

Dipole Antenna Cable Antenna

Approval Sheet

**MODEL : KBE-2400V
KBE-2004V**

Written by,



MYUNG HA LEE

Antenna Development Group/ R&D Center

November 3, 2003

KOSANTenna KOSAN I & T Co., Ltd.

		Subject		Dipole Antenna Approval Sheet	
Document No.	KAT-0310-EX69P		Rev.	IR	
Model Name	KBE -2400V(Tx) KBE -2004V(Rx)		Date	November 3,2003	
Application System	2400 ~2485Mhz		Customer	Vision Technics	
Notice	All the specifications and data in this sheet may vary for each different product board of you.				
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KOSAN	MYUNG HA LEE	Investigation	Verification	Approval	
					
	Approval No.				
	Approval Date				

Customer		Check	Check	Approval
	Approval No.			
	Approval Date			

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Dipole Antenna/ Cable Antenna

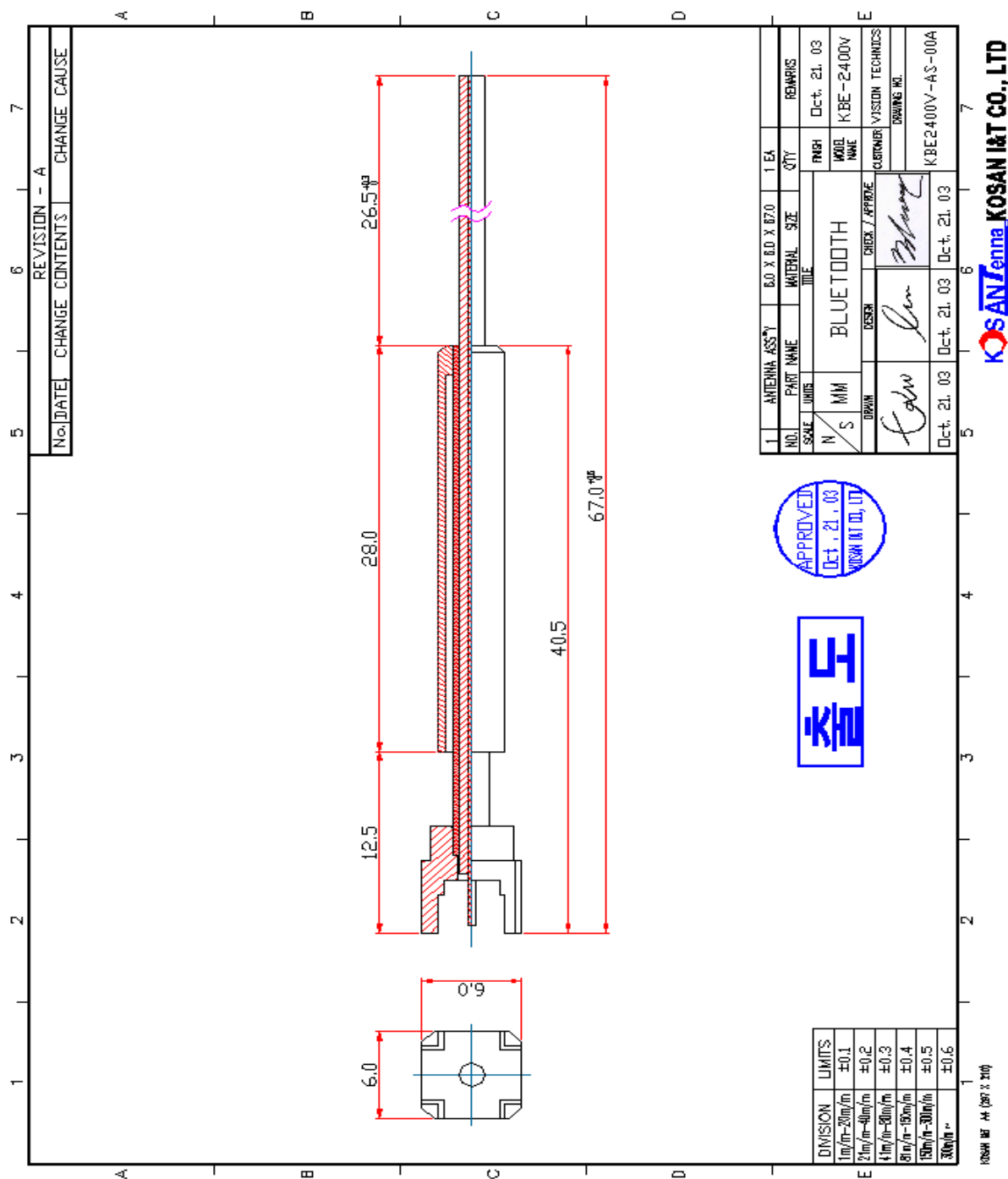
1. Electrical & Mechanical Specifications

Electrical Specifications	
Frequency Range	2400 ~ 2483.5 MHz
V.S.W.R	1.9 : 1 (max)
Gain(Max)	2 dBi(Tx) / 4dBi(Rx)
Nominal Impedance	50 ohm
Radiation Pattern	Omni - directional
Polarization	Vertical
Power Handling	3 watts (max)

Mechanical Specifications	Tx	Rx
Dimensions	67mm	57 X 8.2 X 1mm (Cable Length:118mm)
Weight	2.5g	4g
Radiator	Brass	FR-4
Operating Temp	-30 ~ 90 °C	
Operating Humidity	0 ~ 90 %	
Option	N/A	

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Dipole Antenna (Tx)
2. Mechanical Drawing





