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FIELD STRENGTH TEST REPORT

Report Number: M160836

Test Sample: Cellsafe Chip

Host Model number: Apple iPhone 5,
Apple iPhone 6,
Apple iPhone 6 Plus,
Samsung Galaxy S5,
Samsung Galaxy S6

Tested For: Panasales Clearance Centre Pty Ltd
(trading as Cellsafe)

Date of Issue: 02 September 2016

EMC Technologies Report No: M160836

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Test Sample:	Cellsafe Chip
Host Model number:	Apple iPhone 5 / 6 / 6 Plus and Samsung Galaxy S5 / S6
Tested for:	Panasales Clearance Centre Pty Ltd (trading as Cellsafe)
Address:	14/1866 Princes Highway, Clayton VIC 3168 Australia
Contact:	Nicole Bennett
Phone:	+61 3 9596 9888
Email:	sales@cellsafe.com.au
Test Requirements:	Field strength measurements performed on Apple iPhone 5 / 6 / 6 Plus and Samsung Galaxy S5 / S6, with and without Cellsafe Chip
Test Dates:	25th & 29th August 2016

Test Engineer: **Larry Phuah**

Authorised Signatory: **Andrew Whiteford**
Manager (Melbourne)
EMC Technologies Pty Ltd

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Electric Field Strength Test Report

EMC Technologies Report M160427

1.0 INTRODUCTION

Electric Field Strength Measurements (Peak and Polar) were made from an Apple iPhone 5, an Apple iPhone 6, an Apple iPhone 6 Plus, a Samsung Galaxy S5 and a Samsung Galaxy S6 with and without the Cellsafe Chip fitted. The results were compared to determine if there was a reduction in the transmitted electric field strength when the mobile phones were fitted with the Cellsafe Chip.

The Cellsafe Chips (test samples) and mobile phones were provided by the client. The results herein apply only to the test samples.

2.0 TEST SAMPLE DESCRIPTION and TEST SETUP DETAILS

(Information supplied by the Client)

Test Sample: Cellsafe Chip

Host Model Number:

1. Apple iPhone 5 (Serial No. : C38JGND8F39D
2. Apple iPhone 6 (Serial No. : C36ND084G5MP
3. Apple iPhone 6 Plus (Serial No. : C39PX0FKFG5R0
4. Samsung Galaxy S5
   (Serial No. : LMY47X.G9201_5.1.1_0039)
5. Samsung Galaxy S6
   (Serial No. : KOTH9H.G9001DVUIANC6)

2.1 Product Description

(Information supplied by the Client)

The Cellsafe Chip contains a micro-thin printed circuit board designed to channel radiation away from the user's head and body without adversely affecting the signal field strength (connectivity).

2.2 Operating Conditions

The mobile phones (Equipment Under Test) were operated using an Anritsu MT8820A Radio Communication Analyzer to simulate a call made by the EUT. The channel bands utilised in the measurements are shown in the table below. The power level was set to maximum.

Band (MHz)	Uplink Frequency	Channel	Nominal Power (dBm)
850	836.6 MHz	4183	26
1900	1880 MHz	9400	26

2.3 Test Setup

Measurements were made inside a compliant CISPR 16-1-4 semi-anechoic chamber meeting the requirements for a test volume of 2m x 2m x 2m at 3 and 10 metre distances over the frequency range 30 MHz to 6000 MHz.

The EUT was placed vertically upright with the bottom of the phone facing upwards supported with a foam holder at a height of 1.5 m above the ground plane in the centre of the turn table with the front face of the EUT facing the 0° angle of the turn table. The iPhone 5 was placed at 0.8 m above the ground plane. The antenna height was fixed at 1.6 m. The turntable was rotated through 360° to measure field strength pattern in the Horizontal plane.

The placement of the Cellsafe chip on the EUT was performed by the client.

3.0. RESULTS

The results of the tests are contained on polar plot graphs 1 to 5 in Appendix B. In each graph, the difference between the two traces is the difference in the electric field strength measured from the EUT while it was in transmitting.

3.1 Peak Field Strength Measurement Results

Uplink Frequency (MHz)	Model	Radiated Electric Field Strength Measurement (Max Emission)		Overall Average* Change of Field Strength
		No Chip	With Chip	
836.6	Apple iPhone 5	93.6 dBµV/m	93.2 dBµV/m	-0.78 dB
	Apple iPhone 6	95.6 dBµV/m	95.6 dBµV/m	-0.78 dB
	Apple iPhone 6 Plus	96.9 dBµV/m	95.7 dBµV/m	-0.93 dB
	Samsung Galaxy S5	95.5 dBµV/m	96.4 dBµV/m	+0.87 dB
1880	Samsung Galaxy S6	60.6 dBµV/m	59.3 dBµV/m	-1.28 dB

*The average was calculated from the measured field strength (linear 1 degree values) in increments from 0 to 360 degrees.

