ADA-X4YZ



ADA-X4YZ External 3 in 1 Combination Antenna

Feature:

- GNSS /4GLTE/5G /WiFi / 3 in 1 Combination Antenna
- GPS/GLONASS/Beidou/Galileo/QZSS Supporting
- LTE MIMO or Dual Band WiFi MIMO + Full Band GNSS
- Versatile Combination with up to 3 Cables
- IP69K fully waterproof and ESD Protection
- Magnetic / Adhesive / Screw Mounted Options
- Cable & Connector are customizable

Application:

- Navigation System Application
- Machine to Machine Application
- IoT Application

RoHS/Reach

Specifications:

Category	GNSS		
Application Band	BeiDou	GPS	GLONASS
Frequency(MHz)	1561	1575.42	1602
Efficiency(%)	49.89	42.76	58.61
Average Gain(dBi)	-3.02	-3.69	-2.32
Peak Gain(dBi)	1.21	1.21	1.44
Active antenna performance			
Application band	BeiDou	GPS	GLONASS
Frequency(MHz)	1561±2.046MHz	1575.42±1.023MHz	1602 ±5MHz
Gain(dB)	27	27	27
Noise(dB)	0.98	0.98	0.92
Current Consumption	9.0mA(typical)		
Output Impedance	50Ω		
GNSS_outband rejection			
Frequency(MHz)	600~1300	1300~1530	1650~3000
Gain(dB)	55	30	30
Passive antenna performance			
VSWR	< 2		
Return loss	< -10		
Impedance	50Ω		
Polarization	RHCP		
ESD Protection	+/- 8 KV (direct discharge) +/- 15kV (air discharge)		
Cable/Connector	H-100, 3 meters , SMA(M)		

Category		LTE						
Application Band		LTE 700	GSM 850/900	DCS	PCS	UMTS1	LTE2600	5G NR Band*
Frequency (MHz)		698~824	824~960	1710~1880	1850~1990	1920~2170	2300~2690	3300~3800
Efficiency(%)								
Free space	30cm	55.81	70.29	67.89	73.24	64.68	58.18	15.73
	1m	54.29	68.18	65.13	70.22	61.80	55.05	14.78
	2m	49.51	61.59	56.73	61.00	53.11	45.79	12.02
	3m	45.16	55.63	49.41	52.99	45.64	38.08	9.77
	5m	37.56	45.39	37.48	39.99	33.70	26.35	6.45
On the 30*30 cm ground plane	30cm	40.09	48.87	52.66	60.24	57.01	40.48	17.21
	1m	38.99	47.40	50.52	57.75	54.47	38.30	16.17
	2m	35.56	42.81	44.00	50.17	46.81	31.86	13.14
	3m	32.43	38.67	38.32	43.58	40.23	26.50	10.68
	5m	26.98	31.56	29.07	32.89	29.71	18.33	7.06
Average Gain(dBi)								
Free space	30cm	-2.53	-1.53	-1.68	-1.35	-1.89	-2.35	-8.03
	1m	-2.65	-1.66	-1.86	-1.54	-2.09	-2.59	-8.30
	2m	-3.05	-2.11	-2.46	-2.15	-2.75	-3.39	-9.20
	3m	-3.45	-2.55	-3.06	-2.76	-3.41	-4.19	-10.10
	5m	-4.25	-3.43	-4.26	-3.98	-4.72	-5.79	-11.90
On the 30*30 cm ground plane	30cm	-3.97	-3.11	-2.79	-2.20	-2.44	-3.93	-7.64
	1m	-4.09	-3.24	-2.97	-2.38	-2.64	-4.17	-7.91
	2m	-4.49	-3.68	-3.57	-3.00	-3.30	-4.97	-8.81
	3m	-4.89	-4.13	-4.17	-3.61	-3.96	-5.77	-9.71
	5m	-5.69	-5.01	-5.37	-4.83	-5.27	-7.37	-11.51
Peak Gain(dBi)								
Free space	30cm	3.74	4.39	4.95	4.95	4.49	7.36	-0.51
	1m	3.62	4.24	4.77	4.77	4.31	7.12	-0.78
	2m	3.22	3.74	4.17	4.17	3.71	6.32	-1.68
	3m	2.82	3.24	3.57	3.57	3.11	5.52	-2.58

Adactus AB, Mariehillsvägen 19, 133 37 Saltsjöbaden, Sweden
Tel: +46 8 608 17 70, Fax: +46 8 608 07 10
E-mail: m2m@adactus.se http://www.adactus.se/

