



ELECTRICAL SPECIFICATIONS						
Antenna Model	VFH69383B23JW-518J					
Number of Ports	6					
Port Configuration (Label)	2x- 3G/4G/ISM/CBRS (LTE/CELL)			3x - WiFi (WIFI)		
Frequency Bands, MHz	698- 806	824- 894	880- 960	1690-3800	2400-2500	4900- 6000
Peak Gain, Avg. dBi	1.0	-0.1	0.2	3.6	2.7	5.1
Peak Gain, Max. dBi	2.5	1.4	1.7	7.4	4.0	6.4
VSWR, Avg	1.8	1.9	1.9	1.4	1.4	1.2
VSWR, Max	2.5	2.5	2.4	2.1	2.0	2.0
Isolation LTE1 to LTE2 (dB)	-11	-12	-14	-17	-23	-34
Isolation LTE1 to WIFI 1 (dB)	-35	-37	-36	-14	-14	-31
Isolation LTE1 to WIFI 2 (dB)	-47	-46	-43	-25	-25	-36
Isolation LTE1 to WIFI 3 (dB)	-22	-26	-30	-28	-33	-37
Isolation LTE2 to WFI 1 (dB)	-46	-42	-41	-27	-27	-35
Isolation LTE2 to WIFI 2 (dB)	-38	-37	-37	-12	-12	-32
Isolation LTE2 to WIFI 3 (dB)	-16	-21	-23	-21	-26	-38
Isolation WIFI 1 to WIFI 2 (dB)	-47	-50	-46	-29	-29	-38
Isolation WIFI 1 to WIFI 3 (dB)	-61	-59	-58	-34	-34	-44
Isolation WIFI 2 to WIFI 3 (dB)	-42	-46	-47	-29	-29	-34
Isolation GNSS to LTE 1 (dB)	-46	-48	-41	-37	-42	-50
Isolation GNSS to LTE 2 (dB)	-50	-51	-44	-43	-43	-52
Isolation GNSS to WIFI 1 (dB)	-71	-68	-64	-41	-41	-51
Isolation GNSS to WIFI 2 (dB)	-57	-56	-50	-45	-45	-54
Isolation GNSS to WIFI 3 (dB)	-59	-62	-58	-51	-58	-64
Azimuth 3 dB Beamwidth	360°, Omnidirectional					
Nominal Impedance	50 Ω					
Polarization	Linear Vertical					
Max Power/port- Ambient 25°C (W)	30 (LTE/CELL) / 10 (WIFI)					

MECHANICAL SPECIFICATIONS	
Dimensions- L x W x H mm (inches)	179 x 63 x 48 mm (7.04 x 2.48 x 1.69)
Weight, kg (lbs)	1.31 kg (2.88 lbs)
Mounting	P- Mount
Cable Type	LMR 100- Black pigtailed, LMR 195- Black jumper cables
Color	Black
Radome Material	PC, UL94-V0
Baseplate Material	Aluminum

ENVIRONMENTAL SPECIFICATIONS	
Operating Environment	Outdoor Vehicle
Operating Temperature, °C (°F)	-30 to +70 (-22 to +158)
Storage Temperature	-40 to +85 (-40 to +185)
Ingress Protection	IP67
Material Substance Compliance	RoHS Compliant

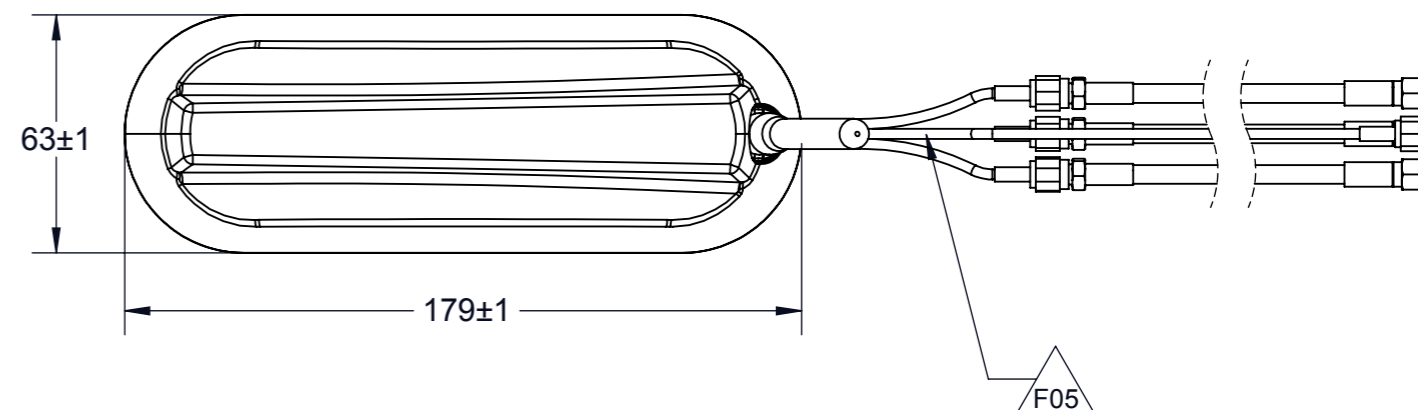
## Notes:

- (\*) This parameters is based on 1ft cable length & 1ft ground plane.
- (\*\*) This parameters is based on 17ft cable length & 1ft ground plane.
- Antenna specification is subjected to change according to the ground plane size.

