



SIP-Based Audio Distribution and Control over IP

User Manual

Revision History
v5.16

Table of Contents	Page
About This Manual	6
1.1 Safety Instructions & Declaration.....	6
1.2 Notice Signs.....	7
System Overview	8
2.1 System Network.....	10
2.2 Applications.....	11
2.2.1 In-Store	11
2.2.2 TERRA-IO	11
Quick Start	13
TERRACOM Family	17
System Hardware	18
5.1 TERRA IP Audio Decoder.....	18
5.1.1 TERRA-EX - Media Exstreamer	18
5.1.1.1 Front Panel.....	19
5.1.1.2 Rear Panel.....	19
5.1.2 TERRA-EXA - Media Exstreamer (20W x 2CH Amp Included)	20
5.1.2.1 Front Panel.....	21
5.1.2.2 Rear Panel.....	21
5.2 TERRA IP Encode/Decoder.....	22
5.2.1 TERRA-LEX - Media In-Exstreamer	22
5.2.1.1 Front Panel.....	23
5.2.1.2 Rear Panel.....	23
5.2.2 TERRA-AMP - Media In-Exstreamer (15W x 2CH Amp Included)	24
5.2.2.1 Front Panel.....	25
5.2.2.2 Rear Panel.....	25
5.2.3 TERRA-FDX - Media In-Exstreamer	26
5.2.3.1 Front Panel.....	27
5.2.3.2 Rear Panel.....	28
5.3 TERRA-FXO - IP Telephone Terminal.....	28
5.3.1 Front Panel	29
5.3.2 Rear Panel	30
5.4 TERRA-IO - IP Contact I/O Terminal.....	30
5.4.1 Front Panel	31
5.4.2 Rear Panel	31
5.5 TERRA-DS1 - Vandal-Proof IP/SIP Door Station.....	32
5.5.1 Front/Rear Panel	33
5.6 TERRA-K - IP-Based Intercom Microphone.....	34
5.6.1 Control Panel	35
5.7 PPM-IT5 - Color Touch Paging & Intercom Console.....	36
5.7.1 Control Panel	37
5.7.2 Side Panel	38
5.7.3 LCD Menu	38
5.7.3.1 Main	40
5.7.3.2 Dial	42
5.7.3.3 Message.....	43
5.7.3.4 Setting	43

5.8	Consoles and Accessories.....	44
5.8.1	RAC 5/RAC 8	44
5.8.1.1	Wiring Connection with Terracom Device.....	44
Web Browser Configuration		45
6.1	Windows Layout.....	45
6.2	IP Address.....	45
6.3	Network Bandwidth and Bitrate.....	46
6.4	IP information.....	47
6.5	Setup 1.....	48
6.5.1	Basic Setting	48
6.5.1.1	Network/Serial/System Time/Family Status/Serial Link/Third Party Controls/Codec/Central Log Setting Setting/TS Record Setting	48
6.5.1.2	SIP	52
6.5.1.3	Paging Setting/Audio Setting.....	55
6.5.1.4	Dial Agent (PPM-IT5).....	56
6.5.2	Device (List)	57
6.5.3	Function Libraries	57
6.5.3.1	Device Group.....	58
6.5.3.2	Command (String).....	59
6.5.3.3	Logic Out.....	60
6.5.3.4	3rd Party Controls.....	61
6.5.3.4	Call	62
6.5.3.4	Message	62
6.5.3.4	Hang Up	63
6.5.3.4	Monitor	63
6.5.3.4	Monitor Cancel.....	63
6.5.3.4	Command (String).....	64
6.5.3.4	Logic Out	64
6.5.3.4	Level Control/Level Read.....	65
6.5.3.4	ON/OFF Switch Control/Read.....	66
6.5.3.4	Device Status	67
6.5.3.4	Multi Function	68
6.5.3.4	Scheduler	68
6.5.3.4	Netsream Select.....	68
6.5.3.4	Music Play/Music Stop.....	69
6.5.3.4	Line Hangup (TERRA-FXO).....	70
6.5.3.4	Line Status (TERRA-FXO).....	70
6.5.3.4	Logic Read	71
6.5.3.5	Multi Function.....	71
6.5.3.6	Macro (PPM-IT5).....	72
6.5.3.7	Goto Button (PPM-IT5).....	72
6.5.3.8	Message Button (PPM-IT5).....	73
6.5.3.9	Locked Button (PPM-IT5).....	73
6.5.3.10	External Variable (PPM-IT5).....	74
6.5.3.11	Call Program (TERRA-DS).....	76
6.5.4	I/O Control	76
6.5.4.1	Local Control.....	76
6.5.4.1	Logic-Call Button.....	77
6.5.4.1	Logic-Command (String).....	78
6.5.4.1	Logic-Message Button.....	78
6.5.4.1	Logic-Call Trigger & RAC-5/8 Call Target.....	78
6.5.4.1	Logic-Message Trigger & RAC-5/8 Message Target.....	78

6.5.4.1	Logic-Logic Out.....	79
6.5.4.1	Logic-On/Off Switch.....	79
6.5.4.1	Logic-Multi Function.....	80
6.5.4.1	RAC-Channel Select.....	80
6.5.4.1	RAC-Play Target.....	80
6.5.4.1	RAC Analog-Volume Control.....	80
6.5.4.1	Edge Trigger Button.....	81
6.5.4.1	Push To Talk	82
6.5.4.1	Level Control	82
6.5.4.2	Remote Control.....	83
6.5.5	Audio Matrix	83
6.5.6	Machine Windows (PPM-IT5)	86
6.5.7	Media Setting	89
6.5.7.1	File Access.....	89
6.5.7.2	Recording Setting.....	90
6.5.7.3	File Browser.....	91
6.5.7.4	Play Setting.....	92
6.5.7.5	Play List Setting.....	92
6.5.7.6	Internal/External Play List.....	93
6.5.7.7	Disk Space.....	93
6.5.7.8	Play List Information.....	94
6.5.8	LINE1/LINE2 (TERRA-FXO)	94
6.5.9	IP Phone (TERRA-FXO)	95
6.5.10	Telephone (TERRA-FXO)	96
6.5.11	Output Volume	96
6.6	Setup 2.....	97
6.6.1	Account Management	97
6.6.2	Scheduler	98
6.6.2.1	New Scheduler.....	98
6.6.2.2	Internal Scheduler List.....	99
6.6.2.3	In-Store Scheduler List.....	99
6.7	Update.....	99
6.7.1	Firmware	99
6.7.2	Configuration	100
6.7.3	GUI (PPM-IT5 only)	100
6.7.4	Update Reboot.....	100
6.8	Status.....	100
6.8.1	TERRA System	100
6.8.2	Control Calibrate	103
6.8.3	Serial Log	104
6.8.4	Log File	105
6.9	About.....	105
6.10	Logout.....	105
6.11	How-To.....	106
6.11.1	Send [Sub Prest] Command to PPM-IT5	106
6.11.2	Use Logic Out to Activate Amplifier During Paging	108
6.11.3	Make Telephone Call	110
6.11.3.1	Using TERRA-FXO.....	110
6.11.3.2	Using PPM-IT5.....	110
6.11.3.3	Using TERRA-FDX.....	111
6.11.4	Message Paging	112
6.11.5	Play Music/Message from Interna/External Playlist	114
6.11.6	Calibrate the RAC and Push Button	115

6.11.6.1 Hotel Application.....	116
Tools	119
7.1 SIP Server (Intercom).....	119
7.2 Internet Paging Server (IPS).....	121
7.3 Icecast.....	122
Maintenance and Troubleshooting	129
Technical Data	130
9.1 TERRA-EX/TERRA-EXU.....	130
9.2 TERRA-EXA.....	131
9.3 TERRA-IEX/TERRA-IEXU.....	132
9.4 TERRA-AMP.....	133
9.5 TERRA-FDX.....	133
9.6 TERRA-FXO.....	134
9.7 TERRA-4IO/TERRA-8IO.....	135
9.8 TERRA-DS.....	135
9.9 TERRA-K.....	136
9.10 PPM-IT5.....	137
Safety (Certification)	138
Contact Information	139

1 About This Manual

This user manual will explicitly describe the hardware installation and the software configuration, provides installers and users the necessary information to setup and configure the system.

❖ Firmware version:

Model	Version
TERRA-EX, TERRA-EXA, TERRA-IEX, TERRA-AMP, TERRA-FDX, TERRA-FXO, TERRA-K, TERRA-IO	v3.0.6.1
TERRA-DS, PPM-IT5	v3.2.0.0

1.1 Safety Instructions & Declaration

- Do not expose the device to extreme temperatures, direct sunlight, humidity, or dust, which could cause fire or electrical shock hazard.
- Keep away water or other liquids from the device. Otherwise fire or electrical shock may result.
- Connect the power cord only to an AC outlet of the type stated in this owner's manual or as marked on the unit. Otherwise fire and electrical shock hazard results.
- Avoid touching power plugs with wet hands. Doing so is a potential electrical shock hazard.
- Take care for correct polarity when operating the device from a DC power source. Reversed polarity may cause damage to the unit or the batteries.
- Avoid placing heavy objects on power cords. A damaged power cord is a fire and electrical shock hazard.
- Do not cut, scratch, bend, twist, pull, or heat the power cord. A damaged power cord is a fire and electrical shock hazard. Ask your TERRACOM dealer for replacement.
- Turn off immediately the unit, remove the power cord from the AC outlet and consult your TERRACOM dealer in any of the following circumstances:
 - Smoke, odor, or noise getting out of the unit.
 - Foreign objects or liquids get inside the device.
 - The unit has been dropped or the shell is damaged.
 - The power cord is damaged.
 - If you continue using the device, fire and electrical shock may result.
- Do not drop or insert metallic objects or flammable materials into the unit as this may result in fire and electrical shock.
- Do not remove the device's cover, as there are exposed parts inside carrying high voltages that may cause an electrical shock. Contact your TERRACOM dealer if internal inspection, maintenance, or repair is necessary.
- Do not try to make any modifications to the device. This is a potential fire and electrical shock hazard.
- Avoid the device's ventilation slots to be blocked. Blocking the ventilation slots is a potential fire hazard.
- To prevent the unit from falling down and causing personal injury and/or property damage, avoid installing or mounting the unit in unstable locations.
- Leave enough space above and below the unit to provide good ventilation of the device. If the airflow is

not adequate, the device will heat up inside and may cause a fire.

- Operate the device in an environment with a free-air temperature of between -5°C ~ 55°C (23°F ~ 131°F).
- Turn off all audio equipment when making any connections to the device, and make sure to use adequate cables.
- Do not use benzene, thinner, or chemicals to clean the device. Use only a soft, dry cloth.
- If the device is moved from a cold place (e.g., overnight in a car) to a warmer environment, condensation may form inside the unit, which may affect performance. Allow the device to acclimatize for about one hour before use.

1.2 Notice Signs

There are two types of signs can be used in this manual. The type is closely related to the effect that may be caused if it is not observed.



Note: Containing additional information.



Caution: The equipment or the property can be damaged, or persons can be lightly injured if the alert is not observed.

2 System Overview

- **Why IP?**

The advantages of audio over IP technology is to use the existing network and even cross the Internet.

- **Where to Use It?**

From the standard applications like shopping malls, hotels, museums, theme parks, hospitals, schools to more tricky and original applications, IP networks are everywhere.

- **Powerful Platform**

The Terracom devices have a powerful processor. You will find a remarkable list of features like priority management, backup management, event management, scheduler, local channel and volume control, paging, echo cancellation, noise reduction.

- **Audio Streaming**

Terracom offers the possibility to stream using the standard RTP protocol in unicast, multicast or broadcast. For some applications, like the In-store, the Terracom can stream using shoutcast/icecast protocols.

- **SIP Benefits**

All Terracom devices are using the SIP technology. It brings you the benefit to have a standard session protocol which can be compatible with IP PBX & soft phone.

- **PoE Benefits**

All Terracom devices support the PoE (Power Over Ethernet). With PoE, the constraint of having AC power outlets is eliminated. This provides flexibility in placing Terracom devices in the most optimal locations instead of choosing locations where power is available.

Optimal placement leads to more efficient network designs and better application performance. And if one day you want to change the location of your Terracom, it would be easier. The network installation can be accomplished easier, faster and for less cost. It is also safer because you can centralize the power management and protect it with an uninterruptible power supply (UPS). At last, use a manageable PoE network switch via web browser or SNMP allows the remote networking devices to be easily reset or shut down which saves the time and expense of dispatching a technician.

- **Management**

Terracom embeds a web interface that enables you to control the Terracom through your favorite internet web browser. For bigger system, you can use the SNMP protocol. For more complex system, the TerraServer will be your supervisor and the management solution of your installation.

TERRACOM
SIP-based audio and control over local network and internet.

Version 3.0.3.0, 2016/10/12 17:08:11
TERRA-FDX, FDX_118@192.168.101.118
OUT-1: N/A / OUT-2: N/A

Setup1 Setup2 Update Status About Logout

Basic Setting Device Function Libraries Audio Matrix I/O Control Media Setting Output Volume

INPUT	MODE	PRIORITY	Mute	LINE OUT (AMP OUT)			STREAM OUT			CONTROL OPTIONS			BUFFER	
				1(A)	2(B)	S/PDIF	OUT	IP ADDRESS	PORT	SELECT	INPUT VOLUME			
SIP	Mono	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A						IN2	35	RT
MIC IN	Mono	6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A	OFF	239.240.100.4	9012	IN1	1	IN2	35	
LINE IN	Mono	6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A	OFF	239.240.100.4	9012	IN1	2	IN2	35	
MESSAGE	Auto	6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A	OFF	239.240.100.4	9012	IN1	3	IN2	35	
MONITOR	Mono	2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A						IN2	35	RT
NET1	Auto	6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A						IN2	35	RT
NET2	Auto	6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A						IN2	35	RT

N/W IN	MODE	SHOUTCAST/ICECAST		STREAM MULTICAST		NET1		NET2	
		URL		IGMP IP	PORT	IN1	IN2	IN1	IN2
SOURCE 1	SHOUTcast/icecast	http://192.168.101.32:9988				IN1	4	Fix	--
SOURCE 2	Stream Multicast			239.240.100.76	3005	IN1	5	Fix	--
SOURCE 3	Stream Multicast			239.240.100.1	9012	Fix	--	Fix	--
SOURCE 4	Stream Multicast			239.240.100.1	9012	Fix	--	Fix	--
SOURCE 5	Stream Multicast			239.240.100.1	9012	Fix	--	Fix	--
SOURCE 6	Stream Multicast			239.240.100.1	9012	Fix	--	Fix	--
SOURCE 7	Stream Multicast			239.240.100.1	9012	Fix	--	Fix	--
SOURCE 8	Stream Multicast			239.240.100.1	9012	Fix	--	Fix	--

* Port 8000~9000 has been used by system, DO NOT use these ports on your design.

Save Cancel

COPYRIGHT © 2011 ATEIS International. ALL RIGHTS RESERVED.

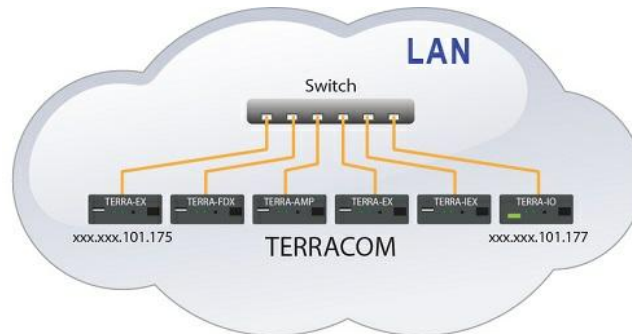
❖ Features

- 10/100MB Ethernet with CAT5/6 connection (RJ45 plug).
- Power supplied via PoE or 24VDC power adapter.
- Simplify the installation, up to 9999 stations per system.
- Support TCP, UDP, SIP, RTP, IGMP, HTTP, DHCP, NTP and SNMP protocols management.
- G.711, G.722, G.726, G.727, G.729, MP3 audio codec and AAC+ decoder.
- Group calls, all call with or without chime.
- Manual and automatic call transfer from station to station and to telephone network.
- Multiple logic IO control.
- Integrated GUI software - TerraManager for monitoring and fault reporting of all system components.
- Web browser for device control and monitoring.
- Logic input: pre-defined call, a contact output activation. RS232/RS485 serial string generation, an alarm. fault display.
- Access control (remote door lock down).
- User Management.

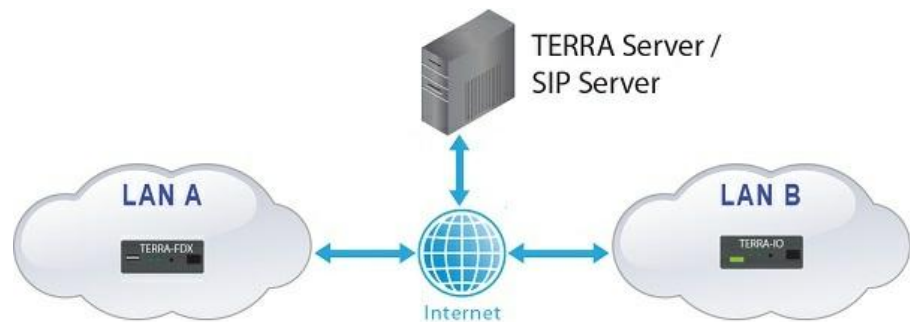
2.1 System Network

There are 3 ways for Terracom devices to communicate with each other.

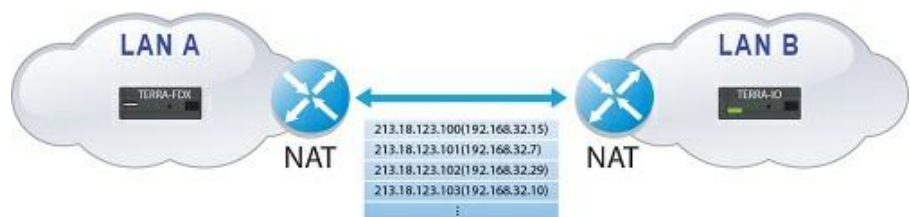
LAN



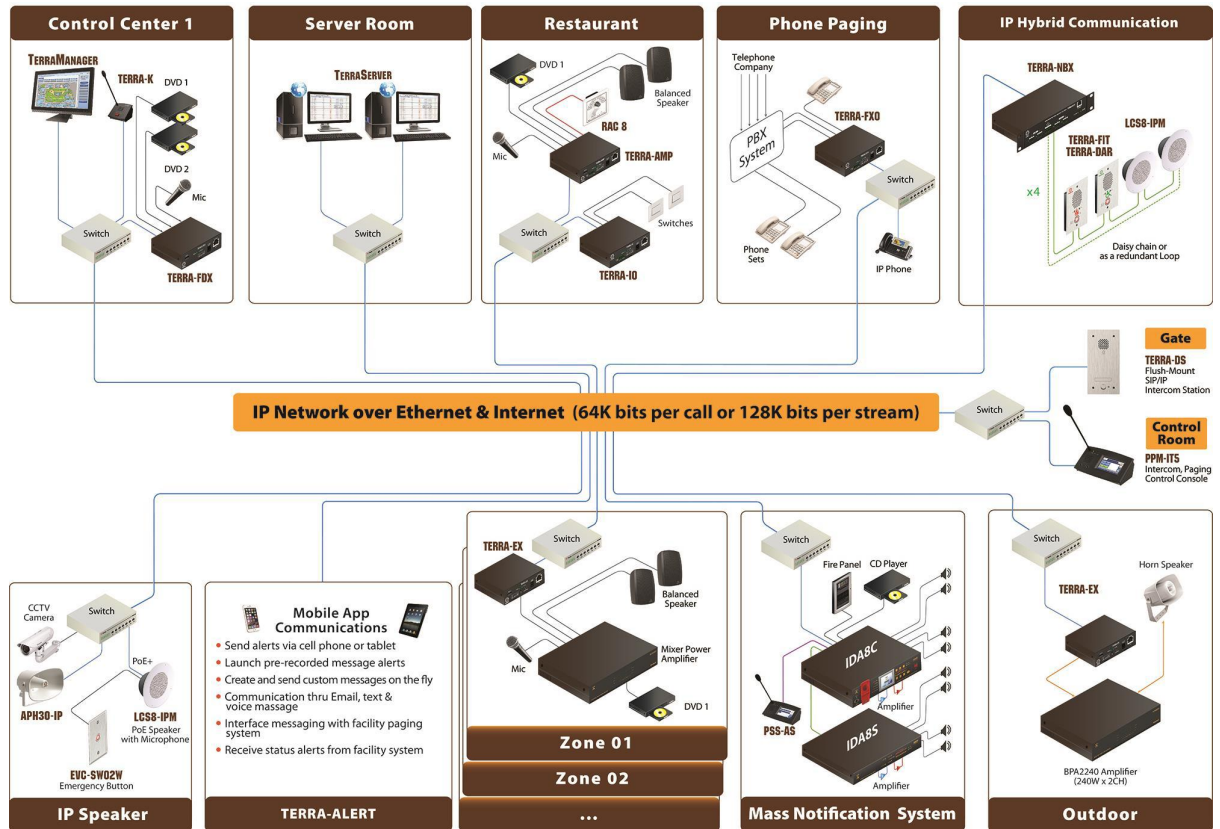
Over Internet



Over Internet via
Static Routing Table
in NAT

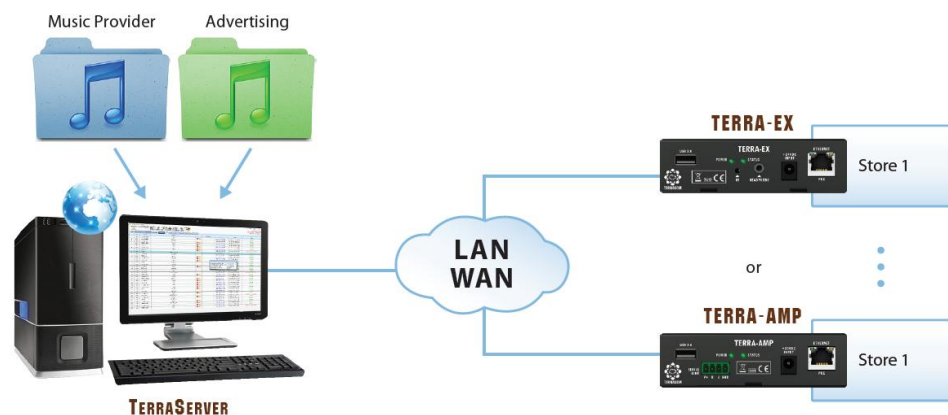


2.2 Applications



2.2.1 In-Store

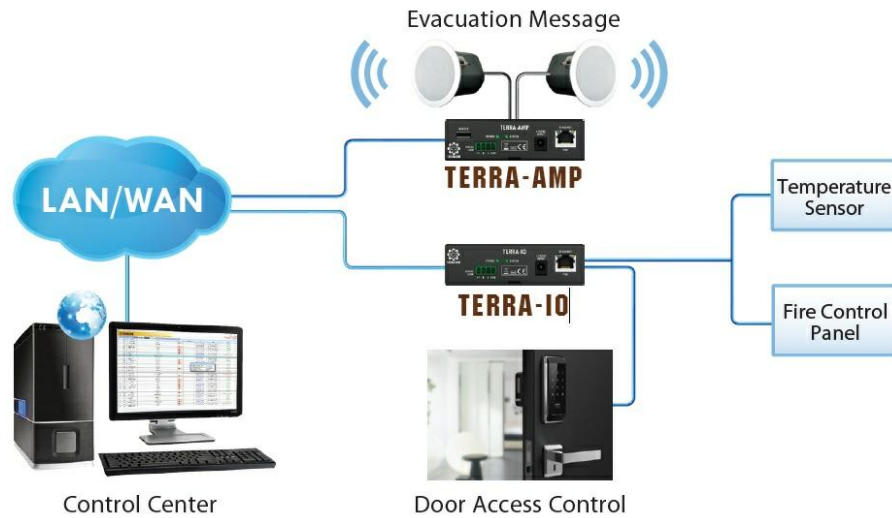
Use the Terracom devices to perform music and advertising messages at each shop. The Terracom device will receive the messages and schedule from TerraServer, and store them on the USB flash memory and play the messages on time.



2.2.2 TERRA-IO

In this example schematic, the TERRA-IO is used as an access controller to detect intruders and to trigger alarms. The temperature sensor is connected to RS232 on the TERRA-IO and will send its status to a server which allows the control centre to activate procedures when errors occur. The serial link can

be used for IP tunneling between a PC and a device like a sensor for tele-monitoring. With the contact I/Os and serial link, the TERRA-IO is the ideal platform for monitoring contact closures and integration with home and office appliances.



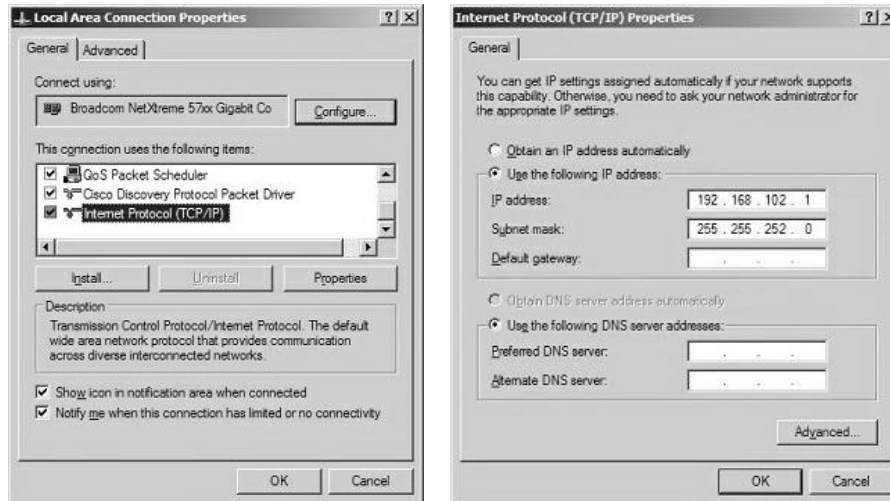
3 Quick Start

Here is a simple demonstration showing how to connect to your Terracom device and perform an IP call. Each Terracom device comes with a default configuration.

1. Assign IP address to PC:

Each Terracom device is shipped from the factory with a default IP address of 192.168.102.10. For more information, see [IP Address](#).

Then, your PC must have an IP address like 192.168.102.x (x is a value between 2 & 254).



2. Power Connection:

The Terracom device can be powered by PoE 48V via CAT5/6 cable. For that you will need a PoE switch. Otherwise, the device can be powered by an external DC-JACK 24V-0.25A power supply. Once the unit is powered on, the Power LED on the device will light up.

3. Network Connection:

Use a straight CAT-5 cable to link your PC network card to the device. Open your favorite web browser (we recommend Mozilla Firefox). Type the IP address (By default: 192.168.102.10) into the address bar. You will be asked for a login. There are two default account settings, see as below. After login, you can start to operate the Terracom web interface.

- Login: admin
- Password: admin

4. Assign IP address to Terracom Device:

- Change the IP address of your device at "Setup1 > Basic Setting > Network". After the settings has been saved, the Terracom unit will auto reboot.

You might need to change the IP settings of your PC network card to be in the same network mask as the new IP address of your Terracom. To avoid the conflict issues when connecting multiple Terracom devices with the

Network	
DHCP	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
IP Address	192.168.101.163
Subnet Mask	255.255.252.0
Gateway	192.168.100.249
DNS	192.168.100.246 <input checked="" type="checkbox"/>

same IP address, be sure to only connect one Terracom device at a time to the Ethernet switch when assigning IP addresses.

5. SIP Server Setting:

- With SIP server:

The audio streaming can be done using a SIP Server. Go to "Setup > Basic Setting > SIP" and enter the settings of your SIP server.

The screenshot shows the 'SIP' configuration window. The 'Transfer Protocol' is set to UDP. The 'Firewall Traversal Mode' is set to SIP Server. The 'Username' is 'ateis175', the 'Password' is masked with dots, the 'SIP Server IP' is '192.168.100.146', the 'SIP Port' is '5060', and the 'RTP Port' is '6912'.

- Without SIP server:

If you don't have a SIP server, please follow the settings as below,

- Firewall Traversal Mode: TERRA Net
- SIP Port: 5060
- RTP Port: 6912

The screenshot shows the 'SIP' configuration window. The 'Transfer Protocol' is set to UDP. The 'Firewall Traversal Mode' is set to TERRA Net. The 'Username' is 'ateis175', the 'SIP Port' is '5060', and the 'RTP Port' is '6912'.

6. Device:

Add the Terracom device you want to call into the Address Book at "Setup1 > Device > Add New Device".

- Enter name_device@XXX.XXX.XXX.XXX:YYYY in the URI field.

- For a SIP call: XXX.XXX.XXX.XXX = the SIP server IP address.
- For a direct call: XXX.XXX.XXX.XXX= the IP address of the device we want to call.
- YYYY= the SIP port number you have entered in the SIP settings.

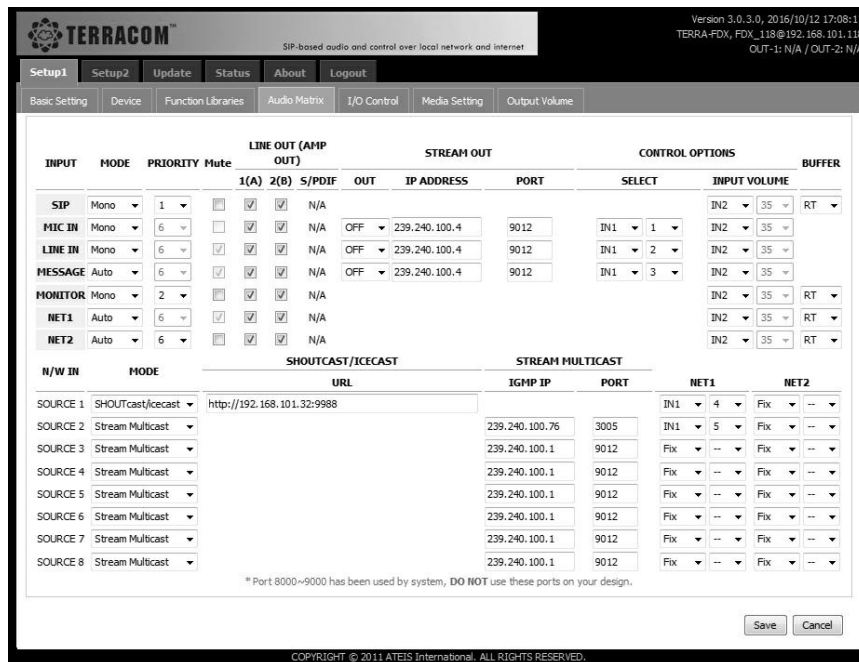
The screenshot shows the 'New Device' configuration window. The 'Device Name' is 'FDX_118', the 'Product Type' is 'TERRA-FDX', the 'URI' is 'FDX_118@192.168.101.118:5060', and the 'Zone' is '1,2'. There are 'Save' and 'Cancel' buttons at the bottom right.

7. Audio Output Matrix:

In the Terracom unit, there is a priority table. You can decide which inputs (SIP call, playlist stored on the USB key, IP streams, mic/line inputs) will be played on the output.

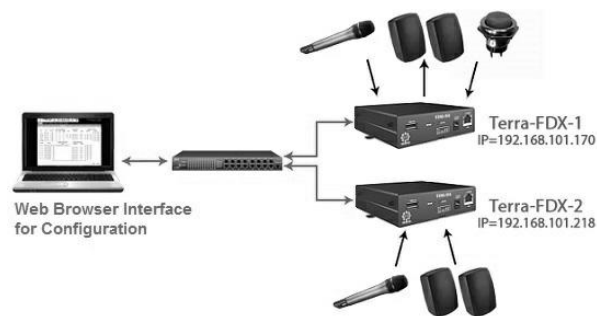


Always set the highest priority for SIP call.

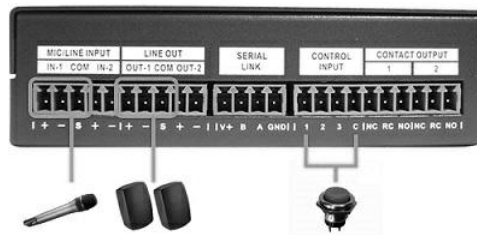


8. How to generate an IP Call:

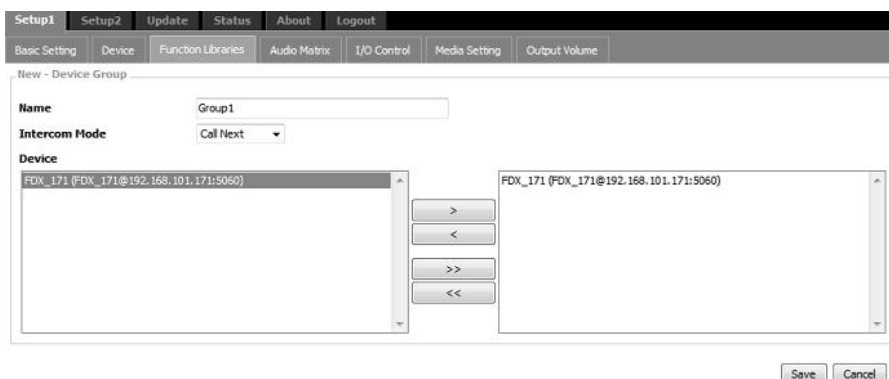
- With the Terracom unit, you can also generate an IP stream. Here we use a simple example, one Terra-FDX call the other Terra-FDXs.



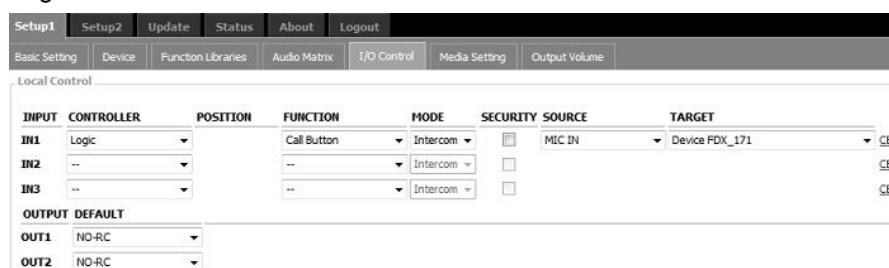
- Connect the Terra-FDX with the following: One mic to MIC-IN connector, one speaker to Line-Out connector and a push button to Control input (1 and GND) as shown in the picture below:



- Finished the step1-4 (IP setting) with two Terracom devices, now follow the steps below to perform an IP call:
 - Add Terra-FDX-2 into Terra-FDX-1's address book at "Setup1 > Device List", click the [Save] button.
 - Add a Call function at "Setup > Function Libraries > Device Group". Choose the device and click the [Save] button.



- 3) Set the button control as shown in the picture below at "Setup > I/O Control" and save the setting.



