FCC CFR47 PART 15 SUBPART C
INDUSTRY CANADA RSS-210 ISSUE 7

CERTIFICATION TEST REPORT

FOR

902-928 MHZ TRANSCEIVER

MODEL NUMBER: A1101R09A AND A1101R09C

FCC ID: X7J-A10040601
IC: 8975A-A10040601

REPORT NUMBER: 10U13329-1, Revision C

ISSUE DATE: AUGUST 26, 2010

Prepared for
ANAREN, INC.
6635 KIRKVILLE ROAD
EAST SYRACUSE, NY 13057-9600, U.S.A.

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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	08/04/10	Initial Issue	T. Chan
A	08/13/10	Updated report, includes 1. Added serial number 2. Changed MSK worst case deviation from 0 kHz to 0 degrees 3. Updated model differences description in the section 5.2 4. Updated Page 59 Data With QP Reading Only 5. Updated 99% BW	Sunny Shih
B	08/20/10	Updated 99% BW	T. Chan
C	08/26/10	Updated 6dB BW	T. Chan

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: ANAREN, INC
6635 KIRKVILLE ROAD
EAST SYRACUSE, NY 13057, U.S.A.

EUT DESCRIPTION: 902-928 MHZ TRANSCEIVER

MODEL: A1101R09A AND A1101R09C

SERIAL NUMBER: 0001-04 (conducted unit), 0001-09 (Radiated unit)

DATE TESTED: JULY 26 – AUGUST 26, 2010

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart C	Pass
INDUSTRY CANADA RSS-210 Issue 7 Annex 8	Pass
INDUSTRY CANADA RSS-GEN Issue 2	Pass

Compliance Certification Services, Inc. (CCS) tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by CCS based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by CCS and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by CCS will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

Approved & Released For CCS By:

THU CHAN
ENGINEERING MANAGER
COMPLIANCE CERTIFICATION SERVICES

Tested By:

WILLIAM ZHUANG
EMC ENGINEER
COMPLIANCE CERTIFICATION SERVICES

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10-2009, FCC CFR 47 Part 2, FCC CFR 47 Part 15, RSS-GEN Issue 2, and RSS-210 Issue 7.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 Benicia Street, Fremont, California, USA.

CCS is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at http://www.ccsemc.com.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)
36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	3.52 dB
Radiated Disturbance, 30 to 1000 MHz	4.94 dB

Uncertainty figures are valid to a confidence level of 95%.

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a 900 MHz Transceiver.

5.2. MANUFACTURER'S DESCRIPTION OF MODEL DIFFERENCES

A1101R09A and A1101R09C are Identical, except A1101R09C has a U.FL connector, and A1101R09A has an integral printed antenna.

5.3. MAXIMUM OUTPUT POWER

The transmitter has a maximum peak conducted output power as follows:

Frequency Range (MHz)	Mode	Modulation	Output Power (dBm)	Output Power (mW)
902.500 - 927.488	DSSS	2FSK	13.33	21.53
902.809 - 927.190	DSSS	MSK	13.34	21.58

5.4. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes Monopole and PCB antenna with maximum peak gains of 3dBi gain on Monopole and 2dBi on PCB antennas.

5.5. SOFTWARE AND FIRMWARE

The EUT Firmware software installed during testing was v01.00

The test utility software used during testing was AirFCC, V2.0.0.10.

5.6. WORST-CASE CONFIGURATION AND MODE

The worst-case channel is determined as the channel with the highest output power.

Modulation	Data Rate	Deviation
2-FSK	250kBand	165 kHz
MSK	500kBand	0 degree

The EUT with patch and PCB antenna have been investigated on X, Y and Z position. The worst case was found to be at X orientation.