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## REVISIONS

REV.	ECN#	ZONE	DESCRIPTION	CHANGED BY/DATE	APPROVED BY/DATE
F02			ADD DRAWING NOTES; ADD SHEET 2 FOR GNSS SPECIFICATION AND EXTERNAL ANTENNA OUTLINE	YS TAN 30APR19	WT NG 30APR19
F03	ECO-19-00228		REVISED PARAMETER TABLE; ADD MOUNTING STUD HEIGHT	YS TAN 21MAY19	WT NG 21MAY19
F04			REVISED SPEC TABLE; ADD JUMPER CABLE ASSEMBLY	YS TAN 14SEP20	WT NG 14SEP20
F05	ECO-20-00563		UPDATED ANTENNA VIEW (GNSS PIGTAIL)	YS TAN 14JAN21	WT NG 14JAN21



## GNSS ANTENNA SPECIFICATIONS

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)	2	2	2
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	50 Ω		
DC Voltage (Vdc)	2.5 - 7.0		
Current Consumption, Max @ room temp (mA)	8.5 ± 3 @ 3.0V		
ESD, kV	± 2 (contact discharge) / ± 4 (air discharge)		
Out-of-band Signal Rejection Min @ room temp (dBc)	698- 960 MHz	> 80	
	1428- 1511 MHz	> 80	
	1710- 2700 MHz	> 80	
	4900- 5800 MHz	> 70	
Input Max Power (dBm)	-10		
Cable Type	RG174, Black		

MATERIAL: N/A

FINISH: N/A

THIRD ANGLE PROJECTION



DO NOT SCALE DRAWING

APPROVALS		DATE
DRAWN BY	YS TAN	25APR19
ELEC. ENG.	TH LEE	25APR19
MECH. ENG.	YS TAN	25APR19
MFG./OPS.	HE KHOR	25APR19

INTERPRET DIMENSIONING AND TOLERANCING IN ACCORDANCE WITH ASME Y14.5M-2009

TOLERANCES UNLESS OTHERWISE SPECIFIED

DIMENSIONS ARE IN MILLIMETERS

ANGLE: ±30'  
 0 PLACE DECIMAL: ±0.5  
 1 PLACE DECIMAL: ±0.25  
 2 PLACE DECIMAL: ±0.13  
 SURFACE ROUGHNESS 1.6/√



TITLE:

VFH69383B23JW-518J

SIZE

A3

DWG. NO.

