

IPcom series

Digital Intercom Panel Via IP

ALTAIR IPCOM IPF-316 16 Key Intercom Panel Station



USER MANUAL

March 2023 version

EN



AUDIO | BROADCAST | COMMUNICATION PRODUCTS

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Included in the supply

- 1x IPF-316 16/32 channels IP Panel Unit
- 4x 3 pin 3.50 Euroblock connectors
- 1x MF-200 Gooseneck 14" microphones
- 4x Rubber adhesive feet
- 1x Operating and User Manual

INTRODUCTION

16 Key Intercom Panel Station

The IPF-316 unit is a digital intercom Panel Unit with up to 32 communication channels via IP designed to function as part of the ALTAIR IPcom series "matrixless" IP intercom system.

Unlike traditional analog intercom equipment, in this model each key channel can be configured independently to communicate with a predefined group of users, adjusting to the preferences of each installation without the need to change the cable connections. These groups can be adjusted according to levels of preference or priorities (according to the hierarchy in the work team). Communication channels can be configured as Party-Line, One-To-Many, Private calls, etc.

Added to the typical functions of an intercom Panel Unit, the channels of the IPF-316 model can be configured as a cue-light transmitter/receiver, as a remote controller of another device, as a point-to-point contact regardless of the physical connection of the device to the support network, and as controller of external signals through the function of remote GPIOs.

The IPF-316 unit connects through an Ethernet network supporting 100/1000 Mbps with uncompressed digital audio of 24 bits / 24 KHz (High Quality, 48K sampling) transported as streaming audio over IP under proprietary Altair protocol. The model gives the option of reducing the audio quality, to improve performance in cases where the network is very saturated, to 16 bits / 12 KHz (Lower Quality, 24K sampling). As most audio networking systems, network is not exclusively used within the system so sharing with another systems.

The IPF-316 unit comes from factory configured as a simple dual channel party-line unit for easy right to use device with no need to extra software to run. By using the Altair configuration software NEBULA, unit can be tailored to be up to 32 channels Panel Unit, distributed in two pages of 16 keys or channels.

The IPF-316 comes with two powering modes:

- Via DC connector using an optional AC/DC adapter. Used as main power if PoE is not available or as part of a redundant power design (recommended).
- Via PoE (Power over Ethernet) power directly from a network switch equipped with PoE ports. This is the recommended configuration in order to eliminate a cable, a connection and a powered adapter.

By the use of the IPX-301 interface, an Altair wireless system can be connected to the system.

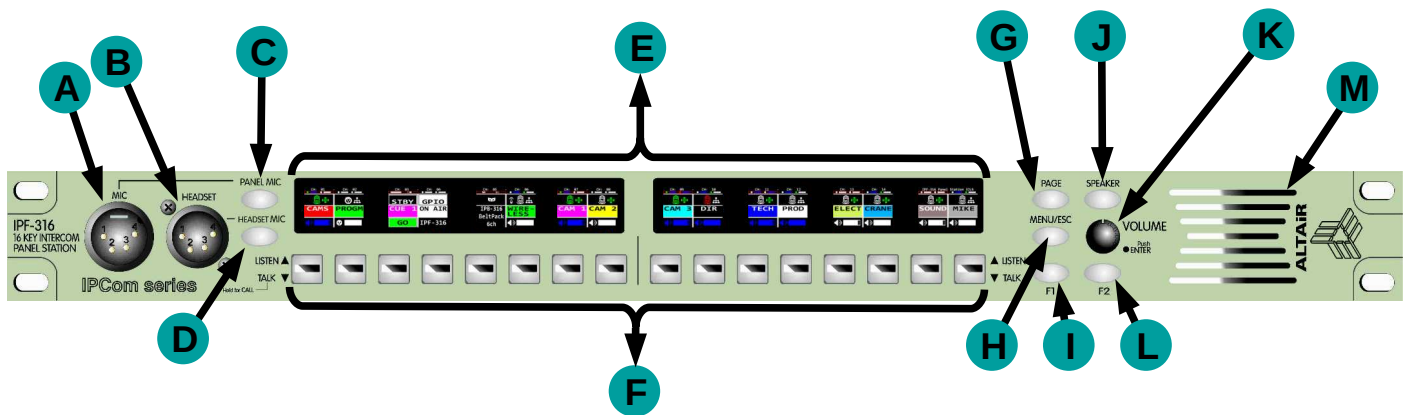
The device is configured by the Altair NEBULA (TM) configuration software. Once configured, the device works in stand alone mode.

HARDWARE

Front Panel

The IPF-316 unit front panel includes a 16 sections RGB OLED display, 16 “LISTEN/TALK” keys, one “PAGE” button, one “SPEAKER” button, one “MENU/ESC” button, two configurable buttons “F1” and “F2”, a “VOLUME” push-rotor, a speaker, a gooseneck microphone and headset inputs. Both panel and headset mics can be selected with the appropriate illuminated buttons.

Controls



Microphone input (A)

4-pin male XLR connector for an gooseneck microphone. The “PANEL MIC” button (C) turns the front panel gooseneck microphone on or off. It is possible to mix both mics.

PINOUT: **Pin1** Mic gnd | **Pin2** Mic + (pos)

Headset Connector (B)

4-pin male XLR connector. Supports single-ear or double-ear headphones equipped with female XLR4

PINOUT: **Pin1** Mic gnd | **Pin2** Mic + (pos) | **Pin3** Ear gnd | **Pin 4** Ear +(pos)

PANEL MIC y HEADSET MIC Keys (C, D)

The “PANEL MIC” (C) and “HEADSET MIC” (D) keys activate or deactivate their corresponding microphone and serves also as main microphone mute.

These keys have a LED that will light up when the microphone is active.

Display (E)

Each display will show the corresponding information of eight channels configured in the panel. The panel manage up to 32 channels distributed within two pages (16 channels per page).

HARDWARE

LISTEN/TALK Keys (F)

Each of the 16 (32) channels has its own actuation key. Pressing the key down enables the talk function and pressing the key up enables the listening function on the corresponding channel. Holding down the key for more than one second activates the talk in momentary mode (PTT) and a short key push activates it in latch mode (when ENABLE LATCH is checked on corresponding channel). Likewise, if it is kept up, a call will be made to the group that has that channel assigned.

Note: Latch function can be disabled by the configuration software NEBULA in order to accommodate the unit for specific needs. When disabled, the TALK function works only PTT

Operation: `USERS> Channels Config> "CHANNEL xx" > TALK LATCH Enabled/Disabled`

PAGE Key (G)

The PAGE key toggles between the "pages" that show the other 16 channels (17 to 32) if programmed.

MENU/ESC Key (H)

The MENU key toggles between normal operating mode and the menu window.

F1 y F2 Keys (I, L)

F1 and F2 are two programmable keys to which the user can assign an action of their choice. The available options are: Key (to act remotely on a key of another device), Private Call (to make a private call to the selected user), Cue Transmitter (to actuate on the state of a Cue Light), GPIO (actuates on a GPIO of the selected user) and Function to perform actions such as: Call to User, Call to Group, Mic Kill to User, Mic Kill to Group, Buzzer Kill to User, Buzzer Kill to Group and Replay Last Seconds.

SPEAKER Key (J)

Switch the Speaker amplifier on/off.

VOLUME/ENTER Rotor with push button (K)

The VOLUME/ENTER rotor is used to raise and lower the overall volume, the speaker volume as well the volume of each individual channel. To modify the main volume you simply have to turn the rotor. If you want to modify the specific volume of a channel you must keep the TALK key of that channel pressed up while turning the rotor. Same way, by holding down the speaker key you can adjust the speaker level. In addition, pressing rotor confirms the different actions that you want to perform through the menu.

Internal Speaker (M)

The IPF-316 panel contains an internal speaker that can be used instead of headphones if desired. The internal speaker allows the user to listen to the audio of the program and the audio of the different groups or private calls that the IPF-316 has configured.

