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RETRACTABLE ANTENNA SPECIFICATION

(MRT-05300)

TX-170SA



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1. Specification

1.1 Electrical Specification

Frequency Range	CELLULAR 824MHz – 894 MHz GPS 1575 MHz US-PCS 1850MHz – 1990MHz	
V.S.W.R	CELLULAR CLOSE IN	< 3.0 : 1
	CELLULAR CLOSE OUT	< 2.0 : 1
	CELLULAR OPEN IN	< 2.8 : 1
	CELLULAR OPEN OUT	< 2.5 : 1
	GPS CLOSE IN	< 3.0 : 1
	GPS CLOSE OUT	< 6.7 : 1
	GPS OPEN IN	< 4.0 : 1
	GPS OPEN OUT	< 7.6 : 1
	US-PCS CLOSE IN	< 2.5 : 1
	US-PCS CLOSE OUT	< 4.0 : 1
	US-PCS OPEN IN	< 4.1 : 1
	US-PCS OPEN OUT	< 3.1 : 1
Impedance	50Ω	
Radiation Pattern	Omni-directional	
Polarization	Vertical	
Max power	2W	

CELLULAR GAIN (PEAK)	TX	849Mhz	2.15dBi	ELEVATION-1	CLOSE OUT
	RX	894Mhz	2.45dBi	ELEVATION-1	CLOSE OUT
US - PCS GAIN (PEAK)	TX	1850Mhz	2.19dBi	ELEVATION-1	CLOSE OUT
	RX	1990Mhz	2.21dBi	ELEVATION-2	CLOSE OUT
GPS GAIN (PEAK)	1575Mhz		0.96dBi	ELEVATION-1	CLOSE IN



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1.2 Mechanical Specification

Length	See the drawing
Temperature	−40 °C − +70 °C
Connector type	Screw

1.3 Packing

Description	Q' ty	Material	Remark
Tray	150EA	P.P	
Air Vinyl	—	Polyester	
Inner Box	1,500EA	SW 1 (A)	17.4Kgf/50mm min.
Master Carton Box	7,500EA	DW 1 (A)	25.4Kgf/50mm min.



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2. Test Equipment

Description	Purpose
Network Analyzer	V.S.W.R, Impedance
Standard Dipole	Gain, Impedance
Digital Calipers	Dimension
Torque Driver	Torque Test
Push Pull Gauge	Force Test
Temp. Chamber	Temperature Test
Thermal Shock Chamber	Thermal Shock
Vibration Shaker	Vibration
Dummy Set	Drop Test

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3. Electrical Specification

3.1 V.S.W.R

The performance of this antenna shall be in accordance with the best V.S.W.R requirements as followings over the entire band.

V.S.W.R	CELLULAR CLOSE IN	< 3.0 : 1
	CELLULAR CLOSE OUT	< 2.0 : 1
	CELLULAR OPEN IN	< 2.8 : 1
	CELLULAR OPEN OUT	< 2.5 : 1
	GPS CLOSE IN	< 3.0 : 1
	GPS CLOSE OUT	< 6.7 : 1
	GPS OPEN IN	< 4.0 : 1
	GPS OPEN OUT	< 7.6 : 1
	US-PCS CLOSE IN	< 2.5 : 1
	US-PCS CLOSE OUT	< 4.0 : 1
	US-PCS OPEN IN	< 4.1 : 1
	US-PCS OPEN OUT	< 3.1 : 1

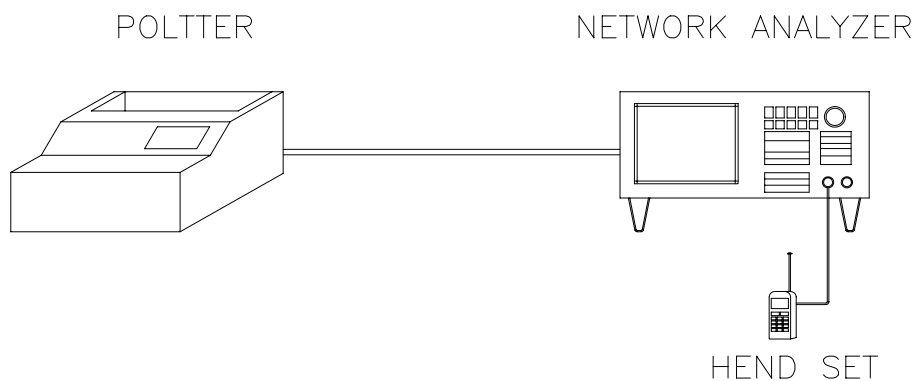


Figure 1 V.S.W.R Measurement System



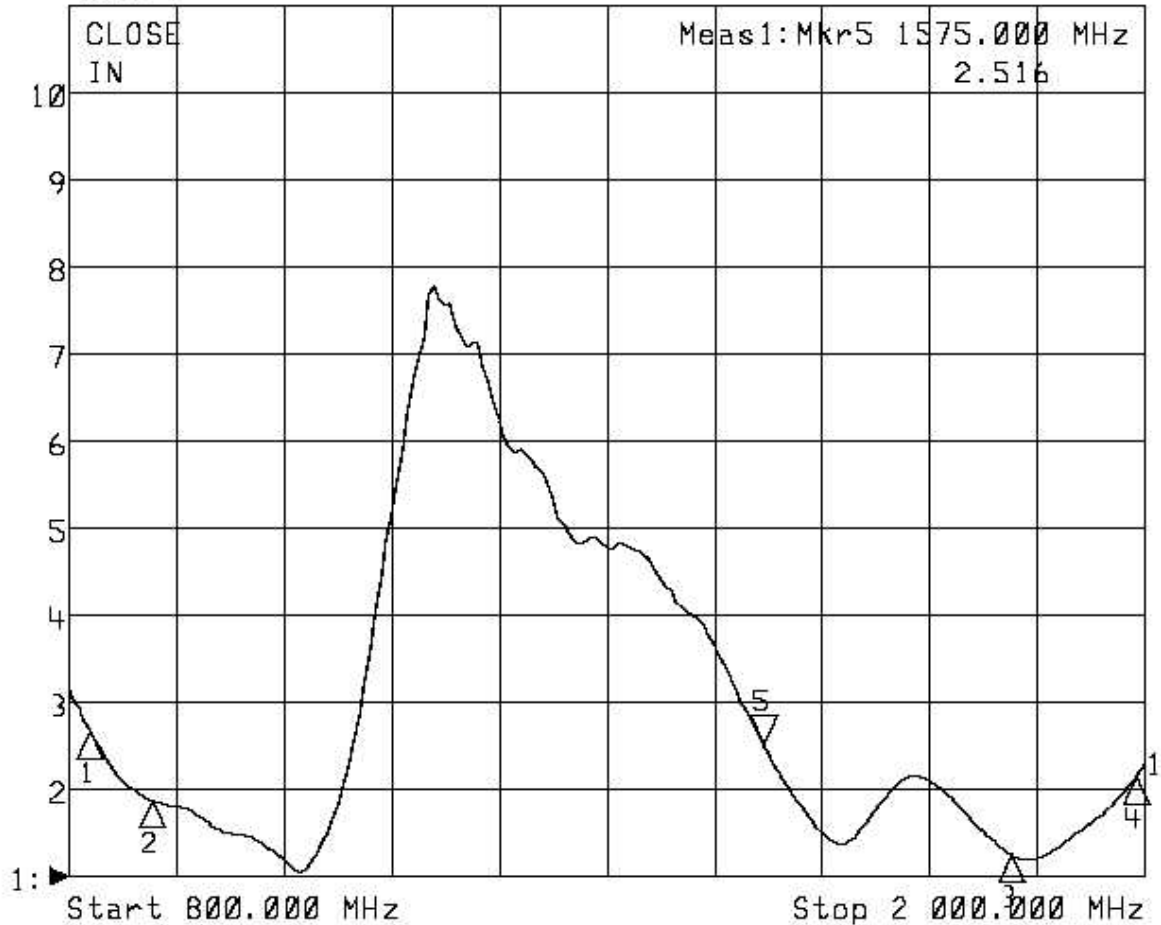
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CLOSE IN

