



Specification For Approval

Type	Whip – ANT
Model Name	HA – 450 – TNC
Part No	
Issued Date	2013. 05. 22

SAE HAN ANTENNA CO.,LTD

301-1107, Ssangyong Techno Park 3,36-1 Samjeong-Dong, Ojeong-Gu, Bucheon-Si, Gyeonggi-Do, Korea

TEL : 82.32.624.2630 FAX : 82.32.624.2632



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2. Specification

2.1. Electrical Specification

Item	Spec	Remarks
Center Frequency	450MHz	
Frequency Range	440MHz – 460MHz	
V.S.W.R	Less Than 2.0	
Gain(dBi)	-2dBi (Max)	
Radiation pattern	Omni-directional	
Polarization	Linear Vertical	
Impedance	Nominal 50 Ω	

2.2. Mechanical Specification

Item	Spec	Remarks
Dimensions	160	mm
Connector	TNC - Male	
Color	Black	
Operating Temperature	-45 $^{\circ}$ C ~ +85 $^{\circ}$ C	
Weight	24g \pm 1g	

2.3. Major Materials Of Parts

Item	Materials	Remarks
Connector	C3604	mm
Cover	Urethane	
Cap	ABS	
Element	SWC	

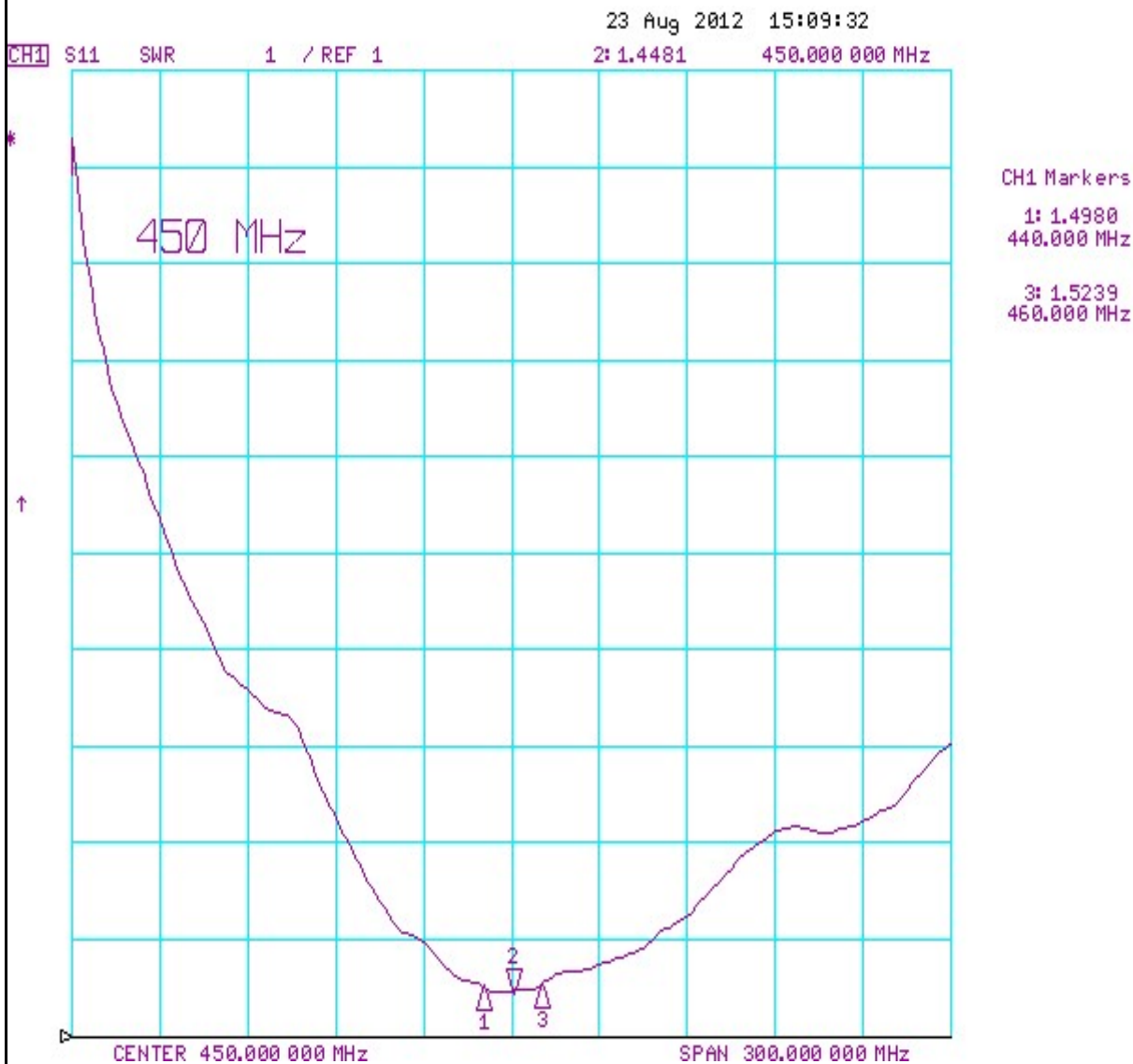


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3. Electrical Specification

3.1 V.S.W.R

DATA

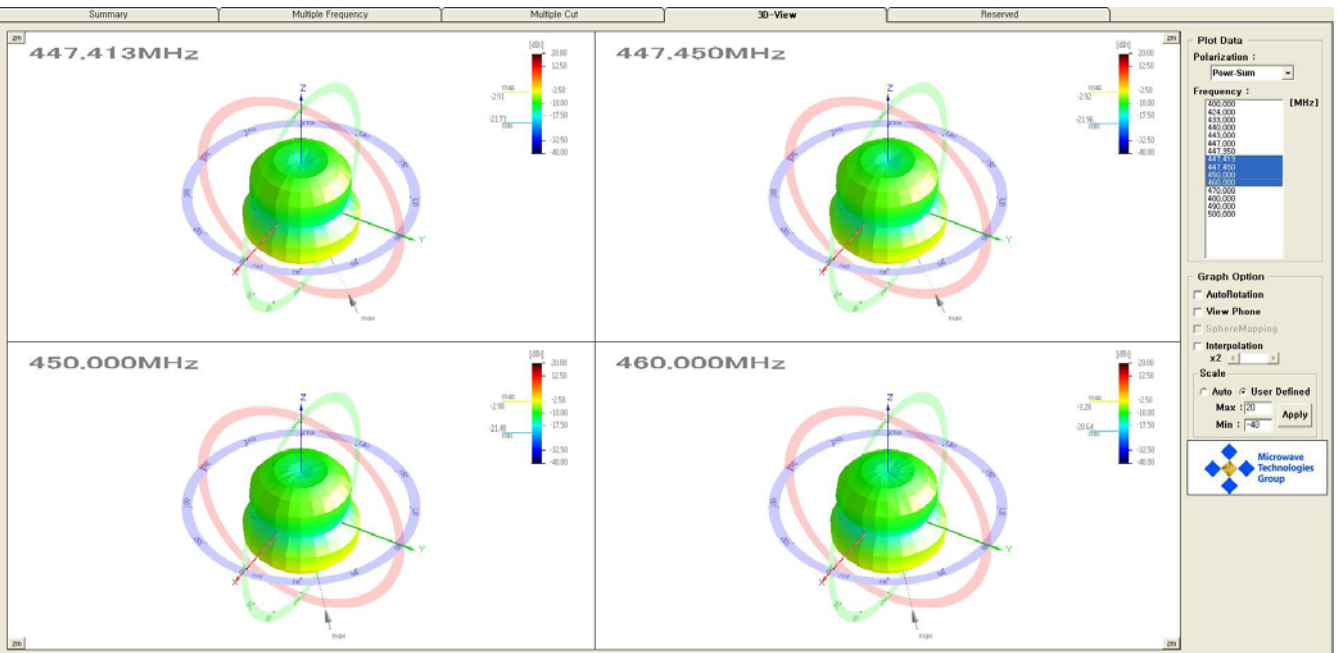
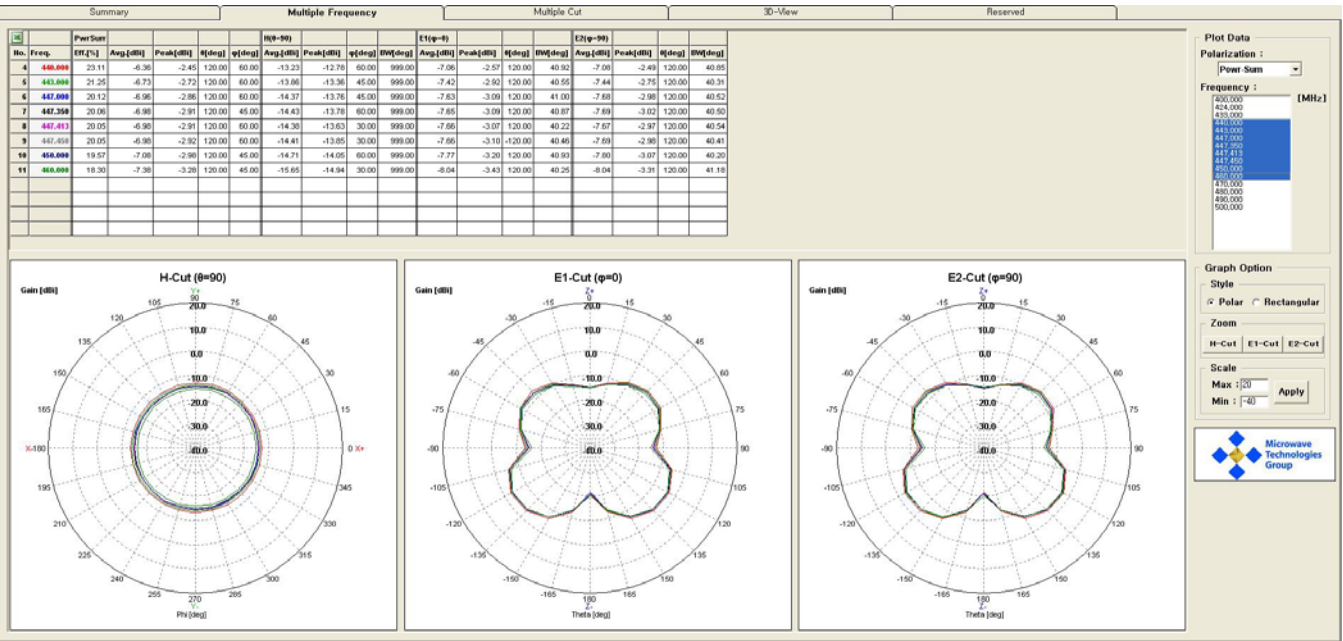


