GIOVE FREENET

IN-BUILT MICRO MULTIROOM ALL IN ONE WITH RS485 PORT USER MANUAL



• STEREO 25+25W • RADIO FM WITH ROS • USB PLAYER • MICROPHONE FOR MESSAGING • AUXIN • RS-4+85 PORT • BLUETOOTH



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INDEX

| pag 2 |
|--------|
| pag 3 |
| pag 3 |
| pag 4 |
| pag 4 |
| pag 5 |
| pag 10 |
| pag 11 |
| pag 14 |
| pag 22 |
| pag 23 |
| pag 26 |
| pag 27 |
| pag 28 |
| |

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Main features

The Giove FREENET device is an all-in-one module, suitable for being installed in a 503 in-built case, by means of the appropriate adapters. It can be installed applying to a wide range of adapters of most popular brands and models.

Supplied with an integrated D class digital amplifier, it can supply up to 25+25W maximum power.

The GIOVE FREENET has been conceived to spread audio in a single zone of maximum 50mq.

The integrated FM Tuner and the USB port, make of the Giove FREE-NET a device that can be installed in every environment, independently.

By wiring the RS485 communication line it is possible to manage and supervise the state of the remote control and change parameters.

The IR remote control device, in equipment, allows to manage the main functions.

The integrated FM Tuner is provided with Automatic search function, RDS and 7 memories.

The USB reader allows to listen to the tracks stored in a memory stick (USB key containing tracks or other audio files on roots or within a maximum of 65534 folders).

The back AUX IN allows to connect another stereo audio source. In combination with other FREENET, coupled with a CA20/CA21 audio controller, it becomes an intercommunication system, thanks to the integrated microphone, and a centralised audio multizone system. The Giove FREENET is endowed with a graphic display and high visibility OLED technology.

USB input

The USB input allows to connect a USB key, containing audio files. When inserting the pen drive, the device automatically commutates into the USB source, scans the USB key contents, searching the audio files and starts reading the first track.

The Giove FREENET remote control can read MP3, WMA and AAC tracks on the pen drives with FAT16 or FAT32 file systems and maximum capacity of 8 GB.

It is not possible to read the contents of mobile devices, smartphones, MP3 players ecc.

The 5V power supply of the USB port is not dimensioned for allowing recharge of mobile devices.

Integrated microphone

The Giove FREENET is equipped with an integrated microphone, that allows to communicate with other remote controls by means of the CA20/CA21 controller.

IR receiver

The Giove FREENET is equipped with an integrated IR receiver, that allows to control its functions by means of the Giove TCIR5 remote control device in equipment and to return the IR controls towards the sources by means of the CA20/CA21 IR outputs.

The black Giove FREENET remote controls are provided with black colour remote control device.

The white/silver Giove FREENET are provided with white colour remote control device.

Keys description

MENU key

The MENU key allows to enter the menu for Sources selection, Tones and Setup of the device, as to change functions between FM memory search or frequency or between folders or tracks of the USB reader.

Keys << e >>

These keys allow forwarding or rewinding of the FM frequency or of track/MP3 folder, in relation to the selected source. Furthermore, they allow the menu navigation.

Keys - and +

The keys – and + allow the volume regulation and the menu navigation.

ENTER key

By keeping pressed for a long time the Giove FREENET is switched on/off, by short pressure the MUTE function is activated. When listening to the USB key content, the track playing is paused. When the SETUP functions are entered, the ENTER key acts for data confirmation.

MIC key

The key showing the microphone symbol, if kept pressed for a short time, activates the microphone function, asking for the remote control ID, to which open communication is addressed. If kept pressed continuously, it makes directly the call towards the last selected ID.

Use of the Giove FREENET

Overview

Switch on the device by the ENTER key or by the ON/OFF key of the remote control device.

Automatically the Giove FREENET will play the TUNER source, it is possible to act on the << or >> keys for tuning on the desired frequency.

When a USB key is inserted, after few seconds the Giove FREENET starts playing the first track, between those stored inside.

For returning to the TUNER source put off the pen drive or press the MENU key until the menu appears, from the SOURCE function it is possible to select the various sources including the TUNER. The TCIR5 remote control device in equipment allows direct access to the various sources.

TUNER source

While the TUNER source is playing, the display shows the frequency tuned by the device as the power of the received signal, the Stereo or the Mono modality of the station, the eventual RDS text and the memory used.

