TAOGLAS®

THDR60

Thunder Series

Integrated 5G/LTE Directional Antenna for Semtech XR60

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

Alcom electronics
A STELLAB TECHNOLOGY COMPANY
Singel 3 | B-2550 Kontich | Belgium | Tel. +32 (0)3 458 30 33 | info@alcom.be | www.alcom.be
Rivium 1e straat 52 | 2909 LE Capelle aan den Ijssel | The Netherlands | Tel. +31 (0)10 288 25 00 | info@alcom.nl | www.alcom.nl

Contents

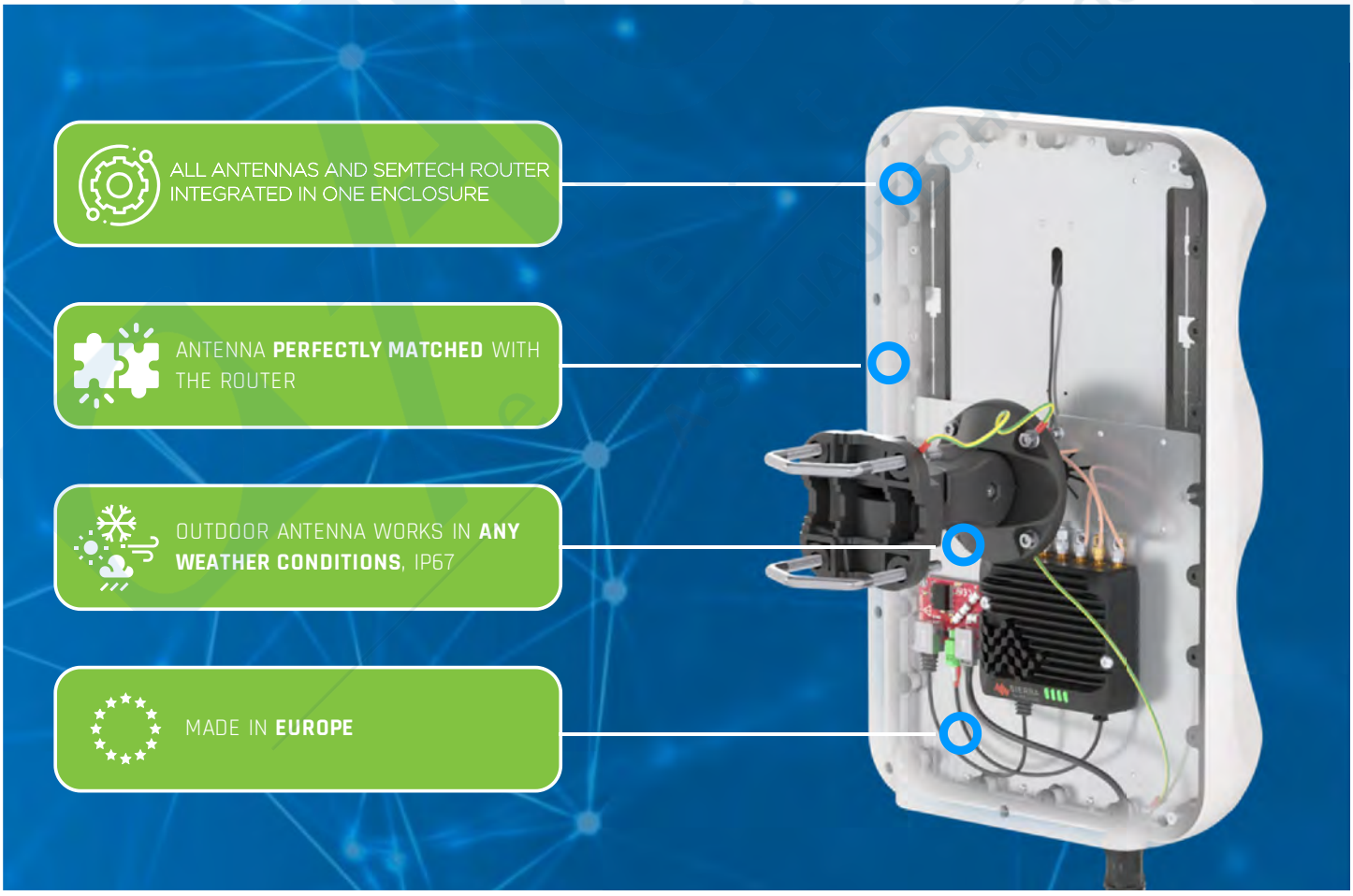
Ireland & USA ISO 9001:2015 Certified

Taiwan ISO 9001:2015 Certified

Thunder Series THDR60
Integrated Directional Antenna for Semtech XR60

INTEGRATED MULTI-BAND LTE & 5G PANEL ANTENNA + WI-FI OMNI ANTENNA + GNSS ACTIVE ANTENNA + PLACE TO INSTALL SEMTECH XR60 (ALL-IN-ONE)

The Taoglas THDR60 Directional 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 THDR60 Thunder Directional 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	0.617 - 0.96 GHz 1.7 - 2.7 GHz 3.3 - 4.6 GHz 4.7 - 6.0 GHz
GAIN	0.617 - 0.96 GHz: 6 dBi 1.7 - 2.7 GHz: 7 dBi 3.3 - 4.6 GHz: 7 dBi 4.7 - 6.0 GHz: 5.5 dBi
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, 46, 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, n46, 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	<<2.00, max <3.00
BEAMWIDTH	80°/80° ±15°
POLARIZATION	X [+-45 degrees]
IMPEDANCE	50 Ω
CONNECTOR	4x SMA
CABLE TYPE	RG316