	5m	2.02	2.24	2.37	2.37	1.91	3.92	-4.38
On the 30*30 cm ground plane	30cm	2.42	3.82	3.61	4.60	4.62	3.75	1.30
	1m	2.30	3.70	3.43	4.39	4.41	3.51	1.03
	2m	1.90	3.30	2.83	3.79	3.79	2.71	0.13
	3m	1.50	2.90	2.23	3.19	3.19	1.91	-0.77
	5m	0.70	2.10	1.03	1.99	1.99	0.31	-2.57
VSWR		< 3						
Return loss		< -6						
Impedance		50Ω						
Polarization		Linear						
Category		**WiFi**						
Frequency (MHz)		2400	2450	2500	5150	5350	5725	5850
Efficiency(%)								
Free space		73.45	71.61	74.47	59.84	57.15	49.66	40.46
On the 30*30 cm ground plane		49.09	46.77	50.00	53.83	55.98	49.43	36.39
Average Gain(dBi)								
Free space		-1.34	-1.45	-1.28	-2.23	-2.43	-3.04	-3.93
On the 30*30 cm ground plane		-3.09	-3.30	-3.01	-2.69	-2.52	-3.06	-4.39
Peak Gain(dBi)								
Free space		6.44	7.23	7.87	6.97	4.89	4.46	4.19
On the 30*30 cm ground plane		3.44	2.85	3.19	4.64	5.25	5.26	1.62
VSWR		< 2						
Return loss		< -10						
Impedance		50 Ω						
Polarization		Linear						
PHYSICAL CONSTRUCTION								
Dimension		Φ64.7mm, H:15.8mm						
ENVIRONMENTAL CONDITIONS								
Operation Temperature		-40～85℃						

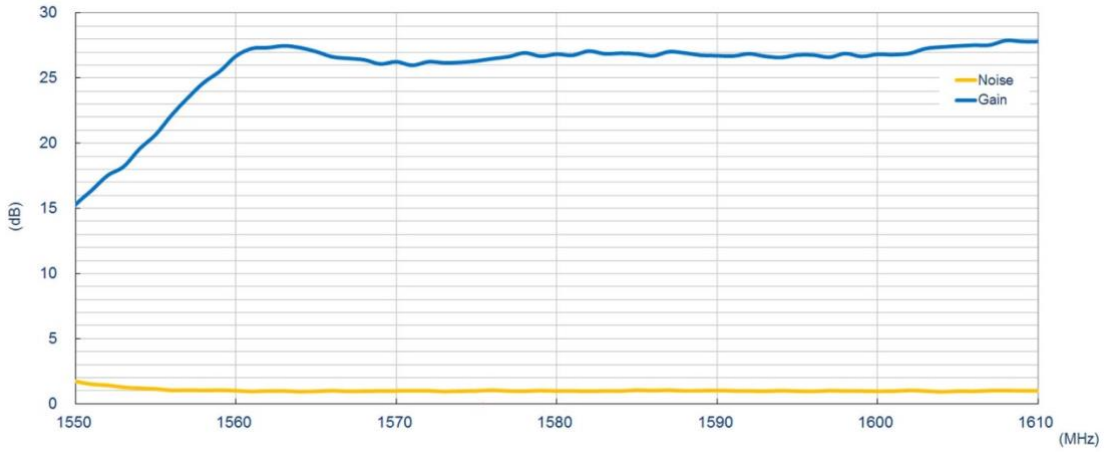
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Storage Temperature	-40～85℃

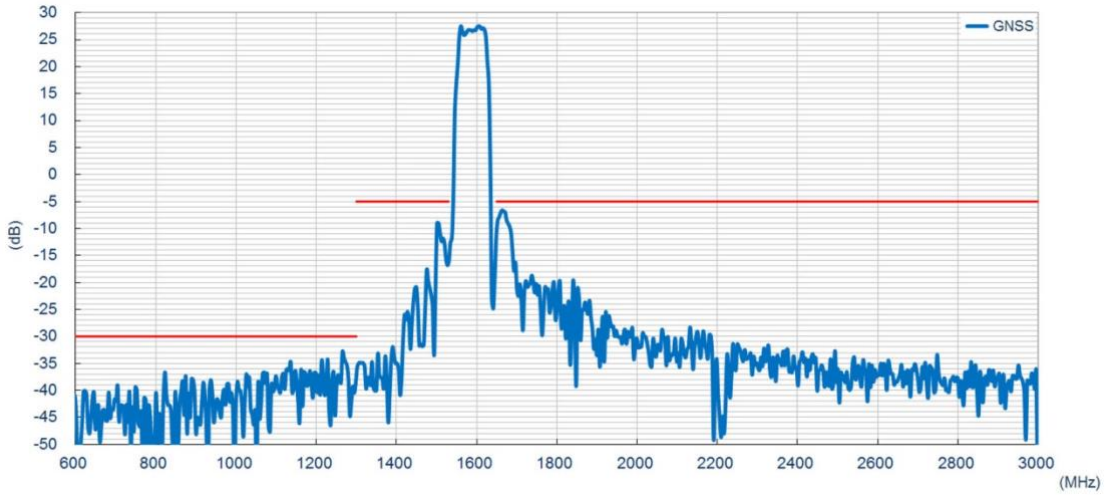
- **5G band is not yet optimized in this datasheet**

Analysis Antenna Performance:

GNSS_Noise &gain :