5.7. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
Laptop	Lenovo	T61	L3-B9034	DoC
AC Adapter	Lenovo	92P1105	11S92P1105Z1ZBW973VOK	DoC

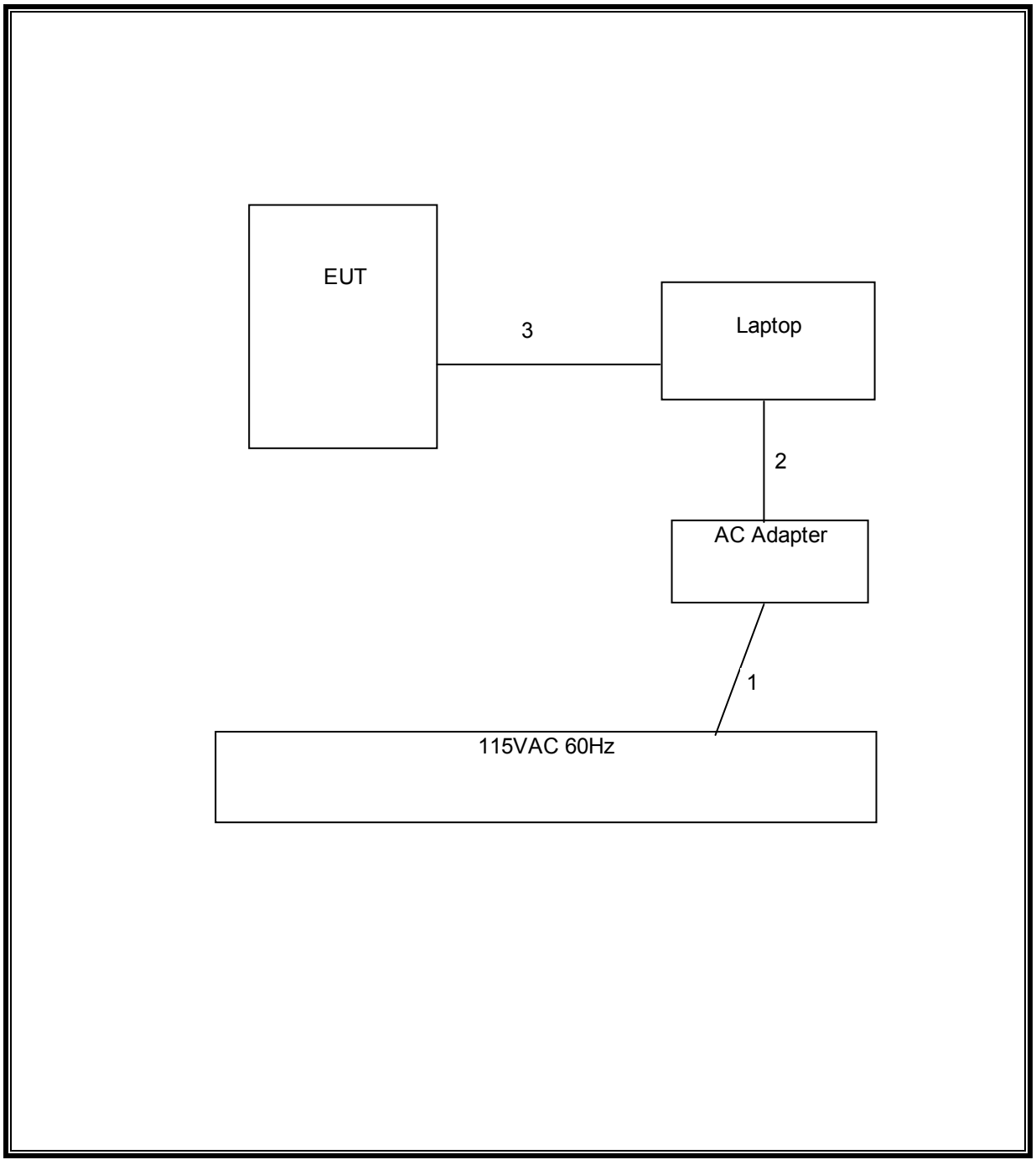
I/O CABLES

I/O CABLE LIST						
Cable No.	**Port**	**# of Identic Ports**	**Connector Type**	**Cable Type**	**Cable Length**	**Remarks**
1	AC	1	US 115V	Un-shielded	2m	One ferrite at Laptop's end.
2	DC	1	DC	Un-shielded	2m	NA
3	USB	1	EUT	Un-shielded	2m	NA

TEST SETUP

The EUT is connected to a host laptop computer during the tests. Test software exercised the radio card.