WI-FI ANTENNA SPECIFICATION

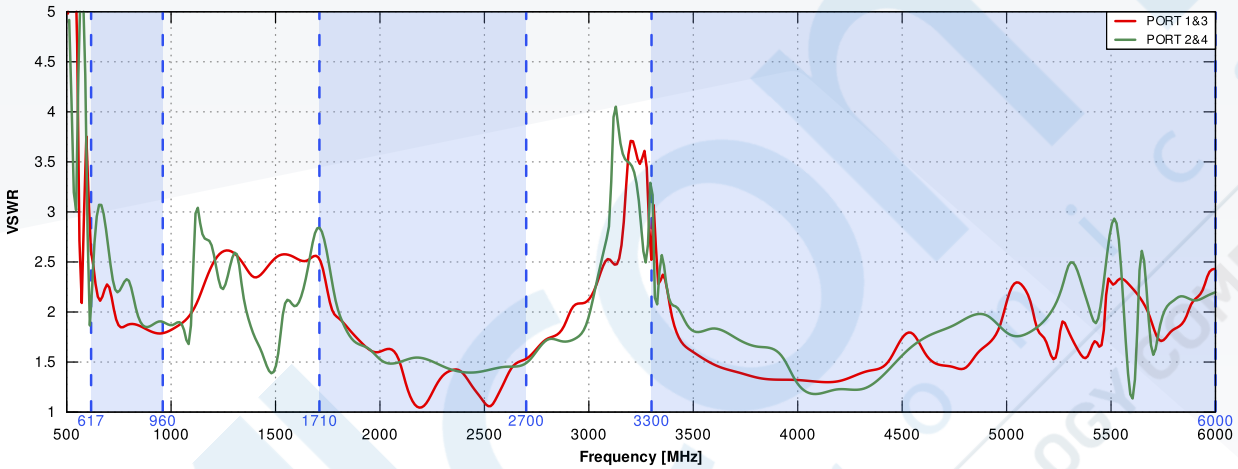
FREQUENCY	2.40 - 2.50 GHz 5.0 - 7.125 GHz
GAIN	2.40 - 2.50 GHz : 6 dBi 5.0 - 7.125 GHz : 7.5 dBi
VSWR	<1.70, max <2.00
BEAMWIDTH	360°/25° ±5°
POLARIZATION	Vertical
IMPEDANCE	50 Ω
CONNECTOR	2x RPSMA
CABLE TYPE	RG316

MECHANICAL SPECIFICATION

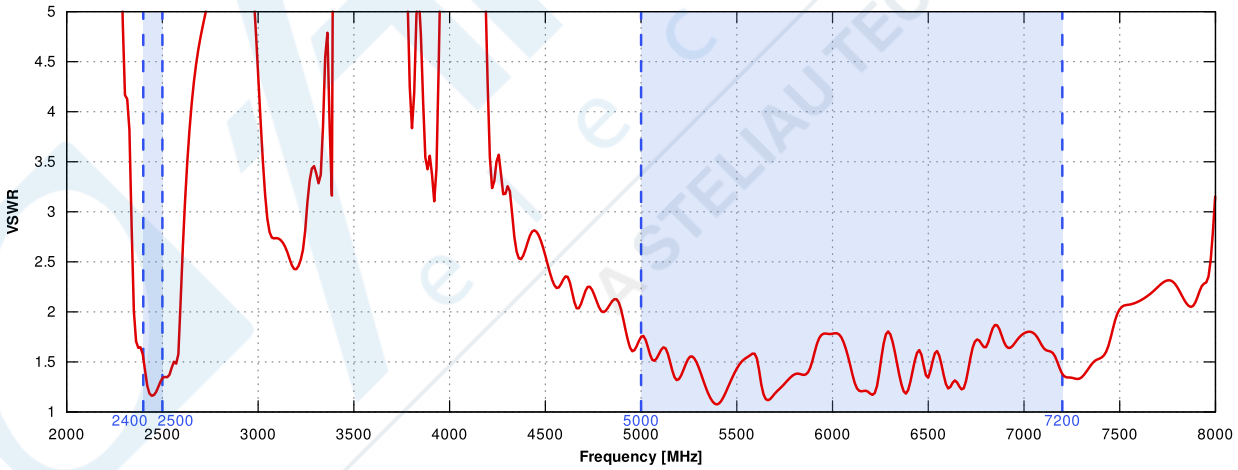
MATERIAL	ABS, Aluminum, PTFE, Fiberglass
INGRESS PROTECTION	IP67
CONNECTOR TYPE	RJ45
DIMENSIONS	480 x 292 x 175 mm 18.9 x 11.4 x 6.87 inch
WEIGHT	1.8 kg 3.97 lbs
OPERATING TEMPERATURE	From -40°C to 75°C From -40°F to 167°F