►1:Reflection /M SWR 1.0 / Ref 1.000 C?

►2:Off



1:Mkr (MHz)	2:Mkr (MHz)
1: 824.0000	2.680
2: 894.0000	1.871
3: 1850.0000	1.251
4: 1990.0000	2.146
5> 1575.0000	2.516

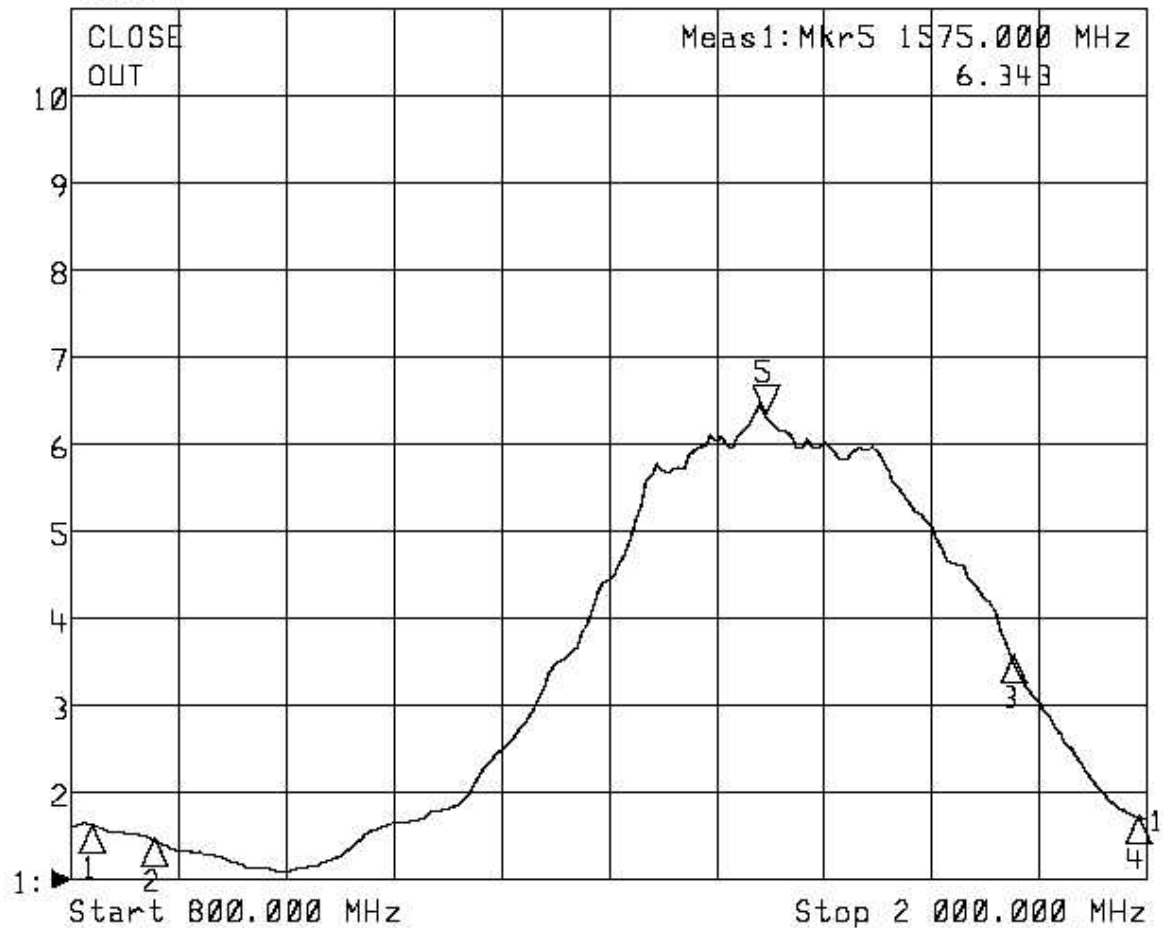


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CLOSE OUT

►1:Reflection /M SWR 1.0 / Ref 1.000 C?

