USER MANUAL
MANUALE D'USO
MANUEL DE L'UTILISATEUR
BEDIENUNGSANLEITUNG

RDNET CONTROL 2

Master Control Unit

RCF S.P.A. THANKS YOU FOR PURCHASING THIS PRODUCT, WHICH HAS BEEN DESIGNED TO GUARANTEE RELIABILITY AND HIGH PERFORMANCES

PRODUCT INFORMATIONS

RDNET CONTROL 2 is an hardware interface to connect RCF RDNET compatible devices to a Personal Computer (PC) by means of an USB connection.

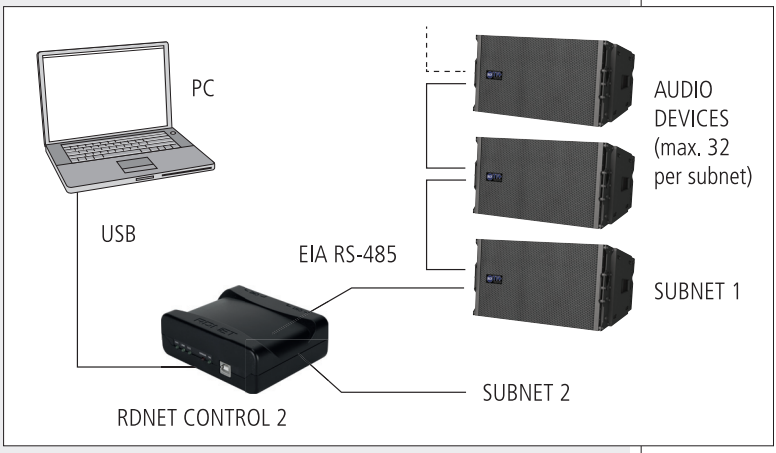
The RDNET system was purposely developed to create a data network for monitoring and command of more systems. The RDNET CONTROL 2 unit can manage up to 2 subnets. Up to 32 devices can be connected to each subnet (2 subnets x 32 = total 64 devices).

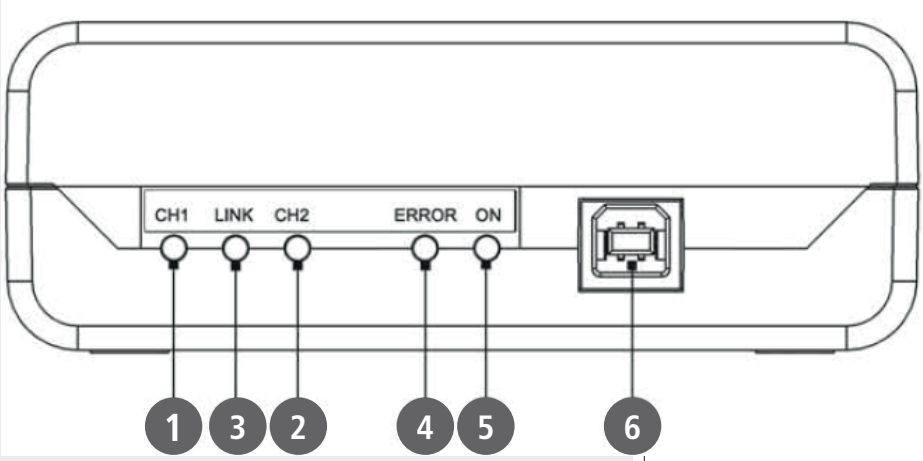
The addressing of the various devices is handled automatically by RDNET CONTROL 2 interface. Each device is assigned a unique address during the power on procedure of network.

For the RDNET network operating, it is necessary to install the appropriate Software on PC, on Microsoft Windows® environment. From PC it is possible to check the operating of each single device connected to the network and edit its parameters output level, mute, equalization, delay, etc.

