



## User Guide



**TIM-1000**

(Tracking Intelligent Microphone)



Thank you for purchasing a Clockaudio product. We are confident that this product will give you many years of trouble free operation.

As part of Clockaudio's continual ongoing programme of product development, improvements to the existing TIM-1000 microphone range may be made to further increase the already excellent reliability and functionality.

**Note: Where necessary, instructions are also provided in Canadian French.**

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## **Disclaimer**

This User Guide is written for users of the TIM-1000 Intelligent Tracking Microphone, to assist in installation and operation. It is not intended to be a detailed source of information.

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## READ ME FIRST – SAFETY INSTRUCTIONS

Please ensure that the following safety instructions are followed. If the product is reissued to another party, please ensure that this document is provided.

1. Ensure that all warnings and important notes are adhered to;
2. Follow all instructions carefully;
3. If the unit needs to be cleaned, only use dry cloth; the unit is not waterproof;
4. There may be a risk of fire if the unit is exposed to dripping or running water or other liquids;
5. Do not install in a totally confined area where there is no air movement over the back of the unit;
6. Do not install the product near heat sources such as radiators, stoves, etc...;
7. Only use the attachments supplied, specified or recommended by Clockaudio.

Assurez-vous que les instructions de sécurité suivantes sont suivies. Si le produit est réédité à une autre partie, assurez-vous que ce document est fourni.

1. Assurez-vous que toutes les mises en garde et notes importantes sont respectées.
2. Suivez toutes les instructions attentivement.
3. Si l'unité doit être nettoyée, utilisez uniquement un chiffon sec. L'appareil n'est pas étanche.
4. Il peut y avoir un risque d'incendie si l'appareil est exposé à des gouttes d'eau, à de l'eau courante ou à tout autre liquide.
5. N'installez pas le produit dans une zone totalement confinée où l'air ne circule pas à l'arrière de l'appareil.
6. N'installez pas le produit à proximité de sources de chaleur telles que radiateurs, cuisinières, etc.
7. Utilisez uniquement les pièces jointes fournies, spécifiées ou recommandées par Clockaudio.

**Warning!**

Do not remove the covers as there is sensitive equipment inside. Only Clockaudio Ltd or its approved service engineers are permitted to service this equipment. There are no user serviceable parts inside.

**Attention!**

Ne retirez pas les couvercles, car il y a du matériel sensible à l'intérieur. Seul Clockaudio Ltée ou ses techniciens agréés sont autorisés à entretenir cet équipement. Le produit ne contient aucune pièce réparable par l'utilisateur.

**Caution!**

Unauthorised maintenance, repair or the use of non-approved replacements may affect the equipment specification and invalidate any warranties.

**Mise en garde!**

Un entretien non autorisé, des réparations ou l'utilisation de pièces de rechange non approuvées peuvent affecter les spécifications de l'équipement et invalider les garanties.

**Equipment covered by this User Guide.**

This User Guide covers the TIM-1000 Intelligent Tracking Microphone. The product is specifically designed for use in board rooms, huddle rooms or other enclosed meeting room spaces.

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## 1 Overview

The Tracking Intelligent Microphone (TIM) breaks the mould for ceiling microphones. Designed for use in AV conference and huddle room applications, TIM-1000 provides unparalleled performance. With automatic tracking of participants within the meeting room, TIM-1000 unshackles them to freely move around the room. Introducing the unique Adaptive Proximity Tracking (APT) technology, and noise suppression, TIM-1000 captures and delivers the best possible sound. With seamless integration into DANTE network and integration with other third party controllers, makes TIM-1000 an ideal choice for any conferencing applications.

Designed from the ground up and integrating seamlessly with Dante and AES67 networks, third party controllers, TIM-1000 offers a host of unique features that allows deployment flexibility and configurability using an intuitive GUI.

Major functionality introduced within TIM-1000 includes:

- Tracks meeting participants within the room
- APT technology for best possible sound output
- Eliminates unwanted steady state noise e.g. air conditioning, projectors
- User selectable colours for the LED ring
- Built-in equalizer
- Supports DANTE and AES 67
- GUI through standard Web browser
- Powered over Ethernet (PoE)
- Separate control and data paths for added security
- API commands via UDP
- Easy setup and install

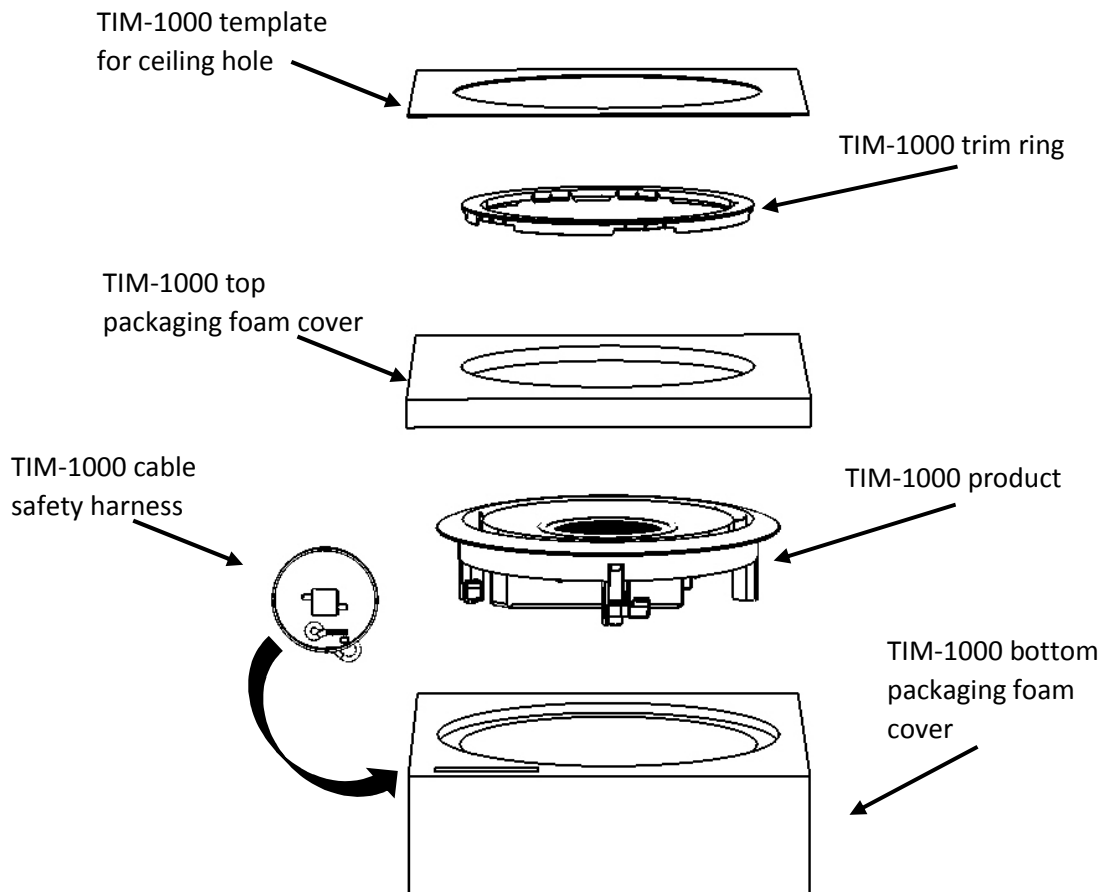
Available in 2 formats, TIM-1000 is suitable for all conference/huddle room applications:

- TIM-1000-CM (Ceiling mount)
- TIM-1000-PM (Pole mount)

## 2 Package Contents

### 2.1 Contents of the TIM-1000-CM (Ceiling Mount version)

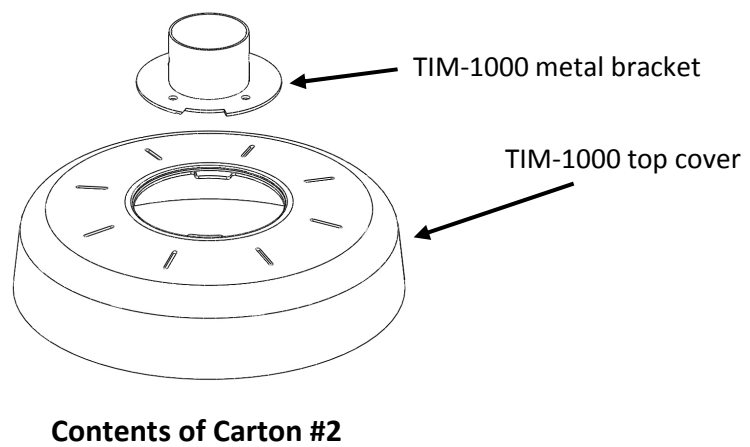
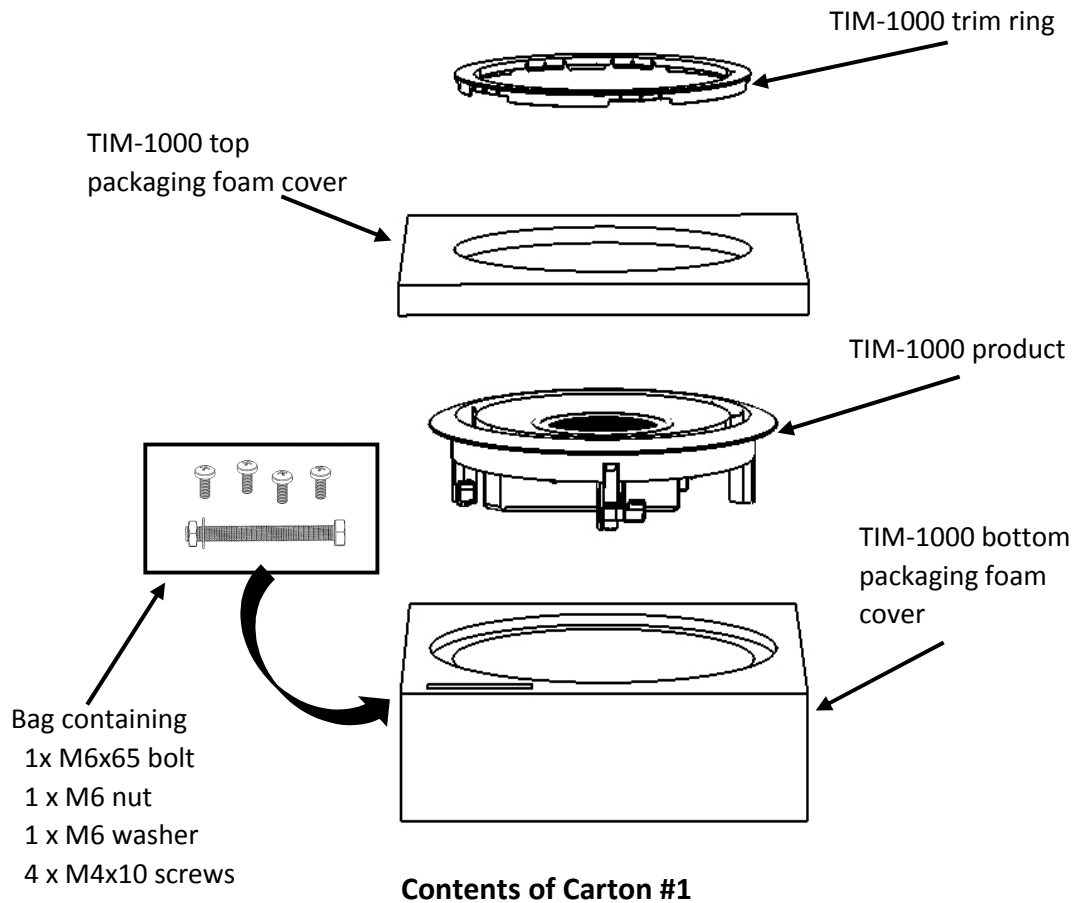
The Ceiling Mount version of TIM-1000 comes in a single carton. This user guide and cardboard template for cutting hole in ceiling (not shown below) are also located in this carton.



