gtt wireless

Powered by Raspberry Pi

Datasheet GTTW V4

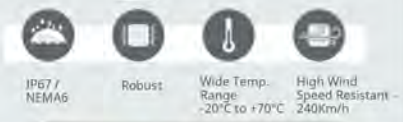
P/N : GTT-PI-PC-ENC

gtt wireless pSmart-box®

Raspberry Pi Omnidirectional Antenna Enclosure Development Kit

2x2 MIMO - 4G/LTE, 5G, 5G Redcap, Wi-Fi, Bluetooth

IP67 'Installation Ready'



Enclosure Lid*

Enc + Slim Profile Lid **Depth** 52 mm

- **Deep Lid** - Depth 70 mm also available - Use Online Configuration Tool

(Raspberry Pi not included) available from **www.raspberrypi.com/products**

Antenna

Embedded Cellular Omni Antenna 1 & 2

2 x multi-band	2x2 MIMO
Antenna 1	4G/LTE + 5G + 5G Redcap
Antenna 2	4G/LTE + 5G + 5G Redcap
Frequency	617-960 / 1710-2170 / 2300-2690 / 3300 - 4200 MHz
Efficiency	43% - 78%
Peak Gain	
Antenna 1	6.1 dBi
Antenna 2	6.3 dBi
Output Impedance	50 ohm
Output VSWR	Typ. 2.5-3

Embedded Wi-Fi & Bluetooth Antenna 3

1 x dual-band	
Frequency	2400-2500 / 5150-5850 MHz
Efficiency	66% - 77%
Peak Gain	6.2 dBi
Output Impedance	50 ohm
Output VSWR	Typ.2

Antenna Interface 2 x SMA 1 x RPSMA

Optional GPS Available + LoRa coming soon

Register for updates

Enclosure & Lid Options Dimensions

Enclosure External Dimensions

Base Unit	L 220 x W250 x D50 mm
Enc + Shallow Lid	L 225 x W255 x D58 mm
Shallow Lid Only	L 225 x W255 x D12 mm

Enclosure Internal Dimensions

Base Unit	L 190 mm x W220 x D37 mm

Total Weight	0.86 kg
Enc & Shallow Lid	0.6 kg
Internal & External Mounting Brackets :	0.26 kg

Box Shipping Dimensions

1 piece box	L 29 x W 29 x 10 cm
Weight	1.3 kg
5 piece carton	L 51 x W 30 x 30 cm
Weight	7.7 kg
1 pallet (150 pieces)	L 110 x W 110 x 165 cm
Weight	240 kg

Materials	Enclosure - High Impact Polycarbonate - UV Resistant Ext Mounting Bracket - Stainless Steel 1.8mm SU304
IP Rating	IP67 / NEMA6
Temp Range	-20°C to +70°
Humidity Range	C95% @55°c
Pressure & Humidity Equaliser	✓Gore® Vent
Interface	M25 Port with USBc module
Wind Speed Tolerance	240 Km/h
External Mounting Bracket	Custom fast one-handed slide in mounting to fixed / pole mounting

