

SPECIFICATIONS

PRODUCT NAME : Mueller向 Water Meter Universal Node

MODEL NAME : ETBLWLIP01

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Designed	Checked	Approved	LG Innotek Co., Ltd.	
S.J.Han				
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1. ANT Features**-PCB Antenna****- BLE / LoRa****- Frequency range****: From 902 to 2480 MHz****- Operating temperature range****: 0 to +60°C****2. Antenna Characteristics**

Built-in performance				
Parameter	Min	Typ	Max	Unit
Frequency Range	902	-	2480	MHz
Directivity	-	Omni	-	-
915MHz	Average Gain	-	-2.05	dBi
	Peak Gain	-	0.9	
2450MHz	Average Gain	-	-2.50	dBi
	Peak Gain	-	0.85	
V.S.W.R	-	-	3.0:1	Under
Impedance		50		Ohm
Radiation Material		PCB Printed		
		PIFA type		

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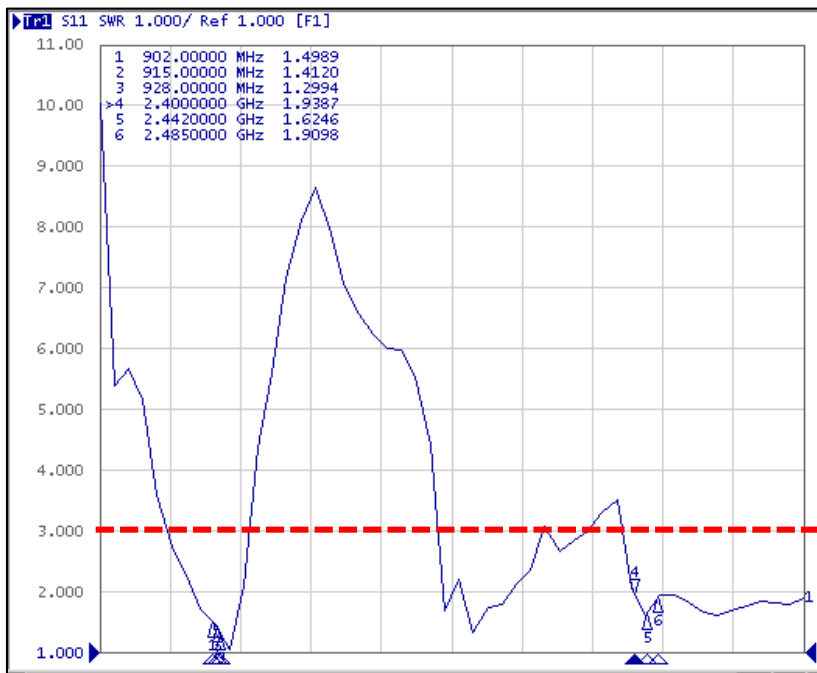
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2.1 Network Data

1) VSWR – LoRa & BLE



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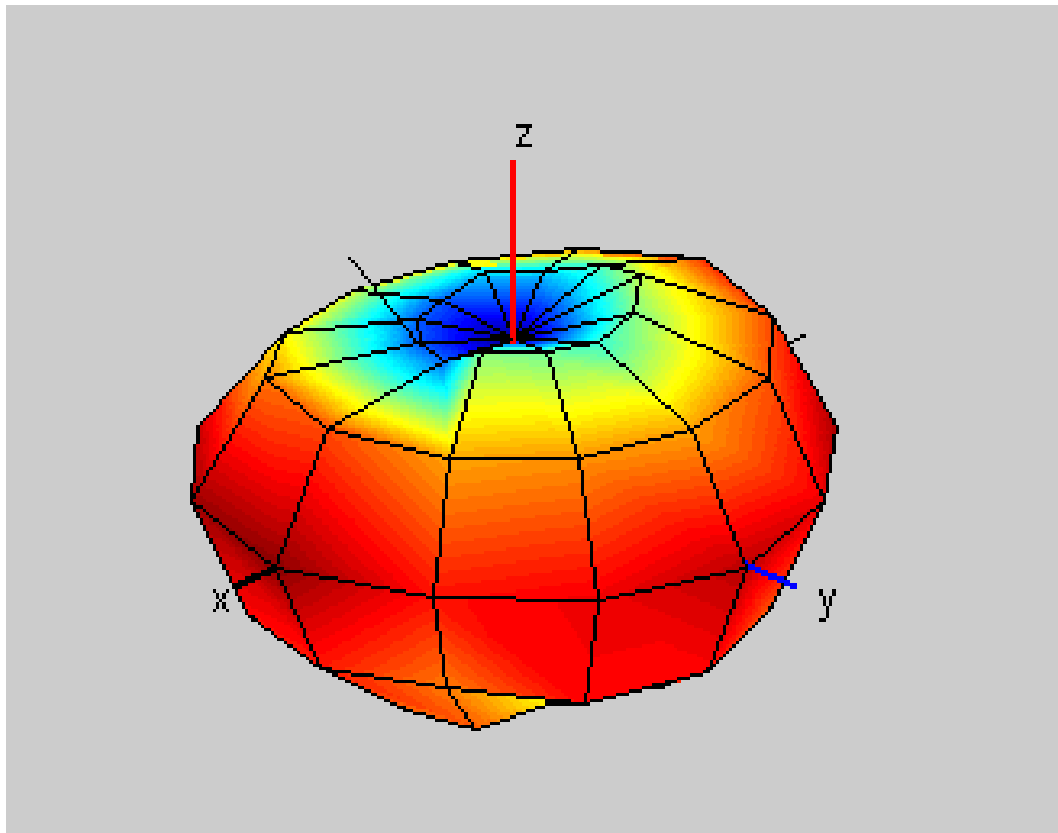
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2.2. Efficiency

