

## 1.OVERVIEW

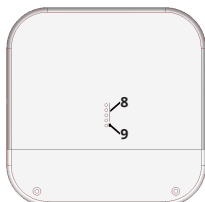
- Receiver and radio repeater for W. M-Bus devices (EN13757-4)
- Remarkable radio coverage due to multi-hop network architecture (MESH)
- Manages up to 500 meters
- Last acquired data stored in a non-volatile memory
- Easy installation with software setup
- Simple and elegant design
- 100...240Vac power or via USB
- "Wall mounting" like installation
- USB interface for local data reading
- Optional WEB interface to match to GE552Y058

- A. Cable compartment lid  
B. "ON" LED light

## 2.Connections/buttons/led lights



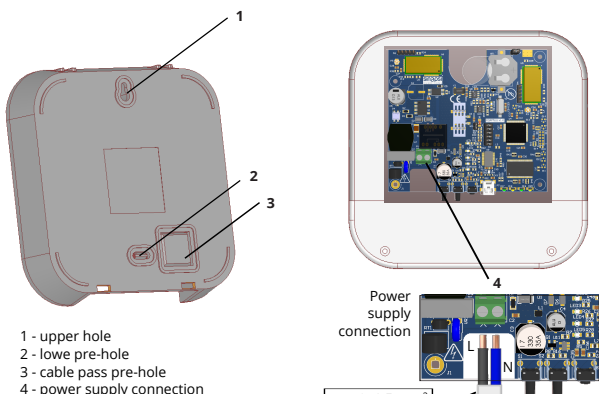
- 1 - Power input 100...240Vac (with clips)  
2 - Multifunction button  
3 - Multifunction button  
4 - Reset button  
5 - USB port



- 6 - MESH network TX-RX LED  
7 - Wireless M-Bus network TX-RX LED  
8 - Signal/reception level LED  
9 - State LED

For details on the configuration of the GE552Y053 using the buttons, see the back of this document, in the dedicated section.

## 3.WALL FASTENING AND CABLE PASS



## 4.PACKAGE CONTENT

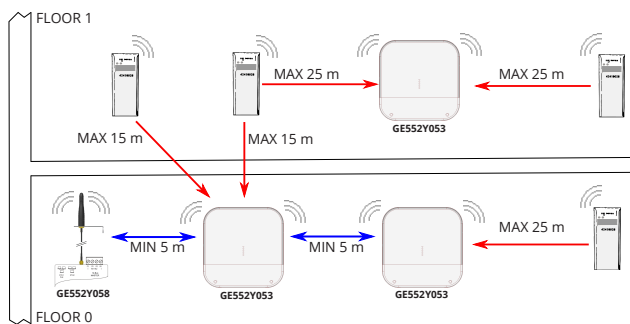
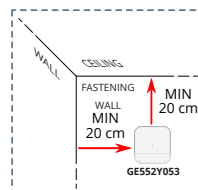


1 x GE552Y053

- 1 x clamp headband  
2 x Screw 2,2x9,5  
2 x Anchor 5x25  
2 x Screws 5x30  
2 x Glands

## 5.POSITIONING AND OPERATING DISTANCES

- 1) Fix the GE552Y053 repeater on fastening wall at a minimum distance of 20 cm from the ceiling and from the adjacent wall.
- 2) The maximum operating distance between the devices installed on the same floor is 25 meters, with no major obstacles such as reinforced concrete or metal walls, columns or beams or other metal structures.
- 3) The maximum operating distance between the devices installed on different floors is 15 meters.