- Controller: Choose "Logic".
 - Position: N/A.
 - Function: Choose "Call Button".
 - Source: Choose "MIC IN".
 - Target: Choose the target.
- 4) Enable the "SIP Auto Answer" at the TERRA-FDX-2's "Setup1 > Basic Setting", here we choose "MIC" IN to fit the physical connection.











SIP Auto Answer ☐ Disable ☒ Enable

SIP Auto Answer Input ☒ MIC IN ☐ LINE IN

- 5) Press the button and the Terra-FDX-1 will call Terra-FDX-2, now you can hear from the speaker and speak to the Terra-FDX-2 through the mic, and vice versa.
- 6) During the SIP call, both two Terracom devices show the information at the upper-right part of the page.

```
Version 3.0.2.46, 2044/12/14 06:25:20
TERRA-FDX, FDX_171@192.168.101.171
OUT-1: SIP / OUT-2: SIP
```

4 TERRACOM Family

										
Audio Interface										
Gooseneck mic (unidirectional)	✓									✓
Mic-Line in/stereo line in				2/1	2/1	2/1	1/0			1/0
Headphone out (mono/stereo)		2/1		2/1						
Mono/or stereo line out		2/1		2/1	2/1	2/1				
Amplifier			20W x 2 8 ohm			15W x 2 8 ohm				
Internal loudspeaker (5 W)	1									
Internal loudspeaker (2.5 W)							1			1
Telephone line (TERRA-FXO)								2		
Telephone set interface								2		
Other Interface										
RS232/RS485		1*		1	1	1		1	1	
Contact input		3	3	3	3	3	4	3	4 In x 4 Out (TERRA-4IO) 8 In x 8 Out (TERRA-8IO)	
Contact output		1	1	1	2	2	2			
USB 2.0		1*		1*	1	1				
Push button	3						1/2/3/4			1
Power Supply										
24 VDC	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
PoE	✓	✓		✓	✓	✓**	✓	✓	✓	✓

*= Optional, see Ordering Information chapter for details.

**= Maximum 6W x 2 when locating by the PoE switch.

										
Software										
Embedded web browser interface	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
G.711/G.722/G.726/G.727/G.729 codec	✓	Decoding only	Decoding only	✓	✓	✓	✓	✓		✓
AAC+ decoder	✓	✓	✓	✓	✓	✓	✓	✓		✓
MP3 codec	✓	Decoding only	Decoding only	✓	✓	✓	✓	✓		✓
Icecast - shoutcast		✓	✓	✓	✓	✓		✓		
SIP/IGMP/DHCP/NTP/SNMP	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
DTMF								✓		
Acoustic Echo Cancellation	✓					✓	✓	✓		
Built-in scheduler	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Noise Reduction	✓						✓			✓
Matrix with priority management		✓	✓	✓	✓	✓		✓		
1 to group paging	✓	Receiving	Receiving	✓	✓	✓	✓	✓		✓
1 to 1 intercom	✓	Receiving	Receiving	✓	✓	✓	✓	✓		✓

5 System Hardware

5.1 TERRA IP Audio Decoder

5.1.1 TERRA-EX - Media Exstreamer



TERRA-EX is proposed as the cost-effective output device which comes with 2 balanced line outputs, 1 stereo line output (3.5 mm mini-jack) for audio monitoring or listen to Internet radio via headphone. 3 control inputs can work with RAC 5/RAC 8 source selector and volume controller and event triggering such as call/hang up, music play/stop, 3rd party command etc., and 1 relay contact output can be programmed to control an external device.

TERRA-EX is designed for simple point to point or point to multi-point audio distribution as well as converting the analog audio via Ethernet/Internet network without the need of a computer. TERRA-EX incorporates the high quality MP3 decoder, ensuring the audio quality is at the highest possibility for music distribution. The internal memory of TERRA-EX supports up to 80MByte for music/message/recording storage, the audio files can be simply stored through a computer in local network and play the files to the local.

For voice such as message playing and voice paging where require less latency throughout the network, G.722 decoder is used for meeting such demand. To integrate with IP phone system, TERRA-EX has also implemented the SIP protocol, allowed the IP phone to directly paging to any TERRA-EX's output without a microphone.

Thanks to the scheduler and the music/message management via optional USB interface, the TERRA-EX is also the perfect solution for in-store applications. The volume control and channel selection can be adjusted by connecting to low-cost ush-mount RAC 5/RAC 8 source selector and volume controller.

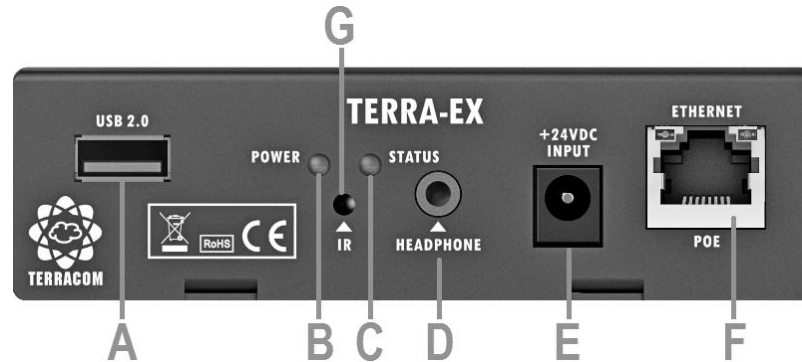
❖ See the following table listed the supported audio codec by TERRA-EX:

Function	Supported Audio Codec
SIP	G.711 ulaw, G.711 alaw, G.722, G.726-32, G.727-32, G.729, PCM16K
SHOUTcast / icecast	MP3, AAC+
Stream	G.711 ulaw, G.711 alaw, G.722, WAVE, MP3, PCM16K
Record	G.711 ulaw, G.711 alaw, G.722, WAV, MP3

❖ Ordering Information

Model	Description
TERRA-EX	IP Audio Decoder (stereo line-OUT x1 or mono x2, input contact x3 & relay output contact(NO/NC)each x1)
TERRA-EX2	IP Audio Decoder (including all interfaces on TERRA-EX, plus RS232 x1)
TERRA-EX4	IP Audio Decoder (including all interfaces on TERRA-EX, plus RS485 x1)
TERRA-EXU	IP Audio Decoder (including all interfaces on TERRA-EX, plus USB2.0 x1)
TERRA-EXU2	IP Audio Decoder (including all interfaces on TERRA-EX, plus RS232 x1, USB2.0 x1)
TERRA-EXU4	IP Audio Decoder (including all interfaces on TERRA-EX, plus RS485 x1, USB2.0 x1)

5.1.1.1 Front Panel



A USB Type A Female Connector:

Optional 2.0 USB interface for music, message and recording (TERRA-EXU, TERRA-EXU2 and TERRA-EXU4 only).

B Power LED:

This LED lights up when the TERRA-EX is powered.

C Status LED:

This LED will flash four times while the device is powered on. If there's a fault, the status LED will light up.

D Headphone Connector:

A stereo line output (3.5 mm mini jack) for headphone.

E 24VDC Input:

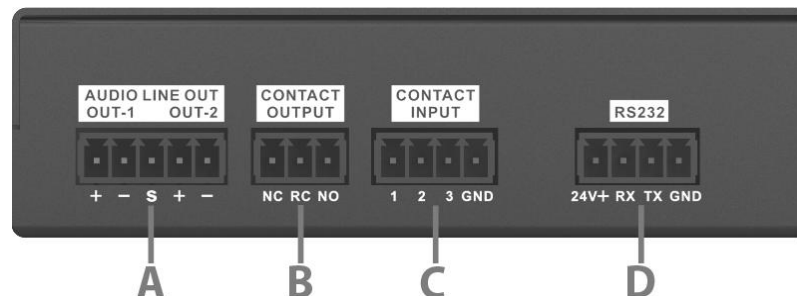
24VDC power supply input (if no PoE available).

F Ethernet/POE Connector:

Ethernet connector (RJ45) for PC configuration, monitoring and power supply.

G IR Receiver [Not in Use]

5.1.1.2 Rear Panel



A Audio Line Out:

2 balanced line outputs (1 stereo or 2 mono). If you want to use unbalanced signal, connect the Cold (-) pin with the Shield (S) pin.

S: Shield, +: Hot audio signal, -: Cold audio signal.

B Contact Output:

The contact output which can be programmed and send a pulse or a static closing/opening to an external device. When the device is powered on and working properly, the NC (normally close) contact is closed and the NO (normally open) contact is open.

C Contact Input:

The contact input is designed to work with a simple contact, button and RAC 5/RAC 8. For example, when connecting a button to GND-pin and 1-pin, it can trigger the setting function which is configured on the web browser.

D RS232/RS485 Connector:

Optional RS232 or RS485 connector for 3rd party control.

5.1.2 TERRA-EXA - Media Exstreamer (20W x 2CH Amp Included)



TERRA-EXA is designed for simple point to point or point to multi-point audio distribution as well as converting the analog audio via Ethernet/Internet network without the need of a computer. TERRA-EXA incorporates the high quality MP3 decoder, ensuring the audio quality is at the highest possibility for music distribution. For voice such as message playing and voice paging where require less latency throughout the network, G.722 decoder is used for meeting such demand.

With the built-in 20W x 2CH amp output (8ohm) on TERRA-EXA, additional cabling and cost for PA amplifiers shall be unnecessary, it shall reduce the complexity and keep the system structure clean, but still achieve all you need.

TERRA-EXA is not a PoE device, and will require a PSU supplied with the unit. For in-store music and advertising applications, the TERRA-EXA offers perfect solution for shoutcast/icecast decoding, scheduler and advertising management. Volume and channel selection can be controlled using the remote RAC source selector.

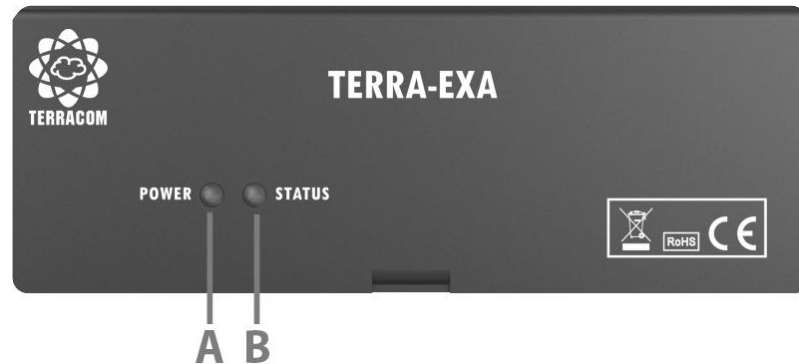
❖ See the following table listed the supported audio codec by TERRA-EXA:

Function	Supported Audio Codec
SIP	G.711 ulaw, G.711 alaw, G.722, G.726-32, G.727-32, G.729, PCM16K
SHOUTcast / icecast	MP3, AAC+
Stream	G.711 ulaw, G.711 alaw, G.722, WAVE, MP3, PCM16K
Record	G.711 ulaw, G.711 alaw, G.722, WAV, MP3

❖ Ordering Information

Model	Description
TERRA-EXA	2 x 20W (8 ohm) Amplified IP Audio Decoder (stereo OUT x 1 or mono x 2, input contact x 3, relay output contact (NO/NC) x 1)

5.1.2.1 Front Panel



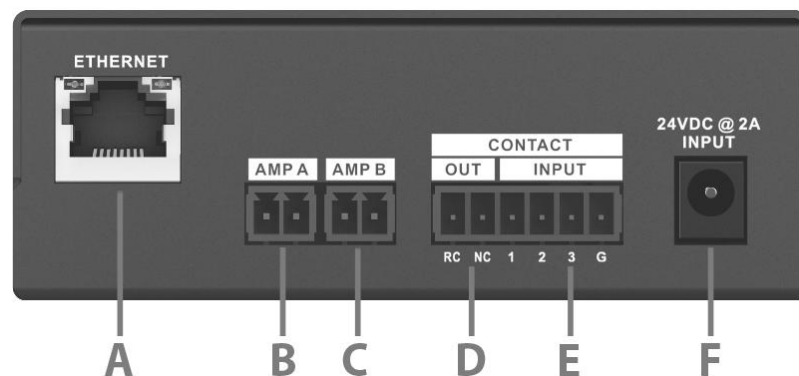
A Power LED:

This LED lights up when the TERRA-EXA is powered.

B Status LED:

This LED will flash four times while the device is powered on. If there's a fault, the status LED will light up.

5.1.2.2 Rear Panel



A Ethernet/POE Connector:

Ethernet connector (RJ45) for PC configuration and monitoring.

B C AMP Out A/B:

20W x 2CH amplifier outputs for 8ohm loudspeakers.

D Contact Output:

The contact output which can be programmed and send a pulse or a static closing/opening to an external device. When the device is powered on and working properly, the NC (normally close) contact is closed and the NO (normally open) contact is open.

E Contact Input:

The contact input is designed to work with a simple contact, button and RAC 5/RAC 8. For example, when connecting a button to GND-pin and 1-pin, it can trigger the setting function which is configured on the web browser.

F 24VDC Input:

External 24VDC (2.5A) power supply.

5.2 TERRA IP Encode/Decoder

5.2.1 TERRA-IEX - Media In-Exstreamer



The TERRA-IEX is a 2 channel audio over IP encoder/decoder which operates as an audio source for IP network such as a CD player or a sound card of a PC and be encoded in high quality MP3. A microphone can also be connected to the mic input and be encoded in G.722. The TERRA-IEX streams its inputs in unicast or multicast. The same device also provides also 2 independent balanced outputs for full duplex communication or for local outputs.

By using an optional USB 2.0 interface, the playlists can be used as a backup of the decoded stream or as a source for the IP streaming. The volume and the channel can be modified by connecting to a low-cost source selector such as RAC.

The contact inputs offers various kinds of implement such as a push button to connect to the TERRA-IEX will broadcast the background music in pre-defined zones. Another button will send the mic input for general announcement. The priority management, volume management, event management & scheduler can be easily setup via web browser.

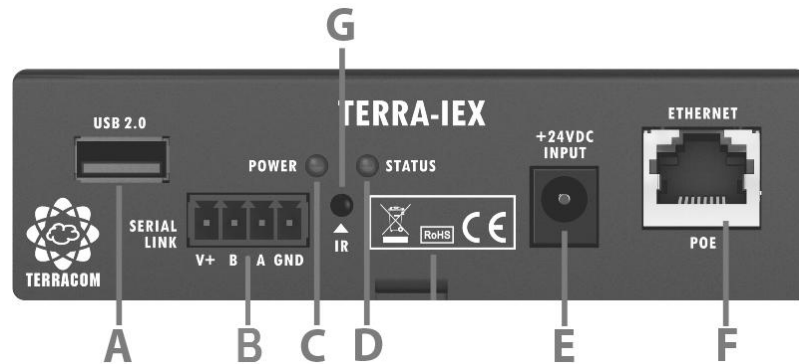
❖ See the following table listed the supported audio codec by TERRA-IEX:

Function	Supported Audio Codec
SIP	G.711 ulaw, G.711 alaw, G.722, G.726-32, G.727-32, G.729, PCM16K
SHOUTcast / icecast	MP3, AAC+
Stream	G.711 ulaw, G.711 alaw, G.722, WAVE, MP3, PCM16K
Record	G.711 ulaw, G.711 alaw, G.722, WAV, MP3

❖ Ordering Information

Model	Description
TERRA-IEX	IP Audio Encoder/Decoder (mic/line-IN x 2, stereo line-OUT x1 or mono x2, input contact x3, relay output contact(NO/NC)each x1, RS232 x1)
TERRA-IEXU	IP Audio Encoder/Decoder (including all interfaces on TERRA-IEX, plus USB2.0 x1)
TERRA-IEXU4	IP Audio Encoder/Decoder (including all interfaces on TERRA-IEX except change the RS232 x1 to RS485 x1, plus USB2.0 x1)

5.2.1.1 Front Panel




A USB Type A Female Connector:

Optional 2.0 USB interface for music, message and recording (TERRA-IEXU and TERRA-IEXU4 only).

B Serial Link:

Either a RS232 or a RS485 for 3rd part control.

 If using the RS232 port, the connector B is as the RX pin and A is as the TX pin.

C Power LED:

The power LED lights up when the TERRA-IEX is powered on.

D Status LED:

The status LED will flash four times while the device is powered on. If there's a fault, the status LED will light up.

E 24VDC Input:

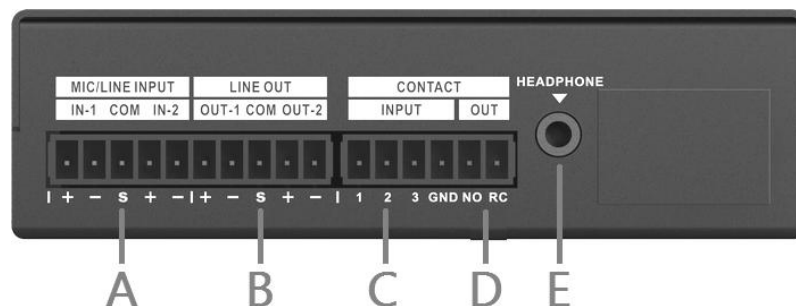
24VDC power supply input (if no PoE available).

F Ethernet/PoE Connector:

Ethernet connector (RJ45) for PC configuration, monitoring and power supply.

G IR Receiver [Not in Use]

5.2.1.2 Rear Panel



A Mic/Line Input:

2 Mic/line balanced inputs. S: Shield, +: Hot audio signal, -: Cold audio signal.

B Line Out:

2 balanced line outputs (1 stereo or 2 mono). S: Shield, +: Hot audio signal, -: Cold audio signal.

C Contact Input:

The contact input is designed to work with a simple contact, button and RAC 5/RAC 8. For example, when connecting a button to GND-pin and 1-pin, it can trigger the setting function which is configured on the web browser.

D Contact Output:

The contact output which can be programmed and send a pulse or a static closing/opening to an external device. When the device is powered on and working properly, the NO (normally open) contact is opened, and RC (relay common) contact is closed.

E Headphone Connector:

A stereo line output (3.5 mm mini jack) for headphone.

5.2.2 TERRA-AMP - Media In-Exstreamer (15W x 2CH Amp Included)



TERRA-AMP comes with 15W x 2CH, 8 ohm amplified outputs, 1 balanced mic/line input, 2 balanced line outputs and 1 stereo line output (3.5 mm mini-jack) for audio monitoring or listen to Internet radio via headphone. A USB flash interface is provided for playback and backup of pre-recorded playlists and announcements. 3 control inputs can work with RAC 5/RAC 8 source selector and volume controller and event triggering such as call/hang up, music play/stop, 3rd party command etc.. And the 2 relay contact outputs can be programmed to control an external device.

TERRA-AMP is also an ideal IP solution for any applications that require a simple device to paging, full duplex intercom and play streaming audio over network. Volume and channel selection can be controlled using the flush-mount RAC 5/RAC 8 remote controller. The TERRA-AMP is easily configured via web interface providing full control over features such as priority and event management, scheduler & output levels.

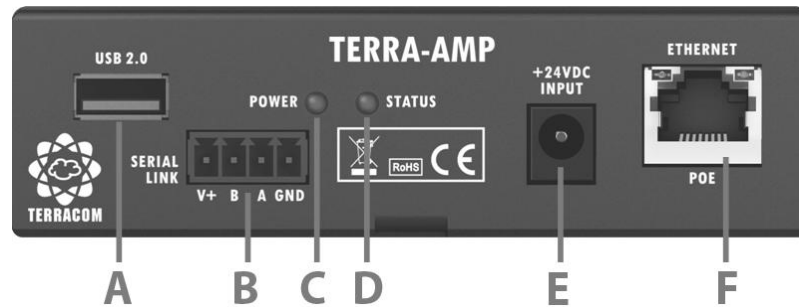
❖ See the following table listed the supported audio codec by TERRA-AMP:

Function	Supported Audio Codec
SIP	G.711 ulaw, G.711 alaw, G.722, G.726-32, G.727-32, G.729, PCM16K
SHOUTcast / icecast	MP3, AAC+
Stream	G.711 ulaw, G.711 alaw, G.722, WAVE, MP3, PCM16K
Record	G.711 ulaw, G.711 alaw, G.722, WAV, MP3

❖ Ordering Information

Model	Description
TERRA-AMP	2 x 15W (8 ohm) Amplified IP Terminal (3.5 mm stereo in x 1, mic/line x 1, stereo OUT x 1 or mono x 2, stereo line-OUT x 1 or mono x 2, input contact x 3, relay output contact x 2, RS232 x 1)
TERRA-AMP4	2 x 15W (8 ohm) Amplified IP Terminal (3.5 mm stereo in x 1, mic/line x 1, stereo OUT x 1 or mono x 2, stereo line-OUT x 1 or mono x 2, input contact x 3, relay output contact x 2, RS485 x 1)

5.2.2.1 Front Panel




A USB Type A Female Connector:

2.0 USB interface for music, message and recording.

B Serial Link:

Either a RS232 or a RS485 for 3rd party control.

 If using the RS232 port, the connector B is as the RX pin and A is as the TX pin.

C Power LED:

This LED lights up when the TERRA-AMP is powered.

D Status LED:

This LED will flash four times while the device is powered on. If there's a fault, the status LED will light up.

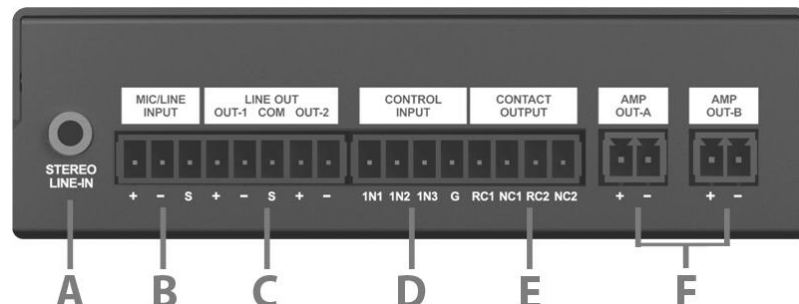
E 24VDC Input:

24VDC power supply input (if no PoE available).

F Ethernet/PoE Connector:

Ethernet connector (RJ45) for PC configuration, monitoring and power supply.

5.2.2.2 Rear Panel



A Stereo Line-in:

A stereo line input (3.5 mm mini jack) for headphone.

B Mic/Line Input:

A Mic/line balanced input. S: Shield, +: Hot audio signal, -: Cold audio signal.

C Line Output:

2 balanced line outputs (1 stereo or 2 mono). S: Shield, +: Hot audio signal, -: Cold audio signal.

D Control Input:

The contact input is designed to work with a simple contact, button and RAC 5/RAC 8. For example, when connecting a button to GND-pin and 1-pin, it can trigger the setting function which is configured on the web browser.

E Contact Output:

The contact output which can be programmed and send a pulse or a static closing/opening to an external device. NC: normally close, RC: Relay common.

The NC (normally close) contact will be closed as soon as the device is powered on and working properly.

F AMP Out A/B:

15W x 2 (8 ohm) independent amplifier outputs. +: Hot audio signal, -: Cold audio signal.

Note: 6W x 2 by PoE.

5.2.3 TERRA-FDX - Media In-Exstreamer



TERRA-FDX comes with 2 balanced mic/line inputs and 2 balanced line outputs, offering full duplex communication. A USB flash interface is provided for playback and backup of pre-recorded playlists and announcements. 3 control inputs can work with RAC 5/RAC 8 source selector and volume controller and event triggering such as call/hang up, music play/stop, 3rd party command etc.. And the 2 relay contact outputs can be programmed to control an external device.

TERRA-FDX is an ideal IP solution for any applications that require a simple device to paging, full duplex intercom and play streaming audio over IP network. It is SIP compliant making it compatible with IP intercom and phones systems such as AVAYA, CISCO & 3COM. Volume and channel selection can be controlled using the flush-mount RAC 5/RAC 8 remote controller. The TERRA-FDX is easily configured via web interface providing full control over features such as priority and event management, scheduler & output levels.

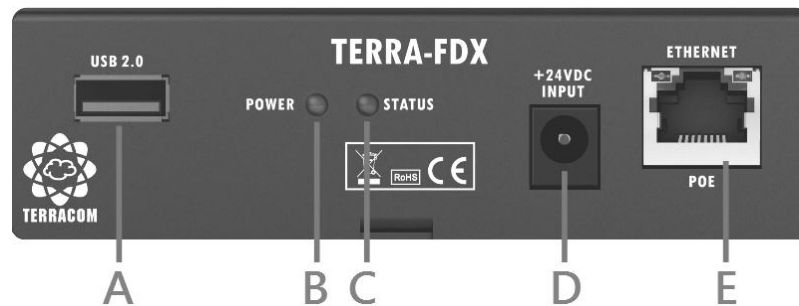
❖ See the following table listed the supported audio codec by TERRA-FDX:

Function	Supported Audio Codec
SIP	G.711 ulaw, G.711 alaw, G.722, G.726-32, G.727-32, G.729, PCM16K
SHOUTcast / icecast	MP3, AAC+
Stream	G.711 ulaw, G.711 alaw, G.722, WAVE, MP3, PCM16K
Record	G.711 ulaw, G.711 alaw, G.722, WAV, MP3

❖ Ordering Information

Model	Description
TERRA-FDX	Full Duplex IP Terminal (mic/line x 2, stereo line-OUT x 1 or mono x 2, input contact x 3, relay output contact x 2, USB2.0 x 1, RS232 x 1)
TERRA-FDX4	Full Duplex IP Terminal (mic/line x 2, stereo line-OUT x 1 or mono x 2, input contact x 3, relay output contact x 2, USB2.0 x 1, RS485 x 1)

5.2.3.1 Front Panel



A USB Type A Female Connector:

2.0 USB interface for music, message and recording.

B Power LED:

This LED lights up when the TERRA-FDX is powered.

C Status LED:

This LED will flash four times while the device is powered on. If there's a fault, the status LED will light up.

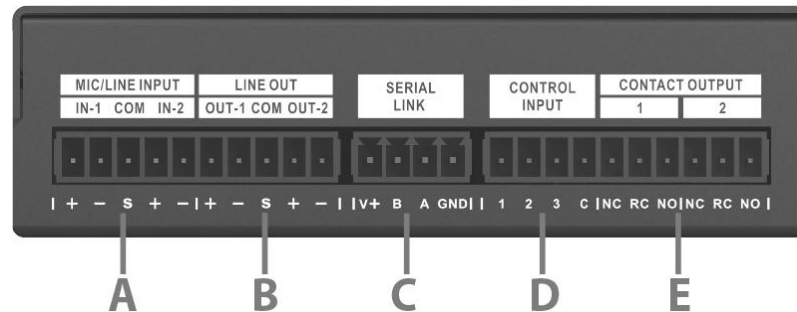
D 24VDC Input:

24VDC power supply input (if no PoE available).

E Ethernet/POE Connector:

Ethernet connector (RJ45) for PC configuration, monitoring and power supply.

5.2.3.2 Rear Panel



A Mic/Line Input:

2 Mic/line balanced inputs. S: Shield, +: Hot audio signal, -: Cold audio signal.

B Line Out:

2 balanced line outputs (1 stereo or 2 mono). S: Shield, +: Hot audio signal, -: Cold audio signal.

C Serial Link:

Either a RS232 or a RS485 for 3rd part control.



If using the RS232 port, the connector B is as the RX pin and A is as the TX pin.

D Control Input:

The contact input is designed to work with a simple contact, button and RAC 5/RAC 8. For example, when connecting a button to GND-pin and 1-pin, it can trigger the setting function which is configured on the web browser.

E Contact Output:

The contact output which can be programmed and send a pulse or a static closing/opening to an external device. NO: normally open, NC: normally close, RC: Relay common. When the device is powered on and working properly, the NC contact is closed and the NO contact is open.

5.3 TERRA-FXO - IP Telephone Terminal



TERRA-FXO is an IP telephone interface with 2 sets of telephone lines and DTMF management for receiving calls or broadcasting calls. The CH1 of TERRA-FXO supports full duplex communication with AEC (Acoustic Echo Cancellation).

It is suitable for the use of analogue and digital phone systems. The typical analogue phone application can be the traditional telephone line/cell phone to intercom/paging to a chosen TERRACOM device (or a device group) through TERRA-FXO, in addition to the digital phone application, the TERRA-FXO can act as a dial agent and let the IP phone (AVAYA, CISCO & 3COM etc.) to dial DTMF keys and proceed

intercom/paging with a chosen TERRACOM device (or a device group).

The TERRA-FXO is easily configured via web interface providing full control over features such as read telephone line status (call in, ringing, disconnect etc.) and hang up Line 1/Line 2 manually or via 3rd party commands, pre-chime/post-chime/SIP call tone setting, scheduler & output levels.

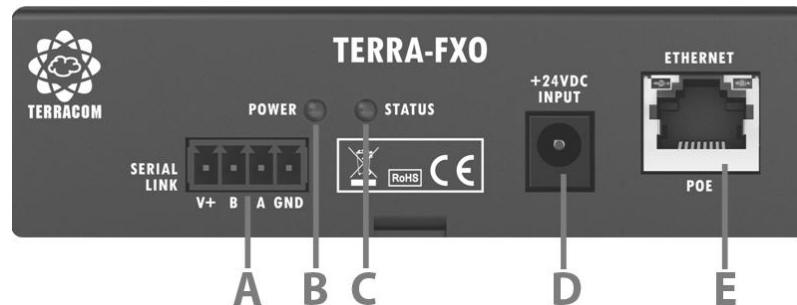
❖ See the following table listed the supported audio codec by TERRA-FXO:

Function	Supported Audio Codec
SIP	G.711 ulaw, G.711 alaw, G.722, G.726-32, G.727-32, G.729, PCM16K
Record	G.711 ulaw, G.711 alaw, G.722, WAV, MP3

❖ Ordering Information

Model	Description
TERRA-FXO	Full Duplex IP Terminal to Telecom Gateway (analog phone interface x 2, RS232 x 1)
TERRA-FXO4	Full Duplex IP Terminal to Telecom Gateway (analog phone interface x 2, RS485 x 1)

5.3.1 Front Panel



A Serial Link:

Either RS232 or RS485 interface for 3rd part control.



If using the RS232 port, the connector B is as the RX pin and A is as the TX pin.

B Power LED:

This LED lights up when the TERRA-FXO is powered.

C Status LED:

This LED will flash four times while the device is powered on. If there's a fault, the status LED will light up.

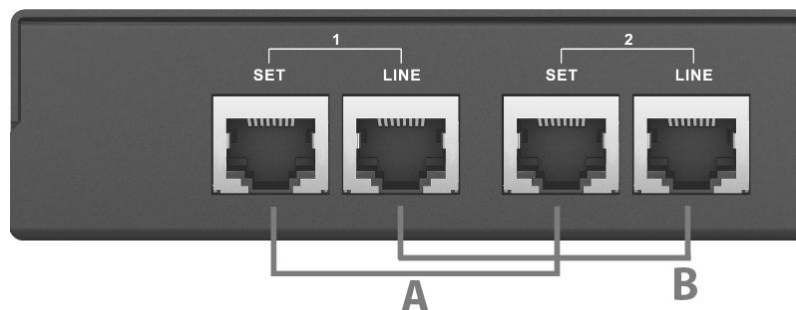
D 24VDC Input:

24VDC power supply input (if no PoE available).

E Ethernet/POE Connector:

Ethernet connector (RJ45) for PC configuration, monitoring and power supply.

5.3.2 Rear Panel



A Handset:

2 sets of connectors to connect to handset.

B Telephone Line-In:

2 LINE-In connectors to connect to telephone line.

5.4 TERRA-IO - IP Contact I/O Terminal



The TERRA-IO is equipped with contact outputs and inputs that are used in industrial & home automation applications or monitoring contact closures. The TERRA-IO is available for two options:

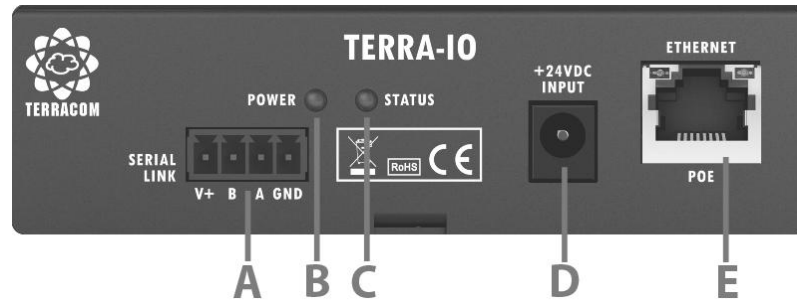
- TERRA-4IO - 4 control contacts in and 4 control contacts out.
- TERRA-8IO - 8 control contacts in and 8 control contacts out.

The serial link (RS232 or RS485 interface) can be used as a sensor for tele-monitoring in IP tunneling between a PC and a device. The contacts I/Os will be useful in industrial & home automation applications or contact closures monitoring. Thanks to the SNMP, the management is adapted to big systems.

❖ Ordering Information


Model	Description
TERRA-4IO	IP Contact Input & Output Terminal (contact IN x 4, relay contact OUT x 4, RS232 x 1)
TERRA-8IO	IP Contact Input & Output Terminal (contact IN x 8, relay contact OUT x 8, RS232 x 1)
TERRA-4IO4	IP Contact Input & Output Terminal (contact IN x 4, relay contact OUT x 4, RS485 x 1)
TERRA-8IO4	IP Contact Input & Output Terminal (contact IN x 8, relay contact OUT x 8, RS485 x 1)

5.4.1 Front Panel



A Serial Link:

Either a RS232 or a RS485 for 3rd part control.

 If using the RS232 port, the connector B is as the RX pin and A is as the TX pin.

B Power LED:

This LED lights up when the TERRA-IO is powered.

C Status LED:

This status LED will flash four times while the device is powered on. If there's a fault, the status LED will light up.

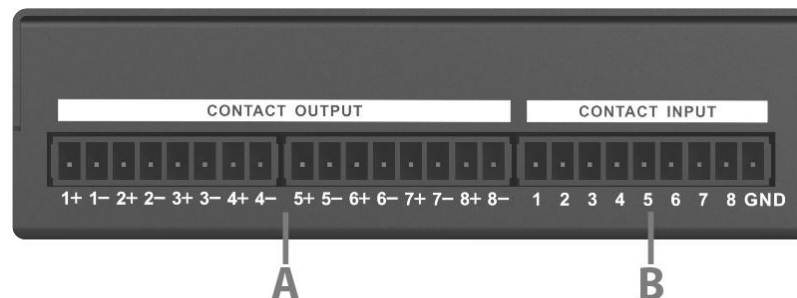
D 24VDC Input:

24VDC power supply input (if no PoE available).

E Ethernet/POE Connector:

Ethernet connector (RJ45) for PC configuration, monitoring and power supply.

5.4.2 Rear Panel



A Contact Output Channel (4 or 8):

The contact output which can be programmed and send a pulse or a static closing/opening to an external device. +: normally open, -: Relay common. When the device is powered on and working properly, the contact (+) is opened.

B Contact Input (4 or 8):

The contact input is designed to work with a simple contact, button and RAC. For example, when connecting a button to GND-pin and 1-pin, it can trigger the setting function which is configured on web browser.

❖ The TERRA-IO is available for two options:

- TERRA-4IO - 4 control contacts in and 4 control contacts out.
- TERRA-8IO - 8 control contacts in and 8 control contacts out.