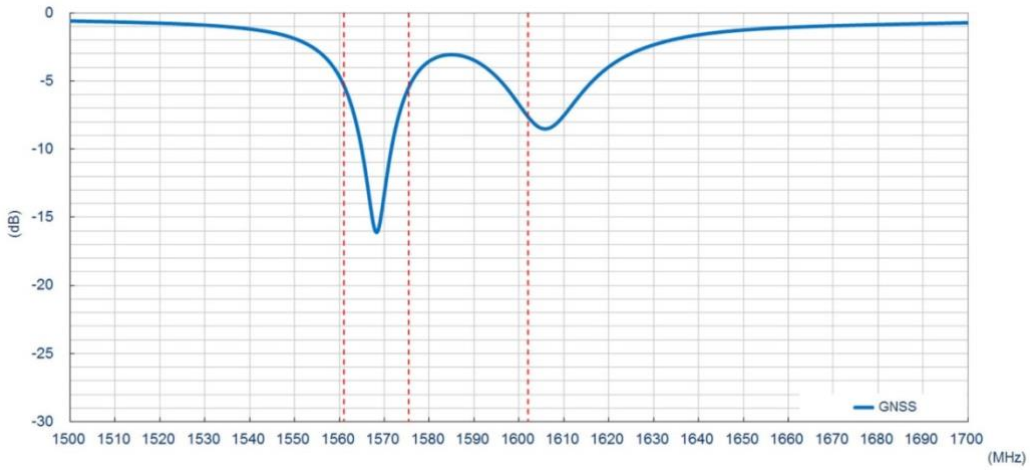
GNSS_outband rejection :



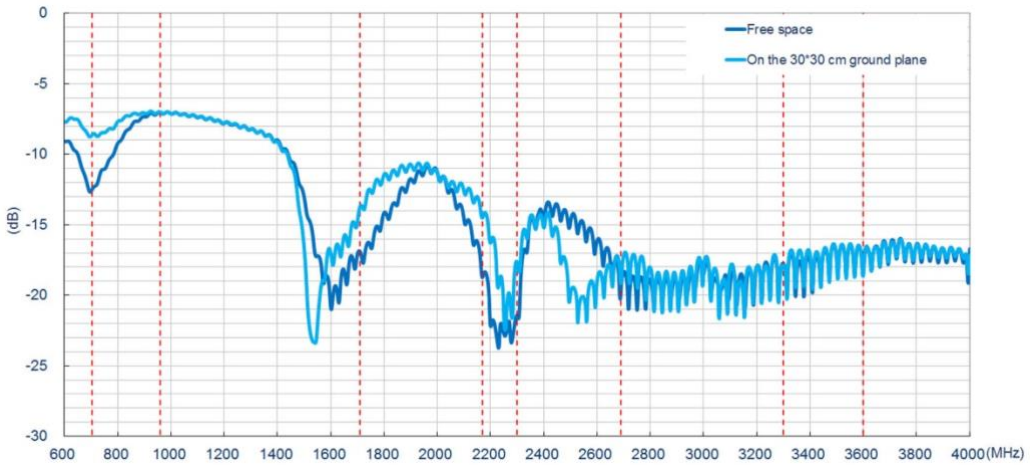
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S-parameters:

GNSS

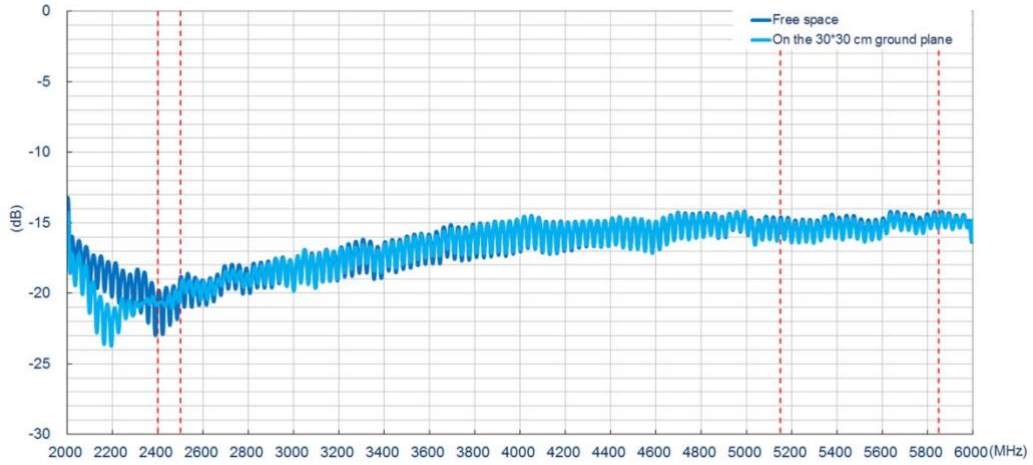


LTE



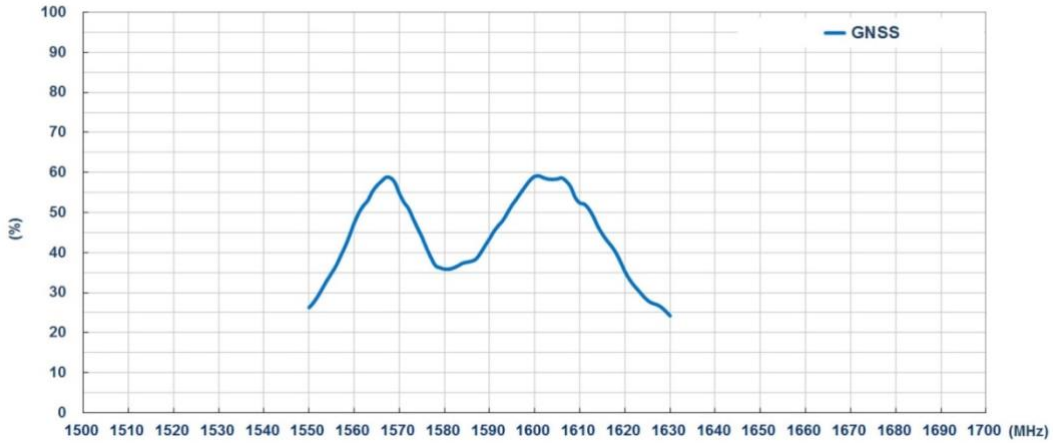
WIFI

Adactus AB, Mariehillsvägen 19, 133 37 Saltsjöbaden, Sweden
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E-mail: m2m@adactus.se http://www.adactus.se/

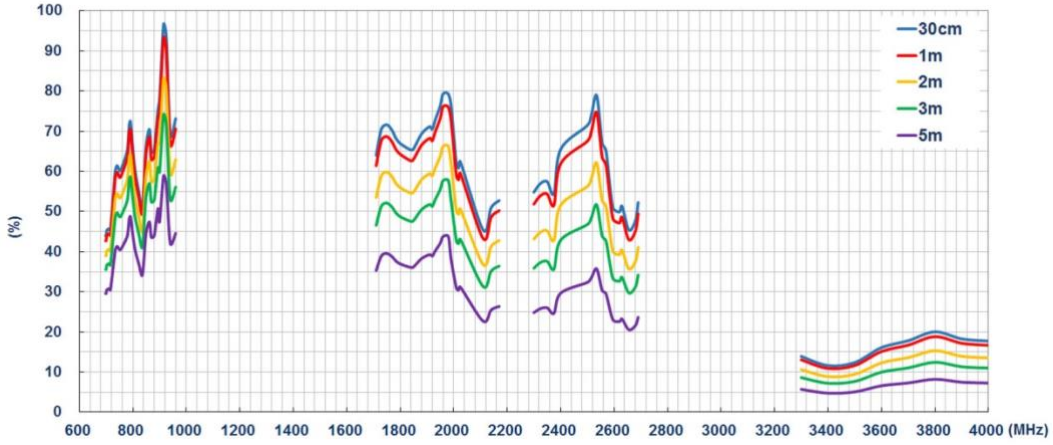


Efficiency:

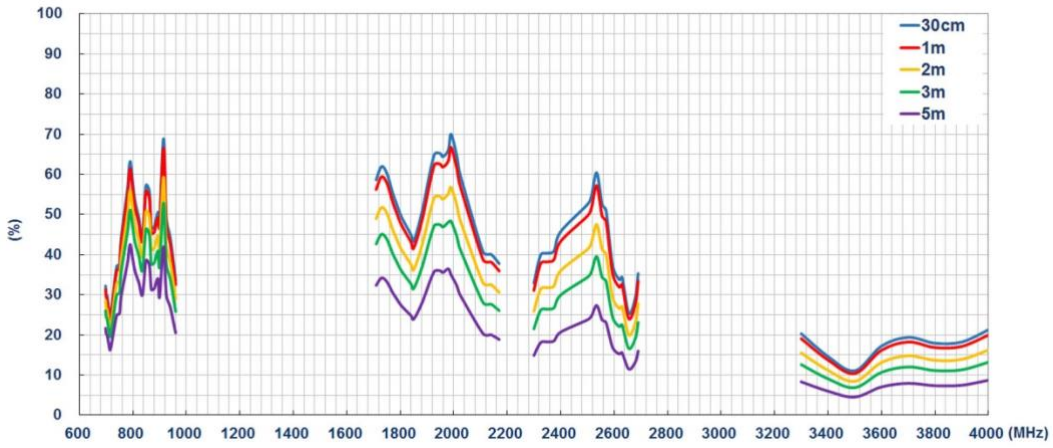
GNSS



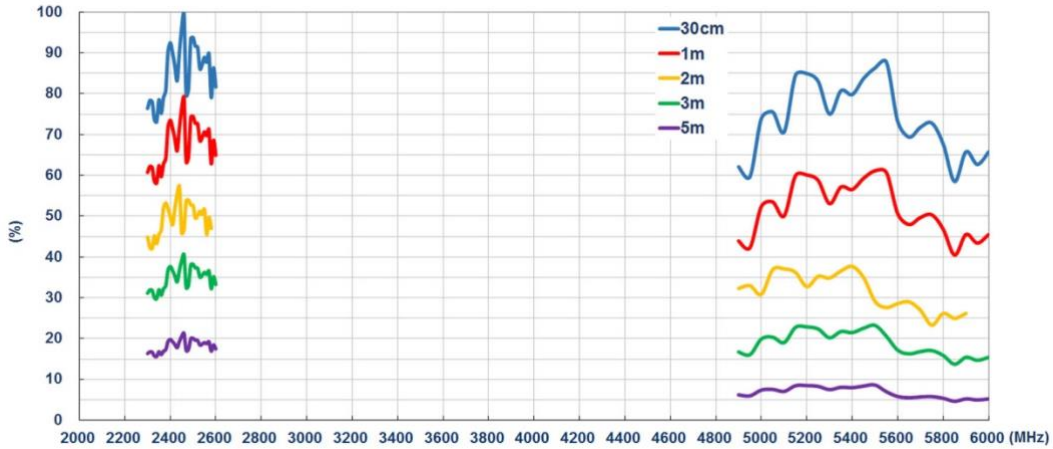
LTE (Free space)



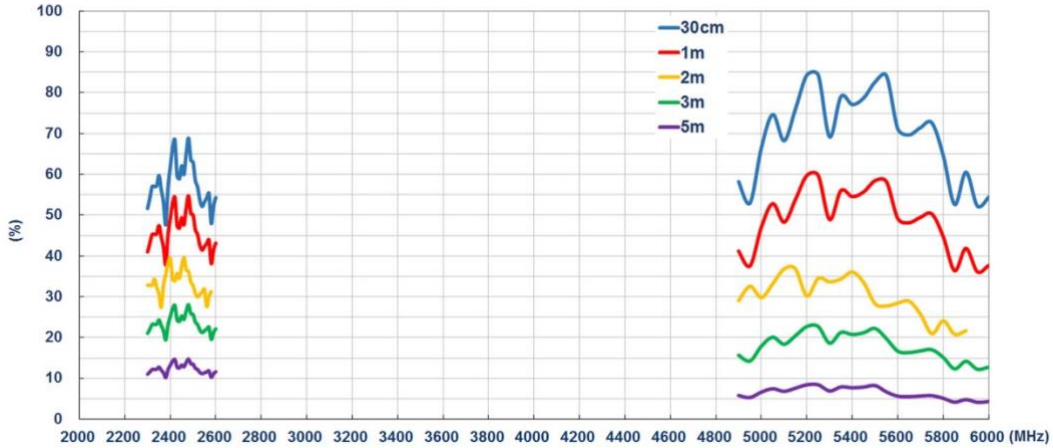
LTE (On the 30*30 cm ground plane)



WIFI (Free space)

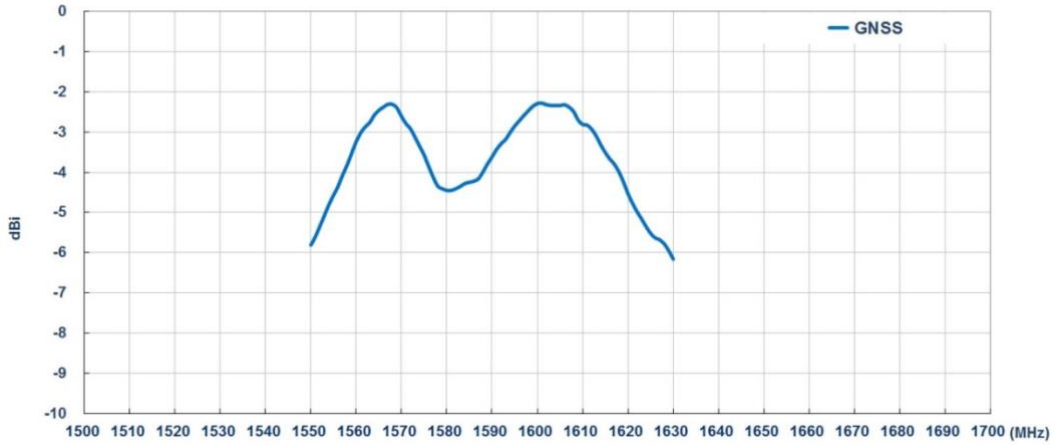


WIFI (On the 30*30 cm ground plane)

