

Repeater GPS controller

Compact, easy in use, reliable RGC-22 is designed especially for repeater control application.

Features:

- Compact case
- Two antenna ports
- High input/output voltage range
- Built-in reliable GPS receiver
- Reprogrammable by USB
- Easy PC user interface
- LED indicators



Figure 1: RGC-22 main view.

Application areas:

- Independent control systems
- Positioning systems

Product description:

Rantelon RGC-22 is a repeater GPS controller. It can be used in mobile repeater control applications, like ferry, train etc. Easy PC user interface allows reprogramming of RGC-22 for required conditions (GPS coordinates, antenna ports). Built-in RF switch gives possibility to select one of two RF ports depending on course of mobile object. External outdoor active GPS antenna has long cable and is powered by RGC-22. Indicating LED-s provide for instant status of RGC-22.

Technical data:

Input/output voltage	DC +9...+17V
DC input	2.1mm jack, positive in center Built-in protective transil +18.6V
Repeater power output cable length	0.5m
Repeater power output DC connector	2.1mm plug, positive in center
Max. rated current into repeater	3A
Current consumption	30mA
RFx ports description	One common RFC N-female 50Ω, Two selectable RF1 and RF2 N-female 50Ω
RFx ports frequency range	880-2200MHz
RFx maximum input power	+29dBm
Insertion loss RFC↔RF1/RF2	Approx. 1dB
Return loss RFC, RF1, RF2	>17dB
GPS receiver	Built-in, L1 frequency
GPS antenna description	External, active (10mA), included in set
GPS antenna port	SMA-female 50Ω, Built-in Bias-T for antenna supply (max. 50mA)
GPS coordinates measurement interval	5 sec.
Programming interface	USB, B-type
Indication	4 green LED-s
Dimensions (without antenna)	135x100x30mm
Enclosure	aluminum, indoor



Installation:

- 1) Unpack and copy application to C:\Program Files\Rantelon directory.
- 2) Create shortcut to application and move it to desktop or Start menu.

Setup:

- 1) Connect power cable to RGC-22.
- 2) Connect computer to RGC-22 with USB cable.
- 3) Run Rantelon Repeater control application. "Rantelon Repeater GPS Controller connected" must appear in the application caption. If it is still disconnected, close applications, unplug USB and power cables, wait 5 seconds, repeat steps 1-2.
- 4) Enter PointN1 and PointN2 coordinates for North trigger border line and PointS1 and PointS2 coordinates for South trigger border line.
- 5) Press button "Calculate & Send". Trigger border lines coordinates and antenna setup are saved into controller memory. When application is closed, trigger border lines coordinates are saved in "ini"-file.

States description:

Repeater will be switched off on crossing North trigger border line in North direction and South trigger border in South direction. And back on when crossing back between North and South trigger border lines.

LED "Repeater Power" is indicating Repeater Power state.

Repeater antenna selection (relatively to the course) could be reversed by checking or unchecking "Invert Antenna Direction" checkbox.

LED-s RF1 and RF2 are showing which antenna is active currently.

Current Time, Coordinates, Speed, Course and Date are visible in the application status bar.

LED "Activity" does blink shortly, when GPS messages are processed each 5 seconds.

RGC-22 will be working with closed control application and removed USB cable. On power-up RGC-22 starts using last saved into memory coordinates/antenna setup.

In case of lost GPS data (for example unconnected or broken GPS antenna) RGC-22 does switch off repeater power.

When RGC-22 is powered, one of two antennas (RF1 or RF2) is always connected.