5.5 TERRA-DS1 - Vandal-Proof IP/SIP Door Station



TERRA-DS1 is an IP/SIP intercom panel for full duplex communication with AEC (Acoustic Echo Cancellation). It is fitted with a stainless steel, IP54 waterproof front panel, ensuring durability and quality performance. In additions, it comes with a push-to-talk button, 2 control outputs and 4 control input contacts, which can be used for the control of a variety of devices such as electronic door locks, automatic barriers and lighting.

It is SIP compliant making it compatible with SIP based third party IP intercom and phones systems such as AVAYA, CISCO & 3COM. It's an ideal solution for a variety of applications such as live broadcasting, intercommunication etc.. The TERRA-DS1 is easily configured via web interface providing full control over features such as 3rd party command string, scheduler, priority and event management & output levels.

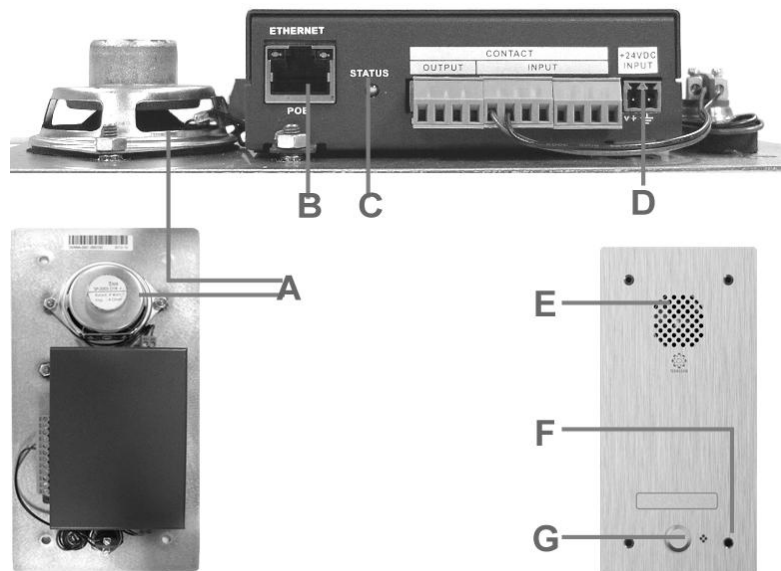
❖ See the following table listed the supported audio codec by TERRA-DS:

Function	Supported Audio Codec
SIP	G.711 ulaw, G.711 alaw, G.722, G.726-32, G.727-32, G.729, PCM16K
SHOUTcast / icecast	MP3, AAC+
Stream	G.711 ulaw, G.711 alaw, G.722, WAVE, MP3, PCM16K
Record	G.711 ulaw, G.711 alaw, G.722, WAV, MP3

❖ Ordering Information

Model	Description
TERRA-DS1	Flush-Mount IP Door Station Intercom Unit (mic/line-IN x 1, speaker-OUT x 1 & button x 1, button ext. port x 1, relay output contact x 2)

5.5.1 Front/Rear Panel



A & E 2W Loudspeaker

B Ethernet/PoE Connector:

Ethernet connector (RJ45) for PC configuration, monitoring and power supply.

C Status LED:

This LED will flash four times while the device is powered on. If there's a fault, the status LED will light up.

D 24VDC input:

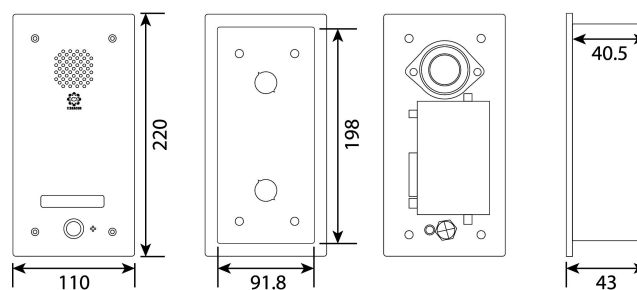
24VDC power supply input (if no PoE available).

F Built-in Condenser Microphone

G Call Button:

A call button which performs the intercom call and can be set via web browser.

❖ Outer Case



5.6 TERRA-K - IP-Based Intercom Microphone



The TERRA-K is an IP multi-function microphone console, designed for full duplex intercom with AEC (Acoustic Echo Cancellation) and paging over local and wide area networks. It comes with a gooseneck microphone and built-in monitor loudspeaker. It also has a single push button on the front panel that can be programmed for a variety of functions, including paging, intercom, pre-recorded announcement via TerraManager etc., and this push button can also be configured as [Push to Talk] or [Lock to Talk] mode.

The TERRA-K is easily configured via web interface providing access to all the paging and control functions. By using the TerraManager integrated control software, paging, full-duplex intercom, music streaming, audio routing, message playing, Scheduler functions, TTS SVE (Text To Speech- Synthetic Voice Engine), device I/O monitoring, volume, 3rd party control etc. can be managed.

❖ See the following table listed the supported audio codec by TERRA-K:

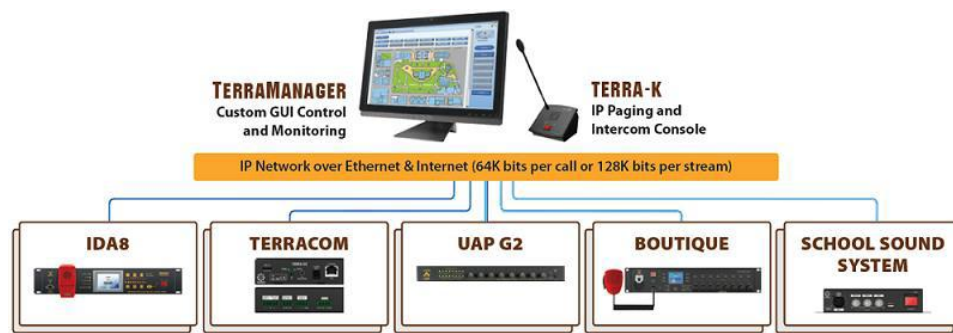
Function	Supported Audio Codec
SIP	G.711 ulaw, G.711 alaw, G.722, G.726-32, G.727-32, G.729, PCM16K
SHOUTcast / icecast	MP3, AAC+
Stream	G.711 ulaw, G.711 alaw, G.722, WAVE, MP3, PCM16K
Record	G.711 ulaw, G.711 alaw, G.722, WAV, MP3

❖ Ordering Information

Model	Description
TERRA-K	IP Based Intercom Microphone

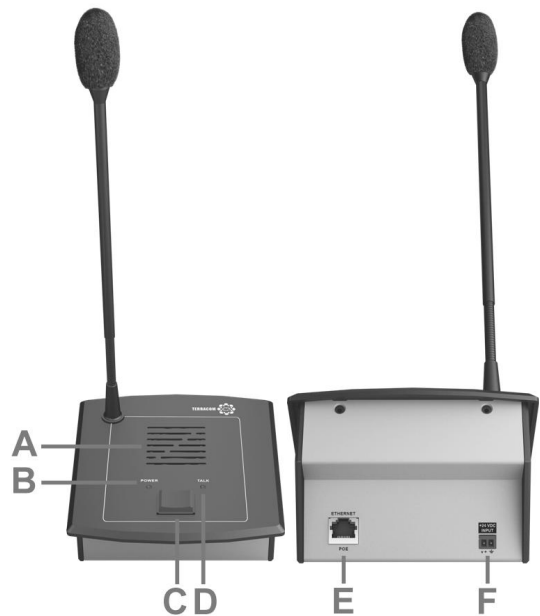
TERRA-K with TerraManager

- Full duplex intercom
- Paging to pre-defined zones
- Pre-recorded announcement and dynamic zone paging via TerraManager



5.6.1 Control Panel

- A** Loudspeaker:
This built-in speaker to play chime and audio message when paging or monitoring signals from TerraManager and on web browser.
- B** Power LED:
This LED lights up when the TERRA-K is powered.
- C** Paging Button:
The "Push to Talk" button for paging.
- D** Talk LED:
This LED lights up when the TERRA-K is in "talk mode".
- E** Ethernet/PoE Connector:
Ethernet connector (RJ45) for PC configuration, monitoring and power supply.
- F** 24VDC Power Input



5.7 PPM-IT5 - Color Touch Paging & Intercom Console



The PPM-IT5 console comes with a 5" TFT touch screen interface which allows intercom with all TERRACOM devices, call-paging, messages broadcasting and DSP matrix parameter control. Its backlit touch screen is designed for simple and user-friendly operation. Thanks to powerful echo cancellation, the PPM-IT5 delivers clear sound for full duplex communication. The 3 hardware keys can be freely assigned within the system control software.

All the paging parameters needed for site operation can be programmed such as assign zones to different buttons, name of zones, group of zones, messages triggering or event control. A total of 168 keys over 14 pages for zone or group of zones selections. The pre-recorded messages and chime are stored into the PPM-IT5 IP paging console. All the settings can be configured via web browser.

❖ See the following table listed the supported audio codec by PPM-IT5:

Function	Supported Audio Codec
SIP	G.711 ulaw, G.711 alaw, G.722, G.726-32, G.727-32, G.729, PCM16K
SHOUTcast / icecast	MP3, AAC+
Stream	G.711 ulaw, G.711 alaw, G.722, WAVE, MP3, PCM16K
Record	G.711 ulaw, G.711 alaw, G.722, WAV, MP3

❖ Ordering Information

Model	Description
PPM-IT5	Programmable Paging Microphone InTerCom (5" panel)

5.7.1 Control Panel



A Microphone:

A 280mm flex microphone.

B Power LED:


This LED lights up when the PPM-IT5 is powered.

C Fault LED:

To display fault status of system, this LED will light up permanently if a fault state in the VACIE system has been engaged.

D EVAC LED:

This LED lights up when system is under evacuation paging, this LED will light up permanently if a evacuation state in the VACIE system has been engaged.

Status	Frequency	Activity
Permanent		System is under evacuation paging.

E F G Button:

Push the button during the half-duplex conversation to activate the following commands below, this can be programmed via web interface.

- Audio Source Select
- Audio Level -
- Audio Level +
- Push To Talk (Intercom)
- Push To Talk (Paging)
- Push To Talk (Evac Announce)
- Push To Talk (Vote Announce)

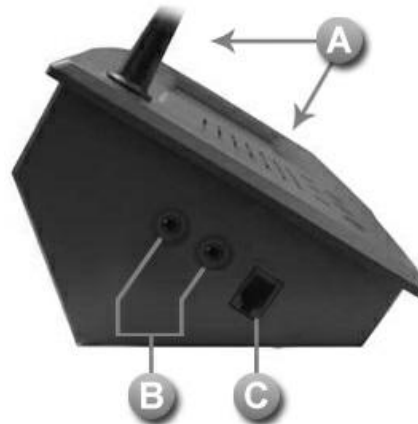
H Loudspeaker:

A monitoring loudspeaker to play chime when paging or monitor the signal from audio processor.

I Touch Screen:

A back-lit touch screen with 5" diagonal and 800 x 480 resolution, each buttons in the PPM-IT5 can be freely configured as a zone paging button or parameter adjustment in audio processor such as IDA8.

5.7.2 Side Panel



A Microphone and Loudspeaker:

Use the internal speaker and microphone of PPM-IT5.

B Phone Jack:

3.5mm headphone jack: To connect to a external headphone output.

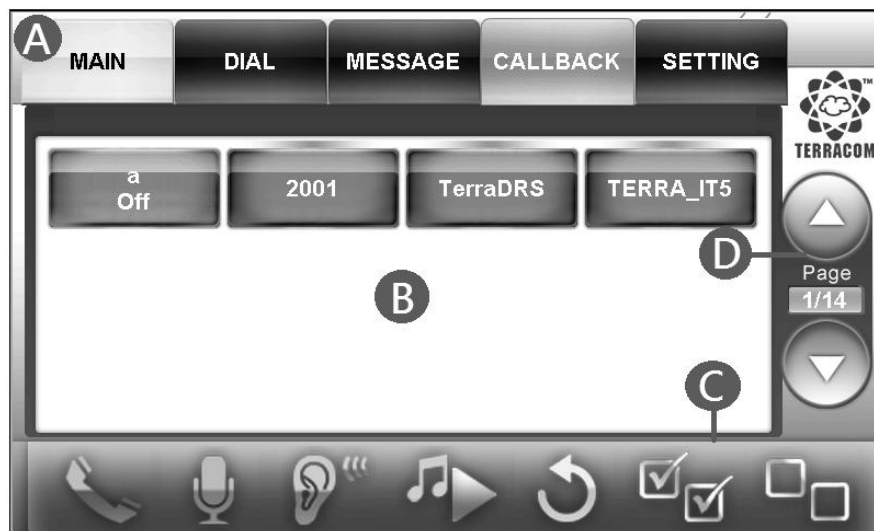
3.5mm mic port (close to RJ9 connector): To connect to an external microphone input.

C RJ9 Connector:

To connect to a RJ9 telephone handset.

5.7.3 LCD Menu

All the buttons displayed on the PPM-IT5 will be managed via Terracom web interface, the touch panel is for operation only. The PPM-IT5 supports multi-language, you can change the language shown on each button (default: English).










A Primary Horizontal Menu:

- [MAIN](#)^[40]: Display the device buttons, event buttons and function buttons.
- [DIAL](#)^[42]: For typing the telephone numbers such as SIP URI and so on.
- [MESSAGE](#)^[43]: Display the message list.
- **CALLBACK**: This function is applicable for EVCS emergency communications system only. This system allows people who need assistance to call the PPM-IT5 by using the Terra-FIT/Terra-DAR intercom unit, and allow the PPM-IT5 to call the end points. The [Callback] tab will list the call(s) in a queue and let the PPM-IT5 choose to accept or reject the intercom call of Terra-FIT/Terra-DAR intercom unit.
- [SETTING](#)^[43]: Display the setting information.

B Content area.

C Operation:

 SIP Call	 Paging	 Monitoring	 Play message
 Deselect All	 Select all	 Back to root menu (works with Macro buttons)	

D Page Up/Page Down.

5.7.3.1 Main




❖ Button Types:

When pressing the button displayed PPM-IT5, its color will be changed to a lighter color.

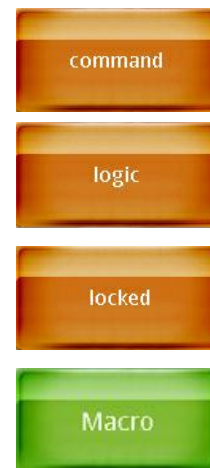
- Device Button (Blue): Display the device name on the button. There is an color indicator at the upper-middle corner of a button to display its status, see the picture below.



- Green: Available
- Red: Busy
- Gray: Off-line


 In case of changing a device button names, you can use Ateis Studio software to change the name of LAP, ECS and IDA8 and edit the names of Terracom device's on web interface.

- Command Button (Orange): Press to perform the Command (string) function which has defined on the web interface.
- Logic Out Button (Orange): Press to perform the Logic (Out) function which has defined on the web interface.
- Locked Button (Orange): Locked button to similar to Command button, but it holds the Up/Down status.
- Macro Button (Green): Manage the buttons like a folder. After create a Macro button, press to enter in its page. See how to create a Marco button from [Macro button](#) ^[72] chapter.




❖ Switch between the Audio Input/Output Set:

Press the hardware button on the front panel, a pop-up window will be displayed for switching the audio source.


 The action of the three hardware buttons on PPM-IT5 needs to be programmed via web interface >Setup > Machine Windows > Parameter Setting > [External buttons](#)^[86] first.

- Auto: Automatically detect the audio input/output set.
- Phone Jack: For plugging the external speaker and mic, the 1/8 inch (3.5mm) jack close to the RJ9 connector is the input.
- Mic: Use the internal speaker and microphone of PPM-IT5.
- RJ9 Connector: For plugging a RJ9 telephone handset.



 When the gooseneck mic/phone-jack/RJ9 telephone handset on PPM-IT5 is disconnected, the LCD panel of PPM-IT5 would display individual message(eg: MIC-IN disconnect/PHONE-JACK disconnect/RJ9 disconnect).

❖ SIP Call:

- Call to other devices (one to one):
 1. Select a zone button which user wishes to call.
 2. Then press  SIP Call button.




- The call from other devices (one to one):
 1. When receiving the SIP call from external device, a confirmation window will display and ask whether to [Accept] or [Reject] the call.
 2. Click [Hang up] button to end this SIP call.






- Paging to multi-users (multi-zones):

1. Select multiple zone buttons which user wishes to paging to.
2. Then press  Paging call button.



- ❖ Paging Message to Multiple Devices:


1. Select multiple zone buttons (devices).
2. Select the message file.
3. Press  Play Message button.




5.7.3.2 Dial



- BS: Backspace.


- CANC: Cancel all.
- CAPS: Caps lock.
-  SIP Call:


Now the 100 in the Device List and call "100@192.168.100.1:5060" user doesn't have to spend much time on typing the entire URI on the touch panel. After enter the name, and easily press the green  button and the complete address will be dialed automatically if the name is existed.

For example, if you enter "100" and press the button, the PPM-IT5 will find the exact device named "100@192.168.100.1:5060".

-  Telephone Call:


If you're going to dial a local phone or a cellphone, type the number and press  button.


You can re-dial the last number by pressing  button.

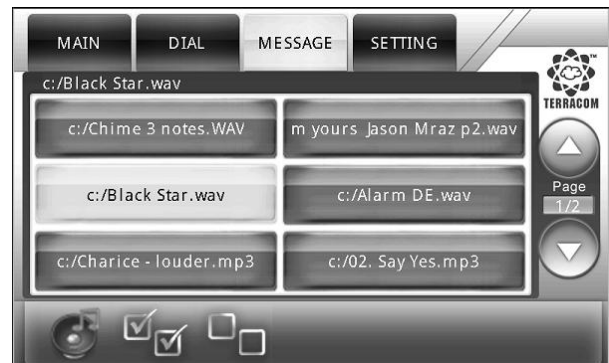
 To dial the local landline phone or cellphone, it is required to assign a TERRA-FXO unit as the dial agent, see [Dial Agent \(PPM-IT5\)](#)^[56] for details.

5.7.3.3 Message





❖ Play Audio Messages:

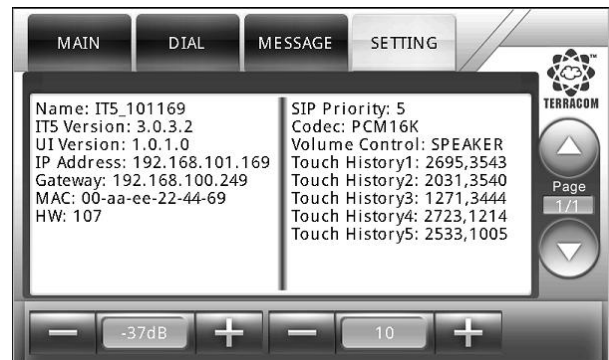
1. Select the audio file on Message page.
2. Select the devices, and press  button.
3. The audio files are stored in the device's flash. You can check the free disk space on the web interface.

 The format currently supported is WAV (16k 16bit only).



5.7.3.4 Setting

-   (Volume):
Use - button and + button to adjust the speaker volume.
-   (Brightness):
Use - button and + button to adjust the screen brightness.



5.8 Consoles and Accessories

5.8.1 RAC 5/RAC 8

The RAC can be used to adjust the source settings such as level control, parameters remotely. The two sets of 5/8 steps knobs on RAC can be programmed by using ATEİS Studio software. The RAC 5/8 is available for US and EU type.



RAC 5/RAC 8
(EU Type)




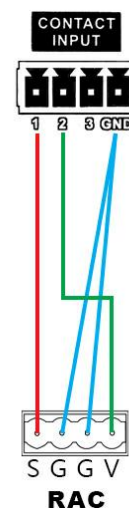
RAC 5/RAC 8
(US Type)

- RAC 5: Wall-mount level and 5 sources selectors
- RAC 8: Wall-mount level and 8 sources selectors

5.8.1.1 Wiring Connection with Terracom Device

Connect the pins of RAC 5/RAC 8 to the contact input of Terracom device, see the picture on the right.

 The RAC 5/RAC 8 is using in analogue connection. It can be influenced by nearby power cables or 100V speaker lines. To avoid this, please use STP CAT5/6/7 with metal shielded cable.



6 Web Browser Configuration

The Terracom devices can be programmed and controlled by Internet browser interface.

6.1 Windows Layout

TERRACOM
SIP-based audio and control over local network and internet

Version 3.0.3.0, 2016/10/14 18:41:53
TERRA-FDX, FDX_118@192.168.101.118
OUT-1: MIC IN / OUT-2: MIC IN

Setup1 Setup2 Update Status About Logout

Basic Setti B Device Function Libraries Audio Matrix I/O Control Media Setting Output Volume

INPUT	MODE	PRIORITY	Mute	LINE OUT (AMP OUT)			STREAM OUT			CONTROL OPTIONS			BUFFER	
				1(A)	2(B)	S/PDIF	OUT	IP ADDRESS	PORT	SELECT	INPUT VOLUME			
SIP	Mono	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A	OFF	239.240.100.4	9012	IN1	1	IN2	16	RT
MIC IN	Mono	6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A	OFF	239.240.100.4	9012	IN1	2	IN2	16	
LINE IN	Mono	6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A	OFF	239.240.100.4	9012	IN1	3	IN2	16	
MESSAGE	Auto	6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A	OFF	239.240.100.4	9012	IN1	3	IN2	16	
MONITOR	Mono	2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A						IN2	16	RT
NET1	Auto	6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A						IN2	16	RT
NET2	Auto	6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A						IN2	16	RT

N/W IN	MODE	SHOUTCAST/ICECAST		STREAM MULTICAST		NET1		NET2	
		URL	IGMP IP	PORT	NET1	NET2	NET1	NET2	
SOURCE 1	SHOUTcast/icecast	http://192.168.101.32:9988				IN1	4	Fix	--
SOURCE 2	Stream Multicast		239.240.100.76	3005		IN1	5	Fix	--
SOURCE 3	Stream Multicast		239.240.100.1	9012		Fix	--	Fix	--
SOURCE 4	Stream Multicast		239.240.100.1	9012		Fix	--	Fix	--
SOURCE 5	Stream Multicast		239.240.100.1	9012		Fix	--	Fix	--
SOURCE 6	Stream Multicast		239.240.100.1	9012		Fix	--	Fix	--
SOURCE 7	Stream Multicast		239.240.100.1	9012		Fix	--	Fix	--
SOURCE 8	Stream Multicast		239.240.100.1	9012		Fix	--	Fix	--

* Port 8000~9000 has been used by system, DO NOT use these ports on your design.

Save Cancel

- A B Primary Menu & Secondary Menu.
- C Display the current firmware version and the information of system time.
- D Display the current device and URI (sip:x@y:Port) that user is using.
- E Line Out (Display the information of the 2 channels Line Out).
- F Content area.
- G Save/Cancel/Done buttons.

6.2 IP Address

If you lose the IP address of your Terracom devices and cannot connect to the web browser, please read the following instruction.

- With only one device:

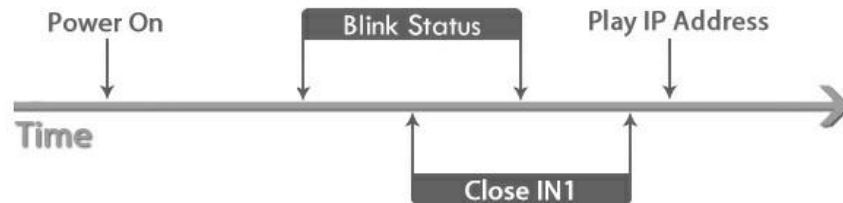
1. Speak Out IP Address:

Most of the Terracom devices (TERRA-EX, EXA, IEX, AMP, FDX, DS) have a "Speak Out IP

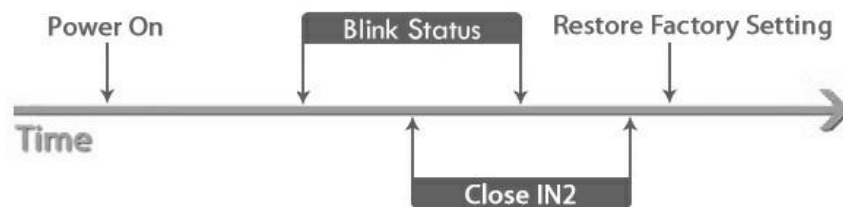
Address" function on web browser. The default is checked.

When the Status LED on the devices flashes four times while it is powered on:

- Short-circuit (close) the contact input 1-pin and G-pin will read the IP address through the speakers.



- Short-circuit the contact input 2-pin and G-pin will reset to the default factory setting.



2. Using Packet Analyzer software:

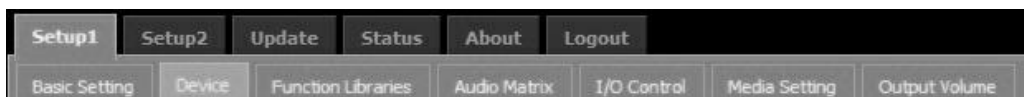
Download the free Packet Analyzer software such as Wireshark and set the filter as "ip.addr == 239.240.38.25", a list of all Terracom units connecting to your LAN will be displayed.

The screenshot shows the Wireshark 1.6.7 interface. The title bar reads 'Atheros L1C PCI-E Ethernet Controller [Wireshark 1.6.7 (SVN Rev 41973 from /trunk-1.6)]'. The menu bar includes File, Edit, View, Go, Capture, Analyze, Statistics, Telephony, Tools, Internals, and Help. The toolbar contains various icons for file operations, capture control, and analysis. The filter field shows 'Filter: ip.addr == 239.240.38.25'. Below the filter, a table displays captured packets:

No.	Time	Source	Destination	Protocol
21180	73.949788	192.168.100.130	239.240.38.25	IGMP
21182	73.985037	192.168.101.178	239.240.38.25	IPv4
21184	74.064949	192.168.101.216	239.240.38.25	UDP
21185	74.099805	192.168.101.175	239.240.38.25	IPv4
21186	74.103712	192.168.101.216	239.240.38.25	IPv4

- Already have two or more devices on the web browser:

Open the Terracom web browser, click "Setup1 > Device" and find out the Terracom unit you want.



6.3 Network Bandwidth and Bitrate

❖ The data rate over the network is calculated as below,

- Audio Streams: It is based on the number of audio stream channels and the audio format.
- Control Streams: Each TERRACOM device is estimated at 28kbps.

❖ The total bitrate is calculated using the formula (in kbps) as below,

$((\text{number of products}) * 28\text{kbps}) + ((\text{number of streams}) * \text{stream bitrate})$

- The example below is using 8 Terra-FDX units + 2 TerraManager, and altogether use 10 channels audio streams (MP3 format) at same time.

$$((8+2) * 28) + (10 * 150) = 1780\text{Kbps.}$$

❖ Audio Stream Format

- Mono:
 - MP3: 150kbps
 - G.722: 90kbps
 - G.711ulaw: 90kbps
 - G.722alaw: 90kbps
 - PCM16k: 280kbps
 - WAVE: 780kbps
- Stereo:
 - MP3: 150kbps
 - WAVE: 1560kbps

6.4 IP information

❖ The TERRACOM products are using the following Multicast address (IGMP)

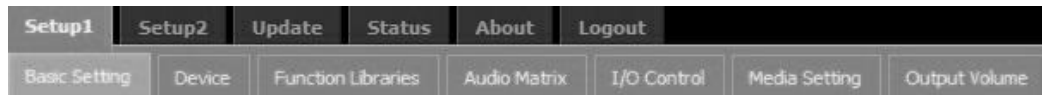
- 239.211.34.48: for ATEIS-NET status display
- 239.211.34.45~49: for IDA8 or BOUTIQUE IGMP address
- 239.240.38.25, Port 9000/9002: for Machines status
- 239.240.38.25, Port 8998: for Paging control
- 239.240.38.25, Port 8995: for Machines display status
- 239.241.100.0 ~ 239.241.100.255, Ports 2000 ~ 3000: for Audio steam
- 239.240.38.25, Port 9002: for BOUTIQUE protocol

❖ The Local Host Ports of TERRACOM products

- 20: File Sync
- 21: File Sync
- 20: Web Server
- 80: website
- 123, 14500, 4096: NTP Server
- 161: SNMP protocol
- 5060: SIP call
- 6912: RTP address

- 8010: Third Party commands
- 26570: Remote Control
- 19760: for IDA8
- 19761: 3rd party control
- 19762: for IDA8
- 19770: for IDA8
- 19780: for IDA8
- 19781: for IDA8
- 19782: for IDA8
- 9002: BOUTIQUE
- 9999: TerraServer File Access

6.5 Setup 1



Under the "Setup 1" and "Setup 2" tabs, you can set how Terracom device connects to the network and performs functions such as Stream Out, Logic Control, 3rd party control, etc.



The name of the tabs and their content is depending on the type of the Terracom device.

6.5.1 Basic Setting

6.5.1.1 Network/Serial/System Time/Family Status/Serial Link/Third Party Controls/Codec/Central Log Setting Setting/TS Record Setting

❖ Network

- DHCP: Enable/disable the DHCP (Dynamic Host Configuration Protocol).
- IP Address: Click to change its IP to fit your network (The default IP address of Terracom device is 192.168.102.10).
- Subnet Mask: Depend on the LAN where the Terracom device is located.
- Gateway Server: The IP address of the gateway server.
- DNS: Tick the checkbox to enable the DNS server and IP address.

Network	
DHCP	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
IP Address	<input type="text" value="192.168.101.171"/>
Subnet Mask	<input type="text" value="255.255.252.0"/>
Gateway	<input type="text" value="192.168.100.254"/>
DNS	<input type="text" value="192.168.100.203"/> <input type="checkbox"/>

❖ Serial (for 3rd Party Control)

- Speed (baud), Data bits, Stop bits, Parity: The settings for 3rd Party Control and SERIAL LINK bypass.

Serial

Speed (baud)	2400
Data bits	5
Stop bits	1
Parity	None

❖ System Time

- Date/Time: If the NTP Client Server is disabled, user shall manually set the time and the timezone of your Terracom device.
- NTP Client Service: Enable the NTP setting. If the NTP is activated, the system date/time of Terracom device will be synchronized by NTP server.
- Timezone: The timezone of your Terracom devices.
 - + NTP Server IP: Set the IP address of NTP Server.
 - + Retrieve Interval: Set the interval to update the system time.
- Daylight: Enable/disable the Daylight Saving Time function on Terracom device.
- Time Difference: Define the time to be an hour/a minute earlier or more.
- Type: Choose [Date] or [Week] option to define the period of Daylight Saving Time.
 - Start Date/End Date: Set the start/end date of Daylight Saving Time.
 - Start Time/End Time: Set the start/end time of Daylight Saving Time.

System Time

Date/Time	From NTP Server.
NTP Client Service	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
+ Timezone	(GMT +08:00) Taipei
+ NTP Server IP	time.stdtime.gov.tw
+ Retrieve Interval	24 h : 0 m
Daylight	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
+ Time Difference	1 h : 0 m
+ Type	<input checked="" type="radio"/> Date <input type="radio"/> Week
++ Start Date	January / 1
++ Start Time	0 h : 0 m
++ End Date	January / 1
++ End Time	0 h : 0 m



The changes in [System Time] will also affect the Scheduler function on web browser.

❖ Family Status

- **Status Notify Service:** Enable the Status Notify Service for allowing other Terracom devices which are not in the same local network to proceed the intercom or paging with others via IPS (Internet Paging Server). See [IPS](#)^[12] chapter for details.

Family Status

Status Notify Service ☒ Enable ☐ Disable

+ Server 1 IP

+ Server 1 Port

+ Server 2 IP

+ Server 2 Port

❖ SERIAL LINK Bypass

- **Serial to Network Service:** Enable/disable the bypass of 3rd party device from the serial link of Terracom device (RS232/RS485) to the Ethernet network.
- **Network to Serial Service:** Enable/disable the bypass of 3rd party device from Ethernet network to the serial link of Terracom device (RS232/RS485).

SERIAL LINK Bypass

Serial to Network Service ☒ Enable ☐ Disable

+ Network IP

+ Network Port

Network to Serial Service ☒ Enable ☐ Disable

+ Network Port

+ Receive IP ☐ IGMP ☐ Local

❖ Third Party Controls

There are two interfaces provided for 3rd Party Control:

1. **Serial Controls Service:** Enable/disable the 3rd party control. Once activated, the "Serial" setting area is required.
 2. **Network Controls Service:** If the Network Controls Service is activated, the local network port is required.
- **Network IGMP Enable:** Enable/disable to use IGMP address, the default network port is 8010.
 - **Network IGMP Address:** Set the IGMP address.

Third Party Controls

Serial Controls Service ☐ Enable ☒ Disable

Network Controls Service ☒ Enable ☐ Disable

+ Network Port

+ Network IGMP Enable ☒ Enable ☐ Disable

++ Network IGMP address

❖ Codec Setting

- MP3 Encoder Bit rate: Select 128k or 192k encoder bit rate of MP3 when streaming or recording.

Codec Setting

MP3 Encoder Bit rate 192K ▼

❖ Central Log Setting


The Central Log function will record all the logs of TERRACOM device, and transmit the log data to remote PC/laptop with TerraServer software.

- Enable: Enable/disable the Central Log function.
- IP Address: Set the IP address using the remote PC/laptop with TerraServer software.

Central Log Setting

Central Log ☒ Enable ☐ Disable

+ IP Address 0.0.0.0

 Central Log Setting is currently available for v3.2.0.0 version (TERRA-DS, PPM-IT5) only.

❖ TS Record Setting

The audio stream files from TERRACOM device will be transmitted to the remote PC/laptop with TerraServer software, and the received stream audio will be saved as the recorded file.


- TS Record: Enable/disable the TS Record function.
- TS IP Address: Set the IP address using the remote PC/laptop with TerraServer software.
- Port: Set the network port, allowing TerraServer software to receive the stream audio from TERRACOM device.

TS Record Setting

TS Record ☒ Enable ☐ Disable

+ TS IP Address 0.0.0.0

+ Port 9018

 TS Record Setting is currently available for v3.2.0.0 version (TERRA-DS, PPM-IT5) only.