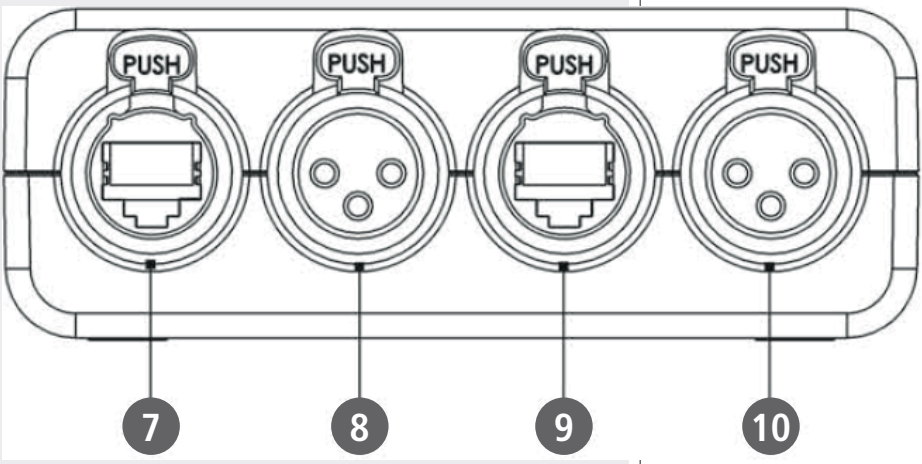
The network and devices configuration can be saved as file in the PC and later reloaded. RDNET is a "real-time" system: Information relating to the functioning of the devices is acquired in real-time, a feature that allows a global view of connected devices.

For the correct working of USB (1.1 o 2.0) communication between PC and RDNET CONTROL2 it is recommended to use the USB cable supplied.





1. CH1 INDICATOR LIGHT
   This indicator light, green LED,flashes to indicate data transmission or reception in the subnet 1.
2. CH2 INDICATOR LIGHT
   This indicator light, green LED, flashes to indicate data transmission or reception in the subnet 2.
3. LINK INDICATOR LIGHT
   This indicator light, green LED,will be used for future applications.
4. ERROR INDICATOR LIGHT
   This indicator light, red LED, lights up to indicate errors during data transmission or reception.
5. ON INDICATOR LIGHT
   This indicator light, green LED, lights up to indicate that device is on and powered by USB.
6. USB CONNECTOR
   USB type B connector, for computer link, by means of cable provided. The RDNET CONTROL 2 is powered by USB connector.



7 RJ45 CONNECTOR CH1
Connector for Subnet 1 RDNET connection by means of CATS cable. For connections refer to "CHANNEL CONNECTIONS" paragraph. If this connector is used DO NOT CONNECT the connector CH1 XLR socket **8**.

8 XLR CONNECTOR CH1
Connector for Subnet 1 RDNET connection.
For connections refer to "CHANNEL CONNECTIONS" paragraph. If this connector is used DO NOT CONNECT the connector CH1 RJ45 socket **7**.

9 RJ45 CONNECTOR CH2
Connector for Subnet 2 RDNET connection by means of CATS cable. For connections refer to "CHANNELCONNECTION" paragraph. If this connector is used DO NOT CONNECT the connector CH2 XLR socket **10**.

10 XLR CONNECTOR CH2
Connector for Subnet 2 RDNET connection. For connections refer to "CHANNELCONNECTION" paragraph.
If this connector is used DO NOT CONNECT the connector CH2 RJ45 socket **9**.

CHANNEL CONNECTION

DO NOT CONNECT BOTH RJ 45 AND XLR CONNECTORS TO THE SAME RDNET PORT!

