

LEETEK

APPROVAL SHEET

NO	MODEL	FREQUENCY
1	HW – T450H – RSMA2	450 MHz



HANWOOL TECHNOLOGY

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REVISION HISTORY

[illegible]

ANTENNA SPECIFICATION

1. MODEL: HW – T450H – RSMA2

2. APPLICATION: This specification is provided for 450 MHz HELICAL ANTENNA

3 ANTENNA used condition

☐ Portable ☒ Fixing ☐ Movement ☐ Out-door ☒ In-door ☒ Etc()

4. ANTENNA Drawing

Attached Drawing paper

5. Electrical specification and performance

Satisfied next data with real used or similar environment conditions.

No.	ELECTRICAL DATA	SPECIFICATIONS	REMARK
5. 1	FREQUENCY RANGE	450 MHz	
5. 2	IMPEDANCE	50 Ω NOMINAL	
5. 3	V. S. W. R	LESS THAN 1:2.0	
5. 4	GAIN	-3dBi	
5. 5	RADIATION PATTERN	OMNI - DIRECTIONAL	
5. 6	POLARIZATION	VERTICAL	

6. Hardware specification and mechanical

No.	MECHANICAL	SPECIFICATIONS	REMARK
6. 1	SPRING	STEEL WIRE	Ni-PLATING
6. 2	“ A” COVER	NYLON 66	BLACK-COLOR
6. 3	JOINT*2EA	BRASS	Ni-PLATING
6. 4	“ B” COVER	NYLON 66	BLACK-COLOR
6. 5	SLEEVE	URETHANE	BLACK-COLOR
6. 6	SMA(m) CONNECTOR COVER	PVC	BLACK-COLOR
6. 7	SMA(m) CONNECTOR	BRASS	Ni-PLATING
6. 8	ANTENNA TOTAL LENGTH	106.2 $\pm$ 1.0 mm	

7. SINUSOIDAL VIBRATION

Vibration Frequencies : 5- 55 Hz (1 cycle)
Sweep Rate : 1 cycle/min
Maximum Amplitude : A - 1 mm
Maximum Acceleration : 2 g
Measuring method

Antenna is combined in the test equipment.

The vibration is done X and Y direction (left, right, up and down) according to below image.
It continued for 2 hours each direction.

8. OPERATING TEMPERATURE

Temperature : - 30℃ / +70℃

Demands : Set Antenna and Cable for 96 hours each temperature.

No visual and mechanical changes.

The fitting and mold will be unchanged mechanically during the test.

The antenna shall satisfy the electrical data

9. HUMIDITY

Condition : 90% ~ 95% / +40℃

Measuring method

Antenna is placed in climatic chamber for 96 hours.

Antenna is taken out from the chamber and measured

after another 24 hours in room temperature

Demands : No visual and mechanical changes.

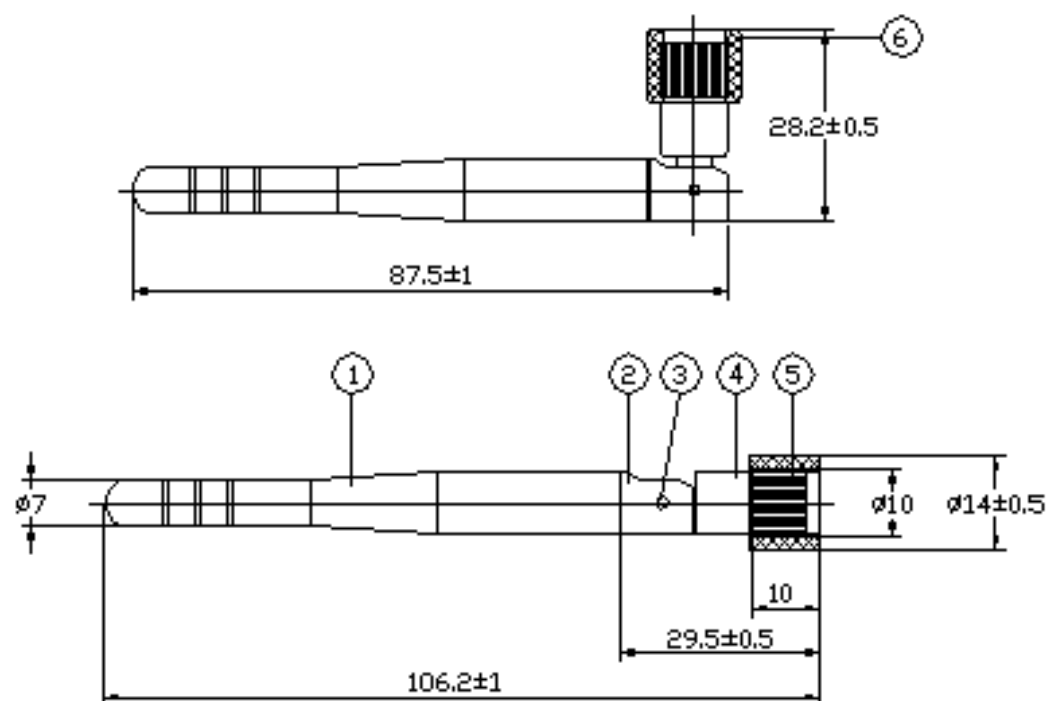
The fitting and mold will be unchanged mechanically during the test.