The brief pressure of the MENU key changes the way of functioning of the << and >> keys.

In the FREQUENCY modality their pressure increases or decreases the tuning frequency, in the MEMORY modality their pressure increases or decreases the station memory. The Giove FREENET is equipped with 7 memories, for memorizing a station proceed as follows:

1 Keep pressed for a long time the MENU key until the display shows the menu.

2 Search the SETUP function by means of the << and >> keys and press the ENTER key.

3 Search the MEM. FM function by means of the << and >> keys and press the ENTER key.

4 Search the memory to be inserted/modified by means of the << and >> keys and press the ENTER key.

5 By the << and >> keys tune on the desired station and press the ENTER key.

The display visualizes shortly the script STORED and indicates the accomplished frequency memorization.

If you desire to memorize other stations, please repeat from the point 4, otherwise go back to the main menu by the MIC key or, alternatively, the display after few seconds will automatically return.

USB source

When inserting a pen drive containing tracks or other playable files, the device automatically commutates into the USB source and starts playing.

While the USB source is playing, the display visualizes the name of the track reading and the name of the folder in which it is stored.

It shows also the time of execution of the same track.

The TRACK script indicates that the << and >> keys are able to scroll the tracks.

The brief pressure of the MENU key changes the way of functioning of the << and >> keys.

In the TRACK modality they allow to forward to the next track or to backward to the previous, while scrolling between the previous folder and the next in the ALBUM modality.

The display normally shows, beside the USB script, a "play" triangle indicating that the track is currently playing.

If the symbol II is shown, it means that the track is in pause and that the Giove FREENET is in MUTE modality (short pressure of the ENTER key).

AUX IN source

By selecting this source it is possible to listen to a source connected to the rear terminals of the device.

Such source could be a mp3 player, a CD player or any other device equipped with analog audio line output or headphone output.

MIC OUT source

The MIC OUT source allows to use the Giove FREENET as a microphone base, able to send the signal of its own internal microphone towards other devices. The signal, of analog monophonic typology, is sent exclusively through the MIC+ output, so it will not be possible to listen to the message by means of the speakers connected to the above described Giove FREENET.

MIC IN source

The MIC IN source allows to listen to another source equipped with analog monophonic signal line, or the microphone signal of another Giove FRENET, connected to the MIC+ terminal.

SOURCES 1 - 7 (CD, DVD, TV, DVR, AUX1, AUX2, MP3)

The audio signal of these sources comes from their respective inputs in the Giove CA20/CA21 audio controllers.

After selecting one of these inputs, appears the screen referred to the IR source controls.

BABY CONTROL function

This function, recallable by the MENU key, allows hearing, by the internal microphone, of what is happening in the zone in which the Giove FREENET is installed.

It is required in the system to be installed two or more Giove FREENET by means of the wirings, as described below.

By recalling the BABY OUT function in a Giove FREENET and the function BABY IN in one or more Giove FRENET, it is possible to listen to what happens in close proximity to the first device.

When regulating the Giove FREENET volume while it is active the function BABY IN or MIC IN, such volume does not affect that of normal listening and is maintained even in case of exit from these functions.

The BABY function has been originally conceived for monitoring the rooms in which infants are sleeping, but the use is configurable according to the user's need.

Improper and/or illegal uses have to be considered total responsibility of the user.

SETUP

The SETUP menu allows to regulate some parameters.

TONE: it allows regulation of treble, mid, bass tones, on the basis of the user's requirement.

MEM.FM: please, view the TUNER section on p. 5

DISPLAY: it allows to set six different screen types when the device is off (standby).

Such regulation is particularly useful in the case when the device is installed in a bedroom, or where the standby display brightness could result annoying.

SYS SETUP (from the 3.7 version): menu protected by access code for setting the volume parameters and data cancelling.

The access code for the submenu is: 4 7 2 0 (not modifiable).

The access code is inserted by scrolling the numbers, by using the + and – keys, then confirming them by the ENTER key.

As soon as the 4 numbers are inserted, the following menus appear, please, view APPENDIX 4 on pp. 23-24:

INFO: Information screen with regard to the firmware and hardware version of the Giove FREENET, dated as the last firmware release. Visualizes also the set ID in the CONFIGNET menu.

