DIGITAL ACOUSTICS

INT-IP-2Gang

Full Duplex IP Call Station
For TalkMaster/SIP Environments

Reference Manual

INT-IP-2Gang Front View

INT-IP-2Gang Back View

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Overview

The Digital Acoustics **INT-IP-2Gang** is a PoE powered IP Intercom Call Station that fits into a standard 2gang box that has a minimum clearance of 2” between the back of the enclosure and the back of the INT-IP-2Gang’s panel. The INT-IP-2Gang Call Station is designed to work with Digital Acoustic’s TalkMaster software suite and/or the SIP Protocol. It can be deployed in environments that require full or half duplex two-way audio:

Features:

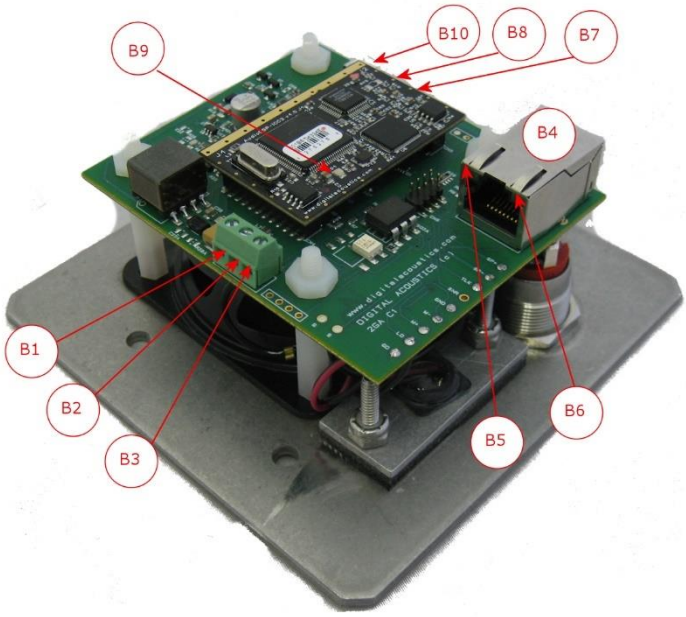
- Simple installation in existing 2-Gang electrical box with plaster ring
- Powered by either a PoE network switch or injector (802.3af)
- Supports DHCP or static IP Address assignment
- Integrated speaker and microphone protected by security screen
- Integrated vandal resistant Call button with visible Staus LED
- Integrated Relay for door/gate activation
- Speaker output up to 1 watt @ 8 Ohms
- Four stainless steel security screws (T-10) included
- Field upgradeable firmware

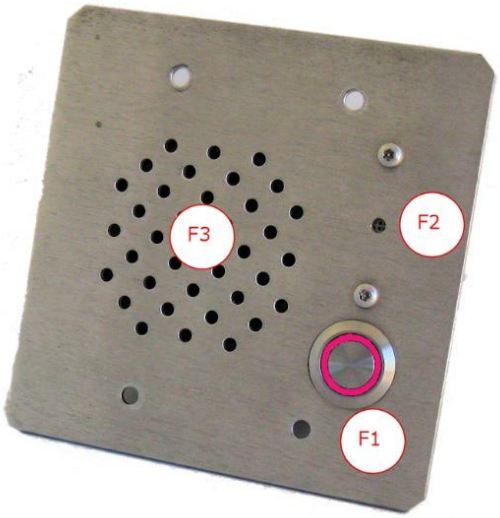
Specifications

Item	Specifications
Network Protocols	DHCP, HTTP, TCP, UDP/RTP, ICMP, IGMP Multicast, SIP
Network Interface	10/100 Ethernet (PoE – 802.3af required)
Command protocols	TalkMaster FOCUS and/or SIP
Audio Rate	64kbs
Audio Resolution	G.711 uLaw or 8-bit PCM
Audio Sample Rate	8K (Voice band), 22K (Background Music)
Audio Frequency	90-4kHz (Voice band), 90-11khz (Background Music)
Internal Amplifier	1 watt @ 8 Ohms
Humidity	10~90%
Power	PoE (802.3af). Requires 7.0 watts from PSE
Size	4.5” (115mm) x 4.5” (115mm) x 1.8” (46mm)

