GSM-REPEATER-SHOP

Instruction manual

RosenFelt.

10dBm repeaters

RF E10S, RF L10S, RF FB10S, RF EW10-L, RF EL10-L, RF ED10-L, RF LED10-A, RF EDW10-L, RF EDW10-A, Z10-RL, ZL10-RL, ZE10-RL

13dBm repeaters

RF ED13-L, RF EL13-L, RF EL13-H, RF E13-H, RF ED13-H, RF EW13-L, RF L13S, RF EW13-L

15dBm repeaters

RF E15-L, RF EL15-L, RF ED15-L, RF LED15-L, RF EDW15-L, RF EDW15-A, RF 15-5B, ZL15-RL, ZE15-RL, ZLE15-RL, RF L15-DA

17dBm repeaters

RF EL17-H

20dBm repeaters

RF E20-L, RF EL20-L, RF ED20-L, RF 20-5B(-T), RF LED20-L(-T), RF EDW-20L ZL20-RL, ZE20-RL, ZLE20-RL, RF L20-DA

23dBm repeaters

RF E23-L, RF EL 23-L, RF LED23-L, RF LED23L-T, RF EDW23-L, RF L23-DA

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1. - MANUAL

Thank you for buying a repeater at our Shop. We sell high-quality, interference-free and energy-efficient equipment with CE markings. For quick and easy installation of your device, you can of course rely on the service of GSM Repeater Shop.

You should be able to get coverage pretty much anywhere. Sometimes, though, it is hard to get a signal, due to newly constructed buildings with excellent insulation. Buildings made out of steel and/or concrete often have the worst reception. The signal may be relatively weak in rural areas, due to the limited number of transmission towers. We are able to offer appropriate solutions in nearly all situations.

IMPORTANT!

A repeater retransmits and boosts the call signal (2G) and/or the data signal (3G/4G/5G). Because transmissions are sent on the frequencies of your provider, you will need your provider's permission. As the buyer/user, you are responsible for requesting the permit to put the repeater into service and use it.

2. - THE 6 GOLDEN RULES FOR A SUCCESFUL INSTALLATION

1. Place the outdoor antenna as high as possible on the outside of your building! Preferably on a roof, chimney or pole.
2. Place your antenna on the correct side of your building. Check section 3.2 of the manual, 'WHERE IS MY BASE STATION LOCATED?', for more information.
3. Make sure the outdoor antenna is located far enough away from the indoor antenna.
4. Never switch on the repeater if it is not yet connected to any antennas. This can damage the repeater and is not covered by the warranty.
5. Do not place an indoor antenna in an area where you already have good reception or close to a window.
6. Only use the special coaxial repeater cables that have the specifications given on our website.

3. - INSTALLATION IN 5 STEPS (preferably done by 2 people)

3.1.1 - UNWRAPPING GSM REPEATERS MODEL RL:

RF Z10-RL, RF ZL10-RL, RF ZL15-RL, RF ZL20-RL, RF ZLE15-RL, RF ZLE20-RL, RF ZLE23-RL

1.

2.

3.

4.

5.

THE REPEATER SET CONSISTS OF

1. GSM Repeater.
2. Outdoor panel antenna
3. Indoor whip antenna
4. 10 metres of low loss coaxial cable
5. Black 220-240 Volt Adapter

3.1.2 – GSM REPEATERS MODEL L:

RF EW10-L, RF EL10-L, RF LED10-L, RF EDW10-L, RF ED13-L, RF EL13-L, RF EW13-L, RF E15-L, RF EL15-L, RF LED15-L, RF EDW15-L, RF 15-5B, RF E20-L, RF EL20-L, RF 20-5B(-T), RF LED20-L, RF LED20L-T, RF EDW-20L, RF E23-L, RF EL23-L, RF LED23L-T, RF EDW23-L, RF ZL10-RL, RF ZL15-RL, RF ZL20-RL

1.

2.

3.

4.

5.

