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Innovative Radio Technology

INFORMATION GUIDE

11dBi Caravan Booster Pack

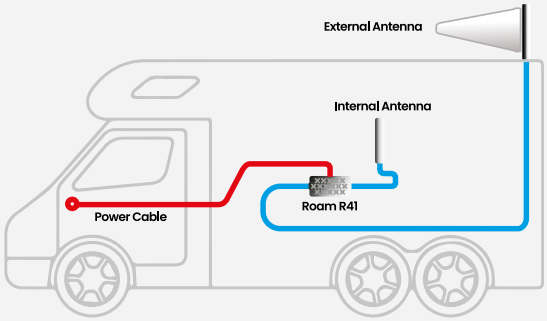
Amplified Cellular Coverage

SKU: 01104C6K6

11.0 dBi | 5G READY | 2YR WARRANTY

PACK INCLUDES

- CEL-FI ROAM R41
- 11 dBi Directional Log 5G Antenna
- Internal Antenna
- Vehicle Power Adaptor
- 6m Low Loss Coaxial Cable



11 dBi Directional Base Log 5G Antenna SKU: 02485

Internal Antenna

Vehicle Power Adaptor

CEL-FI ROAM R41
SKU: 01104C06

NEXTIVITY
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6m Low Loss Coaxial Cable
SKU: 101205

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DATASHEET

CEL-FI ROAM R41

Mobile Cellular Coverage Solution

NEXTIVITY
Smarter by Design

PART NO: 01104C06

The CEL-FI ROAM R41 mobile cellular coverage solution delivers reliable 3G, 4G, and 5G connectivity inside cars and boats, including fleet vehicles. With the latest Nextivity proprietary IntelliBoost chip, ROAM R41 offers enterprise-grade performance to solve poor coverage and enable dependable calling, texting, and streaming on the move. The system features plug-and-play operation for quick and easy set up, improving connectivity in any car, truck, RV, or boat within minutes. ROAM R41 also supports carrier switching through the Nextivity WAVE App for iOS and Android devices.

FEATURES

- Suitable for Telstra / Optus / Vodafone
- Deploy the unit anywhere in the network, with full frequency coverage
- Latest 4th generation Nextivity proprietary IntelliBoost chip delivers channelized coverage for specific mobile network operator signals
- Support for 3G, 4G, and 5G dynamic spectrum sharing (DSS)
- Easy to install with plug-and-play operation

Telstra OPTUS vodafone

SPECIFICATIONS

Frequency Bands	1/3/5/7/8/20/26/28L
Relay Channel Bandwidths (MHz)	5/10/15/20
Networks	3G/4G/5G
Network Protocols	WCDMA/LTE/DSS
Network Selection	Automatically (MyWave App set to “Following”)
Configured to authorized operator	PLMN-IDs
Duplex Modes	FDD
# of Relay Bands (MHz max.)	1
Relay Bandwidth (MHz max.)	20
Output Downlink Power (All Bands) (dBm max.)	0
Output Uplink Power (Bands 5/8/20/26/28L) (dBm max.)	22
Output Uplink Power (Bands 1/3/7) (dBm max.)	24
System Gain (dBm max.)	100
Enterprise-Grade Echo Cancellation (dB min.)	30
Return Loss (dB typ.)	-8

BANDS

Frequency Bands	Downlink (MHz)	Uplink (MHz)	Max. Relay BW (MHz)
1	2110-2170	1920-1980	
3	1805-1880	1710-1785	20
5	869-894	824-849	
7	2620-2690	2500-2570	
8	925-960	880-915	15
20	791-821	832-862	
26	859-894	814-849	20
28L	758-788	703-733	

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INTERFACE

Donor RF Connector	SMA (f)
Server RF Connector	SMA (f)
DC Input	5.5 x 2.5 mm (f) Barrel
Device Setup	Bluetooth for WAVE App
Power & System Status	Bi-color LED (Green/Red)
Factory Debug only	USB 2.0 Micro-B
System Management & SW Updates	WAVE App for iOS 11.0 or later WAVE App for Android
Band Selection	MyWAVE App for iOS 11.0 or later MyWave App for Android

