

MULTICUSTOM



User Manual

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Please read this manual carefully before installing the Multicustom.

The manufacturer will not be responsible for any damage or accidents caused by the use, even correct of its products.

The data and features of the product may change without prior notice.

THANK YOU & CONGRATULATIONS!

Thank you for purchasing the modular controller MULTICUSTOM. This device is a Media Bus Control® automation controller that can be configured according to your needs. This manual is meant for helping you in its installation.

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1-PRESENTATION

Multicustom is a home automation controller that enables to control many devices using buses and varied protocols. This controller receives and emits data via the «MBC» proprietary bus or a LAN connection. Thanks to the «ZIG ACCESS» or Wifi access points, it can also be controlled by Zigbee® (VIMATY70ZR screen) or WiFi (Tactum CE screen). Multicustom can also work with some limitations, in «stand-alone» mode. In that case, no remote control (touch panel, keyboard, computer, ...) is necessary. Actions are triggered by dry contacts or infrared codes.

Multicustom is a modular system. According to the needs of the installation, different types of cards can be mounted in the box. Several boxes can be connected if the number of required cards surpasses the box capacities, each box supporting 3 specific slots and 8 standard slots.

Multicustom exists in 2 versions :

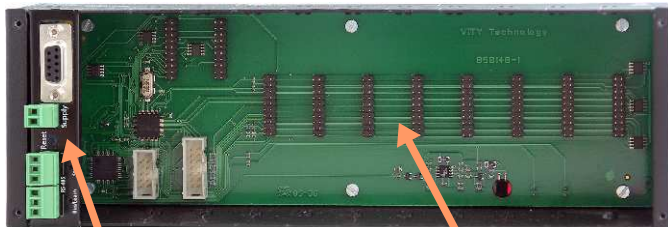
- Multicustom/485 : the device has a «MBC» proprietary bus and a RS232 port for the upgrades.
- Multicustom/IP : the device has a LAN connection and a «MBC» proprietary bus. The upgrade is made by LAN.

2-MATERIAL DESCRIPTION OF THE MULTICUSTOM

2.1- Basic box

Whatever the version, Multicustom is constituted by a base including a box, a backplane main board, a connecting card card and a kit for the rack mounting 19". Only the connecting card changes according to the version. This card is delivered already mounted in the box. It takes the first slot.

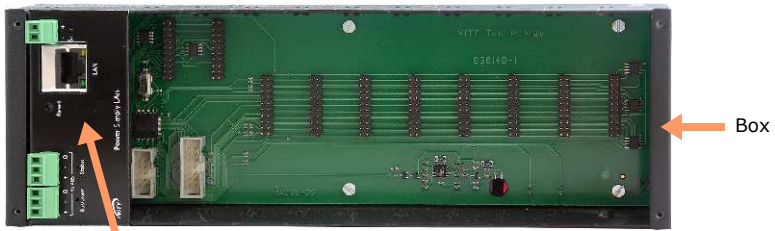
Multicustom/485 version :



Standard connecting card
reference : MCM MBC

Backplane main board

Multicustom/IP Version :



LAN connector
technology reference :
MCM LAN

The backplane is divided into 2 parts. The first is dedicated to 3 specific slots and the second holds 8 standard slots. The silkscreen of the plastic eye-patch which blocks off the unused slots, enables to locate the specific cards position and the standard cards position. Moreover, the backplane connectors position also enables to differentiate the two parts.

As indicated previously the first slot is reserved to the CPU card.

3 specific slots

8 standard slots

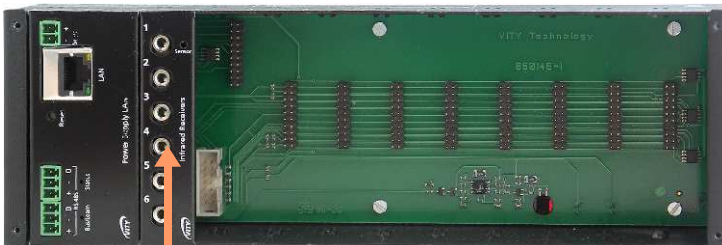


Connector technology card. In this example, standard connector technology card.

Plastic eye-patch

IRX).

The second slot is reserved to the card of RC5 infrared codes reception (reference MCM



MCM IRX card

The third slot is dedicated to the EIB card (reference MCM EIB) or X10 (reference MCM PWL).

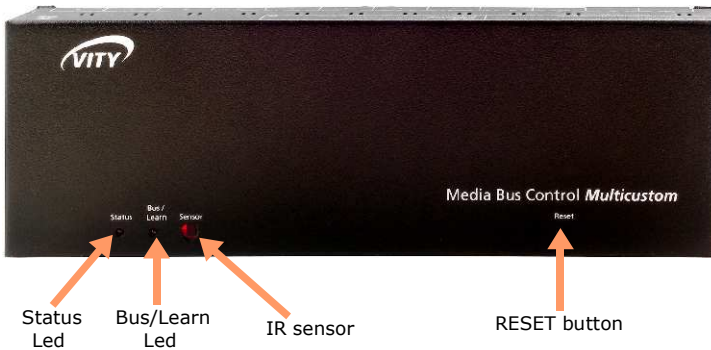


MCM EIB card

The following 8 slots can be set up with the following cards (there's no specific location for each card) :

- Card of 6-out infrared codes emission (reference MCM IRTX).
- VCA Card 2 mono channels or 1 stereo channel (reference MCM VCA).
- Card 8 relays (reference MCM RL).
- Card 8 outputs 0/10 volts (reference MCM 0/10).
- Card 2 RS232 ports (reference MCM RS).
- Card 8 analog inputs (reference MCM A/I).
- Card 8 GPI inputs (reference MCM JPI).

The front side of the basic box is the same for the 2 versions.



The «Status» Led flashes when Multicustom normally works. The «Bus/Learn» Led indicates the transit of commands on the MBC bus or the IR codes learning. These 2 leds are deports of the two equivalent Leds present in the CPU cards.

The infrared sensor «SENSOR» enables the infrared codes learning.

The «RESET» button enables to restart Multicustom.

The box can be fixed in an external bay 19" thanks to the provided 19" rack mount kit
Fix the coner plates on the frame with the supplied screws.



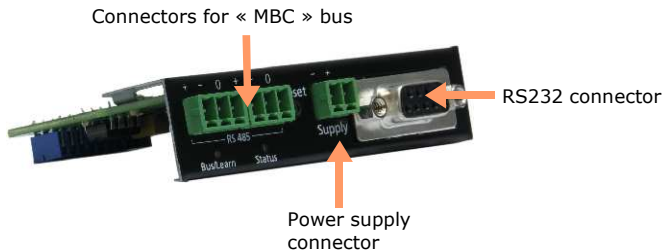
Rack-mounting
bracket 19"

Rack-mounting
bracket 19"

Mechanical features of the box :

- Dimensions : 260 mm x 88 mm x 20 mm.
- Weight : 0,82 kg.
- Provided power supply 12 Vdc / 4A .

2.2- Standard connecting card (reference MCM MBC)



This card is supplied with the Multicustom. It also enables the firmware upgrade and the «stand-alone» programme download via the DB9 connector. Finally it enables to connect the Multicustom «MBC» command bus.

The proper functioning of the Multicustom is indicated by the «Status» Led which must blink. The «Bus/Learn» Led indicates the transit of the «MBC» command bus or the infrared code learning.


The «Reset» button enables to reset the Multicustom.

2.2.1-Connections of the power supply connector «Supply»

Terminal	Signal	
1	GND	
2	+12Vdc	

The external power supply 12Vdc is linked to the connector «Supply» (reference Phoenix Contact : MC1,5/2-G-3,81). The connector used for the power supply is a Phoenix connector Contact reference : MC1,5/2-ST-3,81. Cable section : 0,08 -1,5 mm² (AWG : 28 -16).

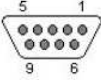
2.2.2-Connection of the «MBC» bus connectors

Terminal	Signal	
1	Tx/Rx +	
2	Tx/Rx -	
3	GND	

You can connect the «MBC» bus on either of the connectors for «MBC» bus (reference Phoenix Contact : MC1,5/3-G-3,81). The second connector is only used to facilitate the Mediabus devices chaining. The connector used for the «MBC» bus cable is a Phoenix connector Contact reference : MC1,5/3-ST-3,81. Cable section : 0,08 -1,5 mm2 (AWG : 28 -16).

The VIMATY 35B, 35S, 35-EIB, 70S, 70-EIB screens, the PADMATY 20S keyboards and the Mediabus controllers (XMONOPRO, MULTICUSTOM et MINIMONO) are connected to the Multicustom by this bus.

2.2.3- RS232 subD9 female connection

Terminal	Signal	
1		
2	RxD	
3	TxD	
4		
5	GND	
6		
7		
8		
9		

The connector to use for the cable connected to the Multicustom, is a DB9 male plug. This RS232 port enables the Multicustom upgrade.

2.2.4-Address configuration

To be able to communicate on the «MBC» bus, each Multicustom must have an address. This address is defined by the dipswitches 1 to 4 located beside the DB9 connector. This address enables to differentiate the different Mediabus devices present on the «MBC» bus.



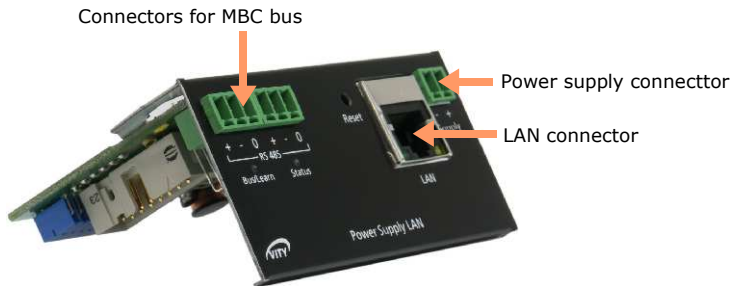
Dipswitches to setup the address

Selection of the address according to the dipswitches :

Address	Dipswitch 1	Dipswitch 2	Dipswitch 3	Dipswitch 4
1	ON	ON	ON	ON
2	OFF	ON	ON	ON
3	ON	OFF	ON	ON
4	OFF	OFF	ON	ON
5	ON	ON	OFF	ON
6	OFF	ON	OFF	ON
7	ON	OFF	OFF	ON
8	OFF	OFF	OFF	ON
9	ON	ON	ON	OFF
10	OFF	ON	ON	OFF
11	ON	OFF	ON	OFF
12	OFF	OFF	ON	OFF
13	ON	ON	OFF	OFF
14	OFF	ON	OFF	OFF
15	ON	OFF	OFF	OFF
16	OFF	OFF	OFF	OFF

The Dipswitches 5 to 8 are only used for the upgrade in forced mode.

2.3-LAN connecting card (reference MCM LAN)




Just like the standard connector technology card, this card assures the Multicustom power supply. It enables in the same way the firmware upgrade and the «stand-alone» programme upload by Ethernet. It also enables to connect the Multicustom to the «MBC» command bus.

The proper functioning of the Multicustom is indicated by the «Status» Led which must blink. The «Bus/Learn» Led as to it indicates the transit of a command on the «MBC» bus or the infrared code learning. The leds of the RJ45 connector indicates the state of the LAN traffic.