ZL Housing

THE REPEATER SET CONSISTS OF

1. GSM Repeater
2. Outdoor panel antenna
3. Indoor whip antenna
4. Low loss coaxial cable (10 metres)
5. 220-240 V adapter

3.1.3 – GSM REPEATERS MODEL DA:

RF L15-DA, RF L20-DA, RF L23-DA

1.

2.

3.

4.

5.

THE REPEATER SET CONSISTS OF

1. GSM Repeater
2. Outdoor panel antenna
3. Indoor whip antenna
4. Low loss coaxial cable (10 metres)
5. 220-240 V adapter

3.1.4 – GSM REPEATERS MODEL H:

RF EL13-H, RF E13-H, RF ED13-H, RF EW13-H, RF EL17-H

1.

2.

3.

4.

5.

THE REPEATER SET CONSISTS OF

1. GSM Repeater
2. Outdoor panel antenna
3. Indoor whip antenna
4. Low loss coaxial cable (10 metres)
5. 220-240 V adapter

3.1.5 – GSM REPEATERS MODEL S:

RF E10S, RF L10S, RF L13S, RF FB10S

1.

2.

3.

4.

5.

THE REPEATER SET CONSISTS OF

1. GSM Repeater
2. Outdoor panel antenna
3. Indoor whip antenna
4. Low loss coaxial cable (10 metres)
5. 220-240 V adapter

3.1.6 – GSM REPEATERS MODEL A:

RF EDW10-A, RF EDW15-A, RF LED10-A

1.

2.

3.

4.

5.

THE REPEATER SET CONSISTS OF

1. GSM Repeater
2. Outdoor panel antenna
3. Indoor whip antenna
4. Low loss coaxial cable (10 metres)
5. 220-240 V adapter

3.2 - WHERE IS MY BASE STATION LOCATED?

There are a number of ways to determine the best place for the outdoor antenna. Below you will find several free apps that you can download which will measure the quality of the incoming signal in different locations on and around the building.

Make sure that the outdoor antenna is placed where the incoming signal was measured to be the strongest. The general rule of thumb is: the higher the antenna, the better.

For Android Smartphone

1. Download the app netmonitor
   Measure the signal type and strength and see to which BTS you are connected.
   IMPORTANT: Use a phone with the sim card of the provider you want to amplify.

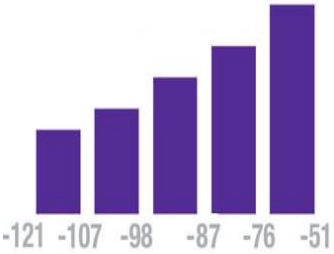
2. More basic: go tot he settings of your phone (the path will change from phone to phone) and find the menue or submenue “network” or “signal strength” to find a value in -xxx dB.
   Here under you find the explanation about the values.

For IPhone (There can be updates to the software availble) Go to your dialpad (as if you want to call somebody) and dial the code *3001#12345#* and press call.

1. You get into the field test mode.
   Every IPhone, depending on the software and model, looks a bit difrent from here.
   You should look for LTE (or UMTS or GSM) **Serving cell info** and a value that is listed under **rsrp0 or rsrp** and displays a value in – xx dB,
   You might also have a menue with a splitt between LTE, UMTS, GSM division on the first screen an look for the value of **rsrp0** in – xx dB on following screen.

The values keep changing, because the signal is fluctuating whenever you change postion.

Keep repeating your measurement until you have determined the best location on or around the building.



-51 ~ -76 dBm	**= maximum ~ good reception**	**= 100 ~ 55 %**
-76 ~ - 87 dBm	**= good ~ decent**	**= 55 ~ 39 %**
-87 ~ - 98 dBm	**= decent ~ average reception**	**= 39 ~ 23 %**
-98 ~ -107 dBm	**= average ~ bad reception**	**= 23 ~ 9 %**
-107 ~ - 121 dBm	**= bad ~ very bad reception**	**= 9% ~ 0 %**

To figure out which provider has the best signal in your neighbourhood, you can check the website http://opensignal.com. You can also see where the nearest transmission tower of your provider is located. Fill in your country and zipcode in the ‘Search for your address or zipcode’. Then click on ‘Masts’. You can see where your transmission tower is located. To our knowledge, this is the best method. Sadly, the website does not offer 100% coverage and no rights may be derived from it.

