

# RACELOGIC VBOX

## Telemetry Radio Overview



Our radios are designed to be used with the Racelogic VBOX range and are capable of transmitting and receiving RS232 serial data wirelessly.

### What are VBOX Radio Modules used for?

#### Differential GPS corrections

- Connecting to a Base Station to transmit positional corrections to a remote VBOX
- Connecting to a VBOX to receive positional corrections from a Base Station
- Connecting to a Moving Base Station to transmit relative corrections to a remote VBOX
- Connecting to a VBOX to receive relative corrections from a Moving Base Station

#### ADAS system

- Connecting two or more VBOXs in order to measure vehicle separation

#### Telemetry

- Connecting to a remote VBOX to transmit serial data to a laptop PC
- Connecting to a laptop PC to receive serial data from a remote VBOX



## VBOX Radio Range

As radio requirements differ around the world, Racelogic offers a range of radio modules, allowing you to select the most suitable frequency and range for your region.

### 869 MHz Radios

Operating at 869.4-869.65MHz, these radios can be used throughout Europe, China and Korea, and have a max. range of 5km. The radios can be used with a Base Station to provide DGPS corrections to a VBOX.

### 915 MHz Radios

The 915 MHz radios can be used in the USA and have a max range of 3.5km. The radios can be used with a Base Station to provide DGPS corrections to a VBOX.

### Variable Frequency Radios

The variable frequency radios can be set to transmit / receive data between 403 and 470MHz. The variable frequency and power of these radios makes them accepted in many countries. With a max range of 10km, the radios can be used with a Base Station to provide DGPS corrections to a VBOX. Dedicated versions for China and Korea are available.

### 2.4 GHz Radios

The 2.4GHz radios can be used in most countries and have a max range of about 2.4km. The radios can be used to transmit DGPS corrections and data to a VBOX or to transmit VBOX serial data from a remote unit to a laptop PC.

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### 2.4 GHz Radios

The 2.4GHz radios can be used in most countries and have a max range of about 2.4km. The radios can be used to transmit DGPS corrections and data to a VBOX or to transmit VBOX serial data from a remote unit to a laptop PC.

- The **Base Station Telemetry** radios (RLRTM24BSU/ RLRTM24RVU/RLRTM24BSJP/ RLRTM24RVJP) connect to an RTK Base Station and are designed to transmit/receive DGPS correction messages.
- The **ADAS Telemetry Single Target** radios (RLRTM24TR) are designed to connect to a VBOX to communicate with another VBOX. They are used in ADAS testing where measurement of vehicle separation is required.
- **ADAS Telemetry Multiple Target** radios (RLRTM24MTS/RLRTM24MTC) radios allow the ADAS system to be applied to two target vehicles. The data flows only in one direction but enables both target vehicles to transmit their data to one subject vehicle.
- The **Moving Base Telemetry** radios (RLRTM24MBC/RLRTM24MBS) radios are used to transmit and receive RTK DGPS corrections from a VBOX unit within a Moving Base setup.
- A **VBOX to PC Telemetry** radio pair (RLRTM24VBT) enables a VBOX to communicate with a laptop running VBOX Tools.

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### VBOX Radio Comparison Chart

#### VBOX to PC Telemetry

Stock Code	Connect To	Application	Transmit/Receive	Frequency	Country	Power	Max Range
RLRTM24VBT	VBOX or PC	Communicate between VBOX unit and PC	Transmit & Receive	2.4GHz	Most	50mW	600m - 800m
RLRTM24VBTU	VBOX or PC	Communicate between VBOX unit and PC	Transmit & Receive	2.4GHz	Most except EU/JP	125mW	700m - 900m

