



THOR60

Thunder Series

Integrated 5G/LTE Omnidirectional Antenna
for Semtech XR60

- Integrated Multi-band 5G Omnidirectional MIMO Antennas
- Cavity to install Semtech XR60 Router
- Robust, IP67 Rated Enclosure

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Thunder Series THOR60

Integrated Omnidirectional Antenna for Semtech XR60

INTEGRATED MULTI-BAND 5G OMNI ANTENNA + WI-FI 6E OMNI ANTENNA + GNSS ANTENNA + PLACE TO INSTALL SIERRA WIRELESS XR60 (ALL-IN-ONE)

The Taoglas **THOR60** Omnidirectional antenna for Semtech XR60 routers is designed for use in a variety of wireless communication applications. This all-in-one product consists of multi-band 5G, Wi-Fi®, and GNSS antennas, integrated in IP67 enclosure. It offers 7.5 dBi gain and wide beam width, which makes it suitable for use in both urban and rural environments. Combining the THOR60 Thunder Omnidirectional antenna with the Semtech XR60 router inside gives you complete outdoor solution with multiple use cases such as public transportation, energy, mining, IoT and much more.





5G / LTE ANTENNA SPECIFICATION

FREQUENCY	617 - 960 MHz 1.7 - 2.7 GHz 3.3 - 4.7 GHz 5.2 - 6.0 GHz
GAIN	617 - 960 MHz : 3 dBi 1.7 - 2.2 GHz : 4 dBi 3.3 - 4.7 GHz : 4.5 dBi 5.2 - 6.0 GHz : 2.5dBi
SUPPORTED LTE BANDS	1, 2, 3, 4, 5, 7, 8, 9, 10, 12, 13, 14, 17, 18, 19, 20, 22, 25, 26, 27, 28, 29, 30, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 47, 48, 49, 52, 53, 65, 66, 67, 68, 69, 71, 85, 103, 106
SUPPORTED 5G BANDS	n1, n2, n3, n5, n7, n8, n12, n13, n14, n18, n20, n25, n26, n28, n29, n30, n34, n38, n39, n40, n41, n47, n48, n53, n65, n66, n67, n71, n77, n78, n80, n81, n82, n83, n84, n85, n86, n89, n90, n95, n97, n98, n100, n101, n256
VSWR	<1.80, max <2.00
BEAMWIDTH	360°/35° ±5°
POLARIZATION	Vertical
IMPEDANCE	50 Ω
CONNECTOR	4x SMA
CABLE TYPE	RG316



WI-FI ANTENNA SPECIFICATION

FREQUENCY	2.4 - 2.5 GHz 5.0 - 7.2 GHz
GAIN	2.4 - 2.5 GHz: 6dBi 5 GHz: 7.5dBi 7 GHz: 7.5dBi
VSWR	< 1.50, max < 2.00
BEAMWIDTH	360°/25°
POLARIZATION	Vertical
IMPEDANCE	50 Ω
CONNECTOR	2x RPSMA
CABLE TYPE	RG316

MECHANICAL SPECIFICATION

MATERIALS	ABS, aluminum, PTFE
CONNECTOR TYPE	RJ45
INGRESS PROTECTION	IP67
DIMENSIONS	160 x 160 x 240 mm 6.3 x 6.3 x 9.45 inch
WEIGHT	1.5 kg 3.31 lbs
OPERATING TEMPERATURE	From -40°C to 80°C From -40°F to 176°F
MAST DIAMETER	40-60 mm 1.57-2.36 inch



FREQUENCY BANDS

LTE / 4G

	1	2	3	4	5	7	8	
	9	10	12	13	14	17	18	
	19	20	22	25	26	27	28	
617 MHz	29	30	33	34	35	36	37	6000 MHz
	38	39	40	41	42	43	44	
	47	48	49	52	53	65	66	
	67	68	69	71	85	103	106	