POWER SUPPLY

Power Consumption (W) max.	18
Input Voltage (VDC)	11.5 to 15
Input Current (A max.)	1.5
Power Supply Plug	Automobile Auxiliary Power
Power Supply Cable	18 AWG
Power Supply Cable Length	5m

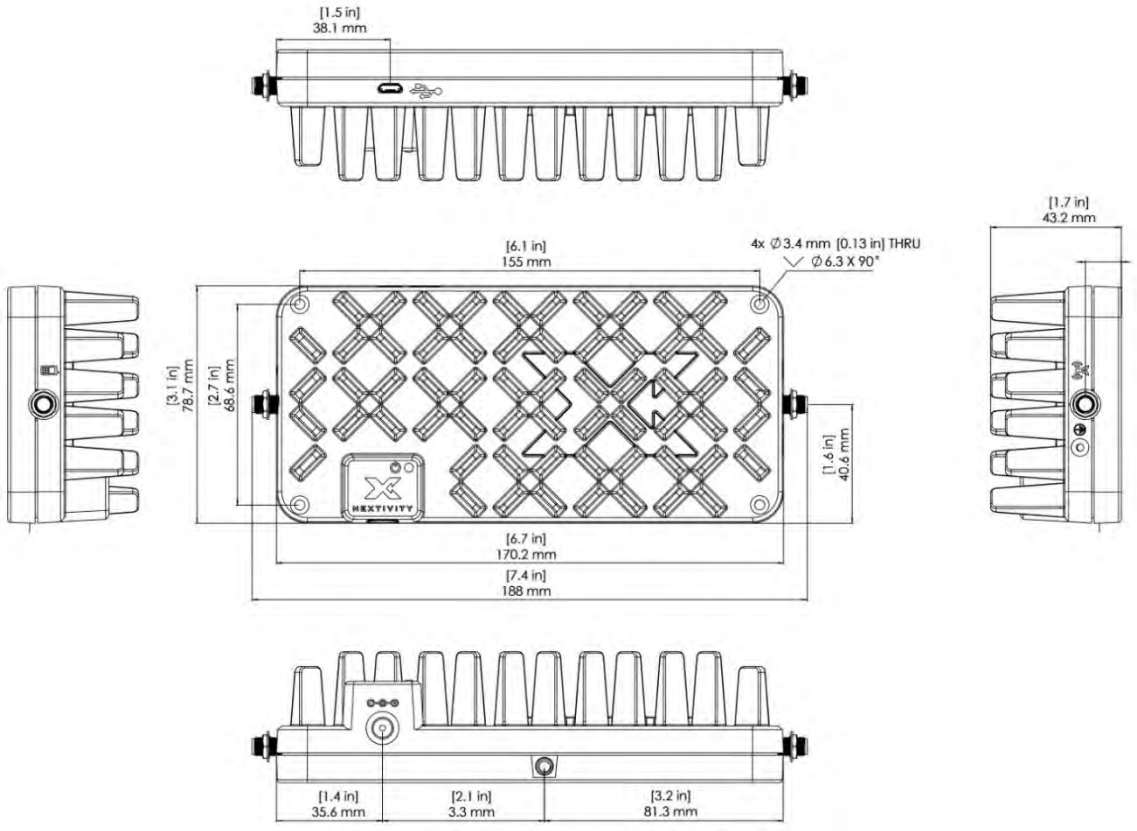
COMPLIANCE

3GPP	TS 25.143 Rel 13 3GPP TS 36.143 Rel 13
CE	Compliant RED 2014/53/EU
RoHS3	EN 63000: 2018
ACMA/RCM	AS/NZS CISPR, 32:2013
Bluetooth	LE Ver 4.2

ENVIRONMENTAL

Operating Temperature	0 to 60 °C
Storage Temperature	-35 to 70 °C
Heat Dissipation	Passive Convection
Surface Temperature max. at ambient	44 °C
Non-condensing Humidity	0 to 95%
Ingress Protection Rating	IPX0