RoHS Compliant

GORE

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Powered by Raspberry Pi

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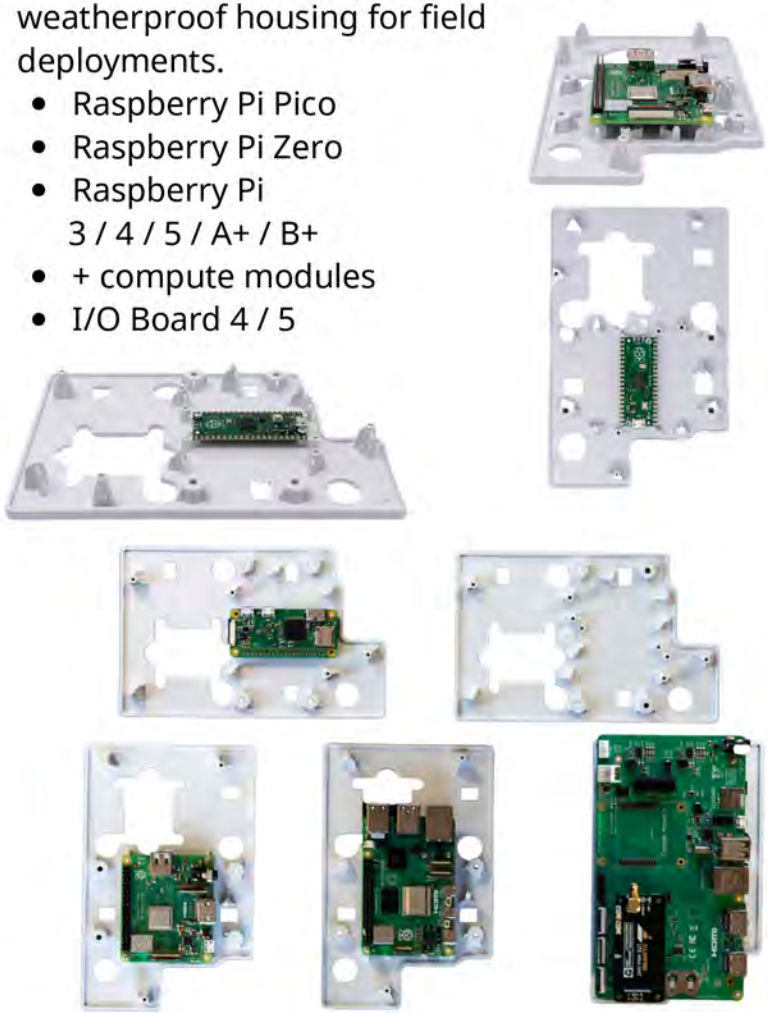
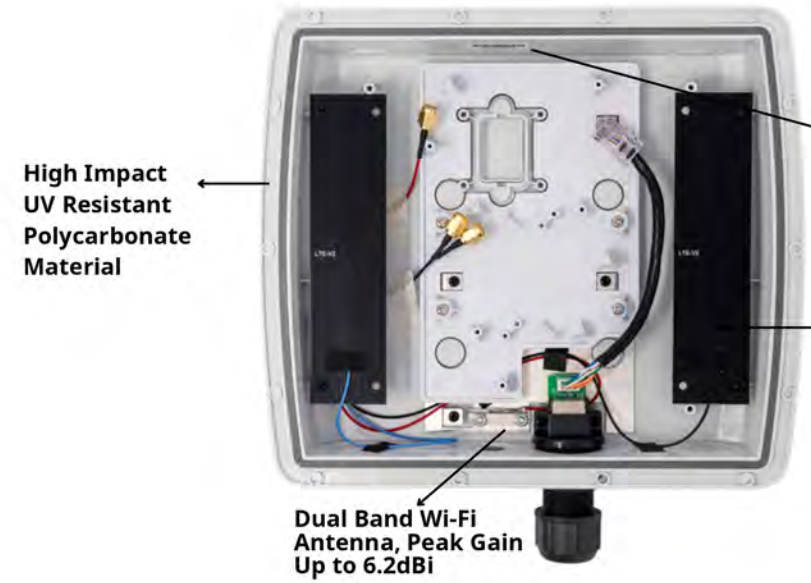
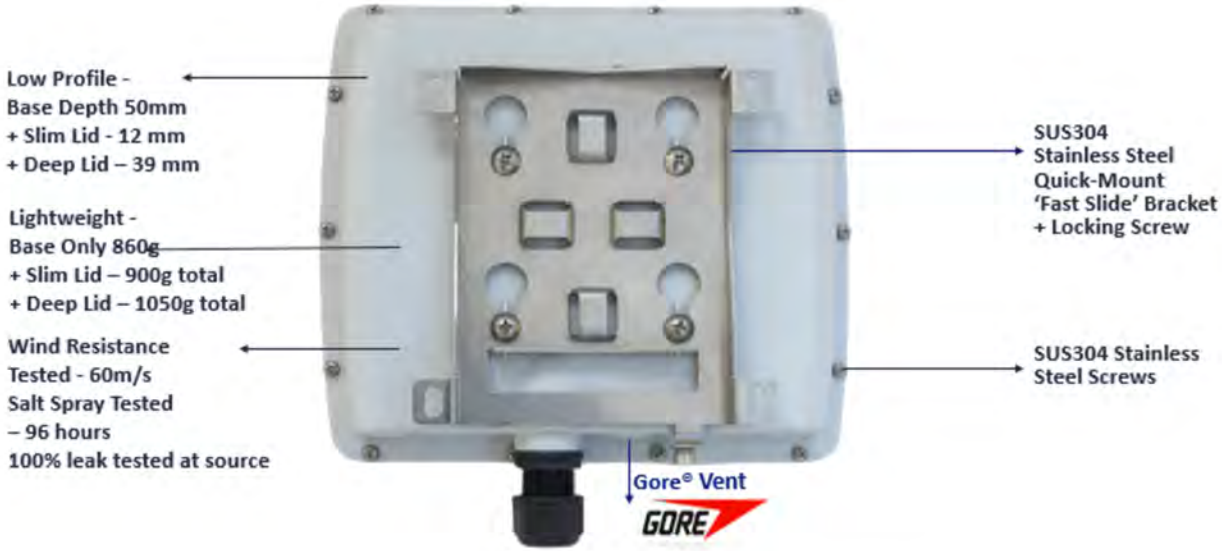
One enclosure, multiple Raspberry Pi board. Universal mounting board safely secures Pico through Compute Module 5 in IP67 weatherproof housing for field deployments.

- Raspberry Pi Pico
- Raspberry Pi Zero
- Raspberry Pi
  3 / 4 / 5 / A+ / B+
- + compute modules
- I/O Board 4 / 5







