Specification For Approval

Type	SMA ANT
Model Name	TSW433N (SMA SP Ø10)
Part No	
Issued Date	2022. 04. 29

Charge	Inspector	Approval
홍민		대영

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1. Revision History

Rev No	Date	Contents	Charge	Remarks
0.0	2022. 04.29	New Established	Hwang Dong Min	

2. Specification

2.1. Electrical Specification

Item	Spec	Remarks
Center Frequency	433MHz	
Frequency Range	430MHz – 450MHz	
V.S.W.R	Less Than 2.0	
Average Gain(dBi)	-1.0dBi (Max)	
Peak Gain(dBi)	3.1dBi (Max)	
Radiation pattern	Omni-directional	
Polarization	Linear Vertical	
Impedance	Nominal 50Ω	

2.2. Mechanical Specification

Item	Spec	Remarks
Dimensions(L)	150mm	(Drawing reference)
Connector	SMA(M)	
Color	Black,NI	
Operating Temperature	-45℃ ~ +85℃	
Weight	12 ± 2g	

2.3. Major Materials of Parts

Item	Type	Remarks
Element	SWC(cu)	
Sleeve	Keyflex	
Joint	Lumid	
Connector	Brass(NI)	

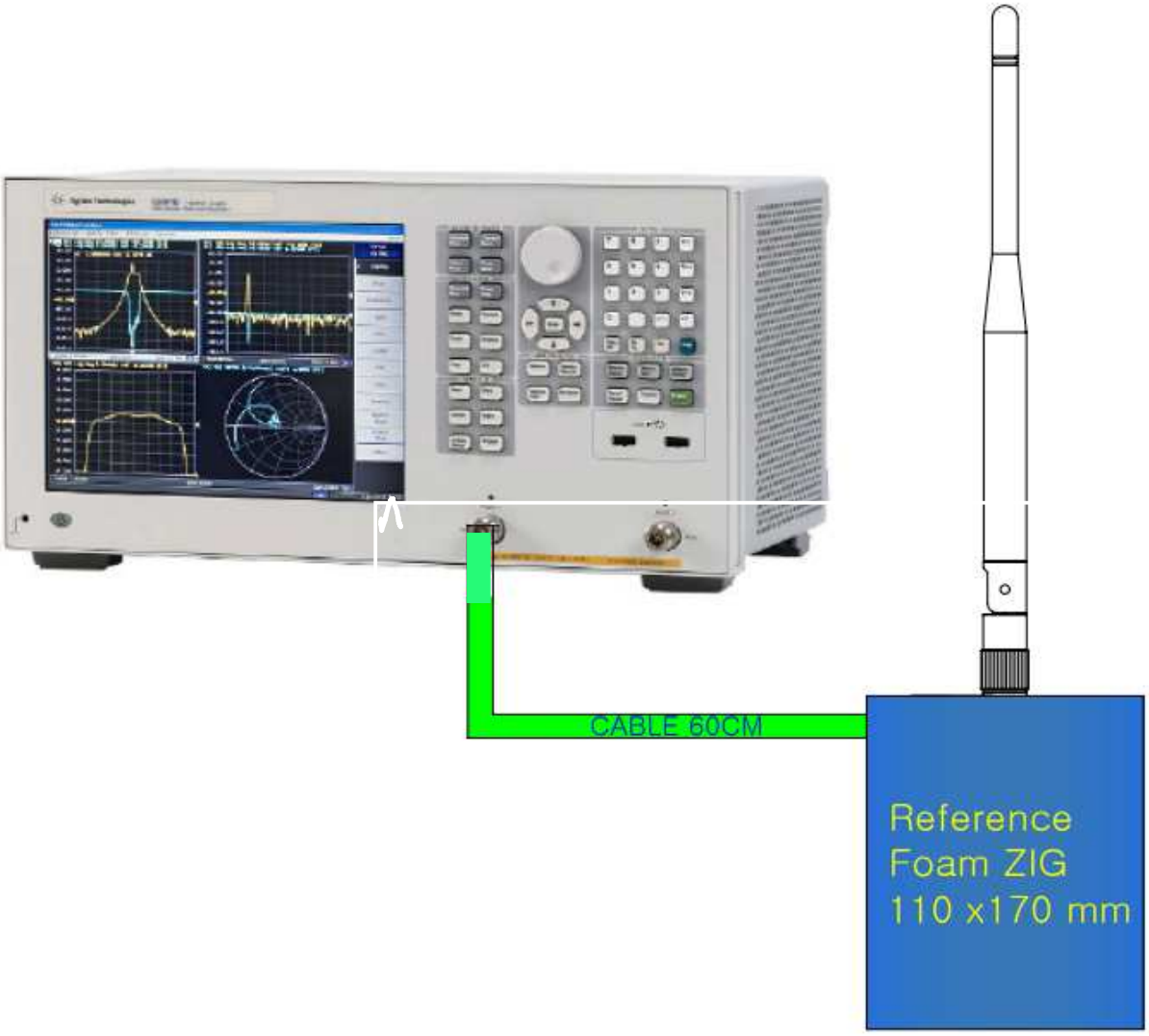
3. V.S.W.R Test

3.1.1 Test method

① Network Analyzer Spec

Equipment	Model	Specification
Network Analyzer	HP8753ES	· Freq. Range : 300KHz ~ 6GHz
Calibration Kit	HP85032B	· DC ~ 6GHz (SMA-Type)