►2:Off



1: Mkr (MHz)		2: Mkr (MHz)
1:	824.0000	1.633
2:	894.0000	1.475
3:	1850.0000	3.581
4:	1990.0000	1.728
5>	1575.0000	6.343



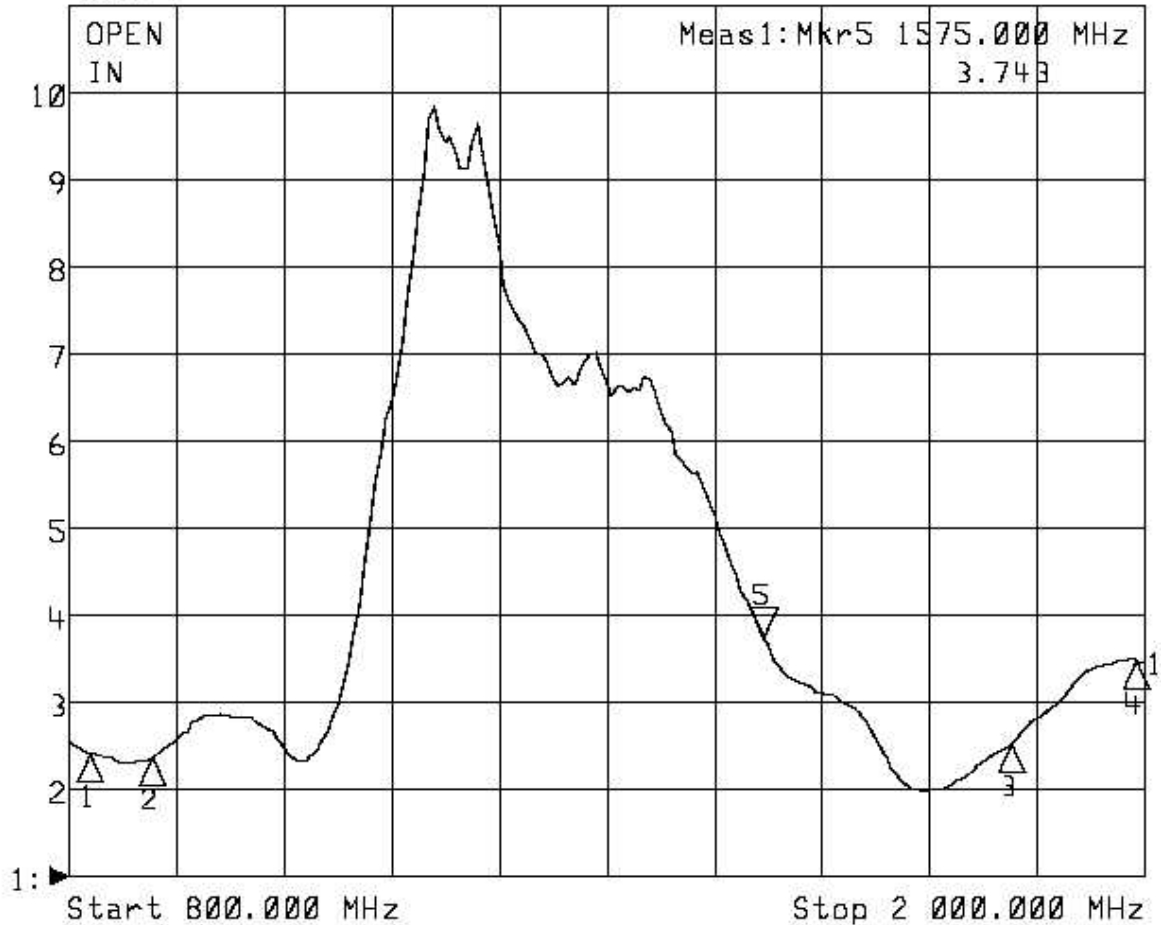
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OPEN IN

►1:Reflection /M SWR 1.0 / Ref 1.000 C?

►2:Off

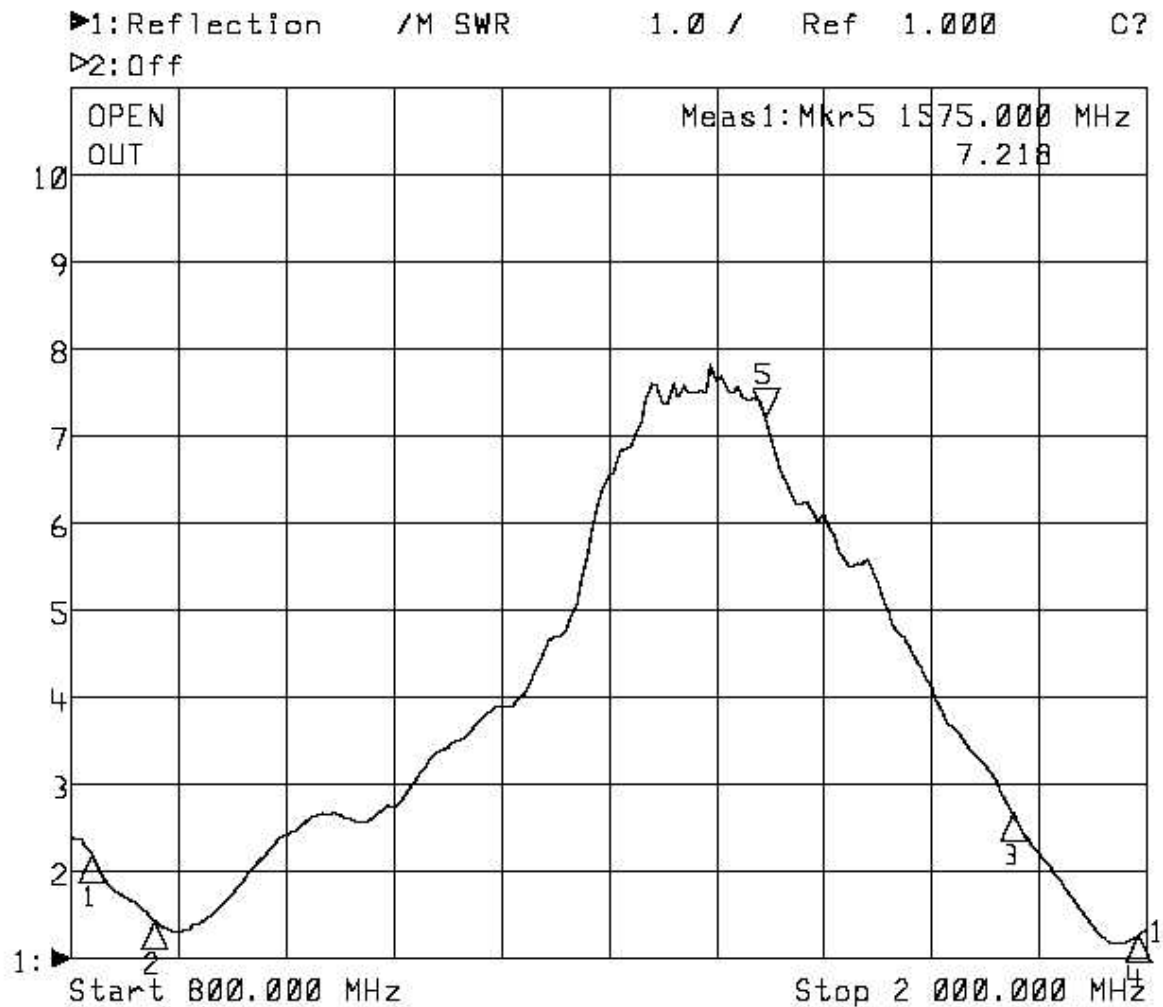


1: Mkr (MHz)		2: Mkr (MHz)
1:	824.0000	2.403
2:	894.0000	2.367
3:	1850.0000	2.516
4:	1990.0000	3.480
5>	1575.0000	3.743