**Contents of Carton**

## 2.2 Contents of TIM-1000-PM (Pole Mount version)

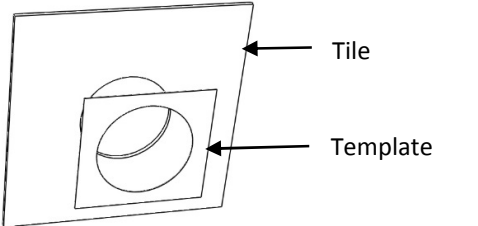
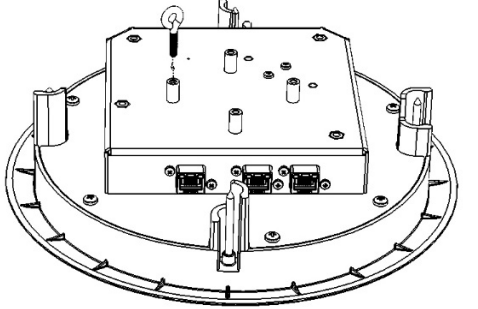
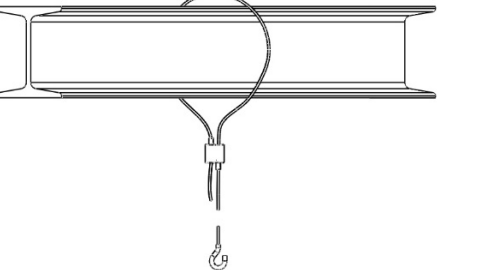
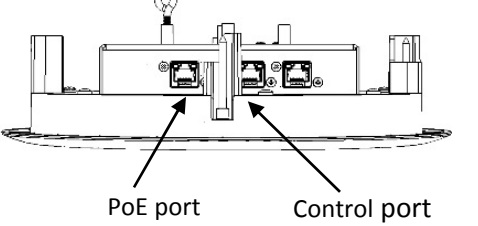
The Pole Mount version of TIM-1000 comes in two cartons. This user guide is located in Carton #1.

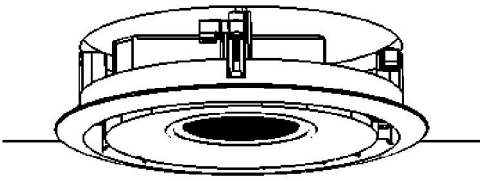
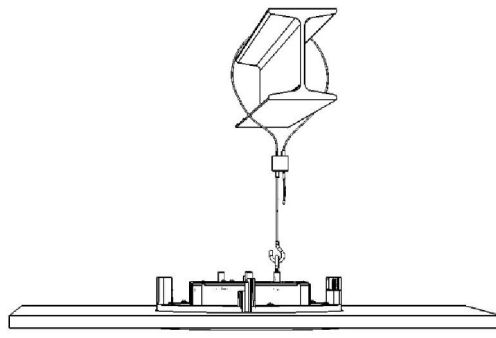
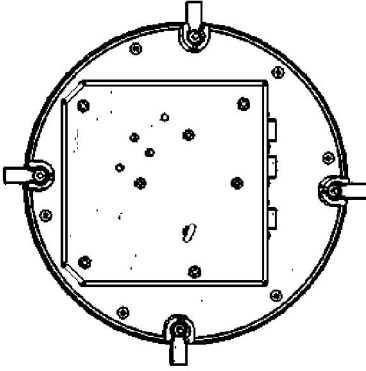
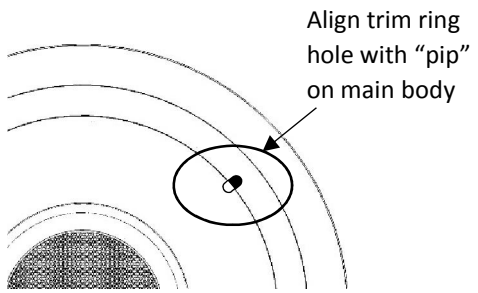


### 3 Installation

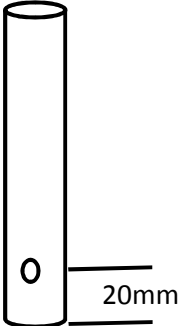
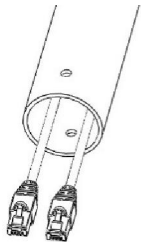
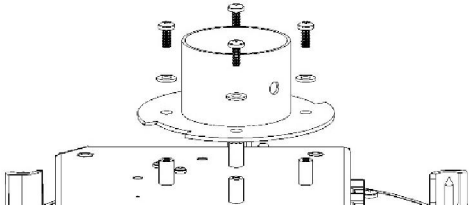
There are two versions of TIM-1000: a ceiling microphone that's installed in the false ceiling or a pole mount version that is hung down vertically from the ceiling. In either case, the distance from the microphone front face to the ground is typically 2.4m to 3.1m (8ft to 10ft). TIM-1000 is easy to install using the guide below. Pickup area of the product is 9.1m or 30ft diameter.

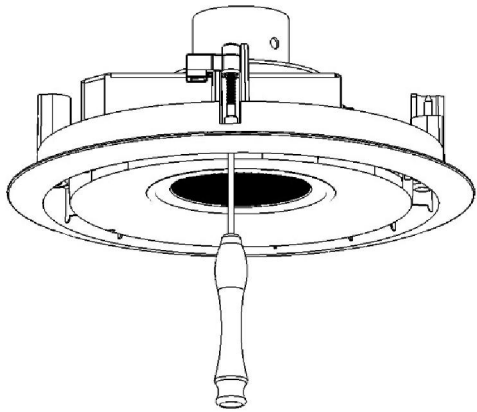
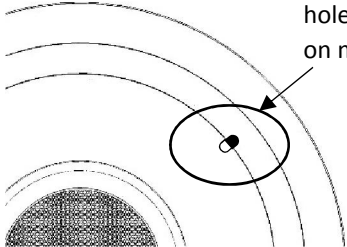
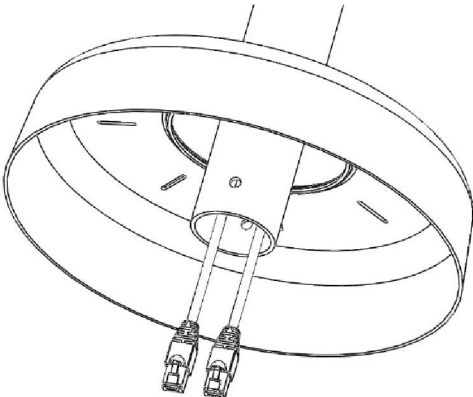
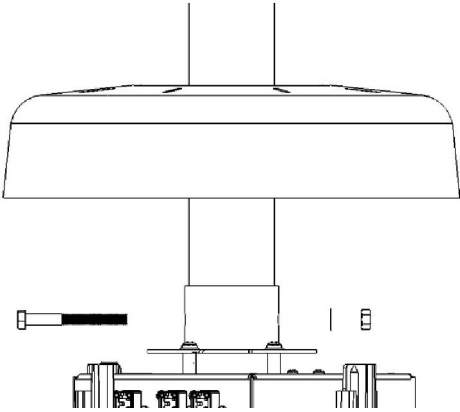
#### 3.1 Ceiling tile mount installation