The antenna shall satisfy the electrical data.

10. TEST and Q/C

This specification is according to fixed demands and suitable Hanwool technology Q/C provision.

But it is possible to skip No. 7~9 demands, after consultation with buyer.



6	SMA(M)CONN. COVER	PVC	BLACK-COLOR
5	SMA(M)CONN.	BRASS	NI-PLATING
4	*B*COVER	ABS	BLACK-COLOR
3	JOINT PIN*2	BRASS	NI-PLATING
2	*A*COVER	ABS	BLACK-COLOR
1	SLEEVE	URETHANE	BLACK-COLOR
No.	PART NAME	MATERIAL	FINISH

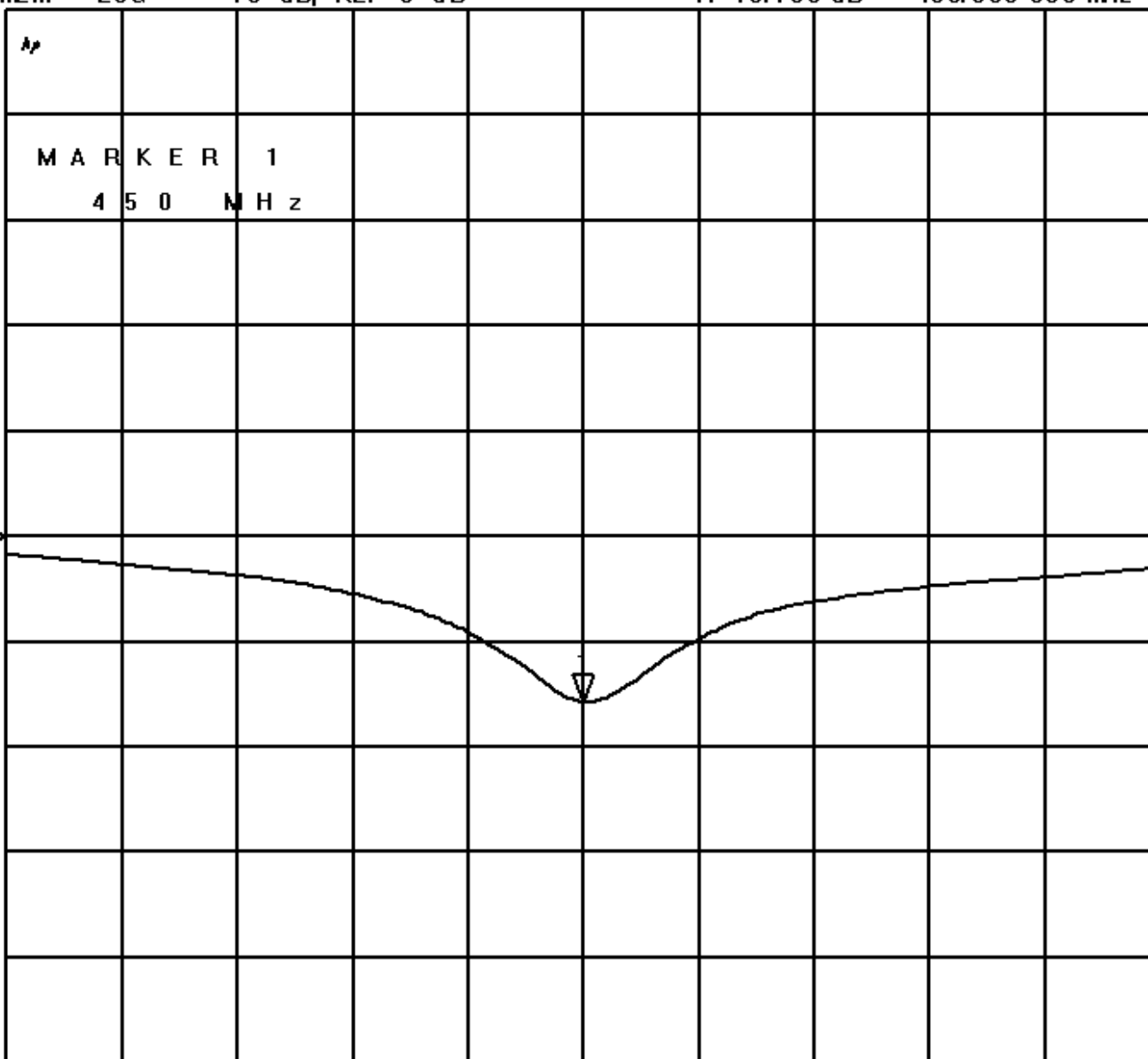
TITLE	ANTENNA ASS'Y	MODEL	HW-T450H-RSMA2
Drawn	Checked	Approval	Date
W.C,LEE		C.G,NAM	2011.03.29
DWG No.	File Name		
110329-2	리턴		