PLOTS

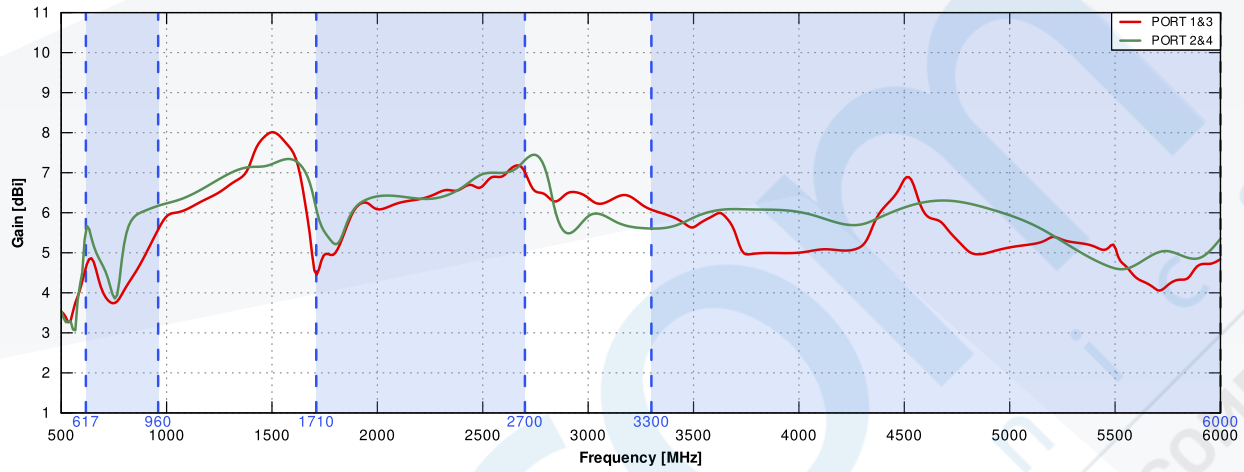
VSWR for 5G/LTE antenna



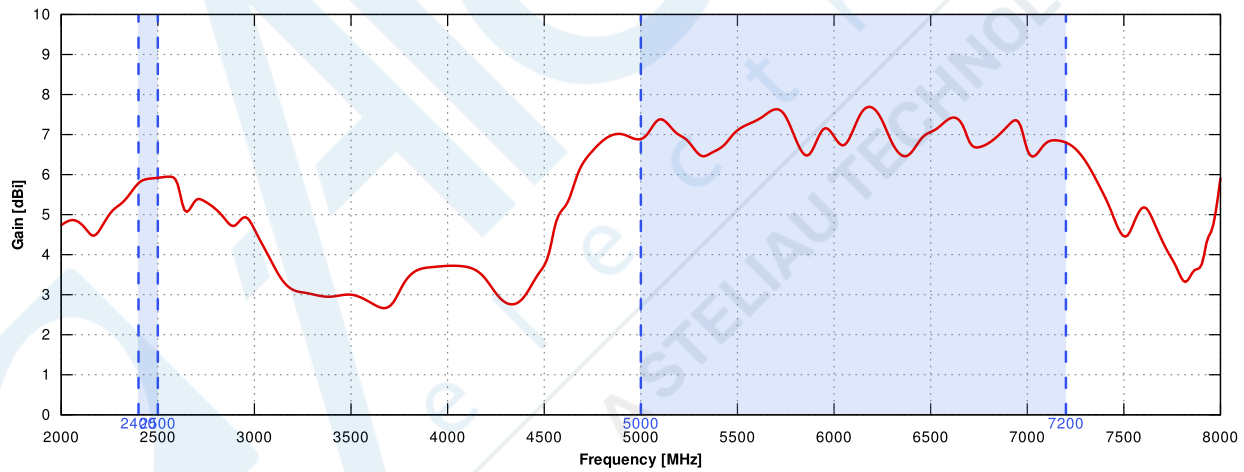
VSWR for Wi-Fi antenna



Gain for 5G/LTE antenna

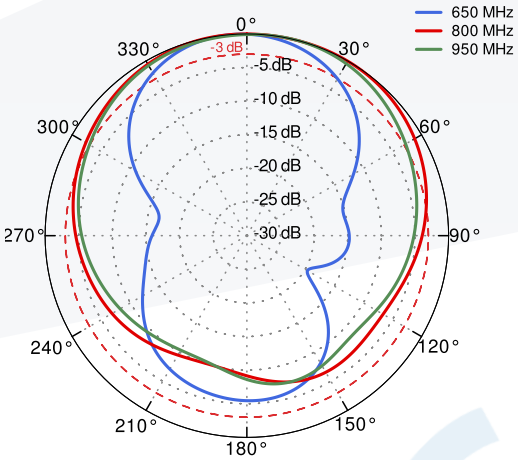


Gain for Wi-Fi antenna

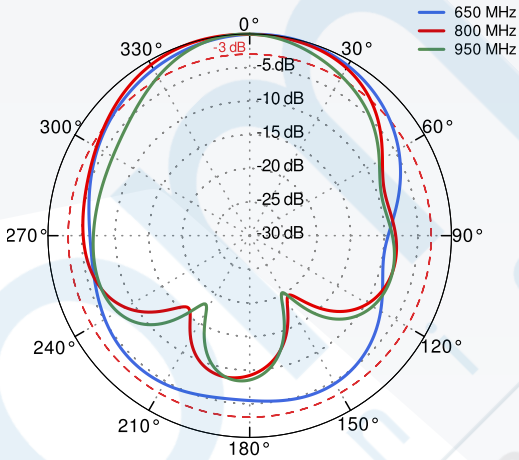


PORT 1&3 - 5G/LTE from 650MHz to 950MHz

ELEVATION

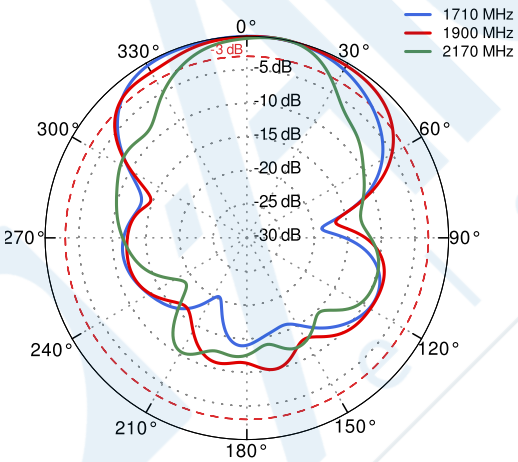


AZIMUTH

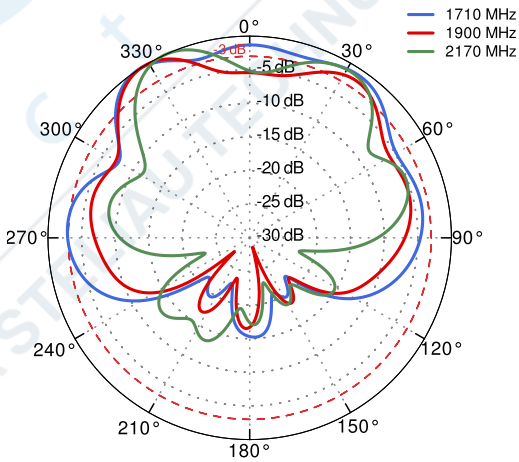


PORT 1&3 - 5G/LTE from 1.71GHz to 2.17GHz

ELEVATION

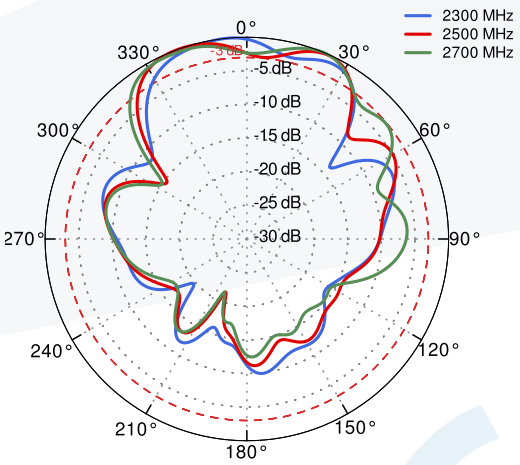


AZIMUTH

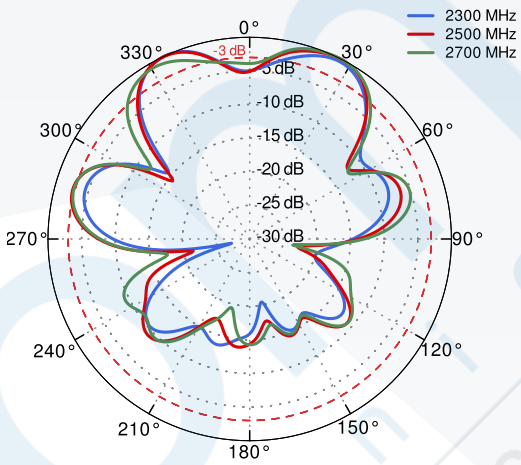


PORT 1&3 - 5G/LTE from 2.3GHz to 2.7GHz

ELEVATION