3.3 - PLACING AND AIMING THE OUTDOOR ANTENNA AND INSTALLING THE REPEATER

PLACE YOUR ANTENNA AS HIGH UP AS POSSIBLE

This part of the installation process is very important. If the reception isn't good outdoors, it will not be good indoors. This is also the case if you live in a rural, wooded area. Trees absorb the GSM signal, which reduces the quality considerably. Placing the antenna high up does not make installing it any easier, but will certainly improve the results. If the signal strength outside your front door is less than 4-5 bars, the signal is actually average. An outdoor antenna that is high up and aimed in the right direction is of vital importance in getting the repeater to work efficiently. Find a suitable location for the outdoor antenna and aim it towards the proper transmission tower.

NOTE: The following is only when using a Yagi directional antenna.

- Pointing it in the direction of the transmission tower is important. The arrow shape will show the correct horizontal position. The antenna has to be placed 'lying down' (see pictures below). This is the case with all Yagi antennas.

*with the condensation drain hole at the bottom

KEEP ENOUGH DISTANCE & MASS (walls and floors) BETWEEN THE INDOOR AND OUTDOOR ANTENNAS.

If there is not enough distance and/or mass between the indoor and outdoor antennas, the antennas go into a feedback loop, which causes interference. This causes problems for the GSM transmission tower. The indicator lights will go red. Should you be unable to create enough distance or mass between the antennas and keep both indoor and outdoor antennas far away from windows. If this fails use a lead blocker or chicken wire to shield the antenna and to prevent feedback.

3.4 – CONNECTION

1. Screw the whip indoor antenna into the 'Output' connection point on the repeater.
2. Run the cable from the outdoor antenna to the desired location of the repeater. Make sure that you have enough distance (at least 5 to 10 metres). There should be at least one brick/steel wall/floor in between the indoor and outdoor antenna. Screw the outdoor antenna's connector into the 'Input' connection point on the repeater.
3. When both antennas are connected, connect the adapter and plug it into the power point. All the indicators should be green. If they are, you will have a good GSM signal in the immediate vicinity of the indoor antenna!

Note: Performing a test is advised. Connect the equipment provisionally so that you can see if the signal is sufficiently amplified. With sufficient signal you can install the equipment permanently. Make sure that the equipment remains undamaged and scratch free as long as it is not installed definitively.

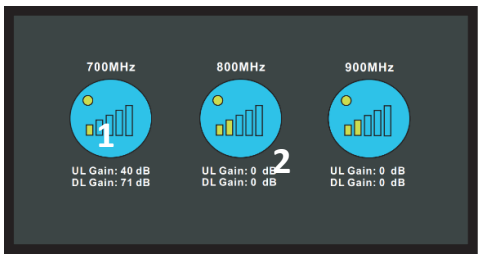
Place the indoor whip antenna on "Indoor" or "Output" or "MS"

Connect the adapter to the powersupply

Connect the Outdoor Antenna with the repeater. Use "Outdoor" or "Input" or "BTS" and the coaxial cable

3.5 – CALIBRATING THE EQUIPMENT

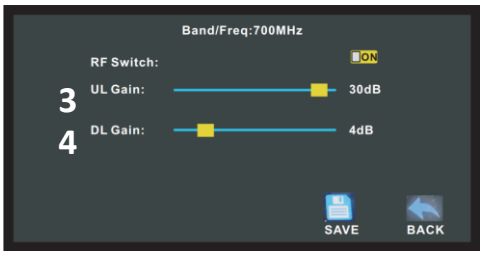
3.5.1 - For the Model RL repeaters:



1. shows if the system working on or off 2. signal strength indication. Each signal bar represents 5dB.

