



## VFQ69383x21JN

**698-960/1690-3800 MHz and 2400  
- 2500/4900-6000 MHz Assembly  
and installation instructions**

### ELECTRICAL SPECIFICATION

Model Numbers	VFQ69383B21JN/VFQ69383W21JN					
Number of Ports	4					
Port Configuration	2x - 3G/4G/5G/ISM/CBRS (LTE/CELL), 1x- WiFi (WIFI), 1x- GNSS					
Operating Frequency (MHz)	698-806	824-894	880-960	1690-3800	2400-2500	4900-6000
Avg. Peak Gain* (dBi) - Gnd. Plane [No Gnd. Plane]	0.2 [1.3]	0.6 [2.0]	1.1 [2.4]	3.8 [1.7]	2.4 [-0.5]	6.4 [3.7]
Max Peak Gain* (dBi) - Gnd. Plane [No Gnd. Plane]	1.2 [2.4]	1.1 [2.4]	1.8 [2.8]	7.4 [4.7]	3.1 [-0.4]	7.0 [4.8]
VSWR** - Avg, Gnd. Plane [No Gnd. Plane]	1.7 [2.0]	1.7 [1.7]	1.7 [1.8]	1.4 [1.5]	1.6 [1.5]	1.2 [1.2]
VSWR** - Max, Gnd. Plane [No Gnd. Plane]	2.5 [2.5]	2.1 [2.5]	2.2 [2.5]	2.1 [2.1]	2.0 [2.0]	2.0 [2.0]

Isolation\*\* (dB)- Gnd. Plane [No Gnd. Plane]

LTE1 to LTE2	-10 [-12]	-12 [-12]	-15 [-14]	-18 [-16]	-23 [-25]	-37 [-37]
LTE1 to WiFi	-38 [-32]	-37 [-32]	-37 [-32]	-14 [-14]	-14 [-14]	-35 [-33]
LTE2 to WiFi	-43 [-45]	-45 [-43]	-45 [-42]	-49 [-26]	-60 [-26]	-47 [-42]
WiFi to GNSS	-68 [-65]	-72 [-70]	-66 [-64]	-54 [-50]	-60 [-55]	-54 [-50]
LTE1 to GNSS	-43 [-40]	-42 [-40]	-39 [-35]	-28 [-25]	-28 [-25]	-39 [-35]
LTE2 to GNSS	-39 [-35]	-44 [-41]	-46 [-43]	-50 [-48]	-59 [-55]	-54 [-50]
Azimuth Plane 3 dB Beamwidth	360°, Omnidirectional					
Nominal Impedance (Ohms)	50					
Polarization	Linear Vertical					
Max Power - Ambient 25°C (W)	30 (LTE/CELL); 10 (WIFI)					

#### Notes:

(\*) - This parameter is based on a 30cm (1ft) cable length. For the ground plane measurement, a 30cm (1ft) ground plane was used  
 (\*\*) - This parameter is based on a 518cm (17ft) cable length. For the ground plane measurement, a 30cm (1ft) ground plane was used.  
 Antenna specifications are subject to change according to the ground plane size.

## MECHANICAL SPECIFICATION

Dimensions - LxWxH - mm (in.)	179 x 63 x 48 (7.04 x 2.48 x 1.69)
Weight - kg (lbs.)	0.93 (2.1)
Cable Type	LMR 100- pigtails, LMR 195- jumper cables, Black
Mounting	P-Mount
Radome Material	PC, UL94-V0
Baseplate Material	Aluminum

## ENVIRONMENTAL SPECIFICATION

Operating Environment	Outdoor Vehicle
Operating Temperature - °C (°F)	-40 to +85°C (-40 to +185°F)
Storage Temperature - °C (°F)	-40 to +85°C (-40 to +185°F)
Ingress Protection Rating	IP67
Material Substance Compliance	RoHS
Rail Compliance Standards	EN61373(Shock & Vibration, EN50155 (Temperature)

## GNSS ANTENNA SPECIFICATION

Frequency of Operation (MHz)	1559 - 1606		
Band	BEIDOU	GPS	GLONASS
Frequency Band (MHz)	1559.052 - 1563.144	1574.42 - 1576.42	1598.0625 - 1605.89
Absolute Gain (dBi)	3.3	4.6	4.8
LNA Gain, Typ. @ room temp. (dBi)	28 ±3		
Noise Figure @ room temp., Max (dB)	≤ 2.5 @ 1575 MHz		
Max VSWR @ room temp.	2.0:1		
Polarization	RHCP		
Nominal Impedance (Ohms)	50		
DC Voltage (Vdc)	3.3		
Operating Supply Voltage (Vdc)	2.5 - 7.0		
Current Consumption, Max @ room temp mA)	8.5 ± 3 @ 3.0V		
Out-of-band Signal Rejection Min @ room temp (dBc)	80 (@ 698- 960 MHz) 80 (@ 1428- 1511 MHz) 50 @ (1627- 1638 MHz) 80 @ (1710- 2700 MHz) 70 (@ 4900- 5800 MHz)		
Input Max Power (dBm)	-10		
Cable Type	RG174, Black		

## SAFETY

The VFQ69383x21JN and all associated equipment should be installed in accordance with all applicable local and national electrical code guidelines to ensure safe operation.