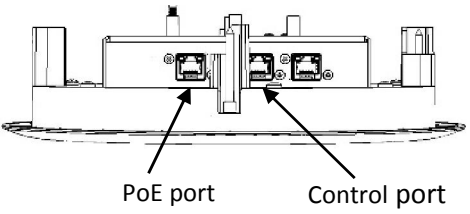
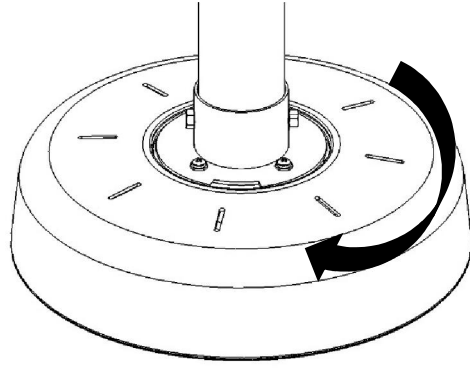
<p>1. Place the provided template on the ceiling tile where needed, draw the 240mm (9.4") hole and then cut appropriately.</p> <p>Placez le gabarit fourni sur la dalle de plafond si nécessaire, faites un 240mm (9.4") trou puis coupez de manière appropriée.</p>	
<p>2. Insert an M4 eyebolt into one of the standoffs on the back of TIM-1000.</p> <p>Insérez un boulon à œil M4 dans l'une des entretoises à l'arrière du TIM-1000.</p>	
<p>3. Attach the cable safety harnesses to a joist or a fixed structure in the ceiling.</p> <p>Attachez les câbles de sécurité à une solive ou à une structure fixe au plafond.</p>	
<p>4. Connect the shielded RJ45 Cat5 cables to TIM-1000; Dante cable has to be connected to PoE; control cable (does not need to be PoE) connects to CTRL1.</p> <p>Connectez les câbles RJ45 Cat5 blindés au TIM-1000. Le câble Dante doit être connecté au PoE; le câble de contrôle (qui n'a pas besoin d'être PoE) se connecte à CTRL1.</p>	

<p>5. Guide the frame through the hole in the ceiling tile ensuring that the fixing clips are pointing inwards.</p> <p>Faites passer le TIM-1000 à travers le trou de la dalle de plafond en veillant à ce que les pinces de fixation soient dirigées vers l'intérieur.</p>	
<p>6. Attach the hook of the safety harness through the M4 eyelet and pull the cable of the safety harnesses to take up any necessary slack.</p> <p>Fixez le crochet du câble de sécurité à travers les œilletons M4 et tirez sur le câble de sécurité afin qu'il n'y ait plus de jeu.</p>	
<p>7. Screw the four screws into the ceiling cover. This rotates the fixing clips and clamps TIM-1000 to the ceiling.</p> <p>Vissez les quatre vis dans le couvercle du plafond. Ceci fait pivoter les pinces de fixation de TIM-1000 au plafond.</p>	
<p>8. Align the pip on TIM-1000's front face with the hole in the trim ring and clip it in gently.</p> <p>Alignez le picot de la face avant du TIM-1000 avec la bague de finition et attachez-le doucement.</p>	
<p>9. Connect the free ends of the shielded RJ45 Cat 5 cables to the appropriate network switches.</p> <p>Connectez les extrémités libres des câbles blindés RJ45 Cat 5 aux commutateurs de réseau appropriés.</p>	

### 3.2 Pole mount installation

<p>1. Connect either a 50mm or 2" diameter pole to the ceiling or an overhead fixture via suitable means.</p> <p>Connectez un poteau de 50 mm ou de 2 po de diamètre au plafond ou à un plafonnier par des moyens appropriés.</p>	
<p>2. Drill a 6.5mm diameter hole (M6) that is 20mm (0.8") from the bottom end of the pole.</p> <p>Percez un trou de 6,5 mm de diamètre (M6) à 20 mm (0.8") de l'extrémité inférieure du poteau.</p>	 <p>The diagram shows a vertical cylindrical pole. A horizontal line indicates a hole is drilled 20mm from the bottom end. The number '0' is written near the bottom of the pole.</p>
<p>3. Feed the Shielded RJ45 Cat5e cables through the pole so that the RJ45 connectors appear through the bottom end; Dante cable has to be connected to PoE; control cable (does not need to be PoE) connects to CTRL1.</p> <p>Faites passer les câbles RJ45 Cat5e blindés à travers le poteau de sorte que les connecteurs RJ45 apparaissent à travers l'extrémité inférieure. Le câble Dante doit être connecté au PoE. Le câble de contrôle (qui n'a pas besoin d'être PoE) se connecte à CTRL1.</p>	 <p>The diagram shows two RJ45 cables being inserted into the bottom of the pole. The RJ45 connectors are visible at the bottom end.</p>
<p>4. Connect the metal bracket to TIM-1000's body using 4 x M4 screws (supplied).</p> <p>Reliez le support en métal au corps du TIM-1000 à l'aide de quatre vis M4 (fournies).</p>	 <p>The diagram shows a metal bracket with four screws being attached to the bottom of the TIM-1000 device. The screws are shown passing through the bracket into the device's body.</p>

<p>5. Unscrew the four ceiling mount fixing clips as these are not required.</p> <p>Dévissez les quatre pinces de fixation du support de plafond, car elles ne sont pas nécessaires.</p>	
<p>6. Align the pip on TIM-1000's front face with the hole in the trim ring and clip it in gently.</p> <p>Alignez le picot de la face avant du TIM-1000 avec la bague de finition et attachez-le doucement.</p>	 <p>Align trim ring hole with "pip" on main body</p>
<p>7. Feed TIM-1000's top cover through the pole connected to the ceiling.</p> <p>Faites passer le couvercle supérieur du TIM-1000 à travers le poteau connecté au plafond.</p>	
<p>8. Feed the ceiling pole into the metal bracket and lock with attached bolt, washer and nut.</p> <p>Introduisez le poteau de plafond dans le support en métal et verrouillez-le avec le boulon, la rondelle et l'écrou fixés.</p>	

<p>9. Connect the free ends of the shielded RJ45 Cat 5 cables to the appropriate network switches.</p> <p>Connectez les extrémités libres des câbles blindés RJ45 Cat 5 aux commutateurs de réseau appropriés.</p>	 <p>PoE port      Control port</p>
<p>10. Position the top cover onto TIM-1000, ensuring it's correctly positioned, and rotate clockwise to lock in place.</p> <p>Placez le couvercle supérieur sur le TIM-1000 en vous assurant qu'il est correctement positionné et faites-le pivoter dans le sens des aiguilles d'une montre pour le verrouiller en place.</p>	
<p>11. Connect the other end of the shielded Cat5e cable to the appropriate network switches.</p> <p>Connectez l'autre extrémité du câble blindé Cat5e aux commutateurs de réseau appropriés.</p>	

Once the units have been connected and TIM-1000 has performed its self-test, it's ready to be configured.

By default, when the units are shipped, they are configured for DHCP for the Control and Dante networks. Therefore, once units are powered up, a DHCP server shall be available to provide TIM-1000 with a control and data ports' IP addresses. If no DHCP server is available, the data port will obtain its IP address using link local (i.e. in the address range of 169.254.xxx.xxx).



### 3.3 Connecting to TIM-1000

To display TIM-1000's web GUI, locate its Control port's IP address and using a web browser connect to it

**http://<Control IP address>/index.php**

Default password for both Home and Advanced pages is “**clockaudio**”.

### 3.4 Adding additional units

For some room configurations, it may be desirable to have more than one TIM-1000. For this scenario, it is possible to add other unit(s) to the room. There are two ways to cable these additional units.

1. Daisy-chain control path – For this option, from the first unit's Control port 2 (CTRL 2) attach a shielded Cat 5e cable to the control port (CTRL 1) on the second unit. If multiple units need to be connected to cover a large area, then repeat the process of connecting CTRL 2 to the next unit's CTRL 1.

It is important to note that the PoE or Data Port cannot be daisy chained.

2. Run separate cables – As per the first unit, separate cables for Data and Control can be run.

### 3.5 Coverage Area

These figures are typical and the coverage area will vary depending upon the install.

Typical height from floor level to TIM-1000 is 2.4m to 3.1m (8ft to 10ft).

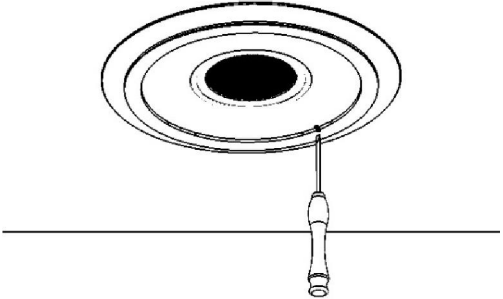
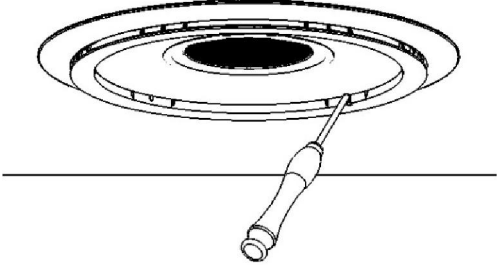
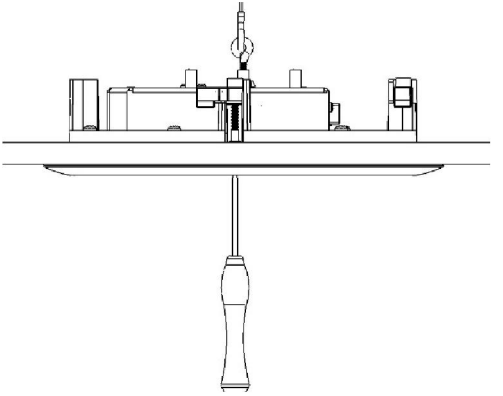
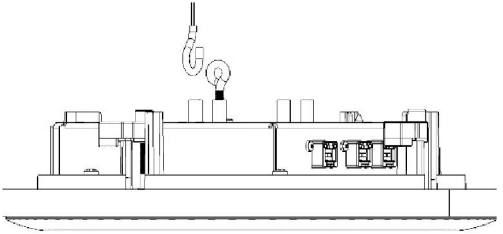
Typical coverage area for TIM-1000 at this height is 9.1m (30ft) diameter.