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OPEN OUT



1: Mkr (MHz)	2: Mkr (MHz)
1: 824.0000	2.191
2: 894.0000	1.432
3: 1850.0000	2.673
4: 1990.0000	1.263
5: 1575.0000	7.218

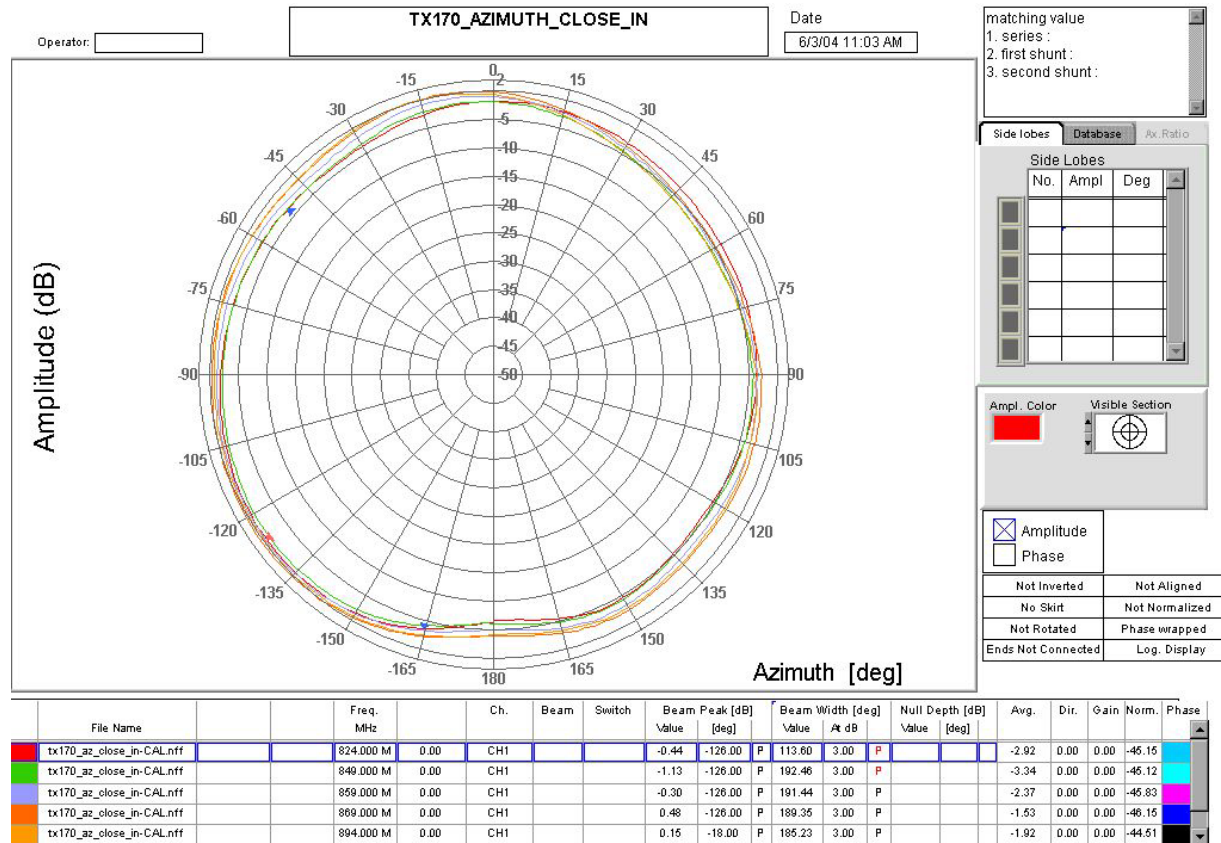


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3.2 Radiation Pattern

The radiation pattern of this antenna shall be omni-directional for the horizontal plane and bi-directional for the vertical plane in both position of extended and retracted.