SETUP DIAGRAM FOR TESTS



6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

TEST EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**Asset**	**Cal Due**
Antenna, Bilog, 2 GHz	Sunol Sciences	JB1	C01016	07/14/11
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01052	08/04/11
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	C01178	08/31/10
Antenna, Horn, 18 GHz	EMCO	3115	C00945	07/29/11
LISN, 30 MHz	FCC	LISN-50/250-25-2	N02625	11/06/10
EMI Test Receiver, 30 MHz	R & S	ESHS 20	N02396	05/06/11
Reject Filter, 2.4-2.5 GHz	Micro-Tronics	BRC13192	N02683	CNR
Peak Power Meter	Boonton	4541	C01186	03/01/11
Peak Power Sensor	Boonton	57318	C01202	02/23/11

7. ANTENNA PORT TEST RESULTS

7.1.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

IC RSS-210 A8.2 (a)

The minimum 6 dB bandwidth shall be at least 500 kHz.

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The RBW is set to 100 kHz and the VBW is set to 300 kHz. The sweep time is coupled.

RESULTS

2FSK MODE

Channel	Frequency (MHz)	6 dB Bandwidth (KHz)	Minimum Limit (MHz)
Low	902.500	529.148	0.5
Middle	914.945	513.614	0.5
High	927.488	538.851	0.5

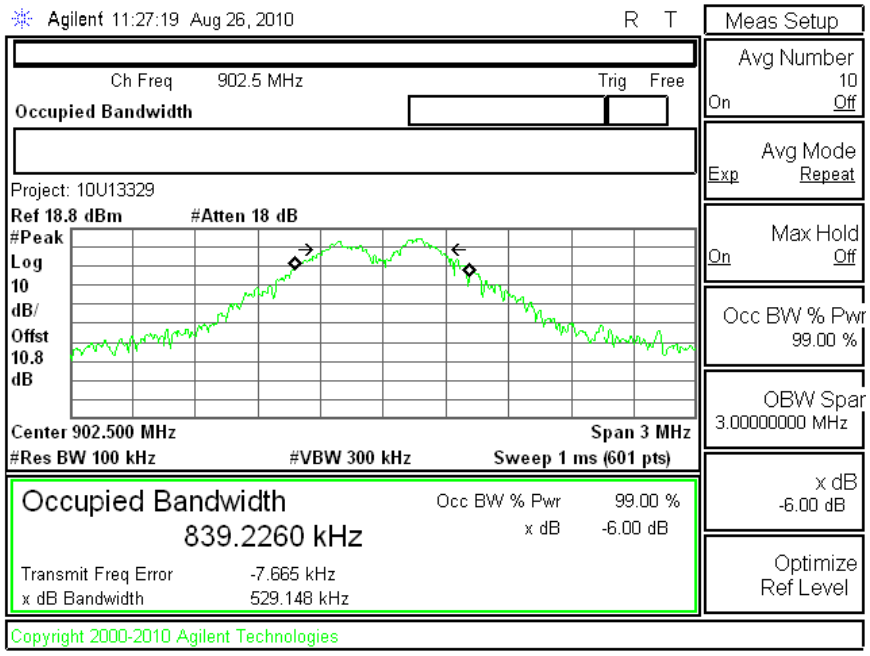
MSK MODE

Channel	Frequency (MHz)	6 dB Bandwidth (KHz)	Minimum Limit (MHz)
Low	902.809	574.454	0.5
Middle	914.952	576.364	0.5
High	927.190	573.980	0.5