RJ 45 CONNECTOR

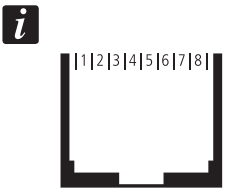
Pin

1. Available for other functions (for example: audio signal +, hot)
2. Available for other functions (for example: audio signal -, cold)
3. Available for other functions (for example: analogue ground)
4. Digital ground
5. Digital ground
6. Available for other functions (for example: power supply)
7. RS 485 A
8. RS 485 B

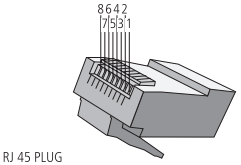
XLR SOCKET

Pin

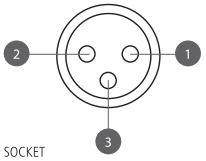
1. Digital ground
2. RS 485 A
3. RS 485 B



RJ 45 SOCKET



RJ 45 PLUG

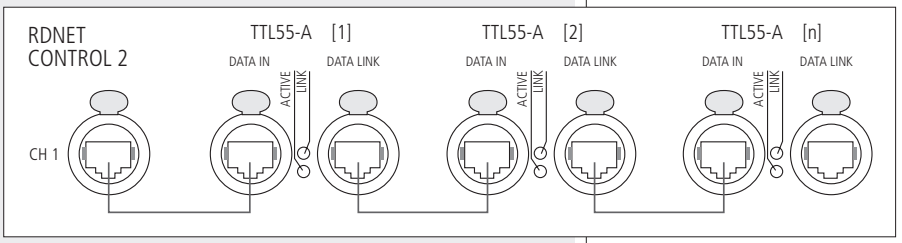


XLR SOCKET

SUBNET CONNECTION

Each of the 2 available RDNET ports of the RDNET CONTROL 2 unit can be connected to max 32 compatible devices (linked in "daisy-chain").

Example: the RDNET CONTROL 2 port 1 is connected to the DATA IN input of a TTL55-A loudspeaker, of which DATA LINK parallel output is linked to the input of the following TTL55-A loudspeaker.



In the example above, [n] is a number from 3 to 32 (max. quantity of devices that can be connected to a subnet). The total CAT 5 cable length of a subnet cannot exceed 900 metres (c. 2950 feet).

NOTES ABOUT THE RDNET SOFTWARE

The RDNET software is protected by international copyright laws and is to be used to configure the RCF RDNET system only.

It is not allowed to modify or change or try to decompile this software.

In no event shall RCF be liable to end-users for any damage whatsoever, including but not limited to financial damages for loss of business profits or business information due to the software use or inability to use this product. The foregoing provision is effective even if RCF has been advised of the possibility of such damages. Even if the software has any material, verifiable and reproducible program errors, RCF shall have no obligation to modify such errors.

RDNET SOFTWARE INSTALLATION

Minimum requirement: a PC with Microsoft Windows® XP, Vista or 7 operating system, having an available USB port.

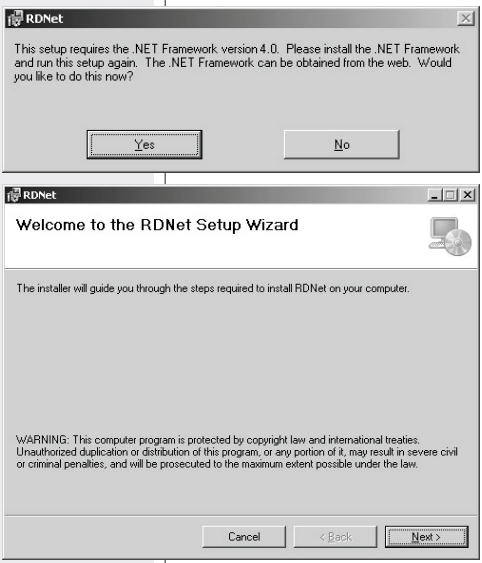
Before installing a new software release, it is necessary to remove the previous version (if installed) by running Start > Programs > RCF Group > RDNet > Uninstall and disconnect the USB cable between the computer and the RDNET CONTROL 2 unit.

Run setup.exe (inside the 'setup folder) to start the software installation.

If the installed PC software does not include the release 4.0 of MS ".NET Framework" (necessary to install the RDNET software), it will be show the request for downloading from the web (for free).

If internet is available, click the YES button to open the web page where it is possible to download the last release of ".NET Framework" software, then install it.