#### DGNSS Telemetry – Base Station

Stock Code	Connect To	Application	Transmit/Receive	Frequency	Country	Power	Max Range
RLRTM869BS	Base Station	Transmit DGPS corrections	Transmit	869.400 – 869.650MHz	Europe	10 - 500mW	5km
RLRTM869RV	VBOX	Receive DGPS corrections	Receive	869.400 – 869.650MHz	Europe	-	5km
RLRTM915BS	Base Station	Transmit DGPS corrections	Transmit	915MHz	USA	500mW	3km
RLRTM915TR	VBOX	Receive DGPS corrections	Receive	915MHz	USA	-	3km
RLRTMVARBS	Base Station	Transmit DGPS corrections	Transmit	403 - 470MHz	Most	100 - 1000mW	10km
RLRTMVARR	VBOX	Receive DGPS corrections	Receive	403 - 470MHz	Most	-	10km
RLRTMVARBSCH	Base Station	Transmit DGPS corrections	Transmit	223.025 - 235MHz	China	100 - 2000mW	10km
RLRTMVARRCH	VBOX	Receive DGPS corrections	Receive	223.025 - 235MHz	China	-	10km
RLRTMVARBSKR	Base Station	Transmit DGPS corrections	Transmit	424.7125 – 424.95MHz	Korea	100mW	3.5km
RLRTMVARRKR	VBOX	Receive DGPS corrections	Receive	424.7125 – 424.95MHz	Korea	-	3.5km
RLRTM24BSJP	Base Station	Transmit DGPS corrections	Transmit	2.4GHz	Japan	50mW	2.4km
RLRTM24RVJP	VBOX	Receive DGPS corrections	Receive	2.4GHz	Japan	-	2.4km
RLRTM24BSU	Base Station	Transmit DGPS corrections	Transmit	2.4GHz	Most	125mW	3km
RLRTM24RVU	VBOX	Receive DGPS corrections	Receive	2.4GHz	Most	-	3km

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### DGNSS Telemetry – Moving Base

Stock Code	Connect To	Application	Transmit/Receive	Frequency	Country	Power	Max Range
RLRTM24MBS	VBOX acting as a Moving Base	Communicate between VBOXs	Transmit	2.4GHz	Most	10mW	600m
RLRTM24MBC	VBOX	Communicate between VBOXs	Receive	2.4GHz	Most	-	600m
RLRTM24MBS	VBOX acting as a Moving Base	Communicate between VBOXs	Transmit	2.4GHz	Most	50mW	600m
RLRTM24MBC	VBOX	Communicate between VBOXs	Receive	2.4GHz	Most	-	600m
RLRTM24MBSU	VBOX acting as a Moving Base	Communicate between VBOXs	Transmit	2.4GHz	Most	125mW	700m
RLRTM24MBCU	VBOX	Communicate between VBOXs	Receive	2.4GHz	Most apart from EU/JP	-	700m

### ADAS Telemetry

Stock Code	Connect To	Application	Transmit/Receive	Frequency	Country	Power	Max Range
RLRTM24TR	VBOX	Communicate between VBOXs	Transmit & Receive	2.4GHz	EU	10mW	400m - 500m
RLRTM24TRJP	VBOX	Communicate between VBOXs	Transmit & Receive	2.4GHz	Japan	50mW	400m - 500m
RLRTM24TRU	VBOX	Communicate between VBOXs	Transmit & Receive	2.4GHz	Most apart from EU/JP	125mW	500m - 600m
RLRTM24MTS	VBOX	Communicate between VBOXs	Transmit & Receive	2.4GHz	EU	10mW	400m - 500m
RLRTM24MTC	VBOX	Communicate between VBOXs	Transmit & Receive	2.4GHz	EU	10mW	400m - 500m
RLRTM24MTSJP	VBOX	Communicate between VBOXs	Transmit & Receive	2.4GHz	Japan	50mW	400m - 500m
RLRTM24MTCJP	VBOX	Communicate between VBOXs	Transmit & Receive	2.4GHz	Japan	50mW	400m - 500m
RLRTM24MTSU	VBOX	Communicate between VBOXs	Transmit & Receive	2.4GHz	Most apart from EU/JP	125mW	500m - 600m
RLRTM24MTCU	VBOX	Communicate between VBOXs	Transmit & Receive	2.4GHz	Most apart from EU/JP	125mW	500m - 600m

#### Please Note

Allowable frequencies and power outputs vary in every country. Users must ensure that the radio to be used is legal in the country, and that any required licenses are held.