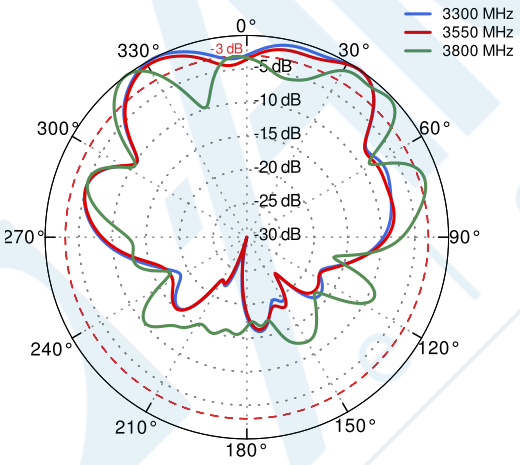


AZIMUTH

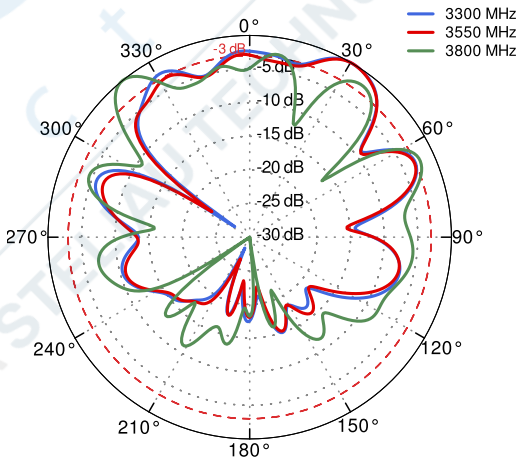


PORT 1&3 - 5G/LTE from 3.3GHz to 3.8GHz

ELEVATION

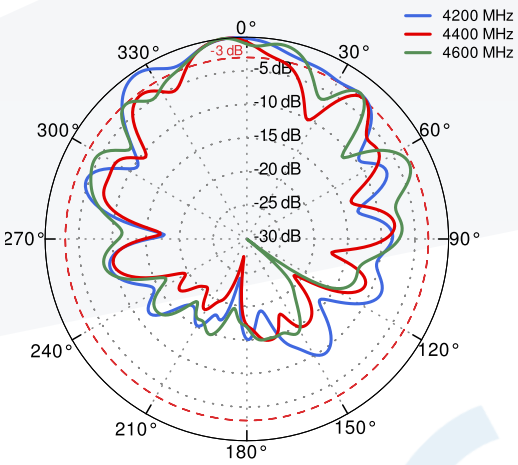


AZIMUTH

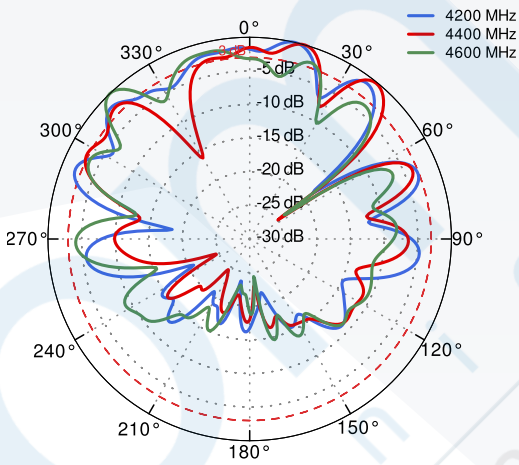


PORT 1&3 - 5G/LTE from 4.2GHz to 4.6GHz

ELEVATION

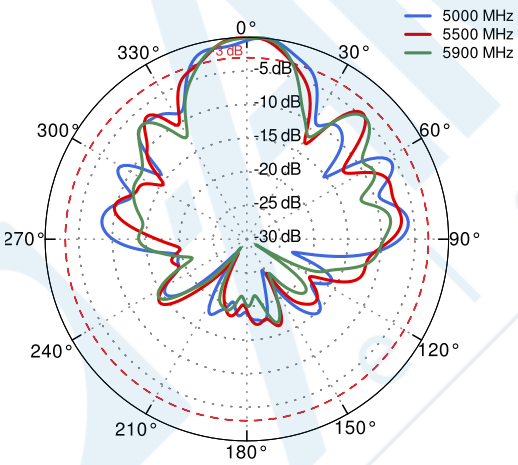


AZIMUTH

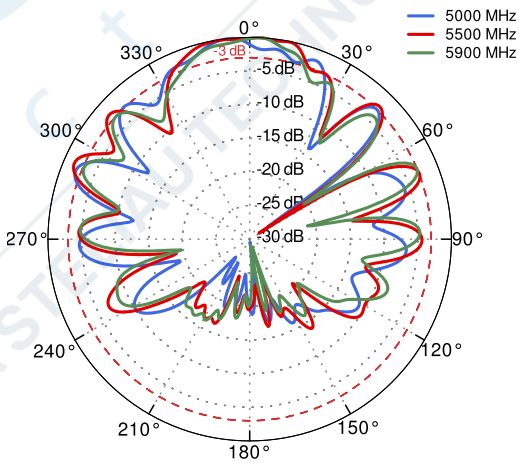


PORT 1&3 - 5G/LTE from 5.0GHz to 5.9GHz

ELEVATION

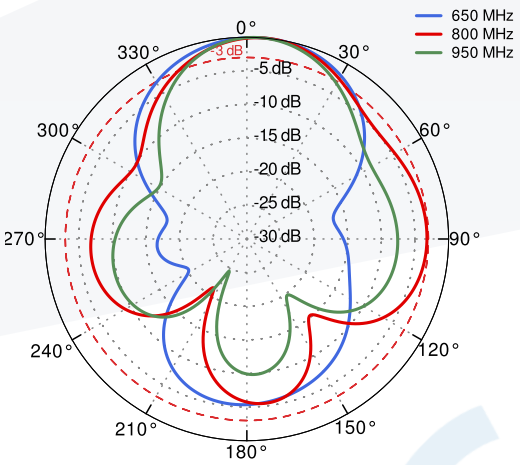


AZIMUTH

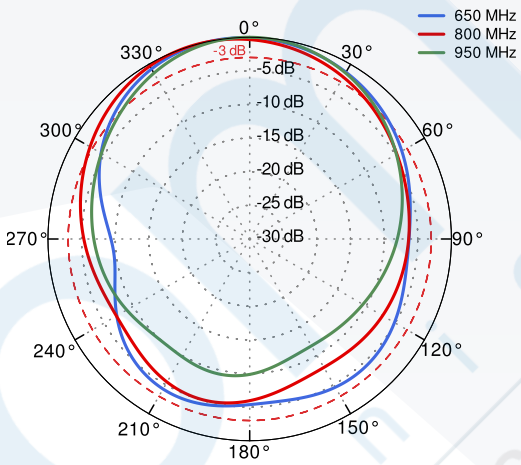


PORT 2&4 - 5G/LTE from 650MHz to 950MHz

ELEVATION

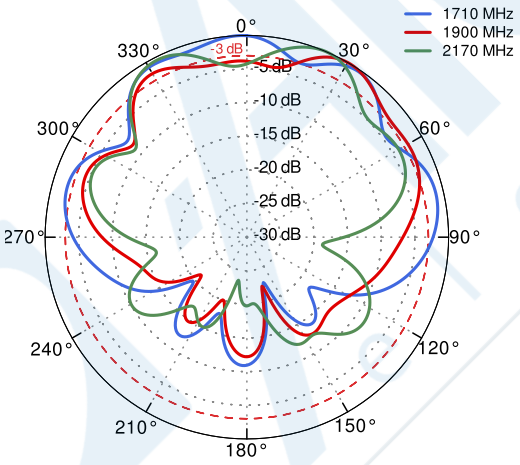


AZIMUTH