VFH69383B23JW-518JMO

REV

F05

SCALE: 1:2

PREVIOUS#

SHEET 1 OF 2

6

5

4

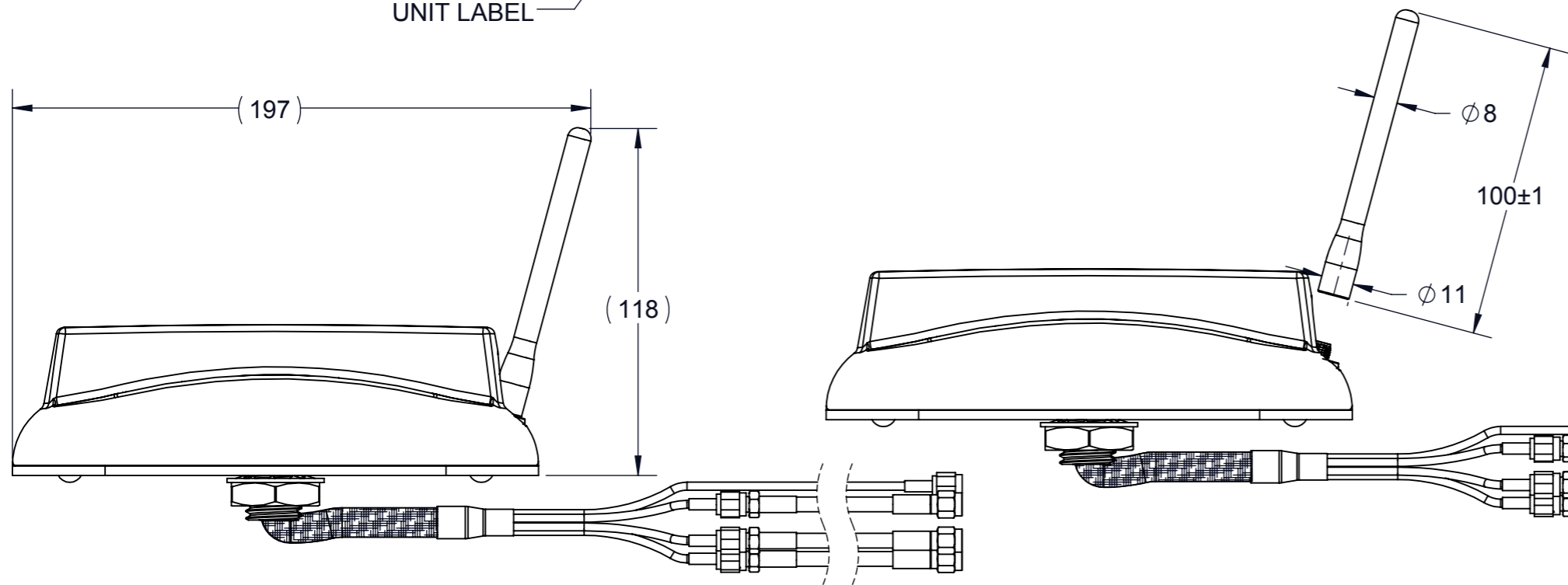
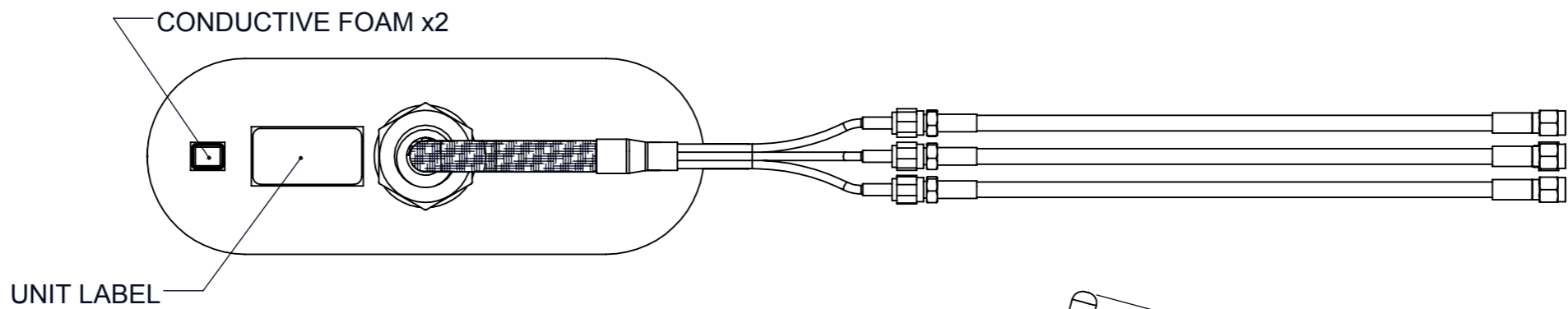
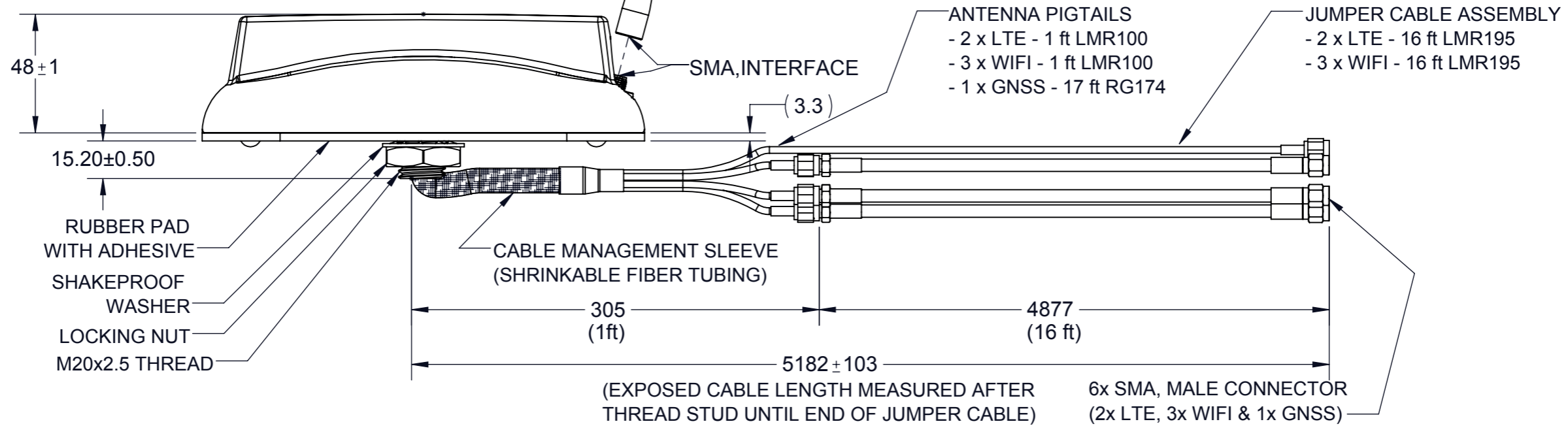
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EXTERNAL WIFI ANTENNA  
P/N:AKIT-VFH69383B-001



**EXTERNAL WIFI ANTENNA OUTLINE**



SIZE	DWG. NO.	REV
A3	VFH69383B23JW-518JMO	F05
SCALE: 1:2	PREVIOUS#	SHEET 2 OF 2

6

5

4

3

2

1