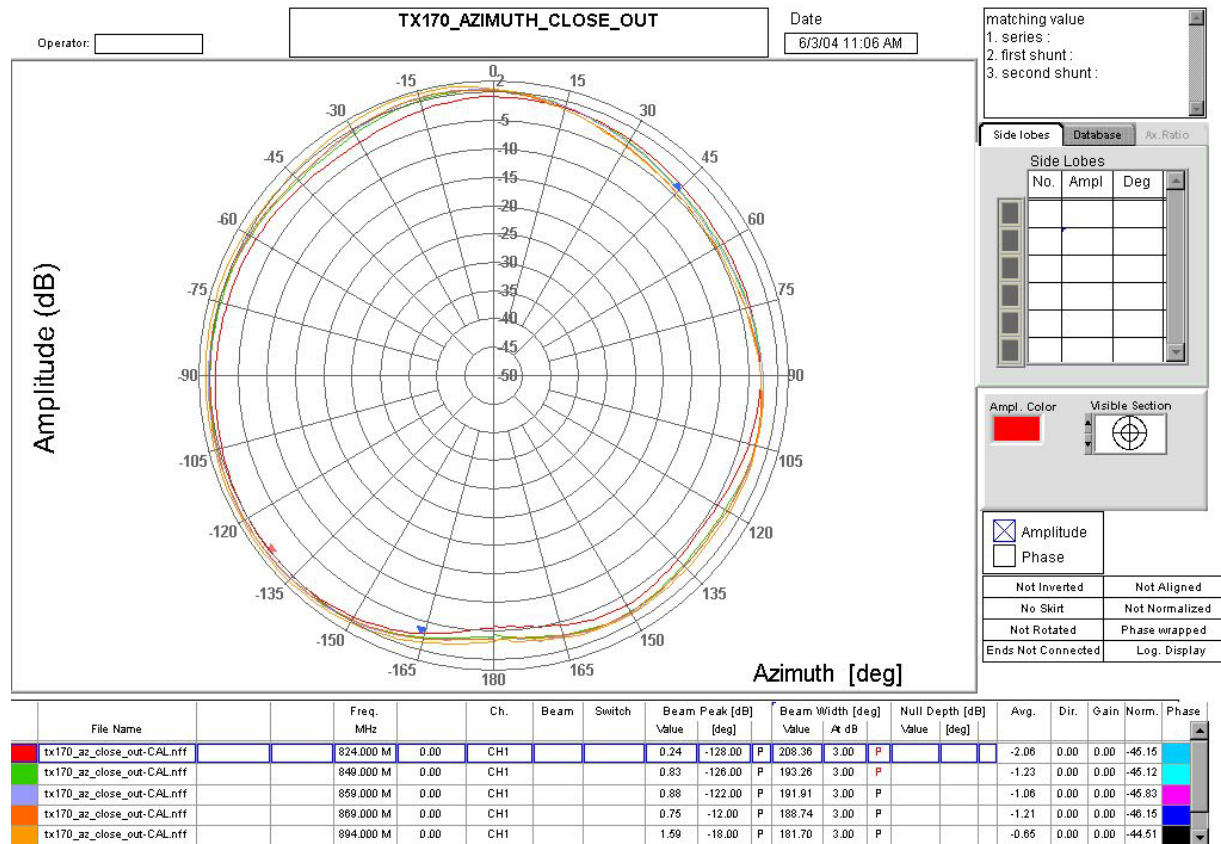
CELLULAR, AZIMUTH, CLOSE IN





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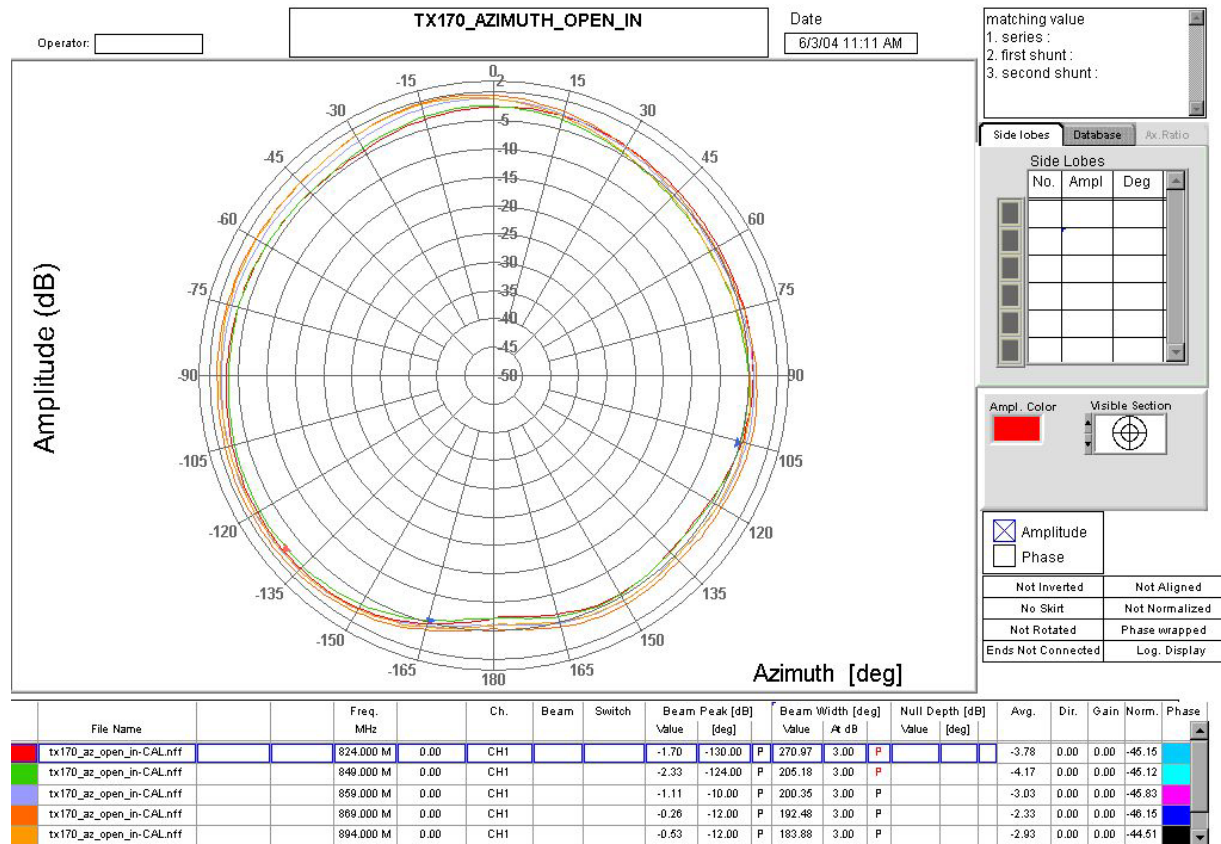
CELLULAR AZIMUTH CLOSE OUT