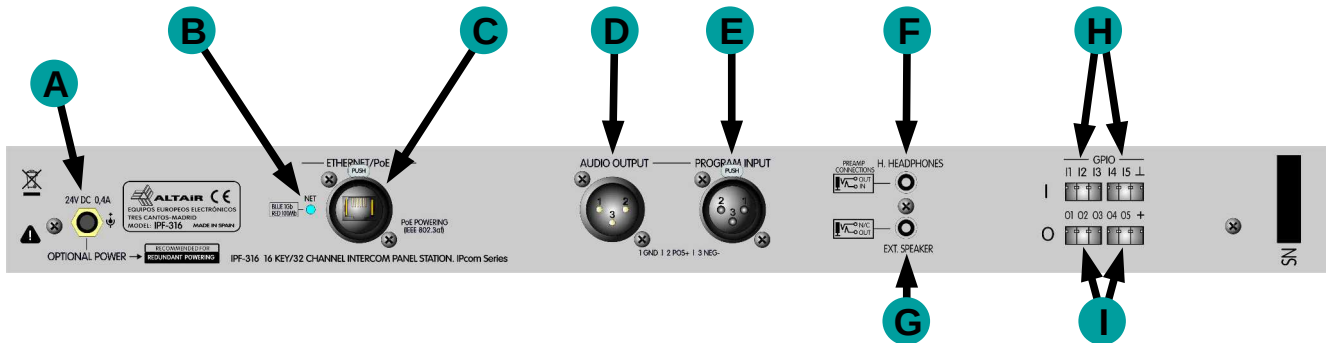
Note:

The IPF-316 panel automatically detects when a headphone is connected and will change the listening mode. This mode enables side-tone listening when SPEAKER is off.

HARDWARE

Rear Panel

The rear panel of the IPF-316 panel contains the following connectors and indicators:



Safety DC Connector (A)

DC to 24V safety connector with anti-pull lock.

PINOUT: Pin +24 Vdc | Body 0V GND

NOTE: In case of using PoE power, it is not necessary to use this connector

Net Status (B)

This LED will indicate the status of the Ethernet connection and the Panel powering.

Led will flash green with intermittent blue sparks when the Panel is connected to an operating switch.

Led will flash green/blue when audio packets are transmitted around the system.

Ethernet Connector (C)

Ethernet RJ45 connector that supports PoE (Power over Ethernet) power in accordance with IEEE802.af standard. Connector allows either etherCON (Neutrik TM) and standard RJ-45. 100/1000 Mb

Audio Output (D)

3-pin male XLR connector whose function is balanced analog audio output port.

Line Input (E)

3-pin female XLR connector whose function is balanced analog audio input port.

Headset Headphones Connector (F)

Mini-jack connector for the preamplifier headphones section.

External Speaker Connector (G)

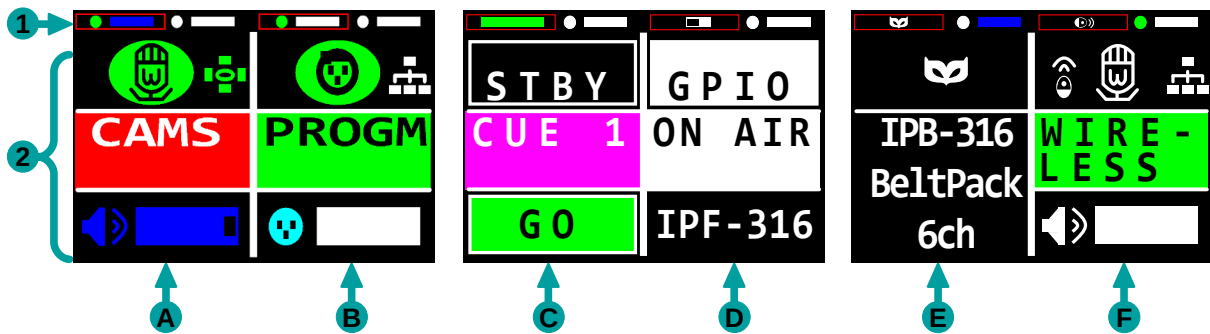
Mini-jack connector for external speakers. Its connection cancels the internal speaker.

GPIO Connectors (H, I)

Phoenix connector for general purpose (GPIO) input (H) and output (I) signals.

DISPLAY INFORMATION

Each of the two main displays on the IPF-316 panel shows eight channels, thus a total of 16 channels are displayed at the same time. Using the PAGE key toggles between the displayed first page of channels 1 to 16 to second page, channels from 17 to 32 (The red box that borders the icons at the top of the Display indicates the page that is being displayed). Examples of various channels configured with different functions are shown below:



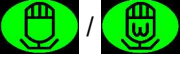














The information shown on the Display is divided vertically into two well-differentiated parts:

1. **Channel Configuration Summary:** Only THIRTY TWO CHANNELS mode: This section shows the representative icons of the function assigned to each of the 32 channels and their status. The red box in this section shows the status of the displayed channel and other block the hidden one. Left block corresponds to the channels on PAGE 1 (1 to 16) and right block to PAGE 2 (17 to 32).
2. **Detailed information of the displayed channel:** This section is divided into several parts depending on the type assigned to the displayed channel:

- A** y **B** → **Intercom:** Audio communication mode between groups typical of intercom devices. Section divided into 3 parts. The upper third shows two icons, the first one indicates the status of the microphone (active / mute), the second icon indicates if the group is configured as Party Line () or as One To Many (). The middle third will display the name of the assigned group. Finally, the lower part indicates the listening status and the volume level.
- C** → **CUE Transmitter:** CUE warning transmitter mode. Section divided into 3 parts. The upper part is the “Stand By” indicator, when the operator of the CUE transmitter unit activates the “Stand By” warning, the **STBY icon will flash red** and a flashing red sign will appear on the receiving unit’s display indicating said warning. When the operator of the receiving unit indicates that it is ready to carry out the pertinent action, the **STBY icon** of the transmitting unit will become **solid red** and a solid red banner will appear on the receiving unit's display. Finally, when the operator of the transmitting unit presses the GO action, the **STBY icon** will be displayed with a **black background** and in the lower part of this section the **GO icon will light up in green**. Likewise, a fixed green sign will appear on the display of the receiving unit, indicating that the pertinent action must be executed.
- D** → **GPIO:** Mode for generating or receiving signals (General Purpose Inputs Outputs).
- E** → **Private call:** Point to point intercom mode. Section divided into two parts, the upper part shows the **private call icon**. The lower part shows the name of the device to which the call will be made.
- F** → **Remote:** Mode to remotely control the microphone status, listening status and volume level of a group configured on another device. Section divided into 3 parts: the upper part shows the remote identification icon () , the microphone status icon (open / mute) and the group settings icon (Party Line / One To Many) ; the middle part shows the name of the assigned group; and finally, at the bottom, the listening status and its volume level are shown.

DISPLAY INFORMATION

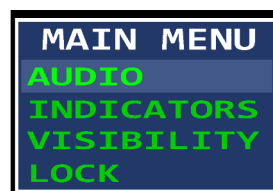
Icon summary

Icon	Description
	Active microphone indicator on the channel. This icon will contain a W when the system is set to High(24kHz) audio bandwidth.
	Muted microphone indicator on the channel. This icon will contain a W when the system is set to High(24kHz) audio bandwidth.
	Microphone locked on channel indicator. This state occurs when the group to which this icon belongs is set to One To Many (👥) and any member of that group (with equal or higher assigned priority) is speaking. This state prevents the user from modifying the state of his microphone. This icon will contain a W when the system is set to High(24kHz) bandwidth.
	Group indicator configured as Party Line . (All group members can speak at the same time)
	Group indicator set to One To Many . (Only one member of the group can speak at the same time)
	Standby indicator. This indicator will flash red when the CUE is activated until the corresponding user indicates that they have seen the signal. At that moment, the indicator will remain solid red, waiting for the "GO".
	GO indicator. This indicator will remain with a black background until the "GO" signal is given, at which time the background will change to green.
	Indicator of channel configured as intercom . The circle represents the state of the channel's microphone (active=green / muted=white) and the rectangle represents the listening state on the channel (active=blue / inactive=white).
	Thumbnail of channel configured as CUE Transmitter . It will be shown white when the CUE is inactive, red (flashing) when the CUE is in the "Standby" status awaiting confirmation from the receiving user of the CUE, red (fixed) when the user has confirmed the "Standby" status and finally in green when the GO signal is given.
	Indicator of channel configured as GPIO .
	Indicator of channel configured as remote . The device to be controlled and the parameters that can be modified are determined through the IPcom configuration software.
	Private call indicator icon.
	Level indicator and listening status . It will show blue when listening is active or white when listening is muted.
	Audio line input as SOURCE via an XLR F icon. As the microphone indicator, green means active and white means inactive input.
	Level and status of audio line output as DESTINATION via an XLR M icon. Blue (output active) / white (output inactive).