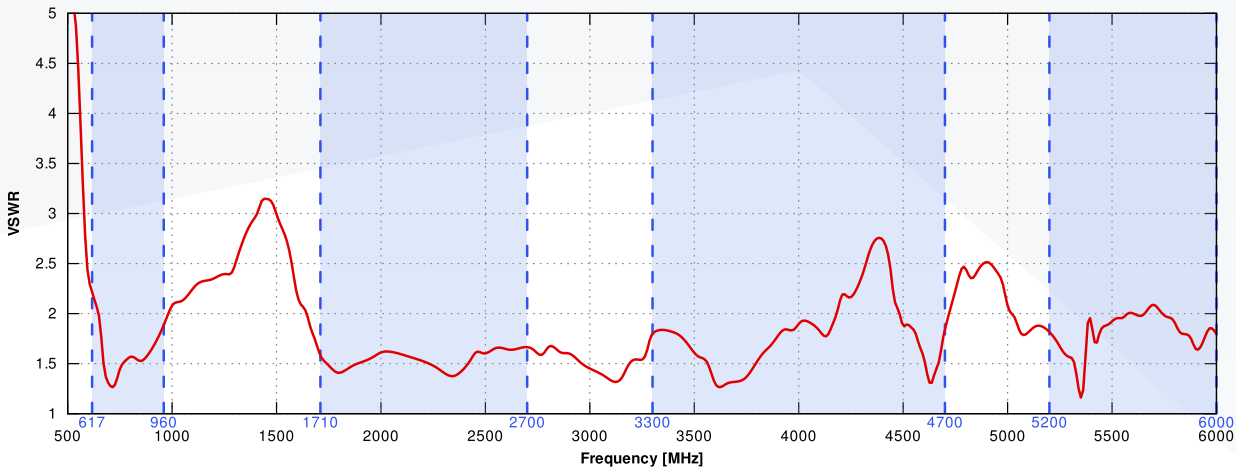
5G

	n1	n2	n3	n5	n7	n8	n12	
	n13	n14	n18	n20	n25	n26	n28	
	n29	n30	n34	n38	n39	n40	n41	
617 MHz	n47	n48	n53	n65	n66	n67	n71	6000 MHz
	n77	n78	n80	n81	n82	n83	n84	
	n85	n86	n89	n90	n95	n97	n98	
	n100	n101	n256					