If ".NET Framework 4.0" has been previously installed, the RDNET ware wizard starts.
Click the NEXT> button to proceed.



Read the license agreement.

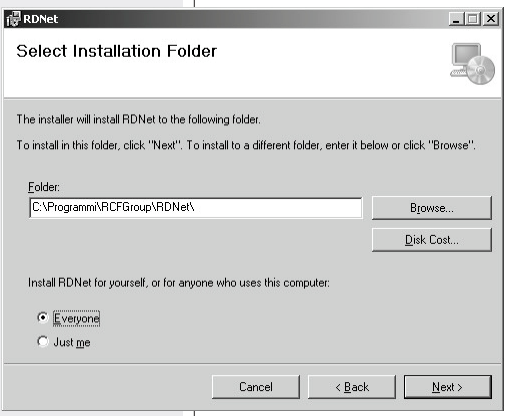
Click "I Agree" to accept and proceed with the software installation.

Click the NEXT > button to proceed.

It is now possible to change the installation folder (directory) of the RDNET software (or keep the default path).

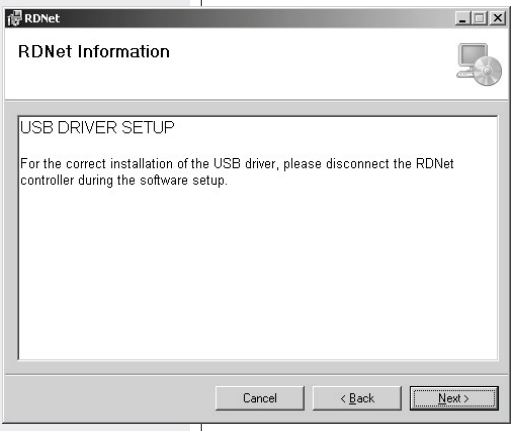
Choose if the software can be used by "Everyone" or "Just me".

Click the NEXT> button to proceed.



The wizard reminds you that it is necessary to disconnect the USB cable between the computer and the RDNET CONTROL 2 unit in order to install A drivers properly.

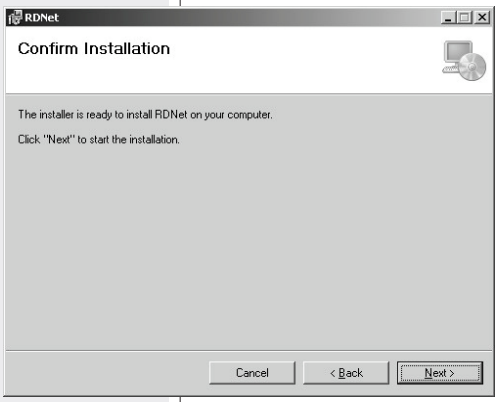
Check if the USB cable is actually disconnected before proceeding.



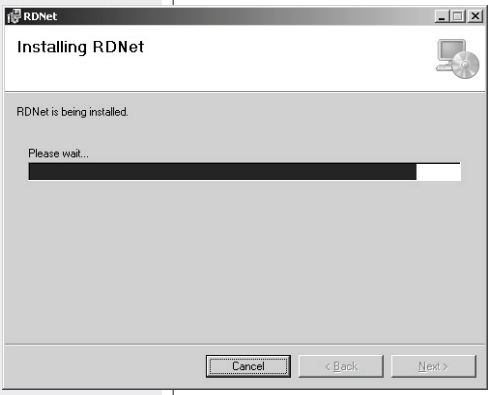
Then, it is required the installation confirmation.

If you are sure, click the NEXT > button to proceed and start the installation.

Await the installation is complete.



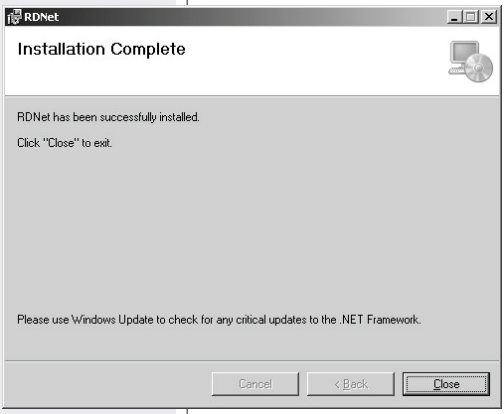
While waiting, the installation progressbar is shown.