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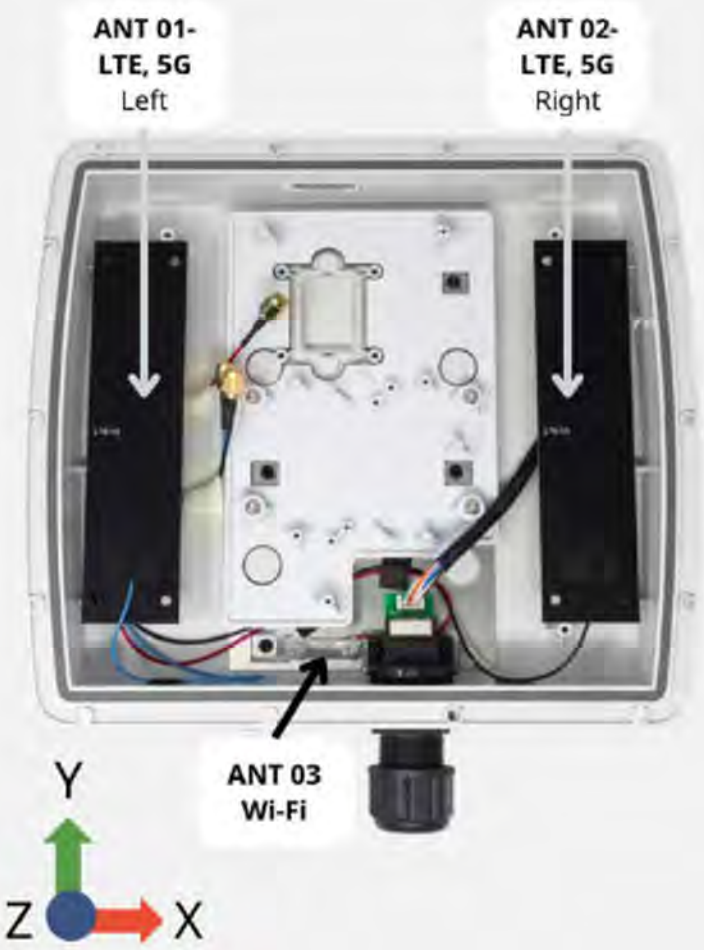
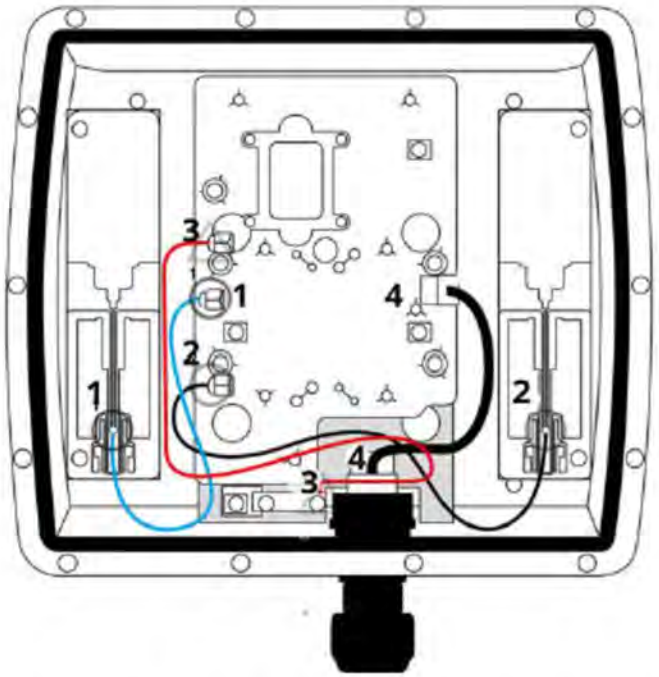
Omni Antenna Definition Diagram



LTE, 5G– ANT 01 / ANT 02
617-960 MHz
1710-2170 MHz
2300-2690 MHz
3300-4200 MHz

Wi-Fi – ANT 03
2400-2500 MHz
5150-5850 MHz

Omni Antenna Connection Diagram



1. 4G/LTE, 5G, 5G Redcap antenna - Left hand **(blue)** cable
2. 4G/LTE, 5G, 5G Redcap antenna - Right hand **(black)** cable
3. Wi-Fi antenna **(red)** cable
4. USB-c module to USB-c cable connector

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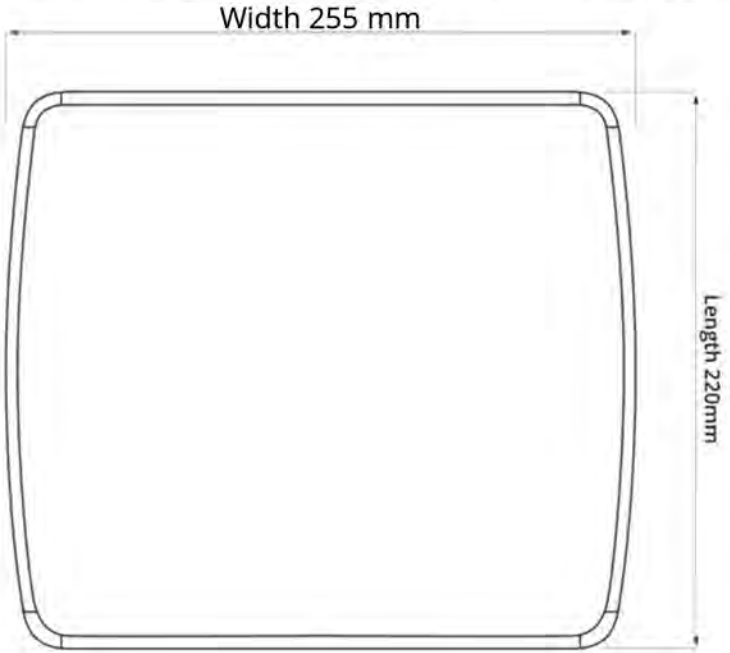
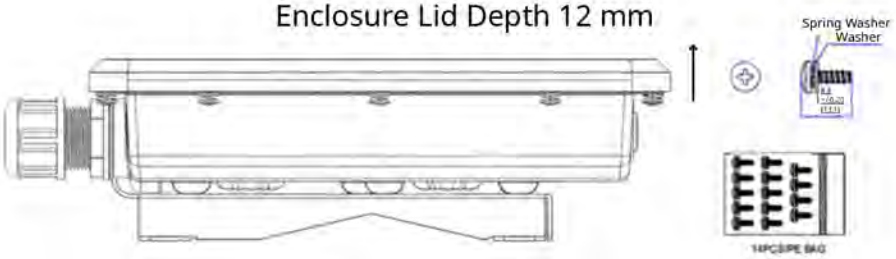
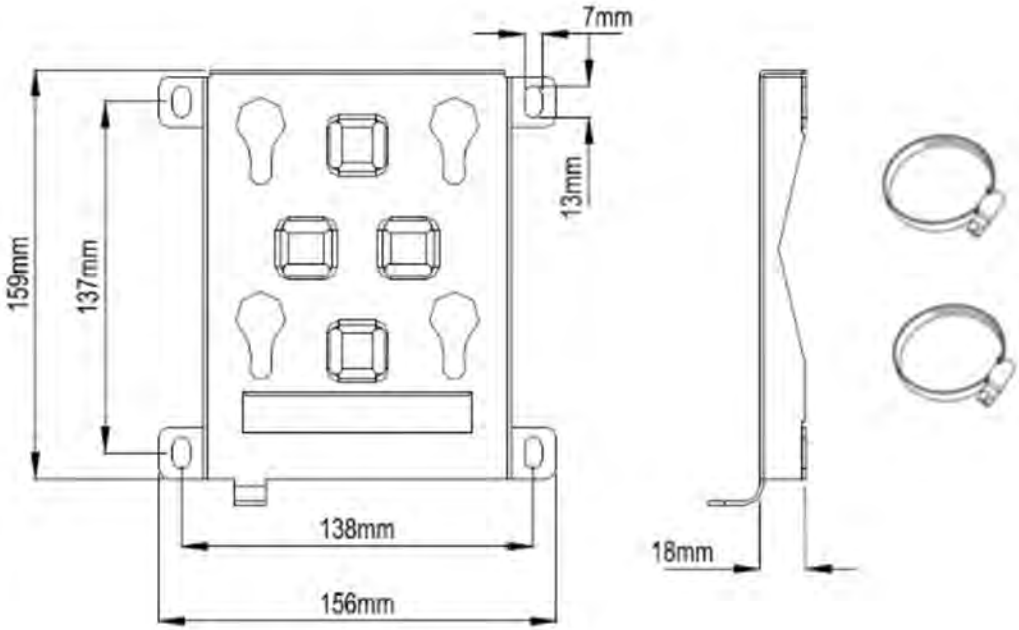
Enclosure UV Resistant Polycarbonate Lid