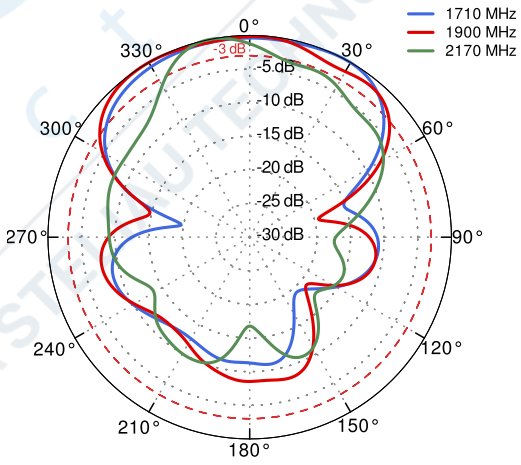


PORT 2&4 - 5G/LTE from 1.71GHz to 2.17GHz

ELEVATION

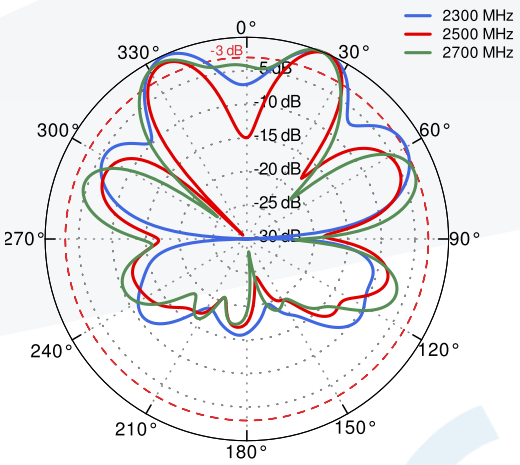


AZIMUTH

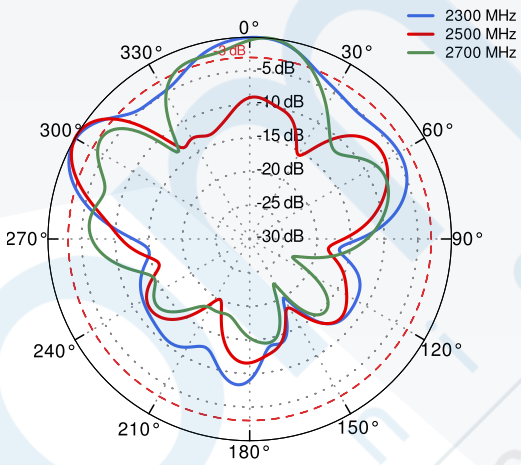


PORT 2&4 - 5G/LTE from 2.3GHz to 2.7GHz

ELEVATION

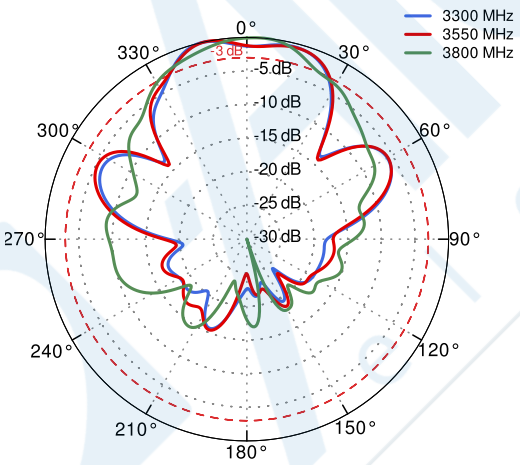


AZIMUTH

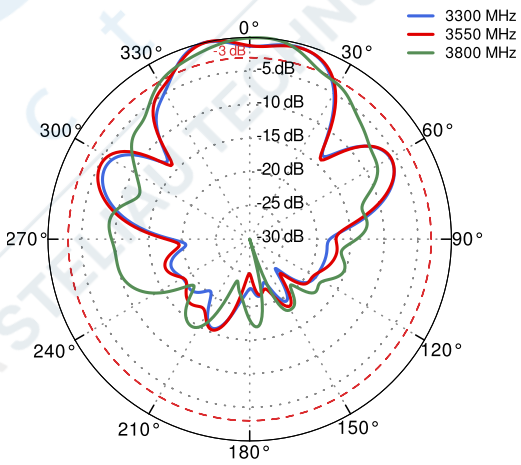


PORT 2&4 - 5G/LTE from 3.3GHz to 3.8GHz

ELEVATION

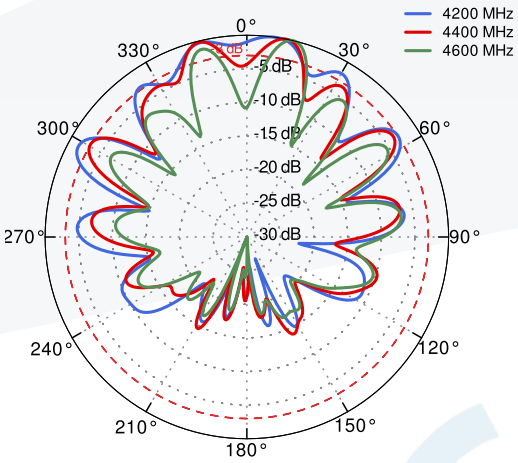


AZIMUTH

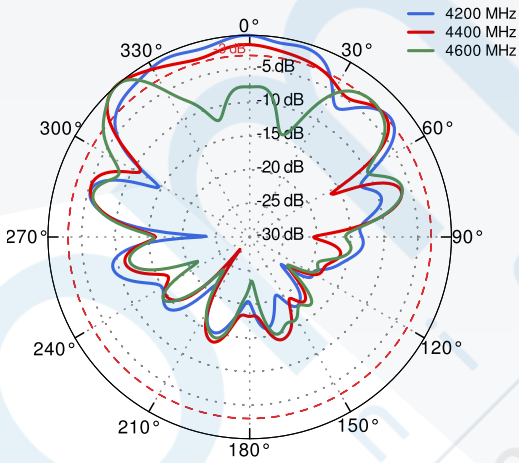


PORT 2 - 5G/LTE from 4.2GHz to 4.6GHz

ELEVATION

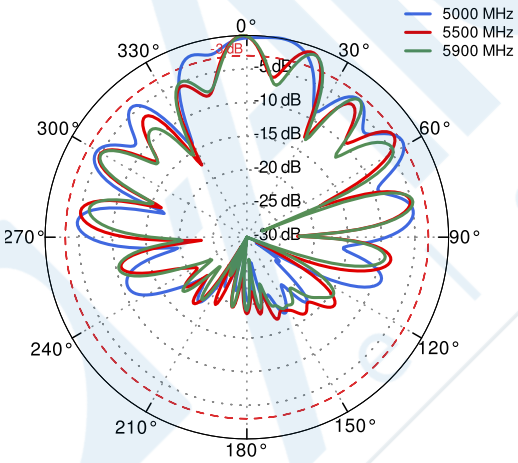


AZIMUTH

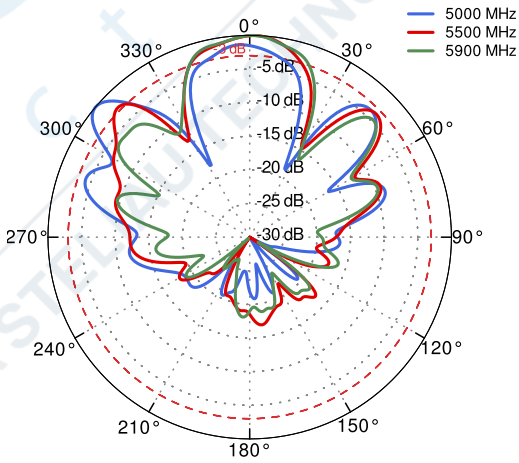