The «Reset» button enables to reset the Multicustom.

2.3.1-Connection of the power supply connector «Supply»

Terminal	Signal	
1	GND	
2	+12Vdc	

The external power supply 12Vdc is connected to the «Supply» connector (reference Phoenix Contact : MC1,5/2-G-3,81). The connector used for the external power supply is a Phoenix connector Contact reference : MC1,5/2-ST-3,81. Cable section : 0,08 -1,5 mm2 (AWG : 28 -16).

2.3.2-Connection of the «MBC» bus connectors

Terminal	Signal	
1	Tx/Rx +	
2	Tx/Rx -	
3	GND	

You can connect the «MBC» bus on either of the connectors for «MBC» bus (reference Phoenix Contact : MC1,5/3-G-3,81). The second connector is only used to facilitate the Mediabus devices chaining. The connector used for the «MBC» bus cable is a Phoenix connector Reference contact : MC1,5/3-ST-3,81. Cable section : 0,08 -1,5 mm2 (AWG : 28 -16).

The VIMATY 35B, 35S, 35-EIB, 70S, 70-EIB screens, the PADMATY 20S keyboards and the Mediabus controllers (XMONOPRO and MINIMONO) are connected to the Multicustom via this bus.

2.3.3-Connection of the network connector

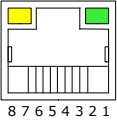
The RJ45 connector of the LAN connector technology card enables to control and upgrade the Multicustom by network. To connect a Multicustom to a Hub, you have to use a straight cable. To connect a Multicustom directly to a PC, you have to use a cross cable (see following pictures). The cable used must be a 4-CAT5 twisted pair cable.

Staight wiring between Multicustom and HUB	
Side A	Side B
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8

Cross wiring between Multicustom and PC	
Side A	Side B
1	3
2	6
3	1
4	4
5	5
6	2
7	7
8	8

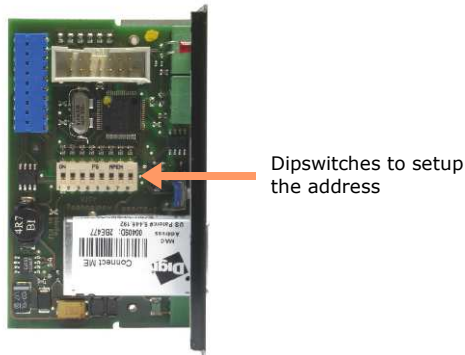
Note: cables 1 and 2 = 1 twisted pair
 cables 3 and 6 = 1 twisted pair
 cables 4 and 5 = 1 twisted pair
 cables 7 and 8 = 1 twisted pair

RJ45 female connection

Terminal	Signal	
1	Tx+	
2	Tx-	
3	Rx+	
4		
5		
6	Rx-	
7		
8		

2.3.4- Address configuration

To be able to communicate on the «MBC» bus, each Multicustom must have an address. This address is defined by the dipswitches 1 to 4 located beside the LAN connector. This address enables to differentiate the different Mediabus devices present on the «MBC» bus.



Selection of the address according to the dipswitches :

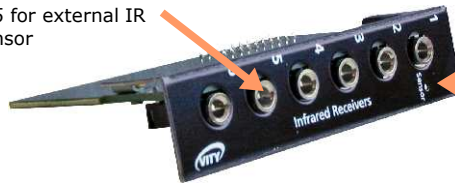
Address	Dipswitch 1	Dipswitch 2	Dipswitch 3	Dipswitch 4
1	ON	ON	ON	ON
2	OFF	ON	ON	ON
3	ON	OFF	ON	ON
4	OFF	OFF	ON	ON
5	ON	ON	OFF	ON
6	OFF	ON	OFF	ON
7	ON	OFF	OFF	ON
8	OFF	OFF	OFF	ON
9	ON	ON	ON	OFF
10	OFF	ON	ON	OFF
11	ON	OFF	ON	OFF

Address	Dipswitch 1	Dipswitch 2	Dipswitch 3	Dipswitch 4
12	OFF	OFF	ON	OFF
13	ON	ON	OFF	OFF
14	OFF	ON	OFF	OFF
15	ON	OFF	OFF	OFF
16	OFF	OFF	OFF	OFF

The Dipswitches 5 to 8 are only used for the upgrade in forced mode.

2.4-Card of RC5 infrared codes reception (reference MCM IRX)

Jack fixed connector
3"5 for external IR
sensor



Internal IR sensor for
IR codes learning

This card enables both to decode infrared frames of the RC5 type from different external sensors, and to learn infrared codes thanks to the internal IR sensor or to the external sensor n°6.

The internal IR sensor (Sensor) or the external sensor n°6 works in the same way as the infrared sensor of the basic box. You can use either for the infrared codes learning.

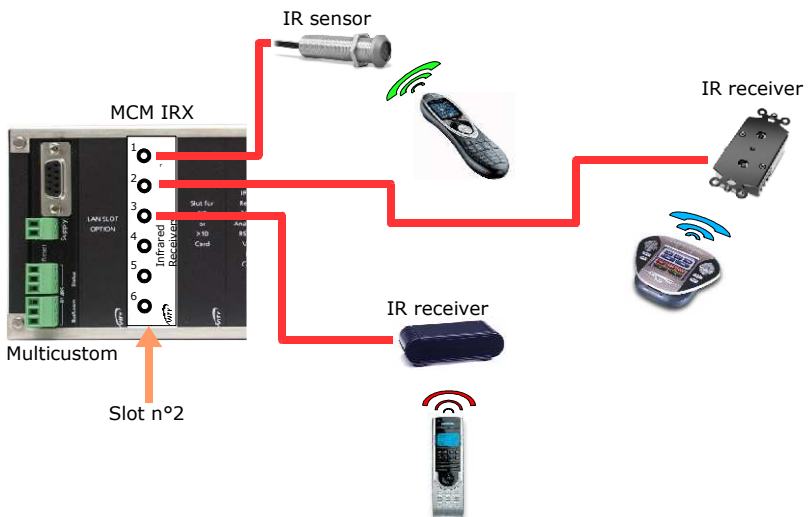
It is possible to connect up to 6 external infrared sensors of the Xantech type. Each jack fixed connector 3"5 supplies 12 Vdc to the external IR sensor with protection against short circuits by polyswitch 50mA.

When a RC5 code is received, either Multicustom sends the information to the «MBC» bus, or it triggers an action associated to the code if it is in stand-alone mode.

This card must be installed in the slot 2. You can not therefore install more than one card by Multicustom box.

Stereo Jack 3"5 connection

Terminal	Signal
1	IN IR
2	GND
3	+12V




2.5-Card X10 (reference MCM PWL)



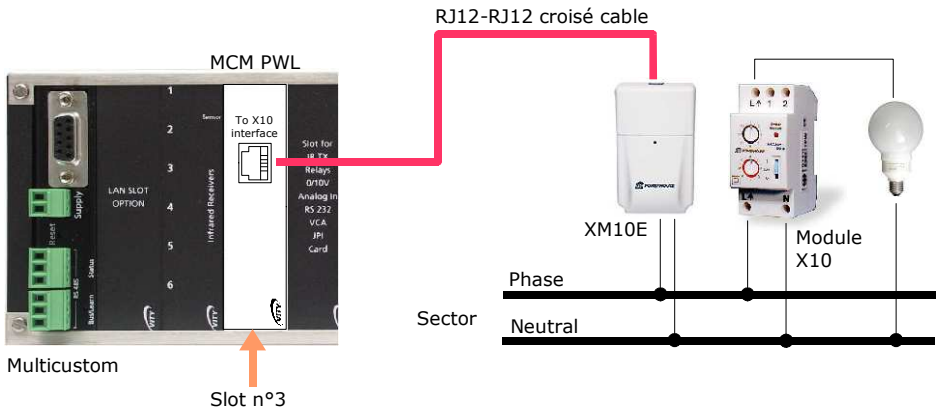
This module is jointly used with a XM10E interface to control an installation X10. The XM10E module enables the connection to the sector assuring the insulation by opto-couplers. The RJ12 6P/4C fixed connector must be connected to the XM10E module by a cross cable set up with 2 RJ12 connectors.

RJ12 6P/4C connection

Terminal	Signal
1	Zero Crossing
2	Com
3	Rx
4	Tx



This card must be installed in the slot 3. Therefore, you can not install more than one card by Multicustom box.



2.6- EIB card (reference MCM EIB)



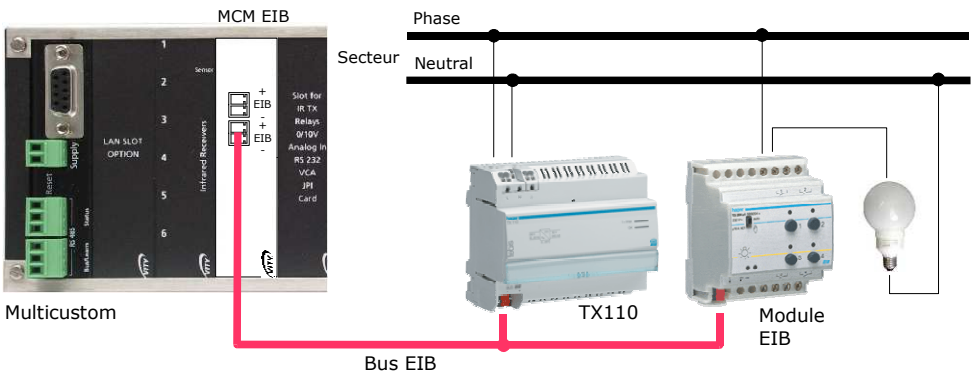
This card is used jointly with a EIB module TX110 in order to interface the «MBC» bus and an EIB installation. The TX110 module assures the power supply of the EIB bus. In no case, the MCM EIB card enables to configure the EIB devices of the installation. You have to use the appropriate softwares and equipments.

Fixed connector connection contact MC1,5/2-G-3,81

Terminal	Signal	
1	EIB -	
2	EIB +	

You can connect on either of the Phoenix connectors Contact. The second connector is only used to facilitate the EIB devices chaining. The connector used for the EIB cable is a Phoenix connector Contact reference : MC1,5/2-ST-3,81. Cable section : 0,08 -1,5 mm² (AWG : 28 -16).

This card must be installed in the slot 3. Therefore, you cannot install more than one card by Multicustom box.



2.7-Card of 6-out infrared codes emission (reference MCM IRTX).



This card enables to control independently or simultaneously up to 6 infrared outputs. You just have to connect a single infrared transmitter like VIEC 3501A or a double infrared transmitter like VIEC 3502A on each mono jack fixed connector 3"5. **Never connect more than 2 infrared emitting leds for one jack 3.5 output.**

The red led located beside the jack fixed connector 3"5 indicates the proper functioning of the card. It must blink in step with the status led of the basic connector technology card.