CEL-FI ROAM R41 MAIN UNIT OUTLINE



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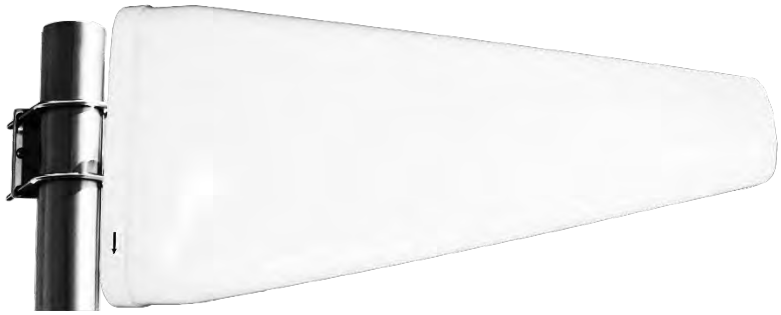
DATASHEET

11 dBi Directional Base Log 5G Antenna

PART NO: **02485**



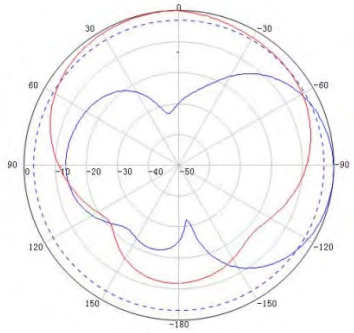
ELECTRICAL SPECIFICATIONS

Frequency Range	698 – 960 MHz	1710 – 2700 MHz	3300 – 4000 MHz
VSWR		≤ 1.8	
Gain	9.5 dBi	10.5 dBi	11 dBi
Horizontal Beam Width	85 °	65 °	60 °
Vertical Beam Width	60 °	55 °	55 °
Front-to-Back Ratio		≥ 15 dB	
Polarization		Vertical	
Intermodulation IM3 (2 x 33 dBm)		≤ -150 dBc	
Input Impedance		50 Ω	
Maximum Input Power		50 W	
Lightning Protection		DC Ground	

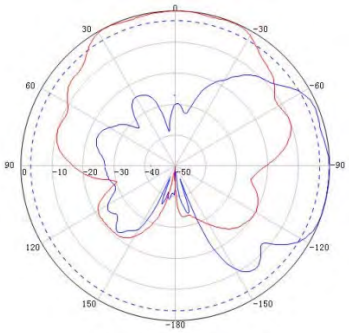
MECHANICAL SPECIFICATIONS

Inner Connector Type	N Female
Installation	Pole-holding
Dimensions	405 x 210 x 65 mm
Antenna Weight	1.2 kg
Radiating Element Material	Al
Operating Temperature	-40 °C to +65 °C
Windy Velocity	60 m/s

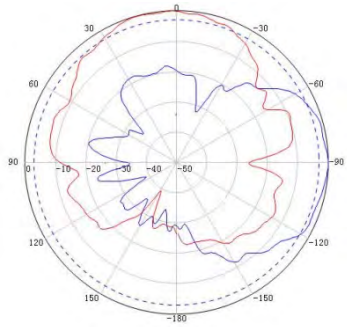
RADIATION PATTERNS



698 MHz

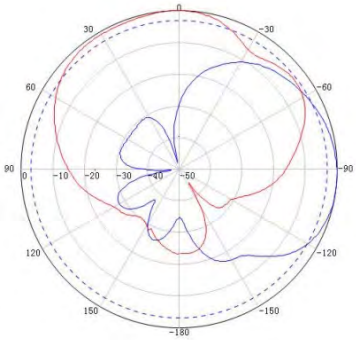


1710 MHz

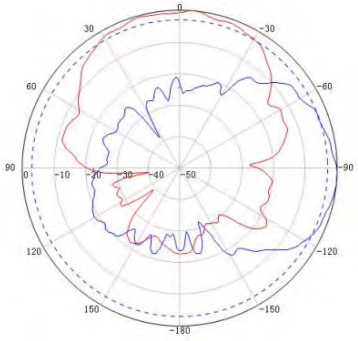


3400 MHz

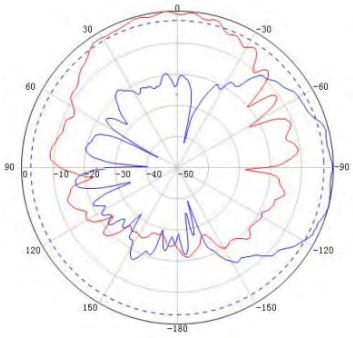
S



960 MHz



2690 MHz



3700 MHz

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LL195 Coaxial Low Loss 6m Lead

N Plug – SMA Plug

PART NO: **101205**

The 101205 is a prepared Coaxial lead of 6 M (18 FT) in length. It uses Benelec **056031** LL195 low loss coaxial cable with a **04206** N-type male crimp plug at one end with a **040013** SMA male plug at the other end. Both connectors have glue type heatshrink protecting cable entry from the weather.

