

# R4 repeater



Boosting mobile signal into your home  
800/ 900/ 1800/ 2100MHz

## Description

Stella Doradus mobile repeaters amplify the cellular signal from all the mobile operators, providing signal coverage throughout the building. The external antenna receives the signal from outside and passes it to the repeater where the signal is amplified. Then, the indoor antennas transmit the amplified signal around the building.

## Features



- Coverage: up to 5 rooms
- Amplifies calls and mobile data for all operators
- Bands can be manually switched off
- Bands can be individually attenuated
- Touch LCD display
- Conforms to R.E.D standards

## Inside the kit



StellaHome R4



Indoor antenna



Outdoor antenna



Power supply



12m outdoor cable

## Installation guide



- 1 Install the external antenna in a location with good signal, outside and high up on the building.
- 2 Using the supplied cable, connect the external antenna to the connector on the right hand side of the repeater.
- 3 Install the repeater and indoor antenna(s) inside the building in the areas where coverage is required.
- 4 Plug the 12V power supply into the wall socket. The green signal bars on the repeater will light up (see Indicator section below).
- 5 Finally, slowly rotate the external antenna towards the operator's mast. Check the signal bars (1-6 LEDs) on the phone inside the house. When maximum signal bars are seen on the phone, install the external antenna in this position.

- Use the sealing tape to seal the connector on the external antenna to ensure it is waterproof.
- It is not necessary to install an external surge protector as this is built into the repeater.
- The repeater must be installed by a mobile operator.

## Safety

The repeater must be installed as per the manufacturer's guidelines.

The repeater has a DC short to ground built into it.

The repeater must be installed indoors in a dry environment as per all electrical equipment.

The provided power supply must be used with the kit.

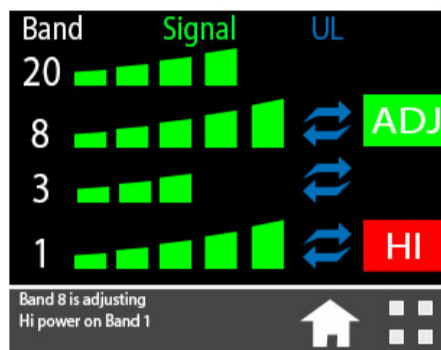
The repeater must not be dismantled, or adjusted in any way. Doing so may cause an electric shock.

The repeater includes electronic components which can be damaged by static electricity.

Air must be allowed to circulate around the device. Do not block the air vents. Do not cover the repeater with anything that influences heat dissipation.

## The LCD screen explained

### Main screen



The band number refers to a frequency:

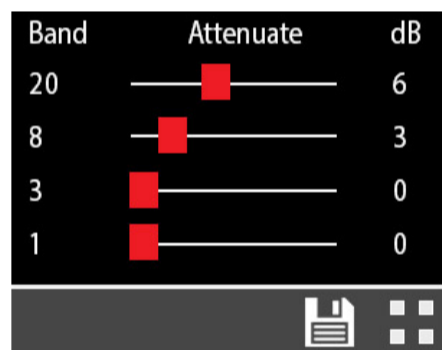
Band	Frequency	Service
20	800MHz	4G
8	900MHz	4G/ 3G/ GSM
3	1800MHz	4G
1	2100MHz	5G*/ 4G

\* - not available in all countries yet.

UL = uplink activated. The blue arrows indicate that the phone is using this band when making a phone call / using data.

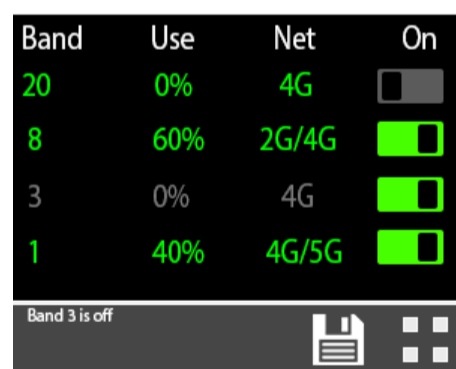
The coloured boxes with messages to the right of each band mean the following:

- ADJ - Adjusting and optimising the signal level.
- RGN - Reduced Gain. This means that there is feedback between the outdoor and indoor antenna. Action: Ensure there is a solid wall between these antennas.
- HI - Hi power. This is a warning that the incoming signal is very strong. Action : Add 3dB manual attenuation.
- OFF - The band is switched off, either automatically, or it has been manually shutdown.