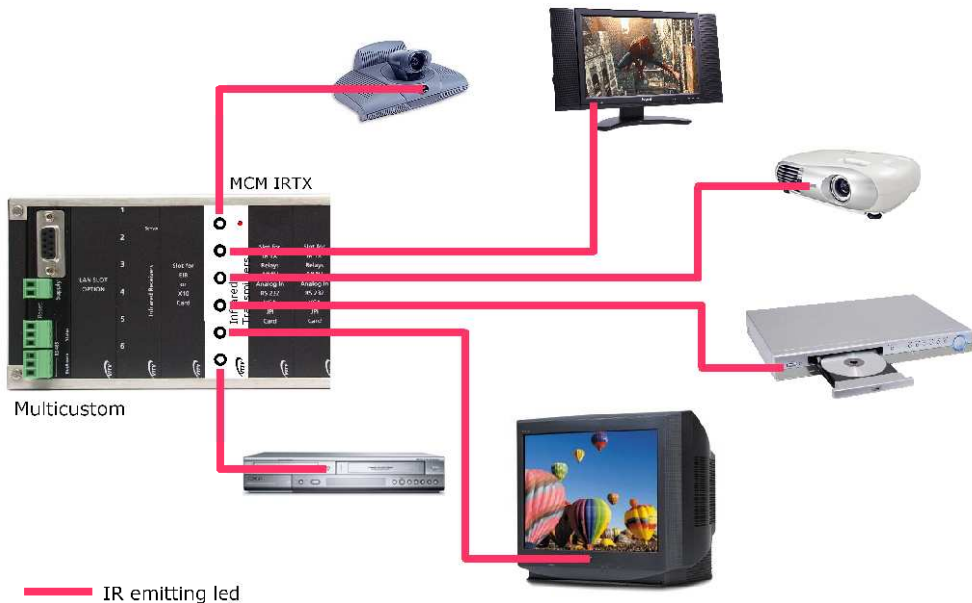
Output impedance of each channel : 100 ohms.

Mono Jack 3.5 connection

Terminal	Signal
1	OUT IR
2	GND



The MCM IRTX module can be installed in one of the 8 standard slots (slots 4 to 11). It is therefore possible to have up to 8 MCM IRTX cards in a same box.



2.8-VCA card 2 mono channels or 1 stereo channel (reference MCM VCA).



This module assures the volume control of 2 independent mono channels or 1 stereo audio channel. The audio inputs and outputs can be unbalanced or balanced.

The red led located beside the + of the audio input «IN1» indicates the proper functioning of the card. It must blink in step with the «status» led of the basic connecting card.

Features of an audio channel:

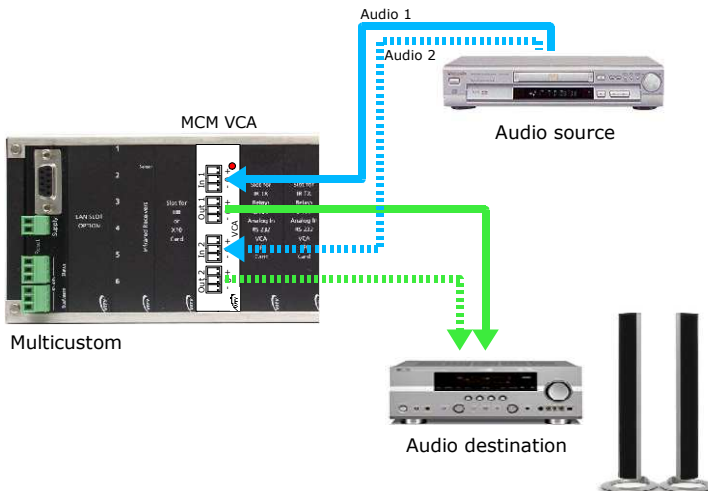
- Input impedance : 10 Kohms
- Output impedance : 100 ohms
- Max. input level : 0 dB
- Gain : -3 dB max
- Bandwith : 33 Hz – 16 KHz

Connection of Phoenix audio fixed connectors contact MC1,5/3-G-3,81

Terminal	Signal	
1	-	
2	GND	
3	+	

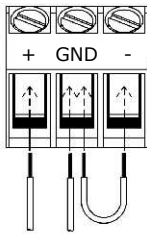
The connector used for the audio cable is a Phoenix connector Contact reference : MC1,5/3-ST-3,81. Cable section : 0,08 -1,5 mm² (AWG : 28 -16).

The MCM IRTX module can be installed in one of the 8 standard slots (slots 4 to 11). It is therefore possible to have up to 8 MCM IRTX cards in a same box.

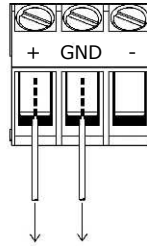


Unbalanced and balanced audio connections :

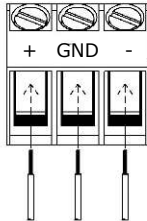
Unbalanced input



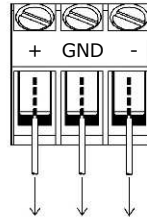
Unbalanced output



Balanced input



Balanced output



It is possible to mix balanced input and unbalanced output or inversely.

2.9-Card 8 relays (reference MCM RL).



This card holds 8 SPST-NO relays. It enables to control the devices controlled by dry contacts. The maximum contact voltage is 36V, the intensity of 1A. For higher values, you have to use power relays.

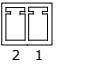
The red led located beside the relay n°1 indicates the proper functioning of the card. It must blink in step with the «status» led of the basic connecting card.

Features of a relay :

- SPST relay, contact normally open
- Contact impedance : 100 mOhm
- Max. voltage : 36V
- Max. intensity : 1A

Connection of Phoenix fixed connector contact MC1,5/2-G-3,81

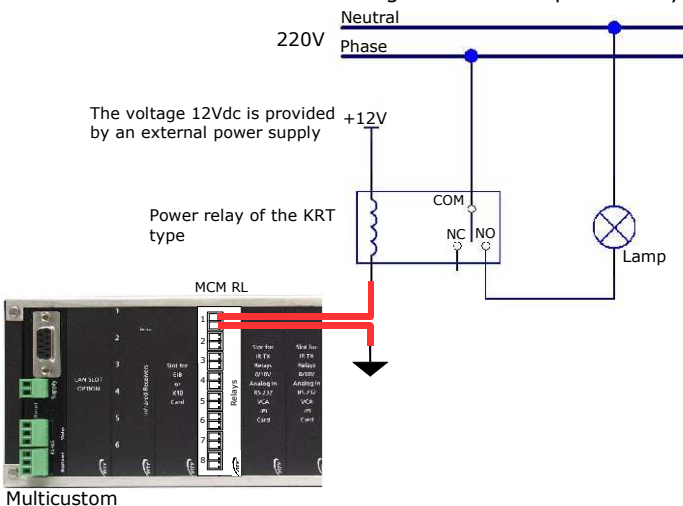
Terminal	Signal
1	C1
2	C2



The connector used for the cable is a Phoenix connector Contact reference : MC1,5/2-ST-3,81. Cable section : 0,08 -1,5 mm² (AWG : 28 -16).

The MCM RL module can be installed in one of the 8 standard slots (slots 4 to 11). It is therefore possible to have up to 8 MCM RL cards in a same box.

Control of a voltage > 36V via a power relay



2.10-Card 8 outputs 0/10 volts (reference MCM 0/10).



This card provides 8 independent voltages, varying between 0 and 10 V. It enables to control the devices of the type : dimmer, mixer with inputs 0-10V control at a distance.

The red led located beside the output n°1 indicates the proper functioning of the card. It must blink in step with the «status» led of the basic connecting card.

Features of a output 0-10V :

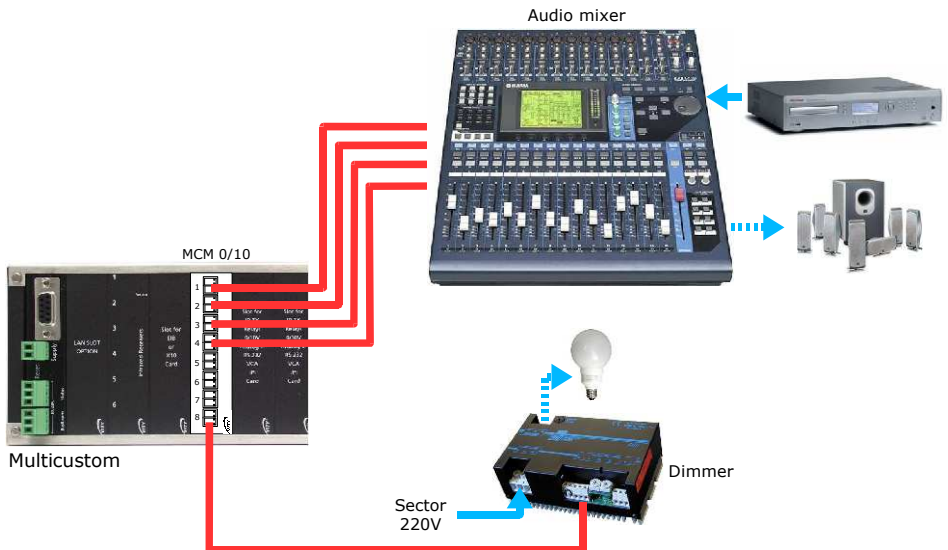
- Impedance : 10 Kohms
- Max voltage : 10 V
- Min voltage : 0 V
- No voltage variation : 10V / 256

Connection of the Phoenix fixed connector contact MC1,5/2-G-3,81

Terminal	Signal	
1	GND	
2	OUT	

The connector used for the cable is a Phoenix connector Contact reference : MC1,5/2-ST-3,81.
Cable section : 0,08 -1,5 mm² (AWG : 28 -16).

The MCM 0/10 module can be installed in one of the 8 standard slots (slots 4 to 11). It is therefore possible to have up to 8 MCM 0/10 cards in a same box.



2.11-Card 2 RS232 ports (reference MCM RS).

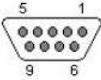


This card provides 2 independent serial ports. It enables to control 2 devices owning a RS232 interface. Each RS232 port have a reception buffer of 15 bytes and an emission buffer of 32 bytes.

The red led located beside the «VITY» logo indicates the proper functioning of the card. It must blink in step with the «status» led of the basic connecting card.

SubD9 female Pins connection

Terminal	Signal
1	
2	RxD
3	TxD
4	
5	GND
6	
7	
8	
9	



The connector to use for the RS232 cable is a DB9 male plug.

Switching parameters

Switching speed :

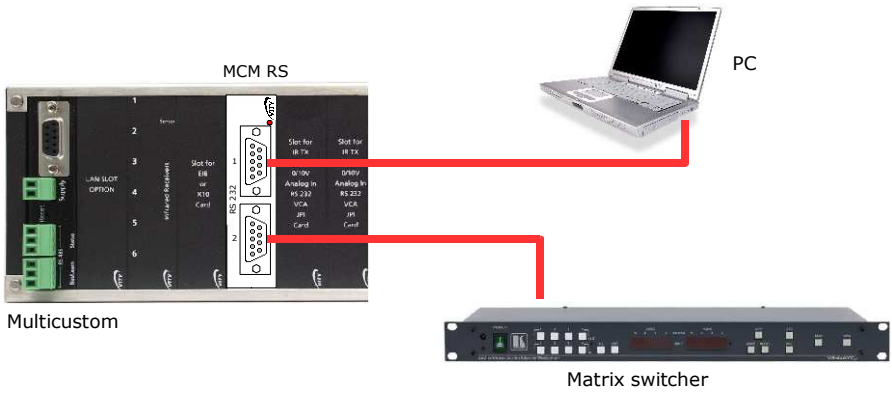
Baudrate	300	600	1200	2400	4800	9600	19200	38400	57600	115200
Port 1	√	√	√	√	√	√	√	√	√	√
Port 2	√	√	√	√	√	√	√	√	√	

Parité : None, odd or even.