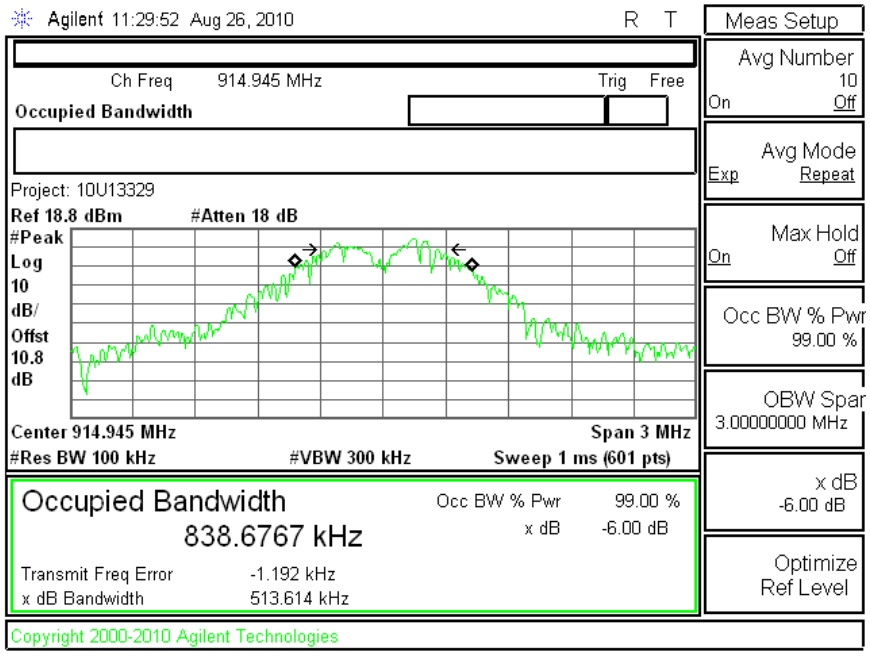
2FSK MODE

6 dB BANDWIDTH

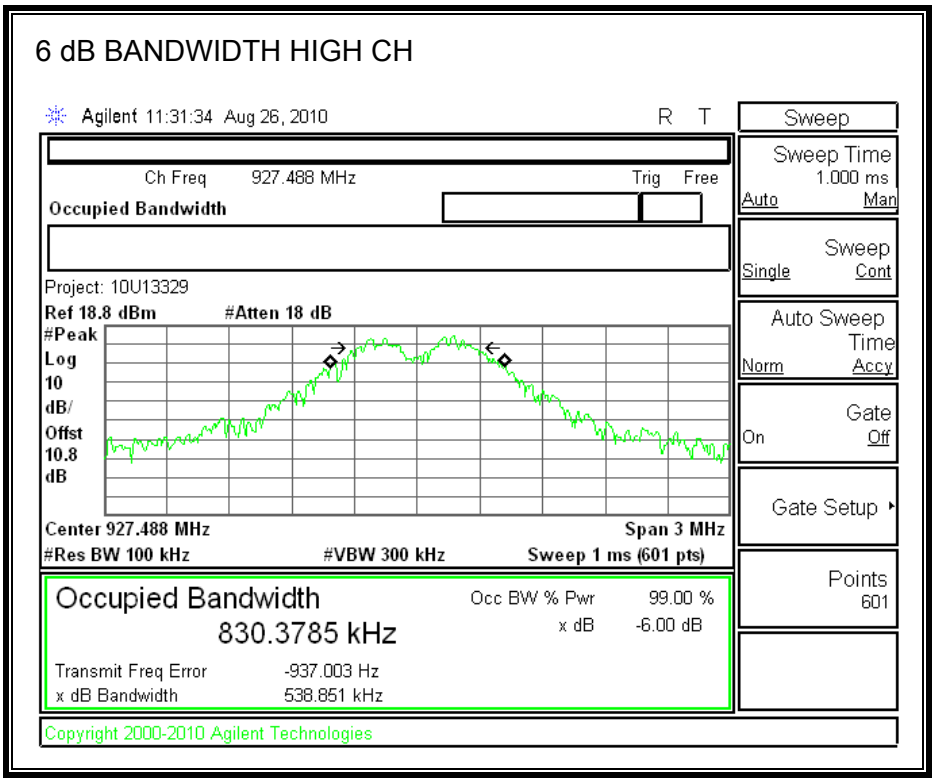
6 dB BANDWIDTH LOW CH



6 dB BANDWIDTH MID CH



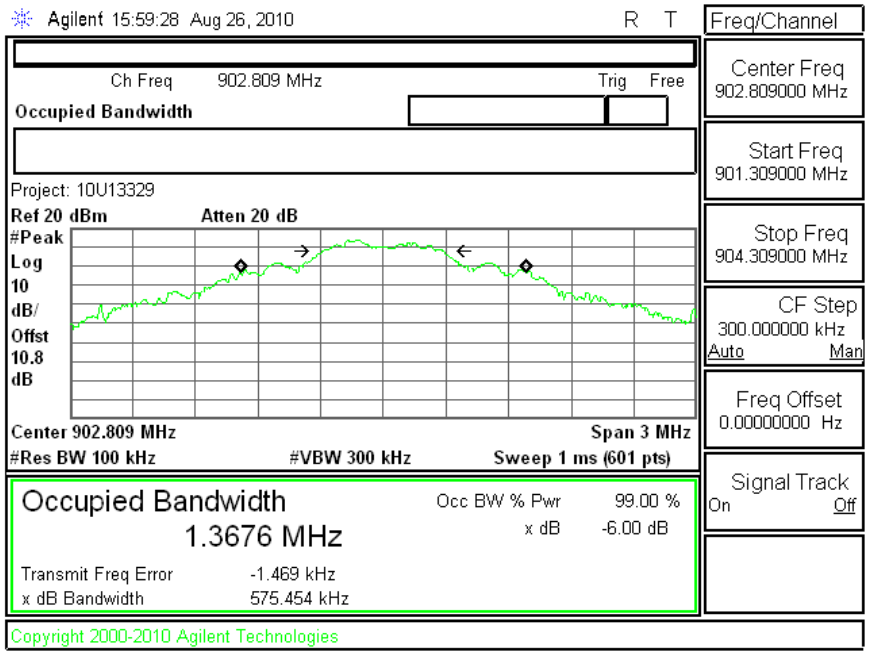
6 dB BANDWIDTH HIGH CH



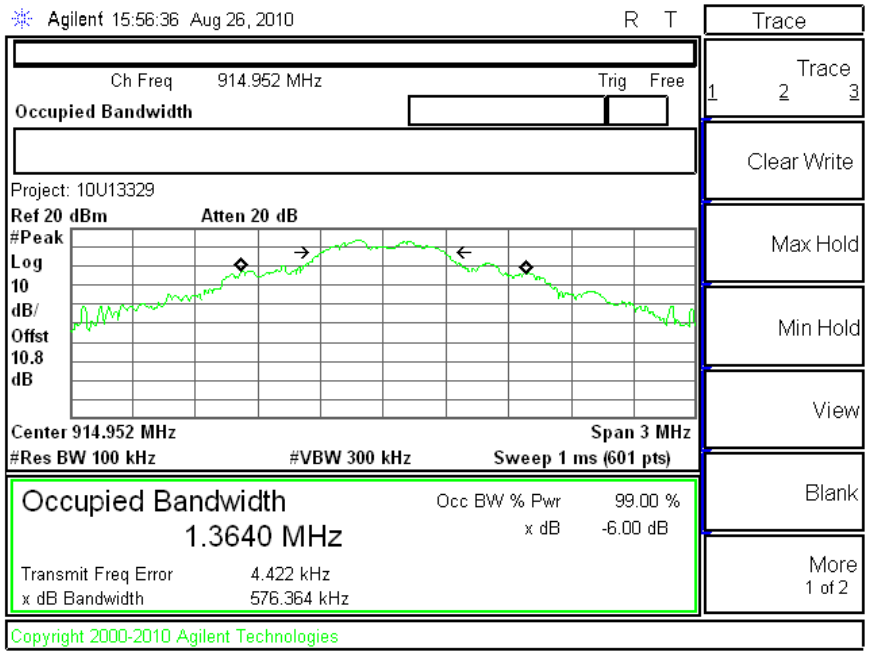
