Amphenol Mobile

HTC

JESSIE 7-850

Tri Band

(GSM850/DCS/PCS)

19 July 2004

1.0 Overview

This report summarizes the electrical results of proposed antenna to support the HTC JESSIE 7-850 Project program.

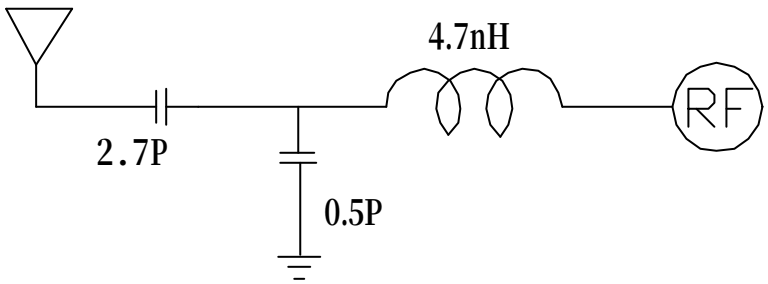
1.1 Specifications

1.2 Antenna Configuration

The antenna operates in GSM850, DCS1800, PCS1900 bands, the phone fixture used is shown in Figure 1.

Figure 1 : Test Fixture

1.3 Antenna Matching Network



2.0 Electrical Testing

2.1 Voltage Standing Wave Ratio (VSWR) Measurements

2.1.1 Test Setup

VSWR measurements (S_{11}) were performed using a Hewlett Packard 8753ES Network Analyzer and previously described test fixture. One setup was used: free space measurement. The complete VSWR plots are provided in Appendix A.

2.1.2 Test Results

Table-1 VSWR Performance Summary					
Freq(MHz)	824	894	1710	1880	1990
VSWR-GSM	2.11	2.79	2.23	1.28	1.61

2.2 Gain Measurement

2.2.1 Test Setup

The gain of the antenna was measured in the anechoic chamber. The chamber provides less than –30 dB reflectivity from 800 MHz through 6 GHz and an 18" diameter spherical quite zone. The measurement results are calibrated using both dipole and leaky wave horn standards. A decoupling sleeve is used to reduce feed line radiation.

2.2.2 Test Results

Tables 2 provide a summary of the gain measurements in free space using the JESSIE 7-850 . The complete gain plots are provided in Appendix B.

Table 2 - Free Space Gain Performance Summary (dBi)						
Frequency(MHz)	H		E1		E2	
	Peak	Average	Peak	Average	Peak	Average
824	-0.65	-2.02	-1.11	-4.53	-1.07	-4.48
849	-1.51	-2.83	-1.20	-5.19	-2.20	-5.42
869	-0.96	-2.34	-1.47	-5.36	-1.66	-4.98
894	-1.01	-3.00	-0.62	-5.14	-1.36	-4.86
1710	-2.13	-4.91	-1.36	-4.93	-0.93	-5.54
1785	-1.65	-4.07	-2.22	-4.52	-1.06	-5.30
1805	-2.24	-4.36	-3.23	-5.10	-1.64	-6.13
1850	-1.90	-4.62	-4.44	-5.91	-2.58	-7.33
1880	-1.98	-5.06	-3.89	-6.47	-2.82	-7.23
1910	-2.22	-4.77	-3.01	-5.31	-1.56	-6.07
1930	-3.09	-4.97	-2.73	-5.39	-1.74	-6.14
1990	-1.00	-4.87	-0.91	-3.81	-1.11	-4.55