The RL models have a touch screen displaying the frequency bands they are operating on. To get a real-time overview of the data the amplifier is receiving, simply click on the frequency band and "Enter Status Page".

The SMART Function system is automatically available when you turn on the amplifier, unlike the Model L, but the amplifier may still be reporting interference.
To find out, simply look at the display and see if any red LEDs are flashing, appear, if so and after checking your installation with the basics (explained on page 1), you can manually and very simply reduce the DL and UL gain to reduce this interference, nuisance that the amplifier signals.
To do this, simply click on the band that signals interference and enter the "Enter Settings Page".
Then reduce the amplifier's DL/UL gain to stop all interference at the amplifier.

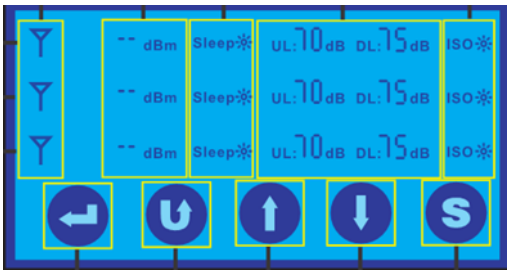


4.Uplink gain setting - Avoid putting more than 5dB difference between the Uplink and Downlink. And Uplink gain must be equal to or less than DL gain, it can’t be more in order to avoid interference to mobile network
5. Downlink gain setting - Alarm LED color must remain green. As for the downlink working performance, it is a good working status that Alarm LED maintains “Green”

Don't forget to press the "Save" button to save your settings and enjoy a stable and better signal from your Rosenfelt amplifier!

If your repeater is not working properly after these steps, please contact us with the values RSSI and DL Output Power. We will be happy to help you!

3.5.2 - For the Model L repeaters:



We advise you to always to use the smart function. Using the "Smart Function", the GSM repeater itself ensures the optimal settings. This is the starting position of the repeater. If not, press S to activate this function.
If the **"ALARM" LED light is green**, the repeater is working. Note: You can make fine calls and the installation is successful. If you have 1 or 2 bars on your phone, the incoming signal is not optimal. Go to: “How do I optimize my repeater”
When the **"ALARM" LED flashes green or orange**. The repeater has (slight) oscillation. It enters AGC (Automatic Gain Control) mode and reduces the power of the repeater. Please go to: “How do I optimize my repeater” (see below).
If the **"ALARM" LED flashes red**, the repeater has heavy oscillation and switches itself off after 5 seconds. Go to: "How do I optimize my repeater".
If the **"POWER" LED is not lit**, the adapter is defective.
If the **"ISO" LED light is green**, the repeater works fine.
If the **"ISO" LED flashes green quickly or slowly**, go to "How do I optimize my repeater".

"How do I optimize my repeater"

- The indoor and outdoor antenna are as far apart as possible.
- Place as much mass (walls, floors, etc.) between the two antennas as possible.
- Place both the indoor and outdoor antenna away from windows.
- Make sure that the outdoor antenna is placed outside towards the transmission tower, as high as possible.

Otherwise, the repeater will not set itself properly and will lose a lot of power.

If the incoming signal (RSSI) is too strong, the Smart Function will not work (properly). For the repeater to function properly, a signal is required between -60 and -90 dBm. You will find this value (s) on the left side of the display. If the signal is better than -60 (lower, for example -40), it is advisable to purchase a signal attenuator or to move your Outdoor antenna away from the BTS. This decreases the incoming signal. If the value is less than -90 (higher, for example -98), you need a directional antenna or place the outdoor antenna in a more favourable location.
If your repeater amplifies multiple bands, the top value on the display is the lowest frequency. And the bottom the highest frequency.

If your repeater is still not working properly after all these steps, please contact us. We will be happy to help you!