Number of bits by character : 5, 6, 7 ou 8.

Number of stop bits : 1, 1.5 ou 2.

The MCM RS module can be installed in one of the 8 standard slots (slots 4 to 11). It is therefore possible to have up to 8 MCM RS cards in a same box.



2.12-Card 8 analog inputs (reference MCM A/I).



The eight analog inputs of this card enable to measure independently eight voltages. Each input has five ratings to set up the sensitivity (3V, 6V, 12V, 24V et 36V), each measured value being coded on 8 bits (256 values). To limit the number of messages on the «MBC» bus, a minimum step variation is defined between 0 and 255 before sending the following measure.

The red led located beside the input n°1 indicates the proper functioning of the card. It must blink in step with the «status» led of the basic connecting card.

Features of an analog input :

Input impedance : 100 Kohms

Max. voltage : 36 V

Min. voltage : 0 V

Minimum delay between 2 measures : 400 ms

5 rating of responsiveness : 3V, 6V, 12V, 24V et 36V

Limit of measure sending start, parameterizable between 0 and 255

Digital conversion on 8 bits.

Broach of Phoenix fixed connector contact MC1,5/2-G-3,81

Terminal	Signal	
1	GND	
2	IN	

The connector used for the cable is a Phoenix connector Contact reference : MC1,5/2-ST-3,81.
Cable section : 0,08 -1,5 mm2 (AWG : 28 -16).

The MCM AVI module can be installed in one of the 8 standard slots (slots 4 to 11). It is therefore possible to have up to 8 MCM AVI cards in a same box.

2.13-Card 8 logic inputs (reference MCM JPI).



The eight logic inputs of this card enable to know the state of external contacts. The Multicustom can also be controlled by these contacts without touch screen. The activation of the contacts triggers actions preprogrammed and stocked in the Multicustom memory thanks to a «stand-alone» programming.

The recognition of a state modification requires that you maintain this modification for a minimum delay of 50 ms.

The red led located beside the input n°1 indicates the proper functioning of the card. It must blink in step with the «status» led of the basic connecting card.

Features of a logic input :

Max. voltage: 30 V

Min. voltage : 0 V

Max. V_{TL} = 0,5V

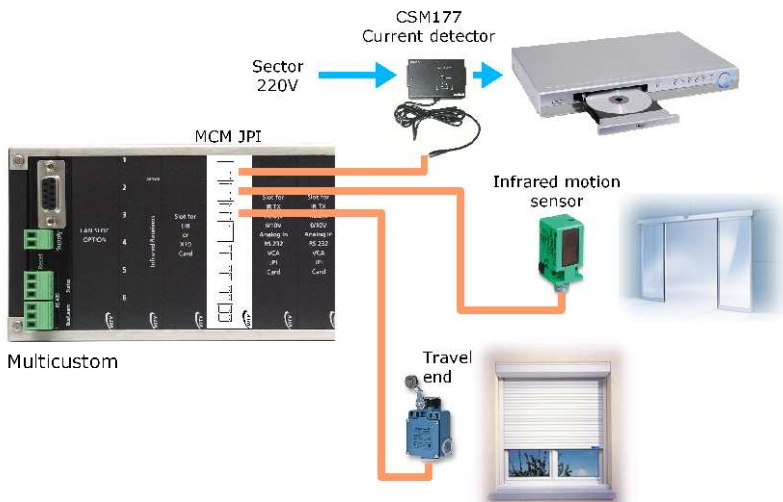
Minimum delay of a state modification : 50 ms

Broach of Phoenix fixed connector contact MC1,5/2-G-3,81

Borne	Signal	
1	GND	
2	IN	

The connector used for the cable is a Phoenix connector Contact reference : MC1,5/2-ST-3,81. Cable section : 0,08 -1,5 mm² (AWG : 28 -16).

The MCM JPI module can be installed in one of the 8 standard slots (slots 4 to 11). It is therefore possible to have up to 8 MCM JPI cards in a same box.

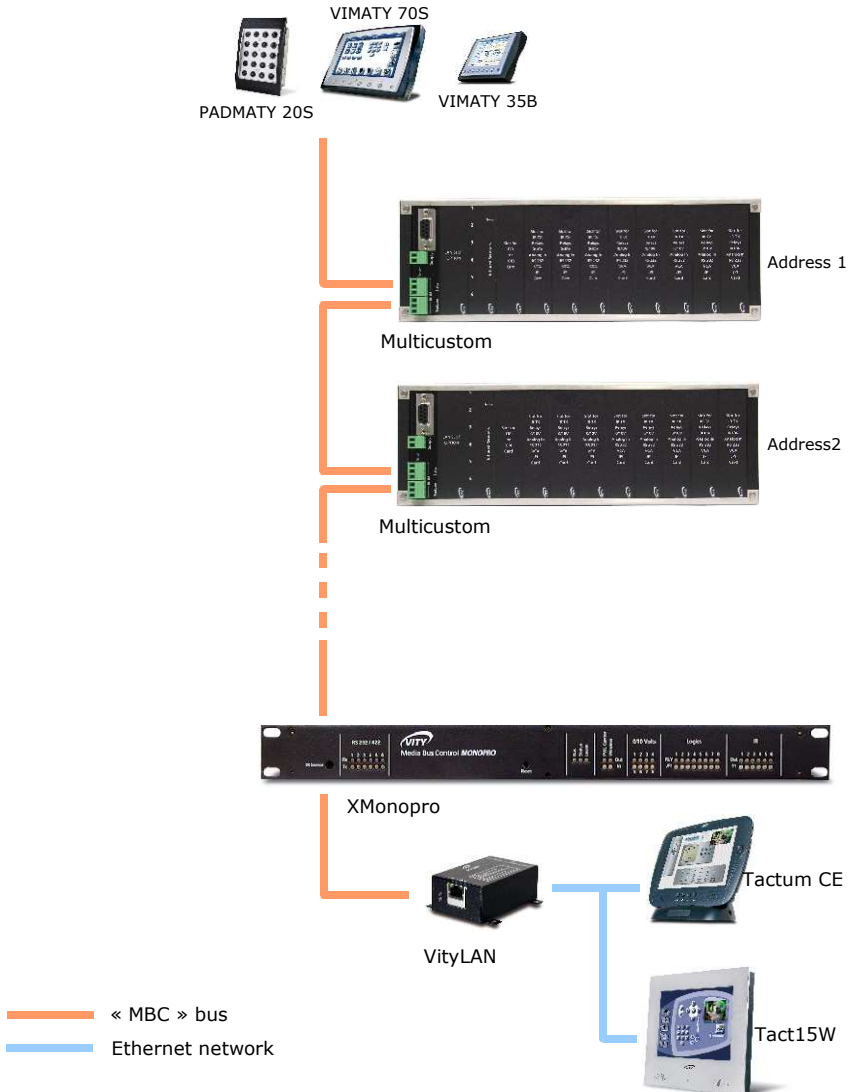


3.2-«MBC» bus connection

You can connect the «MBC» bus on either of the RS485 connectors of the basic connecting card. The second connector is only used to facilitate the chaining of the devices connected to the «MBC» bus.

If several Multicustom are used on the same «MBC» bus, each of them must have a different address (Maximum = 16).

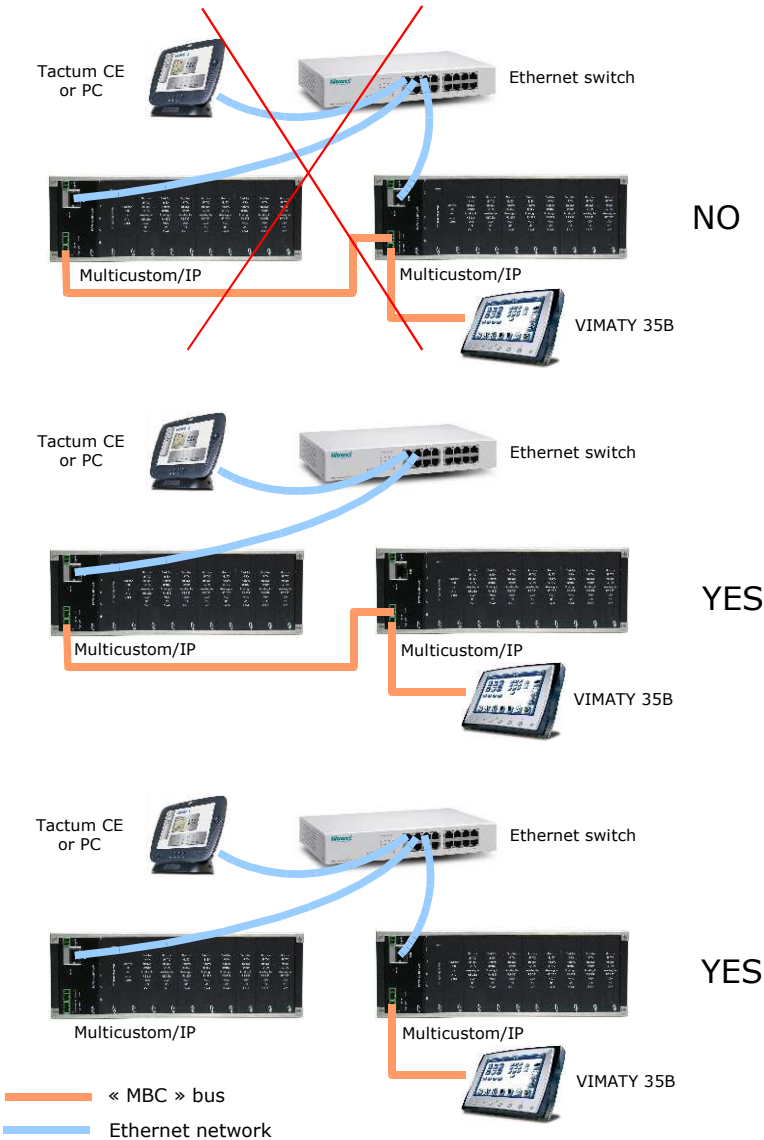
The maximal length of the bus is 1000 m.



3.3-Connection of the IP version on an Ethernet network

The Multicustom/IP version can be connected directly to an Ethernet network 10/100baseT. You must use a RJ45 a straight cable if Multicustom/IP is connected to an Ethernet switch/hub/router and a RJ45 cross cable if it is connected to a PC. Multicustom/IP can be used as a gateway between Ethernet and the «MBC» bus.

Donk link 2 Multicustom/IP at the same time to the same «MBC» bus and to the same Ethernet network.