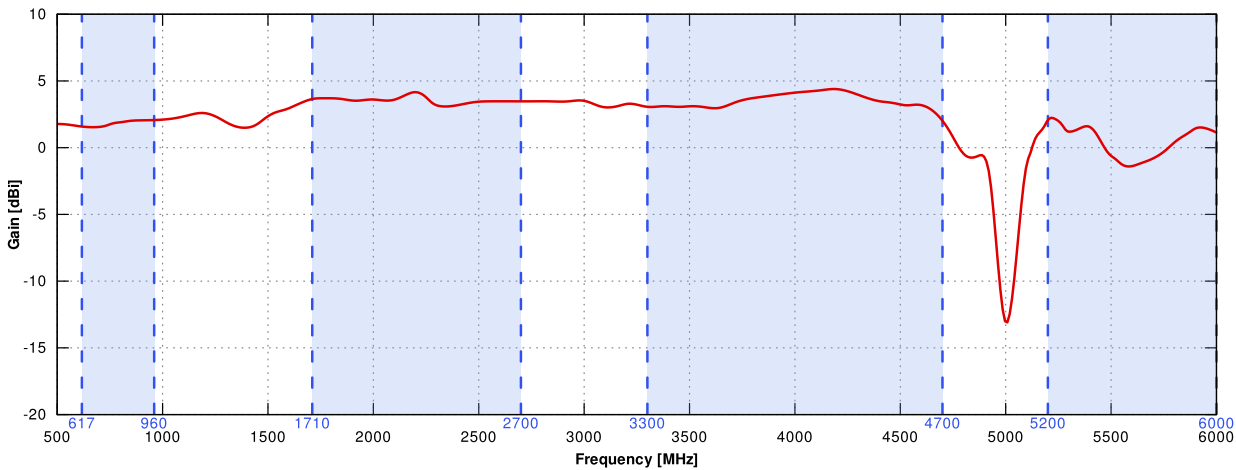


PLOTS

LTE VSWR

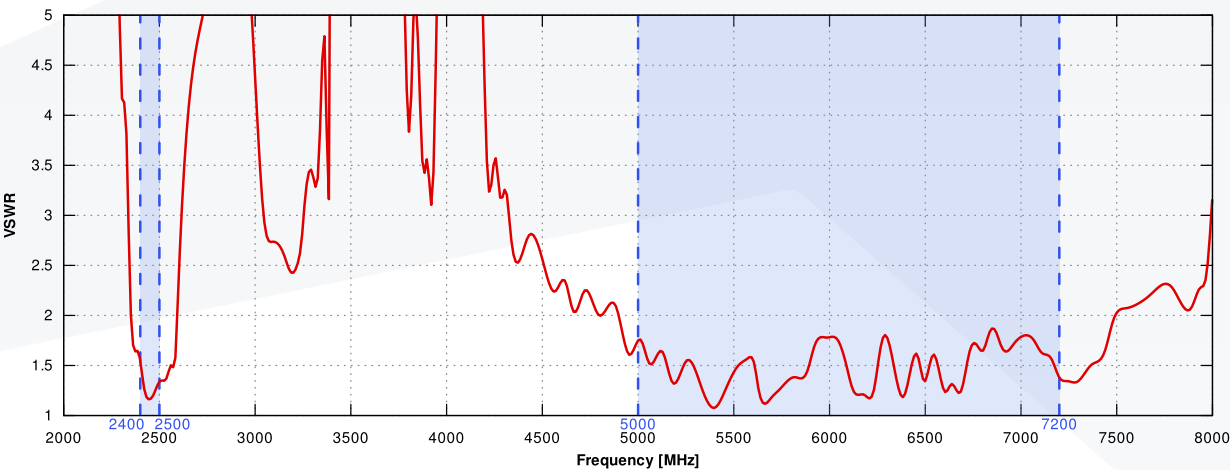


LTE Gain

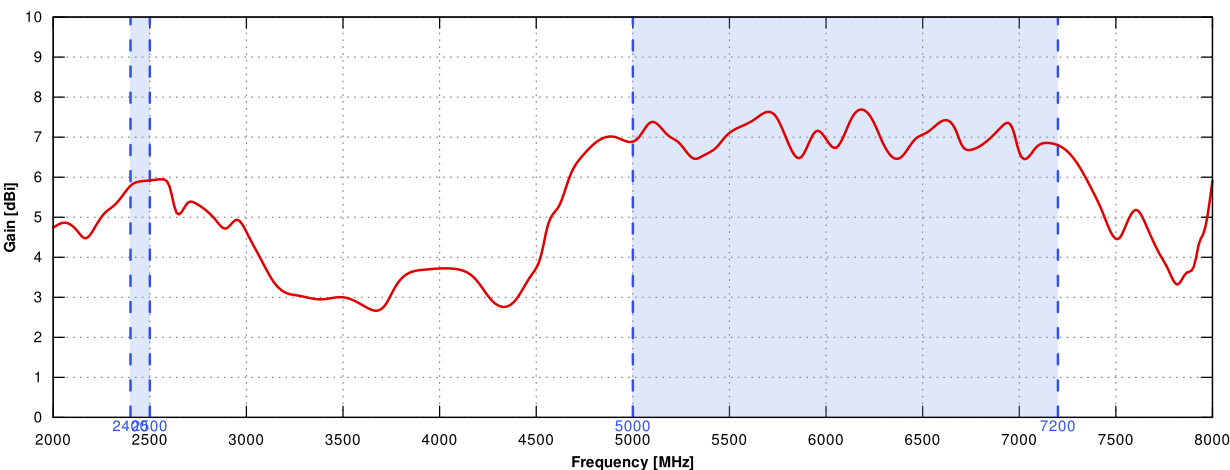




WI-FI VSWR

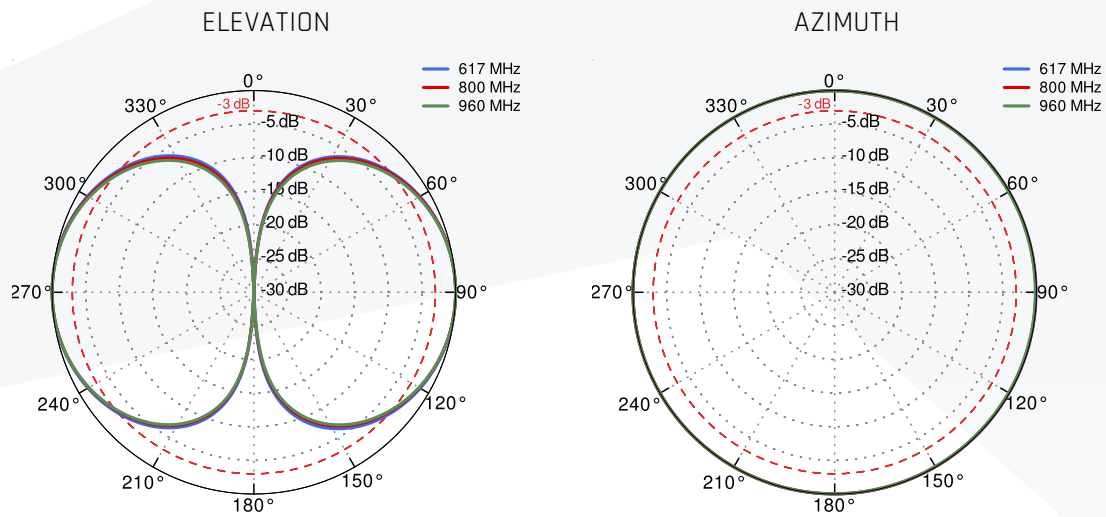


WI-FI Gain

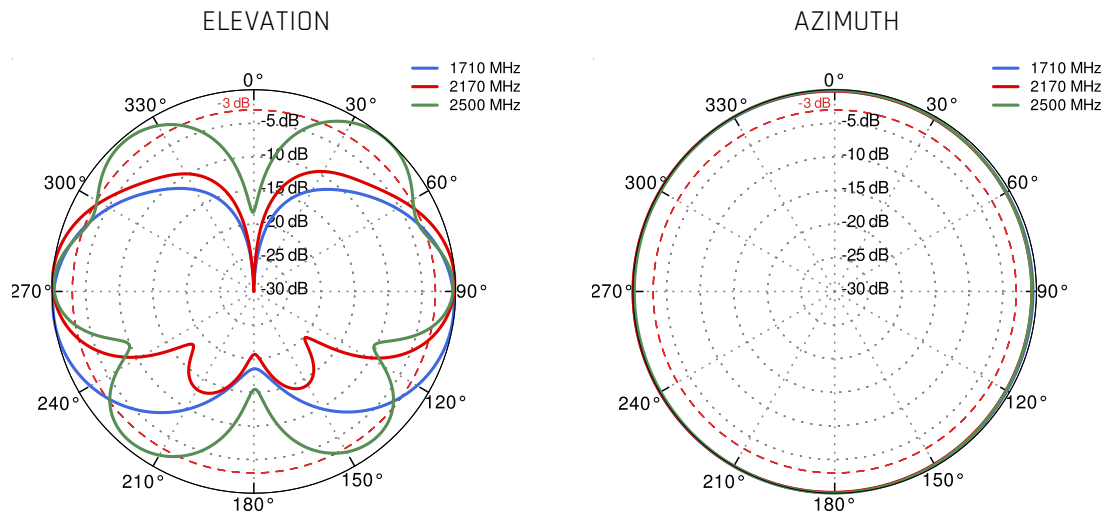




LTE From 617MHz to 960MHz

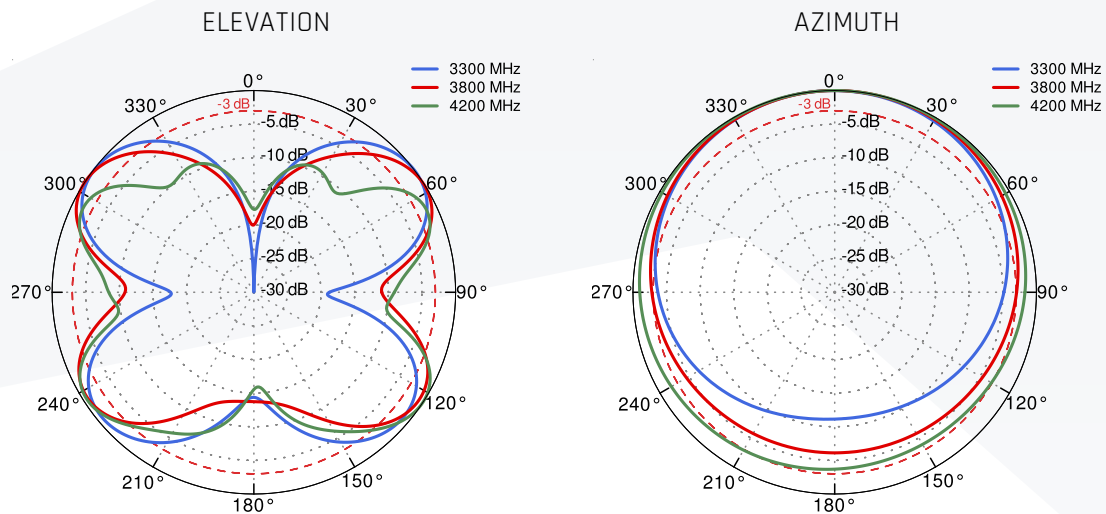


LTE From 1.71GHz to 2.5GHz