## 6. REPEATER NETWORK CONFIGURATION

1. Power on GE552Y058, connect to web interface and start antenna and device scan following the user's manual
2. Power on the first device GE552Y053 to be installed and move it away to a minimum distance of 5 metres from GE552Y058
3. Fixed blue GE552Y053 LED shows the connection to the MESH network
4. Once connected, it shows the MESH radio signal quality to the gateway, by turning on the green front LED, 1 - insufficient reception, 2 - sufficient, 3 - good, 4 - excellent
5. Put GE552Y053 in a place where the reception signal is  $\geq 2$  and of all the W. M-Bus devices you expect to receive with this antenna is satisfactory
6. Check through GE552Y058 web interface or through GE552Y056 software and a PC connected to the antenna by USB that W. M-Bus devices, that you want to receive, reach the GE552Y053
7. Fasten the GE552Y053 and proceed with powering a second repeater keeping at least 5 metres away from both the GE552Y053 and GE552Y058
8. Once connected, it shows the MESH radio signal quality to the gateway, by turning on the front LED, so proceed as for the first GE552Y053



- a) The scanning phase is 12 hours. You can modify its duration through GE552Y058
- b) You can have various independent GE552Y053 networks in the same building, in that case, you need to have different ID or channel for each GE552Y056 group and the relative GE552Y058. You can modify these parameters through GE552Y056 software installed on a pc and connected via USB to GE552Y053, see user's manual for details.
- c) In case the receiver receives more than 500 W. M-Bus devices or it receives devices belonging to other plants, it might be necessary to make it selective. Therefore, you can load a list of W. M-Bus devices marked by their serial number through GE552Y056 software. In this way, the repeater will receive the data exclusively from the listed devices.
- d) The USB / Mini USB cable is not included and is not present in the package

## 7.TECHNICAL DATA

Temperature range:	Operative: -20°C ... +55°C Storage: -25°C ... +85°C
Ingress Protection:	IP 40 (EN60529)
Protection Class:	II
Fastening:	wall clipped
Dimensions:	LxHxP 160x160x35mm
Power supply:	100...240Vac 50/60Hz USB (5Vdc, 500mA) for commissioning
Consumption:	4,5W
Radio Frequency:	868MHz - Max transmission power: 27dBm
W. M-Bus Mode:	S / T / C+T / S & C+T
Max distance between two RPT:	



+55°C  
-20°C



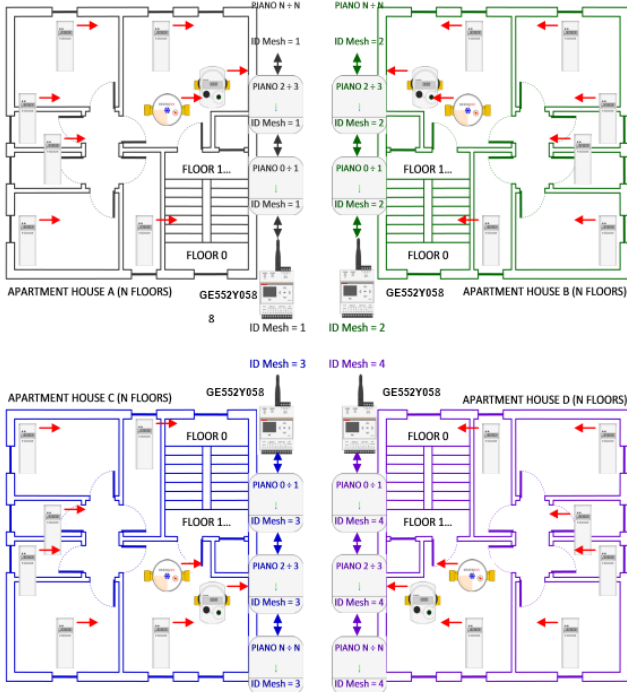
## TROUBLESHOOTING

- 1) The device does not start:
  - in case of network power supply, check that the power is on
  - in case you are using a USB port, check the USB cable quality and that the PC is enabled to handle 500 mA of electrical power
- 2) The blue LED light does not stop flashing:
  - check that the device GE552Y058 is on and that the antenna is connected and in good position (avoid placing it in switchboards or shielded environments)
  - 1 blink "RAM memory error", 2 blinks "W.M-Bus radio module error", 3 blinks "MESH radio module error", 4 blinks "FLASH memory error", 5 blinks "Real Time Clock error"
  - If turning off and restarting the GE552Y053, the error does not reset, the hardware must be replaced.
  - check that GE552Y053 is at least 5 metres distant from GE552Y058 and from other GE552Y053
  - check that the ID and the MESH network channel are correct using GE552Y056 sw and are the same ones used by GE552Y058
- 3) Not all the meters are revealed:
  - check that the meters that were not revealed are not too distant from GE552Y053 or that the signal is not disturbed by thick concrete or metal walls
  - check that the devices are on the list loaded in GE552Y053 or that the W. M-Bus devices list receivable from GE552Y053 is not blocked
  - warning: some W.M-Bus devices transmit periodically (within hours)
  - check that the MESH network is not interrupted using GE552Y058 web interface or GE552Y056 sw