6.5.1.2 SIP

SIP

Transfer Protocol: ☐ TCP ☒ UDP

Firewall Traversal Mode: ☐ SIP Server ☒ TERRA Net

+ Username: TerraDRS

SIP Port: 5060

RTP Port: 6912

Online Identification Way: ☐ URI ☒ IP Address

STUN/DMZ: ☐

Identification Send Interval: 2 s

AEC (Echo Cancellation): ☒ Disable ☐ Enable

AGC Factory Setting: Enable

AGC Maximum Gain: 24 dB

+ Threshold: -45 dB

+ Response Time: 1 ms

+ Release Time: 1000 ms

+ Target Level: -12 dB

Audio Codec: PCM16K

Global Priority: 10

Time To Stop Ring: 15 sec

Ring Volume: 1

Chime Volume: 1

SIP Auto Answer: ☐ Disable ☒ Enable

SIP Stop Ringing: ☒ Disable ☐ Enable

Half-duplex: ☒ Disable ☐ Enable

Speak Out IP Address (CIN1): ☐ Disable ☒ Enable

Factory Setting (CIN2): ☐ Disable ☒ Enable

Pre-Chime: c:/Chime 3 notes.WAV

Post-Chime: c:/Chime 3 notes.WAV

Message Pre-Chime: c:/gong.wav

Message Post-Chime: c:/gong.wav

Answer-Tone: --

SIP Active: 183_1-p

SIP Inactive: 183_1-p

Ringing Active: 183_8-p

Ringing Inactive: 183_8-p

Talk Mode(Collocation TM): Lock To Talk

Pre-Record(Collocation TM): Disable

SIP

Transfer Protocol: ☐ TCP ☒ UDP

Firewall Traversal Mode: ☒ SIP Server ☐ TERRA Net

Server Type: ☒ General ☐ Terra Server

+ Username: ITS_91

+ Password: ***

SIP Server IP(URL) / Port: sbc.insmartcloud.com / 5060

SIP Server Call Only: ☐

SIP Port (TERRA Net): 5060

RTP Port: 6912

STUN/DMZ: ☐

Identification Send Interval: 2 s

AEC (Echo Cancellation): ☒ Disable ☐ Enable

AGC Factory Setting: Enable

AGC Maximum Gain: 24 dB

+ Threshold: -35 dB

+ Response Time: 3 ms

+ Release Time: 1000 ms

+ Target Level: -10 dB

Audio Codec: G.722

Global Priority: 10

Time To Stop Ring: 15 sec

Ring Volume: 9

Chime Volume: 9

SIP Auto Answer: ☐ Disable ☒ Enable

SIP Stop Ringing: ☒ Disable ☐ Enable

Half-duplex: ☒ Disable ☐ Enable

Pre-Chime: c:/Chime 3 notes.WAV

Post-Chime: c:/Chime 3 notes.WAV

Message Pre-Chime: c:/gong.wav

Message Post-Chime: c:/gong.wav

Answer-Tone: --

Callback-Tone: --

SIP Active: 183-7-NC

SIP Inactive: 183-7-NO

Ringing Active: 183-8-p

Ringing Inactive: 183-8-p

TERRA Net

SIP Server

- **Transfer Protocol:** Select either TCP or UDP for the communication protocol between the Terracom devices and SIP Server. You can only choose one protocol at a time.

 The transfer protocol of the Terracom devices and SIP Server should be the same.

- **Firewall Traversal Mode:** Use [TERRA Net] to relay the audio packet through TCP/UDP or use [SIP Server]. See [System Network](#) 10 for details.
- **Server Type:** Select either SIP server (General) or TerraServer. TerraServer is an integrated management software, providing more functions than other servers such as dialing SIP call, routing, 3rd party control, contact in/out control etc..
- **Username**
 - **TERRA Net:** Set the calling name for SIP call, normally this username is defined in the telephone number.
 - **SIP Server:** Set the username (account) for using to connect to the SIP server, this username is the account you've registered on SIP server.
- **Password (SIP Server only):** Enter the password for using to connect to the SIP server, this password is the one you've registered on SIP server.

- SIP Server IP(URL) / Port: Set the IP address or URL link of SIP server which you've registered on SIP server.
- SIP server call only (SIP Server only): Enable/disable to pick up the SIP call only.
- SIP Port: The network port for SIP protocol, set 5060 by default.
- RTP Port: The network port for RTP protocol for receiving and transmitting audio, set 6912 by default.
- Online Identification Way: The Terracom supports to paging to Terracom device via Internet Paging Server (IPS). Here you can choose the URI or IP Address option as the identification way to know whether the Terra device is online/offline.
- STUN/DMZ: Enable this option if the Terracom device is connected in DMZ (Demilitarized Zone) via STUN server (Session Traversal Utilities for NAT), otherwise, the SIP calls cannot be dialed.
- Identification Send Interval: The time interval of sending the signal via Internet Paging Server (IPS).



If the time interval is set higher, it can decrease the occupied bandwidth on network; but it will also cause the response time which IPS detects the Terracom device become slower.

- Line1 AEC: Activate/deactivate the AEC function on the Mic/Line input-CH1 of Terracom devices for the purpose of cancelling the feedback during intercom.



This function is specifically used for the Terracom devices which has mic/line input such as PPM-IT5, TERRA-AMP, TERRA-FXO etc..

- AGC Factory Setting: Click [Enable] button to change the current AGC parameter setting to factory setting.
- AGC Maximum Gain: The maximum gain of AGC supported by the mic audio during the intercom and paging.
 - Threshold (dB): Set the threshold level and the audio level is above, then the gain will be controlled.



Don't set the level too low, otherwise it will hear unexpected sounds such as ambient noise.

- Response Time (ms): Set a pre-delay time for automatic attenuation.
- Release Time (ms): Adjust the fade-out time of the signal when AGC is no longer working.



If the release time is too short, the audio slack will be heard during the intercom and paging.

- Target Level (dB): Define which relative volume you want to target.
- Audio Codec: The supported audio codec for SIP (G.711, G.722, G.726, G.727, G.729, MP3, PCM16K and AAC+ decoder).
- Global Priority: The paging priority with IDA8, UAP G2, LAP G2T and ECS processors. For example, when multiple Terracom devices or TerraManager is paging to IDA8, the Global Priority will be used to define which Terracom devices can use the VoIP component in IDA8.



Once the SIP priority here is higher than the TerraManager's, this device's zone won't be able to be paged by TerraManager.

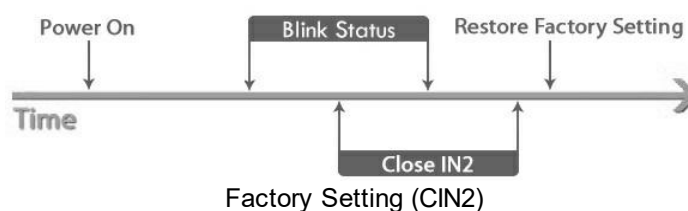
- Time to Stop Ring: The SIP call will be hung up after the set time. If sets up as 0 second, it won't stop

ringing.

- Ring Volume: The volume of ring tone.
- Chime Volume: The volume of pre-chime/post-chime.
- SIP Auto Answer: Enable/disable to pick up the SIP call automatically, usually for monitoring usage.
- SIP Auto Answer Input: Choose the input source, MIC IN or LINE IN.
- Half-Duplex (PPM-IT5 & TERRA-DS only): Enable/disable the half-duplex communication. Once this option is activated, you have to press a button to talk, let go, and then wait for a reply. The person on the other end does the same to respond to you. Neither party can talk at the same time.
- Speak Out IP Address (CIN1): Open the control input 2 and power on the device, during the LED flashing, then close the input 2 and Ground. The TERRA-EX, EXA, IEX, AMP, FDX, DS will speak out its IP Address.
- Factory Setting (CIN2): Open the control input 2 and power on the device, during the LED flashing, then close the control input 2 and Ground. The devices will reset to the default setting (factory setting).



The Factory Setting allows to go back to the default IP address (192.168.102.10) in case you forget the IP address of your Terracom device.



- Pre-Chime/Post-Chime: The pre/post-chime setting when paging to zones.
- Message Pre-Chime/Post-Chime: Allow the Message Button to apply individual pre/post-chime for message broadcasting.
- Answer-Tone: Choose an audio tone which this tone will be played to your caller after the caller picks up the call.
- Callback-Tone (PPM-IT5 only): Choose an audio tone which this tone will be played when receiving an incoming call.
- SIP Active/Inactive: Trigger an action after the SIP call has picked up or trigger an action after the SIP call ends. The triggered action can be the Contact Out, Command (string) and Multi Function.
- Ringing Active/Inactive: Trigger an action when the SIP ringtone starts ringing or trigger an action after the SIP ringtone ends. The triggered action can be the Contact Out, Command (string) and Multi Function.
- Talk Mode(Collocation TM): The talk button of TERRA-K can be configured as [Push to Talk] or [Lock to Talk] mode.
- Pre-Record(Collocation TM): Once this option is enabled and after pressing the talk button of TERRA-K for paging, the paging message will not be paging until the operator releases the talk button(under Push-to-Talk mode) or the operator presses the talk button again (under Lock-to-Talk mode).



Talk Mode (Collocation TM) function and Pre-Record (Collocation TM) function are available for TERRA-K only.

6.5.1.3 Paging Setting/Audio Setting

❖ Paging Setting

You can only enable one setting at a time.

- TERRA Server Agent: Paging through Internet Paging Server, please note the "Family Status >Status Notify Service" needs to be activated.
 - TERRA Server IP: Enter the IP address of your TerraServer.
- IGMP Fix Address: Enable to allow the fix IP address to use the specific IGMP address, otherwise, the system will use the random IGMP address during paging.
 - +IGMP Fix IP: Set the fix IGMP address.

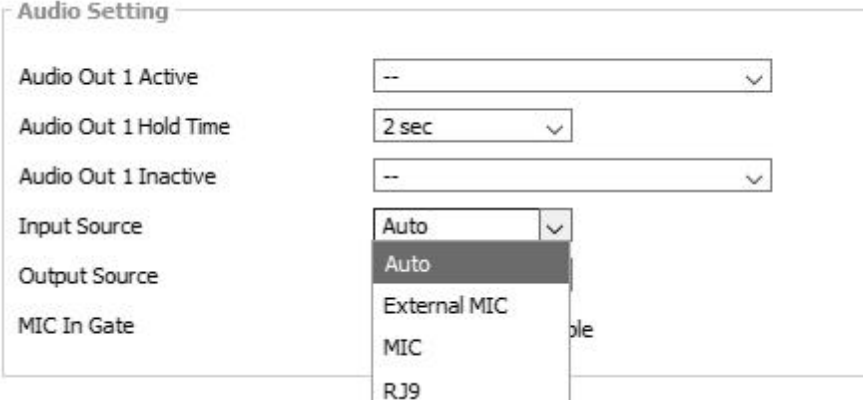
❖ Audio Setting

- Audio Out 1 & 2 Active: Trigger the action when output the Audio Out 1 & 2. The action can be the Command (String), Logic Out and Multi Function.
- Audio Out 1 & 2 Hold Time: The hold time to trigger the Inactive action from the timing of the audio starts to output to the audio stops to output.
- Audio Out 1 & 2 Inactive: Trigger the action when Audio Out 1 & 2 haven't been output. The action can be the Command (String), Logic Out and Multi Function.

- MIC In Gate/Line In Gate: Enable/disable the Gate function for MIC In/Line In audio source.
 - + Threshold: The threshold for triggering the Mic In Gate/Line In Gate.
 - + Hold Time: The period of time that the level of Mic In/Line is continuously less than Threshold, if this period of time greater than Hold Time, the Mic/Line In will stop to input.

 When enables the [Mic In Gate] and [Line In Gate] setting on [Audio Setting], their [Threshold] and [Hold Time] setting will be displayed.

❖ Audio Setting (PPM-IT5)



The screenshot shows the 'Audio Setting' menu with the following items:

- Audio Out 1 Active: --
- Audio Out 1 Hold Time: 2 sec
- Audio Out 1 Inactive: --
- Input Source: Auto (dropdown menu is open showing: Auto, External MIC, MIC, RJ9)
- Output Source: Auto
- MIC In Gate: (checkbox)

- Audio Out 1 Active: Trigger the action when output the Audio Out 1. The action can be the Command (String), Logic Out and Multi Function.
- Audio Out 1 Hold Time: The hold time to trigger the Inactive action from the timing of the audio starts to output to the audio stops to output.
- Audio Out 1 Inactive: Trigger the action when Audio Out 1 haven't been output. The action can be the Command (String), Logic Out and Multi Function.
- Input Source: Specifying input sources with [Auto], [External MIC], [MIC] and [RJ9] options.
- Output Source: Specifying output sources with [MIC], [Phone Jack] and [RJ9] options.
- MIC In Gate: Enable/disable the Gate function for MIC In audio source.
 - + Threshold: The threshold for triggering the Mic In Gate.
 - + Hold Time: The period of time that the level of Mic In is continuously less than Threshold, if this period of time greater than Hold Time, the Mic In will stop to input.

6.5.1.4 Dial Agent (PPM-IT5)

If users wish to use PPM-IT5 to dial local landline phone or cellphone, please assign one of a TERRA-FXO device as the agent, and PPM-IT5 can dial the telephone number from its LCD panel directly.



The screenshot shows the 'Dial Agent' menu with the 'Agent Device' dropdown menu set to 'FXO_198'.

6.5.2 Device (List)

List the Terracom devices located in the same LAN or the devices that users add in manually. The different color on status of device will be indicated as below.

- Black: The devices that users manually add in.
- Grey: The devices are located in the same LAN, but they haven't been added into the Device List.

Name	URI	Type	Zone	Tele Number	Status	Action
IT5	IT5@192.168.101.21:5060	PPM-IT5	1		online	New / Edit / Delete
TK14	TK14@192.168.101.14:5060	TERRA-PPMK			online	Add
MessengerPro1	MessengerPro1@192.168.101.51:5060	Messenger Pro			offline	Add
1	1@192.168.100.6:5060	UAP-G2			online	Add

[New Device](#)

- Name: The name of device.
- URI: The URI of device.
- Type: The type of device.
- Zone: The paging zone of the device.



The max. number of supported zones is 1024.


- Tele Number: The number will be displayed when the TERRA-FXO is connected.
- Status: The green button will indicate the device is in online status, and grey button indicates the device is in offline status.
 - Online (green): The device is online (connected).
 - Offline (grey): The device is offline (disconnected).
 - Paging: The device is currently paging.
 - Phone: The device is currently in intercom.
- Action: Users can perform [New], [Edit] or [Delete] action on the device.
 - New: Add the device in the same LAN.
 - Edit/Delete: Edit/delete the device.
- New Device: Create a new device in a device list which the zone settings require to be different from other device. For example, the zone setting of TERRA-FDX on first device is Zone 1, and on the second device is Zone 2.

Device Name	<input type="text" value="AMP101115"/>
Product Type	<input type="text" value="TERRA-AMP"/>
URI	<input type="text" value="AMP101115@192.168.101.115:5060"/>
Zone	<input type="text" value="1"/> Max Zone: 2

6.5.3 Function Libraries

The [Function Libraries] allows to set the functions and action for managing/controlling the Terracom devices. Follow the steps to create an action.

1. The source path on the web is Terracom web interface > Setup 1 > Function Libraries.
2. Select the function from drop-down box, and click [Add] button.

 The 3 items in this chapter: [Locked Button](#)^[73], [Goto Button](#)^[72], [External Variable](#)^[74] and [Macro](#)^[72] are only supported by PPM-IT5, and [Call Program](#)^[76] is for TERRA-DS.

6.5.3.1 Device Group

Create a device group with multiple Terracom devices.

- Name: The display name of this [Device Group] function.
- Intercom Mode:
 - Call Next: When the first device does not answer the call, the call will transfer to the next device, and continue to call the devices in the device group until one of the device has picked up the call.
 - Broadcast All: Call all the devices in the [Device Group] until any device in this group has picked up the call.
- Device: Select the Terracom device which user wishes to add it in the [Device Group], click [>] and [>>] button to add one or all the devices or click [<] or [<<] button to remove one or all the devices from the left side to the right side.

6.5.3.2 Command (String)

Send command string to 3rd party devices.

- String: The code of the string will depend on the 3rd party devices. The picture above is an example of sending the command string in ASCII code to Ateis processors (IDA8, UAP G2, ECS, LAP G2T), the Ateis processors use Hex code, then users need to change the string in Hex code to ASCII code. The Hex code is %XXh, the XX indicates the character of Hex code.

The Terracom only receive the command string in ASCII code.

- Interface: You can send the command string through network (UDP) or TERRACOM remote. The [Remote] option allows to quickly select the TERRACOM unit which has already added in the [Device List] window, see the picture below.

The [Remote] option is currently available for v3.2.0.0 version (PPM-IT5 only).

- Mode:

- Time Interval: The period of sending the command string to 3rd party device.
- Time Out: The device will stop sending the command string after receiving the answer string from the 3rd party device.

- +Ans: The answer string which sends to Terracom device when 3rd party device has received the command string.
 - +Time Out: Set the "period time" to resend the command string when not receiving the [+Ans] response.
 - +Repeat: Set the "repeat time" to resend the command string when not receiving the [+Ans] response.
- ❖ Users can send the command using logic/Scheduler to 3rd party devices such as UAP G2, ECS, LAP G2T etc.

6.5.3.3 Logic Out

Use logic output to control the 3rd party devices.

- Name: The display name of this [Logic Out] action.
- Remote Target: Select the device you wish to perform this [Logic Out] action.
- Channel: The channel is depending on the number of logic output channel of your Terracom device has. For example, the TERRA-IO has 8 relay outputs (channels).




The [Logic Out] action will not be activated if no channel is selected on [Channel] option.

- Value:
 - NO-RC: Trigger the channel relay of contact output which is "NO RC" in rear panel (Normally Open).
 - NC-RC: Trigger the channel relay of contact output which is "NC RC" in rear panel (Normally Close).
 - TOGGLE: Trigger the relay switch of contact output between Normally Open and Normally Close. The default switch can be user-defined on I/O Control > Local Control > Output Default.
 - PULSE: Close during High period then open during Low period like a square wave.
 - NC-RC Period: The time which the contact output channel triggers the relay "Normally Close".
 - NO-RC period: The time which the contact output channel triggers the relay "Normally Open".
 - Times: Set how many times which the reply of contact output channel will be triggered.
 - REVERSE: Reverse to the last value status after triggering.

How-to: Please refer to [Use Logic Out to Activate Amplifier During Paging](#)^[108] chapter.

6.5.3.4 3rd Party Controls

Set the 3rd party command to allow other device to control the Terracom devices.

 Please enable [Network Controls Service settings] and set [+Network Port] on [Setup1 > Basic Setting > Third Party Controls](#)^[48] first.



- Name: The [Name] field is the command string for triggering an action via 3rd party control.
- Function:

Interface		Function
Connection	Settings	
Ethernet(UDP)	UDP Port = 8010	<ul style="list-style-type: none"> • Call^[62] • Message^[62] • Monitor^[63] • Hang Up^[63] • Command (String)^[64] • Logic Out^[64] • Monitor Cancel^[63] • Level Control/Read^[65] • ON/OFF Switch Control/Read^[67] • Device Status^[67] • Multi Function^[68] • Scheduler^[68] • Netstream Select^[68] • Music Play/ Music Stop^[69] • Logic Read^[71] • Line Status (TERRA-FXO)^[70] • Line Hangup (TERRA-FXO)^[70]
RS232	Speed (baud) Data bits Stop bits Parity	

- Target: Choose the Terracom device (target) which allows the 3rd party device to paging/SIP/control the logic/monitor/control.
- Enable Status: To enable or disable this 3rd party command. If this field is set disable, the Terracom device will not execute the function even receives the command.

6.5.3.4.1 Call

Set the 3rd party command to call a device or a device group.

The screenshot shows a dialog box titled "New - Third Party Controls". It contains the following fields and values:

- Name:** CMDSTR
- Function:** Call
- Source:** MIC IN
- Target:** Device EX_127
- Mode:** Intercom
- Security:** ☐
- Enable Status:** Enable

At the bottom right, there are "Save" and "Cancel" buttons.

- **Source:** The calling source (MIC IN or LINE IN).
- **Mode:** Choose the calling mode (Intercom, Paging, EVAC Announce and Vote Announce).
 - EVAC/Vote Announce: This two call modes are only applicable when using PPM-IT5 to paging to TERRA-RD. The paging priority: EVAC Announce > Vote Announce > Paging.
- **Security:** If the [Security] option is enable, the called device cannot hang up the call during paging unless the caller cancels the call itself.

• Command-Call:

From the example picture above, if you wish to call a device or a device group, please send a command string: CMDSTR. The TERRACOM device will send back in ASCII code as below.

- **200** (ASCII Code) indicates OK (received).
 - **400** (ASCII Code) indicates NG (the 3rd party command sent from 3rd party device is not the same as [Name] field).
-

6.5.3.4.2 Message

Set the 3rd party command to play multiple message/s to a device or a device group.

The screenshot shows a dialog box titled "New - Third Party Controls". It contains the following fields and values:

- Name:** CMDSTR
- Function:** Message (with an additional "Internal msg" dropdown next to it)
- Target:** Device EX_127
- Mode:** Evac Announce
- Security:** ☐
- Enable Status:** Enable

At the bottom right, there are "Save" and "Cancel" buttons.

- **Function:** Select the message file/folder which you create on Media Setting > Internal/External List.
- **Mode:** Choose the calling mode (Intercom, Paging, EVAC Announce and Vote Announce).
 - EVAC/Vote Announce: This two call modes are only applicable when using PPM-IT5 to paging to TERRA-RD. The paging priority: EVAC Announce > Vote Announce > Paging.
- **Security:** If the [Security] option is enable, the caller cannot hang up the call during paging unless the

caller cancels the call itself.

- **Command-Message Play:**

From the example picture above, if you wish to play multiple message/s to a device or a device group, please send a command string: CMDSTR. The TERRACOM device will send back in ASCII code as below.

- **200** (ASCII Code) indicates OK (received).
- **400** (ASCII Code) indicates NG (the 3rd party command sent from 3rd party device is not the same as [Name] field).

6.5.3.4.3 Hang Up

Set the 3rd party command to hang up a call (intercom/paging/EVAC Announce/Vote Announce) or a message.

New - Third Party Controls

Name	CMDSTR
Function	Hang Up
Enable Status	Enable

Save Cancel

- **Command-Hangup:**

From the example picture above, if you wish to hang up a call or a message, please send a command string: CMDSTR. The TERRACOM device will send back in ASCII code as below.

- **200** (ASCII Code) indicates OK (received).
- **400** (ASCII Code) indicates NG (the 3rd party command sent from 3rd party device is not the same as [Name] field).

6.5.3.4.4 Monitor

Set the 3rd party command to monitor the source.

New - Third Party Controls

Name	CMDSTR
Function	Monitor
Target	Device EX_127
Source	SIP
Enable Status	Enable

Save Cancel

- **Source:** Select which source you wish to monitor (SIP/MIC IN/LINE IN/MESSAGE/NET1/NET2/LINE 1/LINE 2).

6.5.3.4.5 Monitor Cancel

Set the 3rd party command to cancel the monitoring of SIP/MIC IN/LINE IN/MESSAGE/NET1/NET2/LINE 1/LINE 2 source.

New - Third Party Controls

Name	CMDSTR	
Function	Monitor Cancel	
Enable Status	Enable	

Save Cancel

- Command-Monitor/Monitor Cancel:

From the example picture above, if you wish to cancel a source monitoring, please send a commend string: CMDSTR. The TERRACOM device will send back in ASCII code as below.

- **200** (ASCII Code) indicates OK (received).
- **400** (ASCII Code) indicates NG (the 3rd party command sent from 3rd party device is not the same as [Name] field).

6.5.3.4.6 Command (String)

Set the 3rd party commend to control other devices.

New - Third Party Controls

Name	CMDSTR	
Function	Command (String)	
Target	CMD_String String1	
Enable Status	Enable	

Save Cancel

- Command-Command (String):

From the example picture above, if you wish the Terracom device to send a command string to control the other devices, please send a commend string: CMDSTR. The TERRACOM device will send back in ASCII code as below.

- **200** (ASCII Code) indicates OK (received).
- **400** (ASCII Code) indicates NG (the 3rd party command sent from 3rd party device is not the same as [Name] field).

6.5.3.4.7 Logic Out

Set the 3rd party commend to control the logic output.

Modify - Third Party Controls

Name	CMDSTR	
Function	Logic out	NC
Enable Status	Enable	

Save Cancel

- Command-Logic Out:

From the example picture above, if you wish to control the logic output, please send a commend string: CMDSTR. The TERRACOM device will send back in ASCII code as below.

- **200** (ASCII Code) indicates OK (received).
- **400** (ASCII Code) indicates NG (the 3rd party command sent from 3rd party device is not the same as [Name] field).

6.5.3.4.8 Level Control/Level Read

❖ Level Control: Set the 3rd party command to adjust the level of audio.

❖ Function:

Select the source (SIP/MIC/LINE/MESSAGE/NET1/NET2/MONITOR/OUT1/OUT2/AMP1/AMP2/AMP All/AGC Gain/SPEAKER/HEADSET/RJ9) you wish to adjust its level.

The screenshot shows a web-based configuration window titled "New - Third Party Controls". It has four main input areas: "Name" with a text box containing "CMDSTR", "Function" with a dropdown menu set to "Level Control", "Source" with a dropdown menu set to "MIC", and "Enable Status" with a dropdown menu set to "Enable". At the bottom right, there are "Save" and "Cancel" buttons.

❖ Source Control & Range:

The table below indicates all the sources and their corresponded adjustable range. To adjust its level, add [:], [:Increase] or [:Decrease] command string and the specific range (level adjustment/mute/bypass) behind the listed source.

Source	Command	Range (Level/Mute/Bypass)	Unit (dB)
SIP/MIC/LINE/MESSAGE/ NET/MONITOR	:	0~36	1
	:Increase	1~100	1
	:Decrease		
SPEAKER/HEADSET/RJ9	:	Mute / -45~0	1
	:Increase	1~100	1
	:Decrease		
AMP1/AMP2 (TERRA-EXA/AMP)	:	Mute / -45~12	1
AGC Gain	:	Bypass / 15~60	3

• Command-Level Control:

- **200** (ASCII Code) indicates OK (received).
- **400** (ASCII Code) indicates NG (the 3rd party command sent from 3rd party device is not the same as [Name] field).

• Examples:

Assume the value of Name is "TARGET".

- To adjust the level of MIC input to 10dB, select **MIC** source from drop-down box. The command string is TARGET:10.
- To decrease 3 dB level on SPEAKER output, select **SPEAKER** source from drop-down box. The command string is TARGET:Decrease 3.
- To mute the AMP1 output, select **AMP1** source from drop-down box. The command string is TARGET:Mute.

- To bypass the AGC Gain, select **AGC Gain** source from drop-down box. The command string is TARGET:**Bypass**.

❖ Level Read: Set the 3rd party command to read back the audio level of source.

- Command-Level Read:

Level Read: From the example picture above, if you wish to read the level of SIP, please send a command string: CMDSTR, the TERRACOM device will send back the value of level.

6.5.3.4.9 ON/OFF Switch Control/Read

❖ ON/OFF Switch Control: Set the 3rd party command to mute/unmute audio source (SIP/MIC/MESSAGE/NET1/MONITOR). The audio sources are located at [Audio Matrix](#) ⁽⁸³⁾ window.

❖ ON/OFF Switch Read: Set the 3rd party command to read back the mute/unmute status.

- Command-ON/OFF Switch Control/Read:

From the example picture above, if you wish to mute the SIP audio source, please send a command string: CMDSTR. The TERRACOM device will send back in ASCII code as below.

- **200** (ASCII Code) indicates OK (received).
- **400** (ASCII Code) indicates NG (the 3rd party command sent from 3rd party device is not the same as [Name] field).

- Example - ON/OFF Switch Control

Assume the value of Name is "TARGET".

- To mute/unmute the SIP audio source.
 - 1) Select SIP source from drop-down box. The command string is TARGET.

- 2) If the current status is mute, the status will switch to unmute after received the 3rd party command. If the current status is unmute, the status will switch to mute after received the 3rd party command.
- To mute/unmute the SIP audio source in a more direct way.
 - 1) Select SIP source from drop-down box. The command string is TARGET:ON.
 - 2) Select SIP source from drop-down box. The command string is TARGET:OFF.

6.5.3.4.10 Device Status

Set the 3rd party command to read the device status (Ready/Paging/Phone/Online/Offline). By adding **string:Full** command string behind the [Name] string, it will inform the 3rd party device that which Terracom device is paging/intercom with the target device.

❖ Command:

Control Action	Command	Result
Device Status	:Full	Paging/Phone:Target
*The Target indicates the Terracom target device.		

• Command-Device Status:

From the example picture above, if you wish to view the device status, please send a command string: CMDSTR. The TERRACOM device will send back in ASCII code as below.

- Ready
- Paging
- Phone
- Online
- Offline

• Example:

Assume the value of Name is "TARGET".

To read the status (Paging/Phone) of a PPM-IT5 device, and know which Terracom target device is paging/intercom with this PPM-IT5, the command string is TARGET:Full.

6.5.3.4.11 Multi Function

Set the 3rd party commend to initiate a [Multi Function] function.

- Command-Multi Function:

From the example picture above, if you wish to initiate a Multi Function, please send a commend string: CMDSTR. The TERRACOM device will send back in ASCII code as below.

- **200** (ASCII Code) indicates OK (received).
- **400** (ASCII Code) indicates NG (the 3rd party command sent from 3rd party device is not the same as [Name] field).

6.5.3.4.12 Scheduler

Set the 3rd party commend to enable/disable the Scheduler. The Scheduler is located at [Scheduler > Global Enable](#)^[98].

- ON/OFF: Enable/disable the Scheduler.

- Command-Scheduler:

From the example picture above, if you wish to enable the Scheduler, please send a command string: CMDSTR. The TERRACOM device will send back in ASCII code as below.

- **200** (ASCII Code) indicates OK (received).
- **400** (ASCII Code) indicates NG (the 3rd party command sent from 3rd party device is not the same as [Name] field).

6.5.3.4.13 Netstream Select

Set the 3rd party commend, and choose to receive the network audio stream. Every Terracom device provides 8 sets of [NET SOURCE], the setting of every [NET SOURCE] can be configured on [Audio Matrix](#)^[83].

New - Third Party Controls

Name	CMDSTR	
Function	Netstream Select	NET1 SOURCE 1
Enable Status	Enable	

Save Cancel

- Command:

To choose to receive which network (NET1 or NET2) and which audio stream source channel (1~8) in a quicker way, send **string:n-c** command string behind the [Name] string.

Command	Meaning	Range
:n-c	n indicates the number of network (NET)	1~2
	c indicates the source channel	1~8

- Command-Netstream Select:

From the example picture above, if you wish to receive the network audio stream, please send a command string: CMDSTR. The TERRACOM device will send back in ASCII code as below.

- **200** (ASCII Code) indicates OK (received).
- **400** (ASCII Code) indicates NG (the 3rd party command sent from 3rd party device is not the same as [Name] field).

- Example:

If users do not wish to send the 3rd party command from [NET 1 SOURCE 1~8] and [NET 2 SOURCE 1~8] one by one, send **string:n-c** command string.

1. Assume the value of Name is "TARGET".
2. To choose to receive the [NET 2 SOURCE 7], the command string is TARGET:**2-7**.

6.5.3.4.14 Music Play/Music Stop

- ❖ Music Play: Set the 3rd party command to play the music from Internal Play List/External Play List.

New - Third Party Controls

Name	CMDSTR	
Function	Music Play	Internal msg
Enable Status	Enable	

Save Cancel

- ❖ Music Stop: Set the 3rd party command to stop the music.

New - Third Party Controls

Name	CMDSTR	
Function	Music Stop	
Enable Status	Enable	

Save Cancel

- Command-Music Play/Music Stop:

From the example picture above, if you wish to play the playlist, please send a command string:

CMDSTR. The TERRACOM device will send back in ASCII code as below.

- **200** (ASCII Code) indicates OK (received).
- **400** (ASCII Code) indicates NG (the 3rd party command sent from 3rd party device is not the same as [Name] field).

6.5.3.4.15 Line Hangup (TERRA-FXO)

- ❖ Line Hangup: Set the 3rd party command to hang up a telephone call (LINE 1 or LINE 2).

- Command-Line Hangup:

From the example picture above, if you wish to hang up a telephone call (LINE 1 or LINE 2), please send a command string: CMDSTR. The TERRACOM device will send back in ASCII code as below.

- **200** (ASCII Code) indicates OK (received).
- **400** (ASCII Code) indicates NG (the 3rd party command sent from 3rd party device is not the same as [Name] field).

- Example:

Assume the value of Name is "TARGET".

To hang up the LINE 1 telephone call, the command string is TARGET:1.

6.5.3.4.16 Line Status (TERRA-FXO)

- ❖ Line Status: Set the 3rd party command to read the telephone line status (Call In/Ringing/Disconnect/Ready/Online) of LINE 1 & LINE 2.

- Command-Line Status:

From the example picture above, if you wish to read the Line Status, please send a command string: CMDSTR. The TERRACOM device will send back in ASCII code as below.

- **Call In**
- **Ringing**
- **Disconnect**
- **Ready**

- **Online**

- **Example:**

Assume the value of Name is "TARGET".

To read the status of LINE 2 telephone call, the command string is TARGET:2.

6.5.3.4.17 Logic Read

Set the 3rd party commend to read the status (NC-RC or NO-RC) of logic I/O.

- **Function:** Select the logic I/O (IN1/IN2/IN3/OUT1/OUT2) you wish to read its status.

- **Command-Logic Read:**

From the example picture above, if you wish to read the logic status, please send a commend string: CMDSTR. The TERRACOM device will send back in ASCII code as below.

- **NC-RC**

- **NO-RC**

6.5.3.5 Multi Function

Create a group of action with multiple functions. There are four default function: [Call Function], [Hang up Function], [Message Function] and [Wait Device Status]. If users wish to use other functions such as [Logic Out], please create it on [Function Libraries] first, then the function you create will be listed on [Function] drop-down box.

Number	Function	Mode	Security	Source	Target	Timer(Second)
1	118_1_NC	Intercom	<input type="checkbox"/>	MIC IN	--	Delay 1
2	118_1_NO	Intercom	<input type="checkbox"/>	MIC IN	--	Delay 2
3	--	Intercom	<input type="checkbox"/>	MIC IN	--	Delay 0
4	--	Intercom	<input type="checkbox"/>	MIC IN	--	Delay 0
5	--	Intercom	<input type="checkbox"/>	MIC IN	--	Delay 0
6	--	Intercom	<input type="checkbox"/>	MIC IN	--	Delay 0
7	--	Intercom	<input type="checkbox"/>	MIC IN	--	Delay 0

- **Name:** The name of this [Multi Function].
- **Function:** Select a function from the drop-down list, these functions will be triggered by the order of the list.
- **Mode:** Choose the calling mode (intercom/paging/EVAC Announce/Vote Announce).

- EVAC/Vote Announce: This two call modes are only applicable when using PPM-IT5 to paging to TERRA-RD. The paging priority: EVAC Announce > Vote Announce > Paging.
- Security: If the [Security] option is enable, the caller cannot hang up the call during paging unless the caller cancels the call itself.
- Source: Choose the source (MIC IN or LINE IN) when the call has been initiated.
- Target: Choose the Terracom device as the target to paging/intercom/SIP/trigging logic etc.
- Timer (second): The delay time between the previous action and the next upcoming action in [Multi Function] list.

6.5.3.6 Macro (PPM-IT5)

Provide the management of the sub-page on PPM-IT5; Up to 14 pages can be saved at the main page window, and up to 2 pages can be saved at the sub-page window.

After created a new Marco button, go to [Setup1 > Machine Window > Windows & Page](#)^[86] and set the Marco button you have created. See the picture as below.