Enclosure Lid Depth 12 mm



Enclosure Stainless Steel Quick Mount Bracket



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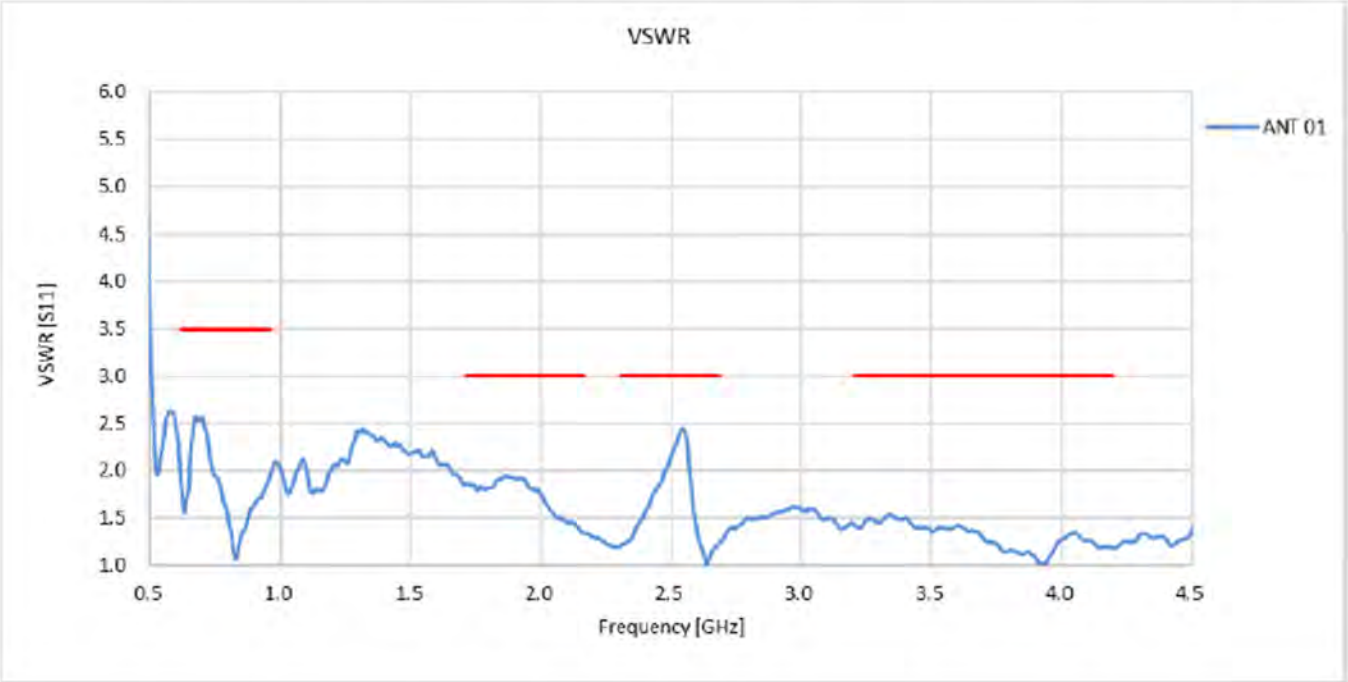
S-Parameters : VSWR – ANT 01 (4G/LTE, 5G)

Frequency(MHz)	ANT 01	Frequency(MHz)	ANT 01	Frequency(MHz)	ANT 01	Frequency(MHz)	ANT 01
617	2.1	1710	1.8	2300	1.2	3300	1.5
960	1.5	2170	1.7	2690	2.2	4200	1.4
698-960 MAX.	2.5	1710-2170 MAX.	2.0	2300-2690 MAX.	2.5	3300-4200 MAX.	1.5