Connections and Controls

The following controls, connectors and LEDs for the INT-IP-2GANG CALL STATION:





Connector	Description	Notes
B1	Relay - Normally Open	Relay rated at 1 Amp at 60VDC or 120AC. Can be activated by TalkMaster Operator Software or via DTMF Sequence from a SIP Phone
B2	Relay - Common	
B3	Relay – Normally Closed	
B4	RJ-45 10/100 Ethernet	PoE – 10/100 Rj45 Connector. Requires 7 watts from PSE
B5	RJ45 Green LINK LED	Solid Green indicates network connection
B6	RJ45 Yellow READY LED	See table below
B7	Blue Power LED	Solid Blue indicates power is on
B8	Red Active LED	Flashes when audio is playing
B9	Blue Heart Beat LED	Normal Operation - Beats 1x per second
B10	Mini USB Connector	Debug Port
F1	Call Button with Integrated LED	Vandal resistant Push to Call button. Button LED tracks the READY LED
F2	Integrated Microphone	Water resistant omni direction electret microphone. Safety screen protection
F3	Integrated Speaker	8 Ohms speaker with waterproof cone. Safety screen protection

LED Status

Description	Call Button LED	RJ45 Yellow Ready	RJ45 Green Link
Normal operational mode. Intercom can communicate with its Server	On	On	On
Playing Audio	On	On	On
Microphone active (half duplex)	On	On	On
Attempting to connect to make a connection or unit has not been configured	Flashing 4x per second	Flashing 4x per second	On
Unit has just processed an Endpoint Discovery request or the **Relay** has been activated	Flashing 20x per second	Flashing 20x per second	On

Installation Instructions

The INT-IP-2GANG CALL STATION can be flush mounted into a standard 2-gang electrical box that has a minimum depth of 2”.

It can be also surface mounted in an enclosure such as the PNL-BB6 or PNL-BB7.

PNL-BB6 - Surface Mount Box

PNL-BB7 - Hooded Surface Mount Box

The INT-IP-2Gang circuit board has been conformal coated to prevent oxidation caused by moisture in outdoor installations. While the Speaker, Microphone and button are rated for outdoor use, the circuit board is NOT waterproof, so the unit should be protected from direct weather exposure. For best results:

- Install under an eave or use a hooded enclosure such as the PNL-BB7
- The button should be placed in the upper left-hand corner so the RJ45 connector faces down to minimize chance of moisture collecting and causing water damage
- Use a high-quality silicone sealant between the top and sides of the unit and the surface it is mounted to

The INT-IP-2Gang can be configured prior to or after installation. Consider configuring it before installation, especially if it will not be in the same subnet as the PC running the TalkMaster Administrator Console.

The **Relay** screw connectors **(B1, B2, B3)** provides a dry contact output from the INT-IP-2Gang suitable for activating equipment such as electronic door strikes. Normally Open (N/O) or Normally Closed (N/C) can be chosen. The **Relay** is rated for 1 Amp at 120 VAC / 30VDC.

- B1 is Normally Open
- B2 is Common
- B3 is Normally Closed

- Ensure that Relay Mode is properly configured for **Door/Relay Output** in Intercom's Configuration

The PoE RJ45 cable should come in from the back, top or bottom of the 2-gang box. After plugging in the cable, make sure the INT-IP-2Gang can be discovered using the TalkMaster Administrator software or that it connects to TalkMaster and/or a SIP Server. Then carefully position it into the box. Use the four security screws (T10) to secure the panel to the box.