FEATURES

- Characteristic Impedance 50 Ohms
- VSWR: <=1.2 (0 – 3 GHz)

RF LOSS (APPROX)

800 MHz	2.23 dB
2000 MHz	7.74 dB

INSTALLATION

The SMA connector is not weatherproof and is not recommended for use outdoors.
The N-Type plug is weather proof however when used outdoors it is recommended that any outdoor connections need to be sealed with self-amalgamating tape, such as Benelec's **5052219BK**, to provide long term weather seal.

Instructions for use of self-amalgamating tape:
Remove separator of tape, elongate to double the length. Wrap continuously, half overlapping each turn, the complete Coaxial joint. For complete protection also apply one or two layers of PVC Electrical Tape over the self-amalgamating tape.

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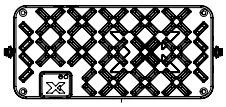
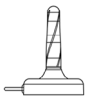
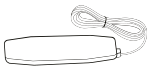
ROAM R41 Quick Start Guide

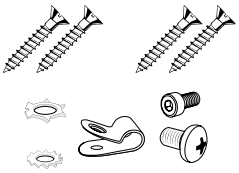
Included In the Box


Main Unit


Automobile Auxiliary Power Adapter


Mobile Donor Antenna*


Server Antenna*


Mounting Hardware

Ground Cable

KIT#:

R41-9B-001	R41-YB-001
R41-9B-002	R41-YB-002
R41-9B-003	R41-YB-003

Model#	Bands Supported	Link	Output Power (dBm)
R41-YB	1/3/5/7/8/26/28L	Downlink	0
		Uplink	22
R41-9B	1/3/7/8/20	Downlink	0
		Uplink	22

Power/Status LED Indicator

LED Behavior	Translation/Error State
No light	Device is powered OFF
Solid Orange	Device is powered ON
-	Device is booting up
Slow blinking green	Device is band scanning to acquire network signals
Solid Green	Device is operating normally and providing coverage
Solid Red	Hardware Error (ES1)–Disconnect & Reconnect
Flash RED 1 time & OFF for 4sec	Device is not receiving signal from the cellular network (ES2)
Flash RED 2 times & OFF for 4sec	Donor input signal is too strong for the device (ES4)
Flash RED 3 times & OFF for 4sec	Device's server antenna is too close to donor antenna (ES7)
Flash RED 4 times & OFF for 4sec	Device is disabled by the operator (ES9)
Flash RED 5 times & OFF for 4sec	Device location lock pending (ES10)
Flash RED 6 times & OFF for 4sec	Device registration pending (ES11)
Flash RED 7 times & OFF for 4sec	Device Self-Test Failed (ES12)

Nextivity WAVE Software

Download the **WAVE App** to monitor and manage the status of your **ROAM R41**.

Scan to Download

Bluetooth

App Store Google play

Download the **MyWave App** to set your **ROAM R41** to automatically track the base station to which your phone is connected.

Scan to Download

Bluetooth

App Store Google play

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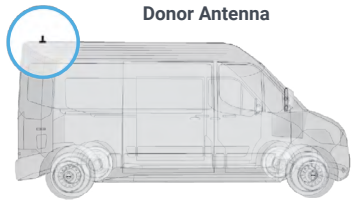
Quick Installation

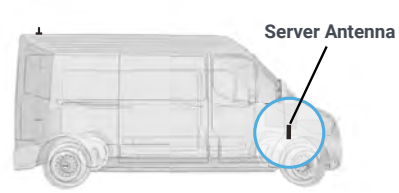
IMPORTANT: Your **CEL-FI GO G41** is electronic equipment. The **CEL-FI GO G41** must be kept indoors and in a dry, cool, well ventilated area.