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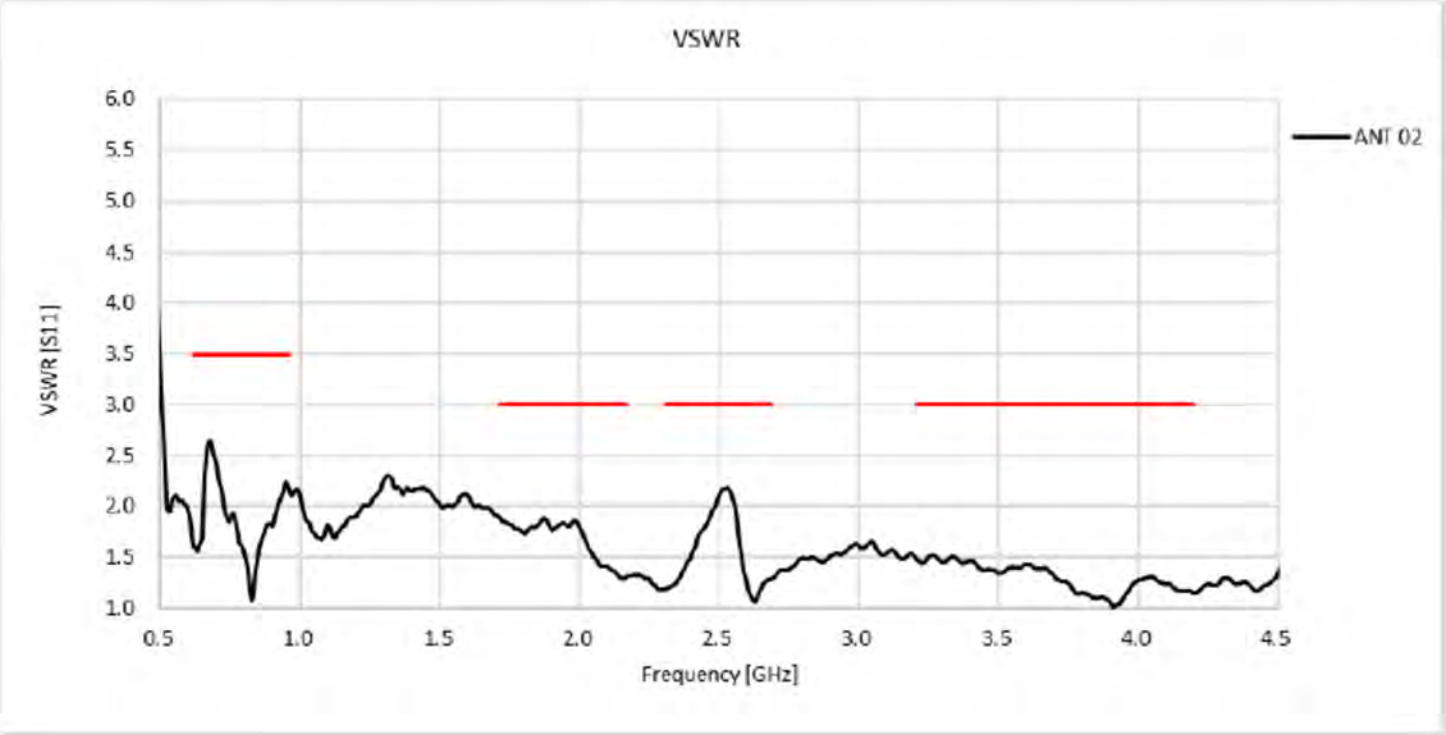
S-Parameters : VSWR – ANT 02 (4G/LTE, 5G)

Frequency(MHz)	ANT 01	Frequency(MHz)	ANT 01	Frequency(MHz)	ANT 01	Frequency(MHz)	ANT 01
617	1.7	1710	1.9	2300	1.2	3300	1.4
960	1.6	2170	1.8	2690	2.1	4200	1.4
698-960 MAX.	2.7	1710-2170 MAX.	1.9	2300-2690 MAX.	2.2	3300-4200 MAX.	1.5