Frequency	V.S.W.R	Remarks
440 MHz	1.4	
450 MHz	1.4	
460 MHz	1.5	



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3.2. Gain & Beam Pattern



Frequency	V.S.W.R	Remarks
440 MHz	-2	
450 MHz	-2	
460 MHz	-3	

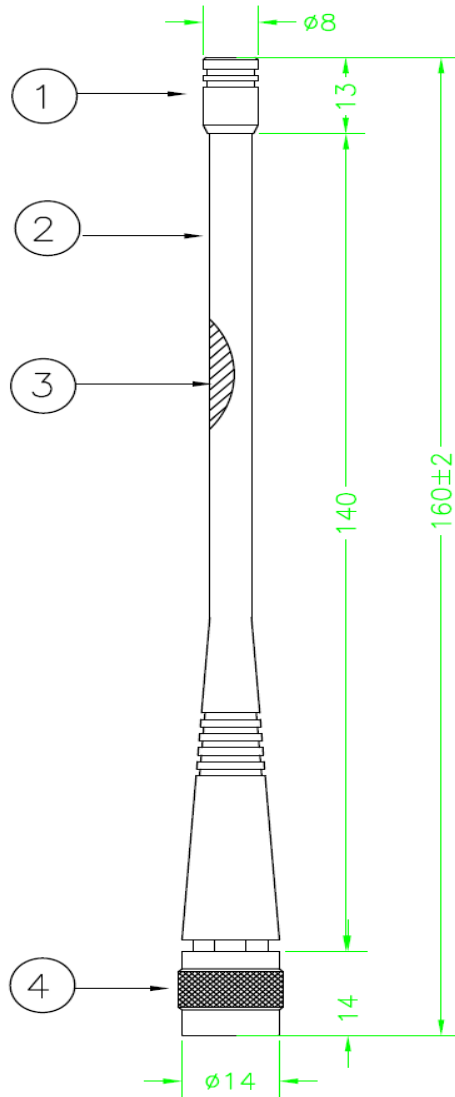


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4. Drawing

CONTROLLED DRAWING
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NO	DESCRIPTION	MATERIAL	SIZE	PART NO	Q'TY
1	CAP	ABS	ø8x13L		
2	MOLD	URETHANE	ø6x140L		
3	SPEED WIRE	CU WIRE	ø3.2		
4	TNC	TNC-M-NI	ø14		



UNLESS OTHERWISE SPECIFIED TOLERANCES		6				NAME OF TITLE	
		5				WHIP ANT. ASS'Y	
0 ~ 4	±0.1	4			SCALE	UNITS	DATE
4 ~ 16	±0.15	3			1 / 1	mm	2004.10.14
16 ~ 63	±0.2	2			DRAWN/DESIGNED	CHECKED	APPROVED
63 ~ 250	±0.3	1			Hwang Dong Min		MODEL No.
250 ~	±0.5	NO	DATE	DESCRIPTION OF REVISION	SIGN		HA-450TNC
							DRAWING/PART No.
							ATC-447B
							APPROVED No.
							USE FREQUENCY (MHz)
							450