4.0 CONCLUSION

The Cellsafe Chip, tested on behalf of Panasales Clearance Centre Pty Ltd (trading as Cellsafe), was found to have a minimal impact on the average signal field strength of the Apple iPhone 5, Apple iPhone 6, Apple iPhone 6 Plus, Samsung Galaxy S5 and the Samsung Galaxy S6 at the tested Uplink Frequencies.

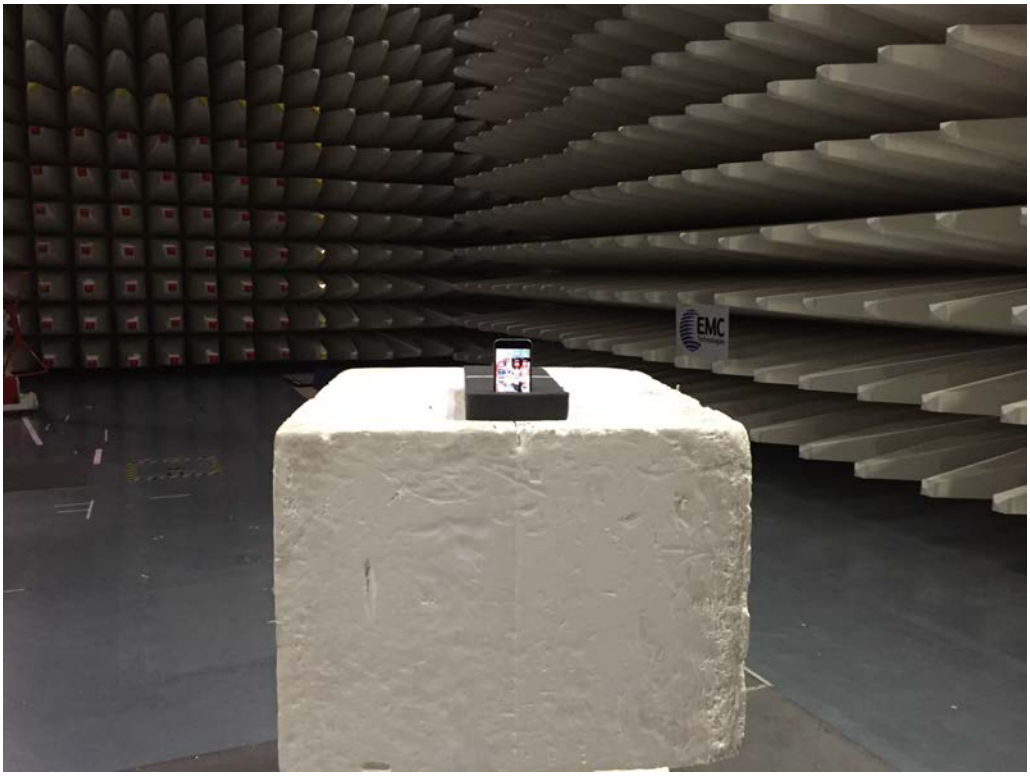
APPENDIX A1
TEST SETUP & SAMPLE PHOTOGRAPHS