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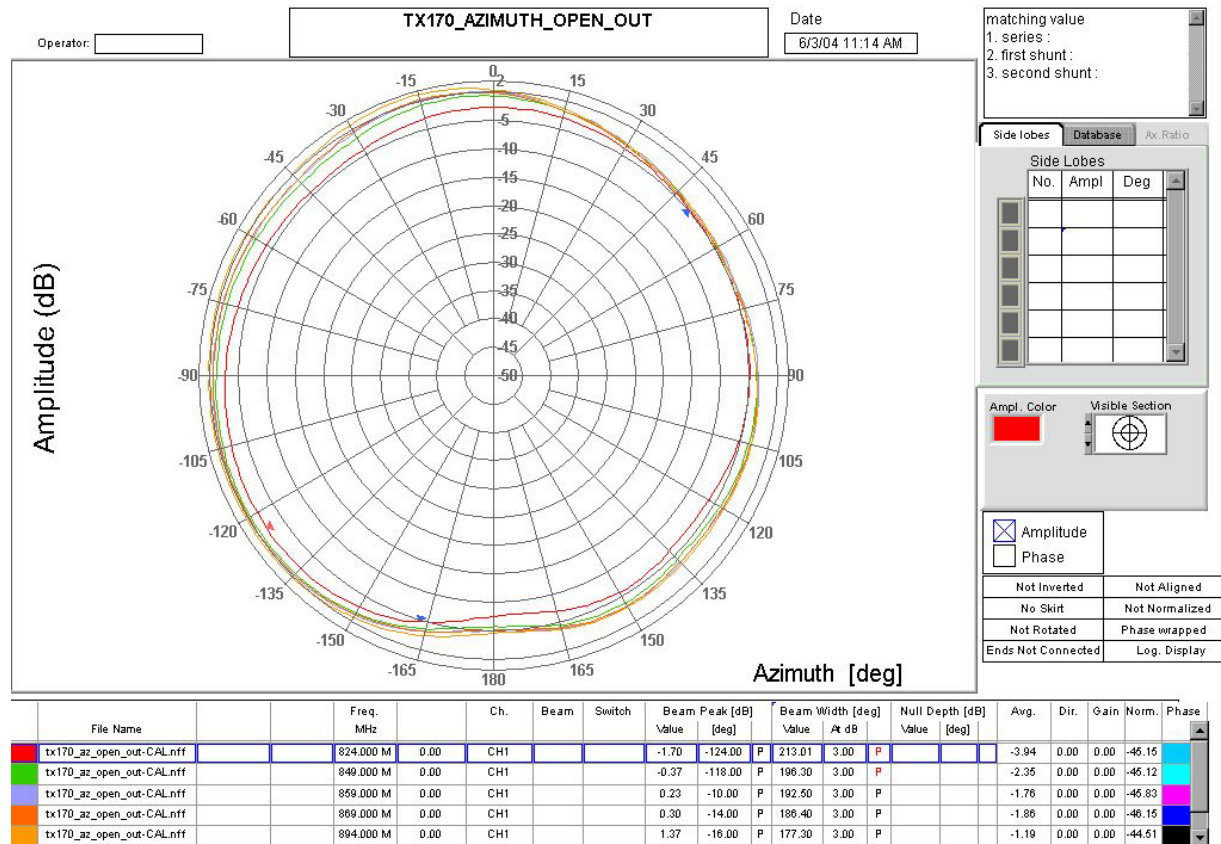
CELLULAR AZIMUTH OPEN IN





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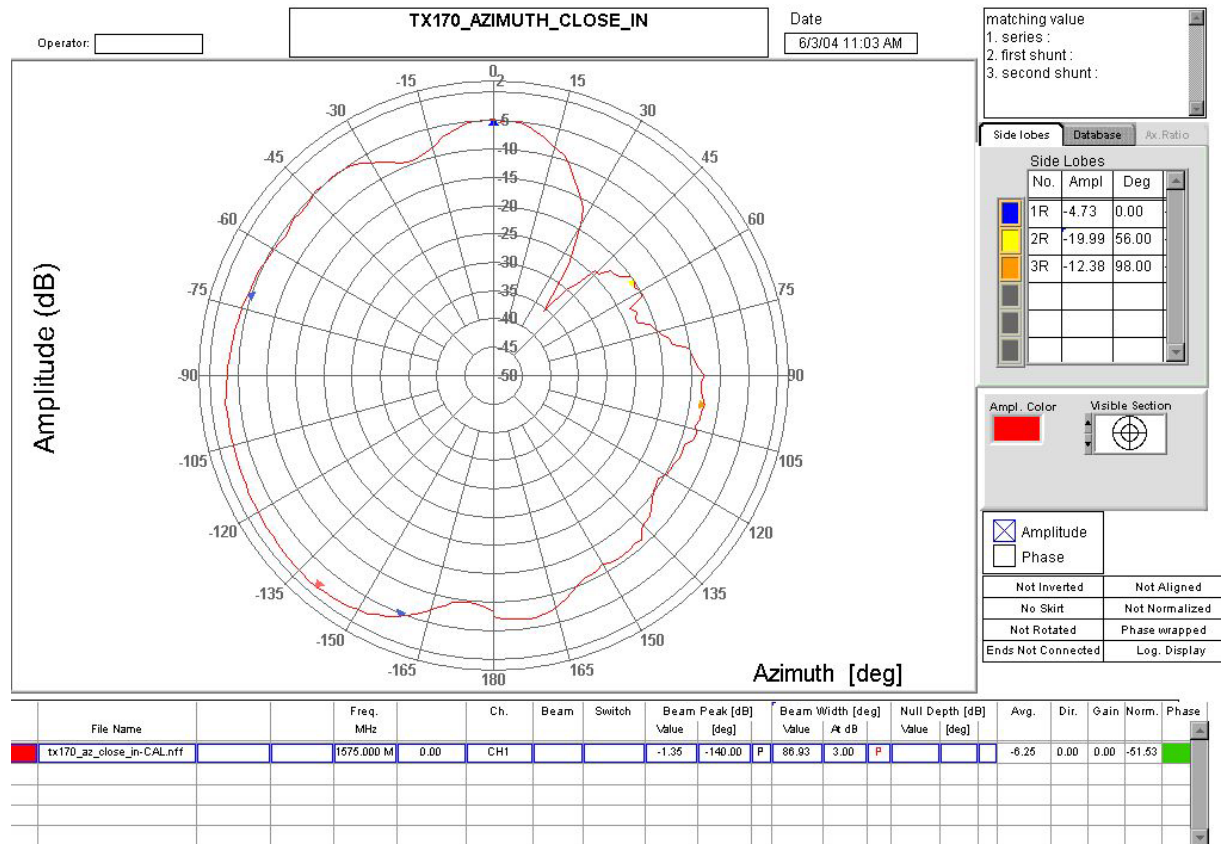
CELLULAR AZIMUTH OPEN OUT