PORT 2 - 5G/LTE from 5.0GHz to 5.9GHz

ELEVATION

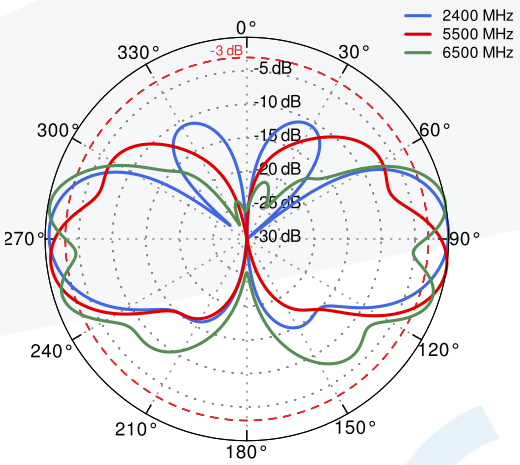


AZIMUTH

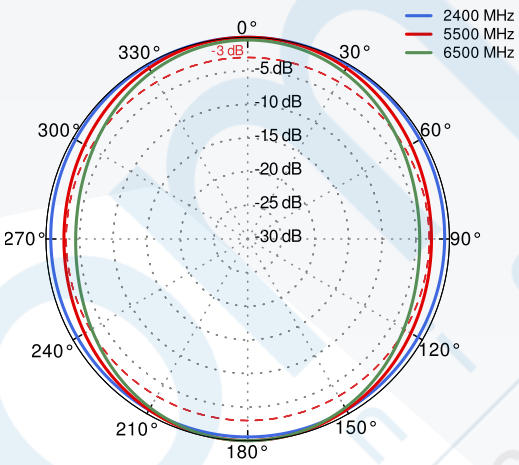


Wi-Fi 2.4GHz and 5GHz and 6GHz

ELEVATION



AZIMUTH



GNSS Specifications

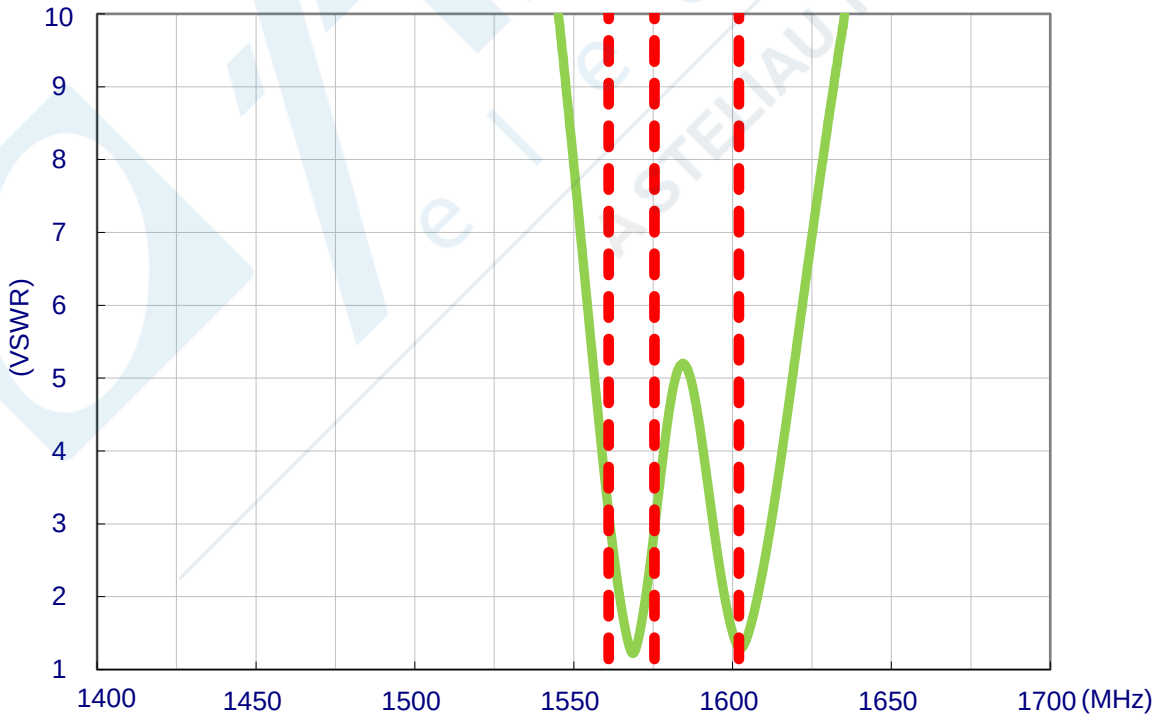
GNSS Frequency Band							
GPS/QZSS	L1 1575.42MHz	L2 1227.6MHz	L5 1176.45MHz	L6 1278.75MHz			
	☑	☐	☐	☐			
GLONASS	L5R 1176.45MHz	L3PT 1201.5MHz	L2PT 1246MHz	L1CR 1575.42MHz	L1PT 1602MHz		
	☐	☐	☐	☑	☑		
Galileo	E5a 1176.45MHz	E5b 1201.5MHz	E4 1215MHz	E3 1256MHz	E6 1278.75MHz	E2 1561MHz	E1 1575.42MHz
	☐	☐	☐	☐	☐	☐	☑
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		