Test Setup Apple iPhone 5

Test Sample Apple iPhone 5 with Cellsafe Chip

APPENDIX A2
TEST SETUP & SAMPLE PHOTOGRAPHS

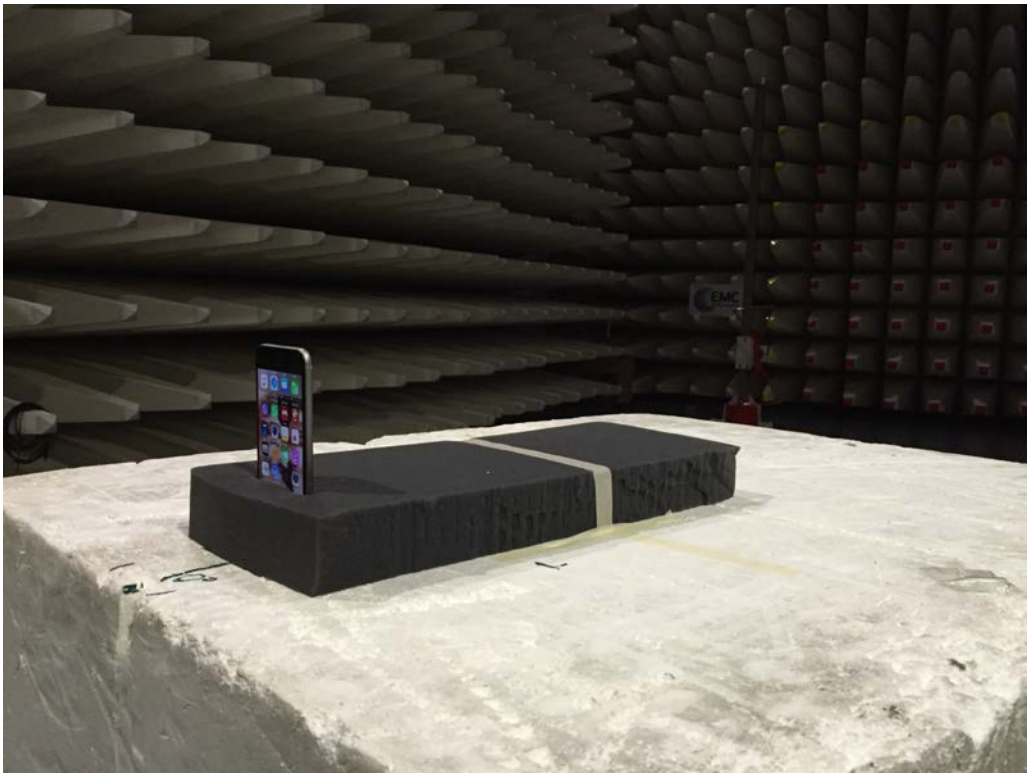
Test Setup Apple iPhone 6



Test Sample Apple iPhone 6 with Cellsafe Chip

APPENDIX A3