As soon as the installation ends (nor), the "Installation Complete" window will appear.

Click the CLOSE button to exit.

Connect the USB cable between the computer and the RDNET CONTROL 2 before running the PC software.



As soon as the RDNET CONTROL 2 unit is turned on, all devices will be listed and cyclically scanned ("polling").

Every listed device confirms its state by turning its LINK LED on.

10 times a second, each device is checked in a single daisy-chain and (when required) the current state is sent to the PC software.

Run the software (in Windows: Start > Programs > RCF Group > RDNet > RDNet).

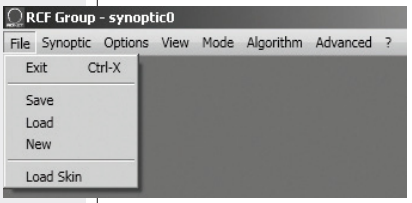
It appears the main window with 7 menus:
FILE - SYNOPTIC - OPTIONS - VIEW - MODE - ADVANCED - ?

FILE

Exit: RDNET software quit.

Save: it saves the current configuration as a file (groups and equalizations included).

Load: it loads a configuration previously saved as a file.
New: new configuration.

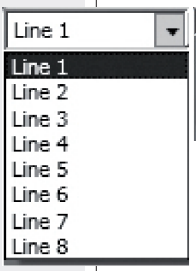


LOAD AND NEW SELECTIONS DELETE THE CURRENT CONFIGURATION'.

Load skin: it loads a software skin.

SYNOPTIC

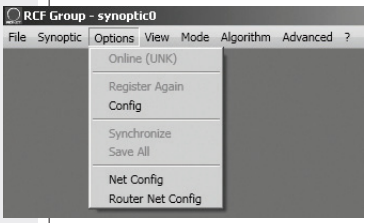
Add Object: a sliding menu opens on the left, a list of all RDNET supported appliances.
This menu allows appliances to be added to mimic diagram in Offline mode (when the connection between PC and HUB is inactive and no diffuser is detected on the network).
To add an appliance, select the sub-network where the appliance is to be added to ("line") from pop-up menu and double click on appliance itself. In normal operation, appliances registered by RDNET network automatically appear in the mimic diagram without using the "Add Object" function.

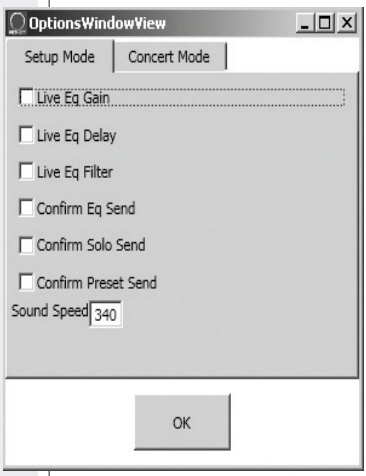


Delete Selection: it deletes (after confirming) the selected object.

Locked: if enabled (tick), it locks the position of all modules on the mimic diagram.

OPTIONS





Online: it enables the link between the PC and the RDNET CONTROL 2 unit.

Register Again: reconfiguration and digital re-addressing of all audio devices connected to RDNET (to be used in case of communication errors).

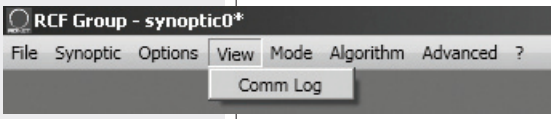
Config: 2 protection levels, Setup and Concert. In each level, it is possible to enable (or disable for safety reasons) one or more of the 5 listed functions:

- **Live Eq Gain:** it enables the real-time GAIN setting (in the equalization window).
- **Live Eq Delay:** it enables the real-time DELAY setting (in the equalization window).
- **Live Eq Filter:** it enables the real-time equalization.
- **Confirm Eq Send:** it enables the EQ confirmation request when clicking the SEND button.
- **Confirm Solo Send:** it enables the confirmation request when activating the SOLO function (only one device turned on at a time).

