RF Report

Longcheer W660

CONTENT

1. General information

Project information

- Bar type phone, main antenna located at the bottom.
- Bands: GSM850/900/1800/1900&WCDMA Band I V IIII
- monopole antenna

2. Test information

2.1 Matching circuit

Matching circuit of main antenna and BT antenna please refer to the following graphic.

Main antenna

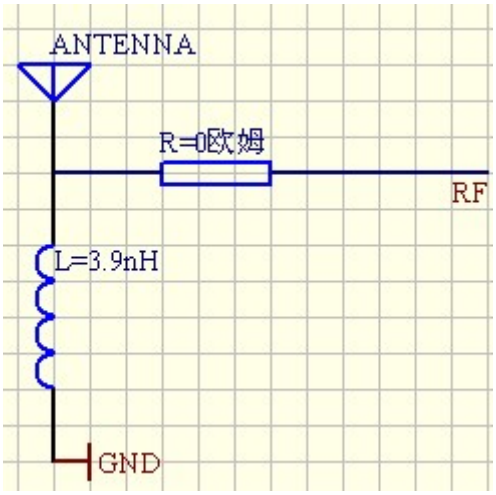


Figure.1 matching circuit

3. Set up

3.1 Return Loss, VSWR

Return Loss, VSWR were performed using Agilent E5071C Network Analyzer and the previously described test fixture. A ferrite-loaded coaxial cable was used to mitigate surface currents on the outside of the cabling. The testing was performed in free space.

Figure.2 testing instrument

3.2 Efficiency

The efficiency of the antenna was measured in the Speed Communication Technology anechoic chamber. The chamber provides less than –40 dB reflectivity from 410 MHz through 6 GHz and 25cm diameter spherical quite zone. The measurement results are calibrated using both dipole and leaky wave horn standards.

Figure.3 speed chamber system

3.3 TRP Measurement Procedure and Settings

The following procedure shall be applied:
• Establish a call to the mobile, set maximum RF output power.
• Execute a full three dimensional (3D) measurement as described and Using:
$\Delta\phi \leq 22.5°$
$\Delta\Theta \leq 15°$
And at three TX frequencies according to: low, mid and high.
(Note: CTIA asks for: 15° and 15°)
• Measure both vertical and horizontal polarization's.
• Calculate one TRP value for the appropriate band as described in 2.

3.4 TIS Measurement Procedure and Settings

The following procedure shall be applied:
• Establish a call to the mobile, set maximum RF output power.
• Execute a full three dimensional (3D) measurement as described Using:
$\Delta\phi \leq 30°$
$\Delta\Theta \leq 30°$
• Measure both vertical and horizontal polarizations.
• An estimation of the additional uncertainty caused by the "pattern is equal" assumption shall be provided

4. Measurement Data

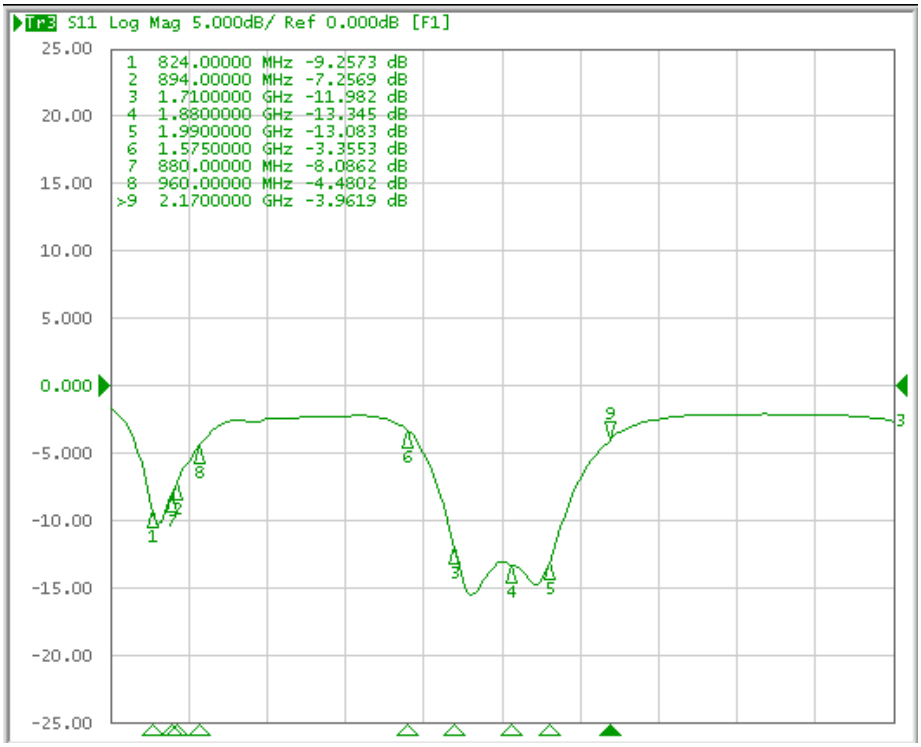
GSM&WCDMA

OTA

EUT TYPE	Test State	Band	Freq(MHz)	TRP(dBm)	Freq(MHz)	TIS(dBm)
	Free Space	GSM850	824.20	28.1	869.20	
			836.60	28.4	881.60	
			848.80	28.9	893.80	105.8
		GSM900	880.20	29.6	925.20	
			897.40	29.4	942.40	
			914.80	28.1	959.80	104.3
		GSM1800	1710.20	27.3	1805.20	
			1747.40	27.0	1842.40	
			1784.80	27.3	1879.80	104.2
		GSM1900	1850.20	28.1	1930.20	
			1880.00	28.1	1960.00	
			1909.80	26.3	1989.80	104.5

EUT TYPE	Test State	Band	Freq(MHz)	TRP(dBm)	Freq(MHz)	TIS(dBm)
	Free Space	WCDMA I	1922.40	20.1	2112.40	
			1950.00	19.4	2140.00	
			1977.60	20.3	1987.60	106.8
		WCDMA V	826.40	19.6	1932.40	
			836.60	20.8	1960.00	
			846.60	20.5	2167.60	106.3
		WCDMA IIII	1712.40	21.3	8714.00	
			1732.40	21.4	881.60	
			1752.60	21.2	891.60	106.1

S11



Efficiency

frequency	efficiency	frequency	efficiency
820	35%	1710	40%
830	37%	1730	43%
840	42%	1750	45%
850	42%	1770	56%
860	42%	1790	65%
870	43%	1810	67%
880	43%	1830	64%
890	44%	1850	58%
900	40%	1870	57%
910	43%	1890	58%
920	41%	1910	62%
930	44%	1930	64%
940	42%	1950	67%
950	43%	1970	69%
960	42%	1990	73%
		2010	73%
		2030	74%
		2050	73%
		2070	70%
		2090	62%
		2110	52%
		2130	44%

		2150	40%
		2170	35%

5. Conclusion and comments

This report summarizes the electrical performance of internal monopole antenna for W660. The antenna was tested using the customer provided phone test fixture. SCT team is looking forward to getting your approval. Thanks for your cooperation.