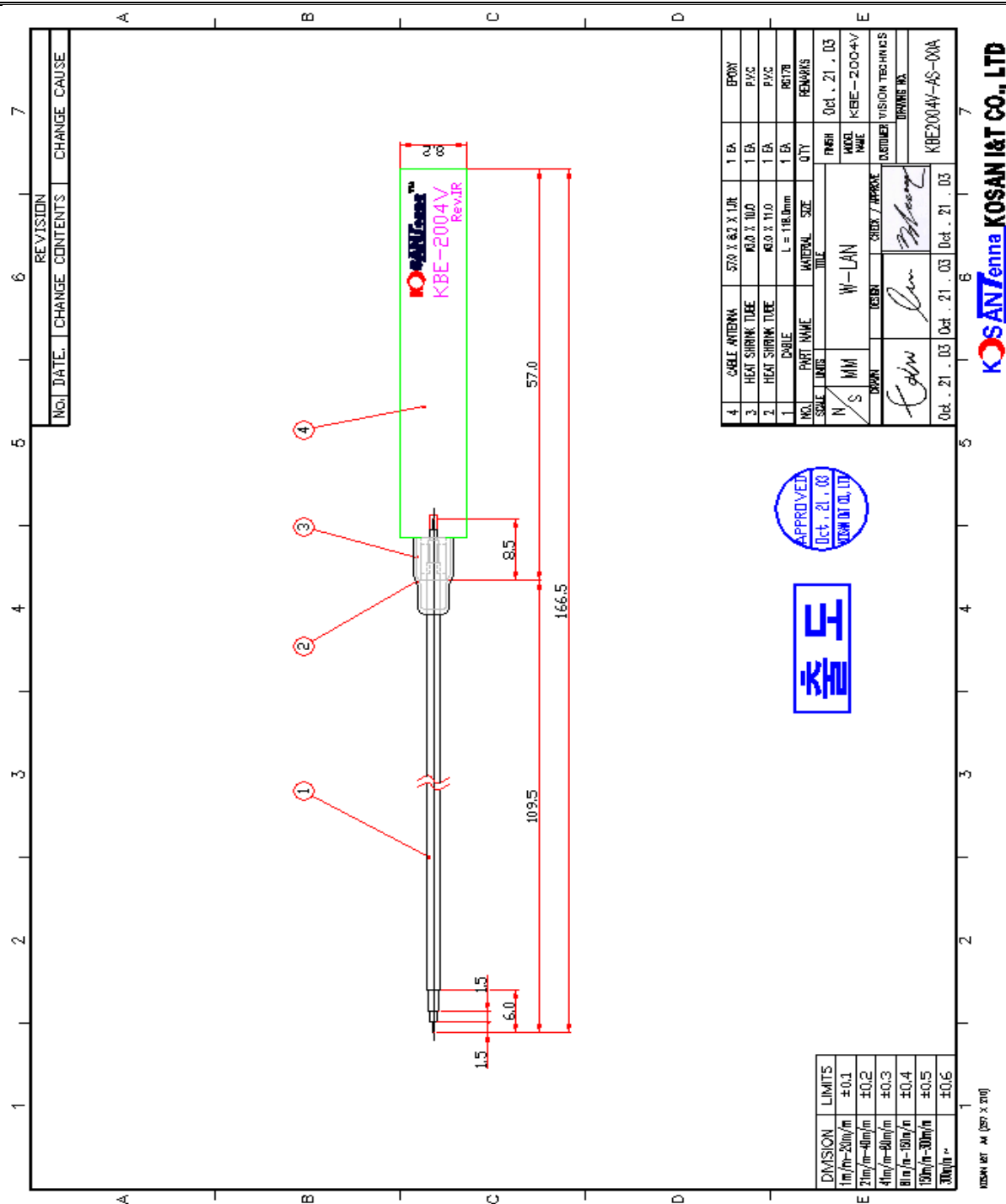
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Cable Antenna (Rx)

2. Mechanical Drawing



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Dipole Antenna

3.Component of Poison Data

The accompanying Data Sheet

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Dipole Antenna

4. Measurement Setup

3-1. Test Equipments

Network Analyzer	HP8753ES
Calibration Kit	HP85033D
High Resistance Meter	HP4277A
Withstanding Voltage Tester	TOS-8750
Adaptor	SMA Type Female ↔ SMA male
Measurement Cable	8120-4779 (Hewlett Packard)

3-2. Test Equipments Setting

2.1 Display	Dual channel : On
	Split display : On
2.2 Menu	Number of points : 201
	Power : 0 dBm
2.3 Measure	Channel 1 : S11
	Channel 2 : S21

3-3. Calibration

Calibration-	Cal. Kit : 50 Ω
	Calibration menu → Full-2 Port
	Reflection
	Forward : Open → Short → Load
	Reverse : Open → Short → Load
	Done
	Transmission
	Do Both → FWD + REV
	Done
	Isolation
	Omit Isolation
	Done

