

MDL GPSLXLTEWIFI/S13W 3.0~5.0 V SMA PLUG RG174/ 300 MM 9**GPSLXLTEWIFI09S13W-S6-00-A SPECIFICATION****1. Application**

This product shall be applied as an antenna unit in positioning and communication application.

2. Appearance

Antenna Unit (with radome, connector, and cable - refer to an attached drawing)

Dimensions		200*100*31.25 mm
Radome		#S13W
Connector	GNSS L1/L2/L5/L6	SMA PLUG
	LTE 1	SMA PLUG
	LTE 2	SMA PLUG
	WIFI 1	SMA PLUG
	WIFI 2	SMA PLUG
Cable	GNSS L1/L2/L5/L6	RG-174 / 300 mm
	LTE 1	RG-174 / 300 mm
	LTE 2	RG-174 / 300 mm
	WIFI 1	RG-174 / 300 mm
	WIFI 2	RG-174 / 300 mm
Magnet		NO
Adhesive		NO
Label		YES
Weight		434 g typ.

3. Operating Condition

Temperature	-40~+90 °C
Humidity	20~95 %RH

4. Storage Condition

Temperature	-40~+90 °C
Humidity	20~95 %RH

UNLESS OTHER SPECIFIED TOLERANCES ON :
 X=N/A X.X=N/A X.XX=N/A
 ANGLES=N/A HOLEDIA=N/A



INPAQ TECHNOLOGY CO., LTD.

SCALE : N/A UNIT : mm
 DRAWN BY : 陳紹平 CHECKED BY : 鄭榮謀
 DESIGNED BY : 李昇鴻 APPROVED BY : 蔡凱翔

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DOCUMENT
NO.

ENS000149370

SPEC REV.
P2

5. Electrical Specification

* All value are defined at 25 ± 15 °C, 65 ± 20 %RH, power handling 1 u watt, air pressure 960 ± 100 hPa unless otherwise noted.

* Patch characteristics are measured with the 09S13W housing in an anechoic chamber.

5-1. GNSS L1/L2/L5/L6 Patch

Characteristics	Specification	
Frequency Range	L1: 1559~1610 MHz L2/L5/L6: 1160~1300 MHz	
Peak Gain	1559 MHz	2.07 dBic typ.
	1575.42 MHz	3.29 dBic typ.
	1602 MHz	2.66 dBic typ.
	1610 MHz	1.42 dBic typ.
	1160 MHz	1.49 dBic typ.
	1227.6 MHz	2.65 dBic typ.
	1278.75 MHz	-0.95 dBic typ.
	1285 MHz	-1.49 dBic typ.
1300 MHz	-2.71 dBic typ.	
Polarization	RHCP	
VSWR	2.5 typ.	
Impedance	50 ohm	

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SPEC REV.

P2

5-2. GNSS L1/L2/L5/L6 Filter / LNA

Characteristics	Specification		
Frequency Range	L1: 1559~1610 MHz L2/L5/L6: 1160~1300 MHz		
Gain	1559 MHz	28.0±3.0 dB	
	1575.42 MHz	28.0±3.0 dB	
	1602 MHz	27.0±3.0 dB	
	1610 MHz	27.0±3.0 dB	
	1160 MHz	28.0±3.0 dB	
	1227.6 MHz	28.0±3.0 dB	
	1278.75 MHz	28.0±3.0 dB	
	1285 MHz	28.0±3.0 dB	
1300 MHz	27.0±3.0 dB		
Noise Figure	3.0 dB typ. (Pre-Saw)		
Filter Out Band Attenuation	F ₁ = 1559 MHz	F ₁ -50 MHz	> 60 dB
		F ₁ -100 MHz	> 70 dB
	F ₂ = 1610 MHz	F ₂ +50 MHz	> 65 dB
		F ₂ +100 MHz	> 65 dB
	F ₃ = 1160 MHz	F ₃ -50 MHz	> 15 dB
		F ₃ -100 MHz	> 45 dB
	F ₄ = 1300 MHz	F ₄ +50 MHz	> 5 dB
		F ₄ +100 MHz	> 15 dB
Output VSWR	2.0 typ.		
Operation Voltage	3.0~5.0 V		
Current	30.0±3.0 mA(3.0±0.1V)		
	31.0±3.0 mA(5.0±0.1V)		