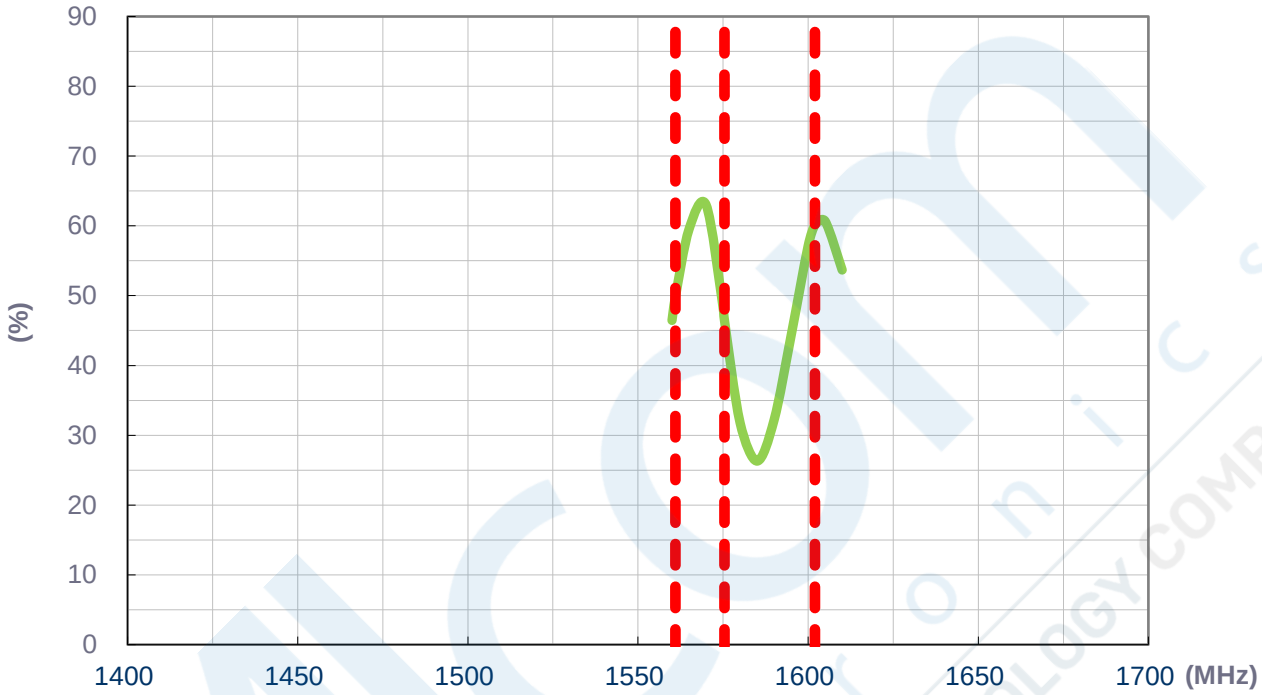
LNA Specification			
Gain (dB)	14.8 ± 1	15.0 ± 1	15.0 ± 1
NF (dB)	2.4 ± 0.2	1.9 ± 0.2	2.2 ± 0.2
Input Voltage	+1.8 to +5 VDC		
Power Consumption	3 to 24.5mA typical		
Out-Of-Band Attenuation (dB)	10-500MHz	> 60	
	500-850MHz	> 40	
	850-1000MHz	> 35	
	1000-1500MHz	> 25	
	1700-2300MHz	> 19	
	2300-5000MHz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