Dipole Antenna/ Cable Antenna

4. Test Procedures

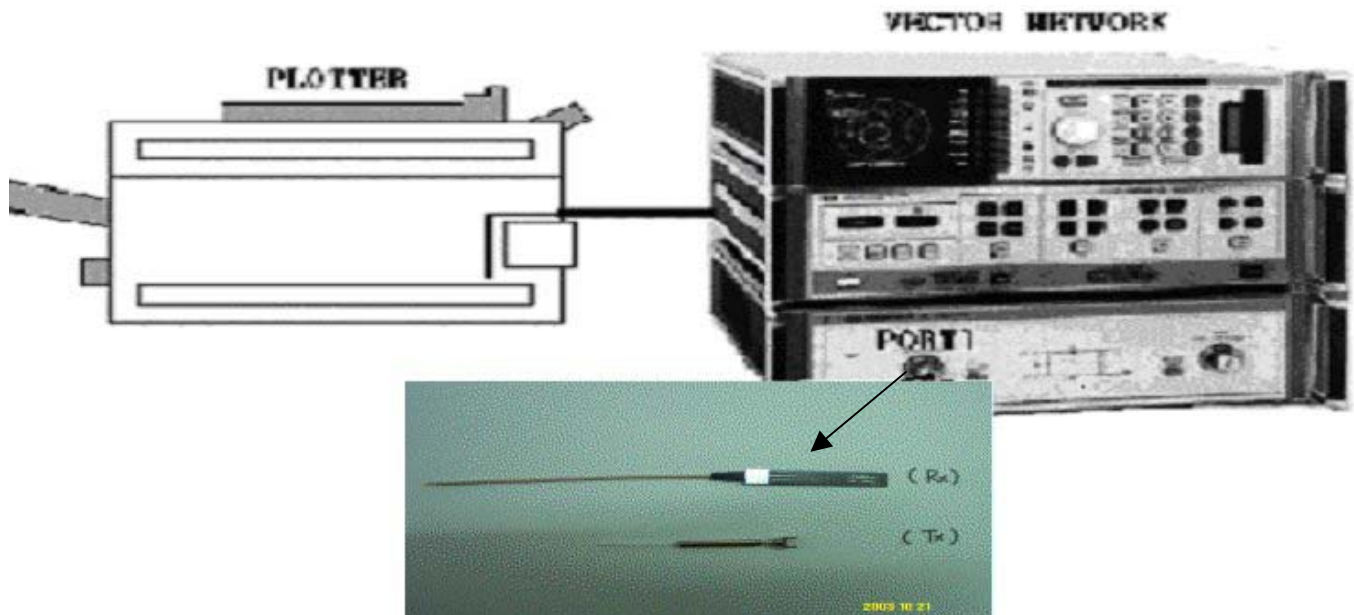
4-1. V.S.W.R.

Step 1. Connect ANT Port With Cable included Adaptor to Port1 of Network Analyzer.

Step 2. Point out Markers on Network Analyzer Display at 2400MHz , 2440MHz, and 2483.5MHz

Step 3. Inspect V.S.W.R < 1.9

Step 4. Measurement



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4. Test Procedures

4-2. Gain and Pattern (Near Field Chamber)

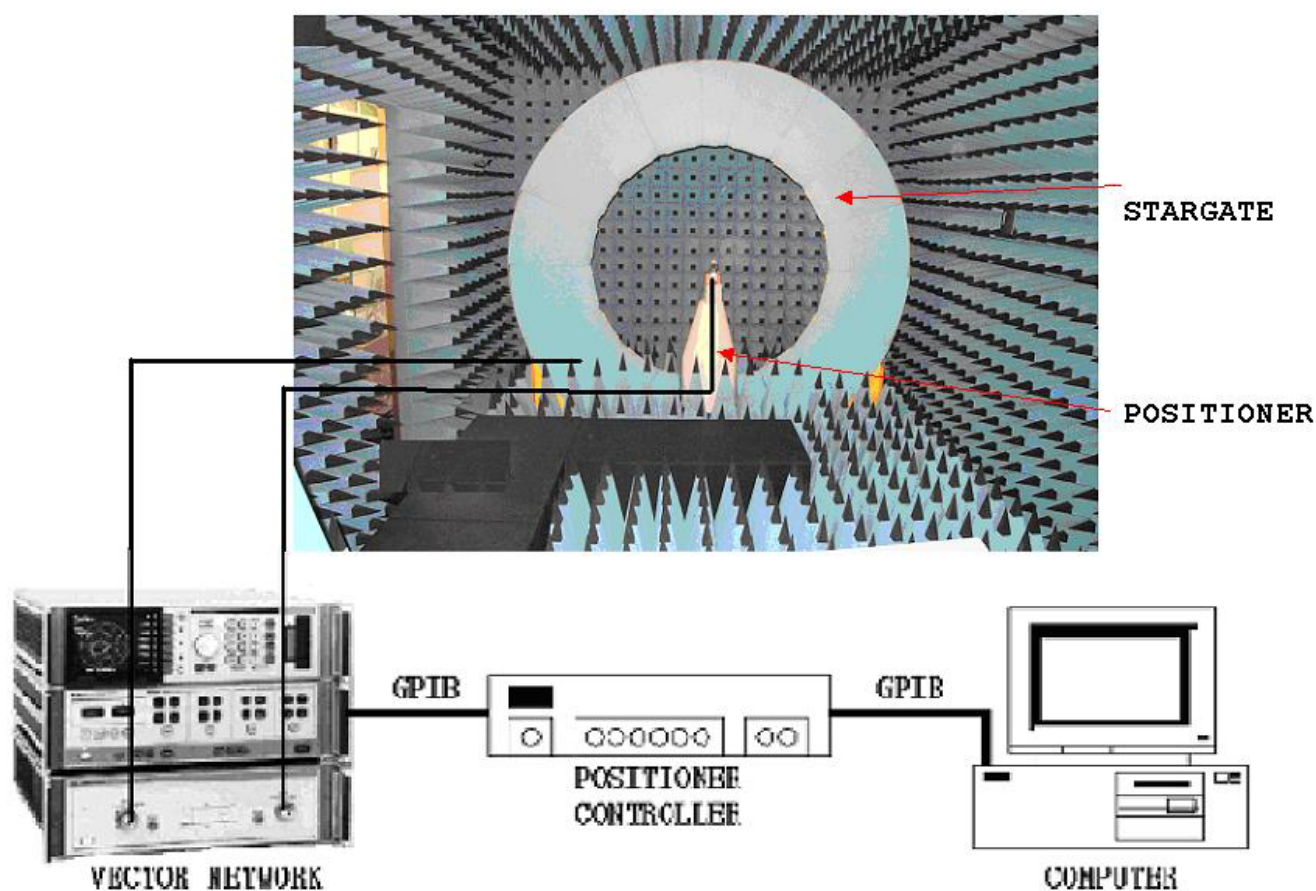
Step 1. Calibrate Chamber System for Gain Measurement Using Stargate 32 Sensor.