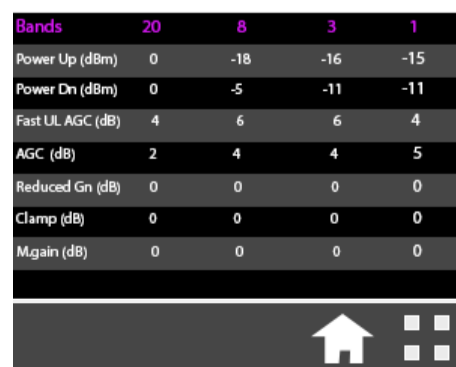
### Settings - Attenuate

On this screen add attenuation to any band. For example, if the incoming signal from the operator on band 8 is too strong, and is automatically shutting down, add < 18dB attenuation to reduce the incoming signal.



### Settings - Band On/Off

On this screen individual bands can be turned off. In some cases a band can be weak ( 1 or 2 bars). The phone might try to use this band and the service might be poor. In this case, turning off this particular band and forcing the phone to use another band can produce a better result.



### Decibel page ( for Stella Engineers reference only)

- Power Up - This is the absolute signal power emitted from the phone.
- Power Down - This is the absolute signal power emitted from the cell tower.
- UL Fast AGC- Automatic gain control. This value indicates by how much (in dBs) the repeater is attenuating the phone to an optimal level.
- AGC- Automatic gain control. This value indicates by how much (in dBs) the repeater is attenuating the signal from the cell tower.
- Reduced Gn- (Reduced Gain) If the repeater experiences a very strong signal from the cell tower it will attenuate the band for an extended period of time.
- Clamp - Extra attenuation in the case of a reduced gain event.
- M.Gain - Manual attenuation.

## Frequency Specifications:

Frequency bands (MHz)	(791 - 862) + (880 - 960) + (1710 - 1880) + (1920 - 2170)
Coverage	800m <sup>2</sup> (open space) or ~4 rooms
Number of People	unlimited
Gain	Uplink Gp > 45dB      Downlink Gp > 55dB
Pass band ripple	< 4dB
I/O impedance	50 ohm/SMA female connector
Max uplink/downlink signal strength	17dBm / 10dBm
Ambient Temperature	-30°C to +70°C
Power supply input	110 - 240V AC
Power supply output	12v DC
Oscillation Control	Automatic
Level Control	Automatic*
Uplink Switch Off	Yes**
AGC Range	30db
Surge protection	SMA connectors DC grounded, 12V DC port MOV protected

## Antenna Specifications:

## Indoor / outdoor antenna

Nominal Gain	6.4dBi / 9.4dBi
3dB beam Pattern	60° x 60°
Bandwidth	790-960MHz + 1710-2700MHz
VSWR	<1.4
Front to Back Ratio	> 20dB
Polarization	Vertical
Power Rating	50W
Impedance	50-OHM
Termination	SMA male
Cross Pol. Discrimination	-20dB
Dimensions	210 x 180 x 43mm
Weight	0.68kg
Wind velocity	126km/hr
Working temperature	-40°C to +65°C

## Power Supply Specification:

AC	100-240V	50-60Hz
DC input	12V	2A
Typical power usage	15	

## Mechanical Specification:

Length	21cm
Width	16cm
Depth	3.5cm
Weight	1.3kg
Mounting	4 x 5mm holes for mounting

\* Automatically adjusts during installation. Thereafter, automatically adjusts for seasonal variation in pathloss between the operators tower and Outdoor Antenna.

\*\* The uplink amplifiers switch off when the repeater is not in use, thus reducing the uplink noise to almost zero. When the repeater is in use (e.g. phone call being made), the uplink amplifier switches on for the duration of the call and a blue LED switches on indicating this is the case.

**Note: Specifications subject to change without notice.**

### Safety information

Maximum transmitted high-frequency Uplink power  
 @832-862MHz: 17dBm  
 @880-915MHz: 17dBm  
 @1710-1785MHz: 17dBm  
 @1920-1980MHz: 17dBm

Maximum transmitted high-frequency Downlink power  
 @791-821MHz: 10dBm  
 @925-960MHz: 10dBm  
 @1805-1880MHz: 10dBm  
 @2110-2170MHz: 10dBm

The product should be marked with the appropriate labeling:

 Before connecting this device, approval must be obtained from all operators.

A license is required for this device in all EU countries.  
 For use in all EU countries:



ES AT BE BG HR CY DE DK EE FI FR EL HU IT LV LU MT ES NL PL  
 PT RO SI SK

Interfaces: GSM, 3G UMTS, 4G LTE, 5G