Menu Elements

Navigation through the Menu window

The Menu will be shown on the right side of the Display by pressing the MENU/ESC key. Use the rotor located on the right of the IPF-316 to scroll through the different elements of the Menu. Turning the rotor clockwise will scroll down the Menu items, conversely turning the rotor counterclockwise will scroll up the Menu. To enter a sub-menu, simply select it and then press the same rotor (ENTER). To go back in the different sub-menus just press the MENU/ESC key.



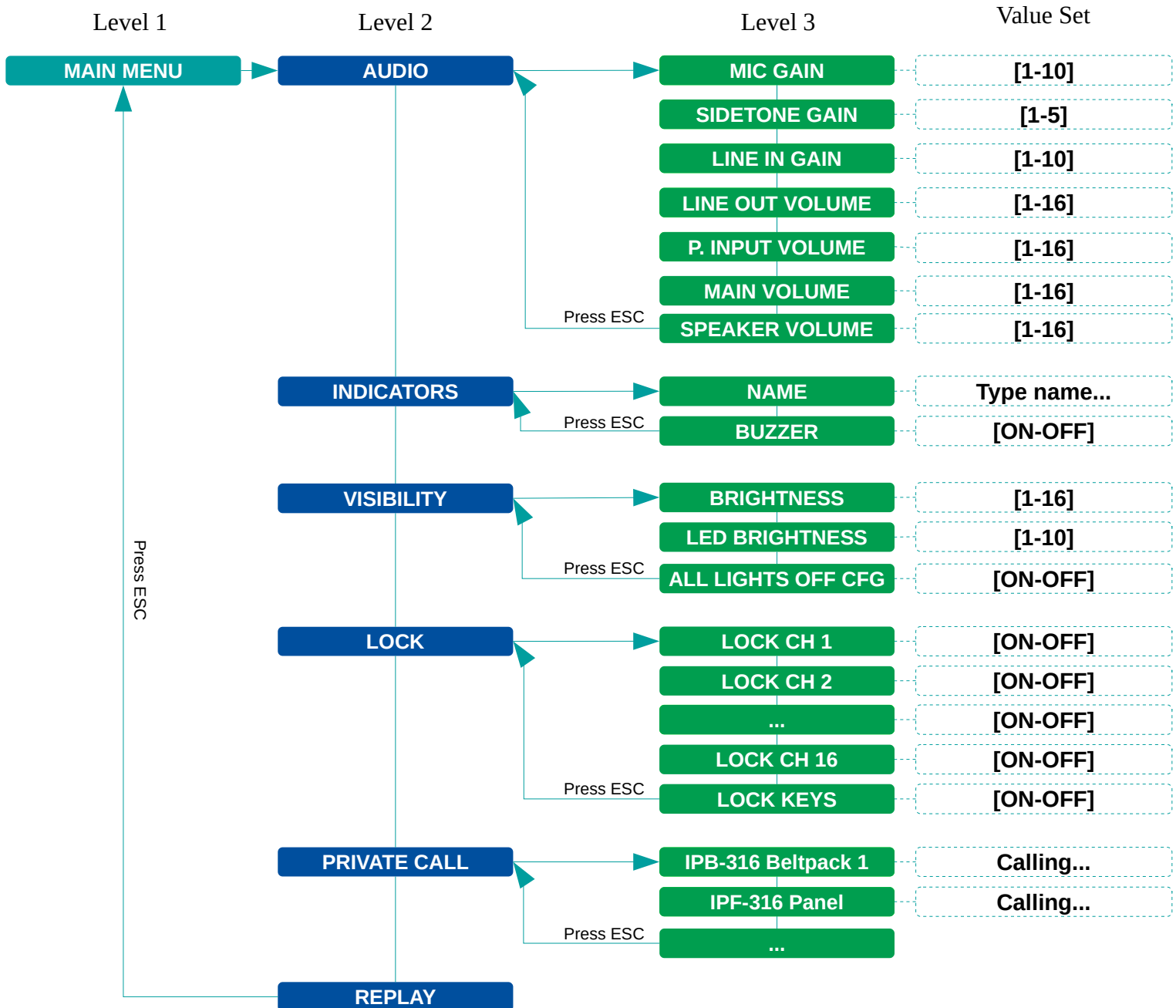
Menu window elements

Each of the sub-menus will give access to the visualization and modification of the values of different parameters of the device:

- **AUDIO:**
 - ◆ **Mic Gain:** Modifies the microphone gain. [1-10]
 - ◆ **Sidetone Gain:** Modifies sidetone gain. [1-5]
 - ◆ **Line IN Gain:** Modifies input gain via XLR. [1-10]
 - ◆ **Line OUT Volume:** Modifies output volume via XLR. [1-16]
 - ◆ **Program Input Volume:** Modifies the volume of the Program Input. [1-16]
 - ◆ **Main Volume:** Modifies the overall volume of the device. [1-16]
 - ◆ **Speaker Volume:** Modifies the volume of the internal speaker. [1-16]
- **INDICATORS:**
 - ◆ **Name:** Shows the name of the device and allows to modify it.
 - ◆ **Buzzer:** Turns Buzzer on or off on the device. [ON-OFF]
- **VISIBILITY:**
 - ◆ **Brightness:** Modifies the brightness of the display. [1-16]
 - ◆ **LED Brightness:** Modifies the brightness of the key LEDs. [1-10]
 - ◆ **All Lights off CFG:** When this parameter is activated, the unit completely disables the LED illumination of all the keys. [ON-OFF]
- **LOCK:**
 - ◆ **Lock CH [1-16]:** Allows individually blocking the keys of each of the 16 channels. [ON-OFF]
 - ◆ **Lock Keys:** Lock all keys on the device. [ON-OFF]
- **PRIVATE CALL:** It allows establishing a point-to-point connection with any of the devices that belong to the system. This sub-menu will list the name of available devices on the system to make a private call. You can not make a private call with an IPX-301 Interface user.
- **REPLAY:** It will play the last few seconds of listening received on the device. The REPLAY time is defined through the **NEBULA configuration software**. Replay function is default set in front panel F1 key.

MENU

Menu Structure



NOTE:

Pressing the MENU/ESC key at any point in the Menu will return to the previous level. If you are at level 1, the menu window will close and you will return to the normal operating mode of the IPF-316 panel.

OPERATION

Units are pre-configured from factory as a simple two groups (party-line) system. Find below a guideline for basic Panel operation. Additional information about channel configuration and operation is found in NEBULA Configuration Manual.

Panel turn-on

The IPF Panel Station as well as the rest of the devices of the Ipcom series do not have a power button and their operation is subject to the switch-on of the network switch to which they belong. Devices equipped with power over Ethernet -PoE- ports, usually lack of this power switch running all time.

In many installations that do not require a 24/7 intercom system, a power button will be needed to turn on/off the switch or switches dedicated to the intercom system for this purpose.

The power indication corresponds to display screen light that is always active in this device.

Initialization. Operational Panel

In the initialization process the Panel Station will first show the ALTAIR logo followed by the company logo if it has been included (see BRAND LOGO in the NEBULA software).

Subsequently, a label in the right side of the display -channel 16- appears indicating that the unit does not yet have a connection to the network "ETHERNET LINK DOWN" that will disappear in a few seconds.

At the end of the power on phase the display will show two channels with their corresponding assignments within the system such as GROUP name, PRIVATE, CUE Standby, GPIO, etc.

Boot time may vary depending on the configured IP mode and configuration as well as other network factors. This start time is around 60 seconds during which the unit will not be operational.

Number of Channels

The Panel Station allows operation with up to 32 simultaneous channels. The channels are accessible by page change that is done by pressing the correspondent PAGE key.

The configuration of the number of channels is done from the NEBULA configuration software and by default is 16 channels. See section "ADVANCED SETTINGS" page.