At the Same Time Set Up Software Program for Chamber System Control.

Step 2. Change Over from a Stargate 32 Sensor to Measuring Antenna
on Target Positioner.

Step 3. Start a Software Program for Chamber System Control & Measuring

Step 4. Measurement Data





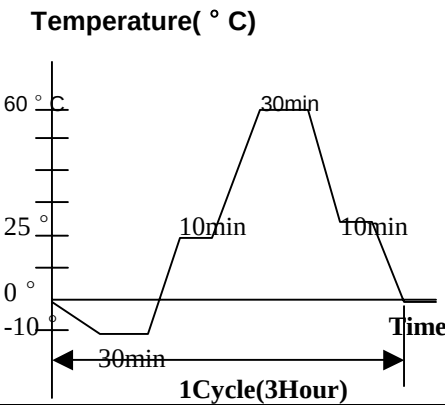
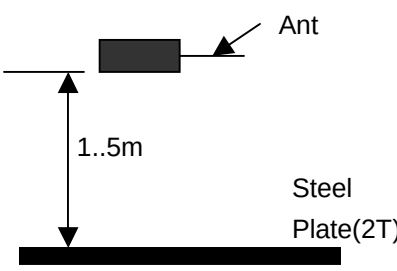
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Dipole Antenna/ Cable Antenna

6. Confidential Test

Item	Specification	Conditions
Vibration Resistance	No Momentary Disconnections or Noise for 300s to 600s No Damage, Crack or Parts Looseness	Frequency of 100Hz to 20KHz , Amplitude of 1mm for versus direction of Antenna , 1 Cycle Time of 60s
Humidity Resistance	Changeable range of RF Impedance in $50\Omega \pm 5\Omega$ No Electrical Short	Temperature of 40°C, Humidity of 95% let stand for 96 hours
Temperature Test 	Changeable range of RF Impedance in $50\Omega \pm 5\Omega$ No change of material characteristic No disconnection	Keeping on -10 ° C for 30min / +25 ° C for 10min / +60 ° C for 30min / +25 ° C for 10min and with 1Cycle 5 times it enforces.
Withstand Voltage	No line or insulator breakdown No disconnection No damage	200V AC for 1 min
Drop Test 	No disconnection No crack or damage	Drop antenna' set at 1.5m height From steel plate(2T) of ground

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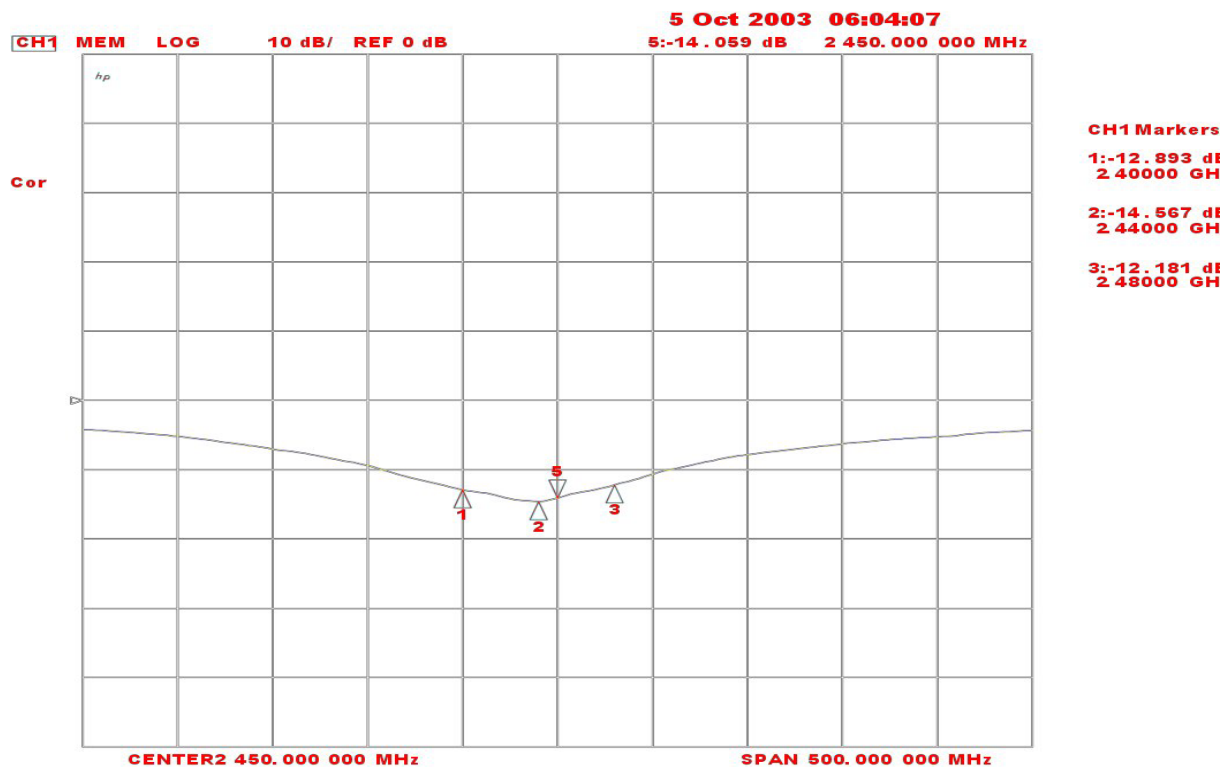
7. Measurement Data