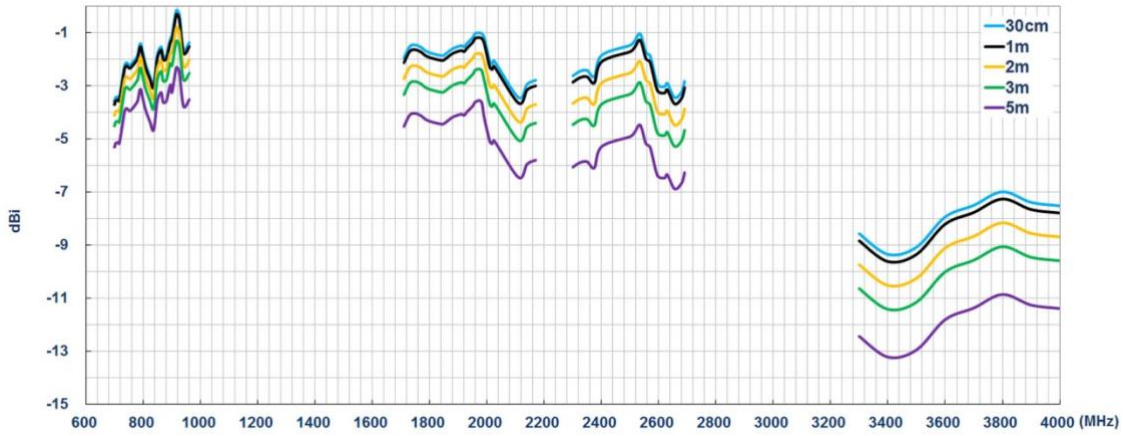


Average Gain:

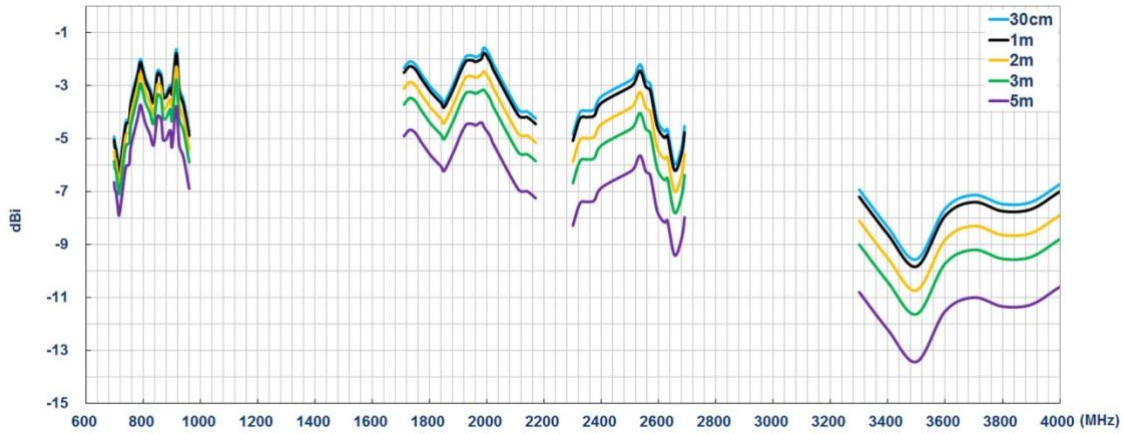
GNSS



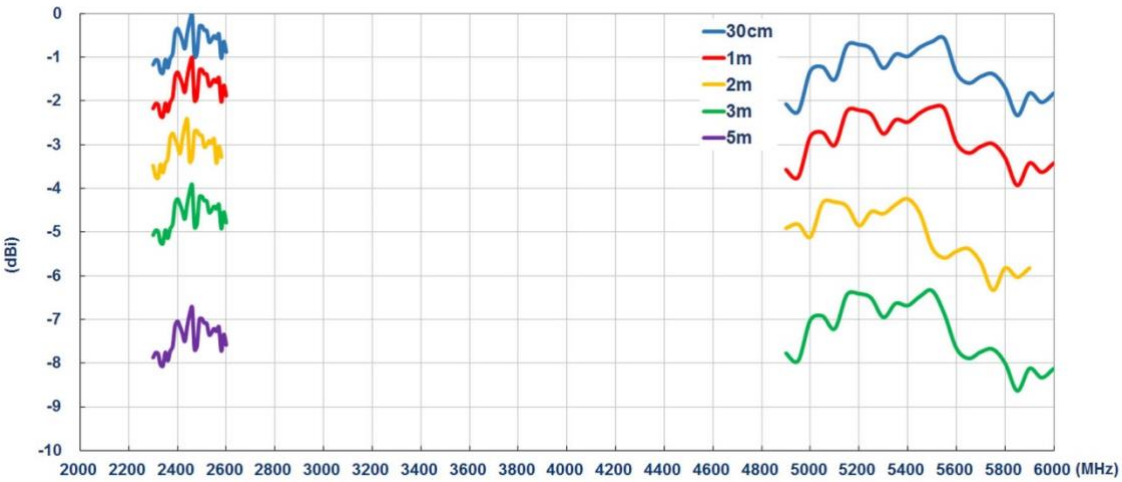
LTE (Free space)