It is recommended to work in the 16 channel mode when possible, taking into account that channel 16 is shared with general info of the system and MENU operations.

Functions assigned to the rotor.

The functionality of the rotor can be defined separately. By default is defined as Main volume control.

Holding down a channel LISTEN key, the individual channel listening can be adjusted.

By holding down SPEAKER key, the speaker listening can be adjusted.

Through the NEBULA software, within the "ADVANCED SETTINGS" window we can choose definition of the rotor function as:

- ◆ **Main Volume:** Adjusts the overall listening volume. The partial adjustment must be done from the menu settings. *DEFAULT setting*
- ◆ **Program Input Volume:** Allows an adjustment of the listening level of the Program Input -source assigned from NEBULA- mixed with the general listening.
- ◆ **Line Out Volume:** Leveling the line output.
- ◆ **Mic Gain:** Direct access to microphone gain (headset and panel microphone)
- ◆ **Line In Gain:** Leveling the line Input

Talk

To talk to the desired group, simply press down the corresponding LISTEN/TALK key down.

The TALK key has two modes of operation, depending on how the user interacts with it:

- **Push to Talk:** Keeping the LISTEN/TALK key pressed down for more than one second will activate this function, enabling the microphone. You will be able to speak until you release the TALK key, at which point the function will be deactivated and with it the microphone.
- **Latch:** Pressing the down key quickly (less than 1 second) will activate the microphone. The moment you quickly press on the LISTEN/TALK key down again, the microphone will be muted. You can Enable/Disable this function on the NEBULA configuration software corresponding channel.

The display will show an icon of a microphone in green in the corresponding group when it is active or in gray when the microphone is deactivated.

In some circumstances the TALK key will not be available -showing its microphone icon in red- such as when the group is defined as ONE TO MANY and at this time the turn to TALK is being used by another user.

The system gives the TALK to any other user after a minute in an attempt to clean ambient noise in the channel or to avoid carelessness of the interlocutor who has initiated the conversation.

Note: Depending on the configuration assigned to the device, it is possible that this function is not enabled and therefore it is not possible to talk. This condition is shown by a different microphone icon.

The groups that appear in the different Displays show a microphone icon in green when it is active or in gray when the microphone is deactivated. Depending on the configuration of the group, a red microphone or an absence of microphone may be displayed, indicating that it is not possible to talk. Check NEBULA system configuration.

Listen

To listen to the desired group press up briefly the corresponding LISTEN/TALK key. It is possible to listen to just one channel or a combination of all available channels mixed.

Note: Depending on the group priority settings, certain users may be muted by the microphone opening action of other users and will not be heard. Consult your intercom system administrator to restore priorities to the specific use of the intercom system.

Listening volume. Mix leveling

Each channel will show a bar at the bottom that indicates the listening level setting. In addition, said bar will be blue when listening is active or gray when it is deactivated -muted-.

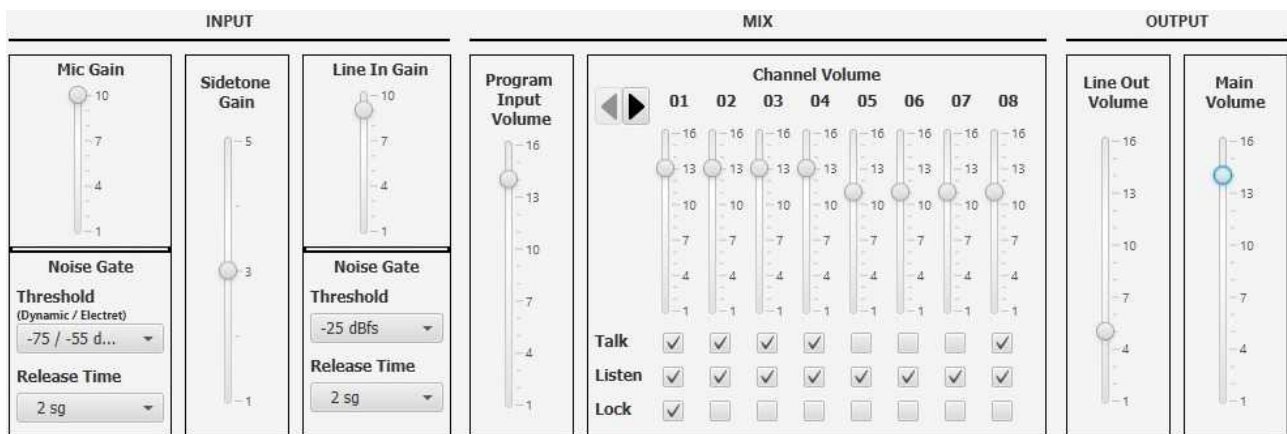
Each channel of the IPF-316 panel has its individual listen volume control and there is also a general volume adjustment.

To adjust the overall listening volume, turn the VOLUME rotor encoder.

To adjust the listening volume of an individual channel, hold up the LISTEN/TALK key of the corresponding channel and turn the VOLUME rotor located on the right side of the IPF-316 front panel.

You can adjust leveling mix on the NEBULA soft program.

Go to USERS > ADVANCED SETTINGS > AUDIO and find the mixer of available channels on MIX section:



TALK and LISTEN This switches works in parallel to correspondent keys on the front panel. Helps administration.

LOCK This switches locks Talk/Listen switches of the correspondent channel avoiding in-advert manipulation

Speaker volume and Settings

The internal speaker and external speaker output can be activated or deactivated by the SPEAKER key.

To adjust the volume of the Internal Speaker, hold down the SPEAKER key and at the same time turn the VOLUME rotor located on the right side of the IPF-316 front panel.

By MENU settings: Enter the menu option AUDIO and then SPEAKER to set it at your choice.

By NEBULA software you can set the level and the activation key remotely and some important parameters:

- **Speaker Attenuation by Panel Microphone.** Set the attenuation of the speaker when Panel Mic is activated. This function reduced the Talk contamination to the open channels due to presence of various signals present on the speaker.

NOTE. The attenuation affects only to the LISTEN of group whose TALK is opened

- **Speaker Attention by Neighbor.** It is possible to reduce the speaker level from a channel shared within a unit or some units in the physical proximity to our unit. You can set the **Attenuation** level due to the correspondent defined **Neighbor**. Attenuation set would be depends of distance, level etc.

Audio Inputs / Audio Outputs

The unit can connect to a standard analogue audio signals by the Audio Input and Audio Output XLR3 connectors. The connection pinout is as follows:

IN/OUT XLR 3 PINOUT	
Pin 1	GND
Pin 2	+Positive
Pin 3	- Negative

Both IN and OUT ports are balanced. The input circuit is electronically balanced and the output is electronically floating balanced output for better coupling and noise rejection.

Call Attention

To make a CALL attention to all members of a group, hold up the TALK/LISTEN key for >1 seconds on the corresponding channel. On the display of all the devices that belong to the group, a message will be shown indicating the user who is making the call and the group to which the call is being made.

To ensure silence in calls, the buzzer and vibrator must be disabled locally or through the NEBULA software.

On systems with many users, the CALL can be initiated automatically by following the action of pressing a TALK key to automate recognition of the caller. This option is set from NEBULA in the USERS>ADVANCED SETTINGS>GENERAL "Send Call when Talk key is activated"

Maybe in this scenario it is advisable to set the TALK LATCH disabled on some groups to guarantee a brief message, leaving the system operative for additional short voice messages.

Operation: USERS>Channel Config> "choose a channel" >TALK LATCH Enabled/Disabled

Private Calls

It is possible to initiate a private conversations at any time to any of the users on the system.

To do so, find on the main MENU the PRIVATE CALL menu option and scroll across all users available. Press ENTER to establish the private call.

Destination user must accept with ENTER or refuse the call by ESC

Finish the private call by pressing again ENTER

Private Call can be further automated by assigning a channel dedicated to a destination unit. To do so, go to USERS > CHANNEL CONFIG and by selecting a channel configure it in TYPE as Private Call, then select the destination of the communication in the USER from a table of available users.

NOTE: Interface stations IPX-301 are no considered here for private call destinations because it is a no operator station.