3.5.3 - For the Model DA repeaters:

Ask your provider or us on which frequency your provider is operating on.

Frequency range setting and sub-band switch

Click Menu button to select the frequency band in the first line of the home page to the one you want to set, eg. B1 (Band 1) in the Figure 3. Press UP- or DW+ button to move the cursor to the first line, and press Enter button to enter next page to check the working frequency range and setting (Figure 4).

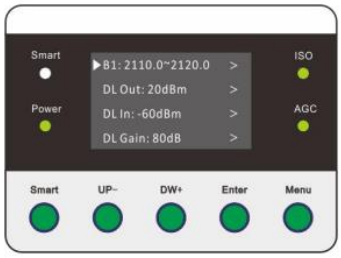


Figure 3

Figure 4

From the page of Figure 3, press UP- or DW+ button to select the frequency band, press Enter button to the page “DL Freq”, press Enter button again to the page of Figure 4. And press UP- or DW+ button to change the starting of the frequency range (as Figure 5/6), then press Enter to move to set the end of the frequency range (with step of 0,1 MHz). Finally press Enter button to confirm (Figure 7). Press Menu button to the previous page.

Figure 5

Figure 6

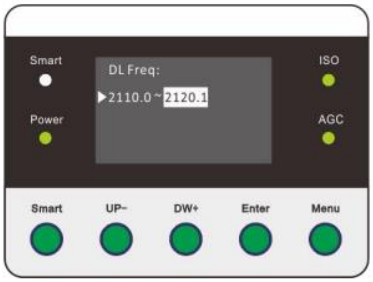


Figure 7

IMPORTANT

When your ISO light is red, make sure that your Smart light is green. If not, press the Smart button. If that does not help, please check “The 6 Golden Rules for an Installation” on page 3.

If your repeater is not working properly after these steps, please contact us. We will be happy to help you!

3.5.4 - For the Model H repeaters:

The repeater model 5 is standard equipped with AGC (Automatic Gain Control). This allows the repeater to set itself as optimally as possible. Sometimes this is not possible, then
- the "**ISO" lamp flashes** ", press the" SET "button. You can then see which bands are causing the problem.

You can solve the problem by:

- Take the indoor and outdoor antenna as far apart as possible.
- Place as much as possible mass (walls, floors, etc.) between the two antennas.
- Place both indoor and outdoor antenna away from windows.
- Make sure that the outdoor antenna is placed outside towards the transmission tower, as high as possible.

Otherwise, the repeater will not set itself properly and will lose a lot of power.

If the **ALARM light flashes**, press the "SET" button. You can then see which tires are causing the problem. The display shows ALC.

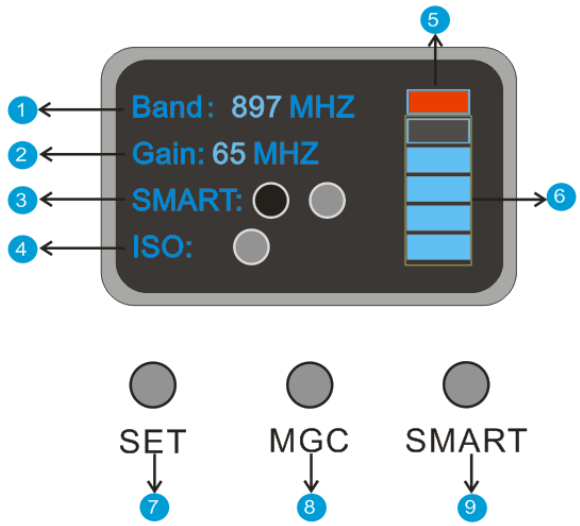
You can solve the problem by:

- Take the indoor and outdoor antenna as far apart as possible.
- Place as much as possible mass (walls, floors, etc.) between the two antennas.
- Place both the indoor and outdoor antenna away from windows.
- Make sure the outdoor antenna is placed outside, not towards the transmission tower.
- Order a signal attenuator on our website.