## LOCATION

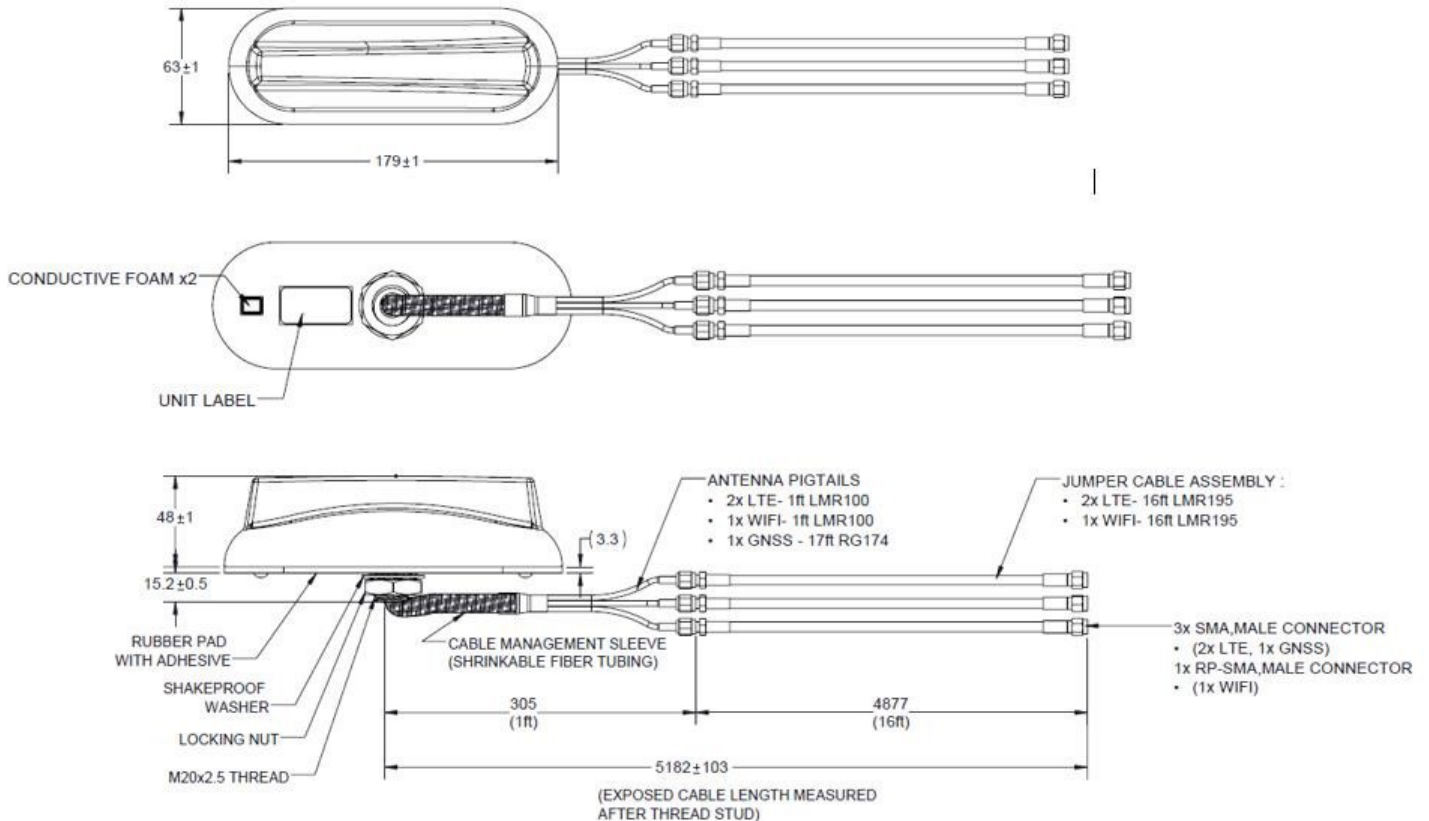
The antenna should be mounted on the desired location before connecting the cable. This is to ensure that the cable is not twisted or damaged during the mounting of the antenna.

## APPLICATION

The VFQ69383x21JN antenna provides an excellent solution for Public Safety, Transportation and After Market Fleet applications with an integration of wide range of frequencies within one aerodynamic housing. This 4-port antenna is configured for 2x ports operation over 3G/4G/ISM/CBRS frequencies, 1x port operation over low/high band WiFi and a fourth port that provides an active antenna for enabling GNSS global navigational services

## MOUNTING

- The mounting area should be clean of any debris, clear from obstructions and as flat as possible
- Punch or drill a 21 mm hole in the roof of the vehicle noting that a 300 mm clearance radius around the antenna is recommended.
- The recommended orientation is facing the front of the vehicle with cables facing the rear: see illustration below
- Feed the cables from the bottom of the antenna through the topside of the 21 mm hole. Peel the adhesive covering on the bottom side of the antenna's gasket. Place the threads of the antenna through the hole so that the gasket of the antenna is flat on the vehicle surface. Slide the lock-nut and washer around the 4 cables and finger-tighten to the stud of the antenna. Tighten the nut with a wrench using 15 Nm of torque
- Use a short service loop (slack) with tie-downs to secure the antenna cables such that any force or movement will not be transmitted to the antenna connectors or the apparatus. Minimum bending radius for the cable exiting the bottom of the antenna is 10 mm



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