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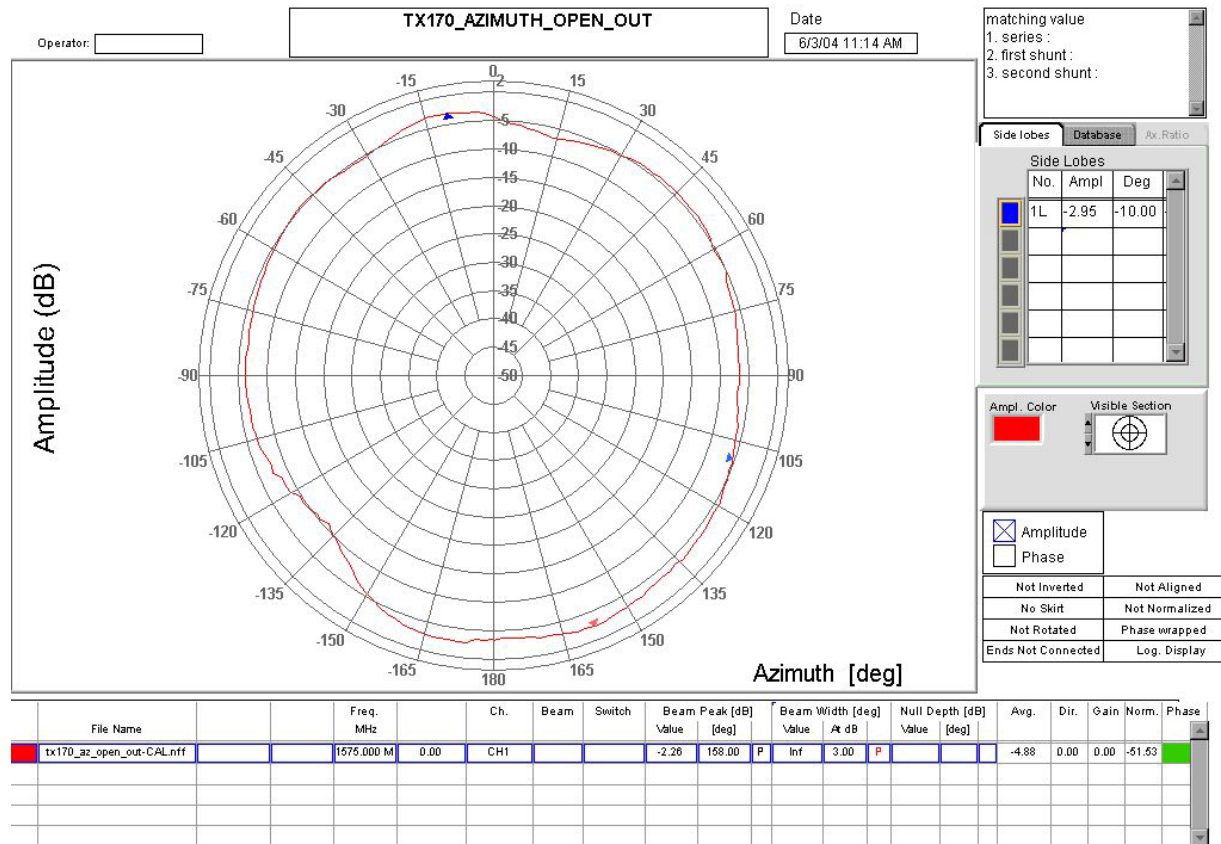
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GPS AZIMUTH CLOSE IN



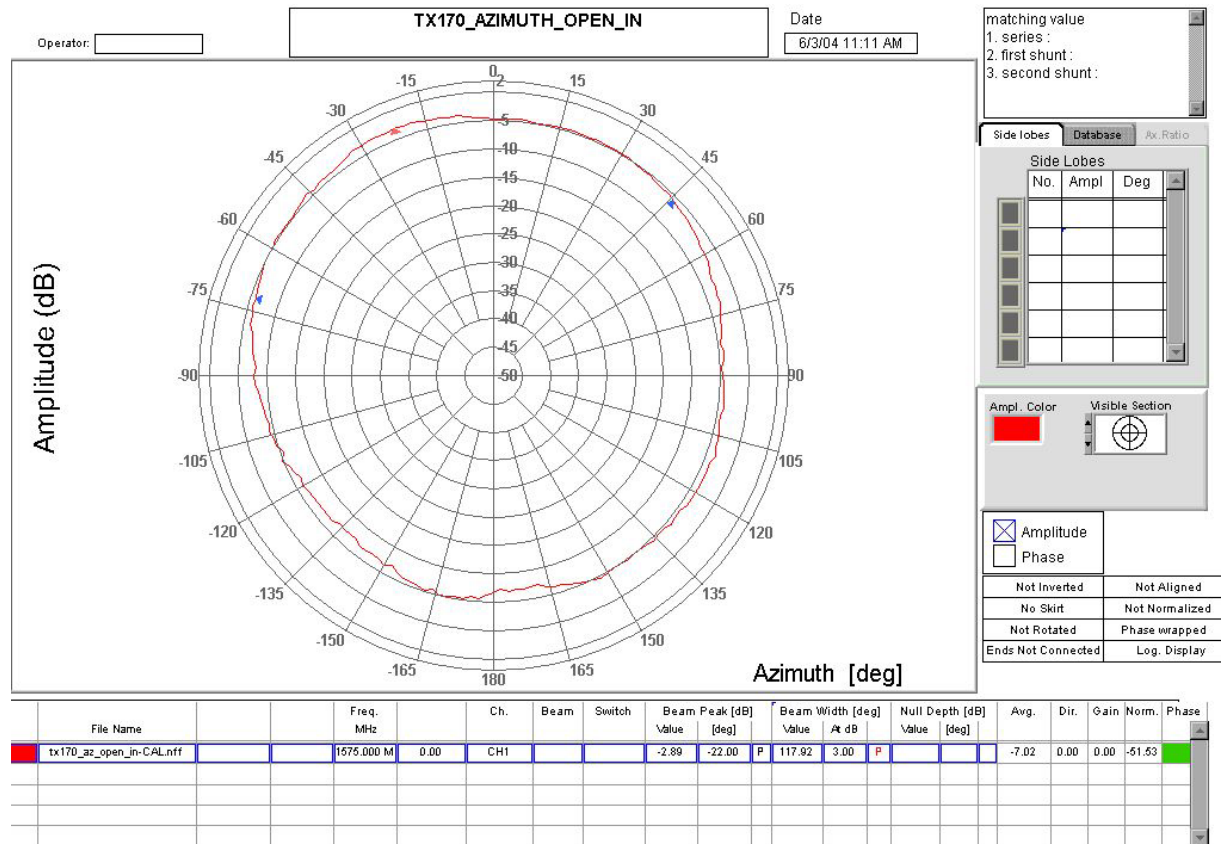
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GPS AZIMUTH CLOSE OUT