MSK MODE

6 dB BANDWIDTH

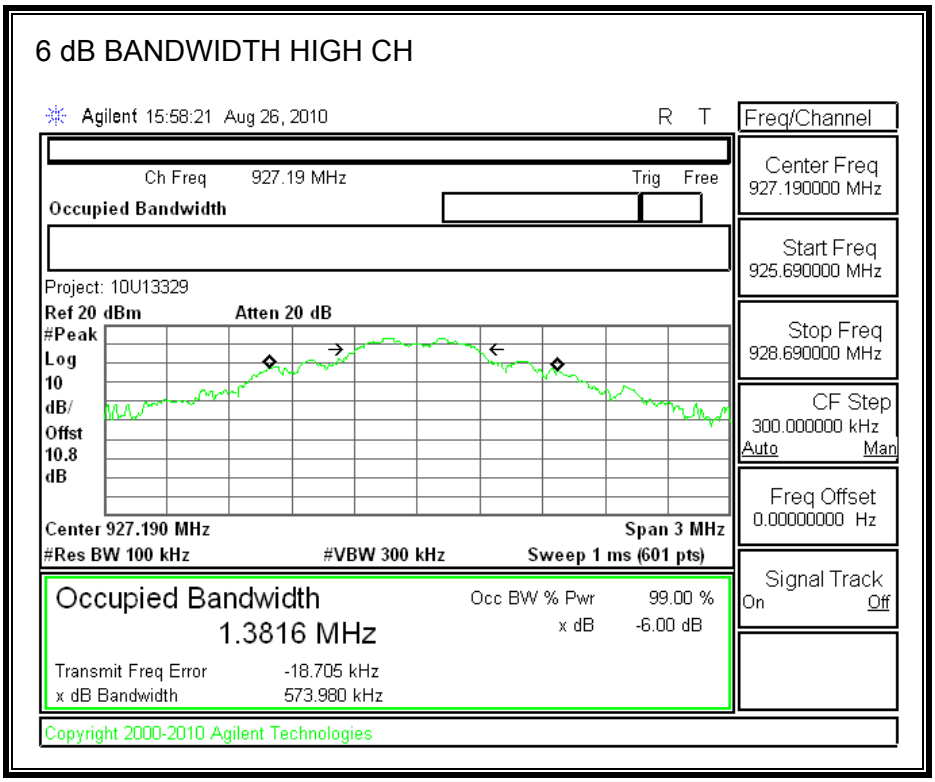
6 dB BANDWIDTH LOW CH



6 dB BANDWIDTH MID CH



6 dB BANDWIDTH HIGH CH



7.1.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to the spectrum analyzer. The RBW is set to 1% to 3% of the 99 % bandwidth. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

RESULTS

2FSK MODE

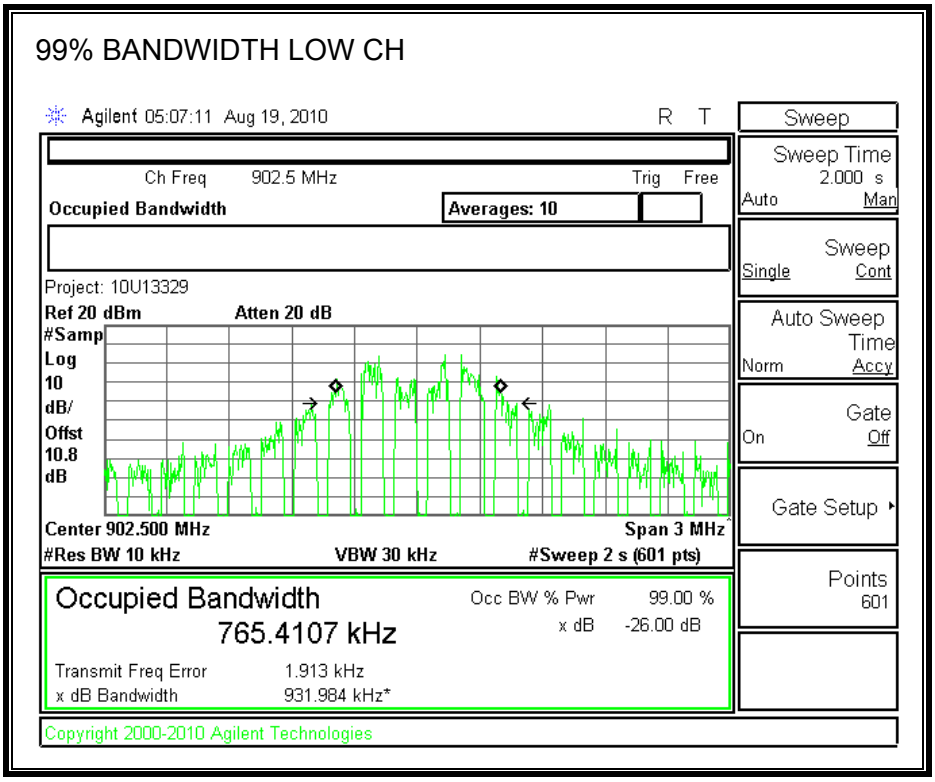
Channel	Frequency (MHz)	99% Bandwidth (KHz)
Low	902.500	765.4107
Middle	914.945	766.4741
High	927.488	751.8449