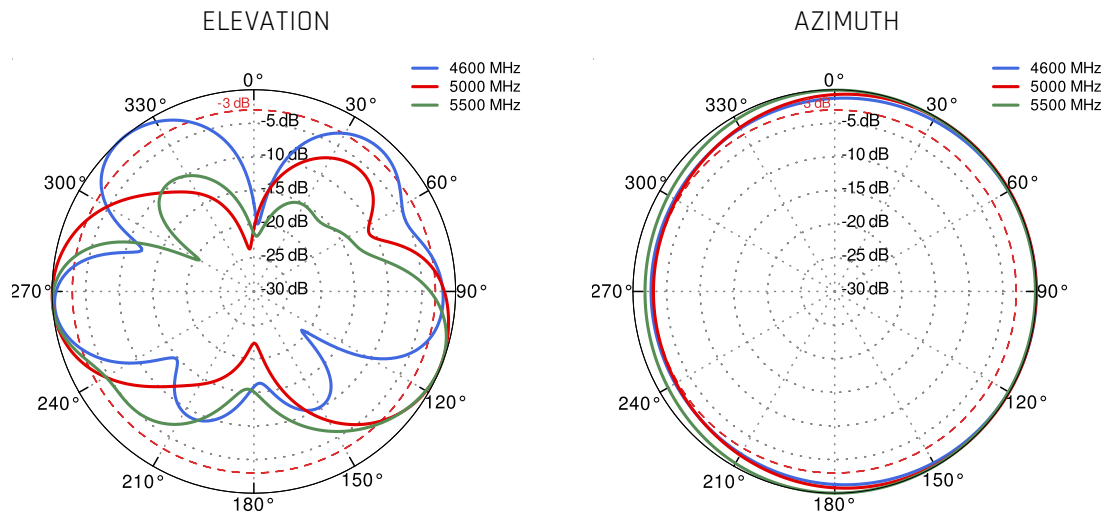




LTE From 3.3GHz to 4.2GHz

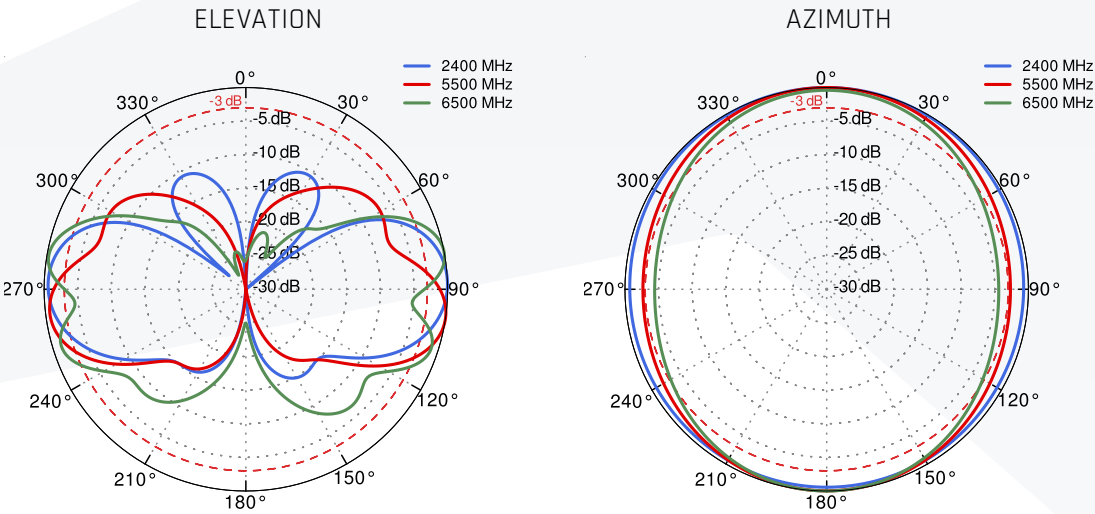


LTE From 4.6GHz to 5.5GHz





Wi-Fi From 2.4 GHz to 6.5 GHz





GNSS Specifications

GNSS Frequency Band							
GPS/QZSS	L1 1575.42MHz	L2 1227.6MHz	L5 1176.45MHz	L6 1278.75MHz			
	☒	☐	☐	☐			
GLONASS	L5R 1176.45MHz	L3PT 1201.5MHz	L2PT 1246MHz	L1CR 1575.42MHz	L1PT 1602MHz		
	☐	☐	☐	☒	☒		
Galileo	E5a 1176.45MHz	E5b 1201.5MHz	E4 1215MHz	E3 1256MHz	E6 1278.75MHz	E2 1561MHz	E1 1575.42MHz
	☐	☐	☐	☐	☐	☐	☒
BeiDou	B1 1561MHz	B2 1207.14MHz	B3 1268.52MHz				
	☒	☐	☐				
Compass	E5B(B2)/ E6(B3) 1268.56MHz	E2(B1) 1561MHz					
	☐	☒					
SBAS	Omnistar 1542.5MHz	WAAS/EGN OS 1575.42MHz					
	☐	☒					