Model Name	KBE-2400V KBE-2004V		
Written by	MYUNG HA LEE	Authorized by	PAN SIK CHOI
Instrument	Network Analyzer: 8753ES (HP)		
Subject	Dipole Antenna / Cable Antenna		
Frequency	2400 ~ 2483.5 MHz		

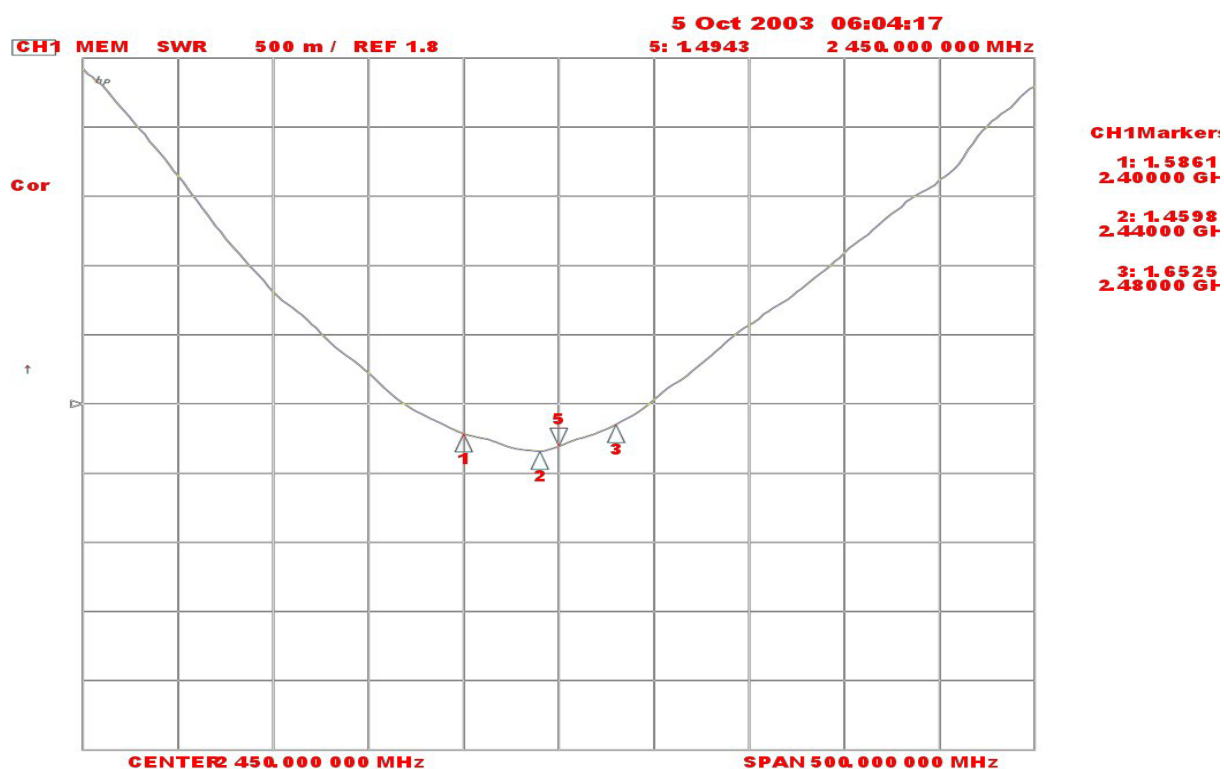
	Items	Spec.	Test Result (#1)	Test Result (#2)
Tx Ant	Frequency	2400 ~ 2483.5 MHz	O.K	O.K
	V.S.W.R	< 1.9	1.7	1.8
	Gain	2 dBi (Max)	2dBi	1.8dBi
	Polarization	Vertical	Vertical	Vertical
	Items	Spec.	Test Result (#1)	Test Result (#2)
Rx Ant	Frequency	2400 ~ 2483.5 MHz	O.K	O.K
	V.S.W.R	< 2.0	2.0	1.9
	Gain	4 dBi (Max)	3.95dBi	4dBi
	Polarization	Vertical	Vertical	Vertical