USAGE EXAMPLES

Configure the unit for a fixed IP address

If you do not have a switch/computer/server with a DHCP server, you have two options:

- **Connect devices to a switch without DHCP server:** The ALTAIR IPCOM Series devices have a protocol whereby if a DHCP server is not available it will auto-assign an IP. The drawback of this method is that the time between start up of devices is much longer, about 70 seconds.
- **Assign a fixed IP to the devices:** To do this, you must access the NEBULA PC Configuration Software, go to the "Users" window, select the desired device and access the "Advanced Settings" menu where in the Ethernet tab you can disable the DHCP option and assign the desired fixed IP.

Note:

It is not recommended to use fixed IP without network knowledge of all the installation. There is a possibility of assigning an IP already in use by another device, which will cause the IpCom system or other devices to malfunction. Consult with your network administrator before assigning a fixed IP to ALTAIR IpCom Series devices. When in doubt, check DHCP





Note:

You can check the IP assigned to a device (IPF-316 or IPB-306) by holding down the MENU key for a few seconds.



The "User" section (in the "Advanced Settings" window) allows you to name each device something easily understandable such as: "Audio", "Director", "Camera 1", "Lighting", etc.

Configure a channel of the IPF-316 Panel as LINE INPUT

With this operation, the IPF-316 unit will receive an analog audio signal as an input signal and transmit this signal to the other devices in the IpCom system. To do so, follow the steps below:

1. In the NEBULA configuration software, go to the Groups work window ():
 - I. Click the button  to create a new group.
 - II. In the Groups table (on the left side of the window) you will see that a new group has been created, select it and click on the name to rename it, e.g. "LINE IN".
2. Now go to the Users work window ():
 - I. In the Users table (on the left side of the window) select the IPF-316 unit.
 - II. In the Channels config table, assign to a channel, configured as Intercom (), the group you have just created ("LINE IN") in the USER/CUE/GROUP column (double click on the channel cell to display a drop-down list with all the available groups to assign).
 - III. Finally, in the SOURCE column of the Channels config table, assign the input method "Line Input" to the channel.

Now, all devices, except the IPF-316, that have the LINE IN group assigned to one of their channels will listen to this analog signal.

To listen to the LINE IN group in the IPF-316 itself, go to the Users window () select the device in the Users table and then click the button  to open the "Advanced Settings" window. In this window activate the "Line Input to Headset/Speaker" option.

>Users>IPF-316>Advanced Settings>General> Mark the checkbox with X: Line Input to Headset/Speaker.

You can adjust the Line Input level via NEBULA or in the device MENU under AUDIO sub-menu.

>Users>IPF-316>Advanced Settings>Audio> Set Fader: Line Input Gain.

Configure a channel as a PA Out

Sometimes is necessary to establish an easy key/button to radiate a message to say a wardrobe, artist room, etc. You can use the Line Out to connect to the PA amplifier. To do so:

Go to the Groups window and create a new Group named PA OUT (sugerence) and define color.

Go to the Users window, select the Panel you need PA out and in Channels Config define a channel as an Intercom and set the newly created Group PA OUT.

In the Destination Tab, select Line Out.

On the Advanced Settings windows > Audio > General, click on "Mic To Line Out"

Now all the messages carried out on the MIC (headset or panel mic) will be present on the Line Out XLR when LISTENING on this channel is open.

So for leaving a message on the PA, operator must hold up for a while the LISTENING key and talk. Next, the key must be hold up for a while again to resume radiating message.

Configure a TALK recording

Sometimes is necessary to record all the producer messages talk to the system for learning process or just to be a remembering of the scenes run on a theater or musical performance. For that purpose, you can use the Line Out to connect to the audio recorder device and set IPF as follows:

Go to the Groups window and create a new Group named TALK REC (sugerence) and define color.

Go to the Users window, select the Panel you need the recording and in "Channels Config" tab define a channel as an Intercom and set the newly created TALK REC

In the Destination Tab, select Line Out.

On the Advanced Settings windows > Audio > General, click on "Mic To Line Out"

Now all the messages carried out on the MIC (headset or panel mic) will be present on the Line Out XLR when LISTENING on this channel is open.

You can momentary cancel the recording by closing the LISTENING key. That key would be the Line Out (recording) On/OFF switch. You can LOCK the operation of this key to avoid switching off unadverted.

NEBULA CONFIGURATION SOFTWARE

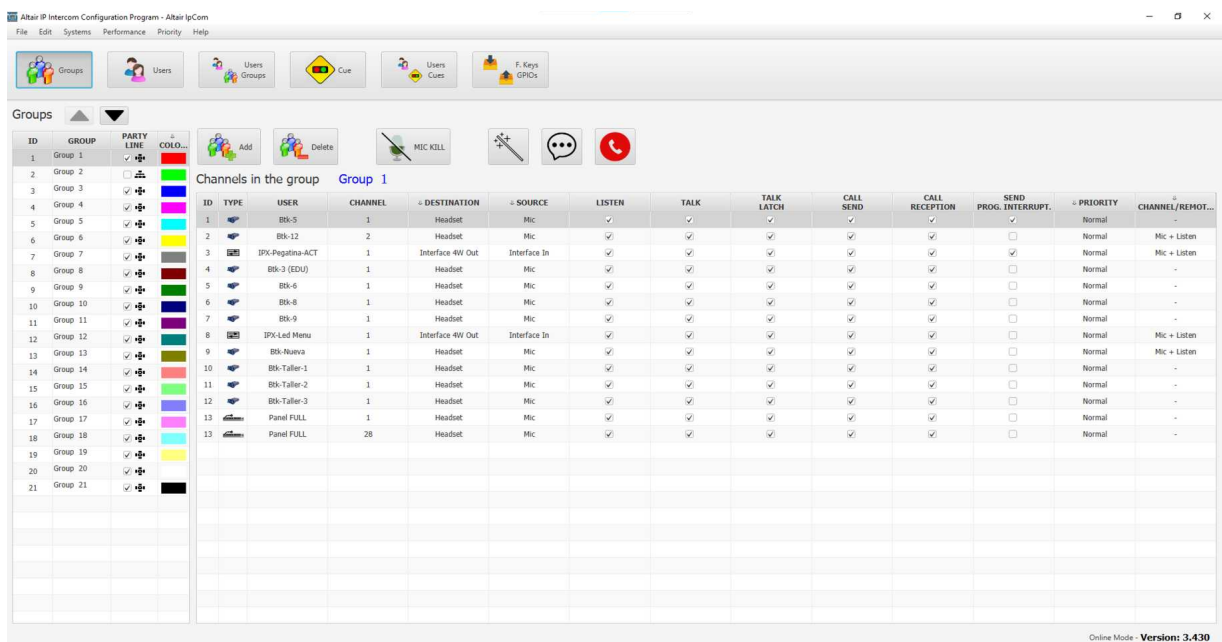
Altair IPcom Software

Configuration windows

The configuration software for the entire ALTAIR IPcom Series contains 6 main windows:

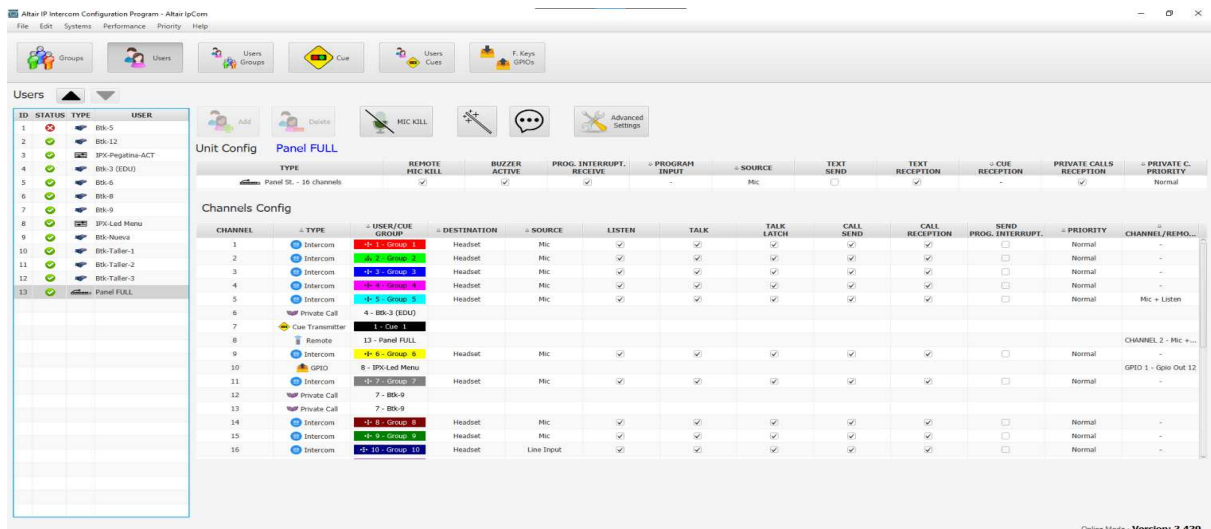
Groups (A)

It shows all the groups created in the system, indicating the different devices that belong to each group and allowing to assign a group configuration for each particular device.