	1	2	3	4	5	6	7
Frequency(MHz)	902	915	928	2400	2442	2485	2500
Efficiency(dB)	-2.05	-2.07	-1.83	-4.13	-2.54	-2.50	-2.76
Efficiency(%)	62.38	62.10	65.61	38.60	55.67	56.19	53.02
TRG(dB)	-2.05	-2.07	-1.83	-4.13	-2.54	-2.50	-2.76
TRG_{Theta}(dB)	-2.62	-2.89	-2.65	-5.30	-3.34	-3.20	-3.95
TRG_{Phi}(dB)	-11.17	-9.69	-9.49	-10.41	-10.29	-10.82	-8.96
UHRG(dB)	-5.06	-5.93	-5.87	-10.01	-9.00	-8.98	-9.42
UHRG/TRG(%)	49.97	41.08	39.49	25.83	22.63	22.53	21.53
H-Plane	-2.43	-2.13	-1.78	-9.17	-6.24	-5.09	-7.14
E1-Plane, AVG(dB)	-3.48	-3.65	-3.45	-4.43	-3.21	-3.14	-3.57
E2-Plane, AVG(dB)	-3.61	-3.95	-3.69	-5.12	-3.35	-3.10	-3.44
Peak Gain(dBi)	0.95	0.88	0.91	0.90	0.88	0.90	0.75
Directivity(dB)	3.88	3.42	3.54	6.54	6.29	5.87	5.58
Minimum Gain(dB)	-6.77	-10.28	-11.09	-13.56	-11.78	-12.46	-12.45
Test Condition							
Antenna Type							

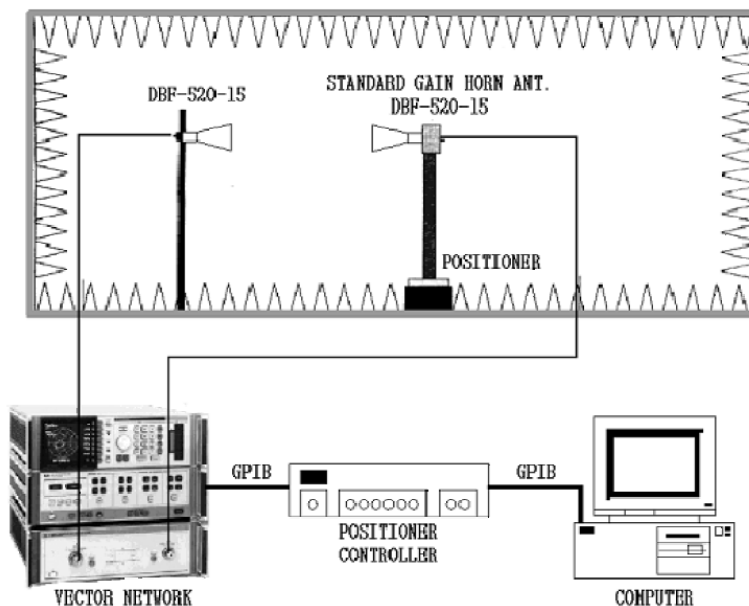
Average Efficiency	-2.67 dBi	56.22
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2.3. Radiation Pattern