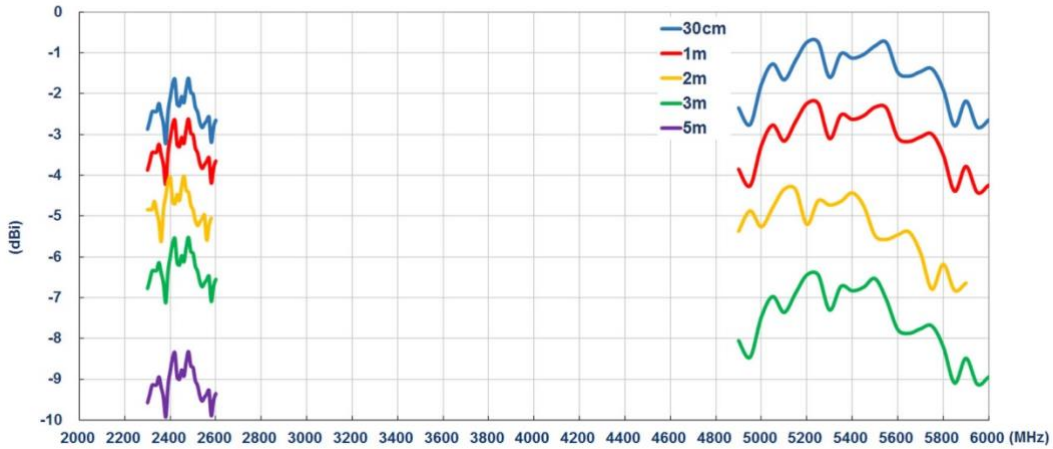
LTE (On the 30*30 cm ground plane)



WIFI (Free space)

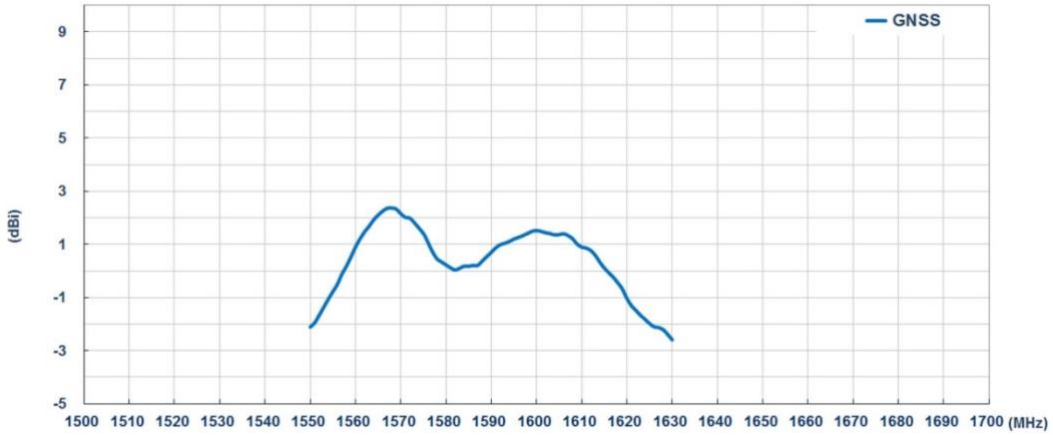


WIFI (On the 30*30 cm ground plane)



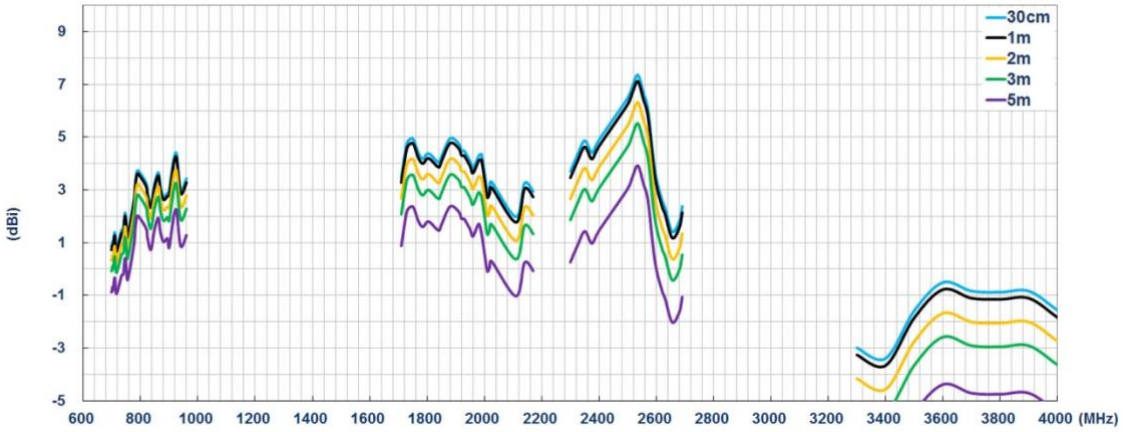
Peak Gain :