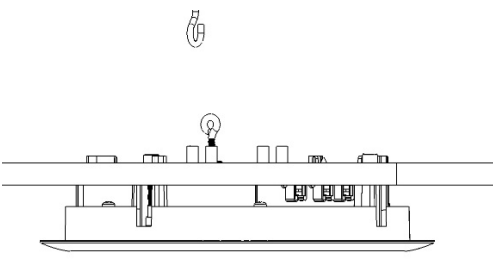
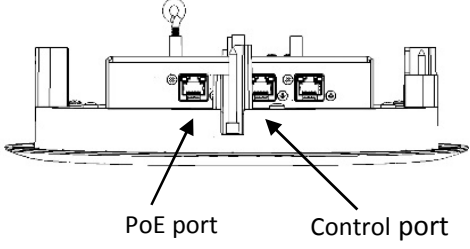
Setting APT function to other than OFF can simulate a larger pickup area as the quieter sounds will be uplifted.

### 3.6 Uninstallation of TIM-1000

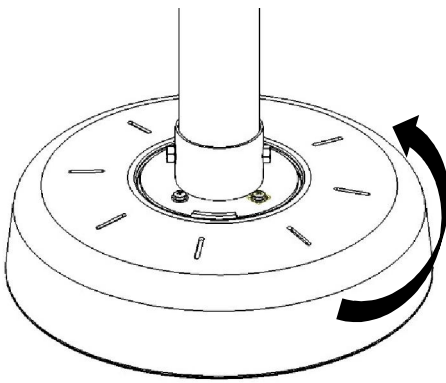
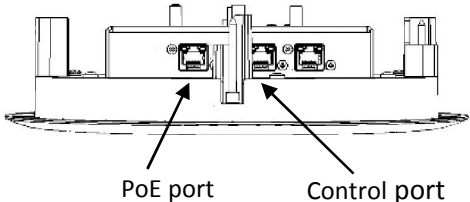
In the event that TIM-1000 needs to be removed, please follow the following process.

#### 3.6.1 Uninstallation of TIM-1000 Ceiling Mount

<p>1. Insert a small flat-blade screw driver or a small allen key into the hole.</p> <p>Insérez un petit tournevis plat ou une petite clé Allen dans le trou.</p>	
<p>2. Gently prise out the Trim ring out taking extra care where the ring is clipped in tight.</p> <p>Soulevez délicatement la bague de finition en faisant très attention lorsque la bague est serrée.</p>	
<p>3. Undo the four screws until you feel that the “dog-leg” clips are turning about 90 degrees.</p> <p>Dévissez les quatre vis jusqu’à ce que vous sentiez que les pinces patte de chien (<i>dog-leg</i>) tournent à environ 90 degrés.</p>	
<p>4. Release the cable harness from the back of the unit.</p> <p>Détachez le harnais de câble à l’arrière de l’appareil.</p>	

<p>5. Gently pull out TIM-1000 from the ceiling tile.</p> <p>Retirez doucement le TIM-1000 de la dalle de plafond.</p>	
<p>6. Remove the PoE and Control cable(s).</p> <p>Retirez les câbles PoE et de contrôle.</p>	

### 3.6.2 Uninstallation of TIM-1000 Pole Mount

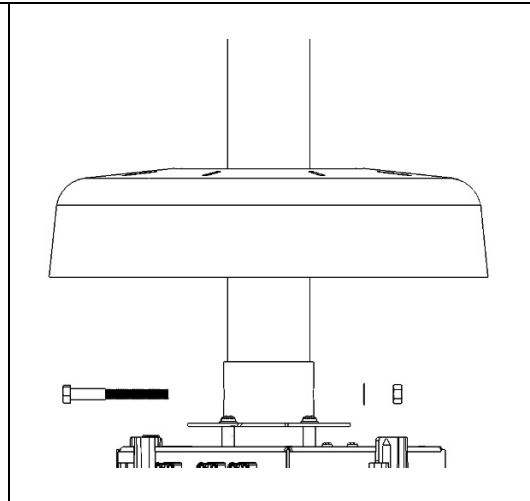
<p>1. Rotate the TIM-1000's top cover anti-clockwise and lift up.</p> <p>Faites pivoter le couvercle supérieur du TIM-1000 dans le sens inverse des aiguilles d'une montre et soulevez-le.</p>	
<p>2. Remove the PoE and Control cable(s).</p> <p>Retirez les câbles PoE et de contrôle.</p>	

3. Lift the top cover off TIM-1000 and undo the nut and washer.

Take care while pulling the bolt out that the unit is supported from the bottom.

Soulevez le couvercle supérieur du TIM-1000 et desserrez l'écrou et la rondelle.

Assurez-vous que l'appareil est soutenu par le bas lorsque vous tirez le boulon.



### 3.7 TIM-1000 Power up sequence

When a PoE cable from a live PoE network switch is applied to TIM-1000's PoE port, the unit powers up indicating the following sequence.

1. The LED ring turns Orange indicating that unit has power and is going through its self-test;
2. After approximately 20 seconds the Orange LEDs go OFF for approximately 15 seconds;
3. The LED ring turns Green indicating that it is ready for use;
4. If the LED ring's default colour had been altered, those colours will be displayed.

## 4 Feature Description

TIM-1000 has a number of features that are quite unique. These features are described below.

Bring up the web GUI of the product. By default, the home tab will be in focus. Before you can log into the GUI to gain access, password is required. The default password is “**clockaudio**” for both the Home and Advanced pages. These passwords can be changed from the Advanced tab with different passwords allocated for both the Home and Advanced tab.

To change passwords, on TIM-1000’s web GUI, click on the Advanced tab and log in. At the bottom right hand side of the GUI, click on change password. This will pop-up another window with radio buttons. Click on the Home or Advanced tab to set the password for the appropriate tab.

Featuring adjustable Adaptive Proximity Tracking (APT) technology, TIM-1000 tracks the person or sound source within the room automatically and equalises the levels of the sound sources. This enables a quieter sounds in the room to normalise the sound levels.

For cases where there may be some unwanted steady state noise in the room, e.g. from a projector, air-conditioning, fan, rain, etc., TIM-1000 features a powerful noise suppression functionality that virtually removes the steady state noise to provide a clear and clean output.

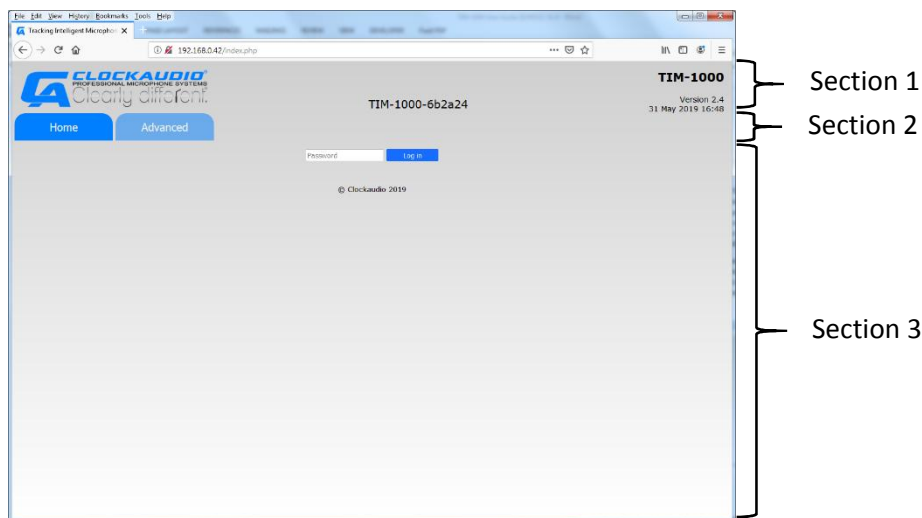
For cases where the corporate board rooms want to change the colour of the LEDs in the ring, a user definable colour pallet is available.

3 x RJ45 ports are provided on the device. One port is for POE and provides connectivity to the Dante network. The second port is for control network while the third port is daisy chaining the control network to another TIM-1000. Up to 4 TIM-1000s can be daisy-chained.

## 5 Understanding the GUI and Features

The section below describes all the features of TIM-1000's GUI and what each one does. When you initially open TIM's GUI using your favourite browser (compatible browsers are Microsoft Edge, Internet Explorer, Safari, Firefox and Chrome), you are presented with a screen with two tabs – Home and Advanced. By default the Home tab is highlighted. When you enter the password for the selected tab, you're logged into that part of the GUI. Every time a different Tab is selected, the appropriate password will have to be re-entered. The GUI is split into 3 sections.

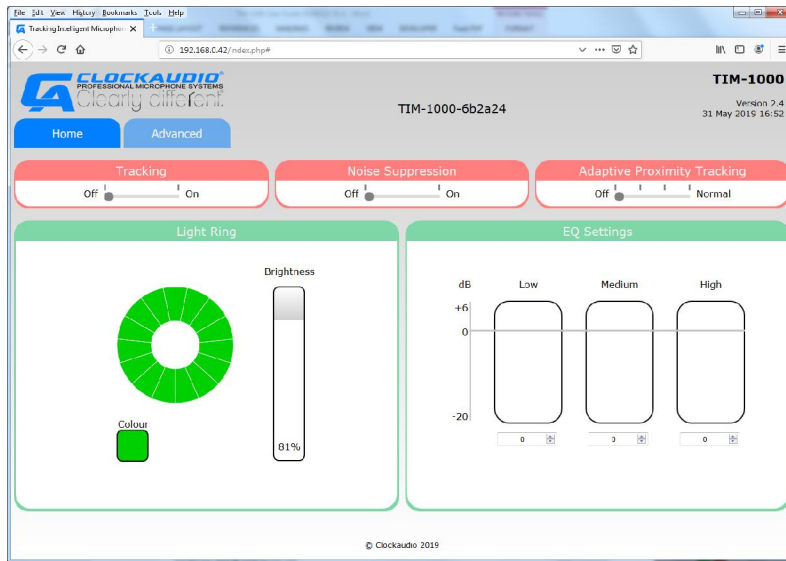
- Section 1 has the Clockaudio logo, Generic product name (TIM-1000), Product name that will appear to the control system (e.g. Dante network), s/w version number, date and time.
- Section 2 displays two tabs – Home and Advanced.
- Section 3 displays the features under the appropriate tab once you've logged in.