3.0 Summary and Conclusion

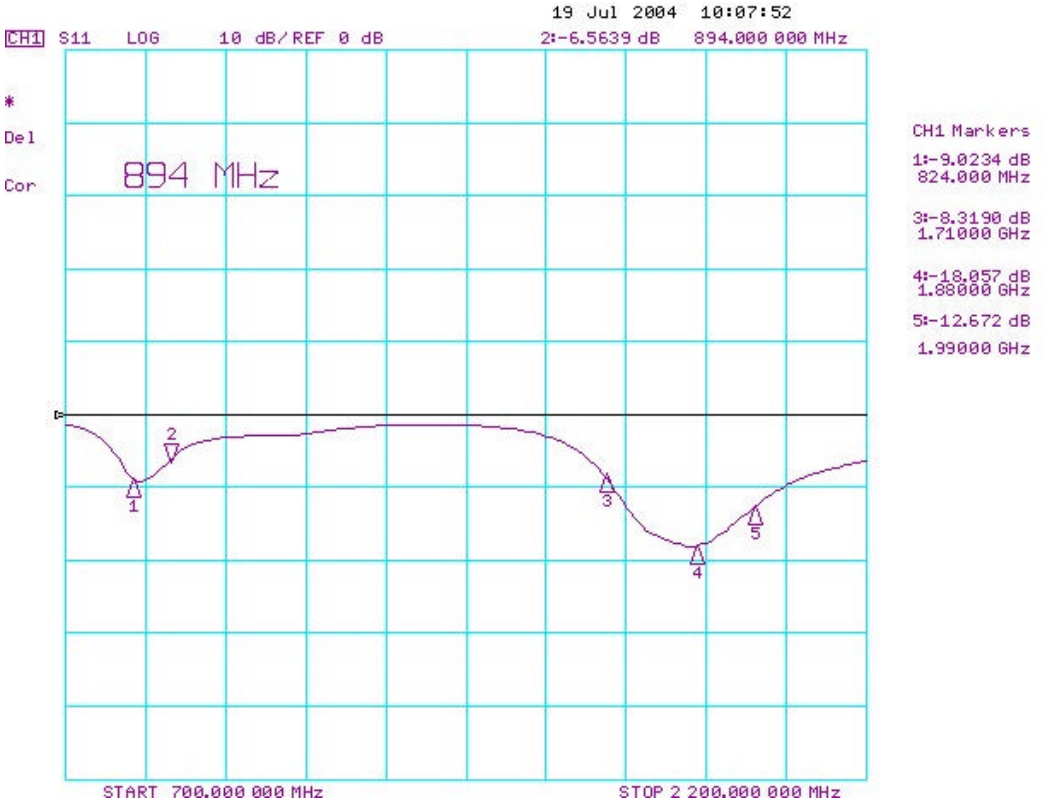
This report summarizes the electrical performance of Tri band antenna designed for HTC JESSIE 7-850 project. This report describes the antenna design using PIFA approach.

The engineering department of Amphenol will continue working on the program to improve the mechanical and electrical characteristics of the antenna. Please let us know if you have any question.