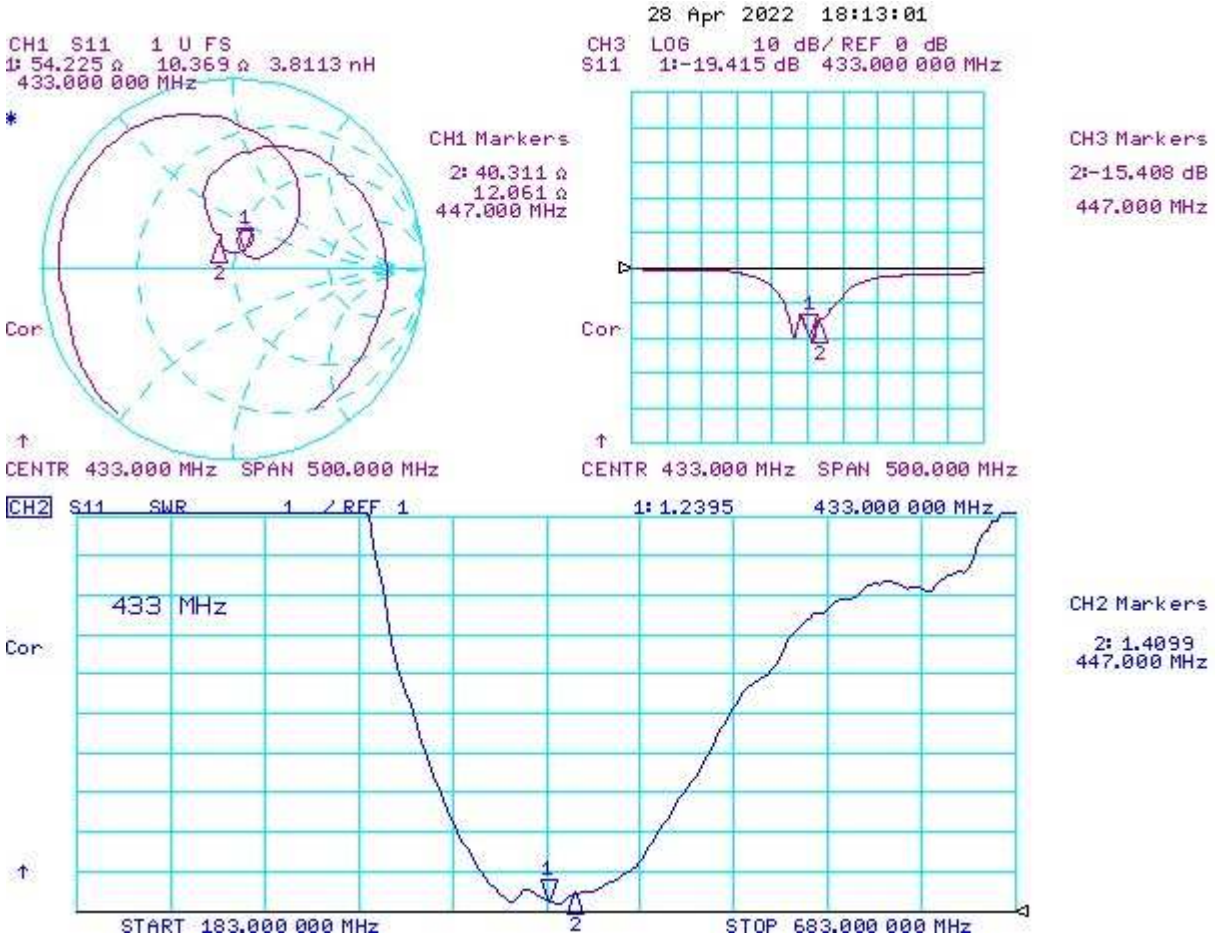
② Network Analyzer test method



3. Electrical Specification

3.1.2 V.S.W.R

DATA

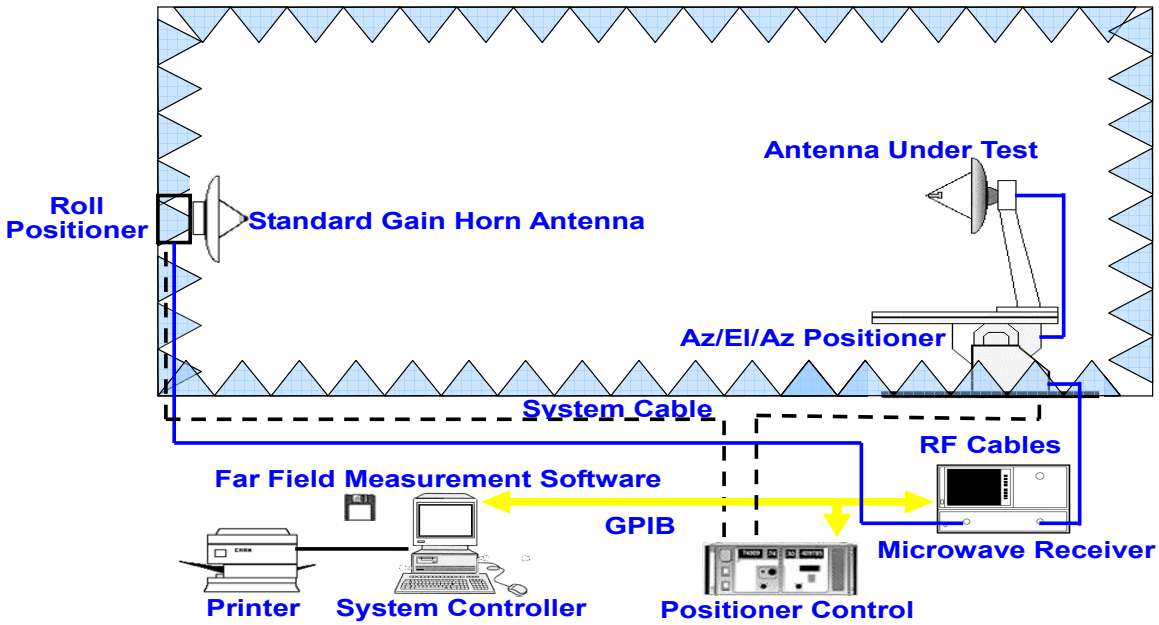


3.2.1 Gain & Beam Pattern Test

① Chamber Spec

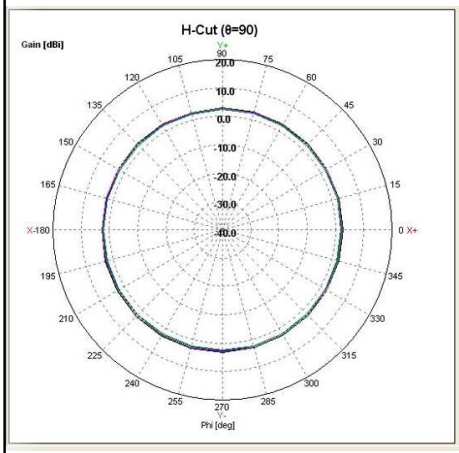
Section	Specification
Chamber Size	6(L)m X 3(W)m X 3(H)m
Frequency Range	400MHz – 6GHz (Far Field)
Quiet Zone	1m X 1 m @ 1GHz
Type	Rectangular
Antenna weight	< 50 kg