3. ANT Test Condition

CTIA-OTA Test Chamber : 3x6x3m



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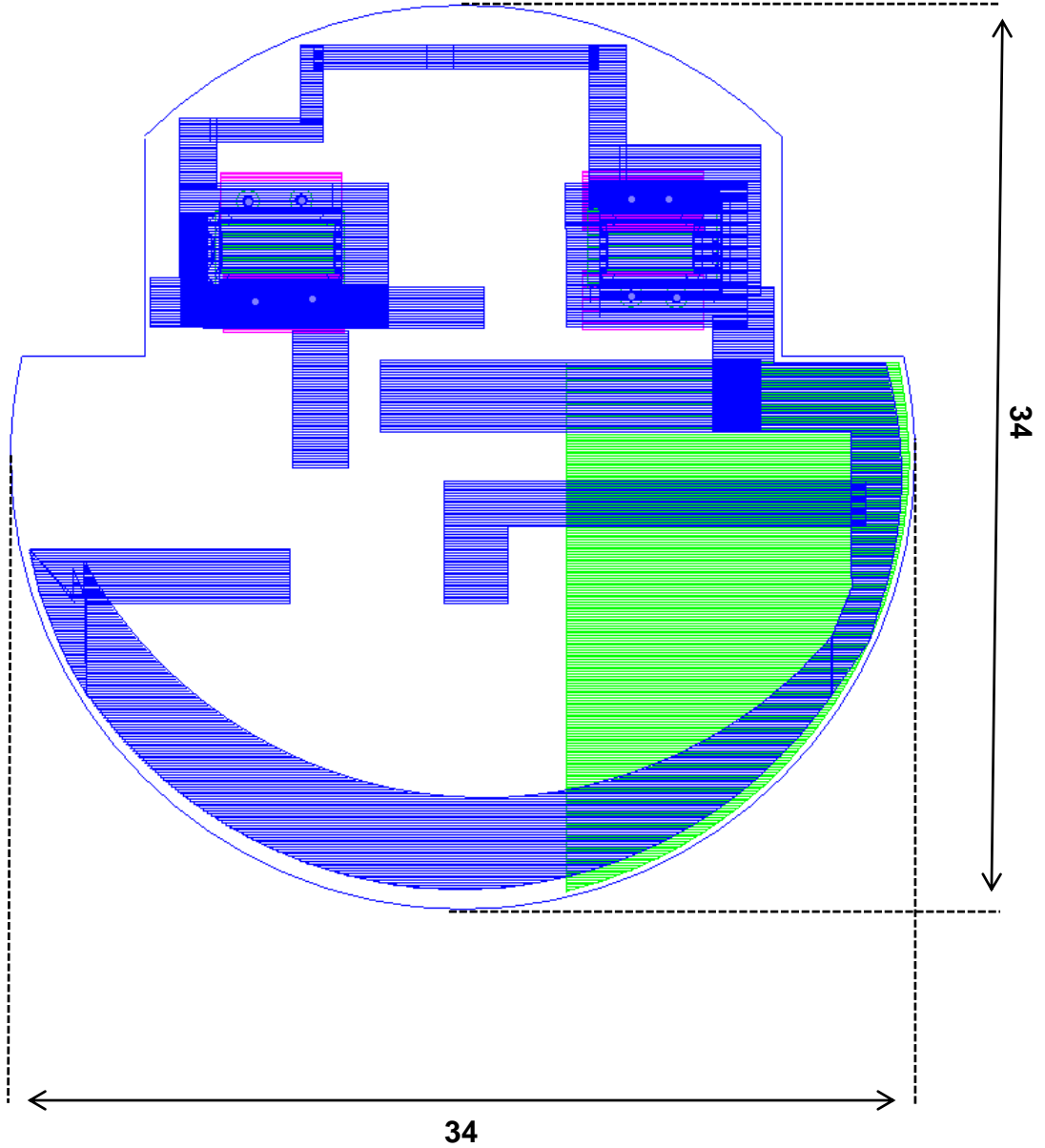
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4. ANT Dimensions



[Unit : mm]