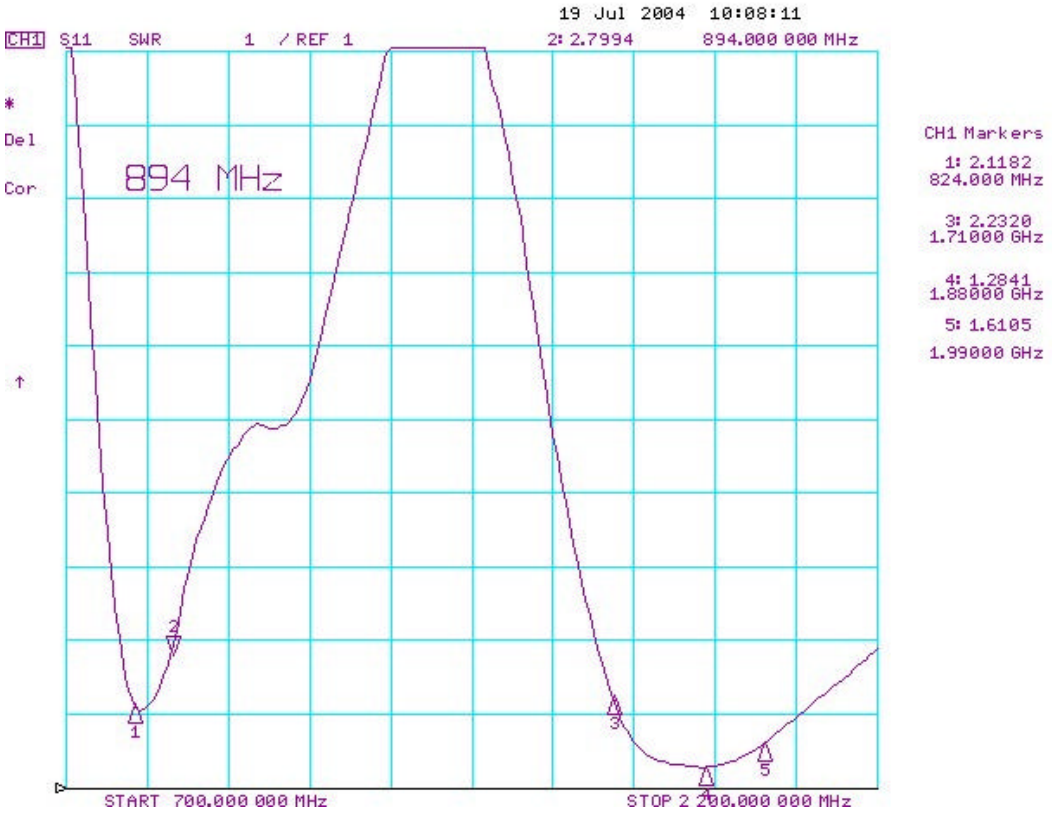
Appendix A

Return Loss/VSWR

Return Loss



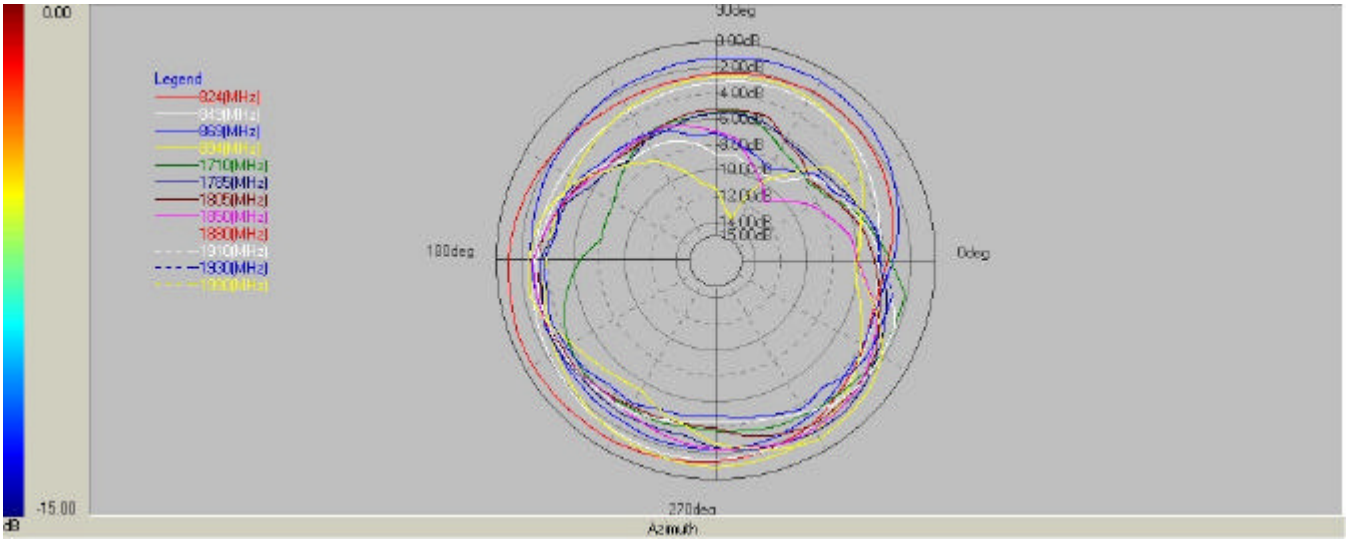
VSWR



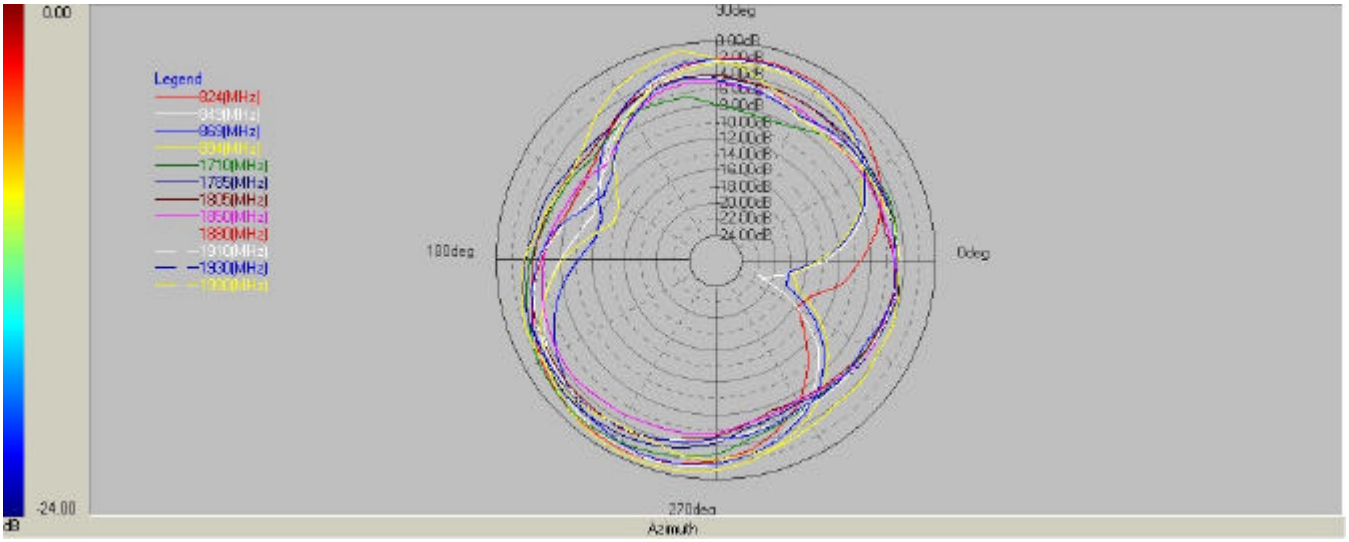
Appendix B

Radiation Pattern

H- Plane



E1- Plane



E2- Plane