The screenshot shows the 'Setup1' configuration page for 'Machine Window > Windows & Page'. It includes sections for 'Name Setting' (MAIN, MESSAGE, DIAL, SETTING), 'Parameter Setting' (Sleep Mode Time, Level Action, External Buttons), and a table for button functions. The 'Windows' dropdown is highlighted, showing 'Marco: Macro1'.

Key	Button Function	Button Name	All	Admin	L1	L2	L3	L4	L5	L6	L7	L8	L9
01	Device	EX_162	-	-	-	-	-	-	-	-	-	-	-
02	--	--	-	-	-	-	-	-	-	-	-	-	-
03	--	--	-	-	-	-	-	-	-	-	-	-	-

- Button Function: There are Device, Paging Group, Command (String), Logic Out (Single) and Locked Button.
- Button Name: The name of each button appears on the touch screen of PPM-IT5.



There is no way to move buttons from one Macro to another, you need to add these buttons manually.

6.5.3.7 Goto Button (PPM-IT5)

Allow to create a jumping page button on the touch panel of PPM-IT5. Users can customize the pages which reduce the difficulties for switching pages on the touch panel.

After created a Goto button, select the customized function users intend to change via PPM-IT5, then press [Save] button, and the jumping page function will be displayed on PPM-IT5.

Modify Function

Name: Main->2

Windows: Main Page

Page: 2

Save Cancel

- Name: The customized name of each button appears on IT5's touch screen.
- Window: Select which window will display (Main Page/Macros) when user press this Goto button on IT5's screen.
- Page: Select which page intending to switch to.

6.5.3.8 Message Button (PPM-IT5)

Create a Message button on the LCD panel (MAIN Page) of PPM-IT5, and this Message button allows a selected Terracom device to play the chosen internal/external playlist.

Modify - Message Button

Name: 162MSG

Play List: Internal msg

Target: device IT5_215

Mode: Paging

Security: ☐

Trigger: Double Click Click interval must less than one second.

Double Check: ☒

Save Cancel

- Name: The name of Message Button.
- Playlist: Assign which internal/external playlist will be played.
- Target: Assign which Terracom device will play the playlist.
- Mode: Choose the calling mode (intercom/paging/EVAC Announce/Vote Announce).



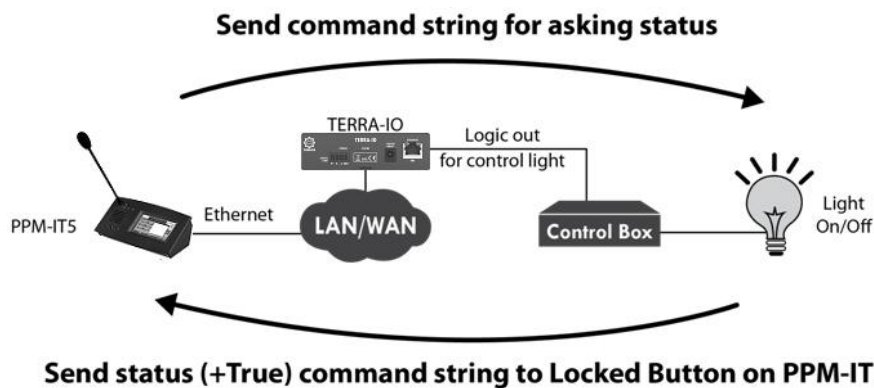
The EVAC/Vote Announce calling modes are only applicable when using PPM-IT5 to paging to TERRA-RD, the EVAC/Vote LEDs on TERRA-RD shall light up for indication.

- Security: If the [Security] option is activated, the caller cannot hang up the call during paging unless the call receiver cancels the call itself.
- Trigger: Choose either [Double click] or [Single click] mode to activate the Message button.
- Double Check: Once this option is activated, a confirmation window will pop-up in the LCD panel of PPM-IT5 once the Message button is triggered, and users require to press [Accept] or [Reject] button to play/cancel the message playlist.

6.5.3.9 Locked Button (PPM-IT5)

The Locked Button allows to use the PPM-IT5 to send the command string to control the logic action and monitor the status of 3rd party device via LAN/WAN.

The diagram below is the example which shows how to combine those functions.



- The PPM-IT5 will send command (string) to the 3rd party device through the logic output of TERRA-IO, here we use a light as an external device.
- To monitor the status of light on/off, it will send a Status (+True) command string to PPM-IT5, and will update on the Locked Button of PPM-IT5.
- The display settings of the Status (+True) command string can be set from [External Variable](#)⁷⁴ function. If received the Status (+True) command from 3rd party device in 200ms, the color of Locked Button on PPM-IT5 will light up; if not, the color of Locked Button will remain in dark.
- After completed the setting, press the Locked Button on PPM-IT5 to control the light on/off with the TERRA-IO.

Modify Function

Name	Lock1
Down action	String_116_HP
Up action	String_116_Call_014
Status	3rd_116_DS
+True	Phone

Save Cancel

- Name: The display name of this [Locked button], it will also appear on the touch panel of PPM-IT5.
- Down/Up Action: The action when pressing the Locked Button on PPM-IT5. For example, the Down/Up action can be used as a Logic Out (Single) action for trigger the light on/off etc..
- Status: Select which Command (string) action will be used on the Locked Button of PPM-IT5 to get monitoring status from 3rd party device.
- +True: If received the Status (+True) command from 3rd party device in 200ms, the color of Locked Button on PPM-IT5 will light up; if not, the color of Locked Button will remain in dark.

6.5.3.10 External Variable (PPM-IT5)

The External Variable function allows the PPM-IT5 to send the command (string) to read the status of 3rd party device.

New - External Variable

Name	FXO 199
Auto Update	str1
Display Offset	3
End Rule	None
End Info	0

Save Cancel

- Name: The display name of this [External Variable].
- Auto Update: Select which Command (string) action will be sent to the 3rd party device to get status.
- Display Offset: Set the number/text of display offset when receiving the [Auto Update] command action from the 3rd party device.

For example, if the received status packet from 3rd party device is "ABCDE", the [Display Offset] is set as 2. The status will be "BCDE". Please note the display offset will also be based on the the setting of [End Rule] option.

- End Rule: There are three kinds of [End Rule] to display the received status command (string) from 3rd party device.

<ul style="list-style-type: none"> ▪ Example 1: If the received status is "ABCDE": <ul style="list-style-type: none"> ➤ Set [Display Offset] as 3. ➤ Choose [None] option on [End Rule]. ➤ The display status will be "CDE". 	<div>End Rule</div> <div>None</div> <div>End Info</div> <div>0</div>
<ul style="list-style-type: none"> ▪ Example 2: If the received status is "ABCDE": <ul style="list-style-type: none"> ➤ Set [Display Offset] as 3. ➤ Choose [Offset of display] option on [End Rule], and set [Offset] as 2. ➤ The display status will be "CD". 	<div>End Rule</div> <div>Offset of display</div> <div>Offset</div> <div>3</div>
<ul style="list-style-type: none"> ▪ Example 2: If the received status is "ABCDE": <ul style="list-style-type: none"> ➤ Set [Display Offset] as 3. ➤ Choose [End character] option on [End Rule], and set [Character] as 68, which 68 indicates the D character in ASCII code. ➤ The display status will be "CD". 	<div>End Rule</div> <div>End character</div> <div>Character(Dec)</div> <div>3</div>

6.5.3.11 Call Program (TERRA-DS)

Set the call schedule and the TERRA-DS will call different devices with the assigned time.

Name		CP1	
Train Scheduler			
1. Call	device EXA_124	at 5 : 0 ~ 6 : 0	
2. Call	--	at 0 : 0 ~ 0 : 0	
3. Call	--	at 0 : 0 ~ 0 : 0	
4. Call	device TK18	at 16 : 0 ~ 17 : 0	
5. Call	--	at 0 : 0 ~ 0 : 0	

- Name: The display name of this [Call Program] list.
- Train Scheduler & Time: Select the devices and set the time which the TERRA-DS wishes to call. The [Call-Program] function supports 5 different set, if there is a conflict between the train scheduler, the call schedule with earlier time will be used (called). The device can be any Terracom devices or device on the group list.
- Time (hour:minute~hour:minute): Set the assigned time to call the device.

6.5.4 I/O Control

Assign the controller such as logic input, RAC-5/8 and RAC-Analog with a triggered action to each control input. Most of the control processes will be introduced in [Setup1 > Function Libraries](#)^[57] chapter, except for Message Button, Message Target/Trigger, On/Off Switch, Edge Trigger Button, RAC-Analog and Push to Talk which don't need to work with a defined function.

6.5.4.1 Local Control

INPUT	CONTROLLER	POSITION	FUNCTION	MODE	SECURITY	SOURCE	TARGET
IN1	RAC-8		Channel Select	Intercom	<input type="checkbox"/>		CB
IN2	RAC-Analog		Volume Control	Intercom	<input type="checkbox"/>		CB
IN3	Logic		Message Button	Paging	<input type="checkbox"/>	Internal MSG	Device FDX_118

OUTPUT DEFAULT

OUT1 NO-RC

OUT2 NO-RC

1. Input: The contact input which will be used for triggering an action, IN1 means contact input channel 1.
2. Controller: Choose a type of interface, including logic and remote device (RAC 5/8, RAC Analog), and it will be used for controlling an action, see Figure 1.
3. Function: Choose a function (channel select/volume control, message button, command string, call, call trigger, logic out, on-off switch, multi-function).

Figure 1



Controller	Function
Logic	Call Button ^[77]
	Command (String) ^[78]
	Message Button ^[78]
	Call Trigger ^[78]
	Message Trigger ^[78]
	Logic Out ^[79]
	ON/OFF Switch ^[79]
RAC-5/RAC-8	Multi Function ^[80]
	Call Target ^[78]
	Message Target ^[78]
	Channel Select ^[80]
RAC-Analog	Play Target ^[80]
	Volume Control ^[80]
Edge Trigger Button	Trigger Function ^[81]
	Message Call ^[81]
	Hang up ^[81]
	Music Play/Music Stop ^[81]
	ON/OFF Switch ^[81]
Level Control	Music Play/Music Stop ^[82]
	ON/OFF Switch ^[82]
Push to Talk	Call Button ^[82]

4. Mode: Choose the calling mode (intercom/paging/EVAC Announce/Vote Announce).
5. EVAC/Vote Announce: This two call modes are only applicable when using PPM-IT5 to paging to TERRA-RD. The paging priority: EVAC Announce > Vote Announce > Paging.
6. Security: If the [Security] option is enable, the caller cannot hang up the call during paging unless the call receiver cancels the call itself.
7. Source: Assign which source will be used to trigger this action. It can be a MIC IN, LINE IN or internal/external playlist.
8. Target: Assign which Terracom device, Device Group or Control Input 1/2/3 you wish to activate this action.

Please proceed the CB (control calibrate) on your device for adjusting the minimum/maximum logic value before setting the function, see [Control Calibration](#)^[103].

6.5.4.1.1 Logic-Call Button

The Call Button allows to intercom or paging using the MIC IN/LINE IN as a source to a chosen Terracom device target when pressing (activated) the button which is connected to the control input (IN1 means logic input channel 1).

Press the connected button again to cancel intercom or paging.

Local Control						
INPUT	CONTROLLER	POSITION	FUNCTION	MODE	SECURITY SOURCE	TARGET
IN1	Logic		Call Button	Intercom	<input checked="" type="checkbox"/> MIC IN	Device EX_162 CB
IN2	--		--	Intercom	<input type="checkbox"/>	CB
IN3	--		--	Intercom	<input type="checkbox"/>	CB

- Mode: Choose the calling mode (intercom/paging/EVAC Announce/Vote Announce).

- EVAC/Vote Announce: This two call modes are only applicable when using PPM-IT5 to paging to TERRA-RD. The paging priority: EVAC Announce > Vote Announce > Paging.
- Security: If the [Security] option is enable, the caller cannot hang up the call during paging unless the call receiver cancels the call itself.

6.5.4.1.2 Logic-Command (String)

Send command (string) to control the devices via 3rd party control.

Local Control						
INPUT	CONTROLLER	POSITION	FUNCTION	MODE	SECURITY SOURCE	TARGET
IN1	Logic		Command (String)	Intercom	<input type="checkbox"/>	ECS
IN2	--		--	Intercom	<input type="checkbox"/>	CB
IN3	--		--	Intercom	<input type="checkbox"/>	CB

- Target: Select a commend (string) action which is added from [Function Libraries].

6.5.4.1.3 Logic-Message Button

The Message Button allows to play the messages directly to a chosen Terracom device target when pressing (activated) the button which is connected to the control input (IN1 means logic input channel 1).



Press the connected button again to stop the message playing.

Local Control						
INPUT	CONTROLLER	POSITION	FUNCTION	MODE	SECURITY SOURCE	TARGET
IN1	Logic		Message Button	Intercom	<input type="checkbox"/>	Internal MSG
IN2	--		--	Intercom	<input type="checkbox"/>	Device FDX_118
IN3	--		--	Intercom	<input type="checkbox"/>	CB

- Source: Select the playlist source which you have created on Media Setting > Internal playlist or on external playlist if a USB flash is connected.

❖ How-to: Please refer to [Message Paging](#)^[112] chapter.

6.5.4.1.4 Logic-Call Trigger & RAC-5/8 Call Target

The Logic-Call Trigger function is used for assigning a logic input channel such as RAC to trigger the call, and here you can choose the MIC IN/LINE IN as the input source and which logic input (IN1 means logic input channel 1). This function needs to work with the RAC-5/8-Call Target, allowing each selection knob of RAC can be assigned with different mode (intercom/paging) and to different Terracom target.

Local Control						
INPUT	CONTROLLER	POSITION	FUNCTION	MODE	SECURITY SOURCE	TARGET
IN1	Logic		Call Trigger	Intercom	<input type="checkbox"/>	MIC IN
IN2	RAC-5	Channel 1	Call Target	Intercom	<input type="checkbox"/>	IN2
		Channel 2		Intercom	<input type="checkbox"/>	Device FXO_198
		Channel 3		Intercom	<input type="checkbox"/>	Device AMP_114
		Channel 4		Intercom	<input type="checkbox"/>	Device IT5_169
		Channel 5		Intercom	<input type="checkbox"/>	Device FXO_199
						Device IDA8C1

Once the settings are completed, user can switch the selection knob on RAC to the Terracom device target, and call the device.

6.5.4.1.5 Logic-Message Trigger & RAC-5/8 Message Target

The Logic-Message Trigger function is used for assigning a logic input channel such as RAC to trigger the message play action and here you can choose the playlist source and which logic input (IN1 means

logic input channel 1). This function needs to work with the RAC-5/8-Message Target, allowing each selection knob of RAC can be assigned with different mode (intercom/paging) and to different Terracom target.

The playlist source needs to be created on Media Setting > Internal playlist or on external playlist if a USB flash is connected first.

Local Control							
INPUT	CONTROLLER	POSITION	FUNCTION	MODE	SECURITY	SOURCE	TARGET
IN1	Logic		Message Trigger	Intercom	<input type="checkbox"/>	Internal MSG	IN2
IN2	RAC-5	Channel 1	Message Target	Intercom	<input type="checkbox"/>		Device IEX536_163
		Channel 2		Intercom	<input type="checkbox"/>		Device AMP_114
		Channel 3		Intercom	<input type="checkbox"/>		Device FXO_198
		Channel 4		Intercom	<input type="checkbox"/>		Device ITS_169
		Channel 5		Intercom	<input type="checkbox"/>		Device FXO_199

Once the settings are completed, user can switch the selection knob on RAC to the Terracom device target you set on IN2 and play the message.

6.5.4.1.6 Logic-Logic Out

Use a Logic Out action to control the target you set on [Function Libraries].

Local Control							
INPUT	CONTROLLER	POSITION	FUNCTION	MODE	SECURITY	SOURCE	TARGET
IN1	Logic		Logic Out	Intercom	<input type="checkbox"/>		118_1_NC
IN2	Logic		Logic Out	Intercom	<input type="checkbox"/>		118_1_NO
IN3	Logic		Logic Out	Intercom	<input type="checkbox"/>		118_2_TO

6.5.4.1.7 Logic-On/Off Switch


Switch on/off the mute function of source (SIP/MIC/MESSAGE/NET1/MONITOR) when pressing (activated) the button which is connected to the control input (IN1 means logic input channel 1).

The mute function of source is located at [Audio Matrix](#) ⁸³.

Local Control							
INPUT	CONTROLLER	POSITION	FUNCTION	MODE	SECURITY	SOURCE	TARGET
IN1	Logic		ON/OFF Switch	Intercom	<input type="checkbox"/>		MIC IN
IN2	--		--	Intercom	<input type="checkbox"/>		
IN3	--		--	Intercom	<input type="checkbox"/>		

Once apply the setting, the MIC IN on Audio Matrix > Control Options > Select will change to the Control Input you set, see the picture below.

INPUT	MODE	PRIORITY	Mute	LINE OUT (AMP OUT)			STREAM OUT			CONTROL OPTIONS			BUFFER	
				1(A)	2(B)	S/PDIF	OUT	IP ADDRESS	PORT	SELECT	INPUT VOLUME			
SIP	Mono	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A					IN2	24	RT	
MIC IN	Mono	6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A	OFF	239.240.100.1	9012	IN1	1	IN2	24	
LINE IN	Mono	6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A	OFF	239.240.100.1	9012	Fix	--	IN2	24	
MESSAGE	Auto	6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A	OFF	239.240.100.1	9012	Fix	--	IN2	24	
MONITOR	Mono	6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A						IN2	24	DT

 Please manually change the priority of MIC IN lower than the SIP calls. Even with the higher priority than LINE IN, the MIC only works when the button is pressed (SWITCH ON).

6.5.4.1.8 Logic-Multi Function

This function allows to trigger the Multi Function action which is stored in your Terracom device.

Local Control						
INPUT	CONTROLLER	POSITION	FUNCTION	MODE	SECURITY	SOURCE TARGET
IN1	Logic		Multi Function	Intercom	<input type="checkbox"/>	aa CB
IN2	--	--	--	Intercom	<input type="checkbox"/>	CB
IN3	--	--	--	Intercom	<input type="checkbox"/>	CB

6.5.4.1.9 RAC-Channel Select

The RAC-Channel Select allows to switch the channel selection knobs on RAC-5/8 and change the source of MIC IN/LINE IN/MESSAGE input which the input channel is connected to the control input (IN1 means logic input channel 1).

1. I/O Control: Set the Control Input.

Local Control						
INPUT	CONTROLLER	POSITION	FUNCTION	MODE	SECURITY	SOURCE TARGET
IN1	RAC-8		Channel Select	Intercom	<input type="checkbox"/>	CB
IN2	RAC-Analog		Volume Control	Intercom	<input type="checkbox"/>	CB
IN3	Logic		Message Button	Intercom	<input type="checkbox"/>	Internal MSG Device IT5_169 CB

2. Go to Audio Matrix page, and assign the source channels to the RAC knobs on [Select] function of [Control Option].

Basic Setting		Device	Function Libraries		Audio Matrix		I/O Control		Media Setting		Output Volume		
INPUT	MODE	PRIORITY	Mute	LINE OUT (AMP OUT)			STREAM OUT			CONTROL OPTIONS			BUFFER
				1(A)	2(B)	S/PDIF	OUT	IP ADDRESS	PORT	SELECT	INPUT VOLUME		
SIP	Mono ▾	1 ▾	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A						IN2 ▾ 35 ▾	RT ▾
MIC IN	Mono ▾	6 ▾	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A	OFF ▾	239.240.100.4		9012	IN1 ▾ 1 ▾	IN2 ▾ 35 ▾	
LINE IN	Mono ▾	6 ▾	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A	OFF ▾	239.240.100.4		9012	IN1 ▾ 2 ▾	IN2 ▾ 35 ▾	
MESSAGE	Auto ▾	6 ▾	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A	OFF ▾	239.240.100.4		9012	IN1 ▾ 3 ▾	IN2 ▾ 35 ▾	

6.5.4.1.10 RAC-Play Target

The RAC-Play Target allows to assign each channel on RAC to use the selected message sources and intercom or paging to the Terracom device (s) target.

Local Control						
INPUT	CONTROLLER	POSITION	FUNCTION	MODE	SECURITY	SOURCE TARGET
IN1	RAC-5	Channel 1	Play Target	Intercom	<input type="checkbox"/>	Internal FXO Device FDX_118 CB
		Channel 2		Intercom	<input type="checkbox"/>	Internal MSG Device IO_183
		Channel 3		Intercom	<input type="checkbox"/>	Internal schedu Device FXO_198
		Channel 4		Intercom	<input type="checkbox"/>	Internal test Device EXA_124
		Channel 5		Intercom	<input type="checkbox"/>	Internal test Device TMNet

6.5.4.1.11 RAC Analog-Volume Control

Allow to control the volume of all audio outputs.

1. Go to [I/O Control] page and set one of the logic input with [RAC-Analog], and choose [Volume Control] function, allowing to turn the volume knob on RAC-5/8

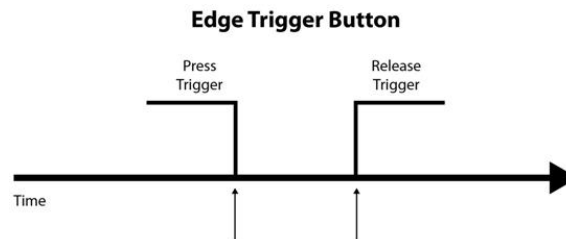
Local Control							
INPUT	CONTROLLER	POSITION	FUNCTION	MODE	SECURITY	SOURCE	TARGET
IN1	RAC-5		Channel Select	Intercom	<input type="checkbox"/>		CB
IN2	RAC-Analog		Volume Control	Intercom	<input type="checkbox"/>		CB
IN3	Logic		Message Button	Intercom	<input type="checkbox"/>	Internal schedu	Device TMNet CB

- Go to [Audio Matrix] page, and [Input Volume] will be dynamically changed via the volume knobs on RAC-5/8.

Basic Setting		Device	Function Libraries		Audio Matrix		I/O Control	Media Setting		Output Volume					
INPUT	MODE	PRIORITY	Mute	LINE OUT (AMP OUT)			STREAM OUT			CONTROL OPTIONS			BUFFER		
				1(A)	2(B)	S/PDIF	OUT	IP ADDRESS	PORT	SELECT	INPUT VOLUME				
SIP	Mono	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A						IN2	35	RT	
MESSAGE	Auto	6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A	OFF	239.240.100.4	9012		IN1	1	IN2	35	
MONITOR	Mono	2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A							IN2	35	RT
NET1	Auto	6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A							IN2	35	RT
NET2	Auto	6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A							IN2	35	RT

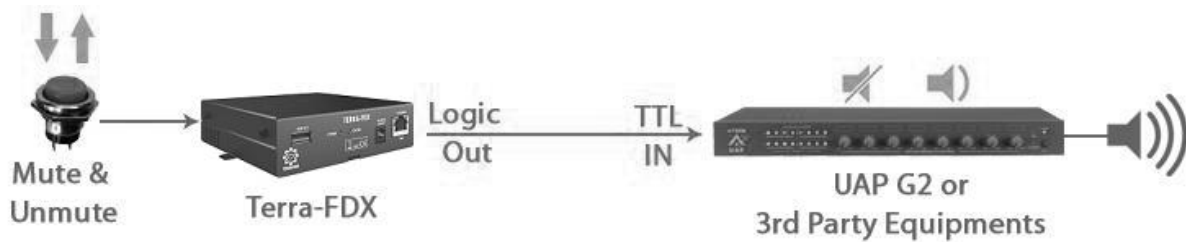
6.5.4.1.12 Edge Trigger Button

To trigger a Hi to Low (Press trigger) or Low to Hi (Release Trigger) action which is set via logic input (IN1 means logic input channel 1).



Local Control							
INPUT	CONTROLLER	POSITION	FUNCTION	MODE	SECURITY	SOURCE	TARGET
IN1	Edge Trigger Button	Release trigger	Music Stop	Intercom	<input type="checkbox"/>		CB
		Press trigger	Music Play	Intercom	<input type="checkbox"/>	--	
IN2	RAC-Analog		Volume Control	Intercom	<input type="checkbox"/>		CB
IN3	Logic		Message Button	Intercom	<input type="checkbox"/>	Internal schedu	Device TMNet CB

- Release Trigger/Press Trigger:
 - Trigger Function: Set Hi to Low and Low to Hi action with the logic input action (Command String, Logic Out, Multi Function).
 - Message Call: Make a message call when release/press the button.
 - Hang up: Hang up the intercom/paging call.
 - Music Play: Play the music based on the internal/external playlist source.
 - Music Stop: Stop the music playing.
 - ON/OFF Switch: Switch on/off the Mute function of source (SIP/MIC/MESSAGE/NET1/MONITOR).



Example Diagram: Edge Trigger Button-ON/OFF Switch

6.5.4.1.13 Push To Talk

Paging/Intercom by constantly pushing the button which is connected to the control input (IN1 means logic input channel 1). Once the button is released, the paging/intercom status will stop.

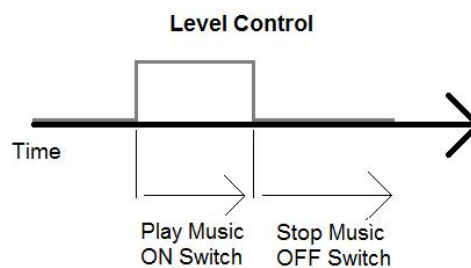
Local Control							
INPUT	CONTROLLER	POSITION	FUNCTION	MODE	SECURITY	SOURCE	TARGET
IN1	Push to Talk		Call Button	Intercom	<input type="checkbox"/>	MIC IN	Device IT5_169 CB
IN2	Push to Talk		Call Button	Intercom	<input type="checkbox"/>	MIC IN	Device DS_12 CB
IN3	Push to Talk		Call Button	Intercom	<input type="checkbox"/>	MIC IN	Device EX_127 CB
IN4	Push to Talk		Call Button	Intercom	<input type="checkbox"/>	MIC IN	Device IO_183 CB

❖ Function:

- Call Button: One this option is enabled, and presses the connected button to start calling (paging/Intercom), and press it again to stop calling.
- Call Permanent: Once this option is enabled, the TERRACOM device will try to call (intercom only) the target device even though the target device is disconnected.

6.5.4.1.14 Level Control

Play/Stop the music or mute the audio source (SIP/MIC/MESSAGE/NET1/MONITOR) by Hi or Low level of logic input.



Local Control							
INPUT	CONTROLLER	POSITION	FUNCTION	MODE	SECURITY	SOURCE	TARGET
IN1	Level Control	Release trigger	Music Play	Intercom	<input type="checkbox"/>	Internal music list	CB
		Press trigger	Music Stop	Intercom	<input type="checkbox"/>		
IN2	--		--	Intercom	<input type="checkbox"/>		CB
IN3	--		--	Intercom	<input type="checkbox"/>		CB

- Music Play: Play the music based on the internal/external playlist source.
- Music Stop: Stop the music playing.
- ON/OFF Switch: Switch on/off the mute function of source (SIP/MIC/MESSAGE/NET1/MONITOR).

6.5.4.2 Remote Control

The Remote Control allows to expand the number of control inputs by TERRA-IO. See the diagram as below.



1. Go to [Device List] page and add a TERRA-IO device.

Add Device

Device Name:

Product Type:

URI:

2. Go to the [I/O Control > Remote Control] and click ADD INx button to select the Device and Control input, then click [Done] button. After that, set the controller, function, source and device target to the corresponded input.

Remote Control

INPUT	CONTROLLER	POSITION	FUNCTION	MODE	SECURITY	SOURCE	TARGET
IN4 (IO_183's IN1)	RAC-5		Channel Select	Intercom	<input type="checkbox"/>		DEL
IN5 (IO_183's IN1)	RAC-Analog		Volume Control	Intercom	<input type="checkbox"/>		DEL
IN6 (IO_183's IN1)	Logic		Call Button	Intercom	<input checked="" type="checkbox"/>	MIC IN	Device AMP_101115 DEL
ADD IN7	--		--	Intercom	<input type="checkbox"/>		
ADD IN8	--		--	Intercom	<input type="checkbox"/>		
ADD IN9	--		--	Intercom	<input type="checkbox"/>		
ADD IN10	--		--	Intercom	<input type="checkbox"/>		
ADD IN11	--		--	Intercom	<input type="checkbox"/>		

Add Remote Controller

Device:

Control:

[Done](#) [Cancel](#)

6.5.5 Audio Matrix

The Audio Matrix provides an interface to manage all audio in/output with the following functions as below.

- Audio routing with priority.
- Audio routing with RAC-5/8.
- Volume control depends on audio source.
- Announcement has different volume with music.
- Send network stream.
- Play network stream.

Setup1 | Setup2 | Update | Status | About | Logout

Basic Setting | Device | Function Libraries | Audio Matrix | I/O Control | Media Setting | Output Volume

A INPUT **B MODE** **C PRIORITY** **D LINE OUT (AMP OUT)** **E STREAM OUT** **F CONTROL OPTIONS** **G BUFFER**

	MODE	PRIORITY	Mute	1(A)	2(B)	S/PDIF	OUT	IP ADDRESS	PORT	SELECT	INPUT VOLUME	BUFFER
SIP	Mono	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A				Fix	24	RT
MIC IN	Mono	6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	N/A	OFF	239.240.100.1	9012	Fix	24	
LINE IN	Mono	6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A	OFF	239.240.100.1	9012	Fix	24	
MESSAGE	Auto	6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A	OFF	239.240.100.1	9012	Fix	24	
MONITOR	Mono	6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A				Fix	24	RT
NET1	Auto	5	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A				Fix	24	RT
NET2	Auto	6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A				Fix	24	RT

H N/W IN **I SHOUTCAST/ICECAST** **J STREAM MULTICAST** **K NET1** **NET2**

SOURCE	MODE	URL	IGMP IP	PORT	NET1	NET2
SOURCE 1	Stream Multicast		239.240.100.147	6912	Fix	Fix
SOURCE 2	Stream Multicast		239.240.100.1	9012	Fix	Fix
SOURCE 3	Stream Multicast		239.240.100.1	9012	Fix	Fix
SOURCE 4	Stream Multicast		239.240.100.1	9012	Fix	Fix
SOURCE 5	Stream Multicast		239.240.100.1	9012	Fix	Fix
SOURCE 6	Stream Multicast		239.240.100.1	9012	Fix	Fix
SOURCE 7	Stream Multicast		239.240.100.1	9012	Fix	Fix
SOURCE 8	Stream Multicast		239.240.100.1	9012	Fix	Fix

* Port 8000~9000 has been used by system, DO NOT use these ports on your design.

Save Cancel

A Input: The audio input sources.

- SIP: SIP calls.
- MIC IN/LINE IN: The LINE IN or MIC IN audio input of TERRACOM device.
- MESSAGE: Play message audio input.
- NET1/NET2: Play network stream.

If the source priority of Input is the same, the priority order will be based on: SIP>MIC IN>LINE IN>MESSAGE>MONITOR>NET1>NET2.

B Mode:

- Mono: Mono channel.
- Stereo: If the mode is set as Stereo on MIC/LINE IN, the MIC IN will be as the left channel which outputs to the LINE OUT A; and LINE IN will be as the right channel which outputs to the LINE OUT B.
- Auto: Auto play the message files from built-in playlist or external USB flash drive after the device is powered on.
- Local: Receive the network stream (Source 1~8).
- TM: Assign Net 1 & Net 2 inputs as the audio routing output of TerraManager (TM).

C Priority: Set the priority of the SIP/MIC IN/LINE IN/MESSAGE/NET1/NET2.

Always set the the priority of SIP as "1" (the highest priority), otherwise the call will be left aside. The SIP includes Call, Paging Group and Pre-define Message.



Please note when selecting the control inputs as RAC on I/O control page, the priority selection here will be locked, users can manually switch the source on RAC instead. See the pictures as below,

INPUT	CONTROLLER	POSITION	FUNCTION	MODE	SECURITY	SOURCE	TARGET
IN1	RAC-5		Channel Select	Intercom	<input type="checkbox"/>		CB
IN2	RAC-Analog		Volume Control	Intercom	<input type="checkbox"/>		CB
IN3	--		--	Intercom	<input type="checkbox"/>		CB

I/O Control page

Back to the Audio Matrix page, the IN1 is RAC-5 sources selectors and IN2 is RAC's knob for volume control.

INPUT	MODE	PRIORITY	Mute	LINE OUT (AMP OUT)			OUT	STREAM OUT		CONTROL OPTIONS			BUFFER
				1(A)	2(B)	S/PDIF		IP ADDRESS	PORT	SELECT	INPUT VOLUME		
SIP	Mono	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A							
MIC IN	Mono	6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A	MP3	239.240.100.4	9012	IN1	1	IN2	35
LINE IN	Mono	6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A	OFF	239.240.100.4	9012	IN1	2	IN2	35
MESSAGE	Auto	6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A	OFF	239.240.100.4	9012	IN1	3	IN2	35
MONITOR	Mono	2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A						IN2	35
NET1	Auto	6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A						IN2	35
NET2	Auto	6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A						IN2	35

Audio Matrix page

D Line Out (AMP Out): Tick the checkbox to enable the audio output channels. The current audio outputs will be shown at the upper-right of the Terracom web interface. For example, it will display MESSAGE during message play.

```
Version 3.0.3.1, 2016/11/11 10:05:49
TERRA-AMP, AMP_114@192.168.101.114
OUT-1: MESSAGE / OUT-2: MESSAGE
```

E Stream Out: Send the network streams.

- Out:
 - MP3, G.722, PCM16K, G.711, WAVE: Choose the audio encoder of the MIC-IN, LINE-IN and MESSAGE input.
 - TM: Choose [TM] to use the MIC input, LINE IN input and MESSAGE input as the audio routing source of TerraManager (TM).
- IP Address: Set the IP address.
- Port: The RTP port should be an EVEN number.



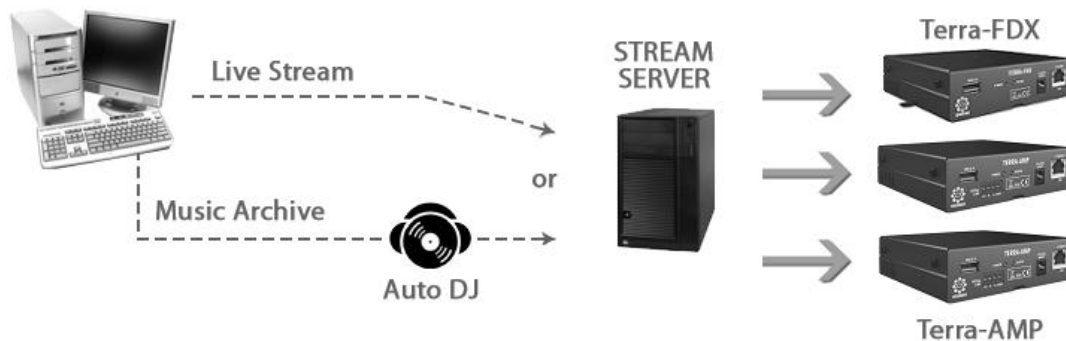
Port 8000~9000 has been used by system, DO NOT use these ports on your system configuration.