Amplifier protection

If the internal amplifier registers a power overload for 5 times, the problem is signalled on the display, the outputs are inhibited and it is required a restoring to be implemented by the user. After the intervention, the outputs audio level is restored with an automatic decrease of 10 steps volume.

USB RADIO MIC ALSUM-TRACK

The remote control device

By the Giove TCIR5 IR remote control device (in equipment) the Giove FREENET can be managed in its essential functions.

On the top side are positioned the keys for source change and the ON/OFF key.

The central keyboard allows frequency/memory or track/folder scrolling.

The central key implements muting/pause functions.

The MEMO FM – ALBUM TRACK key allows to change the way of functioning of the << >> keys.

It is not possible to enter the menus by means of the remote control device.

Fast reset

When it should be required, it is possible to restore the original factory settings of the Giove FREENET, simply by simultaneously pressing the + and – keys, then the Menu key.

It is suggested a complete reset or a simple reboot.

The complete reset cancels each value set by the user, tuner memories, tones, messages volume ecc., the reboot simply consists of a restart of the system.

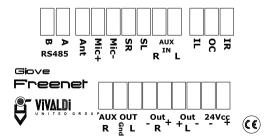
The two procedures are activated by pressing the << or >> keys.

Wirings

In order to start and use the Giove FREENET, it is sufficient to power supply, wiring at least a speaker and the FM antenna.

This can be made of a 1 mt long cable reel, fully vertically extended, connected to the ANT terminal.

It is advisable the use of a maximum section of 0,5mm2.



Speakers outs

To the OUT R and OUT L outputs it is possible to connect loudspeakers with 4 Ohm minimum impedance (please, view the wiring diagram on p. 21).

Considered that the power out of the Giove FREENET is maximum about 25+25W, it is possible to connect 2 couples of 8 Ohm loud-speakers in parallel each other, for spreading audio in a home zone or a medium-sized office.

The negative terminals of the loudspeakers outputs are not internally connected to the negative pole of the power supply.

Connecting the loudspeakers between the terminals + and the ground could damage the Giove FREENET amplifier.

BF input and output

To the AUX IN can be connected devices equipped with line level analog output (CD players, Tuner, ecc.).

The AUX OUT, supplies an analog signal at line level and is regulated from the main volume. It is possible to connect power amplifiers or amplified subwoofers for implementing a higher performance audio system. If necessary, also the MIC input can be used for a further mono source.

OC / IL control terminals

The OC control terminal can be connected to a push button normally open referred to a mass or to a home automation system.

Its function is proportional to prolonged pressure of the central key: at each pulse closing (min 0,5 sec) of the push button/relay, the device is switched on/off.

The terminal named IL constitutes an "Open Collector" output for the control of an auxiliary device.

With Giove FREENET off the IL terminal is connected to the ground.

It is possible to connect, for example, the Giove PS7, the Giove PS20 switching systems.

Terminals for microphone MIC+ / IR function

For using the messaging functions by the internal microphone of the Giove FREENET, it is necessary to connect the MIC+ terminal between the various Giove FREENET in parallel.

Such connection must be implemented by means of 2x0,22 shielded cable or good quality similar cable (e.g. Vivaldi Micro2 cable).

The IR terminal reports the infrared strings transmitted to the infrared receiver on the Giove FREENET towards the CA20/CA21 audio controller.

RS485 A-B communication terminals

These terminals allow connection of the Giove FREENET to a RS485 communication bus. By means of the specific protocol it is possible to control or supervise the several devices connected.

Masses

Although – for reasons of clearance – they are named differently, the 24Vcc terminals – GND and MIC – are internally connected together and are utilizable as signal masses.

The negative power supply pole must be anyway the 24 Vcc terminal – for reasons of section.