MSK MODE

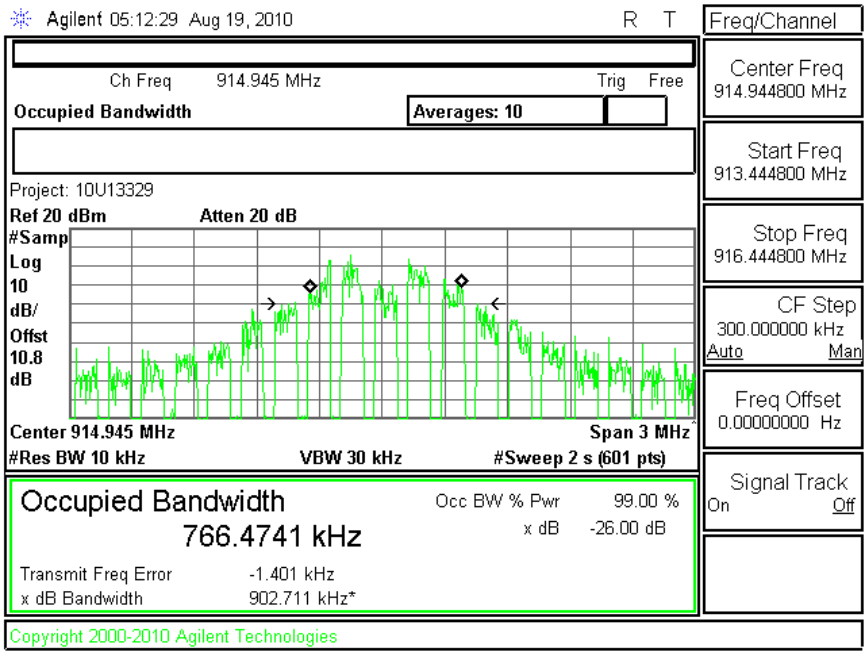
Channel	Frequency (MHz)	99% Bandwidth (KHz)
Low	902.809	1283.8
Middle	914.952	1281.9
High	927.190	1253.5

