Instruction manual

RosenFelt.

RF E10C, RF 10/13 EGSM, RF E15/20/23, RF E 15/20/23-L, RF20B EGSM

RF10/15/20B ED/EW, RF EL 10/13/15/20/23-L, RF EL10/20, RF 15EL, RF 15/20-5B

RF ED/EW 13-L, RF EDW 10/15/20/23-L, RF LED 10/15/20/23-L
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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). 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 SUCCESSFUL 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 2.2 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.
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 - UNWRAPPING

3.1.1 - GSM REPEATERS MODEL 1:

RF E10C, RF 10/13I EGSM, RF E15/20/23, RF20B EGSM

RF10/15/20B ED/EW, RF EL 10/20/23, RF 15EL

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 2:

RF 15/20-5B

THE REPEATER SET CONSISTS OF

1. Repeater
2. Yagi directional outdoor Antenna
3. Panel indoor Antenna
4. 10 metres of low loss coaxial cable
5. 220-240V Adapter
6. Power cord
3.1.3 – GSM REPEATERS MODEL 3:

RF ED/EW/EL 13-L, RF EDW 10/15/20/23-L, RF LED 15/20/23-L, RF E15/20/23-L

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.

Do you have a Smart Phone?

Depending on the Smart Phone you have, there are two possibilities:
1. Download the FIELDTESTER app
   2a. For iPhone type in the code *3001#12345#* and press call
   2b. For Android type in the code *#*4636#*#* and press call
   A number will appear in the upper left corner of your screen. This number will start with a -. This is the dBm value. The lower this number is, the better the reception will be. You can measure again by pressing the ‘refresh’ button. Keep repeating this until you have determined the best location on or around the building.

Or download the OPENSIGNAL app. This measures the strength of the signal (dBm) and can also determine the location of the transmission tower.

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.

Example of a base station
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, 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”

Connect the Outdoor Antenna with the repeater. Use “Outdoor” “Input” and the coaxial cable

Connect the adapter to the powersupply
3.5 – CALIBRATING THE EQUIPMENT

3.5.1 – For the Model 1 and 2 repeaters:

If an indicator light is green, the signal is at its best. You do not have to do anything.
If an indicator lights is orange, you have a little too much signal. Please check under * what to do.
If an indicator light is red and after a few seconds turns off, you need to adjust the setup.

* Create more mass or distance between the indoor and outdoor antenna. this means:
  - Place the indoor antenna further away from the outdoor antenna
  - Place an extra wall between indoor and outdoor antenna
  - Place the indoor and outdoor antenna as far away from windows as possible
  - Place a piece of lead or steel between the indoor and outdoor antenna
  - Order extra coaxial cable to move the indoor antenna further away
  - Place the outdoor antenna higher on the building

If this do not make the indicator lights green you can adjust the white dip switches. The repeater works at maximum power. If you move the dip switches to “on” and the incoming and outgoing signal will be reduced. This is a “trial and error method”.

IMPORTANT
1. Never leave your GSM repeater switched on with a red light for a long time.
2. First mount your antennas before turning on the repeater.

For the single band repeaters with 4 dipswitches
Flip up dip switches 1 and 3. This causes a 50% decrease in the in- and output.

For the repeaters with 10 dipswitches per band
When you have 2 green leds per band, the repeater should work. No more actions needed. If you have a red or no light: Flip up dipswitch number 1 and 6. This causes a slight decrease in the output.
If the indicator lights are still not green, also flip up dip switches 2 and 7. Then flip up switches 3 and 8. Then flip up 4 and 9. Then flip up 5 and 10. If all lights are still red, please take pictures of this side of your repeater, the indoor antenna and outdoor antenna and Whatsapp them to +31 (0)6 830 782 63 along with your order number.
When the leds turn green, start to flip down number 1 and 6. If the indicator lights are still green, also flip down dip switches 2 and 7. Then flip down switches 3 and 8. Then flip down 4 and 9. At the end as many possible switches should be down and the light should be green.

EXAMPLE OF DIP SWITCHES

If your repeater is not working properly after these steps, please contact us. We will be happy to help you!
### 3.5.2 - For the **Model 3** repeaters:

- **Status and definition of ‘POWER’ LED indicator:**

<table>
<thead>
<tr>
<th>Status</th>
<th>POWER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green</td>
<td>Normal</td>
</tr>
<tr>
<td>Off</td>
<td>DC power problem</td>
</tr>
</tbody>
</table>

- **Status and Definition of ‘ALARM’ LED indicator:**

<table>
<thead>
<tr>
<th>Status</th>
<th>ALARM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green</td>
<td>The repeater is working in linearity (= without self-oscillation)</td>
</tr>
<tr>
<td>Flickering</td>
<td>Note: Input signals may be not be strong enough, as per display on the screen. If calls can be performed correctly, leave as it is. Otherwise, please adjust the repeater system to get better (stronger) signal source.</td>
</tr>
<tr>
<td>Orange</td>
<td>System is working with a medium self-oscillation; correction is needed. AGC activation rate : 11~20dB.</td>
</tr>
<tr>
<td>Flickering</td>
<td>System is working with a slight oscillation. AGC activation rate : 1~10 dB.</td>
</tr>
<tr>
<td>Red</td>
<td>It is working with deep oscillation; correction is required. AGC activation rate : 21~30dB, and system will auto shut-off after 5 sec of red.</td>
</tr>
</tbody>
</table>

- **Status and definition of ‘ISO’ LED indicator:**

<table>
<thead>
<tr>
<th>Status</th>
<th>ISO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Display</td>
<td>System is working properly</td>
</tr>
<tr>
<td>ISO Flickering</td>
<td>System is working with a slight self-oscillation. Please adjust the distance/angle of the Donor and Service antennas to keep with enough isolation. A longer distance provides a better isolation.</td>
</tr>
<tr>
<td>ISO PER 3S</td>
<td>System is working with a strong self-oscillation.</td>
</tr>
<tr>
<td>ISO</td>
<td>System is working with a strong self-oscillation.</td>
</tr>
<tr>
<td>Flickering PER 1S</td>
<td>Please adjust the distance/angle of the Donor and Service antennas to keep with enough isolation. A longer distance provides a better isolation.</td>
</tr>
</tbody>
</table>

**Manual Gain Control (MGC)**

Press the “–” icon repeatedly until you have reached the “UpLink gain” setting on the screen (the “UpLink gain” figure flickers). Then press “–” to decrease the gain value as needed, or press “+” to increase it. Remember to press “–” to accept the changes.

*Same principle applies to “DownLink gain” settings.*

**Smart function**

The “Smart” function allows the repeater to set the gain automatically. Press the “S” icon to activate or deactivate this function.

NB: When the Smart function is ON, users can no longer set the gain manually.
First deactivate the Smart function, and then proceed with manual gain value adjustment according to instructions for the MGC (Manual gain Control) below.

*If your repeater is still not working properly after all these steps, please contact us. We will be happy to help you!*
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 packaging, within 14 days after purchase.

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

Declaration of Conformity


Manufacturer for Europe: GSM Repeater Shop (registered trademark of Ostman International b.v.),

Rene Rozeman Huib Oosterveld
Director Director
Wormer, 14 February 2018
www.gsm-repeater-shop.com info@gsm-repeater-shop.nl

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 contents 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 fulfill 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.