

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 5 km. 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 3.5 km. 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 470 MHz. The variable frequency and power of these radios makes them accepted in many countries. With a max range of 10 km, 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 2.4 GHz radios can be used in most countries and have a max range of about 2.4 km. 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 2.4 GHz radios can be used in most countries and have a max range of about 2.4 km. 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 (RLRTM24BS/ RLRTM24RV) 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 (RLRTM24MT/RLRTM243T) allow the ADAS system to be applied to two or three 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 (RLRTM24MB) 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	2.4 GHz	Most	50 mW	600 m - 800 m
RLRTM24VBTU	VBOX or PC	Communicate between VBOX unit and PC	Transmit & Receive	2.4 GHz	Most except EU/JP	125 mW	700 m - 900 m

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 - 869.650 MHz	Europe	10 - 500mW	5 km
RLRTM869RV	VBOX	Receive DGPS corrections	Receive	869.400 - 869.650 MHz	Europe	-	5 km
RLRTM915BS	Base Station	Transmit DGPS corrections	Transmit	915 MHz	USA	500 mW	3 km
RLRTM915TR	VBOX	Receive DGPS corrections	Receive	915 MHz	USA	-	3 km
RLRTMVARBS	Base Station	Transmit DGPS corrections	Transmit	403 - 470 MHz	Most	100 - 1000 mW	10 km
RLRTMVARR	VBOX	Receive DGPS corrections	Receive	403 - 470 MHz	Most	-	10 km
RLRTMVARBSCH	Base Station	Transmit DGPS corrections	Transmit	223.025 - 235 MHz	China	100 - 2000 mW	10 km
RLRTMVARRCH	VBOX	Receive DGPS corrections	Receive	223.025 - 235 MHz	China	-	10 km
RLRTMVARBSKR	Base Station	Transmit DGPS corrections	Transmit	424.7125 - 424.95 MHz	Korea	100 mW	3.5 km
RLRTMVARRKR	VBOX	Receive DGPS corrections	Receive	424.7125 - 424.95 MHz	Korea	-	3.5 km
RLRTM24BSJP	Base Station	Transmit DGPS corrections	Transmit	2.4 GHz	Japan	50 mW	2.4 km
RLRTM24RVJP	VBOX	Receive DGPS corrections	Receive	2.4 GHz	Japan	-	2.4 km
RLRTM24BSU	Base Station	Transmit DGPS corrections	Transmit	2.4 GHz	Most	125 mW	3 km
RLRTM24RVU	VBOX	Receive DGPS corrections	Receive	2.4 GHz	Most	-	3 km

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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	2.4 GHz	Most	10 mW	600 m
RLRTM24MBC	VBOX	Communicate between VBOXs	Receive	2.4 GHz	Most	-	600 m
RLRTM24MBS	VBOX acting as a Moving Base	Communicate between VBOXs	Transmit	2.4 GHz	Most	50 mW	600 m
RLRTM24MBC	VBOX	Communicate between VBOXs	Receive	2.4 GHz	Most	-	600 m
RLRTM24MBSU	VBOX acting as a Moving Base	Communicate between VBOXs	Transmit	2.4 GHz	Most	125 mW	700 m
RLRTM24MBCU	VBOX	Communicate between VBOXs	Receive	2.4 GHz	Most apart from EU/JP	-	700 m

ADAS Telemetry – Single Target

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

ADAS Telemetry – 2 Targets

RLRTM24MTS	VBOX (Subject Vehicle)	Communicate between VBOXs in 2 Target mode	Transmit & Receive	2.4 GHz	EU	10 mW	400 m - 500 m
RLRTM24MTC	VBOX (Target Vehicles 1&2)	Communicate between VBOXs in 2 Target mode	Transmit & Receive	2.4 GHz	EU	10 mW	400 m - 500 m
RLRTM24MTSJP	VBOX (Subject Vehicle)	Communicate between VBOXs in 2 Target mode	Transmit & Receive	2.4 GHz	Japan	50 mW	400 m - 500 m
RLRTM24MTCJP	VBOX (Target Vehicles 1&2)	Communicate between VBOXs in 2 Target mode	Transmit & Receive	2.4 GHz	Japan	50 mW	400 m - 500 m
RLRTM24MTSU	VBOX (Subject Vehicle)	Communicate between VBOXs in 2 Target mode	Transmit & Receive	2.4 GHz	Most apart from EU/JP	125 mW	500 m - 600 m
RLRTM24MTCU	VBOX (Target Vehicles 1&2)	Communicate between VBOXs in 2 Target mode	Transmit & Receive	2.4 GHz	Most apart from EU/JP	125 mW	500 m - 600 m

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ADAS Telemetry – 3 Targets

RLRTM243TS	VBOX (Subject Vehicle)	Communicate between VBOXs in 3 Target mode	Transmit & Receive	2.4 GHz	EU	10 mW	400 m - 500 m
RLRTM243TC	VBOX (Target Vehicles 1 - 3)	Communicate between VBOXs in 3 Target mode	Transmit & Receive	2.4 GHz	EU	10 mW	400 m - 500 m
RLRTM243TSJP	VBOX (Subject Vehicle)	Communicate between VBOXs in 3 Target mode	Transmit & Receive	2.4 GHz	Japan	50 mW	400 m - 500 m
RLRTM243TCJP	VBOX (Target Vehicles 1 - 3)	Communicate between VBOXs in 3 Target mode	Transmit & Receive	2.4 GHz	Japan	50 mW	400 m - 500 m
RLRTM243TSU	VBOX (Subject Vehicle)	Communicate between VBOXs in 3 Target mode	Transmit & Receive	2.4 GHz	Most apart from EU/JP	125 mW	500 m - 600 m
RLRTM243TCU	VBOX (Target Vehicles 1 - 3)	Communicate between VBOXs in 3 Target mode	Transmit & Receive	2.4 GHz	Most apart from EU/JP	125 mW	500 m - 600 m

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.