UNLESS OTHER SPECIFIED TOLERANCES ON :
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NO.
ENS000149370
SPEC REV.
P2

5-3. GNSS L1/L2/L5/L6 Overall Specification (Through Antenna, LNA, Without Cable Loss)

Characteristics	Specification	
Frequency Range	L1: 1559~1610 MHz L2/L5/L6: 1160~1300 MHz	
Gain	1559 MHz	30.07±3.0 dB
	1575.42 MHz	31.29±3.0 dB
	1602 MHz	29.66±3.0 dB
	1610 MHz	28.42±3.0 dB
	1160 MHz	29.49±3.0 dB
	1227.6 MHz	30.65±3.0 dB
	1278.75 MHz	27.05±3.0 dB
	1285 MHz	26.51±3.0 dB
1300 MHz	24.29±3.0 dB	
Output VSWR	2.0 typ.	
Operation Voltage	3.0~5.0 V	
Current	30.0±3.0 mA(3.0±0.1V)	
	31.0±3.0 mA(5.0±0.1V)	

5-4. LTE 1 Antenna

Characteristics	Specification	
Frequency Range	617~960 MHz 1710~2690 MHz 3300~5925 MHz	
VSWR	5.0 typ.	
Peak Gain	617~960 MHz	2.43 dBi
	1710~2690 MHz	2.74 dBi
	3300~5925 MHz	6.42 dBi
Average Gain	617~960 MHz	-4.45 dBi
	1710~2690 MHz	-3.33 dBi
	3300~5925 MHz	-2.19 dBi
Efficiency	617~960 MHz	35.90 %
	1710~2690 MHz	46.45 %
	3300~5925 MHz	60.34 %
Testing Condition	The antenna performance is including 300 mm cable loss.	

UNLESS OTHER SPECIFIED TOLERANCES ON :
 X=N/A X.X=N/A X.XX=N/A
 ANGLES=N/A HOLEDIA=N/A



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P2

5-5. LTE 2 Antenna

Characteristics	Specification	
Frequency Range	617~960 MHz 1710~2690 MHz 3300~5925 MHz	
VSWR	6.0 typ.	
Peak Gain	617~960 MHz	3.09 dBi
	1710~2690 MHz	4.00 dBi
	3300~5925 MHz	7.86 dBi
Average Gain	617~960 MHz	-3.17 dBi
	1710~2690 MHz	-2.47 dBi
	3300~5925 MHz	-2.09 dBi
Efficiency	617~960 MHz	48.22 %
	1710~2690 MHz	56.61 %
	3300~5925 MHz	61.75 %
Testing Condition	The antenna performance is including 300 mm cable loss.	

5-6. WIFI 1 Antenna

Characteristics	Specification	
Frequency Range	2400~2500 MHz 5150~5850 MHz	
VSWR	3.0 typ.	
Peak Gain	2400~2500 MHz	4.63 dBi
	5150~5850 MHz	5.79 dBi
Average Gain	2400~2500 MHz	-4.04 dBi
	5150~5850 MHz	-2.38 dBi
Efficiency	2400~2500 MHz	39.48 %
	5150~5850 MHz	57.86 %
Testing Condition	The antenna performance is including 300 mm cable loss.	

UNLESS OTHER SPECIFIED TOLERANCES ON :
 X=N/A X.X=N/A X.XX=N/A
 ANGLES=N/A HOLEDIA=N/A


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NO.
ENS000149370
SPEC REV.
P2

5-7. WIFI 2 Antenna

Characteristics	Specification	
Frequency Range	2400~2500 MHz 5150~5850 MHz	
VSWR	3.0 typ.	
Peak Gain	2400~2500 MHz	4.39 dBi
	5150~5850 MHz	7.90 dBi
Average Gain	2400~2500 MHz	-3.37 dBi
	5150~5850 MHz	-1.68 dBi
Efficiency	2400~2500 MHz	46.02 %
	5150~5850 MHz	67.86 %
Testing Condition	The antenna performance is including 300 mm cable loss.	