Users (B)

It shows all devices belonging to the system. In this window you will also have access to the Advanced Settings of each device (this window will be shown in depth later).

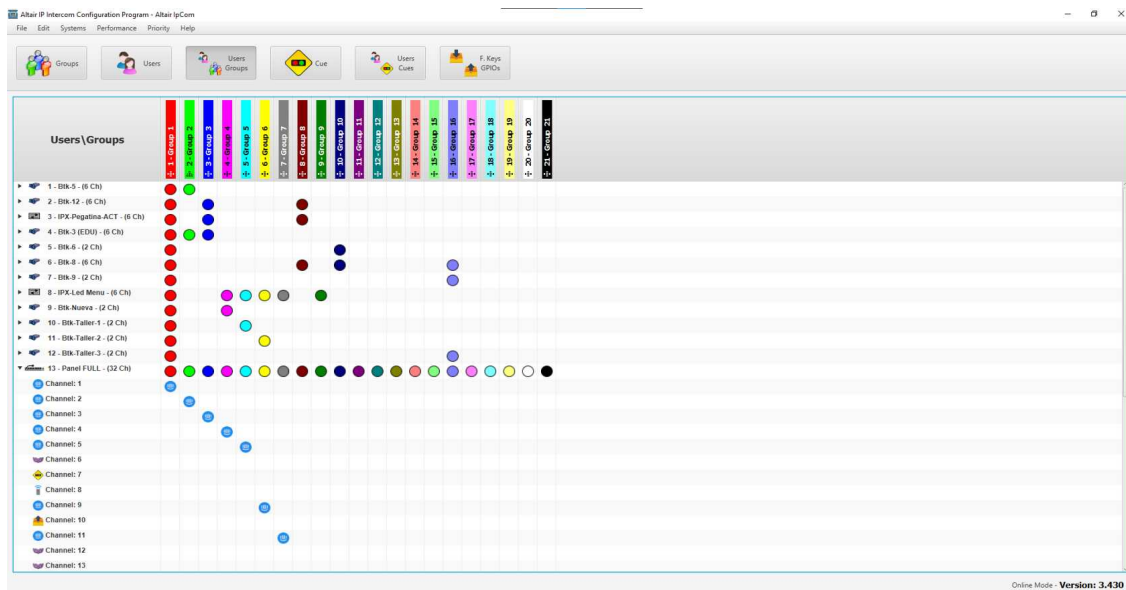


CONFIGURATION SOFTWARE

Users Groups (C)

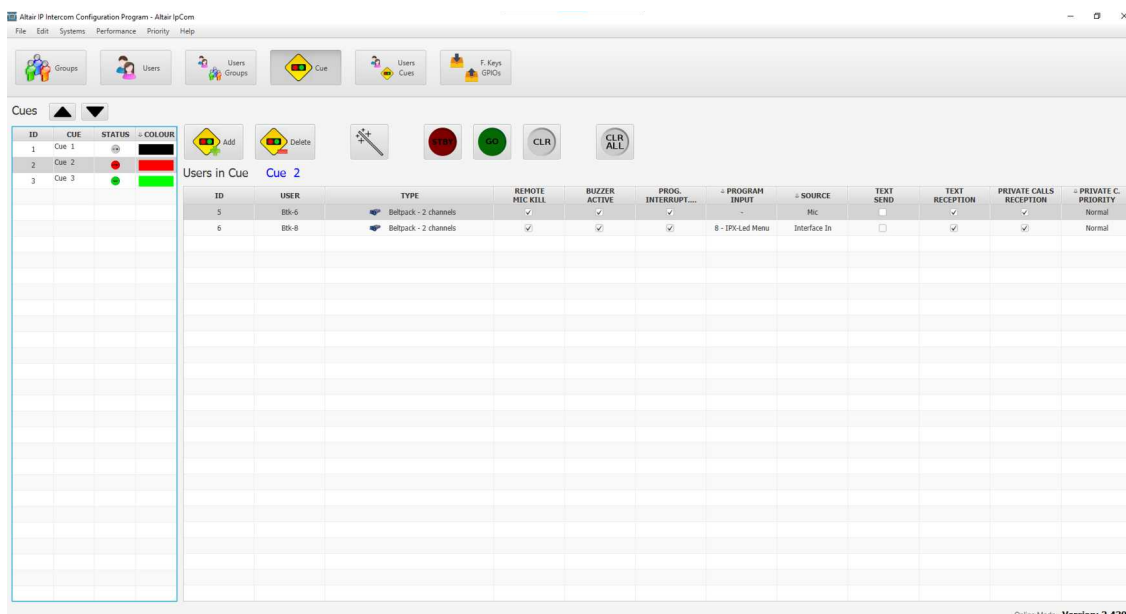
It shows a “matrix” with all the devices and groups of the system, indicating which groups each device is assigned to. If the user has a group assigned to any of their channels, a circle of the same color as the group will be displayed in the corresponding column.

Clicking on the arrow to the left of the username will display its available channels. The icon, shown to the left of each channel name, represents the configured operating mode. If the channel is of the Intercom type, the same icon will be displayed in the column of the group assigned to said channel. Double-clicking on any cell in a channel's row will assign/unassign the corresponding group.



Cue (D)

It shows the Cues created in the system, their status and the devices to which these Cues have been assigned.



CONFIGURATION SOFTWARE

Users Cues (E)

It shows a “matrix” with all the devices and Cues of the system, indicating which devices each Cue is assigned to and its status. Double clicking on a cell will assign/unassign the corresponding CUE on the selected device. Devices with a channel set to Cue Transmitter cannot get assigned a CUE reception.

Fun
Show

The screenshot shows the 'Users\Cues' configuration window in the ALTAIR IPcom Configuration Program. The window title is '1 - BK-5'. It features a toolbar with icons for Groups, Users, Users Groups, Cue, Users Cues, and F. Keys GPIOs. Below the toolbar is a 'Users\Cues' matrix with three columns labeled '1 - Cue 1', '2 - Cue 2', and '3 - Cue 3'. The main area is titled 'Users with Function Keys and GPIOs' and contains three tables:

Function Keys

Key	= TYPE	= USER/CUE GROUP	= KEY/CUE MODE/GPIO OUT/ FUNCTION CONTROL	= NUMBER	STATUS
1	Private Call	1 - BK-5			✖
2	GPIO	3 - IPX-Pegatina-ACT	GPIO 1 - Gpio Out 1		✖

GPIO Input

GPIO	= TYPE	= USER/CUE GROUP	= KEY/CUE MODE/GPIO OUT/ FUNCTION CONTROL	= NUMBER	STATUS
1	Key	3 - IPX-Pegatina-ACT	Task	1	✖
2	Cue Transmitter	1 - Cue 1	Go		✖
3	Function		Call to Group	-	✖
4	Function		Mic Kill to User	-	✖
5	Function		Replay Last Seconds	-	✖

GPIO Output

GPIO	NAME	= TYPE	= USER/CUE GROUP	STATUS	= COLOUR	MODE
1	Gpio Out 12	GPIO Input		✖		Push Mode
2	Gpio Out 12	Channel		✖		Latch Mode
3	Gpio Out 12	Call	21 - Group 21	✖		
4	Gpio Out 12	GPIO Input		✖		Push Mode
5	Gpio Out 12	Listen	4 - BK-3 (EDU)	✖		3