## SPECIAL CASES OF USE

The following image shows an installation in which, for different properties reasons, or for number of devices to be controlled exceeds 500 (Max 500 for each GE552Y058), it is necessary to create four different networks of GE552Y053 Repeaters.

Obviously the following is valid also in cases where there are 2, 3, 5 or a higher number of Repeaters networks.



## SETTING OF MESH NETWORK ID

In order to avoid interferences between the various systems, assign to each GE552Y058 a different **Mesh network ID**. The setting is done on GE552Y058 through its web interface; **Settings / Wireless Devices / Wireless Setup / Setup Mesh Network**.

Setup Mesh network

Mesh ID	3
Channel	13

SAVE

The same **Mesh network ID** setting must be carried out also on all Repeaters that are part of the network of the GE552Y058 which they have to communicate with.

For this procedure it is necessary to connect a PC to the Repeater to be configured (via USB cable). Use the **GE552Y056** software (downloadable from the download section of [it.giacomini.com](http://it.giacomini.com)) and follow the instructions in the manual.

## RF Converter configuration

Serial number	RP16507268
Description 1	DEV_RP16507268
Description 2	
Install date	3/7/2018
Mesh ID	1
Mesh channel	13
W-M-Bus mode	T1

☐ Change password

2

3

**Note:** It is recommended not to change the Mesh Network Channel (default = 13 both on GE552Y058 and on Repeaters), because the change may involve the transmission power of the devices.

LOADING ON REPEATERS OF A W. M-Bus DEVICES LIST IN THE PLANT  
(ONLY ON REPEATERS WITH FIRMWARE VERSION FWRPT1\_V1R20.hex ONWARDS)

Referring to the same image of the previous installation, the various Repeaters receive W. M-Bus signal from their plant devices but they can also receive the signal from devices of adjacent plants.

If one or more Repeaters receive the signal from more than 500 devices (Max 500 for each repeater),

those exceeding 500 are ignored, and may in fact belong to the plant to be checked.

In this case it is necessary to charge, in the same Repeater, a file with a list of devices that are part of its plant (Maximum 500); after uploading the file, the signal of the devices that are not included in the list is ignored by the Repeater.

The file, whose name must be **list.rpt**, must be a CSV file with a format such as the one shown in the following figure.

list.rpt - Blocco note

```
File Modifica Formato Visualizza ?
id;Serial Device;Note;Address;Internal;Surname;Name;City;AES Key;
;;;;;;;;
1;00000001;Bathroom;Fifth Avenue;1-A;Apartment A;Floor 1;New York;00112233445566778899AABCCDDEEFF;
2;00000002;Living room;Fifth Avenue;2-A;Apartment B;Floor 2;New York;00112233445566778899AABCCDDEEFF;
```

For this procedure it is necessary to connect a PC to the Repeater to be configured (via USB cable). Use the **GE552Y056** software and follow the instructions in the manual.