TEST SETUP & SAMPLE PHOTOGRAPHS

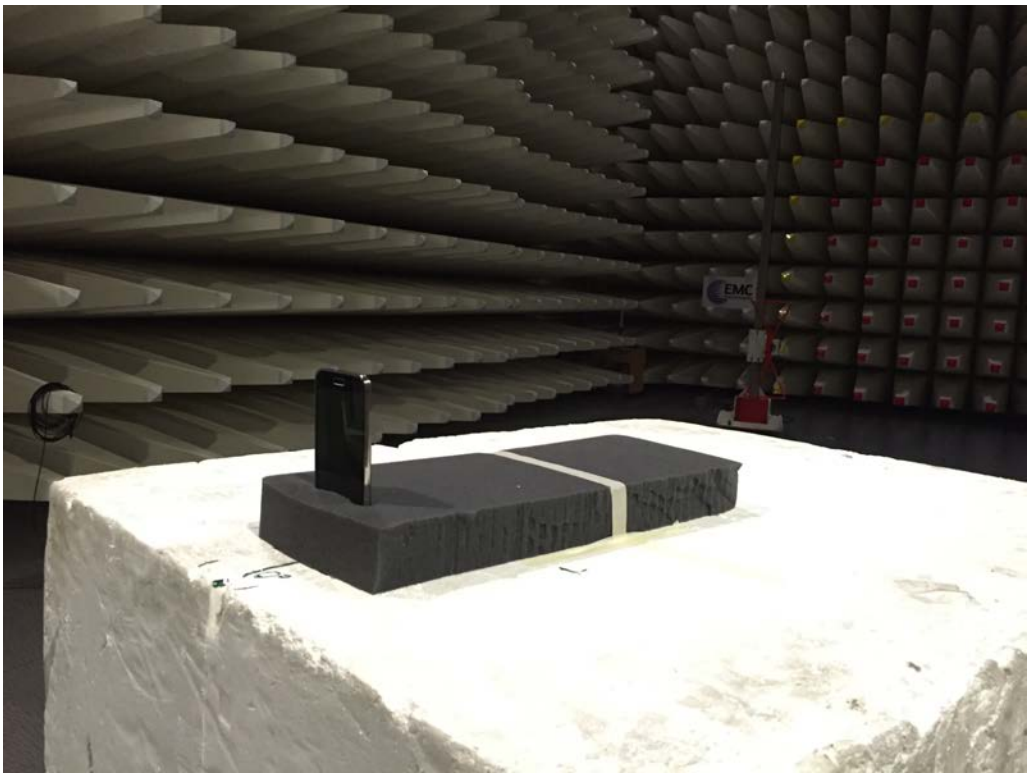
Test Setup Apple iPhone 6 Plus



Test Sample Apple iPhone 6 Plus with Cellsafe Chip

APPENDIX A4
TEST SETUP & SAMPLE PHOTOGRAPHS

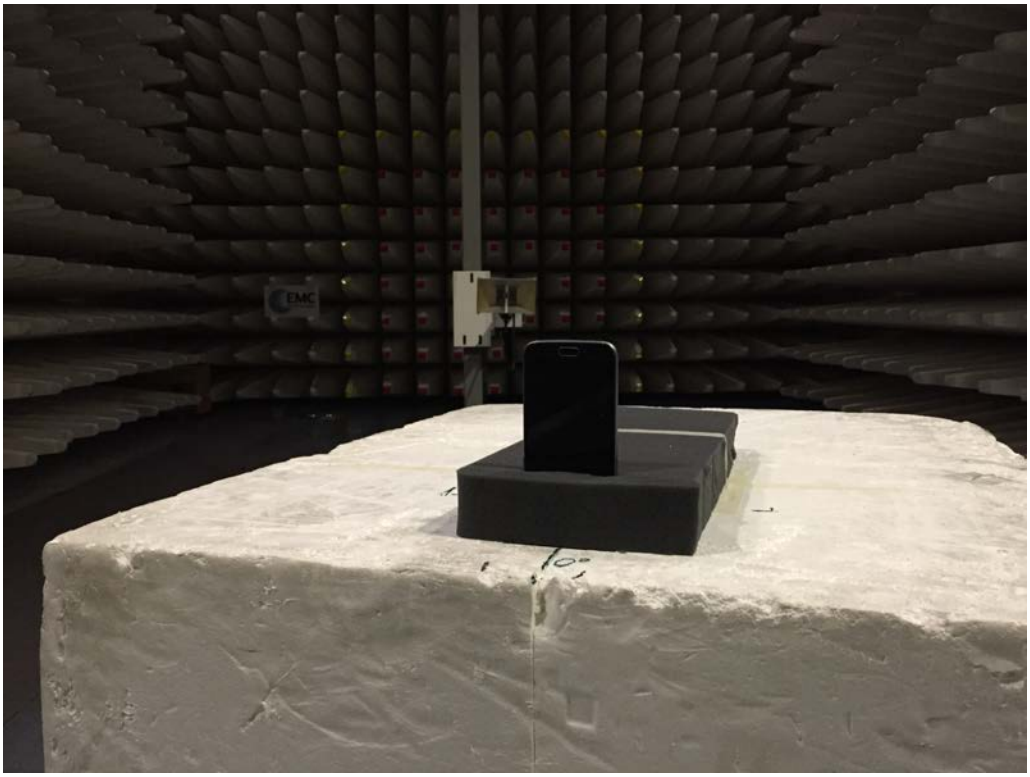
Test Setup Samsung Galaxy S5