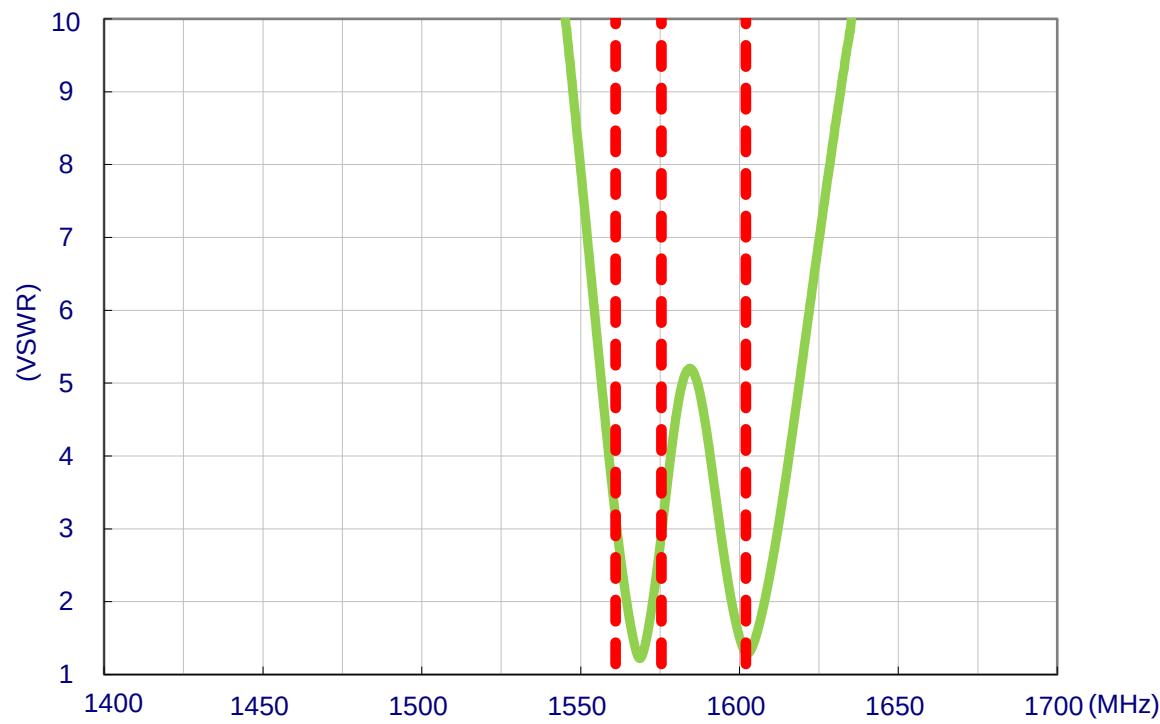
Electrical			
Frequency	BeiDou	GPS/GALILEO	GLONASS
	1561MHz	1575.42MHz	1602MHz
Efficiency (%)	49.8	46.5	60.1
Average Gain (dBi)	-3.03	-3.33	-2.21
Peak Gain (dBi)	2.44	1.72	1.67
Impedance	50Ω		
Polarization	RHCP		



LNA Specification			
Gain (dB)	14.8 ± 1	15.0 ± 1	15.0 ± 1
NF (dB)	2.4 ± 0.2	1.9 ± 0.2	2.2 ± 0.2
Input Voltage	+1.8 to +5 VDC		
Power Consumption	3 to 24.5mA typical		
Out-Of-Band Attenuation (dB)	10-500MHz	> 60	
	500-850MHz	> 40	
	850-1000MHz	> 35	
	1000-1500MHz	> 25	
	1700-2300MHz	> 19	
	2300-5000MHz	> 30	
	5000-6000MHz	> 25	