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[CH1]

MEM LOG 10 dB/ REF 0 dB

1:- 15.755 dB 450.000 000 MHz



CENTER 450.000 000 MHz

SPAN 200.000 000 MHz

STIMULUS	CH1	MEM
426.000 000	-8.1069	dB
427.000 000	-8.3422	dB
428.000 000	-8.5919	dB
429.000 000	-8.8439	dB
430.000 000	-9.1353	dB
431.000 000	-9.4356	dB
432.000 000	-9.7399	dB
433.000 000	-10.062	dB
434.000 000	-10.388	dB
435.000 000	-10.719	dB
436.000 000	-11.052	dB
437.000 000	-11.403	dB
438.000 000	-11.769	dB
439.000 000	-12.116	dB
440.000 000	-12.519	dB
441.000 000	-12.917	dB
442.000 000	-13.343	dB
443.000 000	-13.749	dB
444.000 000	-14.176	dB
445.000 000	-14.564	dB
446.000 000	-14.938	dB
447.000 000	-15.277	dB
448.000 000	-15.500	dB
449.000 000	-15.675	dB
450.000 000	-15.755	dB
451.000 000	-15.742	dB
452.000 000	-15.662	dB
453.000 000	-15.497	dB
454.000 000	-15.232	dB
455.000 000	-14.938	dB
456.000 000	-14.635	dB
457.000 000	-14.314	dB
458.000 000	-13.953	dB
459.000 000	-13.590	dB
460.000 000	-13.192	dB
461.000 000	-12.805	dB
462.000 000	-12.397	dB
463.000 000	-12.005	dB