Test Sample Samsung Galaxy S5 with Cellsafe Chip

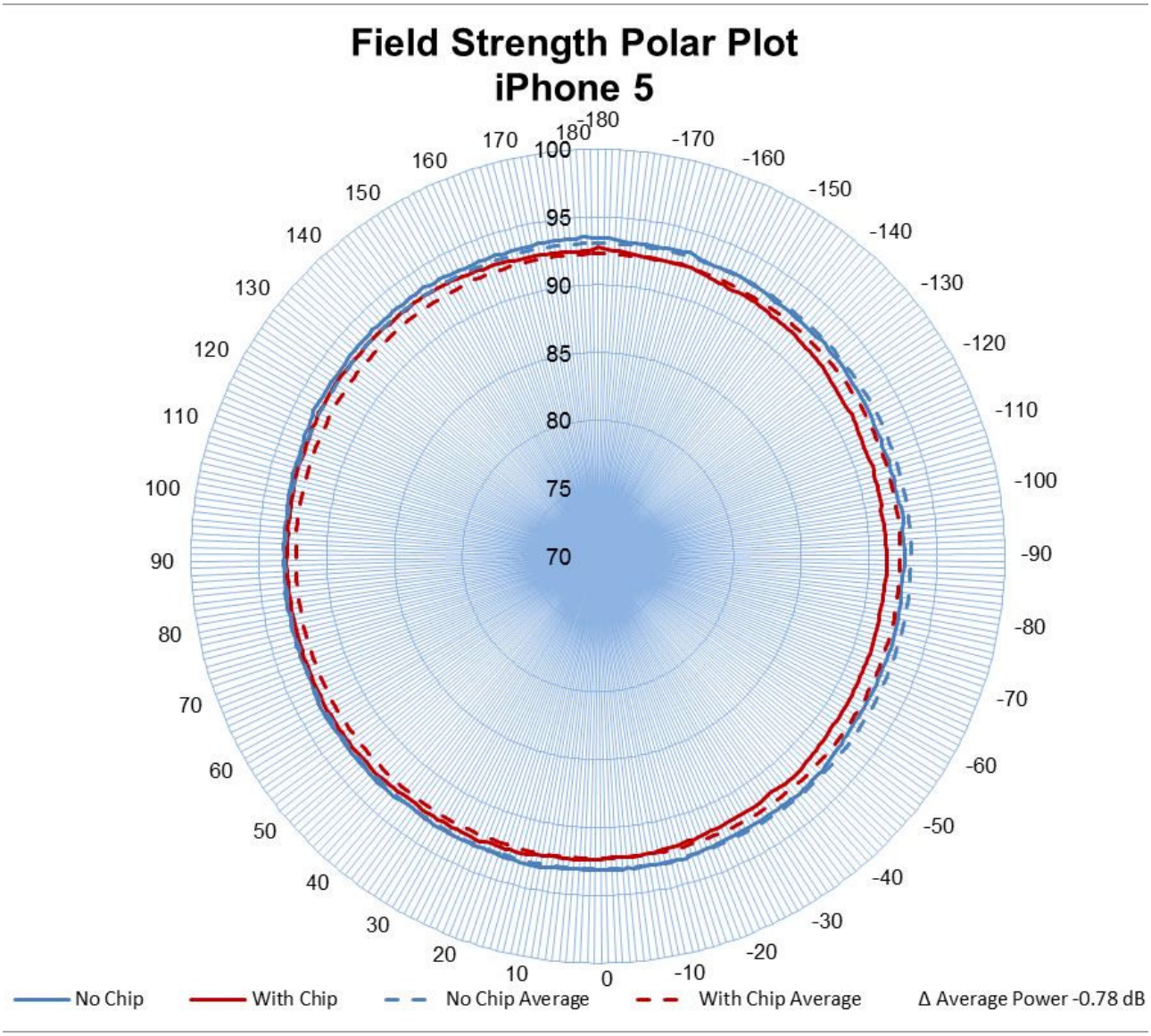
APPENDIX A5
TEST SETUP & SAMPLE PHOTOGRAPHS

Test Setup Samsung Galaxy S6



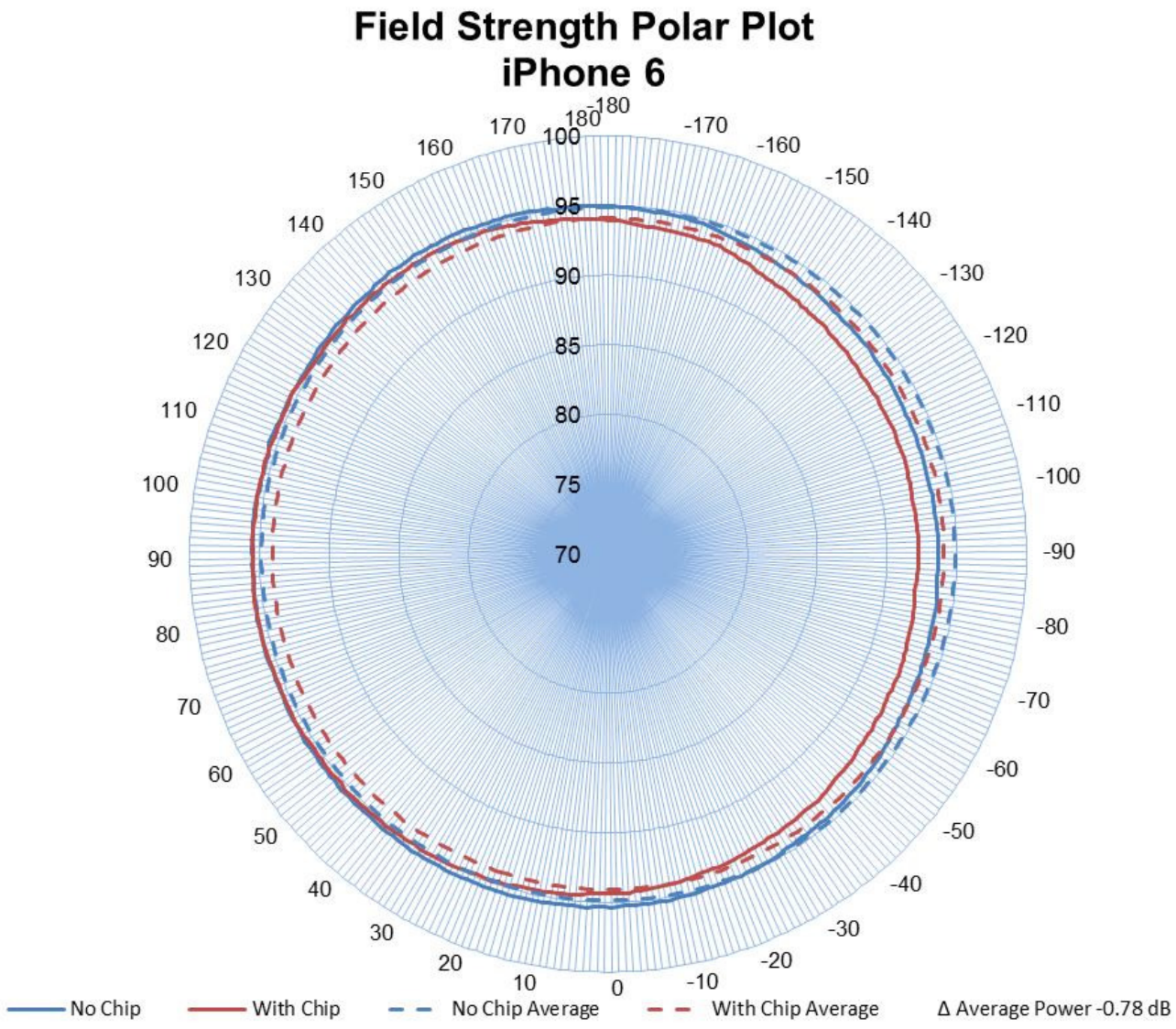
Test Sample Samsung Galaxy S6 with Cellsafe Chip