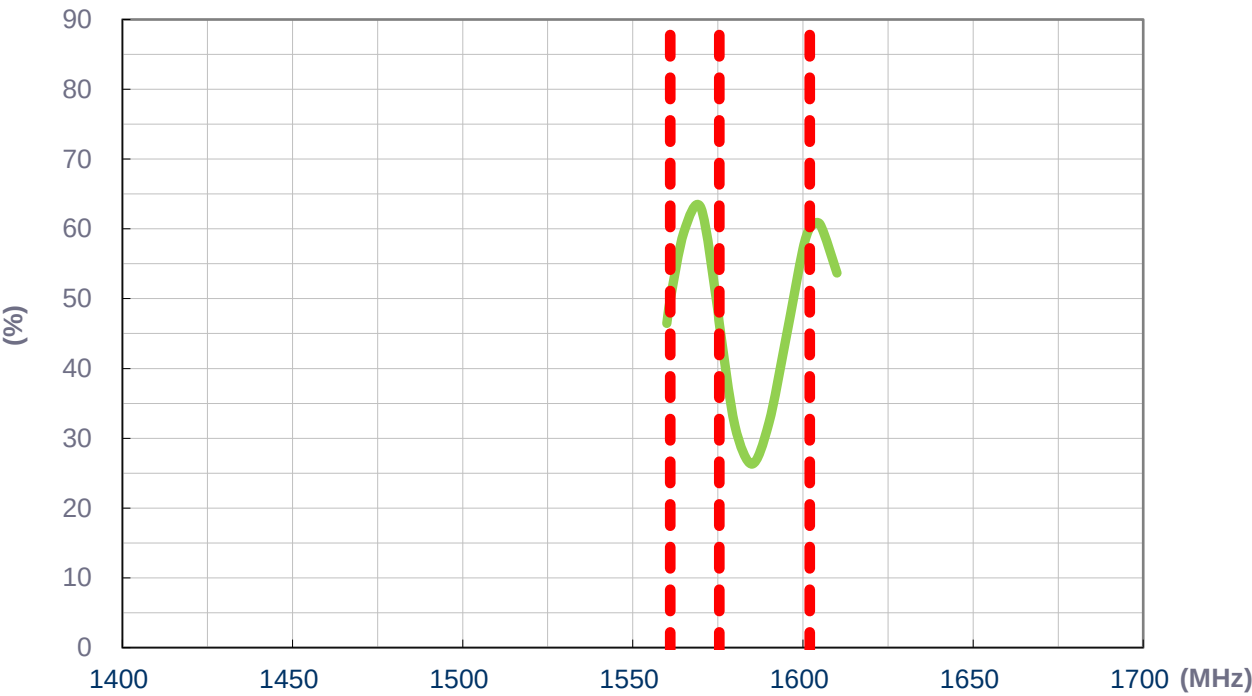
PLOTS

VSWR



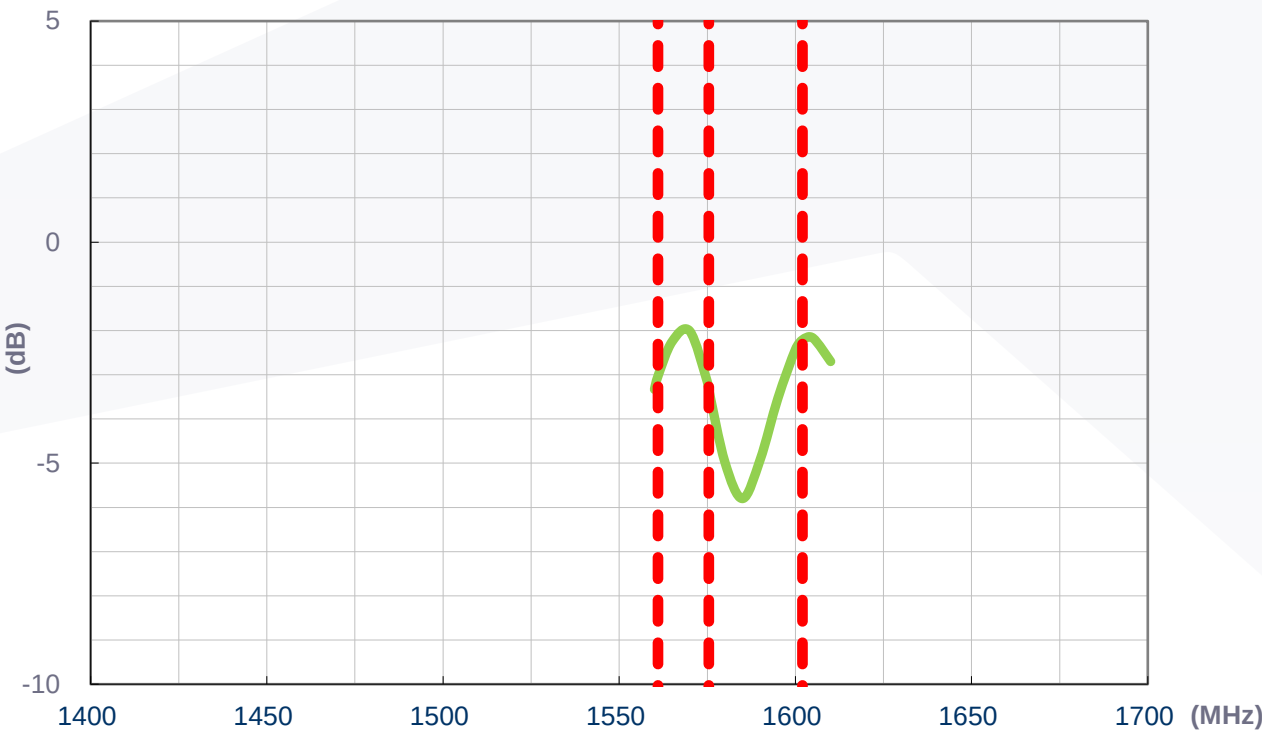