Otherwise, the repeater will not set itself properly and will lose a lot of power.

If the display is set to "**OFF**", the repeater suffers from severe self-oscillation. Follow the tips described under "ISO" light will flash "then…

3.5.5 - For the Model S repeaters:



1. Shows the Up and Down Link of the frequency
2. Shows the maximum gain of Up and DownLink.
3. Smart function. The repeater sets the strength automatically to prevent the alarm.
4. Detection of antenna isolation. When the indoor and outdoor antenna are too close together, the repeater automatically detects this oscillation.
5. ALC alarm indicator.
6. Five bars of the maximum possible strength of the output signal. Each signal bar represents 5 dB.
7. Enter for selection or confirm the settings.
8. MGC - allows you to manually set the repeater. Is not advised by us.
9. Switching the Smart function on and off.

Users should ensure that the ISO and ALC lights always remain green for optimal system performance. You can solve the problem by:
a. Separate the indoor and outdoor antenna as far as possible.
b. Place as much ground (walls, floors, etc.) between the two antennas as possible.
c. Place both the indoor and outdoor antenna away from windows.
d. Make sure the outdoor antenna is placed outdoors away from the transmission tower.
e. Order a signal attenuator on our website.

If both lights are green, but you can only make a good call if you are close to the repeater, the repeater does not set itself properly and loses a lot of power. Then go to points a. to c.

3.5.6 - For the Model A repeaters:

BTS = connection for coaxial cable to outdoor antenna
MS = connection for the indoor antenna

This repeater model has an **Uplink Standby**. When no device is in use, the repeater automatically decreases its power.

I.S.O. - Self-oscillation elimination and **Auto Shut Off**

When the insulation between outdoor and indoor antenna is insufficient, the text I.S.O. appear on the display. The repeater will automatically decrease the gain to function normally.

When severe self-oscillation occurs, the signal output is automatically turned off (Auto Shut Off) to prevent self-oscillation and prevent interference. I.S.O. visible on the display and the run light turns orange or red.

If there is I.S.O. is visible on the display, make sure that:

- The indoor and outdoor antenna are as far apart as possible.
- Place as much mass (walls, floors, etc.) between the two antennas as possible.
- Place both the indoor and outdoor antenna away from windows.
- Make sure that the outdoor antenna is placed outside towards the transmission tower, as high as possible.

Otherwise, the repeater will not set itself properly and will lose a lot of power.

MATERIALS IN OUR WEBSHOP

Extra or longer ‘low loss’ coaxial repeater cables.

Splitters and couplers for the installation of more than one indoor antenna.

Extra indoor antennas in many different shapes and sizes.

Wall bracket for easy mounting of the outdoor antenna.

Should your repeater not function properly despite this extensive manual, do not hesitate to contact our service desk. If our service desk cannot help you, you are probably in an unusual location. No problem: all you have to do is to send back to us the repeater and assorted accessories 100% intact, in the original undamaged packaging, within 14 days after purchase.

See the general terms and conditions on our website for our returns policy.

Important information:

Declaration of Conformity

We, Ostman International b.v., Bruynvisweg 18, 1531 AZ, Wormer, The Netherlands, hereby declares under our sole responsibility that the following Rosenfelt products: RF E10S, RF L10S, RF FB10S, RF EW10-L, RF EL10-L, RF ED10-L, RF LED10-A, RF EDW10-L, RF EDW10-A, Z10-RL, ZL10-RL, ZE10-RL, RF ED13-L, RF EL13-L, RF EL13-H, RF E13-H, RF ED13-H, RF EW13-L, RF L13S, RF EW13-L, RF E15-L, RF EL15-L, RF ED15-L, RF 15F ED, RF LED15-L, RF EDW15-L, RF EDW15-A, RF 15-5B, ZL15-RL, ZE15-RL, ZLE15-RL, RF L15-DA, RF EL17-H, RF E20-L, RF EL20-L, RF ED20-L, RF 20-5B(-T), RF LED20-L(-T), RF EDW-20L, ZL20-RL, ZE20-RL, RF 20B-EW, ZLE20-RL, RF L20-DA, RF E23-L, RF L23-DA, RF EL 23-L, RF LED23-L, RF LED23L-T, RF EDW23-L fully complies to the essential standards and other requirements stipulated in the article of the EU. Radio Equipment Directive (RED) 2014/53/EU. Article 3.1 a): Health and Safety, EN 50385: 2002, Article 3.1 b): Electromagnetic Compatibility, EN 301 489-50 V2.1.1 (2017-20), Article 3.2: Effective and Efficient Use of Radio Spectrum - EN 303 609 V12.5.1 (2016-04). Manufacturer : Ostman International b.v.