F Control Options:

- **Select:** Assign the channel of the RAC-5/8 to the audio control inputs (including the sources from network).
- **Volume:** Set a fixed volume or control it with the knob of RAC, see [I/O Control > RAC Analog-Volume Control](#) ^[80] page.

G Buffer: Set the interval of buffer time (RT, 0.1s, 0.2s..., 1.0s, 1.1s..., 2.0s) before the receiving input sources. This function will be particularly helpful for a Terracom system which multiple Terracom devices are located in different area and lots of network switches are connected, this will cause a delay time for audio transmission for the devices located at remote area, then please set the Buffer in longer delay time. If user wants to play the message audio in real-time for example, please set RT Buffer.

H Mode: Choose a received type (Stream UDP/SHOUTcast/Icecast) of network stream on source 1~source 8.



I SHOUTcast/ Icecast URL: Set the URL, and receive the network radio using SHOUTcast or Icecast. It may cause the sound quality problem if the audio received from the SHOUT cast/Icecast isn't in 48k sampling. To use an Icecast Streaming Media Server, see [Icecast](#) ^[122] chapter.

J Stream Multicast: Set the IGMP IP address and its port, and receive network streaming using Stream Multicast. The IDA8 or TerraManager will use the Multicast type.

K Net 1/Net 2: There are 2 Net channels which can be controlled by RAC 5/8. Select the channel (IN1 means contact input CH1), and use this RAC 5/8 to switch the network stream source (Source 1~Source 8).

6.5.6 Machine Windows (PPM-IT5)

Allow to set the settings on the touch panel of PPM-IT5.

❖ Name Setting

Setup1	Setup2	Update	Status	About	Logout	
Basic Setting	Device	Function Libraries	Audio Matrix	Machine Windows	Media Setting	Output Volume
Name Setting						
MAIN		<input type="text" value="MAIN"/>		DIAL		<input type="text" value="DIAL"/>
MESSAGE		<input type="text" value="MESSAGE"/>		SETTING		<input type="text" value="SETTING"/>
CALLBACK		<input type="text" value="CALLBACK"/>				
						<input type="button" value="Save"/>

❖ MAIN/MESSAGE/DIAL/SETTING/CALLBACK:

The displayed name shown on the menu page of PPM-IT5.



LCD panel of PPM-IT5

❖ Parameter Setting

Parameter Setting

Enter Sleep Mode Time
0 h : 0 m

Select Zone Release Time
30 Sec

Level Action
☐ Enable ☒ Disable

Callback Entry
☐ Automatic ☒ Manual

External Button(Left)
Audio Source Select

External Button(Center)
Audio Level -

External Button(Right)
Audio Level +

Paging

Save

- Enter Sleep Mode Time: Set the time to enter sleep mode.
- Select Zone Release Time: The release time which is the time selected zone button lights off on PPM-IT5.
- Level Action: Enable or disable the authorized [Level Action] function of PPM-IT5.
- External Button (Left/Center/Right): Set the button functions including Audio Source Select, Volume Control (Level + -) and Push To Talk (Intercom).

❖ Function Action (Level Action)

- Check Box: Enable or disable the user level (L1~L9) of each listed function on PPM-IT5, users need to enter the [User ID] and [Password] before making a call, paging, etc.
 - All: Tick [All] checkbox to select L1~L9 authorized levels.
 - L1~L9: The authorized level of L1~L9 can be user-defined.

Function Action

Main	Function	All	Admin	L1	L2	L3	L4	L5	L6	L7	L8	L9
01		<input checked="" type="checkbox"/>	-	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
02		<input checked="" type="checkbox"/>	-	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
03		<input checked="" type="checkbox"/>	-	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
04		<input checked="" type="checkbox"/>	-	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dial	Function	All	Admin	L1	L2	L3	L4	L5	L6	L7	L8	L9
01		<input checked="" type="checkbox"/>	-	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
02		<input checked="" type="checkbox"/>	-	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Message	Function	All	Admin	L1	L2	L3	L4	L5	L6	L7	L8	L9
01		<input checked="" type="checkbox"/>	-	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Save

You can manage the accounts, user's ID and change the password on [Account Management](#) chapter.

This section appears when users enable the [Level Action] on Parameter Setting.

❖ Windows & Page

Windows: Main Page : Page: 1

Key	Button Function	Button Name	All	Admin	L1	L2	L3	L4	L5	L6	L7	L8	L9
01	Device	LAPG2T1	<input type="checkbox"/>	-	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
02	Device	IT5_214	<input type="checkbox"/>	-	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
03	Device	TerraFDX172	<input type="checkbox"/>	-	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
04	Device	IEX536_163	<input type="checkbox"/>	-	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
05	Device	EX_127	<input type="checkbox"/>	-	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
06	Device	EX536_162	<input type="checkbox"/>	-	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
07	Device	EXA_124	<input type="checkbox"/>	-	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
08	Device	DS_12	<input type="checkbox"/>	-	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
09	Device	IT5_169	<input type="checkbox"/>	-	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	Device	FXO_199	<input type="checkbox"/>	-	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	Macro	TEST2	<input type="checkbox"/>	-	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	Goto Button	p3	<input type="checkbox"/>	-	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

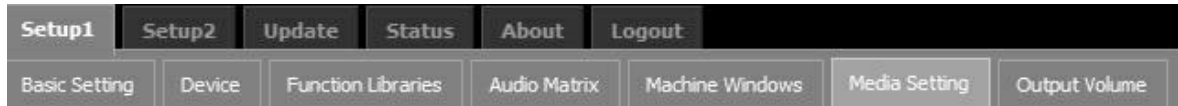
Save

- Windows: The current operation panel, including Main Page and Macro List.
- Page-Main & Marco Page: Support up to 14 pages of button setting on Main Page, and 2 pages on Marco Page.
- Key-Main & Marco Page: Support up to 168 individual keys setting on Main Page, and 24 keys on Marco Page.
- Button Function: Choose the triggering actions, including Device, Command (string), Logic Out, Schedule Control etc. The Device action here indicates as a device zone which allows to proceed intercom or paging.
- Button Name: The device to execute the triggering actions.
- All: Tick [All] checkbox to select L1~L9 authorized levels.
- L1~L9: The authorized level of L1~L9 can be user-defined. See the picture above as an example, all the checkboxes in L1 are activated, which makes L1 is in the highest authorized level, in other words, all the Button Functions can be accessed on PPM-IT5. The button which is not in L1 will

display as a light-off button which cannot be selected on PPM-IT5.

6.5.7 Media Setting

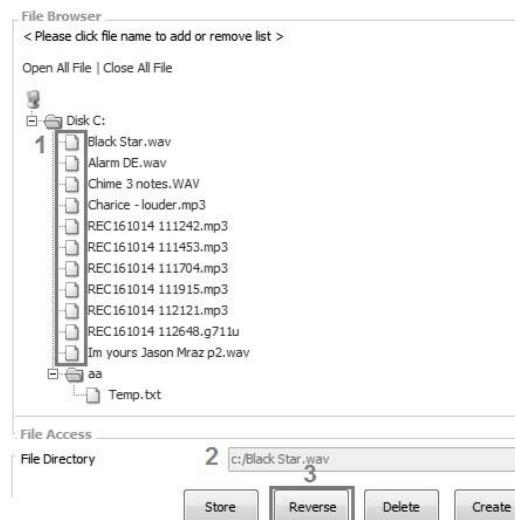
The management of the audio, files, messages list, recording setting and play list.




6.5.7.1 File Access



- File Directory: The file path where you'd like to store the files.
- Please select a file to store:
 - Store: Click [Choose File] button to select the file you want to store, then click [Store] button.
 - Delete: Click [Delete] button to remove an existing file listed on File Directory, and a pop-up confirmation window will be shown first.
 - Create: Click [Create] button to create a new file folder.
- Reverse: Download the file which is stored in the TERRACOM device to your PC/Laptop. First, click the icon of the file on [File Browser], see the picture as below. If the file has listed on [File Directory], then click [Reverse] button to download it.



- Create: Click to create a new file folder.

 Please note that the specification of files (banners, logo, gif files) needs to be followed by the standard format in order to be read by the system.

1. Logo:

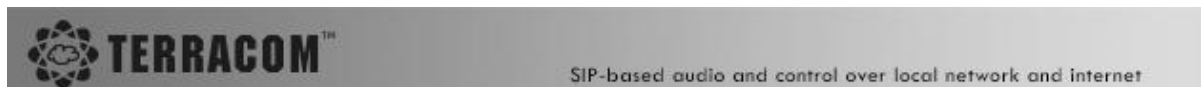
- Size: 80*80
- Format: bmp
- Name: logo.bmp

**2. About:**

- Size: 348*232
- Format: gif
- Name: about.gif

**3. Banner:**

- Size: 629*47
- Format: jpg
- Name: banner.jpg

**4. Message:**

- Size: Less than 10MB
- Audio Codec: WAV, MP3, G.711 and G.722.

6.5.7.2 Recording Setting

The screenshot shows a 'Record Setting' window. It has a 'File Directory' field set to 'c:/'. Below it are 'Mode' (set to 'Stop') and 'Audio Method' (set to 'Local') dropdown menus. There are two lists of audio sources: 'Audio Source' on the left and 'SIP MESSAGE' on the right. Between these lists are four arrow buttons: '>', '<', '>>', and '<<'. To the right of the lists is a 'Codec' dropdown menu set to 'G.711 alaw'. A 'Save' button is at the bottom right.

- File Directory: The file path where you like to store the recording files. Please note the storage space is 2MB.
- Mode: When the recording file is too big to store or the storage capacity is not enough, users can choose to Rewrite/Stop.
 - Rewrite: Rewrite the file from the first recorded file when the memory storage is full.
 - Stop: Stop recording if the memory storage is full.

- Audio Method: Choose which method to input the audio source either from Local Terracom device or Network.
 - Local: Record the audio source by using the MIC IN, LINE IN etc. of local Terracom device. Select the sources which user wishes to add it in the [Audio Source], click [>] and [>>] button to add one or all the sources or click [<] or [<<] button to remove one or all the sources from the left side to the right side.
 - Codec: Set which audio codec (WAV, G.711 ulaw, G.711 alaw, G.722, MP3) the recording file will be saved as.
 - Network Recording: Record the audio source from the network. Please set the Network IP address and Network Port.

Record Setting

File Directory: c:/

Mode: Stop

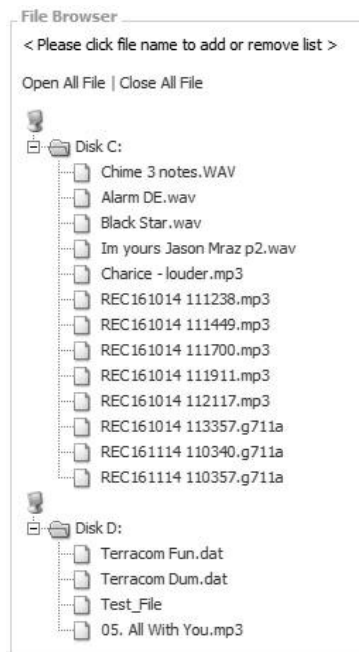
Audio Method: Network

Network IP: 239.240.100.76 Network Port: 3005

Save

6.5.7.3 File Browser

Display all the internal/external audio files that can be stored into the device.



When an USB flash drive is connected to the Terracom device, it will automatically detect its file folder, and the files can be saved into the Internal/External Play List.

The Log List will record the details of [IP Attack] log when a certain IP has been sending too much data traffic packet in a period of time. And a *.blk file (blacklist) shall be automatically listed on TERRA-DS / PPM-IT5 web browser > Media Setting > File Browser setting, allowing users to check the details of data traffic packet.

6.5.7.4 Play Setting

- Play Mode: Select the play mode of your messages.
 - Normal: Play all the audio files on [Play List Setting] once.
 - Repeat all: Play the audio files on [Play List Setting] repeatedly in order.
 - Random: Play the audio files on [Play List Setting] randomly.

In this area, your changes will be auto saved. Remember to set the Priority (right after the SIP) of USB at the "Audio Matrix" page if you want it auto-plays right after booting tone. Also, the Terracom device will load the last setting after reboot.

- Play Target: Choose the target source (internal, external) of your audio files.
 - Internal: Choose the internal storage as your play target.
 - External: Choose the external USB as your play target.
 - Detect by External: Choose the external USB as the first priority, then auto choose the internal storage as the secondary one if external USB cannot be detected.

6.5.7.5 Play List Setting

- Play List Name: Enter the name of your play list.
- Repeat Count: This function is only applicable when playing the message on SIP based.

If you set the [Repeat Count] as 0, this indicates the audio files listed on the [Play List Setting] will only play once, and set the [Repeat Count] as 1 indicates that the audio files will play twice, set as 65535 to play the list forever.

If no playlist exists, it will automatically create a new playlist of all supported files in the USB.

- New List: Click [New List] to add a new empty playlist.
- Remove: To remove the audio file from the playlist, click the file first, then click [Remove].
- Save to Internal/External: Once the files have been added into the playlist setting, click [Save to Internal] or [Save to External] to create a new playlist.

- ❖ If you would like to know how to play the messages on SIP based. Please refer to the [Message button](#) ^[78] chapter.

6.5.7.6 Internal/External Play List

- Function:
 - Edit/Delete: Click the Edit/Delete button to edit/delete the playlist.
 - Copy to internal/external: Copy the same playlist you select to Internal/External Play List.
- Music Database Playlist:

Tick the checkbox of the internal/external playlist you wish it to be played as background music, see [Play Music/Message from Internal/External Play List](#) ^[114] for details.

Internal Play List

PLAYLIST	FUNCTION
<input type="checkbox"/> FXO	Edit / Delete / Copy to external
<input checked="" type="checkbox"/> MSG	Edit / Delete / Copy to external
<input type="checkbox"/> schedu	Edit / Delete / Copy to external
<input checked="" type="checkbox"/> test	Edit / Delete / Copy to external

Save

External Play List

PLAYLIST	FUNCTION
<input checked="" type="checkbox"/> Play List	Edit / Delete / Copy to internal

Save

6.5.7.7 Disk Space

Disk Space

C:\	
Total:	80 MB
Free:	70 MB
Format	
D:\	
Total:	3863 MB
Free:	1861 MB
Format	

- Total: Display the total memory capacity on the device.
- Free: Display the capacity of your device that has left for use.
- Format: Click to format the disk.

 The data will be deleted after formatting.

6.5.7.8 Play List Information

Play List Information

Name: 0

Repeat: 1

001. c:/02. Je Veux.mp3

- Click the file listed on [Internal Play List] and the file information such as file name, etc. will be listed here.

6.5.8 LINE1/LINE2 (TERRA-FXO)

The LINE1/LINE2 page can create the DTMF call setting, set the pre-tone etc., allowing traditional telephone to call TERRA-FXO.

The LINE1/LINE2 will appear in the Setup menu of TERRA-FXO only.

❖ DTMF-Add New DTMF

The screenshot shows the 'Line1' tab of the configuration interface. At the top, there's a 'Pre-Tone' section with a file path 'c:/Im yours Jason Miraz p2.wav' and a volume level '-10dB'. Below this is a table of DTMF numbers and their actions.

DTMF Number	DTMF Action	Action
#118*	Call Device - FDX_118	Edit / Delete
#127*	Call Device - EX_127	Edit / Delete
#0127*	Call Device - EX_127	Edit / Delete
#213*	Call Device - IEX_213	Edit / Delete

Below the table is a button labeled 'New DTMF'. An arrow points from this button to the 'Modify #111*' form below.

The 'Modify #111*' form has the following fields:

- DTMF Number:** # 111 *
- Action:** Call (dropdown), -10dB (dropdown)
- Password:** # (input field), -- (dropdown), -10dB (dropdown)
- Target:** Device - IT5_217 (dropdown)
- Mode:** Intercom (dropdown)

At the bottom right of the form are 'Save' and 'Cancel' buttons.

- DTMF Number: Type the DTMF telephone numbers.
- Action: The action that the TERRA-FXO will perform. Click the drop-down list to select the action.
- Password: Enable the password function by typing the numbers, and select a message file as an indication message before typing the password numbers.
- Target: Select which Terracom device (device group) target to receive the call from the traditional telephone.
- Mode: Choose the calling mode (intercom/paging/EVAC Announce/Vote Announce).
 - EVAC/Vote Announce: This two call modes are only applicable when using PPM-IT5 to paging to TERRA-RD. The paging priority: EVAC Announce > Vote Announce > Paging.

❖ DTMF-Add Pre-Tone

When calling the DTMF number using TERRA-FXO, a pre-tone will be played.

- Pre-Tone: User requires to upload your audio files [WAV (16k 16bit)] for pre-tone on [Media Setting] page first. Please note that the storage space is 80 MB.

❖ Call Program

Set the call scheduler to call Terracom devices in group. There are 24 sets of setting time periods in total.

No.	Target	Enable/Disable	Start Time		End Time		Volume
			Hour	Minute	Hour	Minute	
01. Call	--	Scheduling	0	0	0	0	0dB
02. Call	--	Scheduling	0	0	0	0	0dB
03. Call	--	Scheduling	0	0	0	0	0dB
04. Call	--	Scheduling	0	0	0	0	0dB
05. Call	--	Scheduling	0	0	0	0	0dB
06. Call	--	Scheduling	0	0	0	0	0dB
07. Call	--	Scheduling	0	0	0	0	0dB
08. Call	--	Scheduling	0	0	0	0	0dB
09. Call	--	Scheduling	0	0	0	0	0dB
10. Call	--	Scheduling	0	0	0	0	0dB
11. Call	--	Scheduling	0	0	0	0	0dB
12. Call	--	Scheduling	0	0	0	0	0dB
13. Call	--	Scheduling	0	0	0	0	0dB
14. Call	--	Scheduling	0	0	0	0	0dB
15. Call	--	Scheduling	0	0	0	0	0dB
16. Call	--	Scheduling	0	0	0	0	0dB
17. Call	--	Scheduling	0	0	0	0	0dB
18. Call	--	Scheduling	0	0	0	0	0dB
19. Call	--	Scheduling	0	0	0	0	0dB
20. Call	--	Scheduling	0	0	0	0	0dB
21. Call	--	Scheduling	0	0	0	0	0dB
22. Call	--	Scheduling	0	0	0	0	0dB
23. Call	--	Scheduling	0	0	0	0	0dB
24. Call	--	Scheduling	0	0	0	0	0dB



Fail Message: There will be a tone sound to indicate if the call message is unable to dial. Please check whether users have set the time of dialing or whether either no one answers the phone or the telephone line is busy can occur this issue.

6.5.9 IP Phone (TERRA-FXO)

Users can use the IP phone and traditional telephone to call the TERRA-FXO via Ethernet or landline, and dial the specific DTMF keys to assign an Intercom/Paging/Command String/Multi Function action.

DTMF

Bridge Type: ☐ Telephone ☒ Ethernet

Save

DTMF Number	DTMF Action	Action
#127*	Call Device - EX_127	Edit / Delete
#0127*	Call Device - EX_127	Edit / Delete
#213*	Call Device - IEX_213	Edit / Delete
#0213*	Call Device - IEX_213	Edit / Delete
#124*	Call Device - EXA_124	Edit / Delete
#163*	Call Device - IEX536_163	Edit / Delete
#162*	Call Device - EX536_162	Edit / Delete
#0163*	Call Device - IEX536_163	Edit / Delete
#0162*	Call Device - EX536_162	Edit / Delete
#111*	Logic Out - Logout8	Edit / Delete
#0124*	Call Device - EXA_124	Edit / Delete
#165*	Call Device - TMNet	Edit / Delete
#0118*	Call Device - FDX_118	Edit / Delete
#000*	Command String - String1	Edit / Delete
#222*	Multi Function - MF1	Edit / Delete
#118*	Call Device - FDX_118	Edit / Delete
#114*	Call Device - AMP_114	Edit / Delete
#0114*	Call Device - AMP_114	Edit / Delete

New DTMF

- Bridge Type: Choose to use the traditional telephone or IP phone to call the TERRA-FXO.

6.5.10 Telephone (TERRA-FXO)

The [Line 1 Hangup] and [Line 2 Hangup] function can be manually operated via web browser.

Line Control

Line1 Hangup Line2 Hangup

Users can define when the device will hangup the call device by the frequency of [Busy tone]. See the picture as below.

BusyTone

Enable	Item
<input type="checkbox"/>	480Hz + 620Hz
<input type="checkbox"/>	440Hz
<input type="checkbox"/>	400Hz
<input type="checkbox"/>	425Hz
<input type="checkbox"/>	450Hz
<input type="checkbox"/>	350Hz + 440Hz
<input type="checkbox"/>	270Hz + 320Hz
<input type="checkbox"/>	DC


Save

6.5.11 Output Volume

This function allows to control, modify the volume of output 1, output 2, speaker output (TERRA-DS and PPM-IT5), AMP1/AMP2 (TERRA-AMP), RJ (PPM-IT5), Handset (PPM-IT5).

The screenshot displays the 'Output Volume' configuration page. At the top, there are tabs for 'Setup1', 'Setup2', 'Update', 'Status', 'About', and 'Logout'. Below these are sub-tabs: 'Basic Setting', 'Device', 'Function Libraries', 'Audio Matrix', 'I/O Control', 'Media Setting', and 'Output Volume'. The 'Output Volume' section is active, showing settings for 'Output 1 Volume' and 'Output 2 Volume', both set to '-10.0-dB'. Below this, there are two panels: 'TERRA-DS' and 'PPM-IT5'. The 'TERRA-DS' panel has 'Reset SPK Vol to Factory Setting' (Enable) and 'Speaker Volume' (-12.0-dB). The 'PPM-IT5' panel has 'Reset SPK Vol to Factory Setting' (Enable), 'Speaker Volume' (-9.0-dB), 'RJ9' (0.0-dB), and 'Headset' (0.0-dB).

- Volume: Set the output volume.
- Reset SPK Vol to Factory Setting: Click [Enable] button to return the speaker volume to factory setting.
 - PPM-IT5: -9dB
 - TERRA-DS: -12dB

 [Reset SPK Vol to Factory Setting] is currently available for v3.2.0.0 version (TERRA-DS, PPM-IT5) only.

6.6 Setup 2

6.6.1 Account Management

Manage the accounts such as add/delete a user's ID and change the password.

The screenshot shows the 'Account Management' page with tabs for 'Account Management' and 'Scheduler'. The 'Account Management' section is active, showing 'Management' and 'User Information'. The 'Management' section has a 'Select Function' dropdown set to 'Change a user's setting'. Below this is a 'Change a user's setting' form with fields for 'User's ID', 'Old Password', 'New Password', 'Re-enter to Confirm', and a 'User's Level' dropdown set to 'Admin'. The 'User Information' section displays a table of users:

ID	Level
a	Level 1
b	Level 2
c	Level 3
d	Level 4
8	Level 8

The default account is [User Name]: admin, [Password]: admin

1. ateis / ateis
2. user1 / user1
3. user2 / user2
4. user3 / user3

- Management-Selection Function: If you want to change an existing account, the old password is required.
 - User's ID: Enter your ID.
 - Old/New Password: Enter your old/new password.
 - Re-enter to Confirm: Enter your new password again for confirmation.
 - User's Level: Set the current ID's permission. The authorized level of L1~L9 can be user-defined.

6.6.2 Scheduler

The Scheduler function allows to schedule the actions such as messages/music playing, command (string) triggering, logic out (single) in an assigned time, and these actions will be triggered in the assigned time.

- Setting:

Item	Value
Global Enable	Enable

Save

Global Enable: Enable or disable to trigger all the Scheduler actions.

6.6.2.1 New Scheduler

Name: Music Play 1

Start Time: 2016-10-15

Time: 14:00:00

Enable: Enable

Command: Music Play

Repeat Mode: Daily

End Time: ☒ Never ☐ On

Summary:

Save to internal Cancel

- Name: The display name of this scheduler.

- Start Time: The start time of this scheduler.
- Time: Set a sequence of trigger time from 00:00 to 23:59.
- Command: Select the command action Logic Out, Command (String) and Message Routing etc.
- Repeat Mode (YYYY/MM/DD):
 - Daily/Monthly/Yearly: Trigger this Scheduler action every day/every month/every year.
 - Weekly: Trigger this Scheduler action weekly, you can choose the weekdays.



If you want to repeat two or more days monthly or yearly, please set another scheduler.

- End Time: Set the ending time of this scheduler.
- Summary: Memo area.

6.6.2.2 Internal Scheduler List

Internal Scheduler List	
b	Internal schedu(Message Routing) Command...
c	(Stop Message Routing) Command...
a	127 p(Logic out) Command...
Example Scheduler	NC(Logic out) Command...

Here you can check the scheduler events you have created. Click the content for editing or to delete.

6.6.2.3 In-Store Scheduler List

In-Store Scheduler List	
playmessage (-repeat: 0)	2016/10/25 10:0:0 SUN. MON. TUE. WED. THU. FRI. SAT.
playmessage (-repeat: 0)	2016/10/27 10:0:0 SUN. MON. TUE. WED. THU. FRI. SAT.
playmessage (-repeat: 0)	2016/10/26 10:0:0 SUN. MON. TUE. WED. THU. FRI. SAT.
playmessage (-repeat: 0)	2016/10/28 10:0:0 SUN. MON. TUE. WED. THU. FRI. SAT.

Display the scheduler events which are sent from TerraServer.

6.7 Update

Setup1	Setup2	Update	Status	About	Logout
Firmware	Configuration	GUI	Reboot		

6.7.1 Firmware

Firmware: Click [Browse] button to upload a firmware file.

6.7.2 Configuration

- Reverse Settings: Click [Reverse] button to download the configuration backup file to your PC/Laptop.
- Store Settings: Click [Browse] button to select a configuration file and store into the current configuration.

6.7.3 GUI (PPM-IT5 only)

Allow to change the font size and language of the main buttons. The new settings on PPM-IT5 will be changed after rebooting.

- Font Setting: Set the font style on PPM-IT5. The PPM-IT5 supports multi-languages.

 Please note the font you have stored into your PPM-IT5 requires to support multi-languages as well.

- UI File: Click [Browse] button to select the custom UI background settings on PPM-IT5.

6.7.4 Update Reboot

Reboot: Click to reboot the Terracom device.

6.8 Status

- ❖ TERRA System: Show the general information of the Terracom unit.
- ❖ Control Calibrate: Display the calibration result of control input.
- ❖ Serial Log: Display the history data sent through the serial port (RS232/RS485) of Terracom device.
- ❖ Log File: Display the logs, it supports to load up to 3000 data.

6.8.1 TERRA System

- ❖ Stream Out: Display the STREAM OUT at "[Setup1 > Audio Matrix](#)". The numbers and items are depending on the Terracom unit you're using, N/A means the item is not supported for now. The status will switch to "ON" when the Stream Out has streamed out and successfully received by other devices.

STREAM OUT

Name	MODE	IP ADDRESS	PORT
MIC IN	N/A	N/A	N/A
MESSAGE	N/A	N/A	N/A

❖ MIC Status

MIC Status

Name	Status	Value	
MIC	Normal	36	CB

❖ Device Information:

Display the status of device.

Device Information

DHCP	DISABLE
MAC Address	00-19-84-ca-01-16
IP Address	192.168.101.116
Subnet Mask	255.255.252.0
Gateway	192.168.100.254
DNS	DISABLE
Serial Port	RS485

❖ SIP:

Display the SIP information.

The SIP settings can be changed from "[Setup1 > Basic Setting > SIP](#)".

SIP

Transfer Protocol	<input type="radio"/> TCP <input checked="" type="radio"/> UDP
Firewall Traversal Mode	<input type="radio"/> SIP Server <input checked="" type="radio"/> TERRA Net
+ Username	TerraDRS
SIP Port	5060
RTP Port	6912
Online Identification Way	<input type="radio"/> URI <input checked="" type="radio"/> IP Address
STUN/DMZ	<input type="checkbox"/>
Identification Send Interval	2 s
AEC (Echo Cancellation)	<input checked="" type="radio"/> Disable <input type="radio"/> Enable
AGC Factory Setting	Enable
AGC Maximum Gain	24 dB
+ Threshold	-45 dB
+ Response Time	1 ms
+ Release Time	1000 ms
+ Target Level	-12 dB
Audio Codec	PCM16K
Global Priority	10
Time To Stop Ring	15 sec
Ring Volume	1
Chime Volume	1
SIP Auto Answer	<input type="radio"/> Disable <input checked="" type="radio"/> Enable
SIP Stop Ringing	<input checked="" type="radio"/> Disable <input type="radio"/> Enable
Half-duplex	<input checked="" type="radio"/> Disable <input type="radio"/> Enable
Speak Out IP Address (CIN1)	<input type="radio"/> Disable <input checked="" type="radio"/> Enable
Factory Setting (CIN2)	<input type="radio"/> Disable <input checked="" type="radio"/> Enable
Pre-Chime	c:/Chime 3 notes.WAV
Post-Chime	c:/Chime 3 notes.WAV
Message Pre-Chime	c:/gong.wav
Message Post-Chime	c:/gong.wav
Answer-Tone	--
SIP Active	183_1-p
SIP Inactive	183_1-p
Ringing Active	183_8-p
Ringing Inactive	183_8-p
Talk Mode(Collocation TM)	Lock To Talk
Pre-Record(Collocation TM)	Disable

❖ Audio:

Display the status of audio.


Audio

MIC IN Volume	-48 dB
LINE IN Volume	-28 dB

❖ Fault:

- Nand Flash Error: The FLASH problem of sending/receiving in hardware device.
- AIC3X Error: The IC AIC3X problem of communication in hardware device.
- ADS7830 Error: The IC ADS7830 problem of communication in hardware device.
- PCF8574 Error: The IC PCF8574 problem of communication in hardware device.
- TAS5709 Error: The IC TAS5709 problem of communication in hardware device.
- SPI Flash Error: The SPI FLASH problem of sending / receiving in hardware device.
- SI3050 1 ERROR: The IC SI3050 1 problem of communication in hardware device.
- SI3050 2 ERROR: The IC SI3050 2 problem of communication in hardware device.



 When the fault occurs, the fault will display on the Fault List on the [Status] window of web interface and the Fault LED on the Terracom device will light up.

6.8.2 Control Calibrate

Display the calibration status of contact input.

- Control Input: Display the type of control input and its function.

Control Input	
CONTROL INPUT 1	btn-
CONTROL INPUT 2	RAC5-Channel Select
CONTROL INPUT 3	RAC-Analog-Volume Control

From the picture above, the Control Input 1 displays the "btn-" which indicates no logic input is connected. The Control Input 2 "RAC-Channel Select" indicates the Control Input 2 is connected to the selection channel of RAC 5/RAC 8. And the Control Input 3 "RAC-Analog-Volume Control" indicates the Control Input 3 is connected to the volume channel of RAC 5/RAC 8.

- Logic: Display the minimum and maximum value (between 0~255), it is commonly used for a push button or an analog knob on RAC 5/RAC 8.

Logic			
Name	Maximum	Minimum	Now
Channel 1	241	8	9
Channel 2	241	9	242
Channel 3	242	9	243
Channel 4	241	9	242
Channel 5	241	9	242
Channel 6	242	9	242
Channel 7	241	9	241
Channel 8	242	9	9

- RAC: The RAC 5 and RAC 8 are the remotes which feature the wall-mount volume display and source selection for Terracom system. This function indicates the range of each input channel of RAC 5/RAC 8.

RAC

Mode: ☒ Automate ☐ Manual

RAC-5


Name	Level1	Level2	Level3	Level4	Level5
Channel 1	0 ~ 0	0 ~ 0	0 ~ 0	0 ~ 0	0 ~ 0
Channel 2	0 ~ 0	0 ~ 0	0 ~ 0	0 ~ 0	0 ~ 0
Channel 3	0 ~ 0	0 ~ 0	0 ~ 0	0 ~ 0	0 ~ 0

RAC-8

Name	Level1	Level2	Level3	Level4	Level5	Level6	Level7	Level8
Channel 1	0 ~ 0	0 ~ 0	0 ~ 0	0 ~ 0	0 ~ 0	0 ~ 0	0 ~ 0	0 ~ 0
Channel 2	0 ~ 0	0 ~ 0	0 ~ 0	0 ~ 0	0 ~ 0	0 ~ 0	0 ~ 0	0 ~ 0
Channel 3	0 ~ 0	0 ~ 0	0 ~ 0	0 ~ 0	0 ~ 0	0 ~ 0	0 ~ 0	0 ~ 0

Save

- Mode: Users can define whether to auto detect or manually enter the level value of each channel of RAC 5/RAC 8.

 If the level value are too close or overlap with other level value, please switch to Manual mode and set the value manually. To set the correct values, please see the example picture as below.

- Channel 1: The Level1 (17~22) on Channel 1 does not overlap the Level2 (51~59), and so does other values on Channel 1.
- Channel 2: The Level1 (16~20) on Channel 2 is overlapped the Level2 (20~39), and so does other values on Channel 2, therefore, please adjust the level values again.

RAC-5

Name	Level1	Level2	Level3	Level4	Level5
Channel 1	17 ~ 22	51 ~ 59	60 ~ 87	99 ~ 107	118 ~ 122 ✓
Channel 2	16 ~ 20	20 ~ 39	38 ~ 69	69 ~ 109	108 ~ 129 ✗

- How-to: Please refer to [Calibrate the RAC and Push Button](#)¹¹⁵ chapter.

6.8.3 Serial Log

Serial Tx

History	Offset	Data
1	1	
2	1	
3	1	
4	1	
5	1	
6	1	
7	1	
8	1	
9	1	
10	1	

Clear

Serial Rx

History	Offset	Data
1	1	
2	1	
3	1	
4	1	
5	1	
6	1	
7	1	
8	1	
9	1	
10	1	

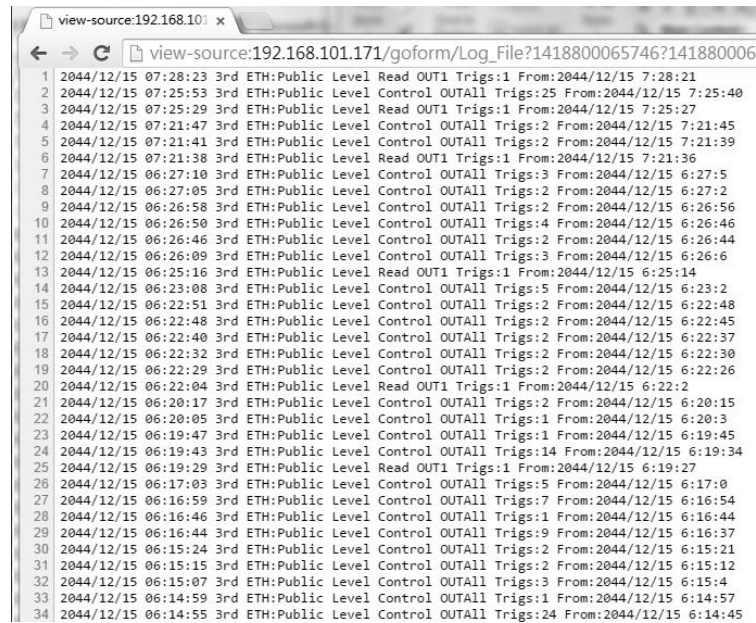
Clear

- ❖ History: Each section of history data (Serial TX and Serial RX) can be recorded with a max. log of 10. The order of item number listed upper among them indicates the newer data.