APPENDIX B1
POLAR RADIATION PATTERN MEASUREMENT



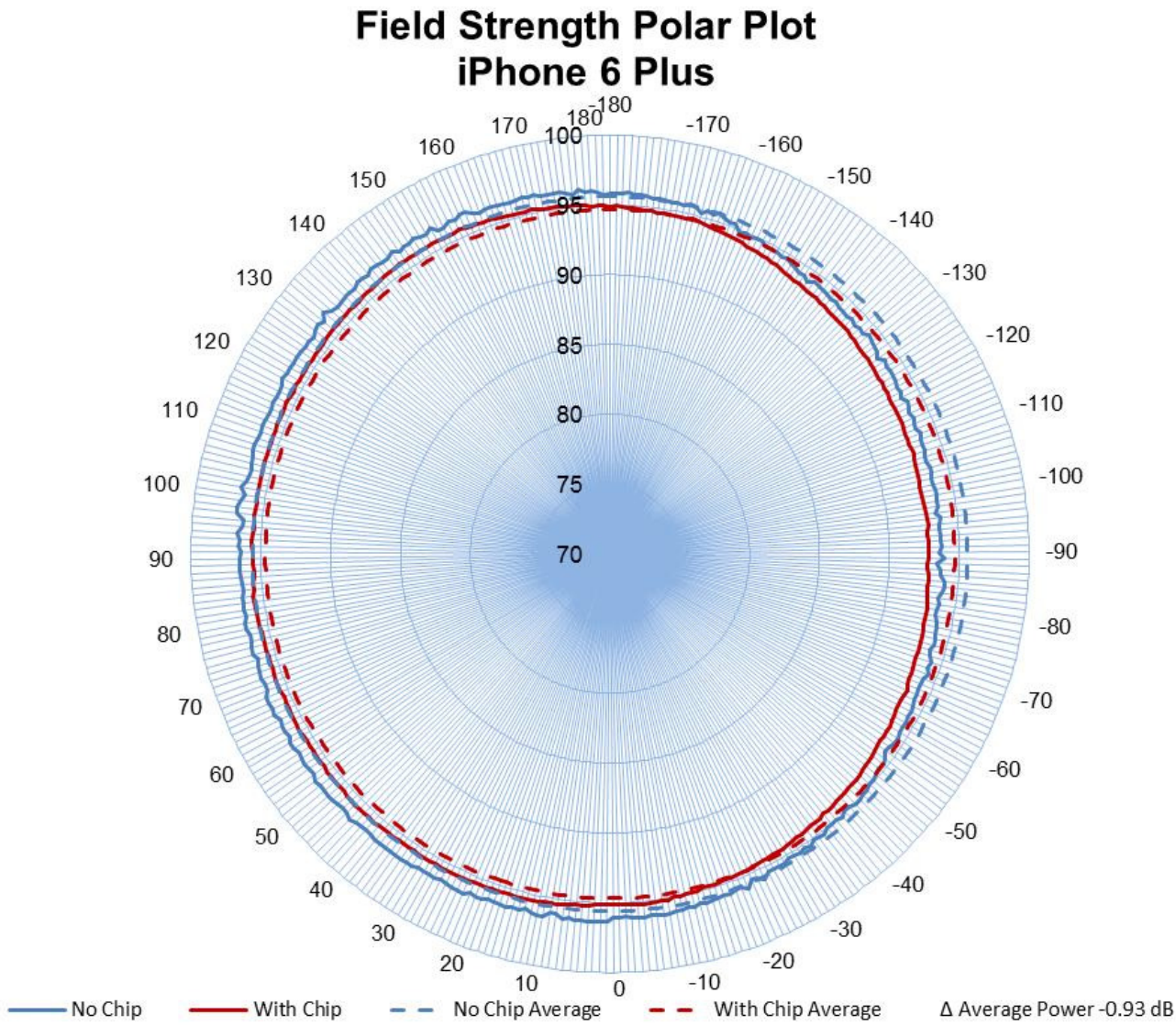
Graph 1 – Apple iPhone 5

APPENDIX B2
POLAR RADIATION PATTERN MEASUREMENT