Audio Options

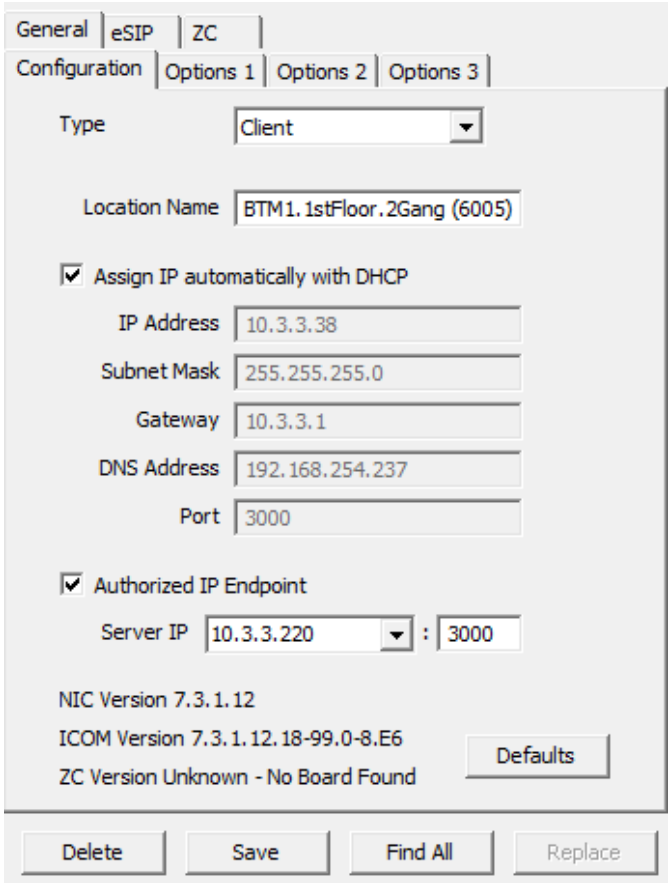
The INT-IP-2GANG CALL STATION will default to Full Duplex mode. The volume should be set to level 3 or 4 for best results. When configuring the unit, make sure to select the **INT-IP-2Gang** audio profile.

In louder environments, consider using half duplex mode. In half duplex mode, the customer at the INT-IP-2Gang presses the Call button to contact an Operator on either TalkMaster or a SIP Phone. In TalkMaster, the Operator can press the Space Bar to toggle between Talking and Listening. On a Phone, the Operator can press the 0 key to toggle between Talking and Listening. In both cases the customer at the INT-IP-2Gang operates in hands-free mode. Make sure to select the **Half-Duplex** audio profile when configuring the unit.

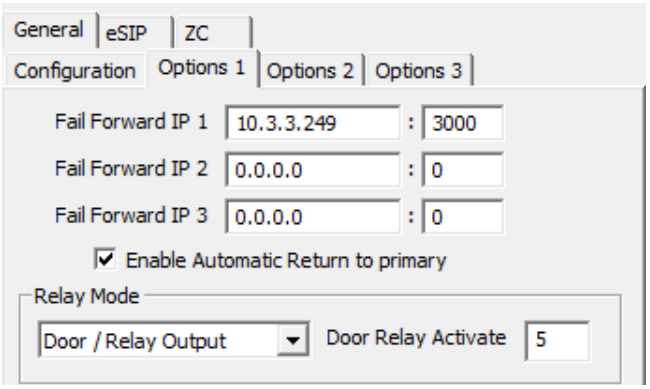
INT-IP-2Gang Configuration

Use the TalkMaster FOCUS Administrator Console to configure the INT-IP-2Gang (available from the **Software/Firmware Downloads** page on www.digitalacoustics.com). The INT-IP-2Gang must be powered on and connected to the same network subnet as the PC running TalkMaster:

- Open the **IP Endpoints → Configuration** tab
- Press the **FIND ALL** button to discover the devices connected to the network
- Select the correct INT-IP-2Gang by comparing the ICOM ID on the screen with the label on the back of the unit
- If the INT-IP-2Gang will be used with TalkMaster, select **Client** from the **Type** dropdown. If it will only be used for SIP operations, select **SIP Stand-alone**
- Enter a **Location Name** to uniquely identify the unit
- Either check the **Assign IP automatically with DHCP** option or enter a static IP Address
- If the INT-IP-2Gang will be used with TalkMaster, enter the IP Address of the TalkMaster Server in the **Server IP** field. The Port should be set to 3000. Make sure the **Authorized IP Endpoint** option is checked on the PC identified in the **Server IP** field