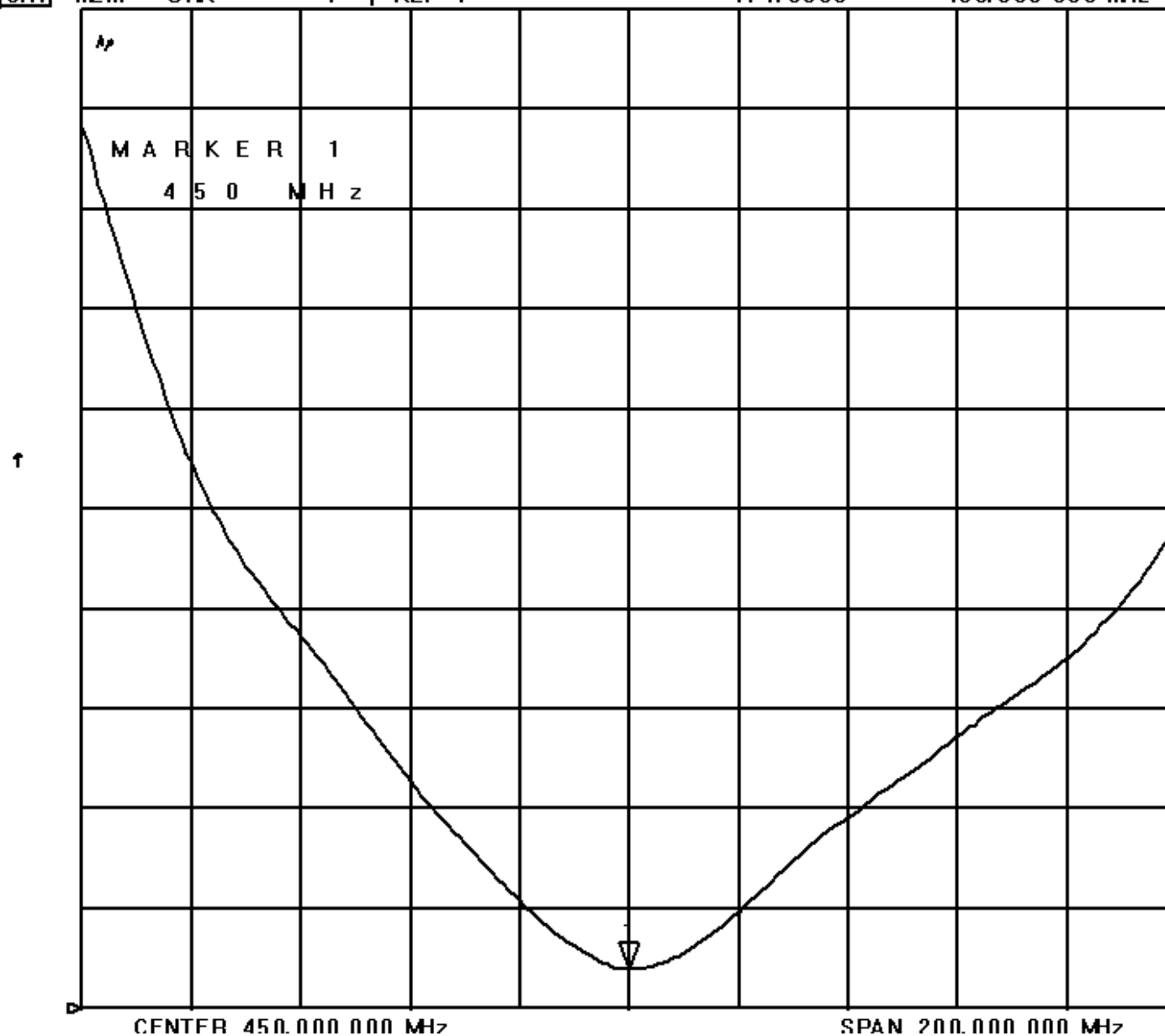
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[CH1]

MEM SWR 1 / REF 1

1: 1.3895

450.000 000 MHz



STIMULUS	CH1	MEM
426.000 000	2.2961	
427.000 000	2.2400	
428.000 000	2.1841	
429.000 000	2.1310	
430.000 000	2.0736	
431.000 000	2.0187	
432.000 000	1.9666	
433.000 000	1.9153	
434.000 000	1.8669	
435.000 000	1.8212	
436.000 000	1.7783	
437.000 000	1.7362	
438.000 000	1.6952	
439.000 000	1.6590	
440.000 000	1.6199	
441.000 000	1.5840	
442.000 000	1.5484	
443.000 000	1.5169	
444.000 000	1.4861	
445.000 000	1.4600	
446.000 000	1.4363	
447.000 000	1.4161	
448.000 000	1.4035	
449.000 000	1.3938	
450.000 000	1.3895	
451.000 000	1.3902	
452.000 000	1.3945	
453.000 000	1.4036	
454.000 000	1.4188	
455.000 000	1.4363	
456.000 000	1.4553	
457.000 000	1.4766	
458.000 000	1.5019	
459.000 000	1.5289	
460.000 000	1.5607	
461.000 000	1.5938	
462.000 000	1.6314	
463.000 000	1.6704	