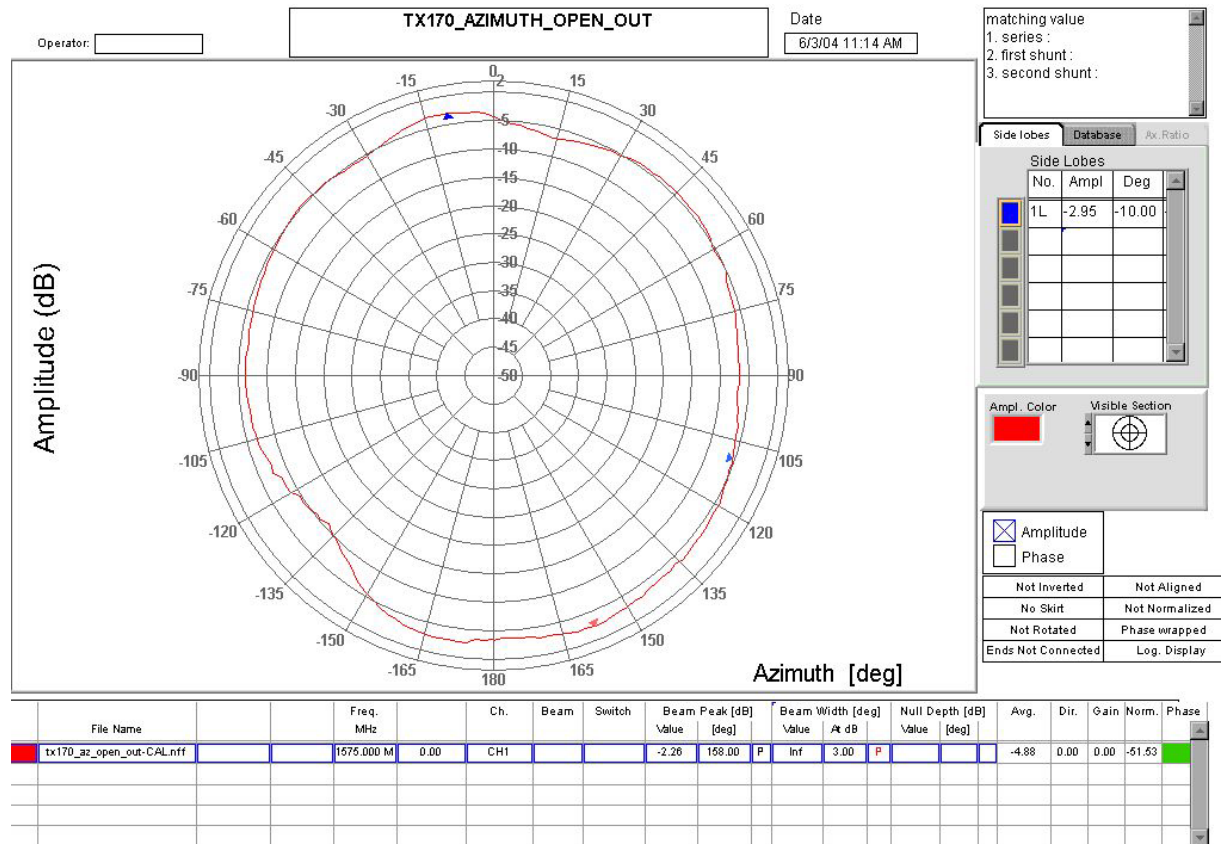
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GPS AZIMUTH OPEN IN



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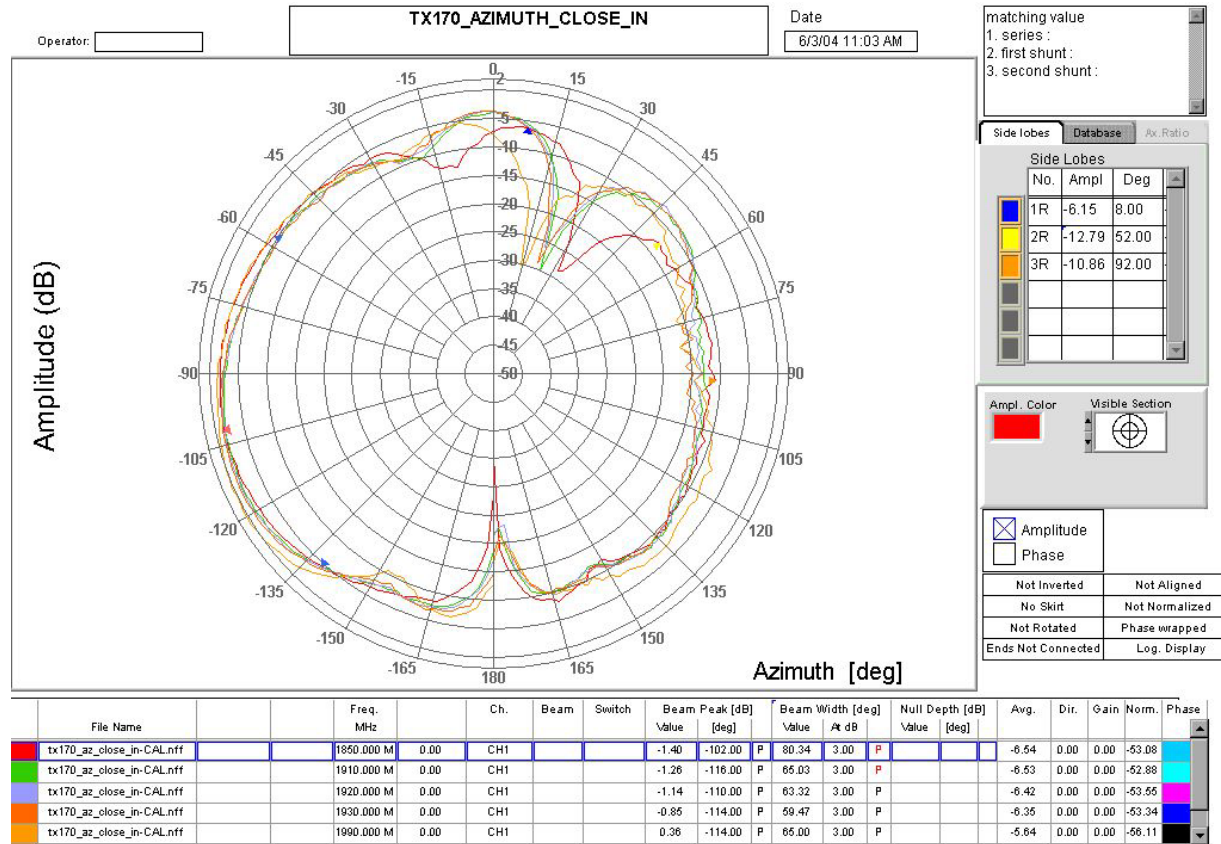
GPS AZIMUTH OPEN OUT





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US-PCS AZIMUTH CLOSE IN





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US-PCS AZIMUTH CLOSE OUT