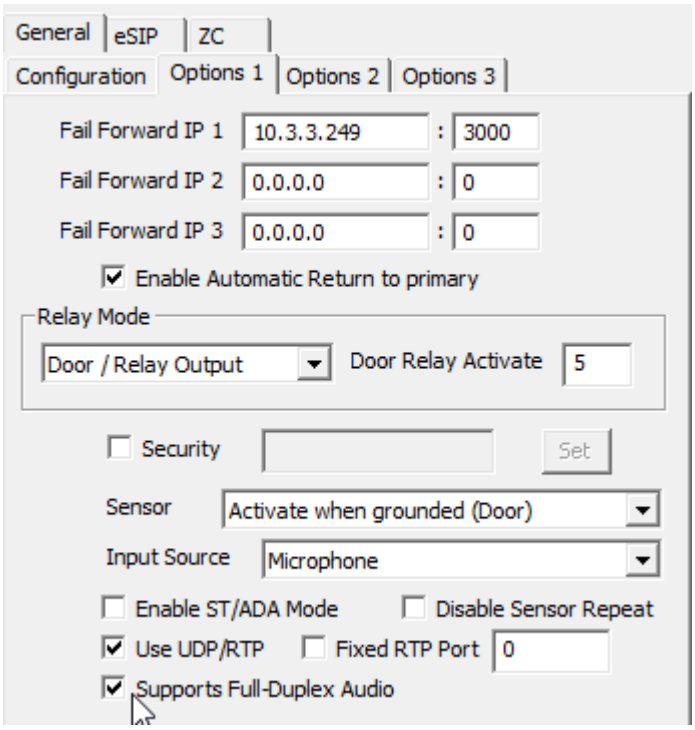


- If the INT-IP-2Gang's onboard relay will be used to open a door, open the **IP Endpoints → Option 1** tab and select the **Door/ Relay Output** option under the **Relay Mode**. Specify the number of seconds that the Relay should be engaged for



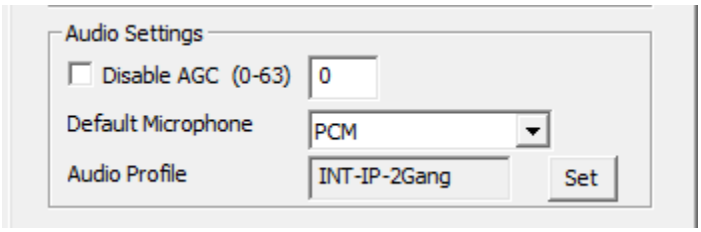
If the INT-IP-2Gang is to be used with the TalkMaster Software:

- On the **IP Endpoints → Options 1** tab
- Check the **Use UDP/RTP** option
- For full duplex operation, check the **Supports Full-Duplex Audio** option