### 5.1 Passwords

Before you can log into the GUI to gain access, the password is required. The default password is “clockaudio” for both the Home and Advanced pages. Passwords can be changed from the Advanced tab where, if required, different passwords can be allocated to both the Home and Advanced tab. See section on Password reset via GUI.

## 5.2 Home Tab



This Tab is what most users will use. Sections of this tab are:

### 5.2.1 Tracking

This is a slider that enables tracking to be turned ON or OFF. Tracking OFF equates to the microphone behaving as omni-directional. Tracking ON equates to the ability of TIM-1000 to track a person around the room.

### 5.2.2 Noise Suppression

This is a slider that enables or disables steady state noise suppression from the output. You may still have noise in the vicinity of TIM-1000 but that steady state noise is not transferred to the person at the other end of the output.

### 5.2.3 APT (Adaptive Proximity Tracking)

This feature has a slider that has four steps

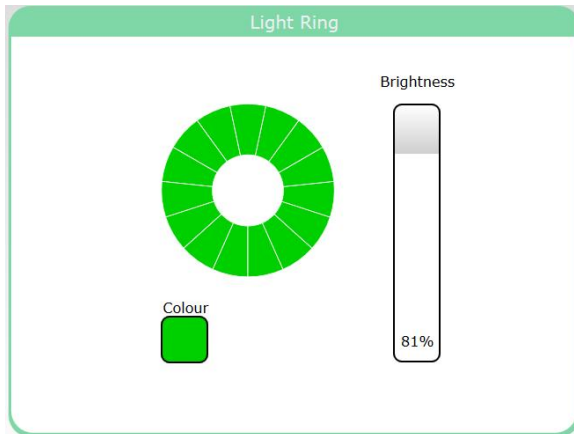
- OFF – No uplift is applied to the sound source that is further away to ensure that the sound levels of the quietest one to the loudest one in the room are kept consistent.
- 1st stop – When this stop is selected, the quieter sound source is slewed at approximately 1.5dB/sec to the same level as that of the person talking close to the mic. If the quieter person continues to talk, their sound source will eventually reach the same level as that of the person talking close to the mic.
- 2nd stop – When this stop is selected, the quieter sound source will be slewed at approximately 3.0dB/sec to the same level as that of the person talking close to the mic. If the quiet talker continues, then they will reach the same output volume as the main speaker quicker than before.
- Normal (last stop) – when this stop is selected, the quieter sound source will reach the same volume as the main speaker at a slew rate of about 6dB/sec.

### 5.2.4 Light Ring

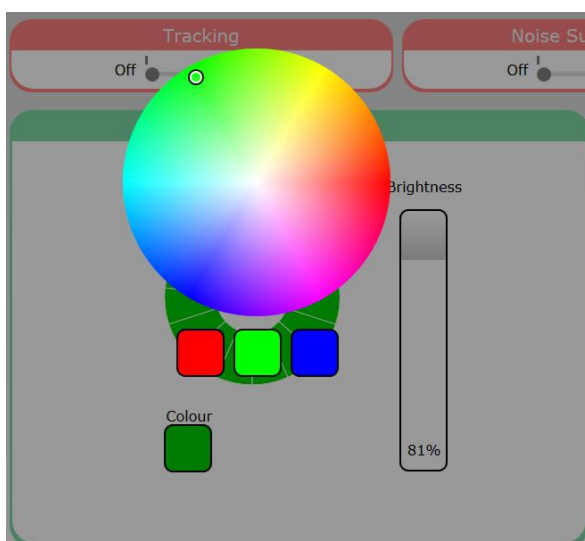
This provides the ability to set the colour of the light ring from the GUI.

Note: If the LED ring is required to illuminate different colours/brightness for different functions e.g. active, mute... then UDP commands should be used program the LEDs colours.

On this GUI panel, there are two other panels.



- Brightness – Clicking in this box and dragging the cursor down varies the brightness of the colour ring on TIM-1000. As the cursor is dragged from the top of the box towards the bottom, the panel's display changes from white to a darker shade of grey. Brightness can be varied from 100% (maximum brightness) down to 16% with its value displayed at the bottom of the intensity panel. As the cursor is hovered over the box displaying the value, an "Off" is displayed. Clicking in this section will set the LEDs to OFF. Thus allowing the LED ring to be switched off completely.
- Colour – Clicking in this box opens a colour pallet that allows the colour of the LED ring to be chosen while the rest of the screen goes grey. Select the desired colour and click outside of the colour wheel to exit. Quick access to set the LED ring for Red, Green or Blue, can be achieved using the appropriate panel under the colour wheel.



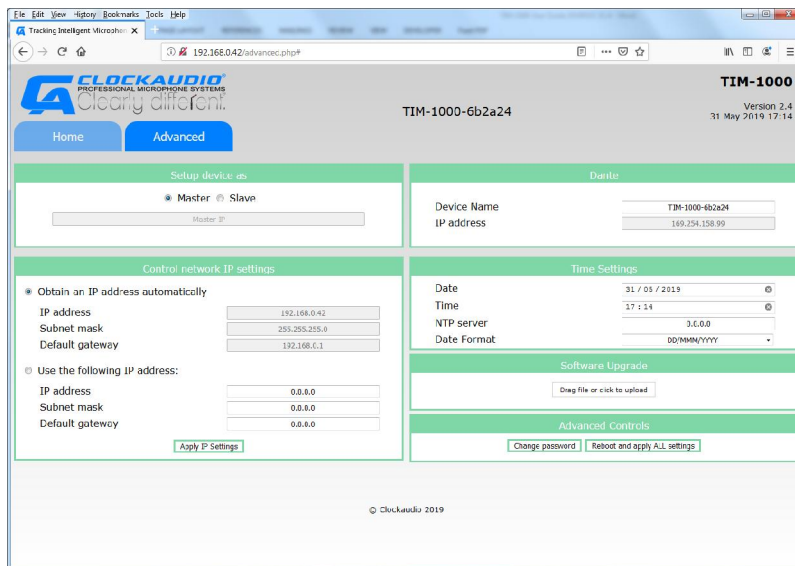


## 5.2.5 EQ settings

These provide audio lift or reductions in the Low (0 – 350Hz), Mid (350 – 2000Hz) or High frequency ranges (2000 – 8000Hz).

## 5.3 Advanced Tab

This tab is typically what an administrator, super user or IT department will use to configure the unit. Sections of this tab are



### 5.3.1 Device setup

Allows TIM-1000 to be set as either Master or Slave unit. In general, if there is only one unit per room, then it has to be set as a Master. However, for areas where you may need to use more than one unit, the other unit(s) can be setup as a Slave device(s). When setup as a Slave, the Master units' IP address must be entered in the GUI for each slave.

### 5.3.2 Control network IP settings

There are two ways for the unit to receive its control IP address – via DHCP or being set with a Static IP. When “Obtain an IP address automatically” radio button is checked, TIM-1000 requests a DHCP server to obtain the address. For this mode, there has to be a DHCP server available. If Static IP needs to be set, select “Use the following IP address” radio button. When this is done, you’ll need to specify the IP address of the unit, subnet mask and default gateway.

### 5.3.3 Dante Settings

This panel displays the current device’s network name (which can be edited) as well as the IP address that will be used by Dante. This address would have either been negotiated through the link local addressing or set through Dante Controller.

### 5.3.4 Time settings

This setting allows date and time to be set as long as the NTP address is 0.0.0.0. If the NTP address is non-zero, TIM-1000 will use the specified NTP server to set the device’s date and time. The date format allows you to select between the two date formats i.e. MMM/DD/YYYY or DD/MMM/YYYY.

### 5.3.5 Software upgrade

When new code is released, you can update the code on the unit by clicking in the box and browsing to the appropriate section and selecting the file or by opening up the area where the file is located and dragging it over into the box. Once done, the upgrade process will start. Stopping mid-way during the process means no upgrade and product can be booted using the older version.

Latest software versions will be available from the [www.clockaudio.com](http://www.clockaudio.com) under TIM-1000.

### 5.3.6 Advanced controls

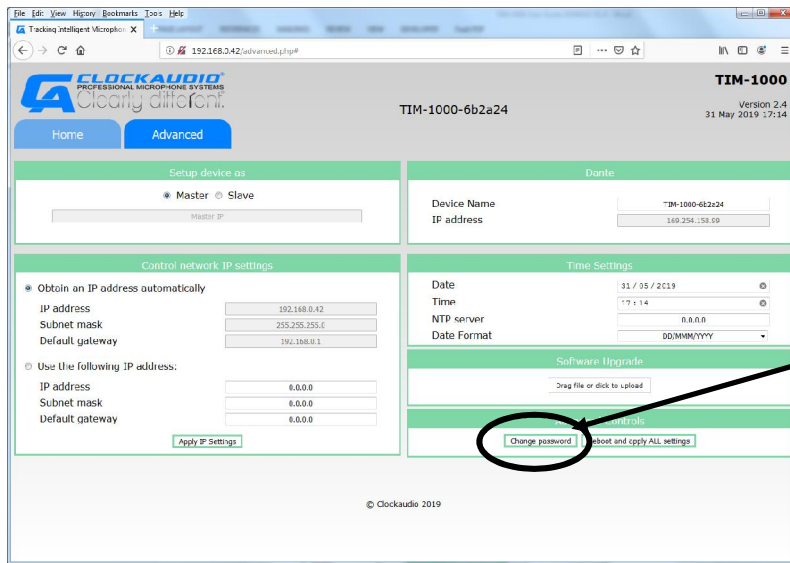
Two buttons are displayed here

- “Change password” – Change password allows you to change passwords for the Home and Advanced tabs. See section on changing “Password reset via GUI”.
- “Reboot and apply ALL settings” – Reboot and apply ALL settings basically does what it says. During the reboot process, contact with the server may disappear, and the GUI will need to be restarted.