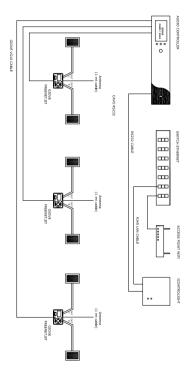
Maximum suggested cable section

In order to achieve a good wiring and to avoid that the adjacent cables connected to the terminal come into contact, it is advisable not to overcome the following listed sections:

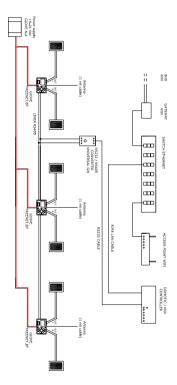
| POWER SUPPLY: | 2x1mm2 | | |
|--|----------------------|--|--|
| SPEAKERS: | 2x1mm2 | | |
| AUXOUT/AUXIN: | 2x0,5mm2 + Shielding | | |
| SL – SR / MIC: | 2x0,5mm2 + Shielding | | |
| IR/OC/IL/ANT: | 0,5mm2 | | |
| RS485 A – B (twisted pair) | 2x0,5mm2 + Shielding | | |
| For shielded cables it is suggested to use good quality cables for audio | | | |
| use, fully shielded (e.g. Vivaldi Micro2). | | | |
| | | | |

WIRING DIAGRAMS

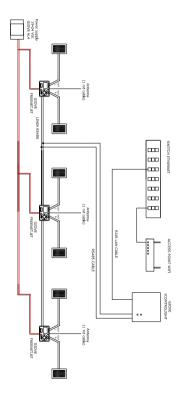
Audio system with CA20/CA21, FREENET and ICONTROLIGHT:



Audio system with FREENET supervised by home automation system:



Audio system with FREENET supervised by ICONTROLIGHT:



16

Wiring the Giove FREENET with the CA20:

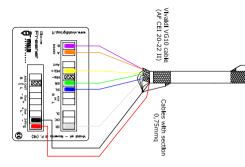
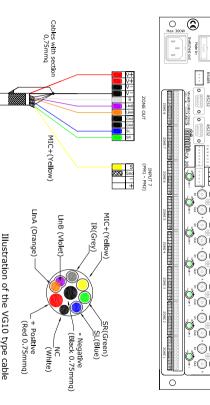


Illustration of the VG10 type cable

section



0

153

Powe

-0

C

0

nuput 4

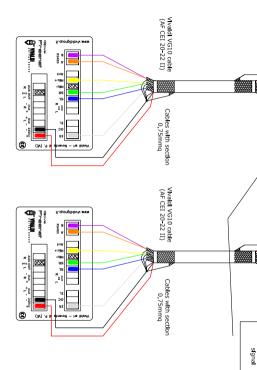
0

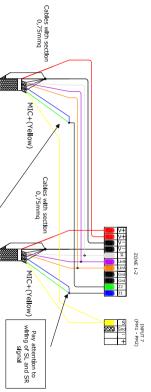
RS232

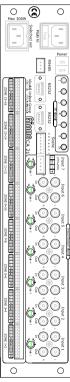
IK SIGNAL

5 5 4 + Input 7 (Httml)

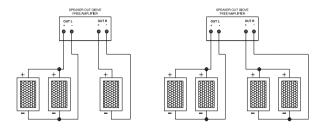
Wiring the Giove FREENET with the CA21:

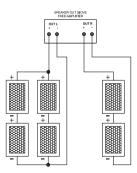






Minimum impedance 4 Ohm for channel





21

Technical features

POWER SUPPLY:

| Voltage: | 19-24 Vcc |
|--------------------------|-----------|
| Max voltage (switched):_ | 1,5A |

USB:

| Socket typology: Supported formats: | | A |
|--|------|----------------------------|
| | MP3 | extension .mp3, .mp2, .mp1 |
| | WMA | extension .asf, .wma |
| | AAC | extension .m4a |
| Supported media: | | SD, SDHC, MMC, mini-SDcard |
| Total folders number | r: | 65534 |
| File systems suppor | ted: | FAT16, FAT32 |
| Maximum support capacity: | | 8GB |

TUNER FM

| Tuning band: | 87,5 - 108,0 MHz |
|-------------------|------------------|
| Automatic search: | SI |
| Memories: | 7 |
| RDS: | SI |

AMPLIFICATION

| Туре: | Digital D class |
|---------------------------------|-----------------|
| Maximum power: | 25+25W |
| Minimum load nominal impedance: | 4 Ohm |
| Equalizer: | 3 bande |
| EQ Range: | 15dB / +5dB |

COMMUNICATION RS-485:

Features:_____ 57600, N, 8, 1

APPENDIX A

SETUP

The SETUP menu allows to regulate some parameters, for the functions TONE, MEM, FM, DISPLAY and INFO, please take for reference p. 9 of this manual.

SYS SETUP (from 3.7 version): menu protected by access code for setting the volume parameters and data cancelling. The access code to the submenu is: 4 7 2 0 (not modifiable).