Synchronize: it aligns all equalization

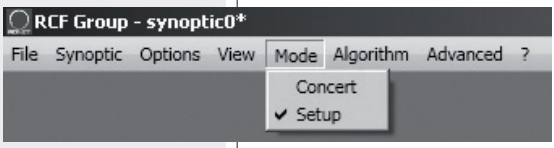
VIEW

Comm Log: log view of network communications and error.



MODE

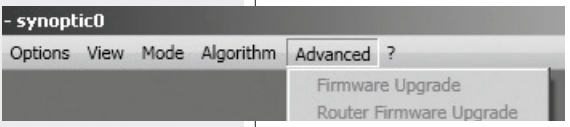
Selection of the protection level, 'Setup' or 'Concert', sellable in the Options > Config menu.



ADVANCED

Firmware Upgrade: device firmware upgrade. Supported only by some RDNET devices.

Router Firmware Upgrade: RDNET CONTROL 2 unit firmware upgrade.



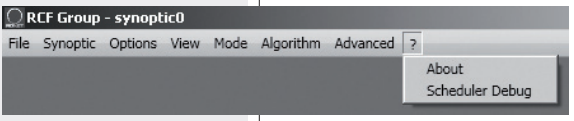
HOW TO UPGRADE THE RDNET CONTROL 2 UNIT FIRMWARE

HOW TO UPGRADE THE RDNET CONTROL 2 UNIT FIRMWARE

1. Link the RDNET CONTROL 2 unit to the computer through the USB cable and turn it on without connecting any device.
2. Wait until its front panel LEDs stop flashing .
3. In the software home page, select ADVANCED> Router Firmware Upgrade to open the respective window, then click LOAD and choose the CONTROL2.RDU file.
4. The download automatically begins. A new window appears reminding you to disconnect the USB cable and then reconnect it later. Click OK when complete.
5. Await until the progress bar indicates the installation end, then disconnect the USB cable and reconnect it later. The RDNET CONTROL 2 unit will automatically reboot.

MENU "?"

About: it opens a window indicating the current software release.



USE IN "ON LINE" MODE

USE IN "ON LINE" MODE

When online, the RDNET CONTROL 2 unit sequentially scans all devices, which are automatically assigned to digital addresses.

The software synoptic is compared to the real settings and any difference is pointed out: the device objects shown in the software without being really present in the net have their "Comm" indicator red, while for the remaining ones, it has to be checked if program equalization data is synchronized with realdata;otherwise,"Eq.Sync" led remains off. Devices linked to the net are automatically added to the software synoptic.

Therefore the software shows an object per each device that has been found.

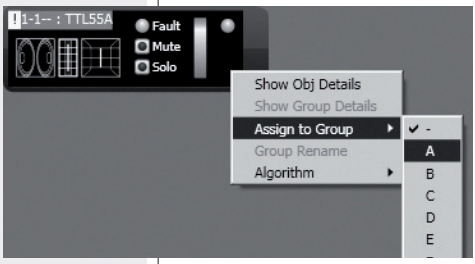
ASSING AN OBJECT TO A GROUP

Each object can be assigned to a group in order to get parameter value changes common to all objects that belong to the same group.

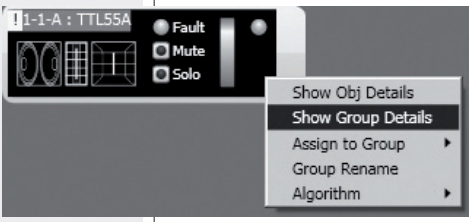
Right-click with the mouse on the object and choose 'Assign to Group', then the proper group (from A to S, for example 'A').