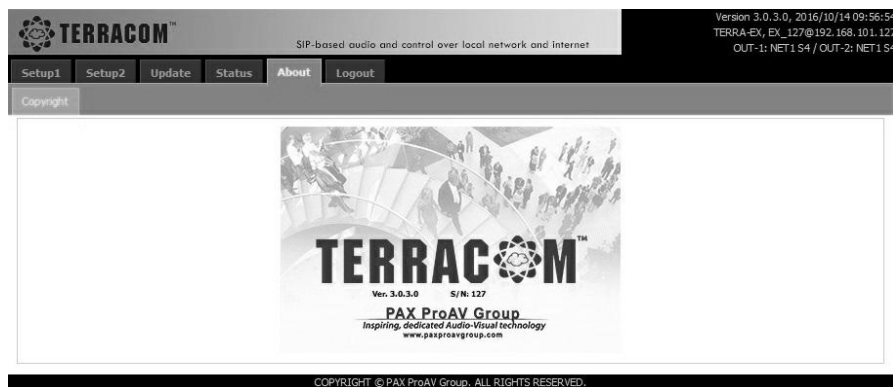
- ❖ Offset: Display the position of offset record of each recorded data.
- ❖ Data: Display the content of each recorded data.
- ❖ Clear: Clear all the Serial Tx/Serial Rx Port.

6.8.4 Log File

Click the Log File to open a new window displaying the "log content". The webpage can be saved to a single html file.



6.9 About



After log in the web interface successfully, the About page will be displayed as the start-up window.


6.10 Logout



Click [Logout] button, there will be a pop-up window for logout confirmation.

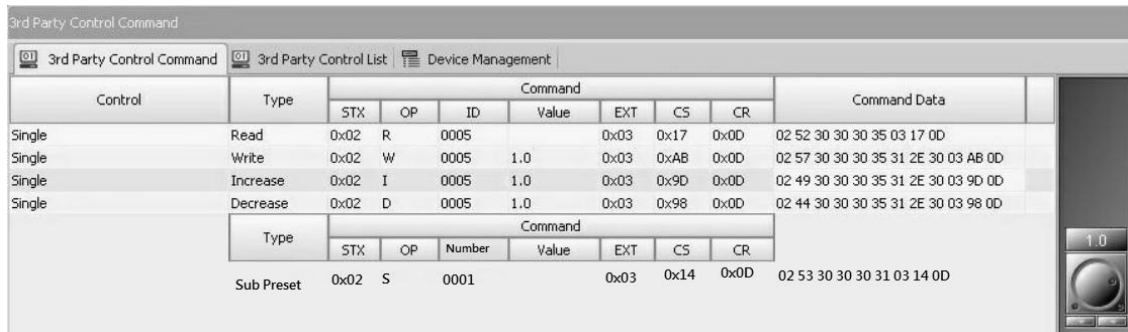
6.11 How-To

6.11.1 Send [Sub Prest] Command to PPM-IT5

 Please create the commands on Ateis Studio software first, and set the settings via Terracom web interface.

❖ Ateis Studio Interface:

1. Copy the [Sub preset] command string data (Hex code) received by the target on Ateis Studio software. The string should be changed to ASCII code on Terracom web interface.
2. The [Sub preset] commands in [Picture 1] come from the internal command of Ateis processor, not from the external commands.



String: %02hWC0051%03h\$02,07h%0dh

[Picture 1]


3. [Picture 2] indicates the different codes listed on the 3rd party command on Ateis Studio software which corresponds to the command string that can be read from the PPM-IT5.


Command						
STX	OP	ID	Value	EXT	CS	CR
%02h	W	C005	1	%03h	\$02,07h	%0dh

= %02hWC0051%03h\$02,07h%0dh

[Picture 2]

- **02**: This is an initial code which is a fixed value and cannot be changed.
- **WC0051**: This number is created by Ateis Studio.
- **%xxh**: Convert xx into hexadecimal values.
- **0D**: This is an end code which is fixed value and cannot be changed.
- **\$xx**: This is the initial code which starts counting from "W".
- **,xxh**: This is the end code which starts counting from the first string number.


 Normally, you will need to change the "WC0051" once.

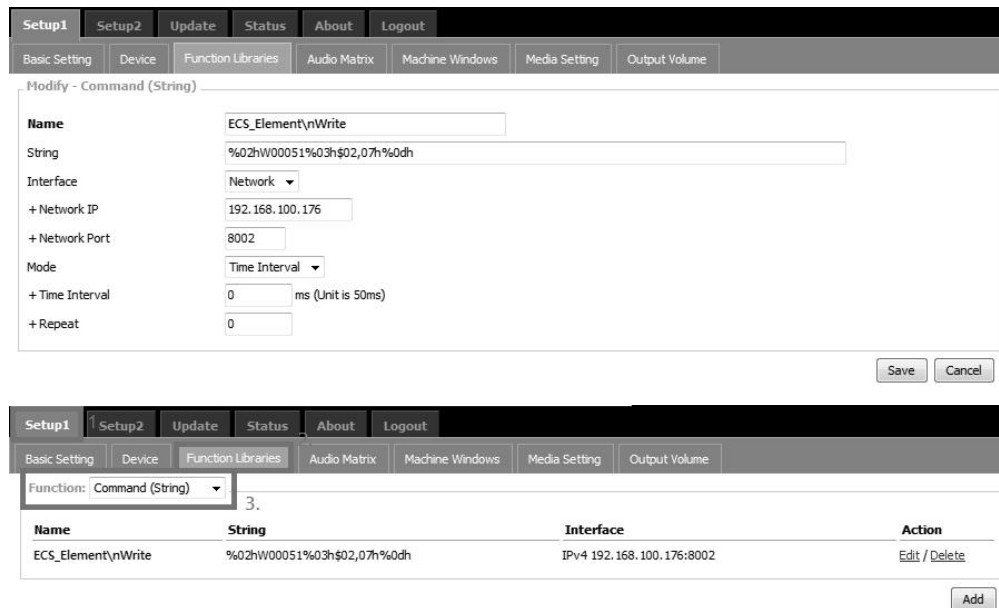
 If the number "WC0051" adds up and changes to "WC0051x" for example, the following ,0xh needs to be added up, too.

Example: If the original string is %02hWC0051%03h\$02,07h%0dh, users need to change the string to %02hWC00511%03h\$02,08h%0dh.

❖ Terracom Web Interface:

1. Create a new 3rd party command on [Function Libraries]. Follow the steps from the pictures as below.

 Remember to set the string as %02hWC0051%03h\$02,07h%0dh, which Terracom can only received the ASCII code.



The first screenshot shows the 'Modify - Command (String)' form in the Terracom Web Interface. The form has the following fields:

- Name:** ECS_Element\nWrite
- String:** %02hW00051%03h\$02,07h%0dh
- Interface:** Network
- + Network IP:** 192.168.100.176
- + Network Port:** 8002
- Mode:** Time Interval
- + Time Interval:** 0 ms (Unit is 50ms)
- + Repeat:** 0

Buttons: Save, Cancel

The second screenshot shows the 'Function Libraries' table in the Terracom Web Interface. The table has the following columns: Name, String, Interface, and Action.

Name	String	Interface	Action
ECS_Element\nWrite	%02hW00051%03h\$02,07h%0dh	IPv4 192.168.100.176:8002	Edit / Delete

Buttons: Add

2. Go to [Machine Window] and select [Command String] on the drop box of [Button Function] and select the command you create on [Button Name]. See the picture below.

Setup1 Setup2 Update Status About Logout

Basic Setting Device Function Libraries Audio Matrix Machine Windows Media Setting Output Volume

Name Setting 2.

MAIN MAIN DIAL DIAL

MESSAGE MESSAGE SETTING SETTING

Save

Parameter Setting

Enter Sleep Mode Time 0 h : 0 m

Level Action ☐ Enable ☒ Disable

Setup1 Setup2 Update Status About Logout

Basic Setting Device Function Libraries Audio Matrix Machine Windows Media Setting Output Volume

Name Setting 2.

MAIN MAIN DIAL DIAL

MESSAGE MESSAGE SETTING SETTING

Save

Parameter Setting

Enter Sleep Mode Time 0 h : 0 m

Level Action ☐ Enable ☒ Disable

External Button(Left) Audio Source Select

External Button(Center) Audio Level -

External Button(Right) Audio Level +

Save

Windows: Main Page Page: 1

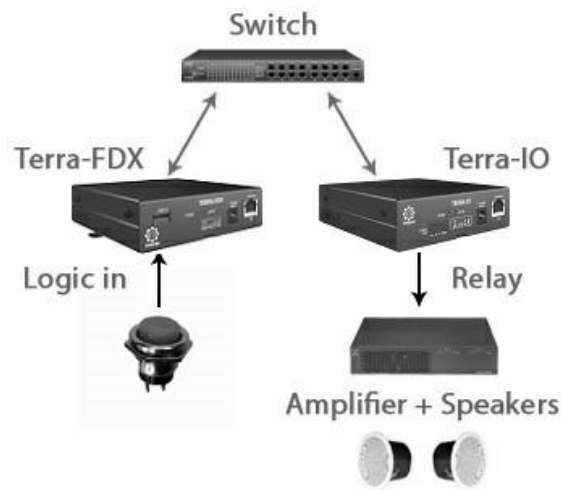
Key	Button Function	Button Name	All	Admin	L1	L2	L3	L4	L5	L6	L7	L8	L9
01	Device	AMP114											
02	Device	EX_127											

3. After that, the configuration will be uploaded into the PPM-IT5 device. See the picture below.



6.11.2 Use Logic Out to Activate Amplifier During Paging

Here is an example using a microphone which is connected to the TERRA-FDX to trigger the relay of TERRA-IO for waking up the power switch of the amplifier during paging.



1. First, connect a device such as power switch which allows the relay of TERRA-IO to control this power switch. Then connect a logic input (button) on TERRA-FDX for triggering the relay of [Logic Out] action.
2. Create a [Logic Out] action from Terracom web interface > Function Libraries > Logic Out. See the picture as below, here we name this [Logic Out] action as Power_On. After completed the setting, click [Save] button.

The screenshot shows the 'New - Logic Out' configuration page. The 'Name' field is set to 'Power_On'. The 'Remote target' dropdown is set to 'Device IO_183'. The 'Channel' dropdown is set to '1'. The 'Value' dropdown is set to 'NC-RC'. There are 'Save' and 'Cancel' buttons at the bottom right.

3. Go to [I/O Control] page, and complete the following settings as below.

The screenshot shows the 'I/O Control' page. It has a table for 'Local Control' with columns: INPUT, CONTROLLER, POSITION, FUNCTION, MODE, SECURITY, SOURCE, and TARGET. The table has three rows for IN1, IN2, and IN3. IN1 is set to Logic, Logic Out, Intercom, and has a checkbox for SECURITY. IN2 and IN3 are set to --, --, Intercom, and have checkboxes for SECURITY. There is also an 'OUTPUT' section with 'DEFAULT' and 'NO-RC' options for OUT1 and OUT2.

INPUT	CONTROLLER	POSITION	FUNCTION	MODE	SECURITY	SOURCE	TARGET
IN1	Logic		Logic Out	Intercom	<input type="checkbox"/>		-- CB
IN2	--		--	Intercom	<input type="checkbox"/>		-- CB
IN3	--		--	Intercom	<input type="checkbox"/>		-- CB

OUTPUT DEFAULT

OUT1 NO-RC

OUT2 NO-RC

- Input: Select the control input which the button is connected to, the IN1 means logic input channel 1.
- Controller: Select [Logic].
- Function: Select [Logic Out].
- Target: Select the [Logic Out] action you set, here we choose [Power_On].

4. Then click [Save] button to activate this action.
5. Now the [Logic Out] action will be activated when pressing the control input button.

6.11.3 Make Telephone Call

6.11.3.1 Using TERRA-FXO

- ❖ Add a TERRA-FXO with telephone card from [Setup1 > Device] as the picture below, then click [Add] button to set the telephone number on [Add Device] window.

FXO_198	FXO_198@192.168.101.198:5060	TERRA-FXO	online	Add
ateis	ateis@192.168.101.169:5060	PPM-IT5	online	Add
FDX_118	FDX_118@192.168.101.118:5062	TERRA-FDX	phone	Add

Add Device

Device Name:

Product Type:

URI:

Telephone Number:

- Device Name: The name of this TERRA-FXO device.
- Telephone Number: Enter the telephone number which will be called.

6.11.3.2 Using PPM-IT5

- ❖ Use PPM-IT5 to call a telephone line by adding a TERRA-FXO on [Setup1 > Machine Window].

Setup1	Setup2	Update	Status	About	Logout		
Basic Setting	Device	Function Libraries	Audio Matrix	Machine Windows	Media Setting	Output Volume	
Name	URI	Type	Zone	Tele Number	Status	Action	
LAPGZT-1	LAPGZT1@192.168.101.117:5060	LAP-GZT	1		offline	New / Edit / Delete	
LAPGZT-2	LAPGZT1@192.168.101.117:5060	LAP-GZT	2		offline	New / Edit / Delete	
LAPGZT-3	LAPGZT1@192.168.101.117:5060	LAP-GZT	3		offline	New / Edit / Delete	
LAPGZT-123	LAPGZT1@192.168.101.117:5060	LAP-GZT	1,2,3		offline	New / Edit / Delete	
RADIO	RADIO@192.168.100.4:5060	Other	1		offline	New / Edit / Delete	
IEX_163	IEX_163@192.168.101.163:5060	TERRA-IEX536	1		offline	New / Edit / Delete	
RADIO_1014	RADIO_1014@192.168.101.4:5060	Other	1		offline	New / Edit / Delete	
RADIO_1015	RADIO_1015@192.168.101.5:5060	Other	1		offline	New / Edit / Delete	
EX_162	EX_162@192.168.101.162:5062	TERRA-EX536	1,2		online	New / Edit / Delete	
ATEISGAL189	ATEISGAL1@192.168.101.189:5060	LAP-GZT	1		offline	New / Edit / Delete	
FXO_198	FXO_198@192.168.101.198:5060	TERRA-FXO		201	online	New / Edit / Delete	

Windows: Main Page : Page: 1

Key	Button Function	Button Name	All	Admin	L1	L2	L3	L4	L5	L6	L7	L8	L9
01	Device	RADIO_1014		-									
02	Device	RADIO_1015		-									
03	Device Group	PR		-									
04	Device	EX_162		-									
05	Device	FXO_198		-									
06	--	--		-									
07	--	--		-									
08	--	--		-									
09	--	--		-									
10	--	--		-									
11	--	--		-									
12	Device	ATEISGAL189		-									

Save

- Choose the target (Terracom device) on the [Button Name] grid of Machine Window.

6.11.3.3 Using TERRA-FDX

- By using a logic:

After connecting a trigger device such as a "push button", you can perform the function with the setting listed below.

Setup1 Setup2 Update Status About Logout

Basic Setting Device Function Libraries Audio Matrix I/O Control Media Setting Output Volume

Local Control

INPUT	CONTROLLER	POSITION	FUNCTION	MODE	SECURITY	SOURCE	TARGET
IN1	RAC-5	Channel 1	Call Target	Intercom	<input type="checkbox"/>		Device ITS_168
		Channel 2		Paging	<input type="checkbox"/>		Device EX_127
		Channel 3		Intercom	<input type="checkbox"/>		Device ITS_215
		Channel 4		Intercom	<input type="checkbox"/>		Device DR5_61
		Channel 5		Intercom	<input type="checkbox"/>		Device TMNet
IN2	Logic		Call Trigger	Intercom	<input type="checkbox"/>	MIC IN	IN1
IN3	--		--	Intercom	<input type="checkbox"/>		

- I/O Control: Select the input which the button is connected to, the IN1 means logic input channel 1.
- Controller: Select Logic.
- Function: Select Call Trigger.
- Source: Select the source, MIC IN or LINE IN.
- Target: Select the target, here we use "IN1".
- By using a RAC-5 or RAC-8:
 1. After connecting a RAC with a button, you can perform the function with the setting listed below.

Setup1	Setup2	Update	Status	About	Logout	
Basic Setting	Device	Function Libraries	Audio Matrix	I/O Control	Media Setting	Output Volume

Local Control							
INPUT	CONTROLLER	POSITION	FUNCTION	MODE	SECURITY	SOURCE	TARGET
IN1	RAC-5	Channel 1	Call Target	Intercom	<input type="checkbox"/>		Device ITS_168
		Channel 2		Paging	<input type="checkbox"/>		Device EX_127
		Channel 3		Intercom	<input type="checkbox"/>		Device ITS_215
		Channel 4		Intercom	<input type="checkbox"/>		Device DRS_61
		Channel 5		Intercom	<input type="checkbox"/>		Device TMINet
IN2	Logic		Call Trigger	Intercom	<input type="checkbox"/>	MIC IN	IN1
IN3	--		--	Intercom	<input type="checkbox"/>		

- I/O Control: Select the input which the RAC 5/RAC 8 is connected to, the IN1 means short 1-pin and G-pin.
 - Controller: Select RAC 5 or RAC 8.
 - Position: The channels of the RAC.
 - Function: Select Call Target.
 - Target: Select the target, you can set 5 or 8 different targets.
2. Now, set a button (as mentioned before) to trigger the RAC.
- I/O Control: Select the input which the RAC 5/RAC 8 is connected to, the IN2 means short 2-pin and G-pin.
 - Controller: Select Logic.
 - Function: Select Call Trigger.
 - Source: Select the source, MIC IN or LINE IN.
 - Target: Select the target, here we use "IN1" where the RAC is connected to.
3. Easily switch the knob to the target you want and press the button to perform a telephone call.

6.11.4 Message Paging

1. Create a new audio list with the selected audio files on [Play List Setting], and choose the folder on [Internal Play List] as the input source.

1

File Browser

< Please click file name to add or remove list >

Open All File | Close All File

Disk C:

- Alarm DE.wav
- Black Star.wav
- Chime 3 notes.WAV
- Im yours Jason Mrz p2.wav
- 02. My Love .mp3
- 02. Je Veux.mp3
- REC140911 181541.mp3
- REC140911 181821.mp3
- REC140911 181850.mp3
- REC140911 182411.g711a
- REC140911 182440.g711a

Play List Setting

Play List Name:

Repeat Count:

c:/Alarm DE.wav
c:/Black Star.wav
c:/02. Je Veux.mp3

New List Remove Save to Internal

Setting

Play Mode: Repeat All

Save

Disk Space

C:\

Total: 80 MB

Free: 54 MB

Format

Internal Play List

2

PLAYLIST	FUNCTION
0	Edit / Delete
<input checked="" type="checkbox"/> Test	Edit / Delete

Save

Play List Information

Name: Test

Repeat: 0

001. c:/Alarm DE.wav
002. c:/Black Star.wav
003. c:/02. Je Veux.mp3

2. Go to [Setup1 > I/O Control] and set [Paging] as the Mode, then choose the internal folder on [Source] as the input Source.

Local Control

INPUT	CONTROLLER	POSITION	FUNCTION	MODE	SECURITY	SOURCE	TARGET
IN1	Logic		Message Button	Paging	<input checked="" type="checkbox"/>	Internal Test	Device EX_162
IN2	--		--	Intercom	<input type="checkbox"/>		
IN3	--		--	Intercom	<input type="checkbox"/>		

6.11.5 Play Music/Message from Interna/External Playlist

The screenshot shows the 'Media Setting' tab in the Terracom web interface. The interface includes the following sections and elements:

- File Access:** Contains a 'File Directory' input field (highlighted with a '1'), a 'Please select a file to upload' button, and buttons for 'Upload', 'Download', 'Delete', and 'Create'.
- Record Setting:** Contains a 'File Directory' input field, a 'Mode' dropdown menu (set to 'Rewrite'), an 'Audio Method' dropdown menu (set to 'None'), and a 'Save' button.
- File Browser:** Contains a '< Please click file name to add or remove list >' prompt, 'Open All File' and 'Close All File' buttons, and a file list for 'Disk C:' (highlighted with a '2'). The file list includes: 02.Spring Rain.mp3, Black Star.wav, Im yours.wav, Chime 3 notes.WAV, Test SP.wav, Alarm DE.wav, and rec.
- Play List Setting:** Contains a 'Play List Name' input field (set to 'New Play List (Play List Use)'), a 'Repeat Count' input field (set to '0:No Repeat; 65535:Forever'), a list of files (highlighted with a '3') including 'c:/02.Spring Rain.mp3', 'c:/Black Star.wav', and 'c:/Im yours.wav', and buttons for 'New List', 'Remove', and 'Save to Internal'.
- Setting:** Contains a 'Play Mode' dropdown menu (set to 'Repeat All', highlighted with a '4') and a 'Play Target' dropdown menu (set to 'Internal'), with a 'Save' button.
- Disk Space:** Contains a 'C:\' section showing 'Total: 80 MB' and 'Free: 64 MB', with a 'Format' button.
- Internal Play List:** Contains a table with columns 'PLAYLIST' and 'FUNCTION' (highlighted with a '5'). The table lists: MSG, FXO, schedu, and test (checked). Each row has an 'Edit / Delete' link. A 'Save' button is at the bottom.
- Play List Information:** Contains a 'Please select a playlist...' prompt.

1. Upload an audio file.
 - Size: less than 10MB
 - Audio codec: WAV, MP3, G.711 and G.722.
2. To create a new playlist, add the files by clicking the listed audio files in File Browser tab.
3. Click [New List] button to finish the playlist setting.
4. Choose the play mode (play once/repeat/random) and play target setting (internal/external/detect by external). For example, set [Repeat All] mode for BGM playing.
5. Select one or multiple playlists as the BGM source.

6. Go to [Audio Matrix] page, and set the priority of MESSAGE Input higher than MIC IN, LINE IN, MONITOR, NET1 and NET2.

7. Then click [Save] button.

Setup1 Setup2 Update Status About Logout									
Basic Setting		Device	Function Libraries	Audio Matrix	I/O Control	Media Setting	Output Volume		
INPUT	MODE	PRIORITY	Mute	LINE OUT (AMP OUT)			STREAM OUT		
				1(A)	2(B)	S/PDIF	OUT	IP ADDRESS	PORT
SIP	Mono	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A			
MIC IN	Mono	6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A	OFF	239.240.100.4	9012
LINE IN	Mono	6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A	OFF	239.240.100.4	9012
MESSAGE	Auto	3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A	OFF	239.240.100.4	9012
MONITOR	Mono	2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A			
NET1	Auto	6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A			
NET2	Auto	6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A			

8. If the music/message playlist has been played successfully, the information of 2 CH Line Out will display as MESSAGE on the top right corner.

Version 3.0.3.1, 2000/01/06 19:24:53
TERRA-FDX, FDX_118@192.168.101.118
OUT-1: MESSAGE / OUT-2: MESSAGE

6.11.6 Calibrate the RAC and Push Button

❖ Calibrate RAC

1. Connect the RAC-5/RAC-8 to your Terracom device, make sure which pin is short with GND-pin. For example here we use IN1 which means logic input channel 1.
2. Click the [CB Control Calibrate] button at [I/O Control] page.

Control Calibrate

Analog Input CONTROL IN1
Controller Minimum

Calibrate

Control Calibration

Control Input CONTROL IN1
Controller Maximum

Calibrate

3. Switch the knob of RAC-5/RAC-8 to the channel 1 and click [Calibrate] button for receiving the [Minimum] data.
4. Switch the knob of RAC to the channel 5/channel 8 and click [Calibrate] button again for receiving the [Maximum] data.
5. Then switch each knob of RAC-5/RAC-8 again for receiving the calibration (from CH1~5 or from CH1~8). The data will automatically be recorded.
6. After all calibration (from CH1~5 or from CH1~8) is done, go back to "Status > Control Calibration" page and check if the values are correct. If they're too close or overlap with other level value, please switch to Manual mode and set the level value manually. Please refer to [Control Calibrate](#) to manually set the correct level values.

❖ Calibrate the Push Button (Logic Input)

1. Connect the push button to your Terracom device, make sure which pin is short with GND-pin. For example here, we use IN1 (short G-pin and 1-pin).
2. Click [CB Calibrate] at the I/O Control page, a pop-up window will appear as the picture below.

Control Calibrate

Analog Input	CONTROL IN1 ▼
Controller	Minimum ▼

Calibrate

3. Open the drop down list, select "Minimum", press the button and click [Calibrate].
4. Open the drop down list, select "Maximum", release the button and click [Calibrate].
5. After calibration (down and up button) is done, go back to "Status > Control Calibration" page and check if the values are correct. If they're too close or overlap with other level value, please switch to Manual mode and set the level value manually. Please refer to [Control Calibrate](#)^[103] to manually set the correct level values.

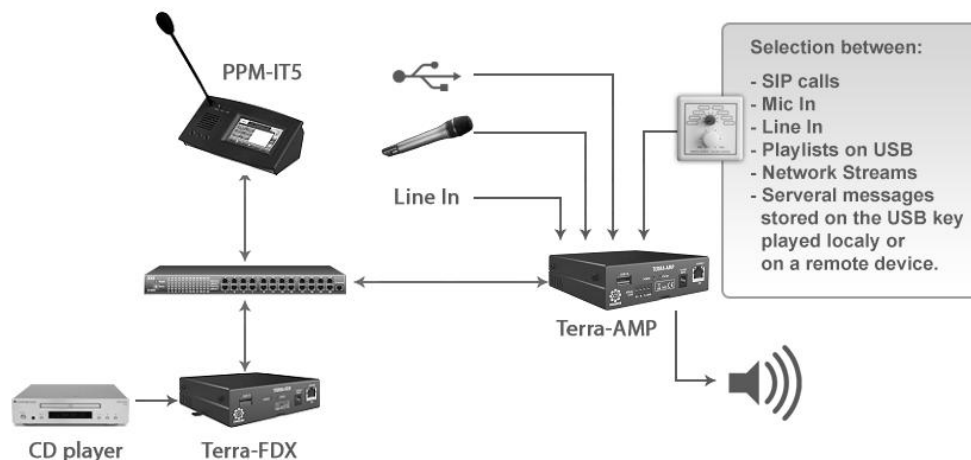
❖ Calibrate an Analog Knob

1. The first 2 steps are the same as calibrating a push button.
2. Open the drop down list, select "Maximum", turn up the knob to max. volume and click [Calibrate].
3. Open the drop down list, select "Minimum", turn down the knob to min. volume and click [Calibrate].
4. After the calibration is done, go back to "Status > Control Calibration" page and check if the values are in the correct range. If they're too close or overlap with other level value, please switch to Manual mode and set the level value manually. Please refer to [Control Calibrate](#)^[103] to manually set the correct level values.

6.11.6.1 Hotel Application

❖ How to use the RAC for music/source selection and how to make an announcement.

From the picture below, the TERRA-AMP is located in each hotel room which is connected to a wall-mounted RAC for source selection, and makes the announcement using the PPM-IT5 console. After the wiring connection between the Terracom devices and RAC are finished, go to the Terracom web interface.

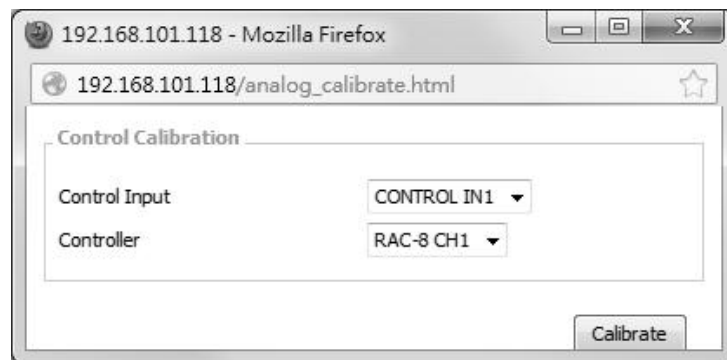


1. Go to the web interface of TERRA-AMP to set the RAC and calibrate both channel selectors and the analog knob for volume control.

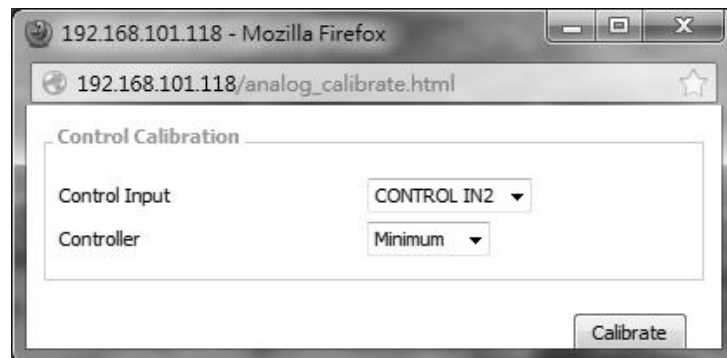
- Go to "Setup1 > I/O Control" and set the controller to the correct control input. Here we have assigned the Channel Select to IN1 and Volume Control to IN2.

Basic Setting Device Function Libraries Audio Matrix I/O Control Media Setting Output Volume							
Local Control							
INPUT	CONTROLLER	POSITION	FUNCTION	MODE	SECURITY	SOURCE	TARGET
IN1	RAC-8		Channel Select	Intercom	<input type="checkbox"/>		CB
IN2	RAC-Analog		Volume Control	Intercom	<input type="checkbox"/>		CB
IN3	Logic		Call Button	Intercom	<input type="checkbox"/>	MIC IN Device IT521	CB

- Click the "CB" and a control input's calibration window will pop-up.
 - How to calibrate a channel selection on RAC is mentioned in the previous chapter, see [Calibrate the RAC and Push Button](#) chapter.



- Similar to calibrate a button, an analog knob has the Min/Max value. Turn up to the max volume on RAC and click [Calibrate] button and turn down to the min volume on RAC and click [Calibrate] button. After all calibration is done, check the values at "Status > Control Calibration" to confirm the consoles are working.



2. The next part is to assign the input source priorities to RAC (except the SIP priority).

- Go to the Audio Matrix page and set as the picture below, the number of channel is depending on the steps the RAC unit.
- Open the drop-down list of "Select" under the "Control Options" and choose IN1 where the RAC is connected to. Next, change the volume from Fix to IN2 as well.

Now the priority of all the audio source and its volume are assigned to the RAC control as shown in the picture below.

INPUT	MODE	PRIORITY	Mute	LINE OUT (AMP OUT)			STREAM OUT			CONTROL OPTIONS					
				1(A)	2(B)	S/PDIF	OUT	IP ADDRESS	PORT	SELECT	INPUT VOLUME		BUFFER		
SIP	Mono	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A						Fix	36	RT	
MIC IN	Mono	6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A	OFF	239.240.100.1	9012			IN1	1	IN2	32
LINE IN	Mono	6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A	OFF	239.240.100.1	9012			IN1	2	IN2	32
MESSAGE	Auto	6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A	OFF	239.240.100.1	9012			IN1	3	IN2	32
MONITOR	Mono	6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A						IN2	32	RT	
NET1	Auto	6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A						IN2	32	RT	
NET2	Auto	6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A						IN2	32	RT	

N/W IN	MODE	SHOUTCAST/ICECAST		STREAM MULTICAST					
		URL		IGMP IP	PORT	NET1	NET2		
SOURCE 1	SHOUTcast/icecast	http://192.168.100.1:9988				IN1	4	Fix	--
SOURCE 2	Stream Multicast			239.240.100.1	9012	IN1	5	Fix	--
SOURCE 3	Stream Multicast			239.240.100.1	9012	IN1	6	Fix	--
SOURCE 4	Stream Multicast			239.240.100.1	9012	IN1	7	Fix	--
SOURCE 5	Stream Multicast			239.240.100.1	9012	IN1	8	Fix	--
SOURCE 6	Stream Multicast			239.240.100.1	9012	IN1	1	Fix	--
SOURCE 7	Stream Multicast			239.240.100.1	9012	IN1	1	Fix	--
SOURCE 8	Stream Multicast			239.240.100.1	9012	IN1	1	Fix	--

* Port 8000~9000 has been used by system, **DO NOT** use these ports on your design.

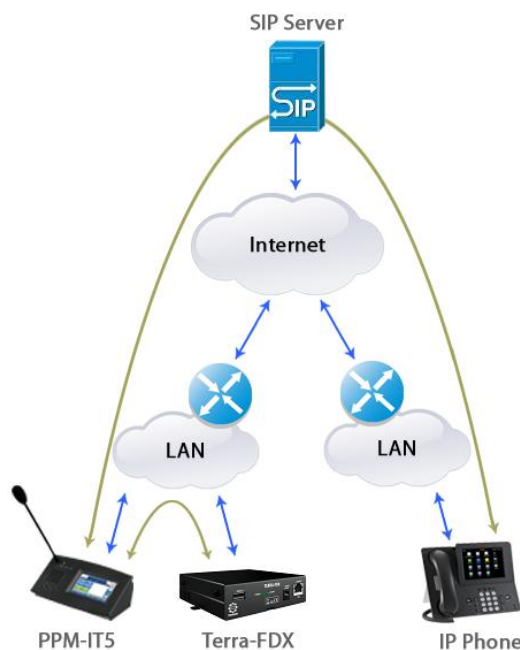


Always set the volume of SIP to "FIX" and to be sufficient for the safety requirements.

7 Tools

7.1 SIP Server (Intercom)

Use PPM-IT5 to call an IP phone over internet by using a SIP Server. The following guide how to setup the Server, IP phone and PPM-IT5.



1. The SIP server will redirect the RTP stream directly, here we use the Asterisk VOIP server.

- **User Extension:** The user name is required in PPM-IT5's web setting page.
- **Display Name:** Set the display name.
- **Secret:** Set the password which is required in PPM-IT5's setting page.
- **Canreinvite:** Re-Invite the policy for this device.
- **nat:** Set "Yes" for both internal and external devices. If the device will always as an internal device, select "No".

2. Set the IP phone, here we use the Yealink IP Phone.

- Register Name: The extension number you want to associate with this IP phone will be required in PPM-IT5's web setting page later.
- User Name/Password: Set the registered user ID and password of the specific Terracom device.
- SIP Server: Set the IP address and port of SIP Sever. In this example, it's the Asterisk VOIP server.

Account		Account 1
Basic >>		
Register Status	Register Fail	
Account Active	<input checked="" type="radio"/> On <input type="radio"/> Off	
Label	1003	?
Display Name	1003	?
Register Name	1003	?
User Name	1003	?
Password	*****	?
SIP Server	111.252.72.157	Port: 5060 ?

- Go to the PPM-IT5 web interface to assign the SIP Server at "Setup1 > Basic Setting" and choose "Other" on Product Type at "Setup1 > Device > Edit".

- Set the SIP Server:
 - Firewall traversal Mode: Choose SIP Server.
 - Username/Password: Set the registered user ID and password of the specific Terracom device.
 - SIP Server IP: Set the IP address of SIP Sever.
 - SIP Port: Network port for SIP protocol, set 5060 by default.
 - RTP Port: Network port for RTP protocol, set 6912 by default.