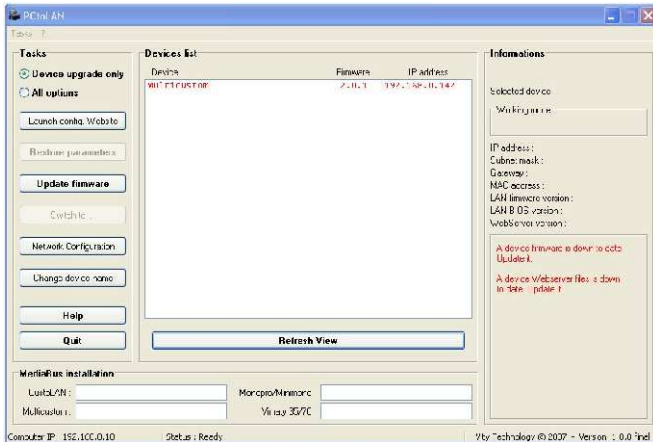


MULTICUSTOM

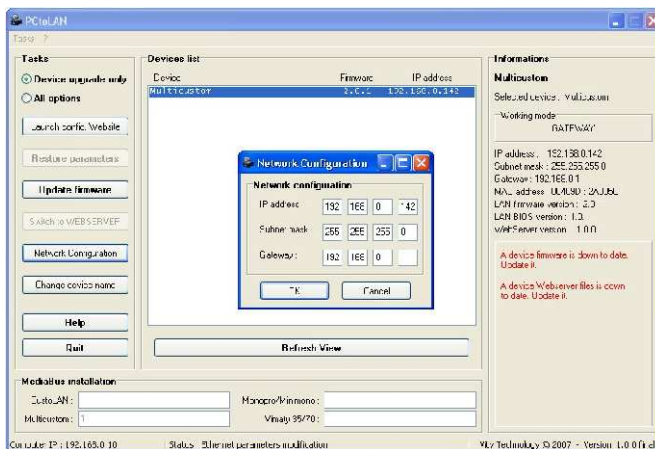
The configuration of the Multicustom/IP IP parameters is made using the software «PCToLAN» that can be downloaded on the website www.vity.com. It is obviously necessary that the parameters you have allocated to the Multicustom/IP correspond to your local network.

Network parameters by default :
IP address = 192.168.0.142.
Subnet mask : 255.255.255.0
Gateway = 192.168.0.1

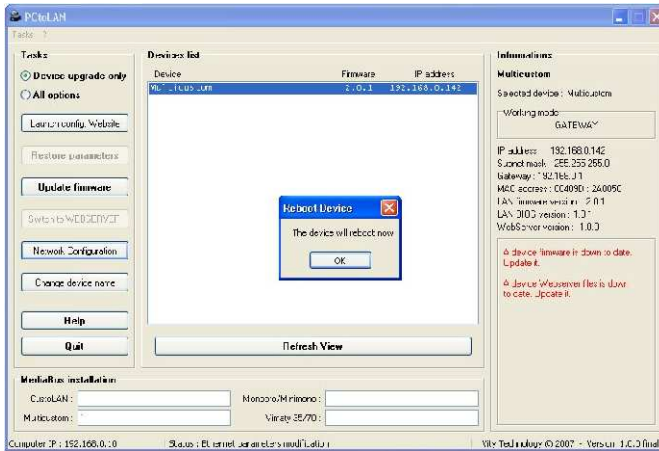
Before executing «PCToLAN», modify the network parameters of your PC to be compatible with the parameters by default of the Multicustom/IP. Supply the Multicustom/IP and launch «PctoLAN». The software must automatically find your Multicustom and display its parameters.



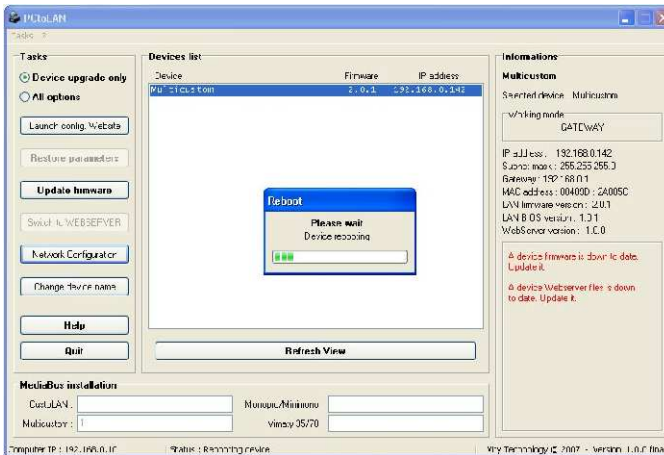
Select your Multicustom and press the «Network Configuration» button. A dialog box «Network Configuration» that enables to modify the IP parameters appears.



Modify the parameters in which you are interested and press the «OK» button.



The dialog box «Reboot Device» is displayed. Confirm pressing «OK».



Wait until the end of the reboot and quit «PctoLAN». Don't forget to modify the parameters of your PC again if it's necessary.

3.4-Connection of the different cards with the target devices

It is necessary to power off all the devices to link, including Multicustom, before networking them.

Use the material description of each card to determine the wiring to realise.
You must not enter a voltage inside the Multicustom box

4-FONCTIONING

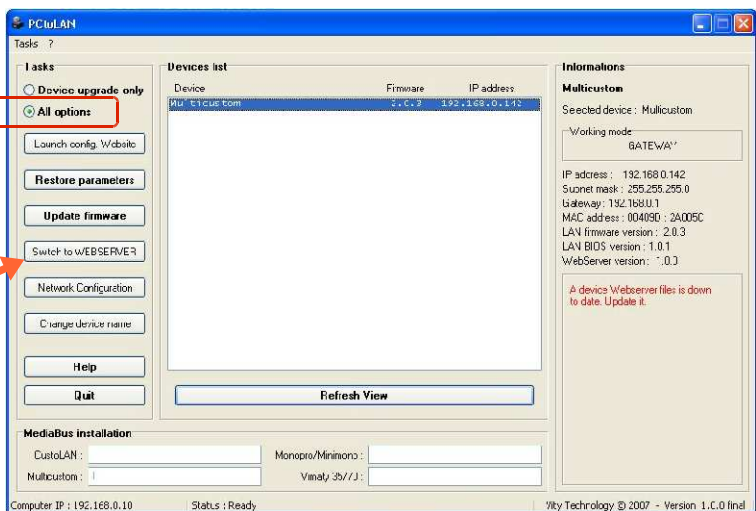
When powering up, Multicustom sends the reset message on the «MBC» bus.
For the IP version, the reset message is also sent on the IP network and a scan of the MBC bus is made. The «STATUS» led of the basic connecting card comes on, then starts blinking indicating the proper starting of the Multicustom.

According to the system configuration, Multicustom can execute commands from the «MBC» and/or IP bus, but also respond to dry contacts and/or RC5 infrared codes by executing macros already stored.

The programming of these macros is made thanks to the «PCToMaty» software. Multicustom can be configured to work only with these dry contacts and/or these infrared codes without using a keyboard, a touch panel or a PC. The macros download is made by the RS232 port or the Ethernet port of the basic connecting card.

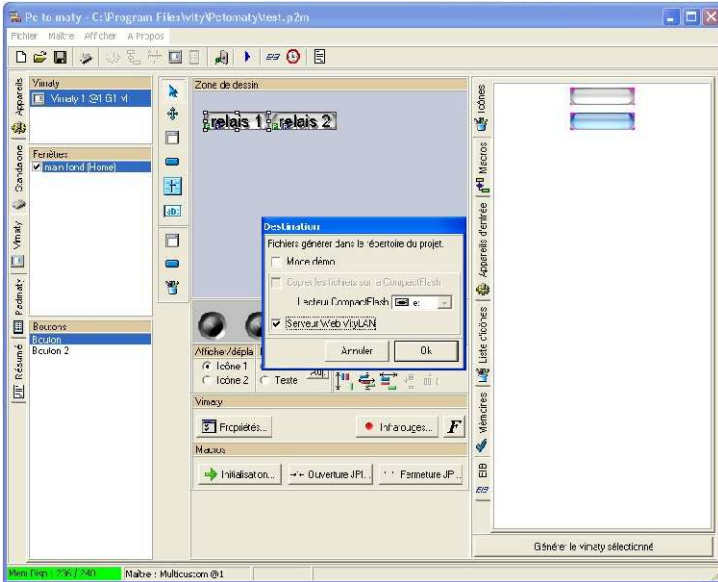
For each data transit on the «MBC» bus, the «bus/learn» led flashes. This led also indicates the transition into the infrared codes learning mode. The infrared codes learning is managed by the «IrDump» software. The transition into infrared learning is triggered via the «MBC» or IP bus.

The Ethernet part of the Multicustom/IP works either in gateway mode (Multicustom/IP transfers the IP messages towards the «MBC» Bus and inversely) or in Web Server mode. The transition of a mode into another is made thanks to the «PCToLAN» software. Once this software is launched, select your device in the list. Confirm «All options» and press the «Switch to WEBSEVER» key to go in Web Server mode. If MultiCustom/IP is already in WEB Server mode, the same key suggests to go in gateway mode (GATEWAY).

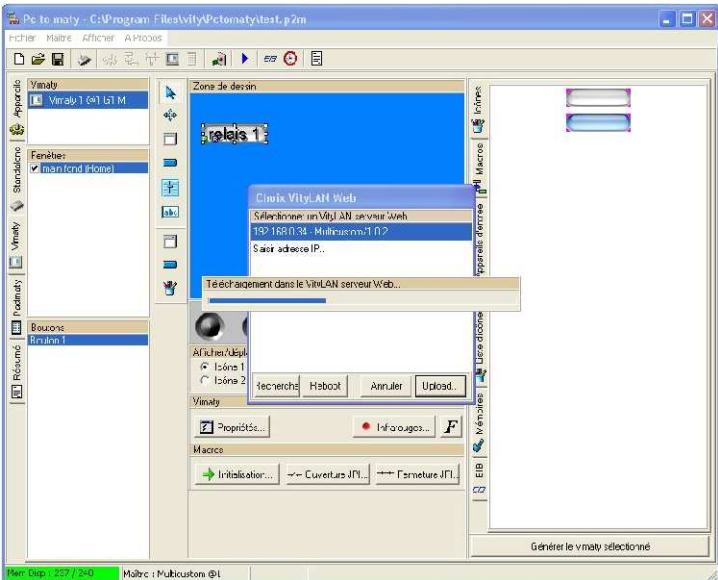


This button enables to switch between the gateway mode and the Web Server mode

Multicustom/IP must also hold a WEB application to provide it to the WEB customer. The creation of this application is made thanks to the «PCToMaty» programme. Proceed in the same way as for the creation of a project for VIMATY 35B. Once the application is created, click on the «Generate the Vimaty» button.



In the dialog box «Destination», confirm «Serveur Web VityLAN» and press «OK».



Once your application is downloaded, MultiCustom/IP is ready to work in WEB server.

5-MBC BUS PROTOCOL

5.1-Communication parameters

Duplex half bus of the RS485 type.
 Communication speed : 115200 bauds.
 Number of bits by character : 8.
 Parity : sans.
 Number of stop bits : 1.

Connection : it is indicated on the above part of the box by the silkscreen and in the «Connexion Mediabus» paragraph.

Connector to use :
Manufacturer : Phoenix Contact reference : MC1,5/3-ST-3,81

5.2-Commands format for Multicustom

Structure of a message :

Header	Type of message	NB of data	Data	Checksum
--------	-----------------	------------	------	----------

Header :

Header			
Target address	ENQ	Transmitter address	ENQ

with ENQ = 0x16 (hexadecimal), target address between 1 and 16 and sender address between 1 and 16.