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Tx_S₁₁

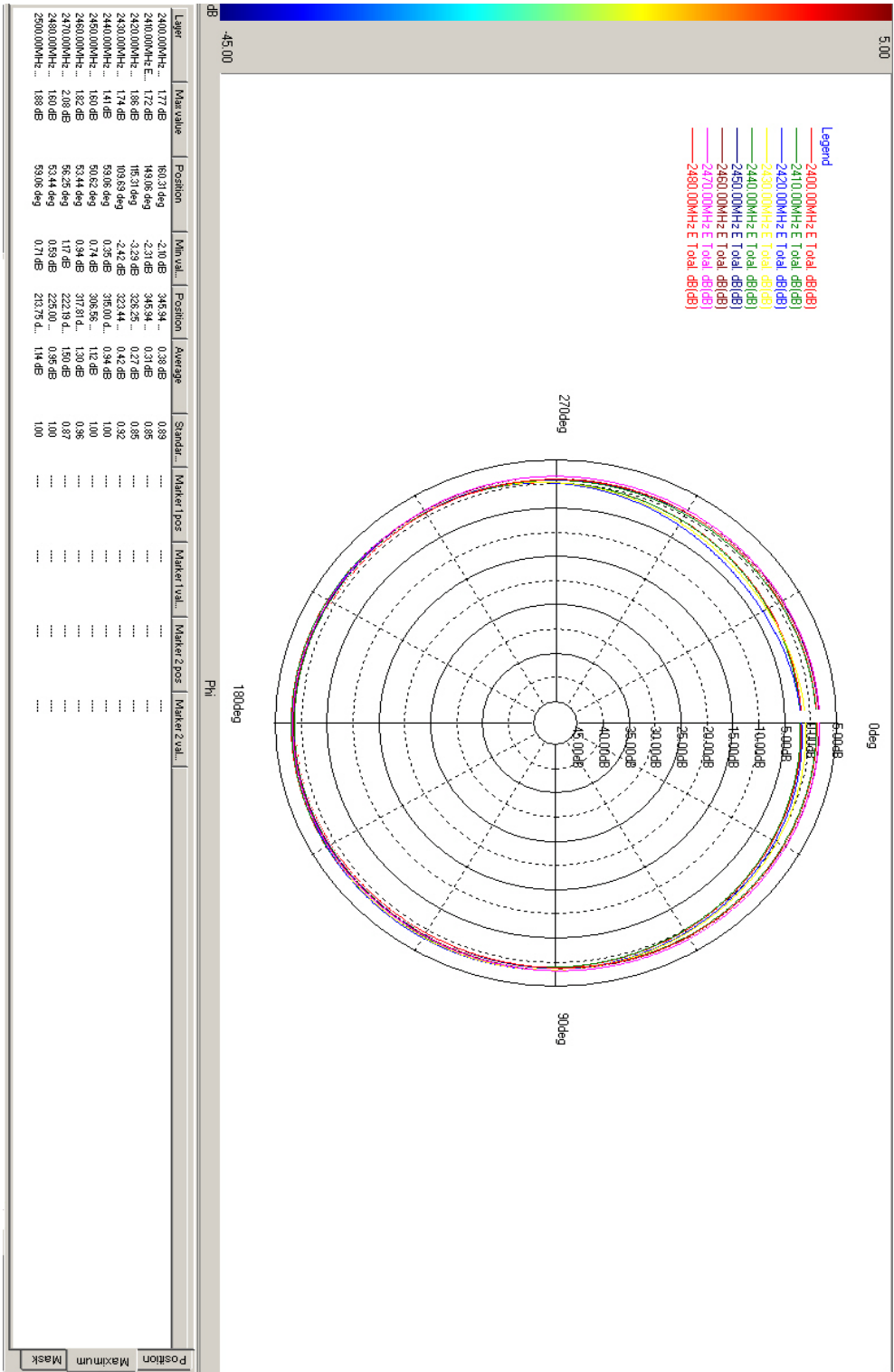


Tx_VSWR



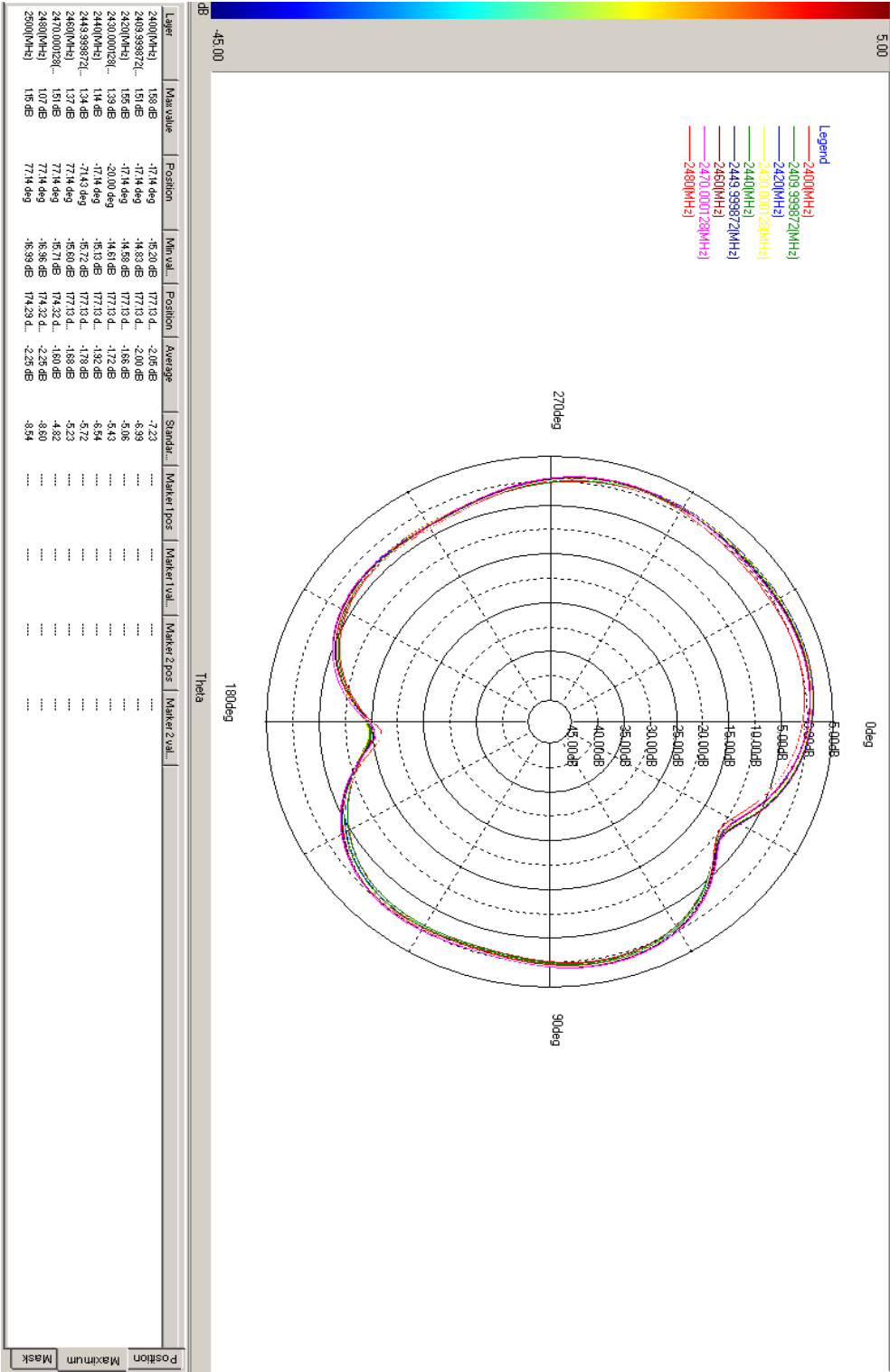
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Tx_Radiation Pattern(AZIMUTH)