Note: Depending upon the DHCP server configuration, it may assign a different IP address to the unit when rebooted.

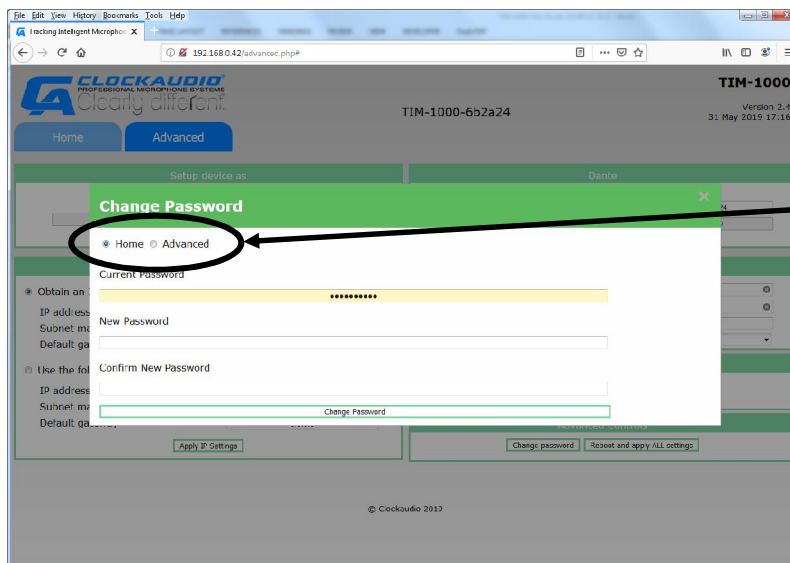
## 5.4 Password Reset via GUI

To change passwords, bring up TIM-1000's web GUI, click on the Advanced tab and log in with the current password.



Click on this field to change passwords

At the bottom right hand side of the GUI, click on change password. The change password pop-up window with radio buttons will appear. Click on the Home or Advanced tab to set the password for the appropriate tab.



Click on these radio buttons to change passwords for the Home or Advanced tabs

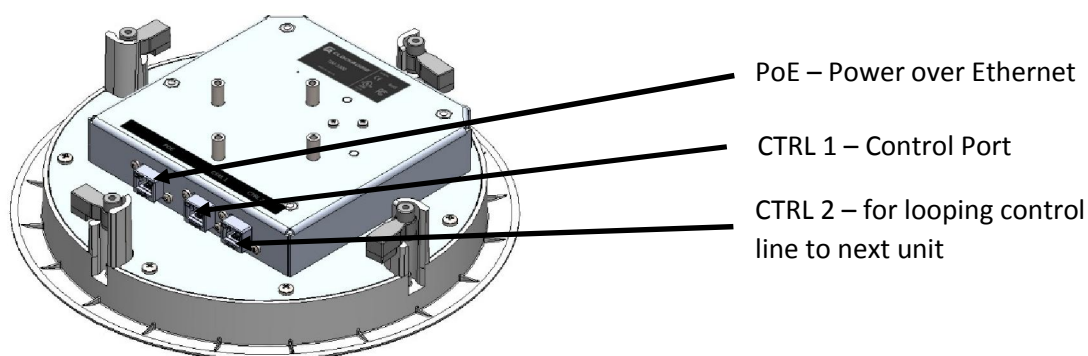
Click on the appropriate tab and change, insert the new password that you wish to set TIM-1000 to and click on Change Password.

## 6 TIM-1000 Physical connections

This section describes the physical RJ45 ports and the Reset switch.

### 6.1 RJ45 Port Connections

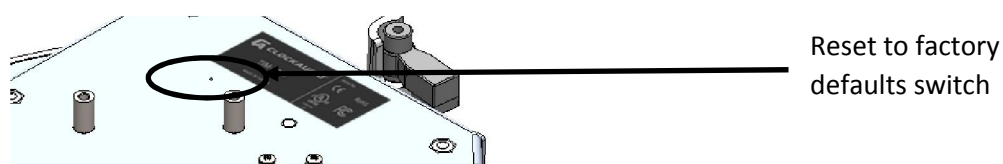
Three RJ45 ports are available for connectivity of the product



- PoE – This port is the one that needs to be connected to the switch that can provide Power over Ethernet and is also the one connected to the Dante network.
- CTRL1 – This port connects to the control network. It can be connected to the same as the Dante network, but there is a flexibility in the product to have both the control and Dante networks separate.
- CTRL2 – This port is used when you want to daisy chain a second device. This RJ45 port connects to the CTRL1 port of the second device. You still have to run an independent cable to connect the second unit's Data port to the Dante network.

### 6.2 Factory Defaults Reset Switch

In the event of forgetting the passwords for the unit, a reset switch is provided on TIM-1000. This reset switch is located on top of the unit and accessible via a pin hole.



It is important that care is taken to reset the unit as it will reset the unit back to factory default.

In order to perform a factory reset, remove the PoE connector and depress the switch using a pin inserted into the hole. Then apply power to the unit while keeping switch depressed for at least 30 seconds and then release the switch.

TIM-1000 will then go through its default power-on sequence and boot up in the factory default state.

## 7 Configuring TIM-1000

There is not a lot that needs to be configured for TIM-1000. The only things that can be configured are:

- Tracking ON/OFF
- Noise Suppression ON/OFF
- APT
- Light Ring Colour
- EQ
- IP settings
- Date and Time
- Software upgrade
- Passwords

TIM-1000 as shipped from the factory is configured to accept DHCP. This means that the control port when plugged into the network will receive its IP address from a DHCP server and when the PoE port is plugged into the Dante network, it would negotiate a link local address.

If the IP addresses need to be changed, then the Control IP address can be changed by going into the Advanced tab of the Web GUI and setting a static IP address. The IP address of the Dante port cannot be changed from the Web GUI – this can only be changed through Dante Controller.

Date and Time can be set through the Advanced tab. If the NTP server's IP address is 0.0.0.0 (i.e. set as an invalid address), then the date and time fields can be used to set the time. If the NTP server address is defined as a valid IP address, then TIM-1000 will attempt to contact the appropriate server to look up and set the time.

If the passwords of the Home and/or Advanced tab are forgotten, not available or have been lost, then it's possible to perform a system reset. See section on Reset Switch on how to perform this action.

Software upgrade is a simple process and can be performed in one of two ways:

1. By dragging and dropping the software "tar" file that is supplied into the software upgrade box on the Advanced tab
2. Clicking into the software upgrade box. This action will create a pop up on the window through which you can navigate to the appropriate area where the "tar" file resides. Select the "tar" file and click Open.

Once the software upgrade starts, TIM-1000 will lose connection to the network during the process and the web GUI will become unresponsive. The whole upgrade process should take no longer than 5 minutes. If the web GUI does not refresh, it will need to be connected again.

It's important to note that any changes (apart from Control IP address) made on the Advanced tab will require clicking on the "Reboot and apply ALL settings" button. When this is done, TIM-1000 may lose contact with the server, but depending upon the network configuration the GUI should refresh after a short while.

## 7.1 Additional TIM-1000 configuration

When additional units are installed in a single conference room, they can be configured either in a Master/Slave mode or as independent units.

Regardless of what mode is used, each additional unit shall produce a single Dante channel. It will be up to the DSP to select the channel.

Configuring TIM-1000 to operate in a Master/Slave mode:

1. Set the radio button on the Advanced tab of the main unit as the Master.
2. On the additional unit(s), set the radio button on the Advanced tab as Slave.
3. Underneath the radio button, enter the Master units IP address for each slave unit(s).

Once configured, the slave units listen on the IP ports of the master unit for commands going to the master. Any relevant commands, e.g. change of light colours, Tracking ON/OFF, Noise suppression ON/OFF, APT settings and/or EQ settings, will be mirrored by the slave units.

Even if the units are going to be located in the same room, it is not necessary to configure them to operate in Master/Slave mode as each unit will supply a separate Dante stream that needs to be selected by the downstream DSP.

Whether the unit is working in a Master/Slave mode or not, each unit shall require its own Control network and Data network IP addresses.

## 7.2 Configuring TIM-1000 on Dante networks

TIM-1000 presents itself as a single channel transmit device on Dante Controller. If the single channel is required to connect to multiple locations, it can be configured using Dante Controller.

## 8 Troubleshooting

The following table describes some of the common faults and how to rectify them

<p>1. Unit not powering up</p>	<ul style="list-style-type: none"> <li>• Ensure that the RJ45 cable is at least Cat5e with all 8 pins connected.</li> <li>• Ensure that the network switch TIM-1000 is plugged into is powered up and delivering Power over Ethernet on the connected port.</li> <li>• Ensure that the Cat 5e cable is plugged into the PoE port on TIM-1000.</li> <li>• If a PoE injector is used, ensure that it is plugged in, powered and delivering PoE.</li> <li>• Ensure that there is minimum of 42 volts DC available at the end of the RJ45 cable that plugs into TIM-1000 and that the PoE switch or Injector is capable of delivering a minimum of 8W.</li> <li>• Ensure that a correct and tested Cat5e cable is being used.</li> </ul>
<p>2. LED ring on TIM-1000 pulsing RED</p>	<ul style="list-style-type: none"> <li>• Fault on unit.</li> <li>• Please power cycle the unit a couple of times to ensure that the fault persists.</li> <li>• If fault persists, please contact your dealer for repair.</li> </ul>
<p>3. TIM-1000 not showing up on Dante network</p>	<ul style="list-style-type: none"> <li>• Check the network settings for the Dante network.</li> <li>• Ensure that the network switch is connected to the correct network and configured correctly.</li> <li>• TIM-1000 uses Link Local addressing to get its IP address. Link local negotiates address in the range of 169.254.x.x.</li> </ul>
<p>4. Cannot load the web GUI</p>	<ul style="list-style-type: none"> <li>• If using Microsoft Windows then you should see TIM-1000 as a network resource on the control IP network. Right click on the device and open up the web page.</li> <li>• Ensure that you have access to the same sub-net as TIM-1000 and that there are no firewalls preventing connections.</li> <li>• Ensure that you can Ping TIM-1000 over the control network. If not there may be a network issue and you'll have to call your network administrator.</li> <li>• Ensure that there is DHCP server available to provide the IP address to TIM-1000. As shipped from the factory, both Data and Control ports require DHCP addressing.</li> </ul>

## 9 Factory Configuration

The following table describes the status of the TIM-1000 after reset.