1 Install Donor Antenna



Mount your **Donor Antenna** on the exterior and towards the rear of your automobile or boat, depending on the design and type of vehicle. Make sure you consider the cable connection to the **Main Unit** with your location choice. **Note:** For best performance, ensure there is 50 cm of metal around the base of the antenna.

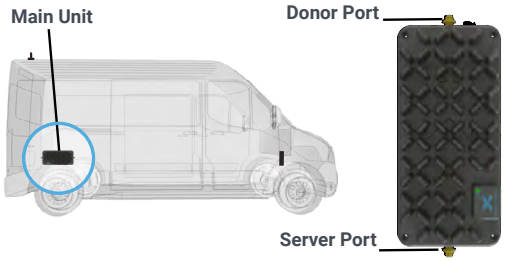
2 Install the Server Antenna



Install the **Server Antenna** in the cabin/deck towards the front of the vehicle where coverage is needed. Make sure to mount the **Server Antenna** horizontally.

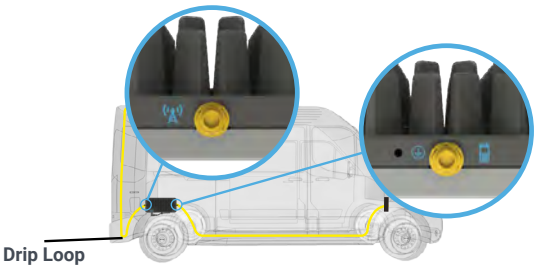
Note: The **Donor Antenna** should be separated/isolated as far away as possible from the **Server Antenna**, greater separation provides the best performance.

3 Select the Main Unit Location



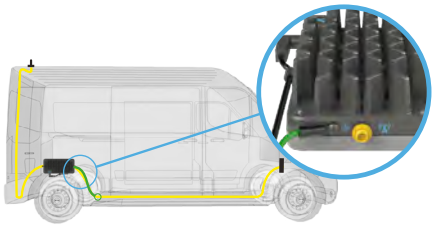
Find a suitable location to securely mount the **Main Unit.** When installed, the **Main Unit** should have airflow and be in a position that doesn't contact other objects. Make sure the location provides enough distance for all the cables to connect. It's best to ensure all cables reach desired locations BEFORE mounting the device.

4 Attach Server and Donor Antennas



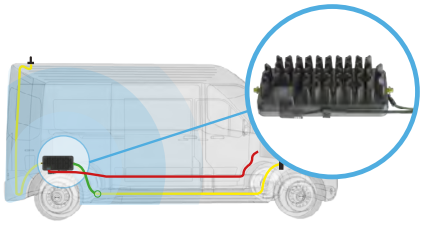
Attach the **Donor Antenna** and **Server Antenna** to the **Main Unit.** Note: Adding a drip loop to the **Donor Antenna** cable is crucial as it prevents water from flowing down the cable and damaging the Main Unit's electronic equipment.

5 Install Ground Cable



Using the provided M3 screw, attach one end of the ground cable to the **Main Unit** and the other end to the chassis of the automobile or boat.

6 Plug in the Main Unit



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Frequently Asked Questions

What is CEL-FI ROAM R41?

The CEL-FI ROAM R41 is a cellular coverage solution designed to boost signal in vehicles and small spaces.

What are the suitable applications for this product?

The CEL-FI ROAM R41 unit is designed to work in a small space such as a car or caravan when used with the appropriate antenna. You can also use it to boost signal in a single small room using the Caravan Booster Pack with a 12V power supply. A power supply can be purchased separately.

What range of improvement in signal can I expect?

The CEL-FI ROAM R41 unit will boost cellular signal from one bar up to full bars but requires at least one bar of signal to be available.

What are the supported Network Carriers?

The CEL-FI ROAM R41 unit works with Telstra, Optus & Vodafone.
(Telstra branded units will only work with Telstra)

Can I use ROAM R41 with more than one mobile network at once?

No, the CEL-FI ROAM R41 will only work with one operator at a time.

What is the Nextivity WAVE App?

The Nextivity WAVE app is for product registration, configuration and provides an interface to switch carriers. The app connects via bluetooth and is available on iOS and Android devices.

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