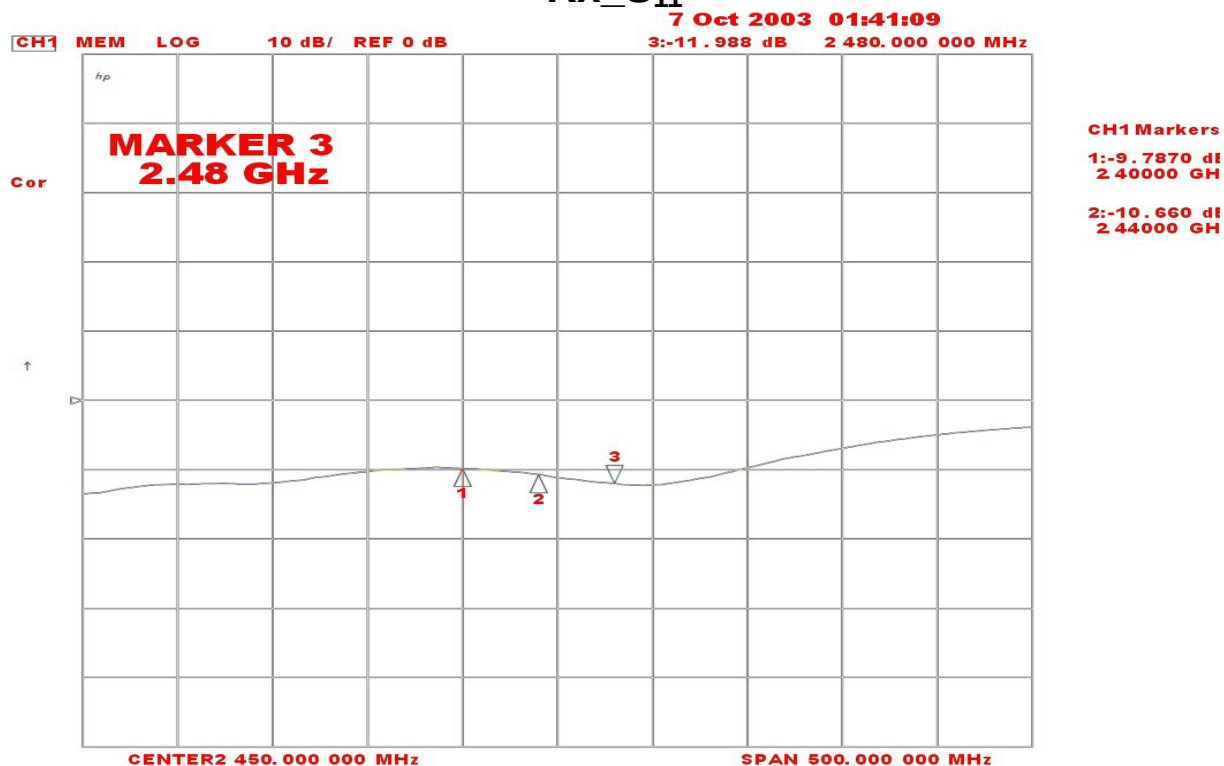
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Tx_Radiation Pattern(ELEVATION)