SIP	
Transfer Protocol	<input type="radio"/> TCP <input checked="" type="radio"/> UDP
Firewall Traversal Mode	<input checked="" type="radio"/> SIP Server <input type="radio"/> TERRA Net
+ Username	IT5_215
+ Password	•
SIP Server IP	192.168.100.176
SIP Port	5060
RTP Port	6912

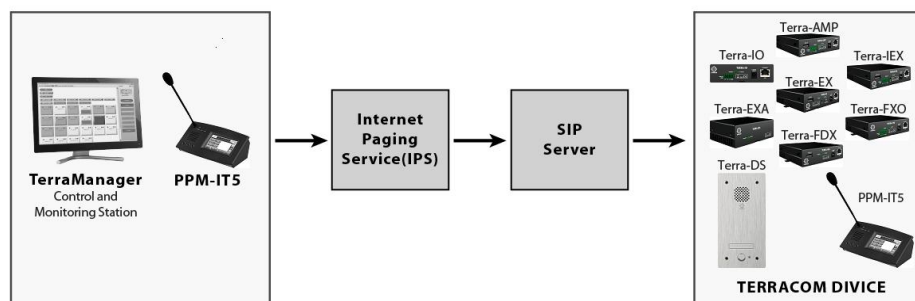
- Add the device into Device:
 - Name: The extension number of IP phone.
 - Product: Choose "Other" and enter the product type, here we use "IP-Phone".
 - URI: The URI of the IP phone.
 - Zone: Choose 1.

Setup1		Setup2	Update	Status	About	Logout
Basic Setting	Device	Function Libraries	Audio Matrix	Machine Windows	Media Setting	
Edit Device						
Device Name	1003					
Product Type	Other					
URI	1003@111.252.83.160:5060					
Zone	1					

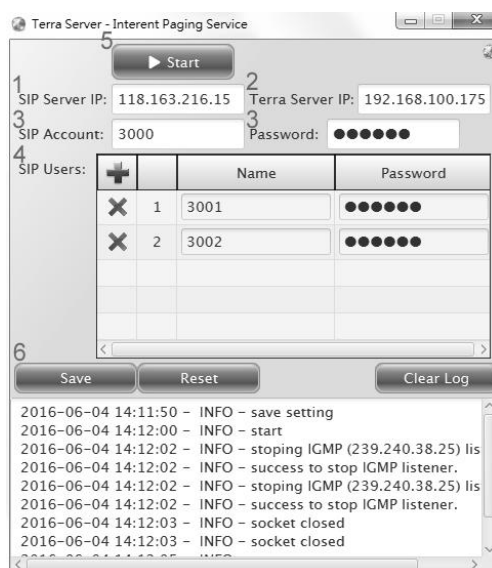
- Go to the Main Window and add a Device button to get the function going with a click of mouse.

7.2 Internet Paging Server (IPS)


Support to paging to Terracom device via TerraServer-Internet Paging Server (IPS) software.



❖ Control Window



1. SIP Server IP: Set the IP address of SIP Sever.
2. TerraServer IP: Set the IP address of Internet Paging Server (IPS).
3. SIP Account/SIP Password: Set the SIP account and password used for IPS.
4. SIP Users: Set the registered user ID and password of your Terracom device for paging.

 Users need to create the [SIP Account] and [SIP Users] from SIP Server first.

5. Start: Click to activate the IPS software.
6. Save/Reset: Click to save/reset the settings. Please note once the Reset button will clear all the data.

❖ TERRACOM Web Browser

SIP

Transfer Protocol: ☐ TCP ☒ UDP

Firewall Traversal Mode: ☒ SIP Server ☐ TERRA Net

+ Username: 3001

+ Password: ••••••

SIP Server IP: 118.163.216.15

Identification Target: 3000

SIP Port: 5060

RTP Port: 6912

Online Identification Way: ☐ URI ☒ IP Address

Identification Send Interval: 2 s

Go to Setup1 > Basic Setting > SIP^[52] on TERRACOM web browser and set the IPS settings.

- Firewall Traversal Mode: Choose [SIP Server] option.
 - Username/Password: Set the registered user ID and password of the specific Terracom device for paging.
 - SIP Server IP: Set the IP address of SIP Sever.
 - Identification Target: Set the SIP Account used for IPS.
- SIP Port: Network port for SIP protocol, set 5060 by default.
- RTP Port: Network port for RTP protocol, set 6912 by default.
- Online Identification Way: Choose [URI] option as the identification way to know whether the Terracom device is online/offline.
- Identification Send Interval: The interval of sending the IPS signal.

❖ Using the TerraManager/PPM-IT5 to paging via Internet Paging Server (IPS) software and SIP server:

Source	IPS	SIP Server	Local Net Paging	Local Net Intercom	VPN Paging	VPN Intercom	Internet Paging	Internet Intercom
TerraManager	No	No	V	V	X	X	X	X
TerraManager	Yes	No	V	V	V	X	X	X
TerraManager	No	Yes	V	V	X	X	X	X
TerraManager	Yes	Yes	V	V	V	X	V	X
PPM-IT5	No	No	V	V	X	X	X	X
PPM-IT5	Yes	No	V	V	V	V	X	X
PPM-IT5	No	Yes	V	V	X	V	X	V
PPM-IT5	Yes	Yes	V	V	V	V	V	V

- V: TerraManager/PPM-IT5 supported
- X: TerraManager/PPM-IT5 unsupported

7.3 Icecast

This chapter shows how to use Icecast server, Edcast and Winamp to stream audio to Terracom.

❖ Program Installation

- Icecast Server:

You can find the newest version on [icecast website](http://icecast.org). Here we use Icecast 2 for Windows (32bit) and follow the steps of setup wizard to install.



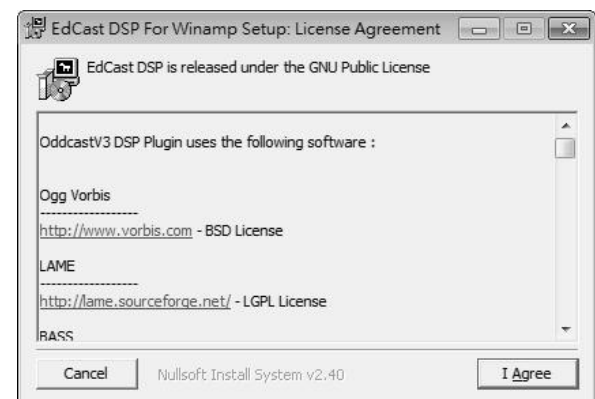
- Winamp Media Player:

You can find the newest version on [Winamp website](http://winamp.com), follow the steps to install.

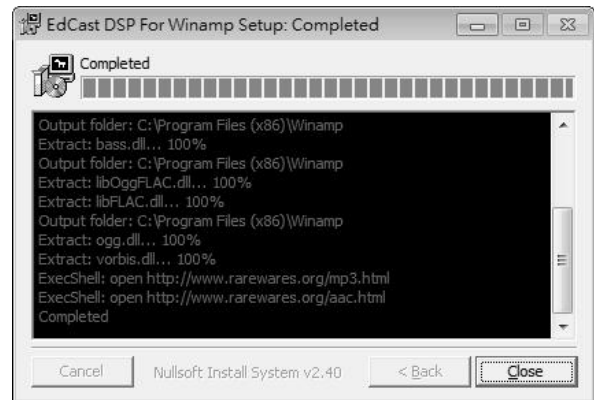
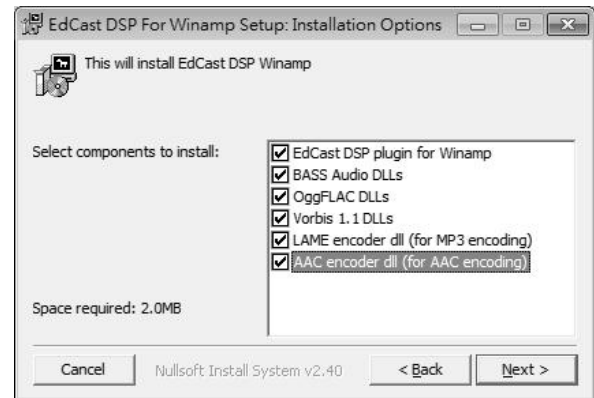


- EdCast:

EdCast supports 48k sample rate and it's exactly what we need for Terracom. Here we use EdCast DSP for Winamp.

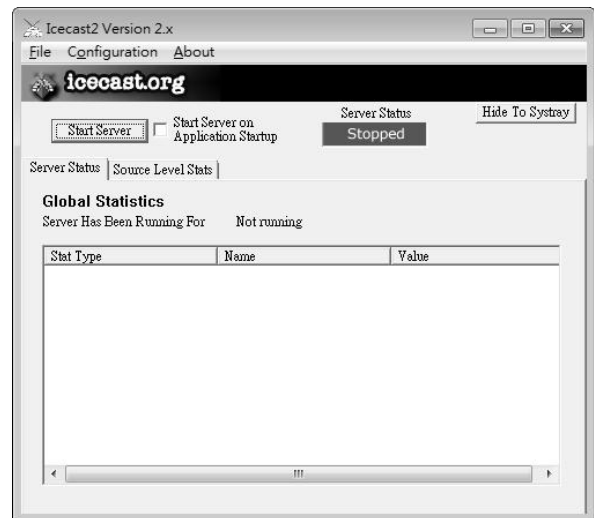


If you want to stream MP3, tick the checkbox of LAME encoder dll (for MP3 recording).



❖ Setting the Icecast Server:

After installing the Icecast, double click its icon to open the server.

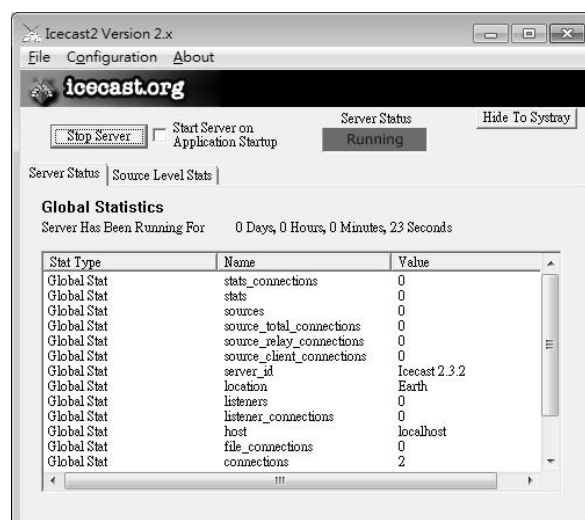


To set the port and password, click the "Configuration > Edit Configuration" to open a text file.

- Find the line `<port>9866</port>` and choose a port which should be an even number and NOT in the range 8000~9000.
- Find the text between the section `<authentication>ID` and `password</authentication>`, this will be required in EdCast's setting fields.

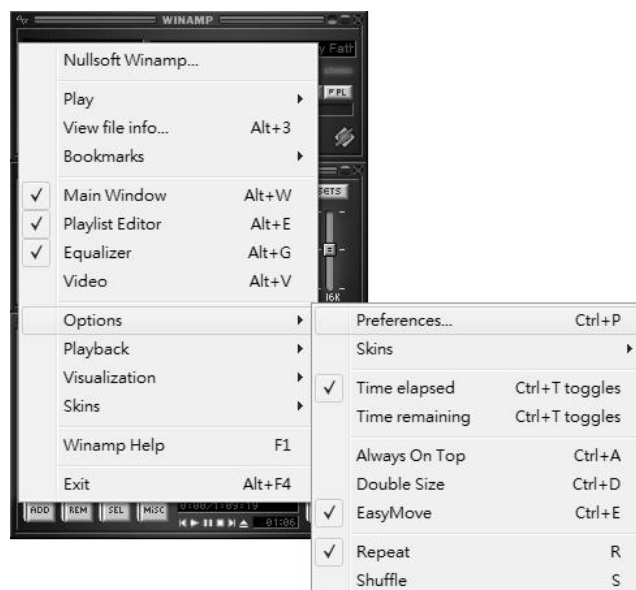
Once the setting is done, click the [Start Server] button, the server will start running as shown in the picture on the right.

- You can click the [Hide To Systray] button to hide the window.

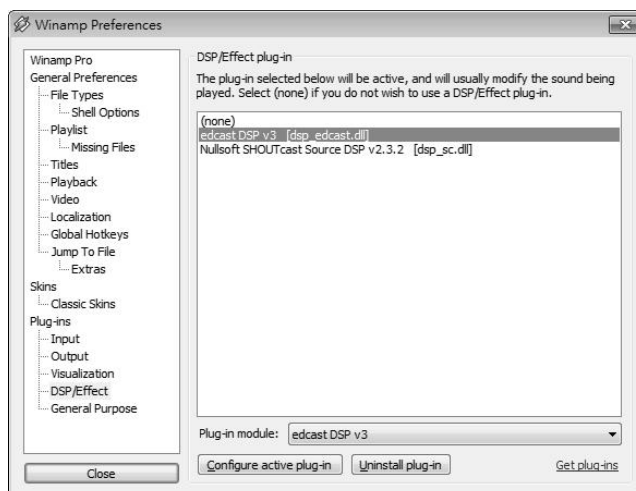


❖ Set Winamp Media Player and EdCast plug-in:

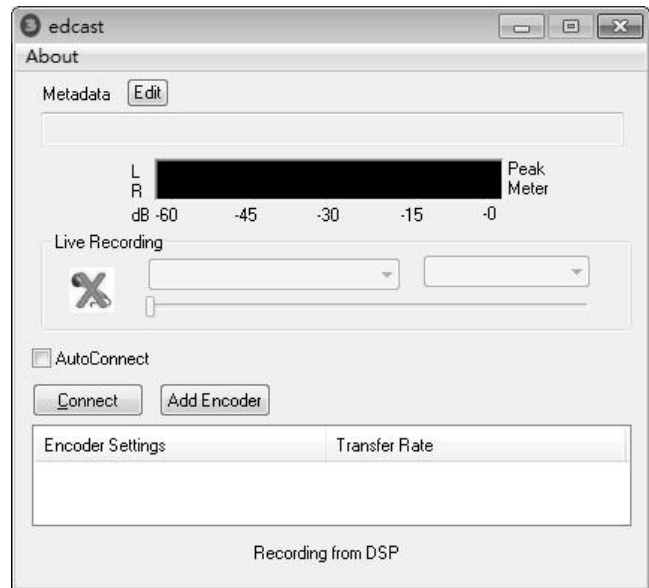
- Assign the DSP plug-in of Winamp media player and set the parameters of EdCast.
- Right click on the Winamp panel and choose "Options > Preferences"




❖ Once the Winamp Preference window opens, choose the item "edcast DSP v3 [dsp_edcast.dll]" in the "DSP/Effect" under the "Plug-ins" section.



Now double click the item to open the EdCast's setting window, it appears as shown in the picture on the right.



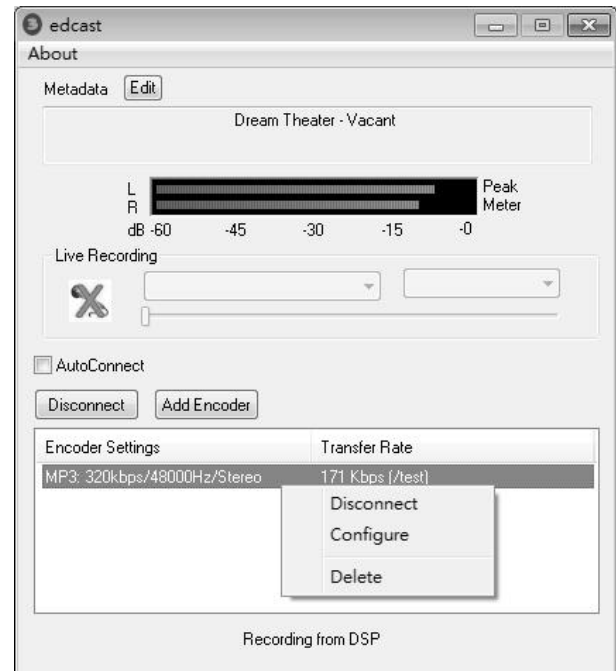
- Click the [Add Encoder] button and set the encoder, only the Basic Setting matters the stream.
 - Samplerate: The sample rate must be 48k or the Terracom would not play the files.
 - Encoder type: Choose MP3. Here we use the MP3 Lame encoder found on a website.

 Copy the file into the Winamp program directory.

- Server IP: Use the default value "localhost" if you're running the server on your PC.
- Server Port: Set the port in the Icecast server's configuration window.
- Encoder password: Set the password in the Icecast server's configuration window.
- Mountpoint: This item is required for icecast, so we assign a "/test" for it.



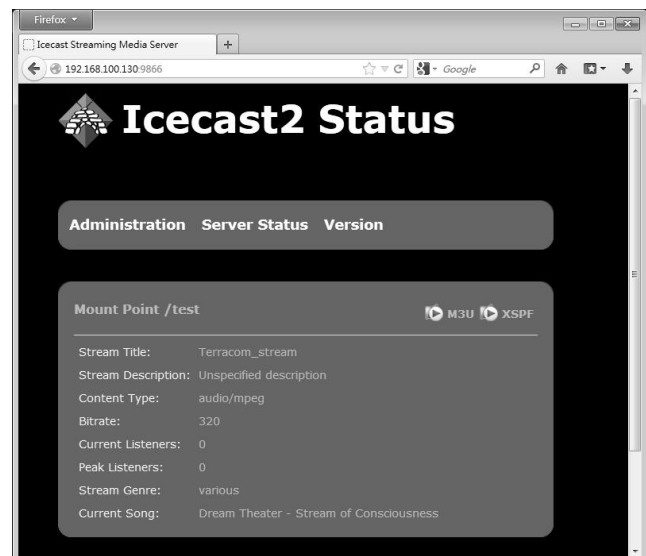
- Click the [Connect] button to start the encoder, the stream will start after few seconds.
- You can right-click to disconnect, configure or delete the encoder as shown in the picture on the right.



❖ Icecast Web Interface:

You can direct your browser to <http://192.168.xxx.xxx:9866/> (replace 192.168.xxx.xxx with your own IP address when it's localhost) and browse through the web interface.

The Current Song showing the dynamic changes with your Winamp player.



❖ Receiving stream from Icecast Server:

Go to Terracom's "Audio Matrix" webpage and set as shown in the picture below, remember to add the "Mountpoint" which is set in the EdCast plug-in setting window.

In the "Setup > Basic Setting" page as mentioned before, you can set the "Stream Buffer" time.

N/W IN	MODE	SHOUTCAST/ICECAST	STREAM MULTICAST	
		URL	IGMP IP	PORT
SOURCE 1	SHOUTcast/icecast ▼	http://192.168.100.130:9866/test		IN1 ▼ 4 ▼
SOURCE 2	SHOUTcast/icecast ▼	http://192.168.100.61:9878/jms		IN1 ▼ 5 ▼
SOURCE 3	Stream Multicast ▼		239.240.100.2	4444 IN1 ▼ 6 ▼
SOURCE 4	Stream Multicast ▼		239.240.100.3	4444 IN1 ▼ 7 ▼

8 Maintenance and Troubleshooting

This chapter will help you diagnose and troubleshoot common problems. If none of these solutions work, please contact your Terracom dealer.

❖ Forget the IP address of your Terracom device and cannot connect to the web browser.

Short-circuit (close) the contact input 1-pin and G-pin, the IP address will be read out via the connected speakers.

❖ Device Cannot connect to Network

1. Check if the Ethernet cable has loosen or not connected, the LED of Ethernet connector shall light up.
2. Check if the Status LED on the front panel has flashed four times.

❖ Update Fails

1. Proceed the Update action again.
2. Remove all the settings (compatible problem).
 - Function Libraries.
 - Control Input.
 - Recording.
3. Enable the "Factory Setting (CIN2)" at the "Basic Setting > SIP" page and perform the restoration.
 - Reverse your configuration.
 - If the IP address is lost, try the factory IP address: 192.168.102.1 to open the web interface.

❖ Can't Access the USB

1. Make sure the file system on the USB is FAT32.
2. If the USB driver has not been safely removed, there might be a file with .db-journal extension created. Delete that file and insert the USB key to the Terracom device again.

9 Technical Data

9.1 TERRA-EX/TERRA-EXU

❖ Electrical

Item	Voltage	Max Power Consumption	Connect Type
PoE	>19VDC	2W	RJ45
24VDC transformer			DC Jack

❖ Audio Characteristics-Line Out

- EIN @ gain 0 dBu = -83 dBrA
- THD+R (20Hz~20kHz)@ gain 0dBu , input 0 dBu = 0.09%
- FR(20Hz ~ 20kHz)@ gain 0dBu , input 0 dBu = 1 dBu
- Max Line out level @ gain 0dub ,input 0 dbu = 4.9dBu (1.38V)

❖ Logic Input

Item	Condition	Min.	Typ.	Max.
Logical Input	Low Active	-	-	1VDC
	High Active	4VDC	-	

❖ Audio Characteristics

Item	Condition	Min.	Typ.	Max.	Comment
Output Level (Headphone out)	20Hz ~ 20kHz	-	-	+5dBu	Electrically Balanced
Output Level (Audio Line out)	20Hz ~ 20kHz	-	-	+5dBu	Electrically Balanced
Input Impedance (input mix attenuation = 0 dB)	20Hz ~ 20kHz	-	20k Ohm	-	Electrically Balanced
Output Impedance	20Hz ~ 20kHz	-	50 Ohm	-	Electrically Balanced
Resolution	-	-	16Bit		-
Sensitivity	-	-59dBu	-	0dBu	-
Sampling Rate	-	-	48kHz	-	-
EIN	20Hz ~ 20kHz	-	<-84dBrA	-	-
T.H.D	20Hz~20kHz, @ gain 0dBu	-	-	<0.5% <0.02 %	<0.5% @<20~20kHz <0.02% @ 1kHz

❖ Mechanical & Environmental

Dimensions (W x L x H):	110mm x 104mm x 32mm
Weight:	0.4kg
Colour:	RAL7016
Operating temperature:	-5°C~55°C (23°F~131°F)

Storage temperature:	-40 °C~+70 °C (-40 °F~+158 °F)
Relative humidity:	0% to 70% (non-condensing)

9.2 TERRA-EXA

❖ Electrical

Item	Voltage	Max Power Consumption	Connect Type
24VDC transformer	>19VDC	48W	DC Jack

- Max AMP OUT RMS @ gain 29 dBu, input -6 dbu, 8Ω-load= 15W (11.1Vrms)
- Max AMP OUT @ gain 29 dBu, input -4.7 dbu, 8Ω-load= 20W (12.8Vrms)
- Rated loaded capacitance: 680 nf

❖ Audio Characteristics-AMP Out

- EIN @ gain 29 dBu, 8Ω-load = -81 dBrA
- THD+R (20Hz~20kHz) @ gain 29dBu, input -7.5 dBu, 8Ω-load, AMP OUT is 10W < 1%
- FR (20Hz ~ 20kHz) @ gain 29 dBu, input -7.5 dBu, 8Ω-load, AMP OUT is 10W: +/- 1dBu

❖ Logic Input

Item	Condition	Min.	Typ.	Max.
Logical Input	Low Active	-	-	1VDC
	High Active	4VDC	-	

❖ Audio Characteristics

Item	Condition	Min.	Typ.	Max.	Comment
Resolution	-	-	16Bit	-	-
Sampling Rate	-	-	48kHz	-	-
EIN (Input Noise)	20Hz ~ 20kHz	-	<- 80dBrA	-	-
T.H.D	20Hz~20kHz, @ 7.5W	-	-	<1%	Half- power@1kHz 20~20kHz
	20Hz~20kHz, @15W	-	-	<1%	Full- power@1kHz 20~20kHz
Frequency Response	20Hz~20kHz, @7.5W	>- 3dBu	-	< +3 dBu	Half- power@1kHz 20~20kHz
	20Hz~20kHz, @15W	>- 3dBu	-	< +3 dBu	Full-power @1kHz 20~20kHz

❖ Mechanical & Environmental

Dimensions (W x L x H):	102mm x 110mm x 32mm
Weight:	0.45kg
Colour:	RAL7016
Operating temperature:	-5°C~55°C (23°F~131°F)

Storage temperature:	-40 °C~+70 °C (-40 °F~+158 °F)
Relative humidity:	0% to 70% (non-condensing)

❖ Support paging by using ATEIS IDA8, ECS, LAP G2T, UAP G2 processors.

9.3 TERRA-IEX/TERRA-IEXU

❖ Electrical

Item	Voltage	Max Power Consumption	Connect Type
PoE	>19VDC	3.12W	RJ45
24VDC transformer			DC Jack

❖ Audio Characteristics

Item	LINE IN To Line out	LINE IN To SPDIF out	LINE IN To headphone	SPDIF IN To headphone	SPDIF IN To LINE Out
EIN @ gain 0 dBu	-83 dBra	-83 dBra	-83 dBra	-83 dBra	-83 dBra
THD+R (20Hz~20KHz)@ gain 0dBu input 0 dBu	0.09%	0.23%	0.10%	0.10%	0.10%
FR(20Hz ~ 20KHz) @ gain 0dBu input 0 dBu	1 dBu	-	1.6 dBu	0.3 dBu	1.3 dBu
FR(20Hz ~ 20KHz) @ gain 20dBu input -20 dBu	-	1 dBu	-	-	-

- Max Line in input level @ gain 0 dBu = 4.9 dBu
- Max Line out level@ gain 0dub ,input 0 dBu = 4.9dBu (1.38V)

❖ Logic Input

Item	Condition	Min.	Typ.	Max.
Logical Input	Low Active	-	-	1VDC
	High Active	4VDC	-	

❖ Audio Characteristics

Item	Condition	Min.	Typ.	Max.
Sampling Rate	-	-	48kHz	-
Serial Clock Frequency	20Hz ~ 20kHz	-	3.08Hz	-
Phantom Power	2.5V, 0.3mA			

❖ Memory:

Type	Memory size	Type	TOTAL Memory size
SDRAM	64M Byte	-	64M Byte
FLASH	128M Byte	-	128M Byte
SPI flash	4M BIT	-	4M Bit

❖ Mechanical & Environmental

Dimensions (W x L x H):	110mm x 104mm x 32mm
Weight:	0.4kg
Colour:	RAL7016
Operating temperature:	-5°C~55°C (23°F~131°F)
Storage temperature:	-40 °C~+70 °C (-40 °F~+158 °F)
Relative humidity:	0% to 70% (non-condensing)

❖ Support paging by using ATEİS IDA8, ECS, LAP G2T, UAP G2 processors.

9.4 TERRA-AMP

❖ Electrical:

Item	Voltage	Max Power Consumption	Connect Type
PoE	>19VDC	12W	RJ45
24VDC transformer		28.8W (max: 30W)	DC Jack

- Rated loaded capacitance: 680 nf

❖ Audio Characteristics

- Audio inputs: maximum level + 5 dB, bandwidth 20 Hz - 20 kHz
- Audio outputs: maximum level + 5 dB, bandwidth 20 Hz - 20 kHz

❖ Logic Input

Item	Condition	Min.	Typ.	Max.
Logical Input	Low Active	-	-	1VDC
	High Active	4VDC	-	

❖ Mechanical & Environmental

Dimensions (W x L x H):	110mm x 104mm x 32mm
Weight:	0.44kg
Colour:	RAL7016
Operating temperature:	-5°C~55°C (23°F~131°F)
Storage temperature:	-40 °C~+70 °C (-40 °F~+158 °F)
Relative humidity:	0% to 70% (non-condensing)

❖ Support paging by using ATEİS IDA8, ECS, LAP G2T, UAP G2 processors.

9.5 TERRA-FDX

❖ Electrical

Item	Voltage	Max Power Consumption	Connect Type
PoE	>19VDC	2.66	RJ45
24VDC transformer		2.64 W	DC Jack

❖ Audio Characteristics

- EIN @ gain 0 dBu = -83 dBrA
- THD+R (20Hz~20kHz)@ gain 0dBu, input 0 dBu < 0.1%
- FR(20Hz ~ 20kHz)@ gain 0dBu, input 0 dBu: +/- 1 dBu
- Audio inputs: maximum level + 5 dB, bandwidth 20 Hz - 20 kHz
- Audio outputs: maximum level + 5 dB, bandwidth 20 Hz - 20 kHz

- Max Line in input level @ gain 0 dbu = 4.6 dBu
- Max Line out level @ gain 0dbu ,input 0 dBu = 4.6dBu (1.31Vrms)
- Phantom Power: 2.5V, 0.3mA

❖ Logic Input

Item	Condition	Min.	Typ.	Max.
Logical Input	Low Active	-	-	1VDC
	High Active	4VDC	-	

❖ Mechanical & Environmental

Dimensions (W x L x H):	110mm x 104mm x 32mm
Weight:	0.4kg
Colour:	RAL7016
Operating temperature:	-5°C~55°C (23°F~131°F)
Storage temperature:	-40 °C~+70 °C (-40 °F~+158 °F)
Relative humidity:	0% to 70% (non-condensing)

❖ Support paging by using ATEIS IDA8, ECS, LAP G2T, UAP G2 processors.

9.6 TERRA-FXO

❖ Electrical

Item	Voltage	Max Power Consumption	Connect Type
PoE	>19VDC	2.66 W	RJ45
24VDC transformer		2.64 W	DC Jack

❖ Sample Rate

Parameter	Symbol	Min	Typ.	Max.
Sample Rate	Fs (LRCK)	8 kHz	-	16 kHz
PCLK Input Frequency	PCLK (SCLK)	256 kHz	-	8192 kHz

❖ Memory

Type	Memory size	Type	TOTAL Memory size
SDRAM	32M Byte	-	32M Byte
FLASH	128M Byte	-	128M Byte
SPI flash	4M BIT	-	4M Bit

❖ Mechanical & Environmental

Dimensions (W x L x H):	110mm x 104mm x 32mm
Weight:	0.43kg
Colour:	RAL7016
Operating temperature:	-5°C~55°C (23°F~131°F)

Storage temperature:	-40 °C~+70 °C (-40 °F~+158 °F)
Relative humidity:	0% to 70% (non-condensing)

❖ Support paging by using ATEİS IDA8, ECS, LAP G2T, UAP G2 processors.

9.7 TERRA-4IO/TERRA-8IO

❖ Electrical

Item	Voltage	Max Power Consumption	Connect Type
PoE	>19VDC	2.88 W	RJ45
24VDC transformer			DC Jack

❖ Logic Input

Item	Condition	Min.	Typ.	Max.
Logical Input	Low Active	-	-	1VDC
	High Active	4VDC	-	

❖ Memory

Type	Memory size	Type	TOTAL Memory size
SDRAM	32M Byte	IS42S83200D-7TL	64M Byte
FLASH	128M Byte	HY27UF081G2A	128M Byte
SPI flash	4M BIT	W25X40VSSIG	4M Bit

❖ Mechanical & Environmental

Dimensions (W x L x H):	110mm x 104mm x 32mm
Weight:	0.42kg
Colour:	RAL7016
Operating temperature:	-5°C~55°C (23°F~131°F)
Storage temperature:	-40 °C~+70 °C (-40 °F~+158 °F)
Relative humidity:	0% to 70% (non-condensing)

9.8 TERRA-DS

❖ Electrical

Item	Voltage	Max Power Consumption	Connect Type
PoE	>19VDC	3.12 W	RJ45
24VDC transformer			2Pin EURO Block@3.81mm

❖ Audio Characteristics

Item	Condition	Min.	Typ.	Max.
EIN	150Ohm input	-	-68 dBrA	-
THD+R	20Hz~20kHz, 0dBu input	-	0.05%	1.00%
Frequency Response	20Hz ~ 20kHz, 0dBu input	-0.5 dBu	-	2.5dBu

Item	Condition	Min.	Typ.	Max.
Phantom Power	2.5V, 1.4mA			

❖ Memory

Type	Memory size	Type	TOTAL Memory size
SDRAM	64M Byte	-	64M Byte
FLASH	128M Byte	-	128M Byte
SPI flash	4M BIT	-	4M Bit

❖ Mechanical & Environmental

Dimensions (W x D x H):	110mm x 43mm x 220mm (with steel plate and outer case)
Weight:	0.8kg
Colour:	RAL7016 and Hairline Steel
Operating temperature:	-10 to +55°C (14°F ~112°F)
Storage temperature:	-40 °C~+70 °C (-40 °F~+158 °F)
Relative humidity:	0% to 70% (non-condensing)

9.9 TERRA-K

❖ Electrical

Item	Voltage	Max Power Consumption	Connect Type
PoE	>19VDC	3.12 W	RJ45
24VDC transformer			2Pin EURO Block@3.81mm

❖ Analog Audio Specification

Item	Condition	Min.	Typ.	Max.
Sensitivity	-	0 dBu	20 dBu	-
Equivalent Input Noise	20 dB gain, 20~20kHz@150Ω	-	-80 dbra	-80 dBu
THD+N	20 dB gain, -20 dB input, 50Hz~7kHz	-	< 1%	-
Frequency Response	20 dB gain, -20 dB input, 50Hz~7KHz	-	1dBu	-
Sampling rate	8kHz	-	8KHz	-
Phantom power	2.5V, 1.4mA			

❖ Mechanical & Environmental

Dimensions (W x D x H):	135mm x 125mm x 350mm (with gooseneck mic)
Dimensions (W x D x H):	135mm x 125mm x 95mm
Weight:	0.8kg
Colour:	RAL7016

Operating temperature:	-10 to +55°C (14°F-112°F)
Storage temperature:	-40 °C~+70 °C (-40 °F~+158 °F)
Relative humidity:	0% to 70% (non-condensing)

9.10 PPM-IT5

❖ Electrical

Item	Voltage	Max Power Consumption	Connect Type
PoE	44~57VDC 250mA	6 W	RJ45
24VDC transformer	18~30VDC		DC Jack

❖ Microphone Output

Maximum level	-35dBu
THD	@ 1kHz < 0.03%
Bandwidth	@ -3dB = 20Hz ~ 20kHz
Target Output Level	0
Max Output Level	-54dBu ~ 6dBu
Phantom Power	2.5V, 1.4mA

❖ Front Panel Speaker

Impedance:	4Ohm
Maximum Power:	2 W @ 1kHz
THD:	< 1% @ 1kHz
Bandwidth:	50Hz ~ 8kHz @ -3dB

❖ Connection & Touch Panel

Maximum Cable Length	100m on Category 5 cable
Screen	Diagonal: 5" Resolution: 800 x 480

❖ Mechanical & Environmental

Dimensions (W x L x H):	250mm x 140mm x 80mm
Microphone Length:	275mm
Weight:	1.1kg
Colour:	RAL7016
Operating temperature:	-5°C~55°C (23°F~131°F)
Storage temperature:	-40 °C~+70 °C (-40 °F~+158 °F)
Relative humidity:	0% to 70% (non-condensing)

10 Safety (Certification)

CE/EMI	EN 55013/CISPR13
CE/EMS	EN 61000-4-2 (ESD)
UL EMC	
TUV (TERRA-K)	
IP44 (TERRA-K)	

11 Contact Information



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