UNLESS OTHER SPECIFIED TOLERANCES ON :
 X=N/A X.X=N/A X.XX=N/A
 ANGLES=N/A HOLEDIA=N/A

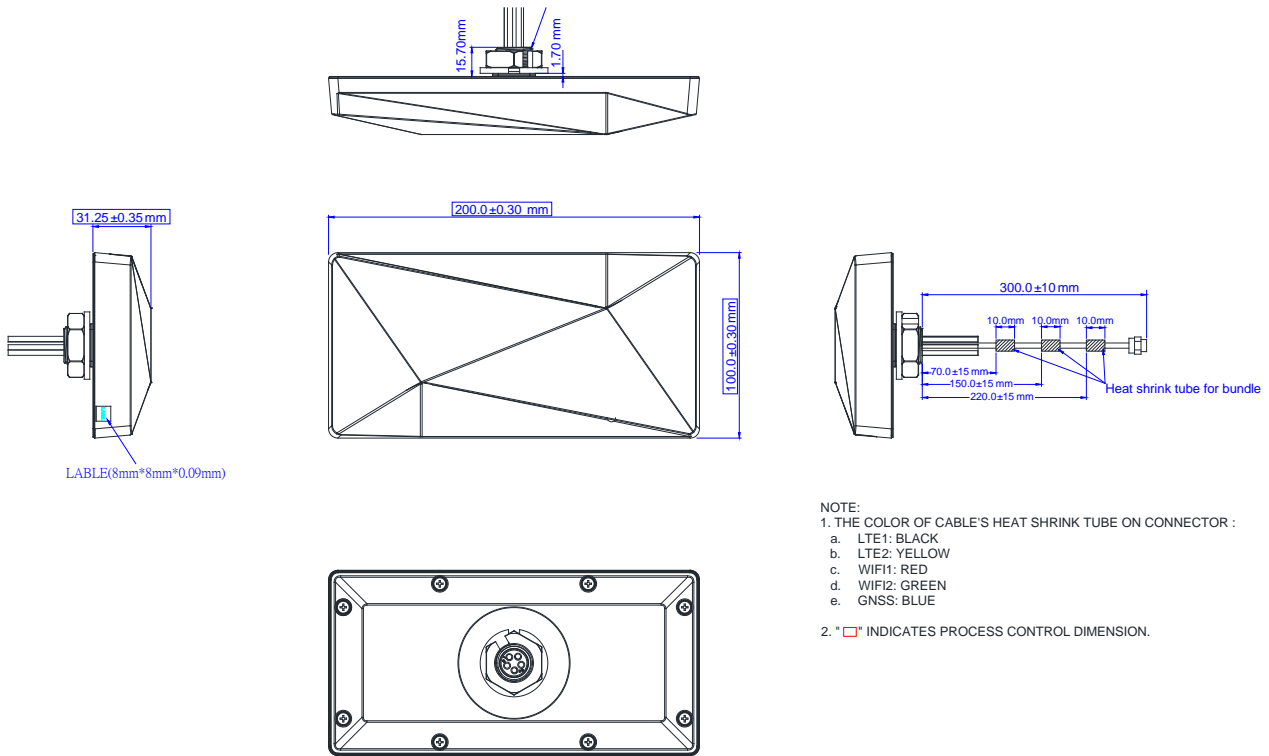

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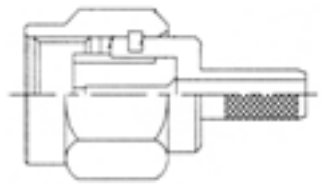
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6. Antenna Dimensions



NOTE:
 1. THE COLOR OF CABLE'S HEAT SHRINK TUBE ON CONNECTOR :
 a. LTE1: BLACK
 b. LTE2: YELLOW
 c. WIFI1: RED
 d. WIFI2: GREEN
 e. GNSS: BLUE
 2. "□" INDICATES PROCESS CONTROL DIMENSION.

6-1. Connector Appearance (SMA PLUG)



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 ANGLES=N/A HOLEDIA=N/A



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