Online Mode - Version: 3.430

CONFIGURATION SOFTWARE

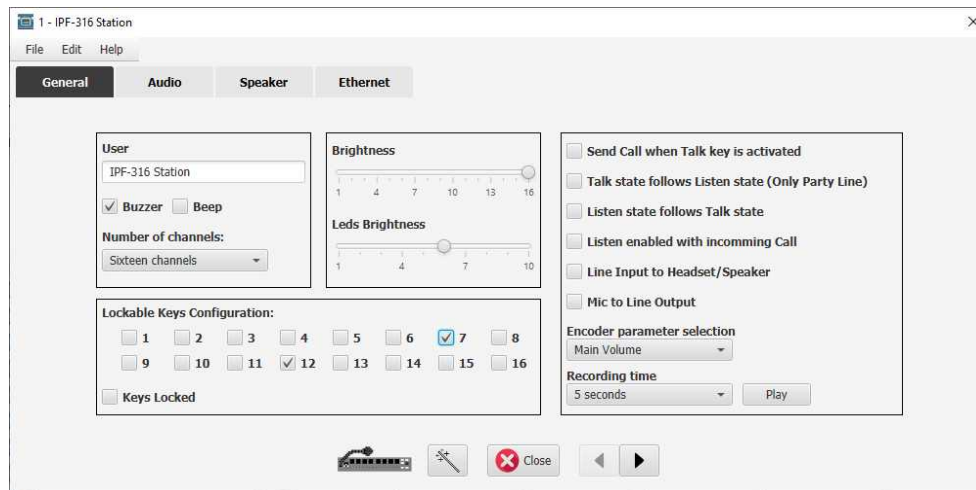
Advanced Settings

IPF-316 panel Advanced Settings window

The window gives access to the **complete configuration of the IPF-316 panel**. This window contains 4 tabs that show the different configuration parameters available:

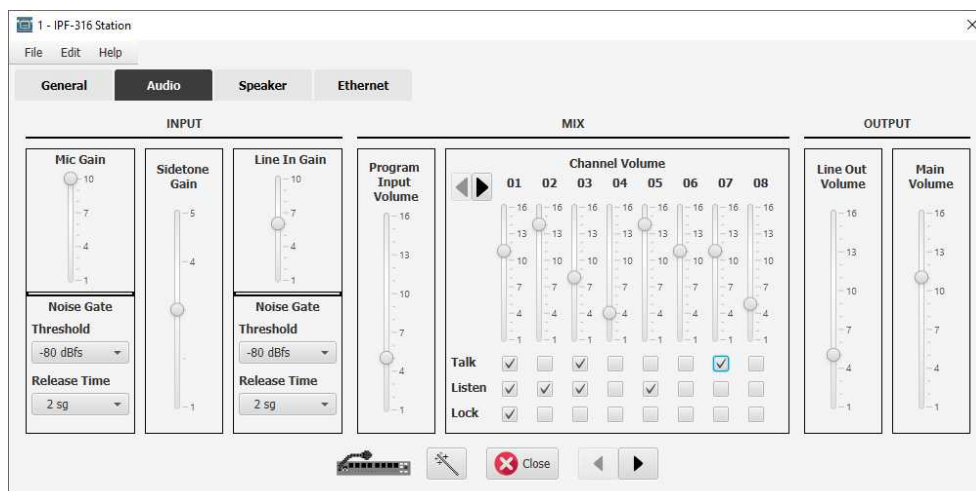
General (A)

General configuration parameters such as On/Off Buzzer/Beep, number of available channels, Display brightness, LED brightness, rotor function, etc.



Audio (B)

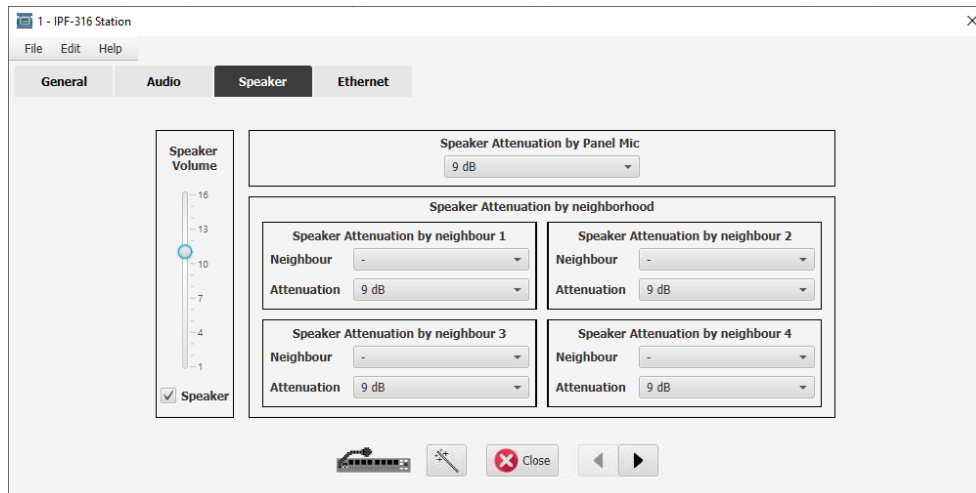
Parameters available for panel audio configuration, such as: microphone gain, noise gate, general volume, enable/disable microphone, etc.



CONFIGURATION SOFTWARE

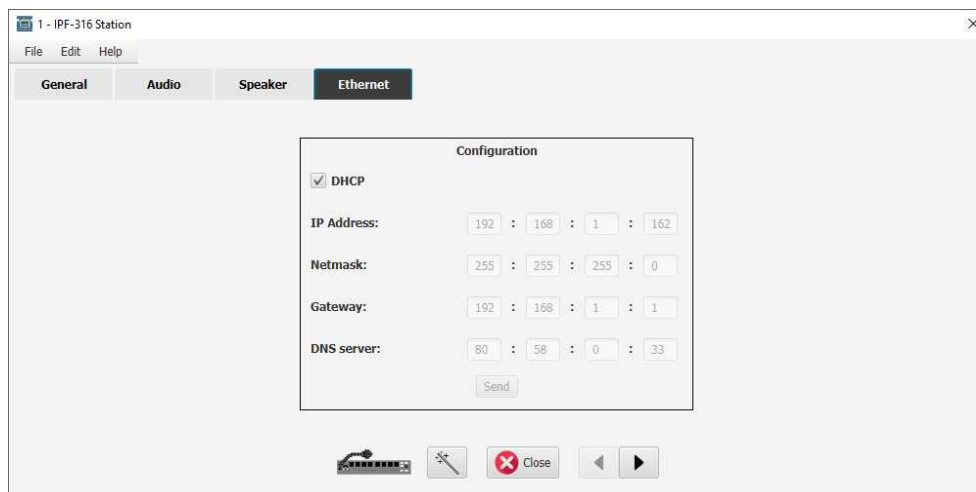
Speaker (C)

Allows you to configure the attenuation of the internal speaker when the device's microphone is active. Attenuation can also be configured based on the microphones of the devices that are assigned as neighbors. Up to 4 neighbor devices can be assigned.



Ethernet (D)

Allows you to activate/deactivate DHCP and, where appropriate, allows you to assign a fixed IP.



Note: Consult the specific NEBULA Configuration Software for more information.

APPENDIX

Configuring guide for GPIO connections

GPO Ports. Logic OUT

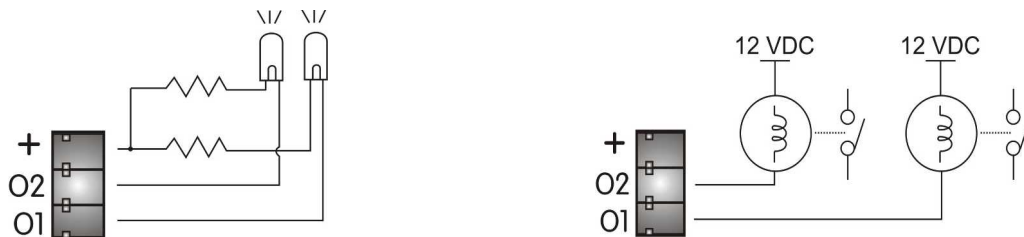
Unit includes five General Purpose Outputs labeled O1 to O5.