	Factory setting or after Button Reset	Reset via UDP	After s/w install	Power-on reset
Tracking	ON	ON	Retained as set	Retained as set
Noise Suppression	ON	ON	Retained as set	Retained as set
APT	OFF	OFF	Retained as set	Retained as set
EQ settings	Low, Mid and High all set to "0"	Low, Mid and High all set to "0"	Retained as set	Retained as set
Unit set as	Master	Master	Retained as set	Retained as set
Control IP address	DHCP	Retained as set	Retained as set	Retained as set
Dante IP address	DHCP	Retained as set	Retained as set	Retained as set
Product name	TIM-1000-<last six digits of Mac Address>	Retained as set	Retained as set	Retained as set
Time	07-Jan-2019 10:10 am	Retained as set	Retained as set	Retained as set
NTP server	0.0.0.0	0.0.0.0	Retained as set	Retained as set
Date format	DD/MMM/YYYY	Retained as set	Retained as set	Retained as set
Colour of LED	GREEN after boot	GREEN after boot	Retained as set	Retained as set

NOTE: After applying a factory reset via depression of the reset button on the top of the unit, default image as loaded at the factory is reinstalled. Please check the Clockaudio website for the latest released code and install it on TIM-1000 (see section 5.3.5).



## 10 Specifications

	Ceiling Mount	Pole Mount
Dimensions	270mm circular x 75mm high (10.63" circular x 2.95" high)	270mm circular x 150mm high (10.63" circular x 5.90" high)
Weight	3 lbs (1.35 Kg)	Approx. 4.5lbs (2.0kg)
Ports	3 x RJ45 (1 port requires PoE other 2 Standard ports)	
Connectivity	Use a standard Shielded Cat5e or better	
Power (supplied via PoE)	Voltage 42 – 57V DC, 8W (IEEE 802.3at-2009)	
Operating Temperature	0 to 40 degC	
Storage Temperature	-20 to 60 degC	
Relative Humidity	10 to 90% non-condensing	
Frequency response	150 to 15000 Hz	
Safety Certifications	IEC/EN 62368-1 CE Mark	IEC/EN 62368-1 CE Mark
EMC	EN 55032, EN 55035 FCC Part 15b CAN ICES-3 (B)/NMB-3(B)	
Ceiling tile cut-out	240mm circular (9.4" circular)	Not applicable

## 11 Programming using UDP commands

UDP commands are the preferred method of communication between a control system (Crestron, AMX, etc.) or DSP and Clockaudio's TIM-1000 product. The section below defines a comprehensive list of all UDP commands that TIM-1000 supports for configuration and management.

UDP commands are sent as ASCII character string with spaces used to delimit fields within a command. The entire command is delimited with a Carriage Return. Whenever a command is sent to the device, all acknowledged commands are returned with the command data with the string "ACK" inserted preceding the command data.

If the device could not process a command then the command is returned with a "NACK" followed by the string of data that was sent. NACKs are always returned for unknown commands, commands with fewer parameters than expected or commands with invalid parameters.

The following sections describe the UDP command handling and the commands that are available for TIM-1000. The default port number utilised for the UDP command is set to 49494.

All commands shall follow the following rule:

**<COMMAND><Space><PARAM 1><Space><PARAM 2><Space>...<PARAM 6><CR>**

Where: <COMMAND> is the actual command sent to the device

<Space> is a space character (20H from the ASCII Table) sent to the device

<PARAM 1> is the first parameter sent to the device

<PARAM 2> is the second parameter sent to the device

:

<PARAM 6> is the sixth parameter sent to the device

<CR> is the carriage return character (0DH from the ASCII Table) sent to the device

NOTES:

1. It is important that only a single space character is inserted between <COMMAND> and <PARAM 1> as well as between each parameters.
2. An invalid <COMMAND>, value of any <PARAM x> and/or additional spaces inserted shall result in the entire command being **rejected**. In that case a "NACK" followed by the string sent shall be returned from the device.
3. Depending upon command syntax, a carriage return shall immediately follow the <COMMAND> or the final parameter for the command.
4. Transmission of insufficient parameters for the command shall result in the entire command being rejected. In that case a "NACK" followed by the string sent shall be returned from the device.
5. It shall be acceptable to have either no space or a single space character at the end of a completed UDP command; more than one space shall result in command being rejected and a "NACK" returned.

## 11.1 ID (Identify Unit)

Definition	<p>The Identify command is used to permit a given unit to be physically identified. It causes the Power LED on the unit to flash at an approximate rate of 330 milliseconds for ON and same for OFF.</p> <p>Identify command has an ON / OFF parameter and remains in the selected state until a new Identify command (or reset event) is sent to change state.</p>
Syntax	ID <Space> <PARAM 1> <CR>
PARAM 1	Defines whether LED flashes 0 = OFF 1 = ON
PARAM 2	This parameter is not required. Carriage return shall follow immediately after Parameter 1.
Example(s)	To set Identify on Ex 1: ID 1<CR>
Device response(s)	The following response shall be received from the device Res 1: ACK ID 1<CR>

## 11.2 FU (Find Unit)

Definition	<p>The Find Unit command is used to permit a given unit to be physically identified. It causes the Power LED to flash at an approximate rate of 330 milliseconds for ON and same for OFF.</p> <p>The Find Unit command shall flash the Power LED for 5 seconds only after which the Power LED function shall then resume without the need for sending any additional commands.</p>
Syntax	FU<CR>
PARAM 1	This parameter is not required. Carriage return shall follow immediately after the Command.
PARAM 2	This parameter is not required.
Example(s)	To Find unit Ex 1: FU<CR>
Device response(s)	The following response shall be received from the device Res 1: ACK FU<CR>

### 11.3 VERSION (Version)

Definition	<p>The VERSION command returns the current version of the Host firmware. The command has no parameters.</p> <p>The VERSION command only returns the version of the Host MCU firmware. For the version of the Ultimo (Dante) firmware the Dante Controller application shall be used.</p>
Syntax	VERSION <CR>
PARAM 1	This parameter is not required. Carriage return shall follow immediately after the Command.
PARAM 2	This parameter is not required.
Example(s)	To request firmware version Ex 1: VERSION<CR>
Device response(s)	<p>The following response shall be received from the device Res 1: ACK VERSION x.y&lt;CR&gt;</p> <p>Where “x” indicates the major version number and “y” the minor version number of the Host’s MCU firmware</p>

### 11.4 DEFAULTS (Defaults)

Definition	The DEFAULTS command sets TIM-1000 to a known default state on all settings (see section on Factory Configuration).
Syntax	DEFAULTS <CR>
PARAM 1	This parameter is not required. Carriage return shall follow immediately after the Command.
PARAM 2	This parameter is not required.
Example(s)	To request firmware version Ex 1: DEFAULTS<CR>
Device response(s)	<p>The following response shall be received from the device Res 1: ACK DEFAULTS&lt;CR&gt;</p>

## 11.5 STS (Set TS State)

Definition	The STS State command provides for setting the state of the Red, Green or Blue LEDs on either all or a selected LED.
Syntax	STS <Space> <PARAM 1> <Space> <PARAM 2> <CR>
PARAM 1	This parameter defines the port for which the status is required. 0 = All LEDs 1..15 = Specific LED
PARAM 2	This parameter defines the state of the LED for values of R, G or B 0 = OFF 1 = ON
Example(s)	To set the state Ex 1: STS 0 R=1<CR> ; sets RED LED ON for all LEDs Ex 2: STS 1 R=0<CR> ; sets RED LED OFF for LED 1 only Ex 3: STS 3 G=1<CR> ; sets GREEN LED ON for LED 3 only Ex 4: STS 4 B=1<CR> ; sets Blue LED ON for LED 4 only
Device response(s)	The following response shall be received from the device Res 1: ACK STS 0 R=1<CR> ; Red LED set to ON for all LEDs Res 2: ACK STS 1 R=0<CR> ; Red LED set to OFF on LED 1 only Res 3: ACK STS 3 G=1<CR> ; Green LED set to ON for LED 1 only Res 4: ACK STS 4 B=1<CR> ; Blue LED set to ON for LED 4 only

## 11.6 GTS (Get TS Status)

Definition	The Get TS status command is used to retrieve the logic input / output state of either ALL or a selected LED. The data is formatted similarly for each channel
Syntax	GTS <Space> <PARAM 1> <CR>
PARAM 1	This parameter defines the port for which the status is required. 0 = All LEDs 1..15 = Specific LED
PARAM 2	This parameter is not required. Carriage return shall follow immediately after Parameter 1.
Example(s)	To request LED status Ex 1: GTS 0<CR> ; requests status for all LEDs Ex 2: GTS 2<CR> ; requests status for LED 2 only
Device response(s)	The following response shall be received from the device Res 1: ACK GTS 0 CH1R=0 CH1G=1 CH1B=1 CH1SC=0 ..... CH15R=1 CH15G=1 CH15B=1 CH15SC=1<CR> Res 2: ACK GTS 2 CH2R=0 CH2G=1 CH2B=1 CH2SC=1<CR>  <ul style="list-style-type: none"> <li>• CHxR=y provides the current state for channel x Red LED, y = 0 for inactive, 1 for active</li> <li>• CHxG=y provides the current state for channel x Green LED, y = 0 for inactive, 1 for active</li> <li>• CHxB=y provides the current state for channel x Blue LED, y = 0 for inactive, 1 for active</li> <li>• CHxSC=y For TIM-1000 y=0</li> </ul>