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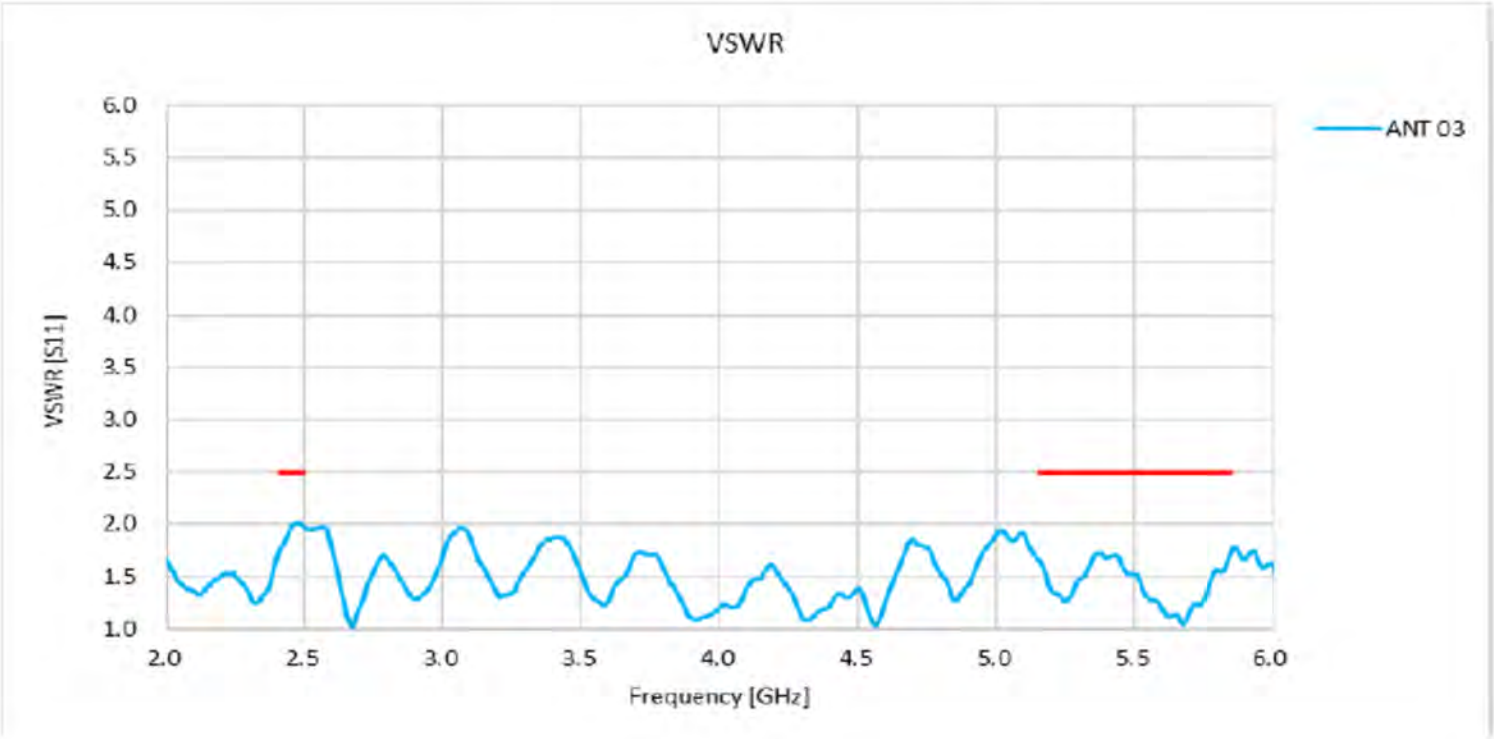
S-Parameters : VSWR – ANT 03 (WiFi)

Frequency(MHz)	ANT 03	Frequency(MHz)	ANT 03
2400	1.7	5150	1.7
2500	2.0	5850	1.8
2400-2500 MAX.	2.1	5150-5850 MAX.	1.8



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Peak Gain / Efficiency : ANT 01 (4G/LTE, 5G)

ANT 01			
Frequency (MHz)	3D		
	Efficiency	Avg. Gain	Peak Gain
617	41%	-3.9	1.3
698	41%	-3.9	1.4
704	42%	-3.8	1.6
746	42%	-3.8	1.5
760	48%	-3.2	1.8
787	63%	-2.0	2.6
791	68%	-1.6	2.7
824	85%	-0.7	4.1
836	81%	-0.9	4.5
849	80%	-1.0	4.9
869	79%	-1.0	5.0
880	77%	-1.1	4.5
894	71%	-1.5	3.7
900	69%	-1.6	3.7
915	67%	-1.7	3.2
925	66%	-1.8	3.3
940	65%	-1.8	3.2
960	64%	-1.9	3.2

ANT 01			
Frequency (MHz)	3D		
	Efficiency	Avg. Gain	Peak Gain
1710	72%	-1.4	4.3
1750	74%	-1.3	4.6
1785	74%	-1.3	4.5
1805	73%	-1.4	4.3
1840	72%	-1.4	3.9
1850	71%	-1.5	3.8
1880	70%	-1.6	4.0
1910	66%	-1.8	4.4
1920	65%	-1.9	4.6
1930	65%	-1.8	4.8
1950	65%	-1.8	5.1
1960	65%	-1.9	5.1
1980	64%	-1.9	5.0
1990	64%	-1.9	5.0
2110	74%	-1.3	5.4
2140	75%	-1.2	5.5
2170	78%	-1.1	5.4

ANT 01			
Frequency (MHz)	3D		
	Efficiency	Avg. Gain	Peak Gain
2300	79%	-1.0	6.0
2400	70%	-1.6	5.5
2500	53%	-2.8	2.8
2570	56%	-2.6	3.4
2595	67%	-1.7	4.4
2600	70%	-1.6	4.5
2620	75%	-1.3	4.4
2690	75%	-1.2	4.2

ANT 01			
Frequency (MHz)	3D		
	Efficiency	Avg. Gain	Peak Gain
3300	68%	-1.7	5.0
3400	70%	-1.6	5.1
3500	72%	-1.4	4.8
3550	71%	-1.5	4.8
3600	72%	-1.4	5.1
3700	74%	-1.3	5.3
3800	76%	-1.2	5.9
3900	74%	-1.3	6.3
3980	71%	-1.5	5.9
4000	69%	-1.6	5.2
4100	70%	-1.6	4.6
4200	72%	-1.4	4.7

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Peak Gain / Efficiency : ANT 02 (4G/LTE, 5G)

ANT 02			
Frequency (MHz)	3D		
	Efficiency	Avg. Gain	Peak Gain
617	39%	-4.1	1.3
698	40%	-4.0	1.2
704	43%	-3.7	1.3
746	48%	-3.2	1.2
760	56%	-2.5	1.5
787	69%	-1.6	2.9
791	73%	-1.3	3.0
824	77%	-1.1	3.6
836	72%	-1.4	3.8
849	70%	-1.6	3.9
869	64%	-1.9	3.4
880	63%	-2.0	3.0
894	60%	-2.2	2.6
900	60%	-2.2	2.7
915	61%	-2.1	3.0
925	62%	-2.1	3.4
940	63%	-2.0	3.8
960	63%	-2.0	4.1