## CONFIGURATION REPEATER THROUGH FUNCTIONALITY OF KEYS



- 1 - 100...240Vac power supply input (screw clamps)
- 2 - "Multi-function" button
- 3 - "Multi-function" button
- 4 - Reset button
- 5 - USB Port

- 6 - MESH network TX-RX LED
- 7 - W. M-Bus network TX-RX LED
- 8 - Signal level LED
- 9 - Status LED

## Change ID MESH - GE552Y053

1. Press keys 2 and 3 (2s. < T < 6s) simultaneously.
2. On release all the LEDs (8) will flash at the same time to indicate that you have entered edit mode ID MESH.
3. Now press button 3 (at least 1s.) to switch the ID MESH.
  - ID MESH 1 => Green LED (8.1) on - the others off
  - ID MESH 2 => Green LED (8.2) on - the others off
  - ID MESH 3 => Green LED (8.3) on - the others off
  - ID MESH 4 => Green LED (8.4) on - the others off
4. To SAVE press keys 2 and 3 simultaneously for more than 1s. Press the 2 button to exit without saving.
5. Verify that the blue LED does not remain on steady.
6. If, after switching on all four MESH IDs, the blue LED continues to remain on steady, it will be necessary to configure the GE552Y053 via GE552Y056 software.
7. Repeat for each GE552Y053.

## Activate SND\_IR mode (Installation Mode) - GE552Y053

- a) It typically involves the installation of the AMR system and subsequently the installation of the heat cost allocators
  - b) Both the AMR system and the distributors must be configured to work in this mode
  - c) SND\_IR mode activation procedure on a newly installed GE552Y053
1. Press button 2 (> 6s.). When pressing button 2, the green LED (8.1) flashes every second, until you are under the 6s. Once the 6s have passed, the LED (8.1) flashes every 500ms => this indicates that the "SND\_IR" scan mode has been changed.
  2. RPT enters the "SND\_IR" scan mode. RPT receives and takes over all the devices that transmit the installation W-M-Bus telegram. (This frame contains no data)
  3. Scan duration without user intervention 12 hours => Manual stop of the scan => press key 2 (no coded pressure time)

Note: GE552Y053 automatically exits the SCAN mode after 12 hours.

## Accept mode activation ALL - GE552Y053

- a) It is used when the commissioning is carried out after with respect to the installation of the heat cost allocators
  - b) To activate the accept ALL mode on a newly installed GE552Y053
1. Press button 2 (2s. < T < 6s)
  2. When pressing button 2, the LED (8.1) flashes every second. When the key 2 is released, the LED (8.1) remains lit to indicate the activation of the accept ALL mode.
  3. RPT receives and takes charge of all devices transmitting in W-M-Bus including frames in Installation Mode (SND\_IR) - The first green LED lights up permanently - Scan duration without user intervention 12 hours
  4. press the button 2 (no coded pressure time) to stop the scan manually
- Note: if during the scan the RPT connects into the MESH network the mode of operation will automatically change with the value set on the GE552Y058.

## GE552Y053 - S - T - C Mode of operation modification

1. Press keys 2 and 3 simultaneously (> 6s.)
2. The mode of operation is changed by pressing the 3 key briefly
  - Mode C => Green LED (8.1) on - the other off ★ Factory setting
  - Mode S => Green LED (8.2) on - the other off
  - Mode T => Green LED (8.3) on - the other off
3. save settings by pressing the 2 and 3 button (> 2s.)
4. exit => key 2 for ESC function without saving (during programming status). Automatic ESC from programming status after 10 minutes later.

Note: GE552Y053 automatically exits the SCAN mode after 12 hours.

## Restore factory settings

1. Press and hold keys 2 and 3 simultaneously.
2. Then press the reset button 4, without releasing the keys 2 and 3
3. As soon as all the LEDs (8) and (9) flash quickly, release all three keys.

## REPEATERS FIRMWARE UPGRADE

You should always check the possible release of the latest firmware available version of the Repeaters, compared to the one installed on the devices in the production phase.

For this procedure it is necessary to connect a PC to the repeater to be configured (via cable USB). Use the **GE552Y056** software (downloadable from the download section of [it.giacomini.com](http://it.giacomini.com)) and follow the instructions in the manual.

## Manage access to RF Converter

USB COM port	AUTO	1	Connect
Password login	AUTO		<input checked="" type="checkbox"/> Standard password
Serial Number	COM43		

Firmware

FW revision available	FWRPT1_V1R23.hex	2	Upgrade firmware
	FWRPT1_V1R23.hex		
	Load file	3	