Efficiency

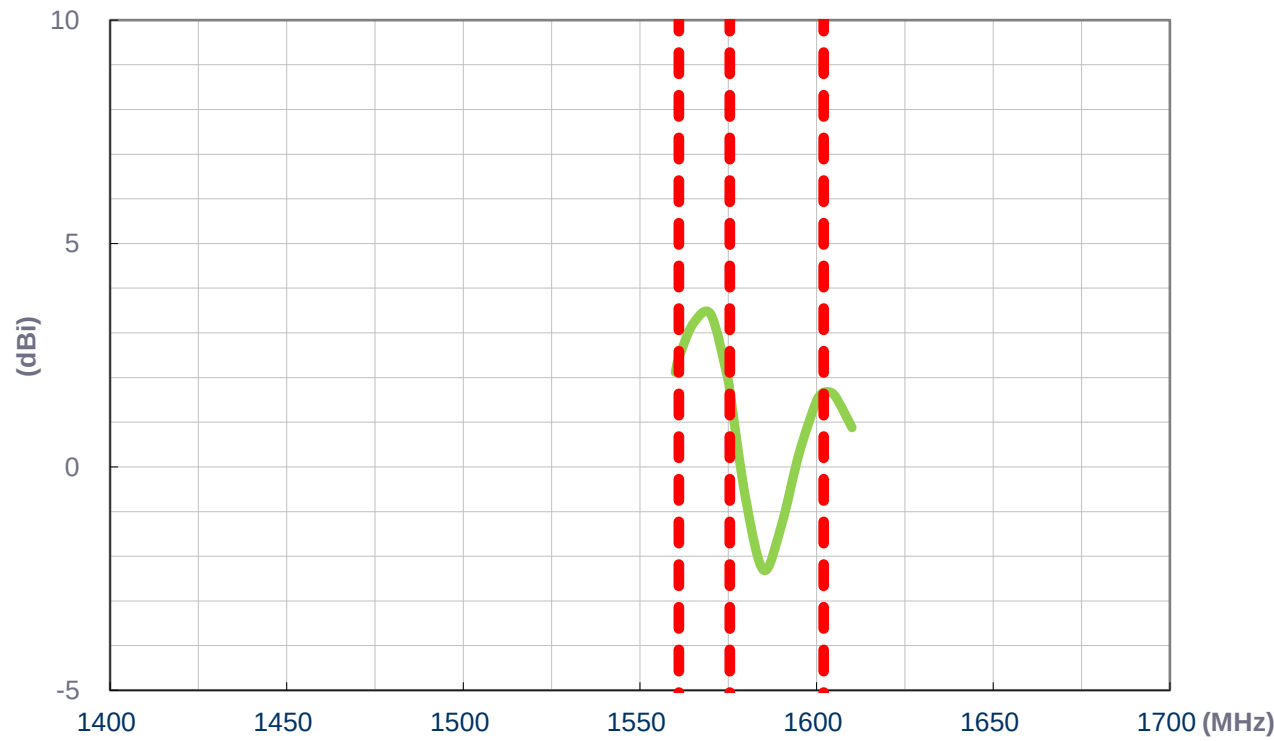




Average Gain



Peak Gain





DIMENSIONS