ANT 02			
Frequency (MHz)	3D		
	Efficiency	Avg. Gain	Peak Gain
1710	75%	-1.2	4.1
1750	76%	-1.2	4.4
1785	76%	-1.2	5.2
1805	76%	-1.2	5.2
1840	74%	-1.3	5.1
1850	73%	-1.4	5.0
1880	71%	-1.5	4.6
1910	66%	-1.8	4.5
1920	66%	-1.8	4.6
1930	66%	-1.8	4.8
1950	65%	-1.9	5.0
1960	64%	-1.9	5.0
1980	64%	-1.9	5.1
1990	64%	-1.9	5.1
2110	75%	-1.3	5.9
2140	75%	-1.3	5.8
2170	77%	-1.2	5.6

ANT 02			
Frequency (MHz)	3D		
	Efficiency	Avg. Gain	Peak Gain
2300	77%	-1.2	5.7
2400	68%	-1.7	4.9
2500	53%	-2.7	2.6
2570	49%	-3.1	2.1
2595	62%	-2.0	3.8
2600	65%	-1.9	4.1
2620	73%	-1.4	4.7
2690	74%	-1.3	4.6

ANT 02			
Frequency (MHz)	3D		
	Efficiency	Avg. Gain	Peak Gain
3300	67%	-1.7	4.4
3400	69%	-1.6	4.4
3500	72%	-1.4	4.0
3550	71%	-1.5	4.0
3600	72%	-1.4	4.5
3700	74%	-1.3	4.9
3800	74%	-1.3	5.2
3900	73%	-1.4	5.8
3980	74%	-1.3	6.1
4000	72%	-1.4	6.0
4100	70%	-1.6	5.1
4200	71%	-1.5	4.6

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Peak Gain / Efficiency : ANT 03 (WiFi)

ANT 03			
Frequency (MHz)	3D		
	Efficiency	Avg. Gain	Peak Gain
2400	66%	-1.8	3.3
2450	67%	-1.7	3.9
2500	68%	-1.7	4.4

ANT 03			
Frequency (MHz)	3D		
	Efficiency	Avg. Gain	Peak Gain
5150	69%	-1.6	5.0
5200	70%	-1.5	5.2
5250	74%	-1.3	5.6
5300	76%	-1.2	5.5
5350	77%	-1.1	5.3
5470	75%	-1.2	5.2
5600	77%	-1.1	5.9
5725	77%	-1.2	5.5
5800	77%	-1.2	6.0
5850	76%	-1.2	6.2

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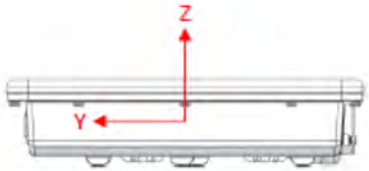
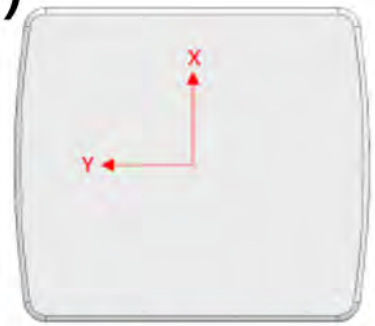
Far-fields : ANT 01 (4G/LTE, 5G)

Frequency(MHz)
617-960

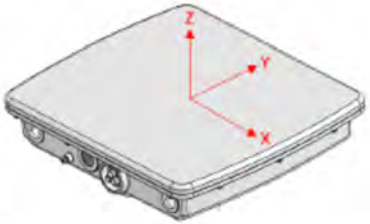
ZX-Plane

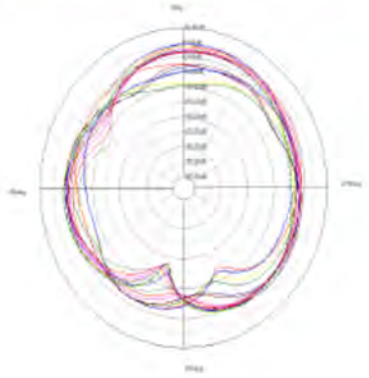


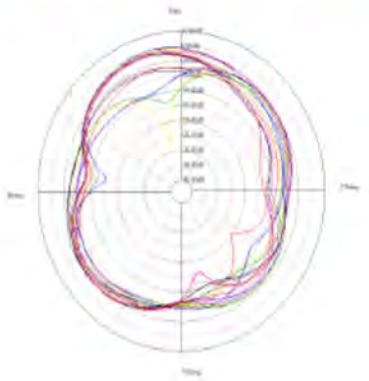
YZ-Plane



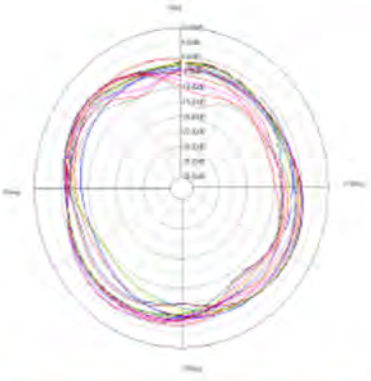
XY-Plane



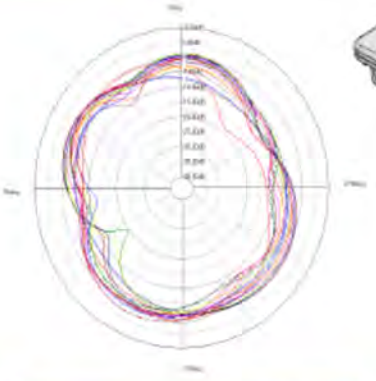




XY-Plane(60°)