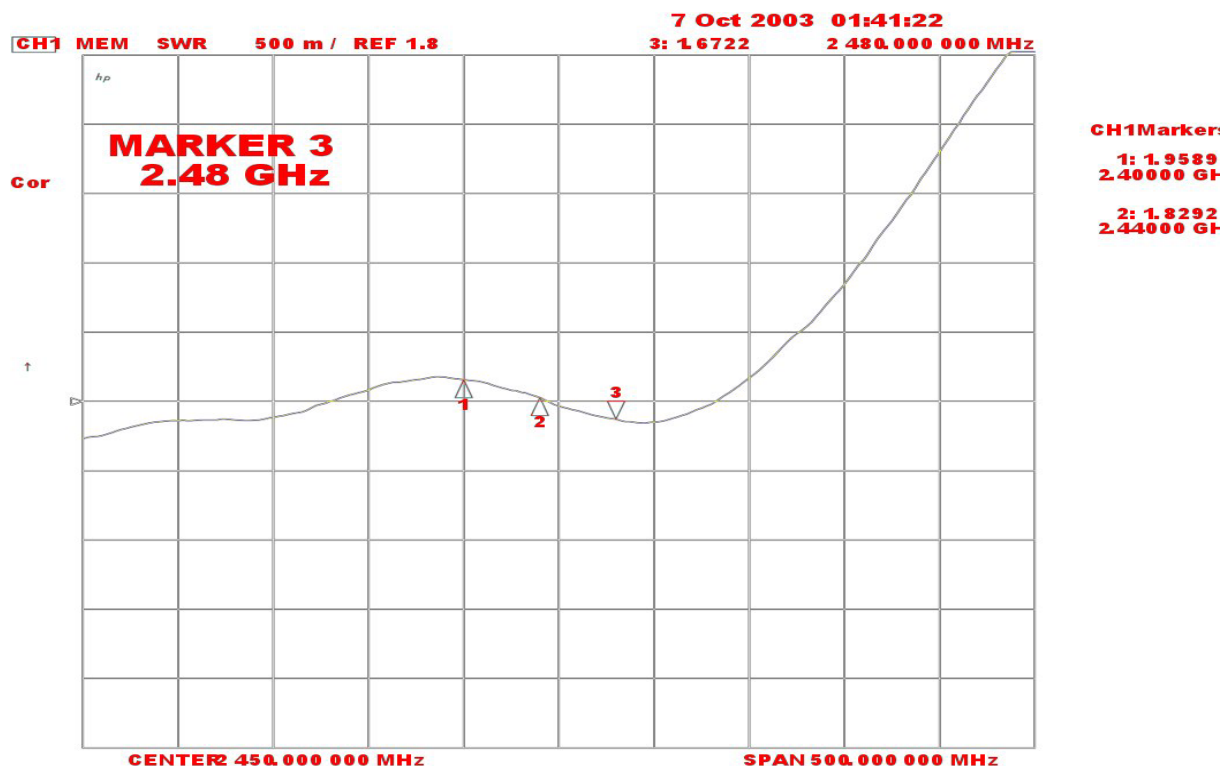


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Rx_S₁₁

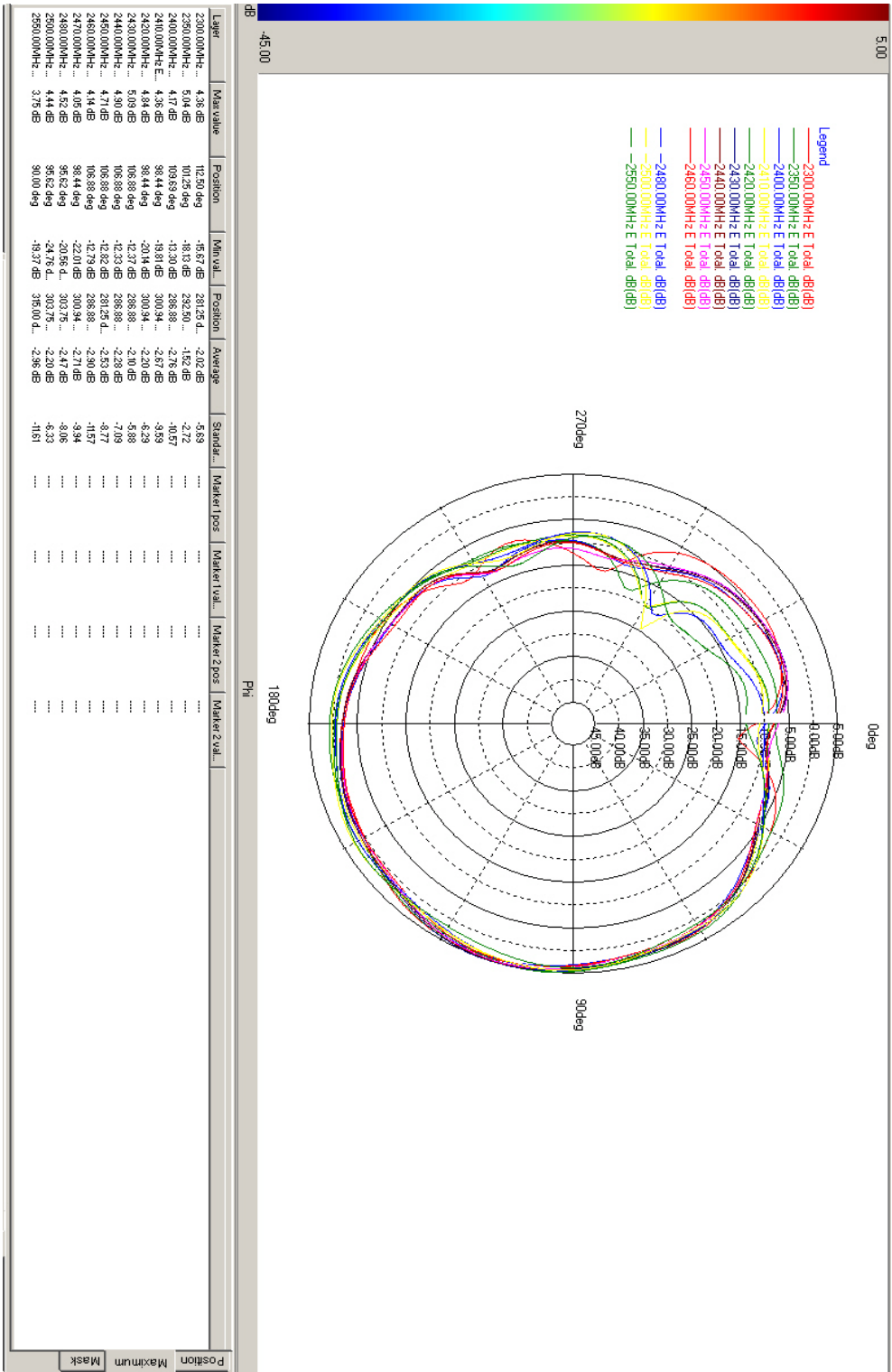


Rx_VSWR



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Rx_Radiation Pattern(AZIMUTH)





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Rx_Radiation Pattern(ELEVATION)