After assigning an object to a group, its external edge gets coloured and the group letter is indicated after the subnet and the digital address (example: 1.1-A: TTL55-A).

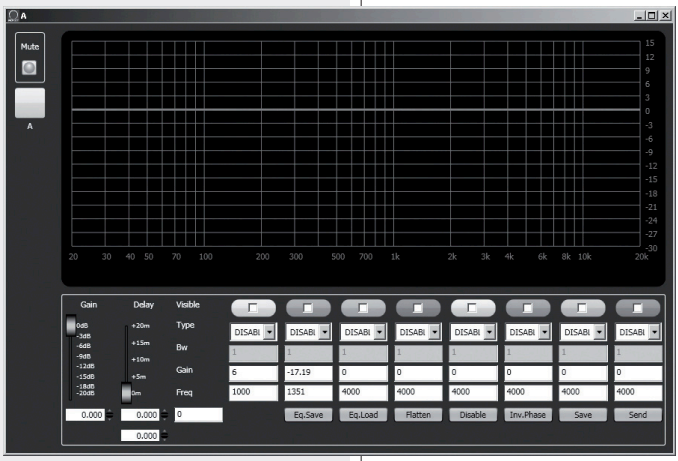
ASSIGN AN OBJECT TO A GROUP



Right-click again the object and now choose 'Show Group Details' to open the common equalization window (settings can be made in the same way as a single object as long as assigned to a group).



The following screen appears on the group.



GAIN: signal level attenuation (value: from 0 to -20 dB).

DELAY: signal delay setting, express in the range of 0 + 20 metres (that is the correspondent distance). Note: the value on the right of the distance (in metres) is the sample number.

Eq. SAVE: it allows saving current equalization in a file (*.rde),on computer (a dialogue box opens to save the file).

Eq. LOAD: it allows opening an equalization file (*.rde) previously saved on computer.

FLATTEN: it disables all filters (the frequency response gets 'flat').

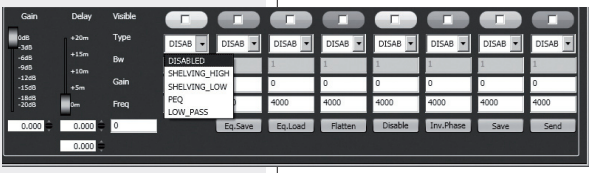
DISABLE: it disables the equalization, but without changing filter settings.

INVERTED PH: when selected, the signal phase is inverted.

NORMALLY THE SIGNAL PHASE DOES NOT NEED TO BE INVERTED. THE PHASE INVERSION MAY BE USEFUL TO COMPENSATE OR MINIMISE POSSIBLE UNDESIRED ACOUSTICAL DESTRUCTIVE INTERFERENCES, DUE TO PARTICULAR LOUDSPEAKER POSITIONS.

SAVE: it sends and stores the equalization to the selected device.

SEND: it sends (without storing) the equalization to the selected device. It is possible to set up to 8 selectable filters:



DISABLED: the filter is disabled.

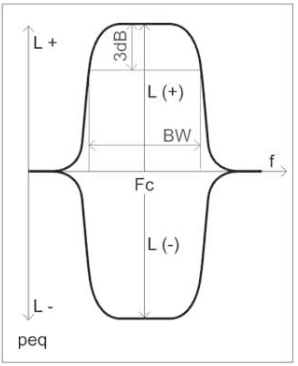
SHELVING_HIGH: increase or decrease the level of all frequencies above the selected frequency by the specified amount.

SHELVING_LOW: increase or decrease the level of all frequencies below the selected frequency by the specified amount.