GNSS

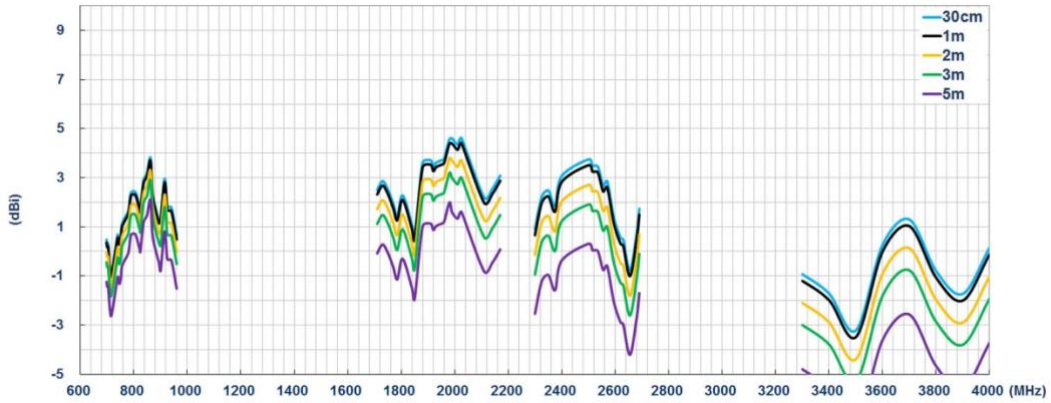


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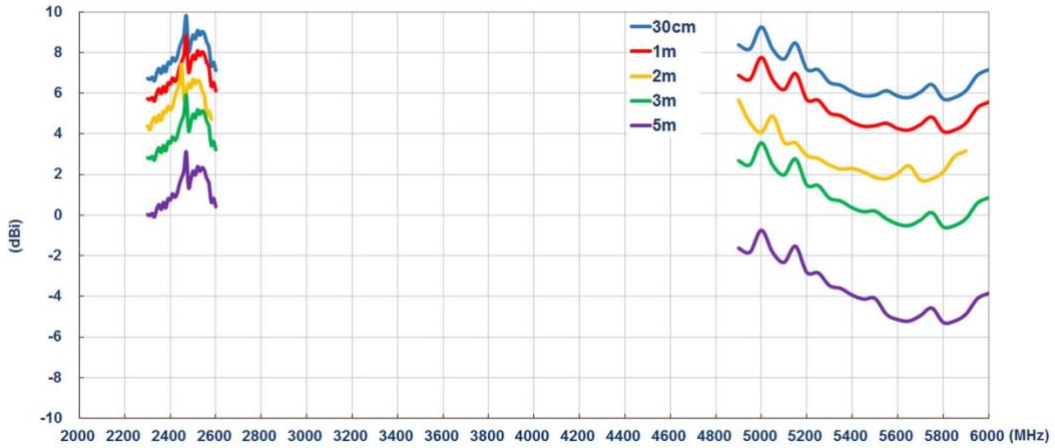
LTE (Free space)



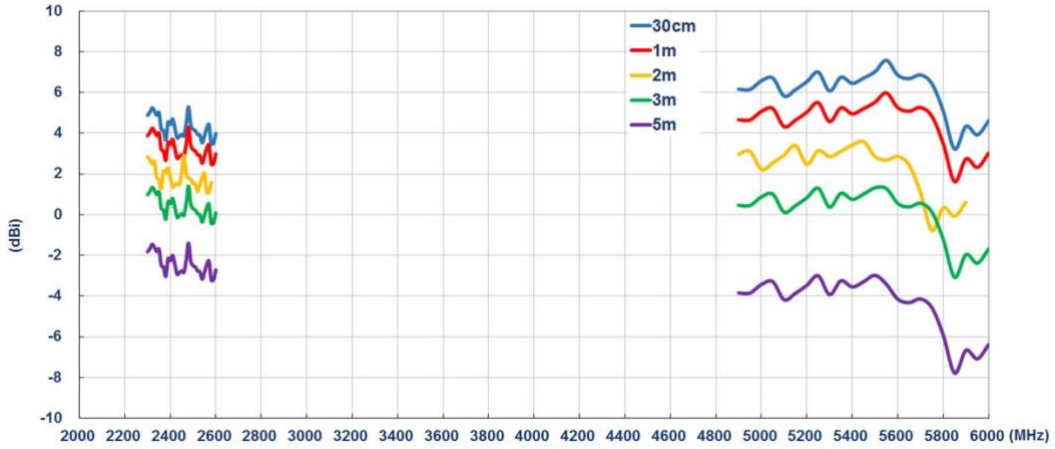
LTE (On the 30*30 cm ground plane)



WIFI (Free space)



WIFI（On the 30*30 cm ground plane）



Ordering codes

ADA-X4YZ-C/S/T

X 0 = Empty 1 = GPS 2 = GPS/GLONASS 3 = Full GNSS

Y 6 = WiFi (2.4GHz) 8 = 4G/Lte/5G (690-2700MHz)

Z 0 = Empty 1 = WiFi (2.4GHz) 2 = 4G/Lte/5G (690-2700MHz)

C = screw mount (center bolt)
S = magnetic mount
T = tape mount

EXAMPLE ADA-3482-C means:

1 x Full GNSS + 2 x 4G/Lte/5G + screw mount

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E-mail: m2m@adactus.se http://www.adactus.se/