The access code is inserted by scrolling numbers using the keys + and -, then confirming them by the ENTER key. Once the four numbers are inserted, the following menus appear:

CONFIGNET: setting the control ID on the RS485 bus. Set the value by the + and – keys, select ENTER and confirm by the >> key.

AUDIO: menu dedicated to the settings of the value of the maximum settable volume, of the mono or stereo modality and of the activation of the LPF crossover (Low Pass Frequency), accessible only in mono modality.

---MAX: value settable from 10 to 50 Db, it is the maximum peak, beyond that the volume can not be set. Default value is 50 dB. Once chosen the desired value, press the ENTER key and confirm with the arrow key on the right >>.

---MODE: value settable as MONO or STEREO, it allows to make the Giove FREENET outputs mono, that means having the same audio infos output both in the right channel as in the left, or stereo, that means having in the right channel different audio infos from the left. Once chosen the desired value, press the ENTER key and confirm with the arrow key on the right >>.

---LPF: acronym for Low Pass Frequency, activable only when it has been first chosen the MONO modality, it allows to set up a cut-off frequency in the Giove FREENET outputs. Settable values OFF, 55 Hz, 85 Hz, 120 Hz and 160 Hz. Once chosen the desired value, press the ENTER key and confirm with the arrow key on the right >>. BOOT: menu dedicated to the settings of the volume value and of the source at switch on and activating or not of automatic switch on of the Giove FREENET when it is power supplied.

---VOL: value settable from 0 to 50 dB, it consists of the volume level at which the Giove FREENET is switched on, after that the power supply is physically disconnected. If the Giove FREENET is switched off by the remote control device or by the ENTER key and then switched of again, the volume will maintain the same value of when it has been switched off. Default value is 10 Db. Once chosen the desired value, press the ENTER key and confirm with the arrow key on the right >>.

---SRC: it allows to select the source on which the Giove FREENET is switched on, after that the power supply is physically disconnected. Settable functions: TUNER, USB, AUXIN, MIC OUT, MIC IN, AUX2, BLUET. Default value: TUNER. Once chosen the desired value, press the ENTER key and confirm with the arrow key on the right >>.

---STBY: settable value ON and OFF, if set ON, after that the power supply is physically disconnected and reconnected, the Giove FREE-NET is positioned in standby, if set OFF, after that the power supply is physically disconnected and reconnected, the Giove FREENET is automatically switched on in the source and at the volume above set. Once chosen the desired value, press the ENTER key and confirm with the arrow key on the right >>.

RST PARAM.: Submenu dedicated to the reset function of the Giove FREENET settings. It is divided into three further menus:

---USER MEM: by pressing Enter it is required to confirm or cancel the operation by pressing the right arrow >> or left arrow << . By confirming the choice, are cancelled the parameters referred to the Tones regulation, the FM stations memorization and to the logo display settings.

---SYST MEM: by pressing Enter it is required to confirm or cancel the operation by pressing the right arrow >> or left arrow << .

By confirming the choice, are cancelled the parameters referred to the volume settings in the submenu SETUP VOL, restoring values to those default.

---ALL MEM: by pressing Enter it is required to confirm or cancel the operation by pressing the right arrow >> or left arrow << . By confirming the choice, are cancelled the parameters referred to the two previous memories, USER MEM and SYST MEM.

CONFIG.BT (only for FREE.BTI version): menu dedicated to the settings of the integrated addressable Bluetooth device in the Giove FREE. ---NAME: it allows to change the name of the Bluetooth device of the Giove FREENET. Default name: VIVALDI. Scroll by the + and – keys the letters from A to Z and the numbers from 1 to 9. By means of the arrow keys << and >> move the cursor to the next position. 8 maximum available characters. Confirm by pressing the ENTER key and then the right arrow key >>.

---PASSWORD: it allows to change the password of the Giove FREE-NET Bluetooth device. Default password: 1 2 3 4. Scroll by the + and – keys the numbers from 1 to 9. By means of the arrow keys << and >> move the cursor to the next position. 4 maximum available characters, only numbers. Confirm by pressing the ENTER key and then the right arrow key >>.

---RESET PAIR: it allows to reset the pairing list of the Bluetooth device of the Giove FREENET, or the list of the devices previously associated. Confirm by pressing the ENTER key and then the right arrow key >>.