Type of message : 3 characters

Type of message		
Requested interface	Function	Card slot address

- Requested interface :
 - 'A' (code ASCII 65) = IR learning (+ control)
 - 'a' (code ASCII 97) = IR learning (without control)
 - 'E' (code ASCII 69) = IR emission
 - 'I' (code ASCII 73) = EIB network
 - 'R' (code ASCII 82) = relays
 - 'L' (code ASCII 76) = logic inputs
 - 'X' (code ASCII 88) = analog inputs
 - 'V' (code ASCII 56) = VCA
 - 'Z' (code ASCII 90) = 0/10V
 - 'C' (code ASCII 67) = RC5 channels
 - 'S' (code ASCII 83) = serial links

- 'P' (code ASCII 80) = carrier currents (X10)
 - 'D' (code ASCII 68) = radio
 - 'T' (code ASCII 84) = reset
 - 'O' (code ASCII 79) = time-out control
 - 'F' (code ASCII 70) = cards setup request
- Function :
- 'C' (code ASCII 67) = command
 - 'c' (code ASCII 99) = IR learning with a 455 khz carrier
 - 'D' (code ASCII 68) = data request
 - 'E' (code ASCII 69) = data sending
 - 'R' (code ASCII 82) = a card reset
- Card slot address :
- 0 for the specific cards
 - From 1 to 8 for the other cards

Number of data : 1 character equal to the number of data present in the «Data» +1 segment.

Data : They depend on the type of message.

- IR learning ('A' or 'a')
 - Function = 'C' : Request a IR code learning in the corresponding channel.
 - Nb data = 2.
 - Data :
 - Data 1 = nummber of channel (from 1 to 255).
 - Function = 'E' : Sending of the IR frame requested.
 - Nb data = 129
 - Data :
 - Data 1 = N° of the channel,
 - Data 2 = 1st data of the IR frame,
 - ...,
 - Data 128 = last data of the IR frame.
 - Function = 'D' : Request the data of a IR frame already learnt.
 - Nb data = 2.
 - Data :
 - Data1 = number of channel (from 1 to 255).
- IR emission ('E')
- Function = 'C' : Emit an IR code, on one or several outputs.
 - Nb data = 12
 - Data :
 - Data 1 = 'S' (without carrier) or 'P' (with carrier),
 - Data 2 = mask of the outputs concerned by the emission for the card in the slot 1,
 - Data 3 = mask of the outputs concerned by the emission for the card in the slot 2,
 - Data 4 = mask of the outputs concerned by the emission for the card in the slot 3,
 - Data 5 = mask of the outputs concerned by the emission for the card in the slot 4,
 - Data 6 = mask of the outputs concerned by the emission for the card in the slot 5,
 - Data 7 = mask of the outputs concerned by the emission for the card in the slot 6,

- Data 8 = mask of the outputs concerned by the emission for the card in the slot 7,
- Data 9 = mask of the outputs concerned by the emission for the card in the slot 8,
- Data 10 = N° of the requested emission (255 possible),
- Data 11 = Number of frames to emit (up to 255)

Mask of the outputs concerned by the IR emission :

Bit 7	Bit 6	Bit 5	Bit4	Bit 3	Bit 2	Bit 1	Bit 0
		Output 6	Output 5	Output 4	Output 3	Output 2	Output 1

– RC5 reception ('C')

- Function = 'E' : Sends the RC5 code received on one of the 6 inputs.
 - Nb data = 4
 - Data :
 - Data 1 = Mask indicating the RC5 channel that has received the code

Bit 7	Bit 6	Bit 5	Bit4	Bit 3	Bit 2	Bit 1	Bit 0
		Input 6	Input 5	Input 4	Input 3	Input 2	Input 1

- Data 2 = RC5 code (8 bits)
- Data 3 = RC5 code (4 bits)

– Relays ('R')

- Function = 'C' : Close, open or ipulse on the relays
 - Nb data = 3
 - Data :
 - Data 1 = 'O' to open the relay, 'F' to close the relay, 'C' for a pulse of 0,5 second
 - Data 2 = mask of the relays to command

Bit 7	Bit 6	Bit 5	Bit4	Bit 3	Bit 2	Bit 1	Bit 0
Relay8	Relay 7	Relay6	Relay 5	Relay 4	Relay 3	Relay 2	Relay 1

– Logic inputs ('L')

- Function = 'E' : Sends the state of the logic inputs
 - Nb data = 10
 - Data :
 - Data 1 = state of the inputs for the card in the standard slot 1
 - Data 2 = state of the inputs for the card in the standard slot 2,
 - Data 3 = state of the inputs for the card in the standard slot 3,
 - Data 4 = state of the inputs for the card in the standard slot 4,
 - Data 5 = state of the inputs for the card in the standard slot 5,
 - Data 6 = state of the inputs for the card in the standard slot 6,
 - Data 7 = state of the inputs for the card in the standard slot 7,
 - Data 8 = state of the inputs for the card in the standard slot 8,
 - Data 9 = mask indicating the present logic cards.

Bit 7	Bit 6	Bit 5	Bit4	Bit 3	Bit 2	Bit 1	Bit 0
Slot 8	Slot 7	Slot 6	Slot 5	Slot 4	Slot 3	Slot 2	Slot 1

State of the logic inputs of a card :

Bit 7	Bit 6	Bit 5	Bit4	Bit 3	Bit 2	Bit 1	Bit 0
Input 8	Input 7	Input 6	Input 5	Input 4	Input 3	Input 2	Input 1

- Function = 'D' :Requests the state of the logic inputs
 - Nb data = 2
 - Data :
 - Data 1 = 'D'

– 0/10V ('Z')

- Function = 'C' : change of the voltage level of one or several outputs 0/10V by voltage steps with a defined duration between each step.
 - Nb data = 6
 - Data :
 - Data 1 = mask of the concerned outputs

Bit 7	Bit 6	Bit 5	Bit4	Bit 3	Bit 2	Bit 1	Bit 0
0/10V 8	0/10V 7	0/10V 6	0/10V 5	0/10V 4	0/10V 3	0/10V 2	0/10V 1

□ Data 2 =

Bit 7	Bit 6	Bit 5	Bit4	Bit 3	Bit 2	Bit 1	Bit 0
Variation direction of the rampe	Generation of the ramping	Variation step audio value	Low weight of the duration between 2 steps by multiple of 10 mS				

If the Bit 7 = 1 then negative variation of the voltage

If the on variation step value is null (bit 5 = 0

and bit 6 = 0) then the automatic mode of calculation is used.

- Data 3 = Number of steps(from 0 to 255)
- Data 4 = Final value requested (from 0 to 255)
- Data 5 = High weight of the duration between 2 steps by multiple of 10ms. The max duration between 2 steps is therefore of $2^{12} \times 10 \text{ mS}$ i.e 40960 mS.

Automatic mode of calculation :

The system automatically calculates variation direction that must be given to go from the current voltage to the final voltage defined by Data 4. The time value between 2 steps is given by Data 5 (the max duration is therefore of $2^8 \times 10 \text{ mS}$ i.e 2560 mS). The number of steps is automatically calculated (Data 3 is ignored).

– Request of cards setup ('F')

- Function = 'E' : indicates what's the Multicustom setup
 - Nb data = 11
 - Data :
 - Data 1 = specific slots setup

Bit 7	Bit 6	Bit 5	Bit4	Bit 3	Bit 2	Bit 1	Bit 0
Card IRX	Card X10		Card EIB				

If the bit is 1 then the corresponding card is present.

- Data 2 = presence of cards on the standard slots.

Bit 7	Bit 6	Bit 5	Bit4	Bit 3	Bit 2	Bit 1	Bit 0
Slot 8	Slot 7	Slot 6	Slot 5	Slot 4	Slot 3	Slot 2	Slot 1

If the bit is 1 then the corresponding slot is occupied.

- Data 3 = type of card on slot 1
- Data 4 = type of card on slot 2
- Data 5 = type of card on slot 3
- Data 6 = type of card on slot 4
- Data 7 = type of card on slot 5
- Data 8 = type of card on slot 6
- Data 9 = type of card on slot 7
- Data 10 = type of card on slot 8

Type of card	Data
MCM RL card	0
MCM JPI card	1
MCM VCA card	2
MCM 0/10V card	3
MCM IRTX card	4
MCM A/I card	5
MCM RS card	6
Reserved	7

- Function = 'D' : requests the Multicustom setup
 - Nb data = 2
 - Data :
 - Data1 = 'D'
- VCA ('V')
 - Function = 'C' : adjust the audio output level
 - Nb data = 6
 - Data :
 - Data 1 = mask of the concerned audio channels

Bit 7	Bit 6	Bit 5	Bit4	Bit 3	Bit 2	Bit 1	Bit 0
						Channel 2	Channel 1

□ Data 2 =

Bit 7	Bit 6	Bit 5	Bit4	Bit 3	Bit 2	Bit 1	Bit 0
Variation direction of the rampe	Generation of the ramping	Variation step audio value		Low weight of the duration between 2 steps by multiple of 10 mS			

If the Bit 7 = 1 then negative variation of the audio level

If the variation step value of the audio level is null (bit 5= 0 and bit 6=0) then the automatic mode of calculation is used.

- Data 3 = Number of steps (from 0 to 255)
- Data 4 = Final value requested (from 0 to 255)
- Data 5 = High-weight of the duration between 2 steps by multiple of 10ms. The max duration between 2 steps is therefore of $2^{12} \times 10 \text{ mS}$ i.e 40960 mS.

Automatic mode of calculation :

The system automatically calculates variation direction that must be given to go from the current voltage to the final voltage defined by Data 4. The time value between 2 steps is given by Data 5 (the max duration is therefore of $2^8 \times 10 \text{ mS}$ i.e 2560 mS). The number of steps is automatically calculated (Data 3 is ignored).

– Analog inputs ('X')

- Function = 'C' : analog inputs setup
 - NB data = 5
 - Data :
 - Data 1 = 'V' to validate an input or 'D' to invalidate it
 - Data 2 = mask indicating the concerned input

Bit 7	Bit 6	Bit 5	Bit4	Bit 3	Bit 2	Bit 1	Bit 0
Input 8	Input 7	Input 6	Input 5	Input 4	Input 3	Input 2	Input 1

If the bit is 1 then the corresponding input is concerned.

□ Data 3 = Rating selected for the input

Selected rating	Data 3
0/3V rating	0
0/6V rating	1
0/12V rating	2
0/24V rating	4
0/36V rating	8

- Data 4 = Variation value authorized without an emission trigger of a value change message
- Function = 'E' : indicates a value change of an analog input

- Nb data = 4
- Data :
 - Data 1 = mask indicating the input whom value has changed

Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Input 8	Input 7	Input 6	Input 5	Input 4	Input 3	Input 2	Input 1

If the bit is 1 then the corresponding input is concerned.