PLOTS

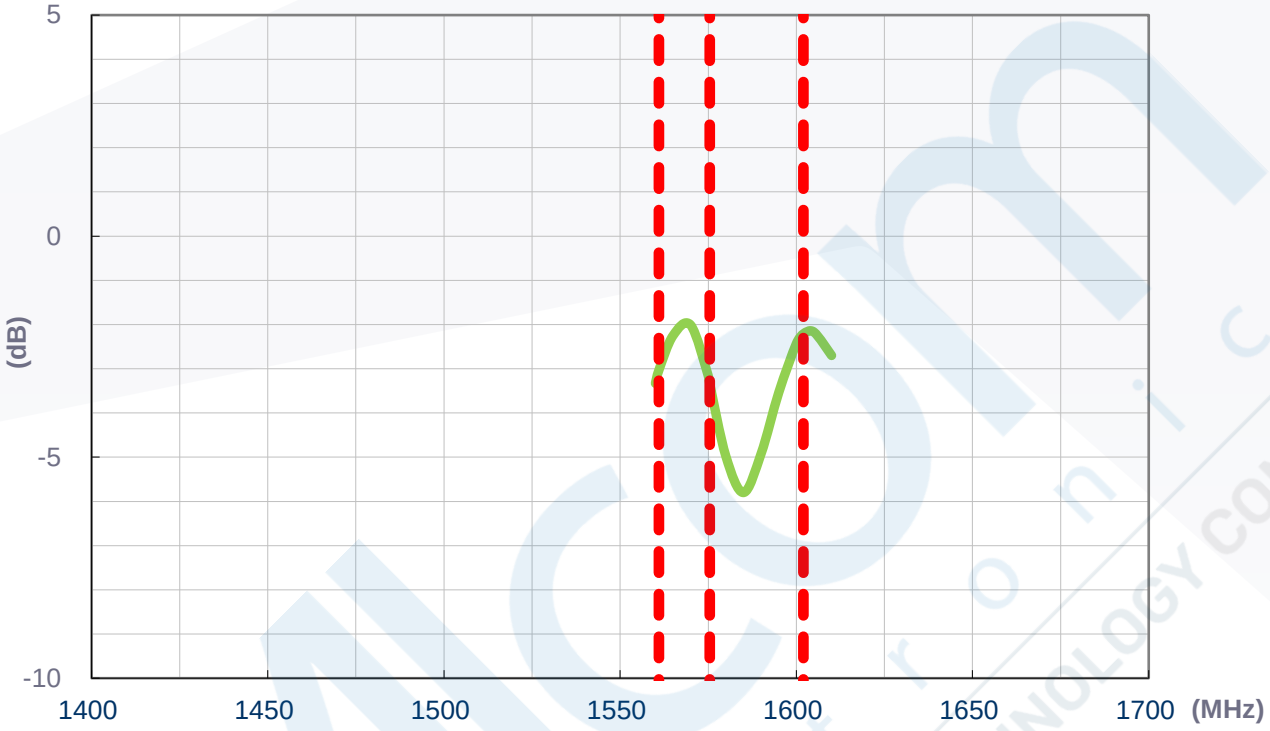
VSWR



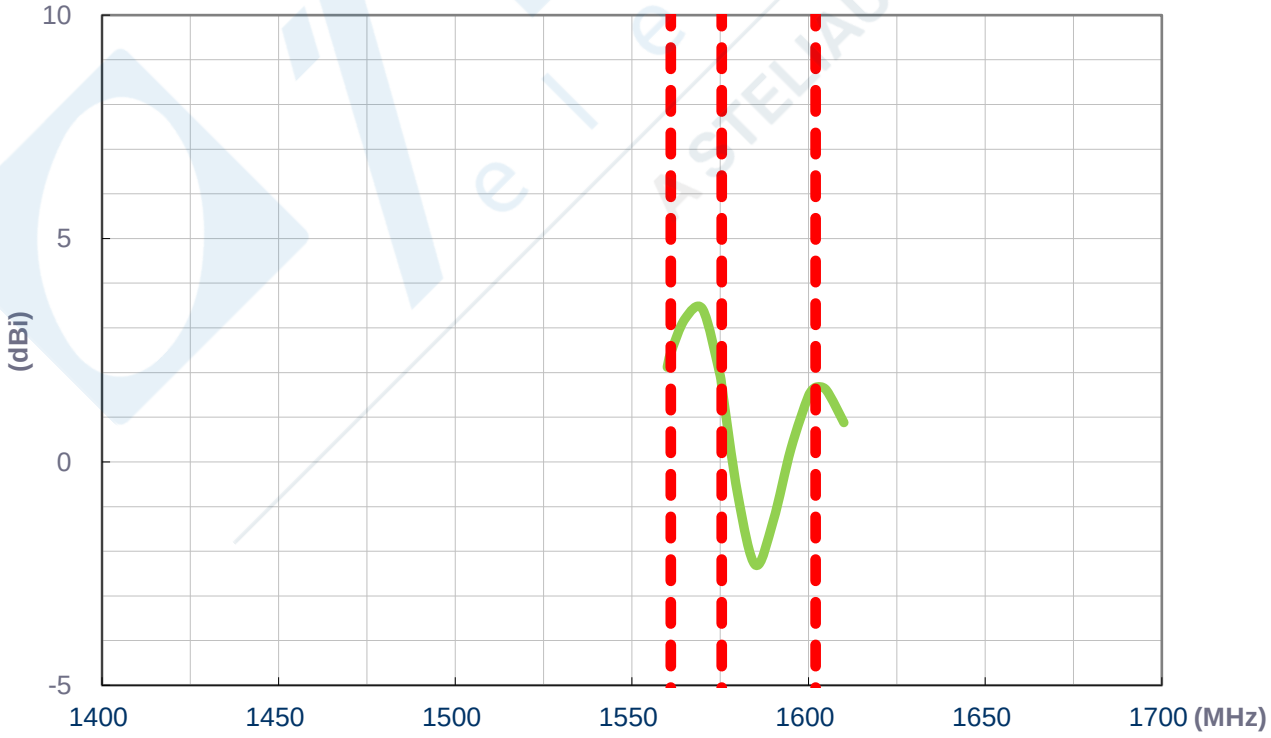
Efficiencyy



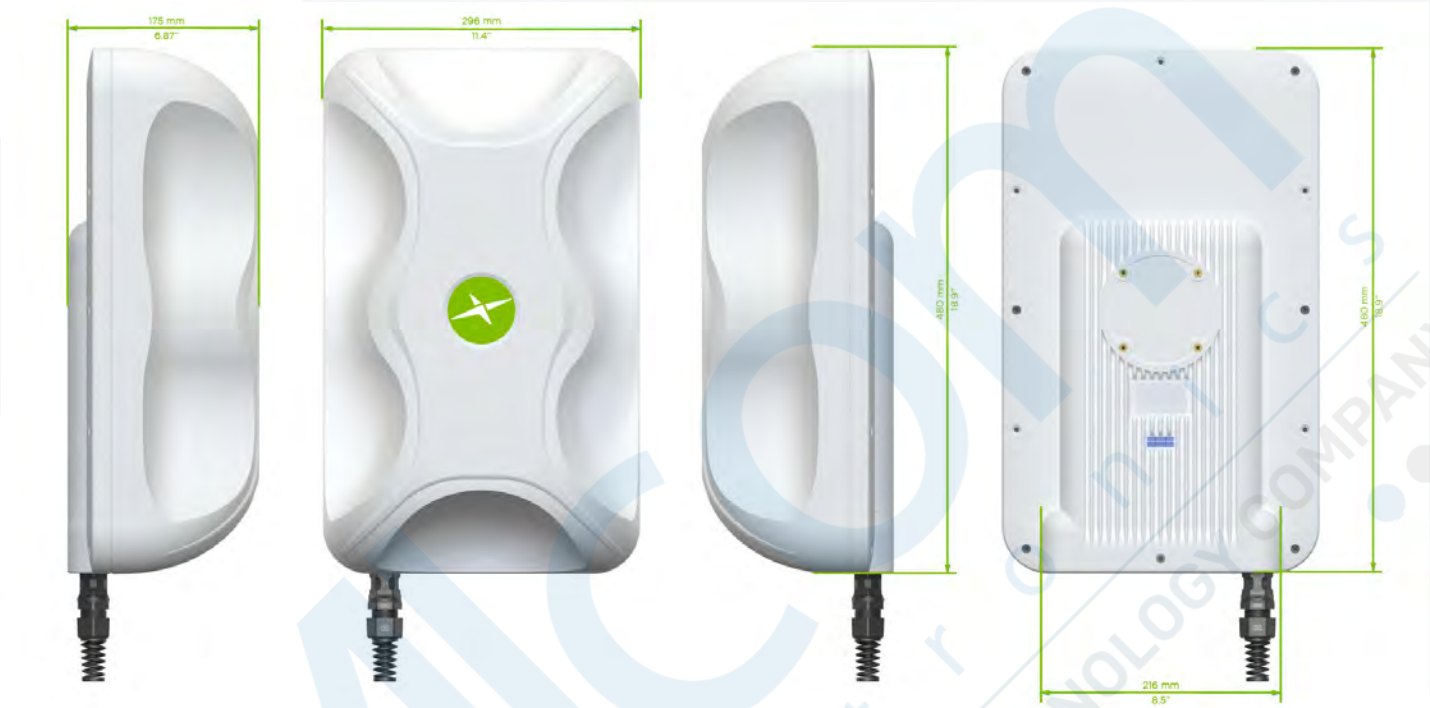
Average Gain



Peak Gain



DIMENSIONS



Singel 3 | B-2550 Kontich | Belgium | Tel. +32 (0)3 458 30 33 | info@alcom.be | www.alcom.be
Rivium 1e straat 52 | 2909 LE Capelle aan den Ijssel | The Netherlands | Tel. +31 (0)10 288 25 00 | info@alcom.nl | www.alcom.nl