POWER SOURCE OUT In order to ease the interconnection from external logic inputs, unit includes a protected 3 Volt referred to ground power source labeled **+**. Power source is limited to 100 mA

Standard (3.5 pitch) Phoenix™ connector for General Purpose Output signals. Each GPO consist on an internal Open Collector with a 100 K pull-up circuit with a behavior similar to a contact closure circuit to ground when driven by a positive external source. It is possible to use the above referred power source in case it is not available as for example to drive a LED. But when driving relays other than 3Volt coil, it is necessary to get appropriate external power supply to drive it at the necessary voltage.

A relay is always necessary when driving loads in AC or with a voltage higher than the maximum 40V capability of the GPOs.

The GPO can be activated from the intercom system via: Channel (from another device or own unit), State of a CUE Light, incoming Call (of a Group), TALK state (from a channel of a device), LISTEN state (from a channel of a device) and GPI/Function Keys.

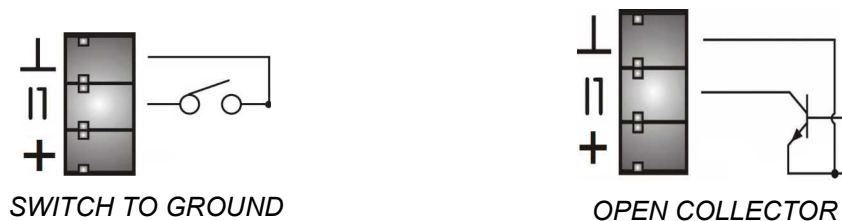


GPI Ports. Logic IN

Unit includes five General Purpose Inputs labeled I1 to I5.

Standard (3.5 pitch) Phoenix™ connector for General Purpose Input signals. The IPX-301 includes 1 general purpose logic input.

The GPIs are logical, with an internal pull-up of 3 Volts and 100 Kohm, and therefore the simplest assembly is a simple switch to ground. Assemblies can also be connected to an open collector output from an ancillary equipment.



SWITCH TO GROUND

OPEN COLLECTOR

GPIs can perform the following actions: Key (remotely control a key of another device), Private Call, CUE Transmitter (activate a CUE status), GPIO (activate a GPO) and Function (Call to Group, Mic Kill to User/Group, Buzzer Kill to User/Group and Replay last seconds).

TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS - Measured values		
SYSTEM SPECIFICATIONS	FREQUENCY RESPONSE	100 Hz – 24KHz (-3 dB) H / 12 KHz (-3 dB) L
	DYNAMIC RANGE	80 dB
	LATENCY	Typically < = 20 ms L
	POWER REQUIREMENTS (alternate)	<ul style="list-style-type: none"> ● +24V / 160 mA nominal. AC/DC adapter ● PoE 3 class / <5W
PREAMPLIFIER	MICROPHONE TYPE (Headset)	Dynamic (D) o Electret (E). Automatic Selection
	MICROPHONE TYPE (Panel Mic)	Dynamic (D)
	MICROPHONE INPUT IMPEDANCE	4K7
	NOMINAL / MAXIMUM LEVEL	-40 dBu (D) / -20 dBu(E)
	PHANTOM VOLTAGE	+9 VDC (Automatic Selection)
HEADPHONE AMPLIFIER	IMPEDANCE	200 ohm (nominal); 2K ohm (maximum).
	MAXIMUM LEVEL / OUTPUT LEVEL	20 Vpp (200 ohm) / 250 mW (200 ohm).
	FREQUENCY RESPONSE	250 Hz – 15 KHz.
	RESIDUAL NOISE	-75 dBu (all mics off)
SPEAKER AMPLIFIER	RATED POWER	4 W @ 8 ohm
	MAX SPL LEVEL	89 dB SPL @0,5m
	EXTERNAL CONNECTION	Mini-jack 3.5 mm. Connection cancels internal speaker
GPIO PORTS	GPO x 5	3 pin 3.5 mm Euroblock / 40 V max DC, 200 mA max
	GPI x 5	3 pin 3.5 mm Euroblock / 40 V max DC, 100K pull-up
	+ POWER OUT	3V DC/ 100 mA max
ETHERNET PORT	100/1000-Mbit/s Ethernet	IEEE802.3-2002 standard
	PoE compatible	IEEE802.af standard
ETHERNET CABLE	RECOMMENDED CABLE TYPE	CAT. 5E or higher (1000BASE-T)
	Maximum recommended cable length	100m
ACCESSORIES (optional)	Headsets	ALTAIR AM100 Series
	AC/DC adapter	ACPA-IP REF: VET-24
ACCESSORIES (included on the supply)	Gooseneck microphone	MF-200 Series 14" XLR4
DIMENSIONS	Longitudinal measures	1U rack (485×45 mm, 90mm) (LxWxD)
WEIGHT	Net without accessories	1700 gr
ENVIRONMENTAL CONDITIONS	Temperature (operating)	0°C a 50°C
	Humidity (operating)	10% a 90% (HR, not condensed)

Note: Technical specifications subject to change without notice.

TROUBLESHOOTING GUIDE		
SYMPTOM	CHECK	PROCEDURE
System is excessively complex for the job.	Save the session configuration on software NEBULA file .ipa	On NEBULA, go to Edit tab and select Clear Memory: System will go to Factory Default Settings: Dual channel party-line
Excessive return on the headset. (Own voice heard on the headphones)	Reduce the unit side-tone level in the MENU>AUDIO Cut the listening channels to evaluate the origin.	Along the different devices sharing the group, check for a headset making the coupling. Reduce listening level. Close the Talk. Set properly the Speaker att by Panel Mic. (i.e. -15 dB) Check for an interface set in 2W mode with a deficient NULLING on the line. Start an AUTO NULL
-Not a stable display -Device initialization cycling.	Maybe IP address is repeated along the network.	Using NEBULA check individual IP setting are different along the system. Set units in DHCP mode.
“ANOTHER SYSTEM PRESENT” label on display	A new IP device has been introduced on network	-Disconnect the unit if not necessary -Join the unit to the network. See NEBULA>Join/Clear icon

USER MANUAL

WARRANTY

This unit is warranted by Equipos Europeos Electrónicos to the original user, against flaws in the manufacturing and in the materials, for a period of two years (one year depending on some countries), starting from the date of sale.

Flaws due to wrong use of the unit, internal modifications or accidents, are not covered by this warranty.

There is no other warranty expressed or implicit.

Any faulty unit must be sent to the dealer or the manufacturer. The serial number of the unit must be included for any request to the technical service.

Equipos Europeos Electrónicos reserves the right to modify the prices or the technical specifications without further notice.

SERIAL NUMBER:

Extract of the Declaration of Conformity (DoC)

“We, Equipos Europeos Electrónicos, S.A. declare, that the above mentioned product is manufactured according to our Full Quality Assurance System in compliance with Directive 99/5/EC. The presumption of conformity with the essential requirements regarding Council Directive 99/5/EC is ensured.”

The Declaration of Conformity (DoC) has been signed. In case of needing a copy of the original DoC, it can be made available via the internet direction:

<http://www.altairaudio.com/DoC>

Disclaimer

You shall not use the *IPF-316 PANEL* in any safety critical or functional applications, including but not limited to using in life supporting, military or nuclear applications. Altair expressly disclaims any responsibility for such usage which shall be made at your sole risk, even if Altair has been informed in writing of such usage. Unless expressly designated in writing by Altair as suitable for use in aerospace applications, you shall not use the above products in such areas.

European Union Waste Electronics Information

Unión Europea Información sobre residuos electrónicos

Waste from Electrical and Electronic Equipment (WEEE) directive

The WEEE logo signifies specific recycling programs and procedures for electronic products in countries of the European Union. We encourage the recycling of our products. If you have further questions about recycling, contact your local sales office.



Directiva sobre Residuos de Aparatos Eléctricos y Electrónicos (RAEE)

El logotipo de la Directiva RAEE se refiere a los programas y procedimientos específicos de reciclaje para aparatos electrónicos de países de la Unión Europea. Recomendamos el reciclaje de nuestros productos. Si tiene alguna consulta, póngase en contacto con su Distribuidor.

Information based on European Union WEEE Directive 2002/96/EC

Información basada en la Directiva de la unión europea RAEE 2002/96/EC y el Real Decreto 208/2005



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