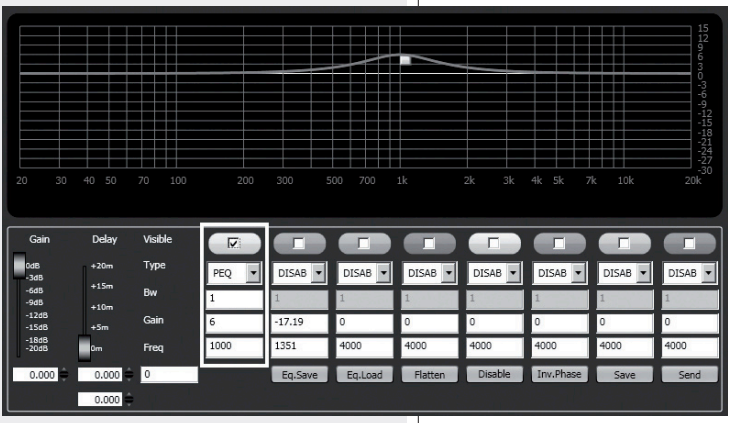
PEQ: Parametric equalizer that allows to adjust the level L at the settable centre frequency Fe and specify the bandwidth BW (the adjusted level can be widened or narrowed).

LOW_PASS (available as first filter only): Butterworth 24 dBI octavelow-pass filter (note:filter GAIN controlis disabled).

HIGH_PASS (available as second filter only): Butterworth 24 dBI octave hi-pass filter (Note: filter GAIN controlis disabled).



Frequency and gain can be adjusted either graphically (through the mouse), by enabling the 'Visible' option (to visualize the filter intervention) and moving the little coloured square or in an analytical way, by inserting the values in the cells and then activating the 'Visible' option. The overall equalization is shown as a red line, the intervention of a single filter as a line of its respective colour and lower thickness.



The first object of a group gives its own data to the group, sharing them with all next objects that will be assigned to the same group. The group common data are the gain, the delay and the equalization.
RDNET always check if these data are the same of loudspeakers(or others audio devices), if not, the "Eq. Sync" LED on loudspeaker goes off, indicating that the loudspeaker parameters are not synchronized with the software configuration.
The user can synchronize the system according to the software configuration. If all objects belonging to the same group are removed, that group will also be removed and common data will be lost.
When an object is removed from a group, it will maintain all group data until changes are applied.

RDNET SOFTWARE REPAIR AND REMOVE

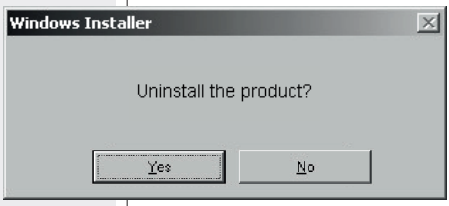
RDNET SOFTWARE
REPAIR AND REMOVE

If the RDNET software needs to be repaired (in case of errors, for instance due to damaged files) or removed, run the setup.exe file of the installation software.

The window will show 2 options:
- Select "Repair RDNet" to repair the software
- Select "Remove RDNet" to remove the software.

Then click the Finish button to proceed.

An alternative way to remove the software
(in Windows):
Start > Programs > RCF Group >RDNet > Uninstall
Click Yes to confirm.



NOTE

Each device can have different parameters.

TO UNDERSTAND CHARACTERISTICS AND FUNCTIONS OF ALL DEVICES. ALWAYS REFER THEIR RESPECTIVE USER MANUALS.

SPECIFICATIONS

Network	Standard ElA RS-485 up to 2 managed subnet max. 32 devices connected to each subnet
RDNET connections	2 RJ 45 connectors (EtherCon) for CAT 5 cable 2 three-pole XLR socket (as alternative to RJ 45)
PC connection	USB (type B)
Power supply	Powered by USB Type B socket
Mechanical characteristics	ABS Plastic BOX Black color
Dimensions (w, h, d)	111 mm, 40.5 mm, 89.5 mm
Net weight	175 gr

RDNET CONTROL 2 IS READY FOR USE WITH SOME DEVICES EX. DVA T12.

OTHER DEVICES MAY BE ADDED SUCCESSIVELY, DOWNLOADING THE SOFTWARE FOR RDNET CONTROL 2 PLUG-IN, FROM RCF WEBSITE WWW.RCF.IT