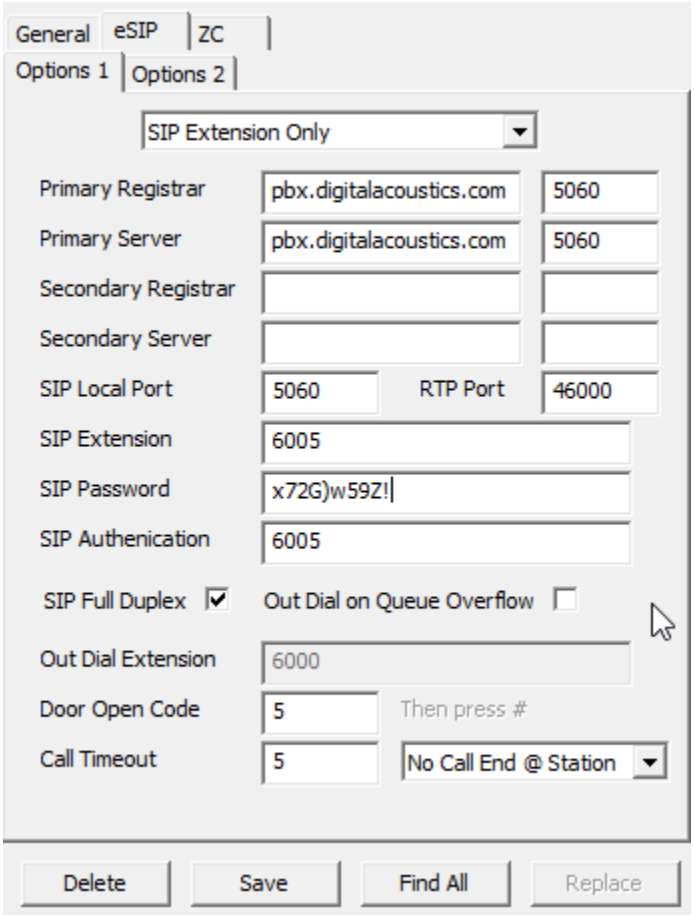
On the **Options 2** tab, configure the audio profile:

- If Full Duplex operation has been configured, select the **INT-IP-2Gang** Audio Profile, otherwise select the **Half Duplex** profile



If the INT-IP-2Gang will be used in SIP mode:

- Open the **IP Endpoints → eSIP → Options 1** tab
- If the INT-IP-2Gang should dial a number when the Call button is pressed, select **Dial SIP Extension on PTT**. Otherwise, select **SIP Extension Only**
- Enter the IP Address or DNS of the Primary SIP Registrar and Primary SIP Server (usually the same) as well as the Port (default is 5060)
- Enter the INT-IP-2Gang's **Local Port** (defaults to 5060) and **RTP Port** (defaults to 46000)
- Enter the **SIP Extension** that was created in the PBX
- Enter the **SIP Password** that was created in the PBX
- Enter the **SIP Authentication** (usually the same as the SIP Extension or the User ID that is linked with the Extension)
- For Full Duplex SIP operation, check the **SIP Full Duplex** option and verify that the **INT-IP-2Gang** audio profile has been selected on the **Options 2** tab
- If the option **Dial SIP Extension on PTT** has been selected, enter the extension or phone number to be dialed in the **Out Dial Extension**
- If the INT-IP-2Gang's onboard relay will be used to open a door, enter the digit to be pressed by the Phone Operator. If more than one digit is used, the Phone Operator must press the selected digits followed by the #



When all changes have been made, press the **Save** button at the bottom of the screen.

Volume Setting

The INT-IP-2Gang has seven volume steps. The volume defaults to level 5. If the INT-IP-2Gang has been configured for TalkMaster, use the Operator Console to adjust the volume level. If it has been configured for SIP, then the volume can be adjusted when a call is placed to it.

In TalkMaster Operator Console, make sure the INT-IP-2Gang shows as a connected device in the **Intercoms** tab. Select menu option **Help → Help on using TalkMaster** and then search for IP Endpoint Volume Control for current instructions on displaying and setting the volume.