XY-Plane(90°)



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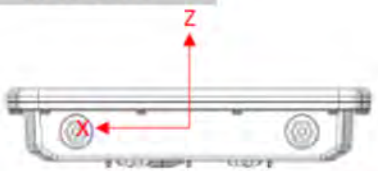
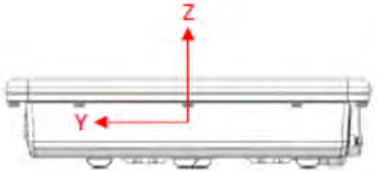
Far-fields : ANT 02 (4G/LTE, 5G)

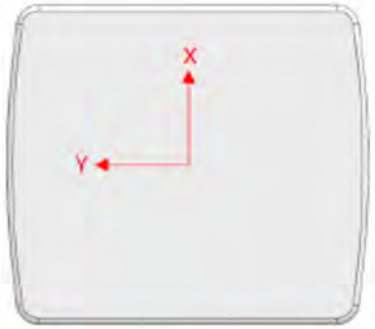
Frequency(MHz)
1710-2170

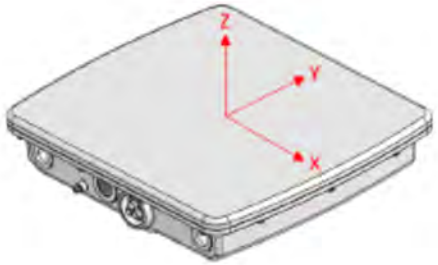


ZX-Plane

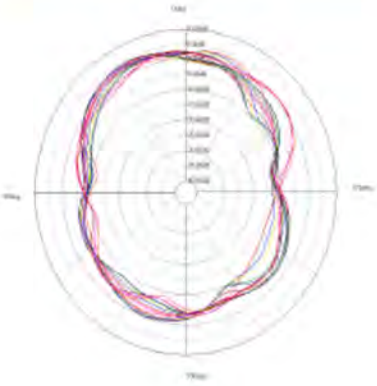


YZ-Plane

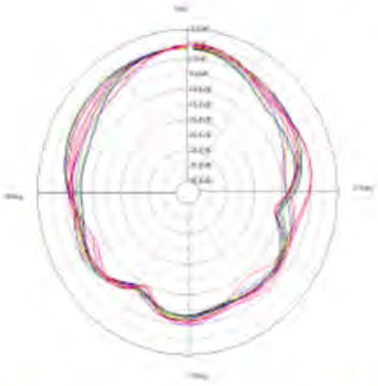




XY-Plane



XY-Plane(60°)



XY-Plane(90°)

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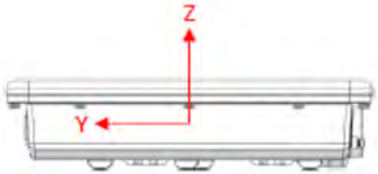
P/N : GTT-PI-PC-ENC

Far-fields : ANT 03 (WiFi)

Frequency(MHz)
2400-2500

ZX-Plane



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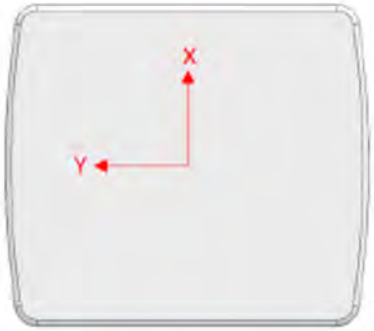
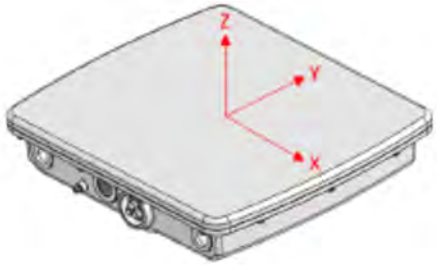
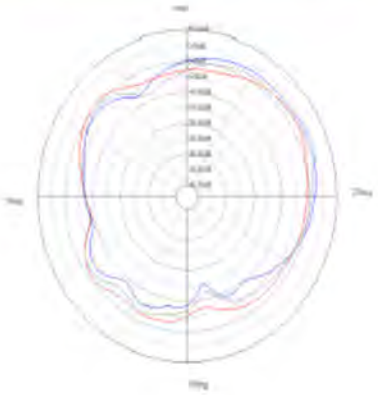
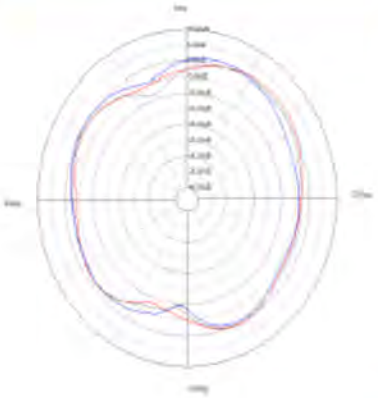


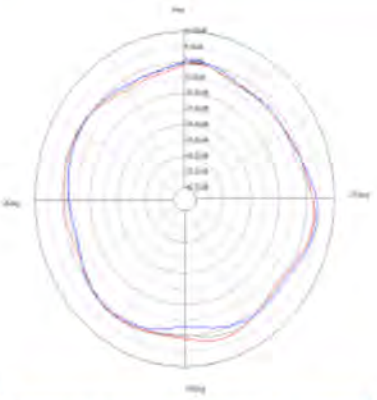
XY-Plane







XY-Plane(60°)



XY-Plane(90°)

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