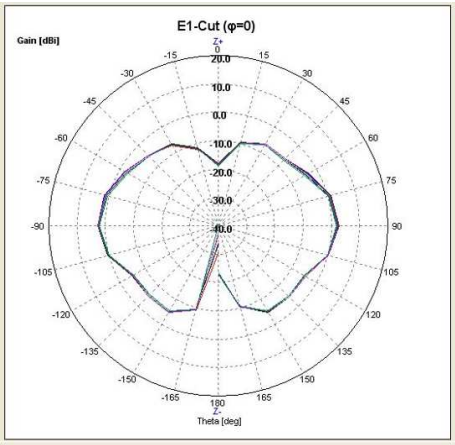
② Chamber Test method

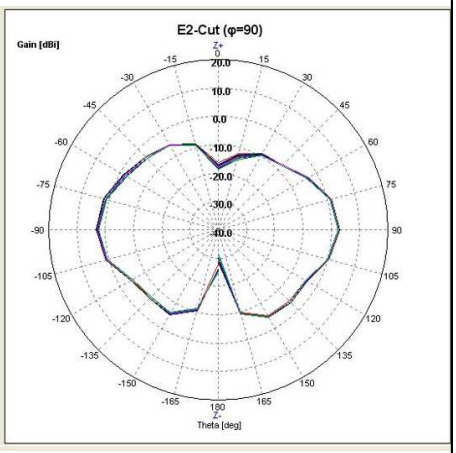


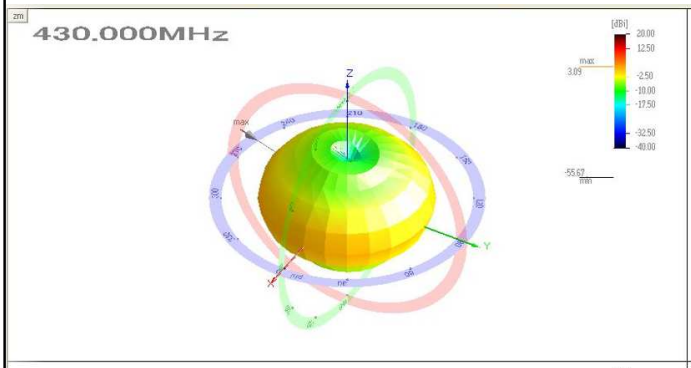
3.2.2 Gain & Beam Pattern

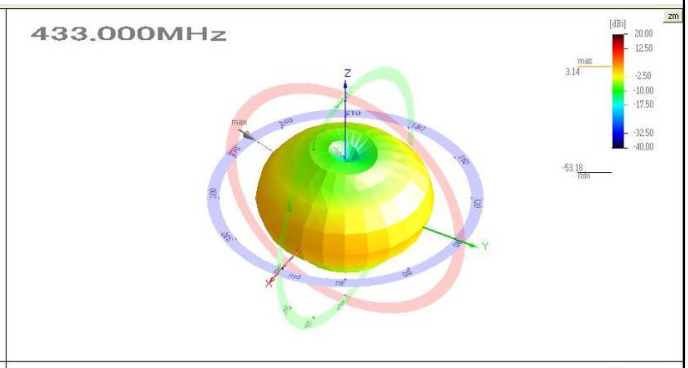
		θ-Pol(H)					H(θ=90)			
No.	Freq.	Eff.[%]	Avg.[dBi]	Peak[dBi]	θ[deg]	φ[deg]	Avg.[dBi]	Peak[dBi]	φ[deg]	BW[deg]
1	430.000	75.37	-1.23	3.09	90.00	255.00	2.63	3.09	255.00	999.00
2	433.000	77.86	-1.09	3.14	90.00	255.00	2.77	3.14	255.00	999.00
3	435.000	79.42	-1.00	3.20	90.00	255.00	2.86	3.20	255.00	999.00
4	437.000	79.30	-1.01	3.15	90.00	255.00	2.86	3.15	255.00	999.00
5	440.000	75.83	-1.20	2.94	90.00	255.00	2.68	2.94	255.00	999.00
6	442.000	72.59	-1.39	2.73	90.00	255.00	2.49	2.73	255.00	999.00
7	445.000	70.47	-1.52	2.61	90.00	255.00	2.38	2.61	255.00	999.00
8	447.000	69.90	-1.56	2.56	90.00	255.00	2.35	2.56	255.00	999.00
9	450.000	66.67	-1.76	2.36	90.00	255.00	2.16	2.36	255.00	999.00