- Data 2 = channel rating

Selected rating	Data 2
0/3V rating	0
0/6V rating	1
0/12V rating	2
0/24V rating	4
0/36V rating	8

- Data 3 = new value of the analog input

- RS232 serial links ('S')

- Function = 'C' : setup the UARTS
 - Nb data = 5
 - Data :
 - Data 1 = concerned serial port (1 = port 1, 2 = port 2)
 - Data 2 = communication speed

Data2	1	2	3	4	5	6	7	8	9	10 *
Baudrate	300	600	1200	2400	4800	9600	19200	38400	57600	115200

* valid only for the port 1

- Data 3 = port setup

Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
			Parity		Parity type	Number of bits by character	
0	0	0	0 = with 1 = without	0	0 = even 1 = odd	00 = 5 01 = 6 10 = 7 11 = 8	

- Data 4 = port setup

Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
				Number of stop bits			
0	0	0	0	7 = 1 8 = 1.5 0Fh = 2			

- Function = 'E' : send the received characters on a serial port
 - Nb data = number of received characters + 2
 - Data :
 - Data 1 = number of the serial port on which the characters have been received (1 = port 1, 2 = port 2)
 - Data 2 = 1st received character
 - ...
 - Data n = last received character

The characters emission is triggered if more than 15 characters have been received or if no character has been received from 200 mS.

- Function = 'D' : Request the characters emission on a serial port
 - Nb data = number of characters to emit + 2
 - Data :
 - Data 1 = number of the selected port (1 = port 1, 2 = port 2)
 - Data 2 = 1st charcater to emit
 - ...
 - Data m = last character to emit

– Carrier currents (X10) ('P')

- Function = 'C': Port X10 setup
 - Nb data = 2
 - Data :
 - Data1 : 'U' for the US norm, 'E' for the European norm
- Function = 'E' : reception of a X10 message
 - Nb data = 4
 - Data :
 - Data 1 = House code
 - Data 2 = Number code
 - Data 3 = Function code
- Function = 'D' : émission of a X10 command
 - Nb data = 4
 - Data :
 - Data 1 = House code
 - Data 2 = Number code
 - Data 3 = Function code

Equivalence X10 codes – Data

House Code	Data1
A	0x06
B	0x07
C	0x04
D	0x05
E	0x08
F	0x09
G	0x0A
H	0x0B
I	0x0E
J	0x0F
K	0x0C
L	0x0D
M	0x00
N	0x01
O	0x02
P	0x03

Device number	Data2
1	0x06
2	0x07
3	0x04
4	0x05
5	0x08
6	0x09
7	0x0A
8	0x0B
9	0x0E
10	0x0F
11	0x0C
12	0x0D
13	0x00
14	0x01
15	0x02
16	0x03

Function	Data3
All Units Off	0x10
All Units On	0x18
On	0x14
Off	0x1C
Dim	0x12
Bright	0x1A

– Reset ('T')

- Function = 'C' : Reset request
 - Nb data = 1
 - No data
- Function = 'E' : Executed Reset
 - Nb data = 1
 - No data
- Function = 'D' : Presence request on the bus. The target presence is confirmed by the message acknowledgement.
 - Nb data = 1
 - No data

– EIB ('I')

- Function = 'C' : Setup the physical address and the EIB group address of the Multicustom
 - Nb data = 5
 - Data :
 - Data 1 = Physical address of the Multicustom (MSB)
 - Data 2 = Physical address of the Multicustom (LSB)
 - Data 3 = Group address of the Multicustom (zone,line)
 - Data 4 = Group address of the Multicustom (node)

Executing this command makes a RESET of the EIB interface (not of the bus!)

- Function = 'E' : Reception of an EIB command
 - Nb data = number of EIB characters received + 1

- Data :
 - Data 1 = EIB control field
 - Data 2 = Physical address of the source (MSB)
 - Data 3 = Physical address of the source (LSB)
 - Data 4 = Group address of the source (MSB)
 - Data 5 = Group address of the source (LSB)
 - Data 6 = EIB DAF & length
 - Data 7 = 1st character of the EIB message data
 - ...
 - Data i = last character of the EIB message data ($i_{\max} = 18$)
- Function = 'D' : Emission of an EIB command
 - Nb data = number of EIB characters to emit + 1
 - Data:
 - Data 1 = EIB control field
 - Data 2 = Physical address of the source (MSB)
 - Data 3 = Physical address of the source (LSB)
 - Data 4 = Group address of the recipient (MSB)
 - Data 5 = Group address of the recipient (LSB)
 - Data 6 = EIB DAF & length
 - Data 7 = 1st character of the EIB message data
 - ...
 - Data j = last character of the EIB message data ($j_{\max} = 18$)

Checksum : 2 characters

1st character : 0x04 (hexadecimal)

2nd character : total of the characters from the 1st character of the type of message to the first character of the checksum (0x04) included.

5.3 – Structure of a data exchange and examples

- 1) Emission of a MBC command if the bus is free.
- 2) Each device connected on the MBC bus checks if it's the recipient of the message.
- 3) Control of the command checksum by the recipient.
- 4) Message acknowledgement by the recipient.
- 5) If the command is valid, execution of the command or response to the command (in this case, return to the stage 1).

The Multicustom acknowledgement depends on the Multicustom state and the validity of the received command checksum.

This response is made up of a header of 4 characters identical to the header previously defined (but inversion recipient/transmitter) and of 2 additional characters.

If the checksum is erroneous, the following frame is sent back :
header + 0x15 (hexadecimal) + 0x15 (hexadecimal)

If the checksum is valid but Multicustom is occupied, the following frame is sent back :
header + 0x08 (hexadecimal) + 0x15 (hexadecimal)

Otherwise, the frame is the following :

header + 0x06 (hexadecimal) + 0x15 (hexadecimal)
or
header + 0x07 (hexadecimal) + 0x15 (hexadecimal)

Examples :

- Sending of a string of «test» characters to the serial port 2 of the MCM RS card in the standard slot 3 of Multicustom of address 1, transmitter address 0x08:
dispatched command :

Target	ENQ	Transmitter	ENQ	'S'	'D'	Slot	Nb	Port	't'	'e'	's'	't'	0x04	Checksum
0x01	0x16	0x08	0x16	0x53	0x44	0x03	0x06	0x02	0x74	0x65	0x73	0x74	0x04	0x66

valid acknowledgement of the card :

Target	ENQ	Transmitter	ENQ	ACK	NACK
0x08	0x16	0x01	0x16	0x06	0x15

- Configuration of the serial port 2 of the MCM RS card in the standard slot 8 of Multicustom of address 1, transmitter address 0x09, baudrate = 19200, even parity, 8 data bits by character, 1 stop bit :
dispatched command :

Target	ENQ	Transmitter	ENQ	'S'	'C'	Slot	Nb	Data1	Data2	Data3	Data4	0x04	Checksum
0x08	0x16	0x09	0x16	0x53	0x43	0x08	0x05	0x01	0x07	0x03	0x07	0x04	0xB9

valid acknowledgement of the card :

Target	ENQ	Transmitter	ENQ	ACK	NACK
0x09	0x16	0x01	0x16	0x06	0x15

- Closure of the relay 1 of the MCM RL card in the standard slot 4 of the Multicustom of address 1, transmitter address 0x0F :
dispatched command :

Target	ENQ	Transmitter	ENQ	'R'	'C'	Slot	Nb	'F'	Mask	0x04	Checksum
0x01	0x16	0x0F	0x16	0x52	0x43	0x04	0x03	0x46	0x01	0x04	0xE7

valid acknowledgement of the card :

Target	ENQ	Transmitter	ENQ	0x06	0x15
0x0F	0x16	0x01	0x16	0x06	0x15

- Reset of a Multicustom of address 1 :
 - 0xF0,0x16,0x01,0x16,0x54,0x45,0x01,0x04,0x9E
0xF0 is the target by default always used during a reset.

6-IP PROTOCOL

1.1-Communication parameters

All the Multicustom/IP are configured so that the messages are transmitted in broadcast (Therefore, they must work on a local network!).

Features of the communication :

- Type of communication : UDP protocol.
- Emission port : 12000.
- Reception port : 12000.

For the communication as a WebServer, the Multicustom/IP will work with the following communication features :

- Type of communication : TCP protocol.
- Emission port : 12000
- Reception port : 12000

For the needs of the home automation installation set-up softwares, the Multicustom will automatically switch between 2 modes of communication. Therefore, as long as the Internet communication is not requested, it will work in UDP.

Communication speed : 10/100 Mbps.

1.2- IP commands format

The IP message takes over the message format for the «MBC» bus to which is added a header made up of the 4 characters string : «VITY».

Message format :



- Network header : "VITY".
This header enables the Multicustom to locate the messages whom it is the recipient.
- MBC frame : it's the frame prviously defined for the «MBC» bus. All the existing commands for the «MBC» bus consequently exist on the IP bus too.

Like on the «MBC» bus, the IP message acknowledgement depends on the checksum validity and the Multicustom state.

If Multicustom is occupied, the acknowledgement is the following :

'V'	'I'	'T'	'Y'	'B'	'U'	'S'	'Y'
0x56	0x49	0x54	0x59	0x42	0x55	0x53	0x59

If the checksum is erroneous, the acknowledgement is :

'V'	'I'	'T'	'Y'	ENQ	NACK	ENQ	EOT
0x56	0x49	0x54	0x59	0x16	0x15	0x16	0x04

MULTICUSTOM

If the checksum is correct and Multicustom available, the frame contains the acknowledgement + the sent MBC frame :

'V'	'I'	'T'	'Y'	ENQ	ACK	ENQ	EOT	Target	ENQ	Transmitter	...
0x56	0x49	0x54	0x59	0x16	0x06	0x16	0x04		0x16		...

7-OS UPGRADE

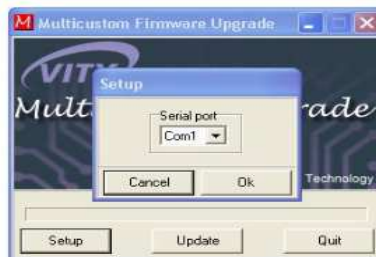
The OS upgrade method depends on the used version of the Multicustom. The upgrade is made by 2 different softwares, «Multicustom Upgrade» for the Multicustom/485 version and «PCToLAN» for the Multicustom/IP version.

Multicustom/485 version :

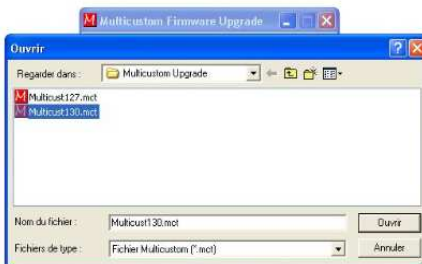
To make the firmware upgrade of the Multicustom/485, link the RS232 port of the Multicustom/485 to a COM port of a PC thanks to a cross cable. Launch the «Multicustom Upgrade» program (this program is available on the site www.vity.com).



Select the serial port used on your PC.



Then press «Update». Select the upgrade file. The file must have an extension of «.mct» type.



Confirm the upgrade. According to the number of the upgrade version and the version currently present in Multicustom/485, the message may be different.



When the upgrade is complete, the following window appears :



Press «OK» to complete the upgrade.

The Multicustom/485 automatically executes a reset after the upgrade.