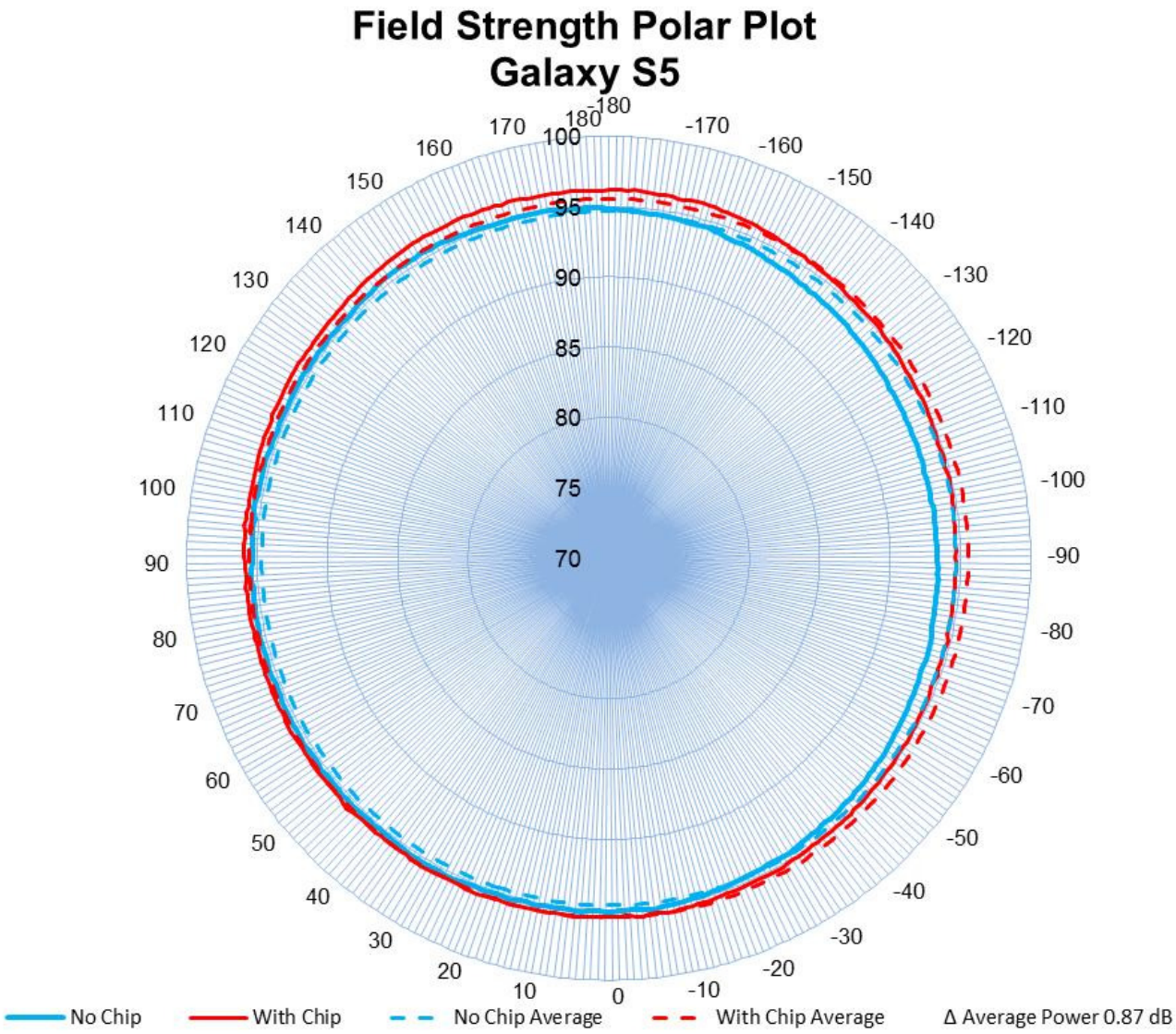
Graph 2 – Apple iPhone 6

APPENDIX B3
POLAR RADIATION PATTERN MEASUREMENT



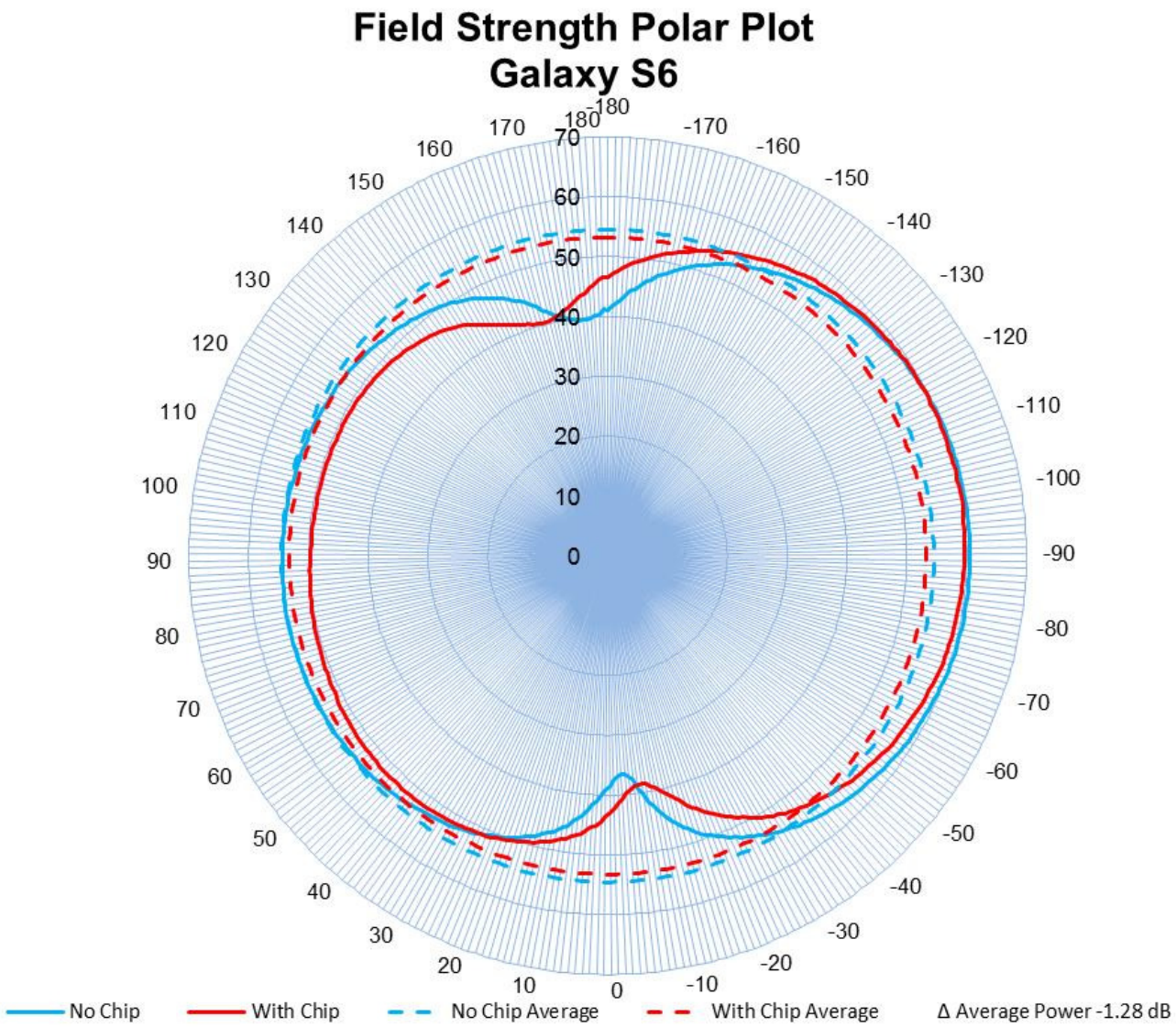
Graph 3 – Apple iPhone 6 Plus

APPENDIX B4
POLAR RADIATION PATTERN MEASUREMENT



Graph 4 – Samsung Galaxy S5

APPENDIX B5
POLAR RADIATION PATTERN MEASUREMENT



Graph 5 – Samsung Galaxy S6