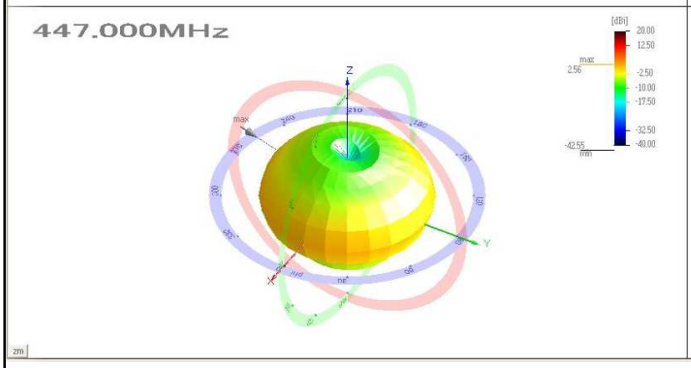


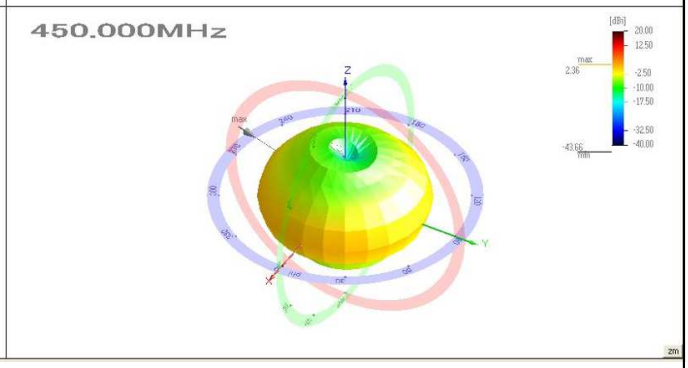












4. Drawing

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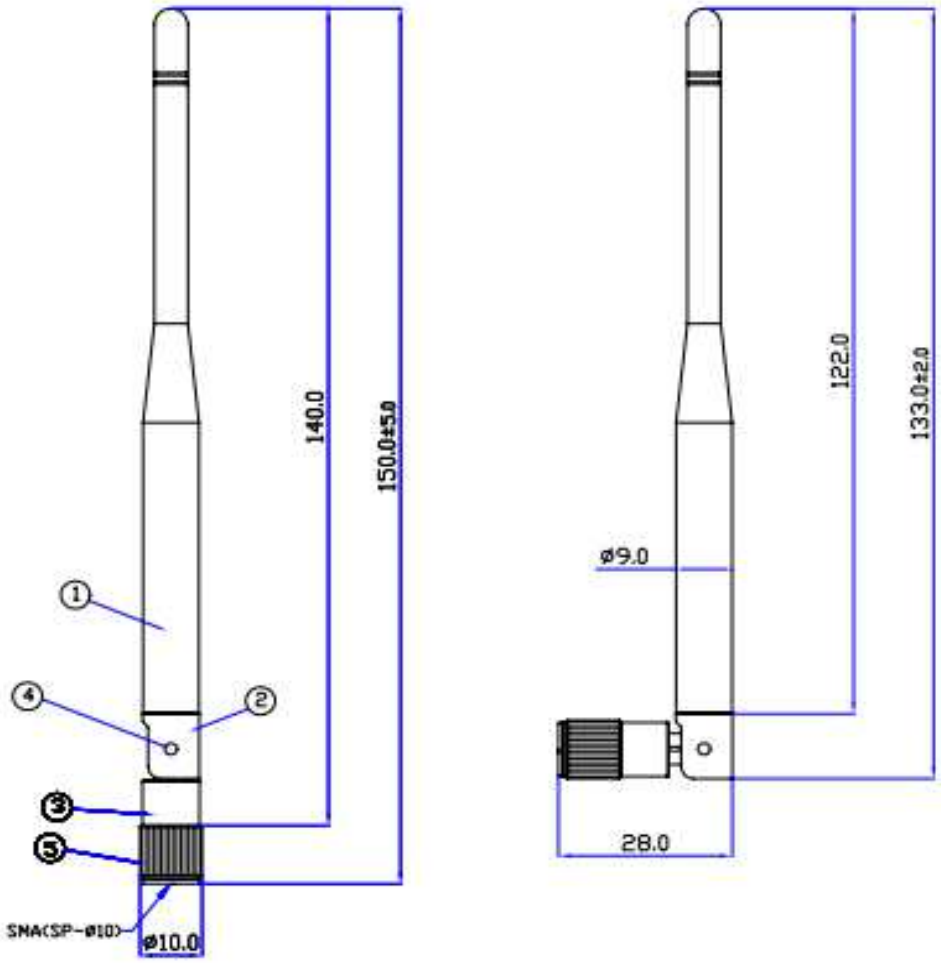
NO	DESCRIPTION	MATERIAL	SIZE	PART NO	Q'TY
1	SLEEVE	KEYFLEX / BLACK	ø9.0x122.0mm		1
2	JOINT A	LUMIDE / BLACK	ø9.1x23.0mm		1
3	JOINT B	LUMIDE / BLACK	ø9.2x17.5mm		1
4	PIN	BRASS / NI	ø2.0x3mm		2
5	CONNECTOR	SMA MALE / NI	ø10.0x18mm		1



UNLESS OTHERWISE SPECIFIED TOLERANCES		NO	DATE	DESCRIPTION OF REVISION	SIGN
0 ~ 4	± 0.1	6			
4 ~16	±0.15	5			
16 ~63	± 0.2	4			
63 ~ 250	± 0.3	3			
250 ~	± 0.5	2			
		1			

SAEHAN ANTENNA			NAME OF TITLE HELICAL ANTENNA	
SCALE	UNITS	DATE	MODEL No. TSW433N SMA(SPø10)	
1/1	mm	2022.04.26		
DRAWN/DESIGNED	CHECKED	APPROVED	DRAWING/PART No.	
HWANG	.D.M		APPROVED No.	
			USE FREQUENCY (MHz)	433MHz