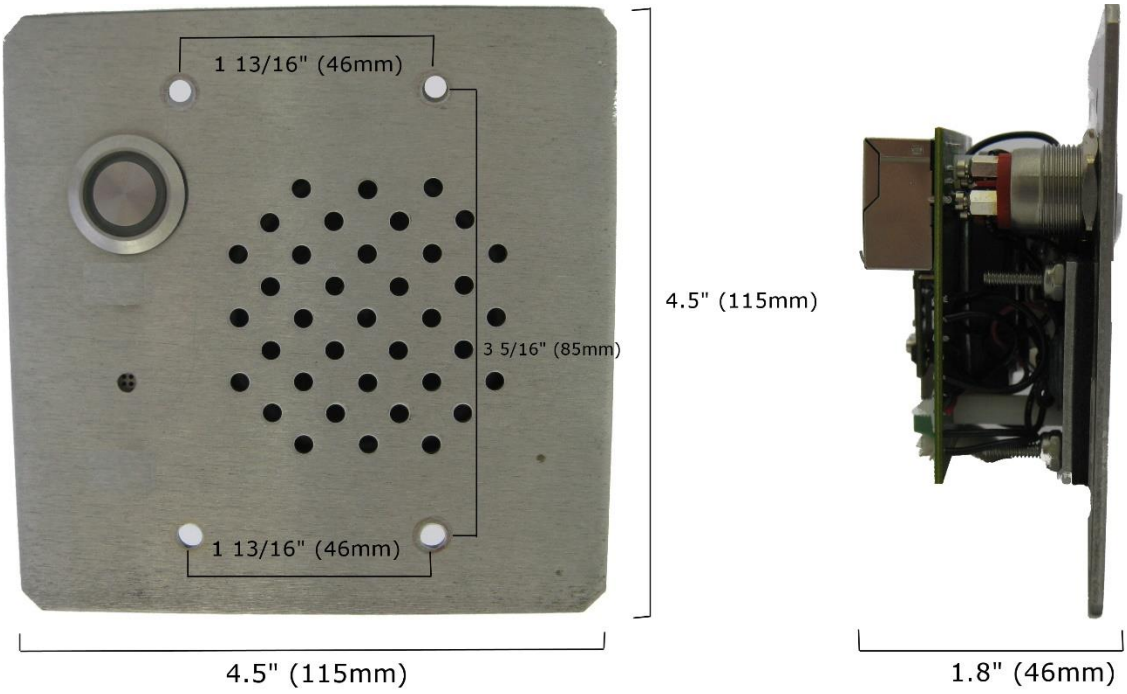
If the INT-IP-2Gang has been configured for SIP operations, the volume can be set during a SIP call by pressing the following keys:

- #00 – Set volume down one level
- #01 – Set to Volume Level 1
- #02 – Set to Volume Level 2
- #03 – Set to Volume Level 3
- #04 – Set to Volume Level 4
- #05 – Set to Volume Level 5
- #06 – Set to Volume Level 6
- #07 – Set to Volume Level 7
- #08 – Set volume up one level

If the PBX that is being used has already used the key combinations above, then TalkMaster must be used to set the volume.

Physical Dimensions

The INT-IP-2GANG CALL STATION dimensions are as follows:
4.5” x 4.5” x 1.8” (115 mm x 115mm x 46mm)



Environmental

The INT-IP-2GANG CALL STATION is designed to operate indoors or outdoors. See the Installation Instructions for outdoor use.

Troubleshooting

Once configured, the INT-IP-2GANG Call Station should operate trouble free.

Reset to Factory Defaults

The configuration information can be reset to factory defaults by the following procedure:

- Unplug the PoE network cable
- Press and hold the CALL button
- Plug in the PoE cable
- Wait till the unit plays a beep and then wait between 5 -10 seconds before releasing the Call button
- A multi tone beep will be heard and the unit will reboot with the default factory settings (DHCP will be enabled)

Low Volume

Make sure that the correct Audio Profile has been selected. Refer to the Audio Options section for additional information.

Viewing tech support info via the USB port

If requested by Digital Acoustics Support, a USB cable can be attached to the INT-IP-2GANG CALL STATION to capture additional information.

- Attach a USB cable to the Mini USB connector (connector 11)
- Attach the other end of the USB cable to a PC running Windows®
- Open the Windows Device Manager to determine the virtual Serial port that has been assigned to the unit (the unit will enumerate as **GPS Data Logger**)
- Open a terminal emulation program such as Tera Term and set the serial port properties to 115kbs, 8,N,1, no flow control and ANSI Terminal
- Press the **Enter** key
- If nothing appears on the screen, unplug/replug the USB cable and then press the **Enter** key
- Provide the requested info to Digital Acoustics Tech support

Contacting Technical Support

Information online at www.digitalacoustics.com

Email support

esupport@digitalacoustics.com

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