APPENDIX B

BLUETOOTH source (only for the FREENET.BT version)

The BLUETOOTH source allows to send by an audio Bluetooth streaming tracks or files with audio content to the FREENET.BT.

Select the Bluetooth source (BLUET.) from the sources menu of the Giove FREENET.BT, now the Bluetooth is active and is visible from each mobile device for ca. 5 minutes, after this time it will enter in standby modality. It is necessary to press the + key for reactivating or switching off and switching on again the Giove FREENET by the ENTER key or by the remote control device.

Once identified the device as VIVALDI, make the association between the two devices and insert the password 0 0 0 0 (if required).

From the mobile device play now a track by the music player, the audio will be automatically transmitted to the Giove FREENET.

IMPORTANT

The Bluetooth device range is configured for use in the civil field, where it is possible to have more FREENET.BT devices in the same house and at close distances, in order to avoid connections noises.

The mobile device coupled with the FREENET.BT, must be maintained in such position that between the two devices are not interposing physical barriers, which could constitute shielding to the Bluetooth signal, creating interferences (e.g. avoid to put the mobile device in the pocket while Bluetooth connecting, avoid to take position in the space between the FREENET.BT and the mobile device, avoid to position the mobile device in close proximity to metal structures such as shelving,..).

APPENDIX C

ADDRESSABLE BLUETOOTH source

(only for the FREENET.BTI version)

The BLUETOOTH source, allows to send by an audio Bluetooth streaming tracks or files with audio content, to the FREENET.BTI.

Select the Bluetooth source (BLUET.) from the sources menu of the Giove FREENET.BTI, now the Bluetooth is active and is visible from each mobile device.

Once identified the device as VIVALDI (default name, for modifying please, view on p. 22), make the association between the two devices and insert the password 1 2 3 4 (default password, for modifying please, view on p. 22).

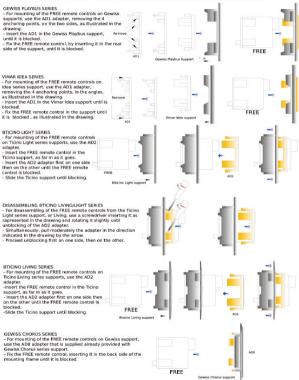
From the mobile device play now a track by the music player, the audio will be automatically transmitted to the Giove FREENET.BTI.

IMPORTANT

The Bluetooth device range is configured for use in the civil field, where it is possible to have more FREENET.BTI devices in the same house and at close distances, in order to avoid connections noises.

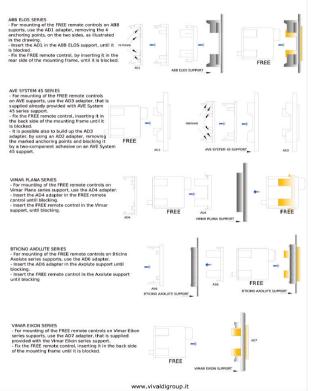
The mobile device coupled with the FREENET.BTI, must be maintained in such position that between the two devices are not interposing physical barriers, which could constitute shielding to the Bluetooth signal, creating interferences (e.g. avoid to put the mobile device in the pocket while Bluetooth connecting, avoid to take position in the space between the FREENET.BTI and the mobile device, avoid to position the mobile device in close proximity to metal structures such as shelving,..).

ADAPTERS FOR FREEMOUNTING INSTRUCTIONS



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ADAPTERS FOR FREE MOUNTING INSTRUCTIONS



29

ADAPTERS FOR FREE MOUNTING INSTRUCTIONS

AVE SYSTEM 44 SERIES

 For mounting of the FREE remote controls on AVE System 44 supports, use the AD9 adapter, that is supplied provided with AVE System 44 series support:
Fix the FREE remote control, inserting it in the back side of the

 Hx the FREE remote control, inserting it in the back side of the mounting frame until it is blocked.

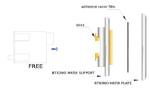


BTICINO MATIX SERIES

 For mounting of the FREE remote controls on Bticino Matix series supports, use the AD10 adapter, inserting it in the mounting frame until blocking.

 Fix the FREE remote control, inserting it in the backk side of the mounting frame until it is blocked.

 Lay the covering adhesive film on the front side, then fix the Bticino Matix series plate.





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