Rene Roozeman
Director
Wormer, 26 October 2022
www.gsm-repeater-shop.com

Huib Oosterveld
Director
sales@gsm-repeater-shop.com

Permit

The sale of GSM Repeaters for mobile phones is permitted in Europe if the products comply with the conditions and requirements of the Radio Equipment Directive (RED) 2014/53/EU of THE EUROPEAN PARLIAMENT AND THE EU COUNCIL. The products of GSM REPEATER-SHOP comply with these standards. Buying a GSM repeater is freely permitted in all European countries. Using a GSM Repeater is freely permitted in most countries. In some European countries, the buyer must first receive official written permission from the GSM operators. Check if you need to ask for permission in your country. In most cases the law states that transmitters such as the GSM repeater can be used only with the permission of the provider. By ordering one of our products, the buyer, by agreeing to the general terms and conditions, has stated that they have read and understood all the relevant information. The GSM REPEATER SHOP cannot be held accountable by the buyer for any problems arising from the purchase, or delivery of a GSM repeater, failure to obtain permission from the GSM operator(s), putting a GSM repeater into service or using a GSM repeater.

Warranty

All delivered appliances have 2 years warranty for consumers and 1 year warranty for companies, in accordance with EU directives. In case of visible defects, complaints must be filed within 14 days after purchase. The complaint must be sent via e-mail or in writing and must contain a clear description of the contentions or defects. Should the products be sent back at the initiative of the buyer, the shipping costs will be paid by the buyer. GSM REPEATER SHOP is not responsible for damage sustained during shipping. GSM REPEATER SHOP is not responsible for damage sustained by the buyer or a third party through the use of a product supplied by GSM REPEATER SHOP, unless the buyer can prove that the damage was sustained due to intention or gross negligence on the part of GSM REPEATER SHOP. Direct or indirect costs or damage sustained by the buyer or a third party are not covered under the warranty unless the buyer can prove that the damage was sustained due to intention or gross negligence on the part of GSM REPEATER SHOP.
Should compensation be paid for the products purchased by the buyer, this will be limited to the purchase price of the product in question. The warranty cannot be invoked in the following cases:

- Damage due to moisture, water or lightning
- Impact damage
- If third parties have altered the product in any way
- Malfunctions due to improper use of the product
- Damage caused intentionally or by gross negligence
- If the buyer fails to fulfil his obligations
- If you open up the device. This can also give you an electric shock.

Right of withdrawal

When purchasing products via the internet, the buyer is permitted within a period of 14 days to dissolve the contract without stating reasons. This term starts on the day that the product is received by or on behalf of the buyer. During this term, the buyer will handle the product and packaging materials with care. The buyer will unpack and use the product only to the extent necessary to decide if he wishes to keep the product. Should the buyer wish to use his right of withdrawal, he will return the product to the seller carriage paid, with all supplied accessories, in its original, undamaged state in the original packaging with a copy of the original order confirmation. Should the buyer wish to exercise his right of withdrawal, the shipping costs for returning the item will be paid by the buyer. Should the buyer have paid for the item already, the seller will repay the cost price within 30 days after receiving the item back. Any costs previously paid for shipping and/or handling will not be reimbursed.