## 11.7 STSB (Set TS Brightness)

Definition	The STSB command provides for setting the brightness of the Red, Green or Blue LEDs on either ALL or a selected LED.  The brightness levels are implemented as a “duty cycle”. The duty cycle is set in 10% increments so valid values are 10, 20, 30, 40, 50, 60, 70, 80, 90 and 100.
Syntax	STSB <Space> <PARAM 1> <CR>
PARAM 1	This parameter defines the LED number 0 = All LEDs 1..15 = Specific LED
PARAM 2	This parameter defines the brightness levels implemented as a “duty cycle”. The duty cycle is set in 10% increments so valid values are 10, 20, 30, 40, 50, 60, 70, 80, 90 and 100
Example(s)	To set brightness Ex 1: STSB 0 R=50<CR> ; sets Red to 50% brightness on all LEDs EX 2: STSB 1 G=70<CR> ; sets Green to 70% brightness on LED 1 only Ex 3: STSB 4 B=90<CR> ; sets Blue to 90% brightness on LED 4 only
Device response(s)	The following response shall be received from the device Res 1: ACK STSB 0 R=50<CR> Res 2: ACK STSG 1 R=70<CR> Res 3: ACK STSB 4 R=90<CR>

## 11.8 GTSB (Get TS Brightness)

Definition	The Get TS brightness command is used to retrieve the brightness level of either ALL or a selected LED.
Syntax	GTS <Space> <PARAM 1> <CR>
PARAM 1	This parameter defines the LED number. 0 = All LED 1..15 = Specific LED
PARAM 2	This parameter is not required. Carriage return shall follow immediately after Parameter 1.
Example(s)	To request brightness level Ex 1: GTSB 0<CR> ; requests brightness level for all LEDs Ex 2: GTSB 2<CR> ; requests brightness level for LED 2 only
Device response(s)	The following response shall be received from the device Res 1: ACK GTSB 0 CH1R=50 CH1G=30 CH1B=30 ..... CH15R=10 CH15G=100 CH15B=100<CR> Res 2: ACK GTSB 2 CH2R=50 CH2G=100<CR>  <ul style="list-style-type: none"> <li>• CHxR=y provides the brightness level for channel x Red LED, y = 10..100</li> <li>• CHxG=y provides the brightness level for channel x Green LED, y = 10..100</li> <li>• CHxB=y provides the brightness level for channel x Blue LED, y = 10..100</li> </ul>

## 11.9 SRGB (Set RGB State)

Definition	The SRGB State command provides a more granular level for setting the brightness of the Red, Green and Blue LEDs in the LEDs
Syntax	SRGB <Space> <PARAM 1> <Space> <PARAM 2> <CR>
PARAM 1	This parameter defines the LED number. 0 = All LEDs 1..15 = Specific LED
PARAM 2	This parameter specifies the intensity level for each RGB colour as a decimal value of 8 bits i.e. 0 through 255
Example(s)	To set RGB values Ex 1: SRGB 0 255 255 255<CR> ; set Red, Green and Blue LEDs to full intensity on all LEDs Ex 2: SRGB 1 128 0 255<CR> ; set Red to 50%, Green to 0% and Blue to 100% intensity on LED 1
Device response(s)	The following response shall be received from the device Res 1: ACK SRGB 0 255 255 255<CR> Res 2: ACK SRGB 1 128 0 255<CR>

## 11.10 GRGB (Get RGB State)

Definition	The GRGB State command retrieves the brightness of the Red, Green and Blue of either ALL or a selected LED.
Syntax	GRGB <Space> <PARAM 1> <CR>
PARAM 1	This parameter defines the LED number. 0 = All LEDs 1..15 = Specific LED
PARAM 2	This parameter is not required. Carriage return shall follow immediately after Parameter 1.
Example(s)	To request RGB status Ex 1: GTS 0<CR> ; requests RGB status for all LEDs Ex 2: GTS 2<CR> ; requests RGB status for LED 2 only
Device response(s)	The following response shall be received from the device Res 1: ACK GRGB 0 CH1 200 167 167 ..... CH15 67 95 100<CR> Res 2: ACK GRGB CH2 128 128 250<CR>

### 11.11 APT (Set APT)

Definition	The APT command determines the amount of Adaptive Proximity Tracking. It defines the rate at which the product slews to the sound source; when set to normal the furthest sound source appears as clear as the nearest.
Syntax	APT <Space> <PARAM 1> <CR>
PARAM 1	This parameter defines how the product slews to the sound source. 0 = OFF ; TIM-1000 works without any proximity tracking 1 = SLOW ; Tracks at a slew rate of approx. 1dB/sec 2 = MEDIUM ; Tracks at a slew rate of approx. 3dB/sec 3 = NORMAL ; Tracks at a slew rate for best possible sound  If this parameter is omitted, then unit shall return state of APT.
PARAM 2	This parameter is not required. Carriage return shall follow immediately after Parameter 1.
Example(s)	To set APT to NORMAL Ex 1: APT 3<CR> ; sets APT to NORMAL Ex 2: APT <CR>; inquires status of APT
Device response(s)	The following response shall be received from the device Res 1: ACK APT 3<CR> Res 2: ACK APT x<CR> ; where "x" indicates state of APT

### 11.12 TRACKING (Tracking Mode)

Definition	The TRACKING command enables or disables the tracking function.
Syntax	TRACKING <Space> <PARAM 1> <CR>
PARAM 1	This parameter turns tracking ON or OFF. 0 = OFF ; allows microphone to work as an Omni 1 = ON ; enables tracking mode  If this parameter is omitted, then unit shall return state of TRACKING.
PARAM 2	This parameter is not required. Carriage return shall follow immediately after Parameter 1.
Example(s)	Ex 1: TRACKING 1<CR> ; enables tracking functionality of the microphone Ex 2: TRACKING <CR> ; inquires state of unit's TRACKING mode
Device response(s)	The following response shall be received from the device Res 1: ACK TRACKING 1<CR> Res 2: ACK TRACKING x<CR> ; where "x" indicates state of TRACKING



### 11.13 EQ (EQ Settings)

Definition	The EQ command sets the values for each of the equaliser bands on TIM-1000.
Syntax	EQ<Space><PARAM 1><Space><PARAM 2><CR>
PARAM 1	This parameter defines whether it's the LOW, MEDIUM or HIGH frequency that needs to be set 0=LOW frequency setting 1=MEDIUM frequency setting 2=HIGH frequency setting
PARAM 2	This parameter defines the value for each of the PARAM 1 settings. The range shall be from +6dB to -20dB. The values shall be integer values.  If this parameter is omitted, then unit shall return EQ value of PARAM 1
Example(s)	To set EQ settings Ex 1: EQ 0 +4<CR> ; defines LOW frequency setting at +4dB Ex 2: EQ 1 -10<CR> ; defines MEDIUM frequency setting at -10dB Ex 3: EQ 0 <CR>; inquires EQ state of the LOW frequency setting
Device response(s)	Res 1: ACK EQ 0 +4<CR> Res 2: ACK EQ 1 -10<CR> Res 3: ACK EQ 0 x<CR> ; where "x" indicates EQ value of LOW frequency settings

### 11.14 NOISESUP (Noise Suppression)

Definition	The NOISESUP command defines whether the ambient noise suppression is enabled or disabled
Syntax	NOISESUP <Space> <PARAM 1> <CR>
PARAM 1	This parameter defines whether noise suppression is OFF or ON. 0 = OFF 1 = ON  If this parameter is omitted, then unit shall return state of NOISESUP
PARAM 2	This parameter is not required. Carriage return shall follow immediately after Parameter 1.
Example(s)	To set noise suppression Ex 1: NOISESUP 1<CR> ; enables noise suppression Ex 2: NOISESUP <CR> ; inquires unit's state of noise suppression
Device response(s)	The following response shall be received from the device Res 1: ACK NOISESUP 1<CR> Res 2: ACK NOISESUP x <CR> ; where "x" indicates status of noise suppression

## 12 Product Warranty

This product is offered with a 1 year warranty from the date of purchase. Any defect that arises due to faulty materials or workmanship will either be replaced, or repaired free of charge by the agent from whom you purchased the unit. Please note charges will be incurred on any products returned for service / repair not in warranty or have been subject to customer abuse or incorrect wiring.

The warranty is subject to the following provisions:

- The warranty does not cover accidental damage, misuse, cabinet parts, knobs, batteries or consumable items. Any product returned to Clockaudio failing to meet the terms listed will incur a repair and carriage charge.
- The product must be correctly installed and operated in accordance with the instructions supplied with the product.
- Unauthorised modifications and alterations to the original specifications will render the warranty void.
- The product must be used for the sole purpose that it was designed for.
- The warranty given is strictly with the original owner and becomes invalid if the product is resold or becomes damaged by inexpert repair.
- Product purchased outside of the countries served by Clockaudio designated / approved agents are not covered by the warranty.
- Specifications / improvements are subject to change without notice.
- Clockaudio disclaims any liability for incidental or consequential damages.
- The warranty is in addition to and does not diminish your statutory legal rights.

## 13 Product Disposal

At the end of the life of this equipment, dispose of equipment according to local regulations



For more information and advice on Clockaudio products please visit the Clockaudio website:  
[www.clockaudio.com](http://www.clockaudio.com)

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