Multicustom/IP version :

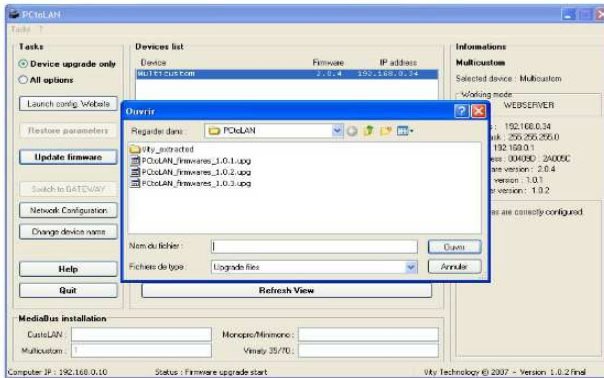
The Multicustom/IP upgrade is made up of 2 parts : firmware upgrade and network part upgrade. These 2 parts are managed by the same «PCToLAN» software (this program is available on the site www.vity.com).

After connecting Multicustom to the network, execute «PCToLAN». Select your device in the list «Devices list» list. Press the «Update firmware» button.

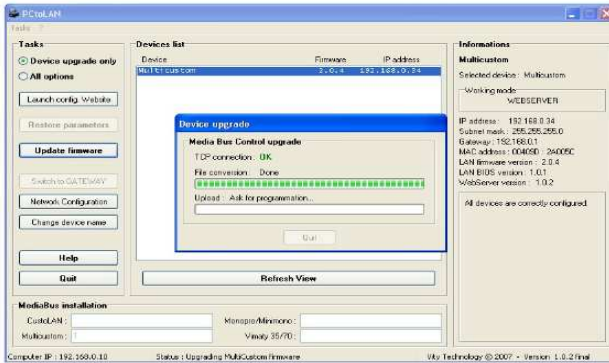
Select your Multicustom in this list.



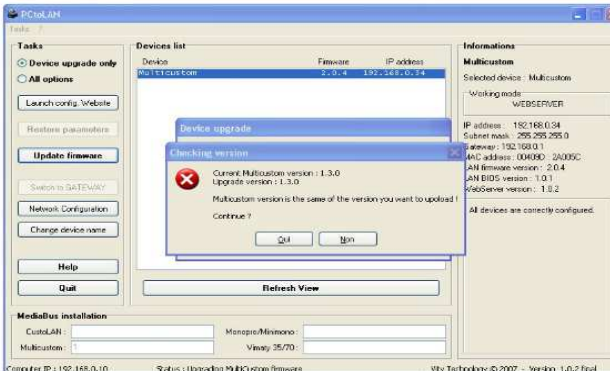
Select the firmware upgrade file you want to install, then confirm.



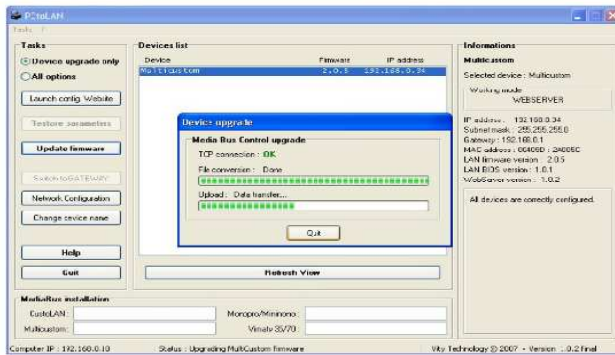
PCToLAN establishes the connection and prepares the upgrade file emission.



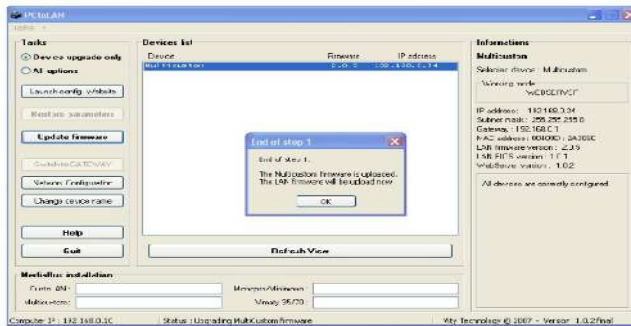
Confirm the upgrade. According to the version number of the upgrade and the currently present version in Multicustom/IP, the message may be different. If the firmware is up-to-date, you can press «NO» to go directly to the second part.



The firmware upgrade starts.



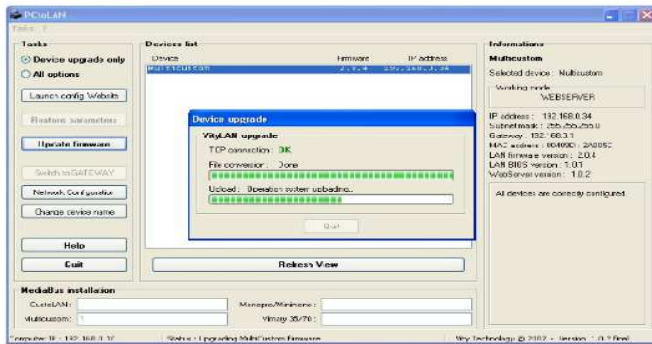
When the firmware upgrade is complete, the following message appears. Confirm to go to the stage 2 of the upgrade.



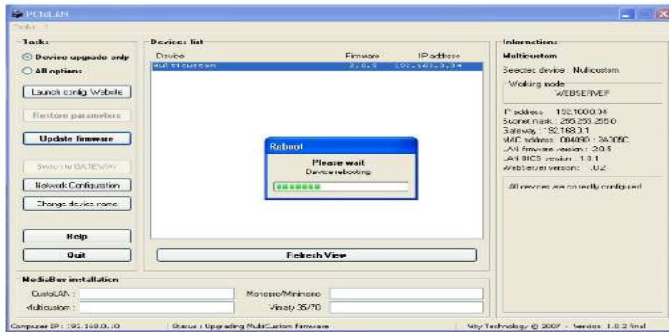
«PCToLAN» then controls the network part and suggests the network upgrade.



Then, PCTOLAN transfers the network upgrade file after confirmation.



After the end of the network part upgrade, Multicustom/IP automatically reboots. Wait for the end of this phase and leave «PCTOLAN».



8-TECHNICAL SPECIFICATIONS

General features :

- ☛ Power supply : 12Vdc
- ☛ Dimensions : 260,00 mm x 88,00 mm (2U) x 60,00 mm (dimensions without rack adapter 19").
- ☛ External power supply connector : MC1,5/2-G-3,81 (Manufacturer : Phoenix Contact).
- ☛ Protection by polyswitch.
- ☛ Rack mounting kit 19".

Specific modules

- ☛ MCM IRX : Module 6 RC5 infrared inputs on female stereo jack socket 3,5 mm.
- ☛ MCM PWL : Module of bus X10 control. To use with a XM10E module.
- ☛ MCM EIB : Module of bus EIB control.

Standard modules

- ☛ MCM IRTX : Module 6 infrared outputs on female stereo jack socket 3,5 mm.
- ☛ MCM RS : Module of 2 RS232 ports.
- ☛ MCM RL : Module 8 SPST NO relays (1A – 36V max).
- ☛ MCM 0/10 : Module 8 outputs 0-10V.
- ☛ MCM A/I : Module 8 analog inputs.
- ☛ MCM JPI : Module 8 logic inputs.
- ☛ MCM VCA : Module 2 VCA.

«MBC» bus

- ☛ Duplex half bus of RS485 type.
- ☛ Communication speed : 115200 bauds.
- ☛ Communication parameters : 8 data bits by character, 1 stop bit, no parity.
- ☛ MBC connector : MC1,5/3-G-3,81 (Manufacturer : Phoenix Contact).

Ethernet

- ☛ 10/100 Mbps.
- ☛ UDP and TCP protocols.
- ☛ Used port : 12000 in emission and in reception.
- ☛ Connector : RJ45.

Compatible brands with MEDIA BUS CONTROL® AUTOMATION SYSTEMS

The MEDIA BUS CONTROL automation systems are compatible with many audiovisual equipment, lighting and EIB-KNX manufacturers. You will find below the main compatible major brands, but Media Bus Control® obviously doesn't restrict itself to them...

3M, ABB, Adtec, Akg, AllenHeath, Analogway, Ask, Autopatch, Barco, Behringer, Biamp, Canon, Clipsal, CommTec, DIS, Epson, Extron, Faroudja, Fostex, Gyra, Hager, Imerge, Jung, JVC, Kenwood, Knox, Kodak, Kramer, Legrand, Lexicon, Lightec, Lite Touch, Lutron, Meridian, Merten, Mitsubishi, Nec, Niko, Onkyo, Panasonic, Phillips, Pioneer, Pixelmagics, Proxima, RGB Spectrum, Samsung, Sennheiser, Siemens, Sharp, Sony, Tasca, Theben, Vigatec, Vity, Xantech, Yamaha, Zumtobel... and more

VITY WARRANTY

1. VITY warranty.

VITY Technology France, headquarters, 180 Rue Pierre Landais, 56850 CAUDAN - France, and its subsidiaries VITY China and Vity USA warrant that MULTICUSTOM will be free of defects in materials and manufacture at the time of sale and will remain in good working order for a period of 2 years following the date of the original sales invoice from VITY. This warranty refers to the products manufactured by VITY. A return materials authorization is necessary before reshipping a product. This authorization is available via the Internet site of VITY <http://www.vity.com/> and must be sent by fax to VITY : 02 97 89 20 10. On the other hand, if it's a product distributed by VITY, the applying warranty is that of the constructor. Its term may vary according to the present warranty and may therefore last more or less than 2 years. This warranty will be clearly specified during the sale. Multicustom is warranted for 2 years.

2. What the warranty doesn't cover.

This warranty does not apply to (a) any VITY product that has been modified, altered or repaired by an unauthorized agent or improperly transported, stored, installed, used, or maintained; (b) damage caused by acts of nature, including flood, erosion, or earthquake; (c) damage caused by a sustained low or high voltage situation or by a low or high voltage disturbance, including brownouts, sags, spikes, or power outages; or (d) damage caused by war, vandalism, theft, depletion, or obsolescence.

3. Disclaimer and other warranties.

The warranties contained in Section 1 are the exclusive warranties given by VITY and supersede any prior, contrary or additional representations, whether oral or written. Vity disclaims and excludes all other warranties – whether express, implied, or statutory.

4. Buyer's exclusive remedies for any nonconformity.

If a VITY product fails to conform to the warranties in Section 1, Buyer must notify VITY within a reasonable time and in no event more than thirty (30) days after the discovery of the nonconformity, and VITY will repair any nonconforming products or components.

5. Application of the warranty.

During the period of warranty, VITY Technology will repair the defective units free. The defective products must be sent to your expenses to the Vity Technology's buildings at Caudan with a note of accompaniment. The repaired units will be turned over to our expenses with the recipient. Apart from the period of warranty, VITY Technology will repair the defective units in its buildings at Caudan, and the cost of repair will be the responsibility of the customer. In the case of the product was bought to a Vity subsidiary or a Vity distributor, it must be returned to the subsidiary or the distributor before.

6. Exclusion of consequential and incidental damages.

Vity shall be not liable under any circumstances for consequential or incidental damages including, but not limited to, labour costs or loss of profits arising in connection with the use of or the inability to use Vity products.

7. Transport damage.

VITY will not be responsible for items damaged during shipment to or from VITY. The shipping carrier is responsible for items damaged during shipment.

8. No Modifications.

This warranty may not be modified except in writing by an authorized VITY officer.

9. Other notice.

VITY reserves the right to modify or discontinue designs, specifications, warranties, prices and polices without prior notice.