2FSK MODE

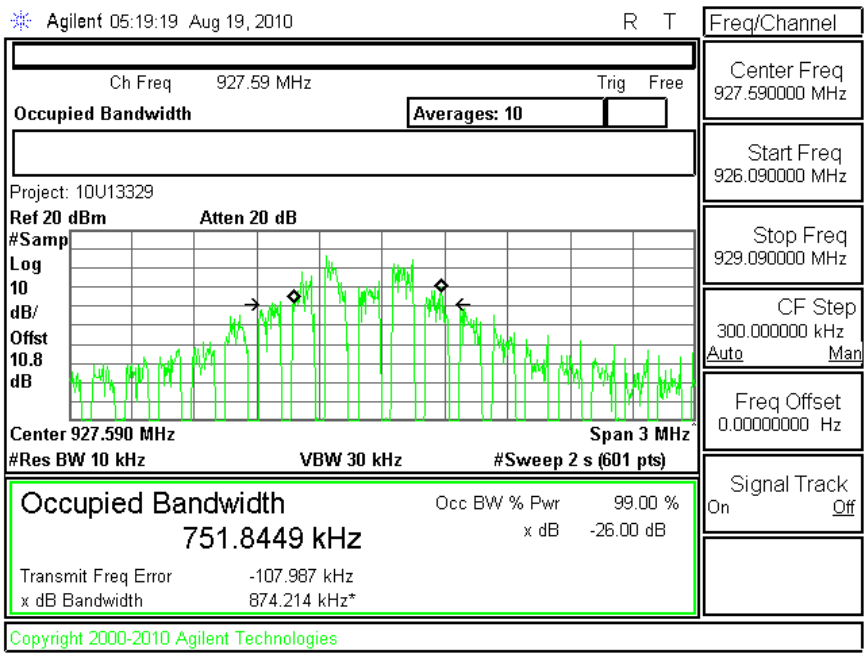
99% BANDWIDTH



99% BANDWIDTH MID CH

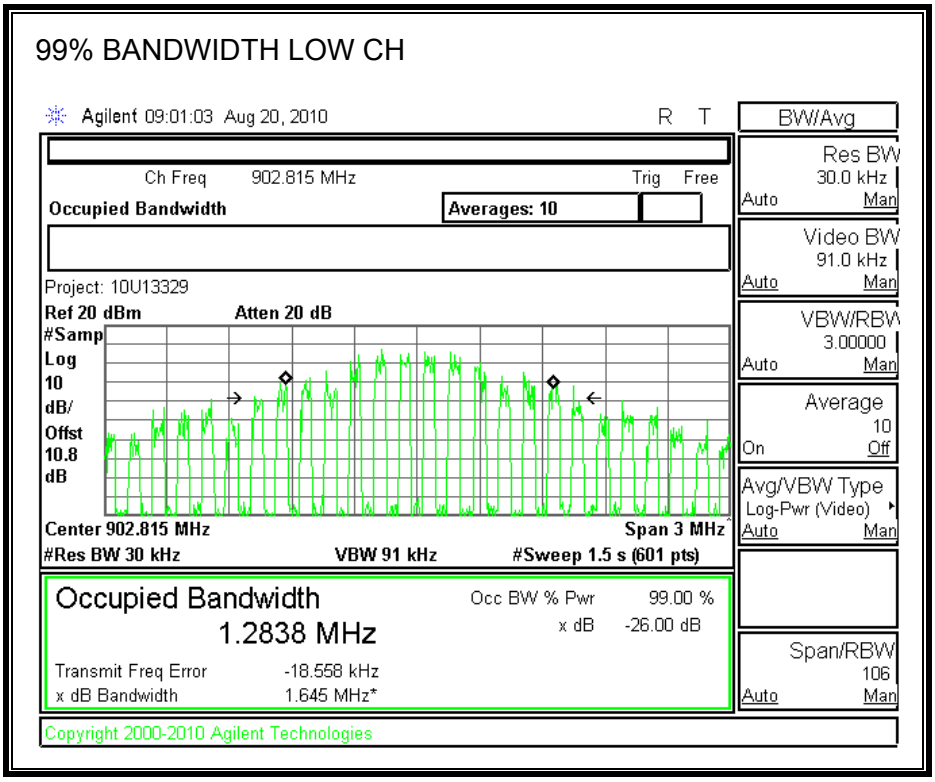


99% BANDWIDTH HIGH CH

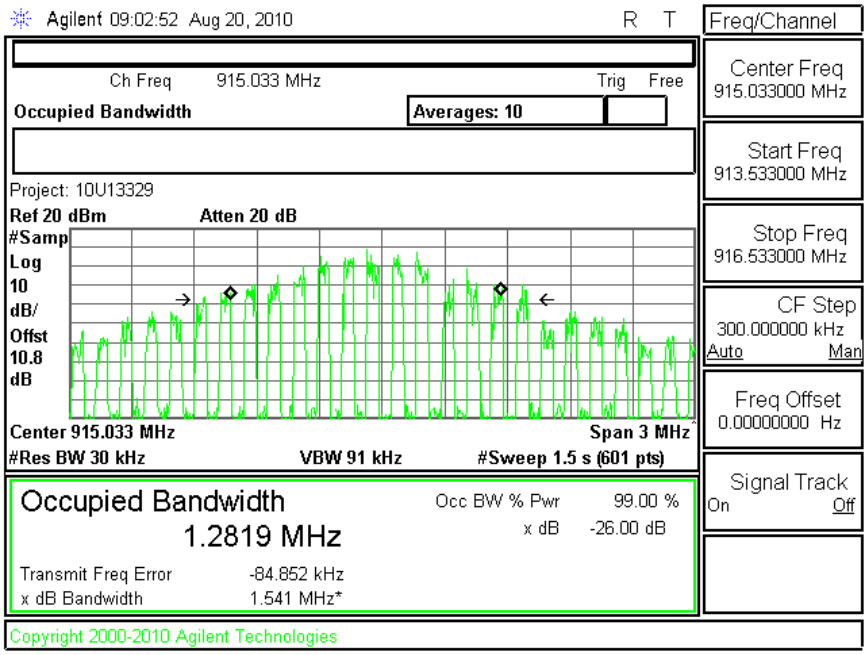


MSK MODE

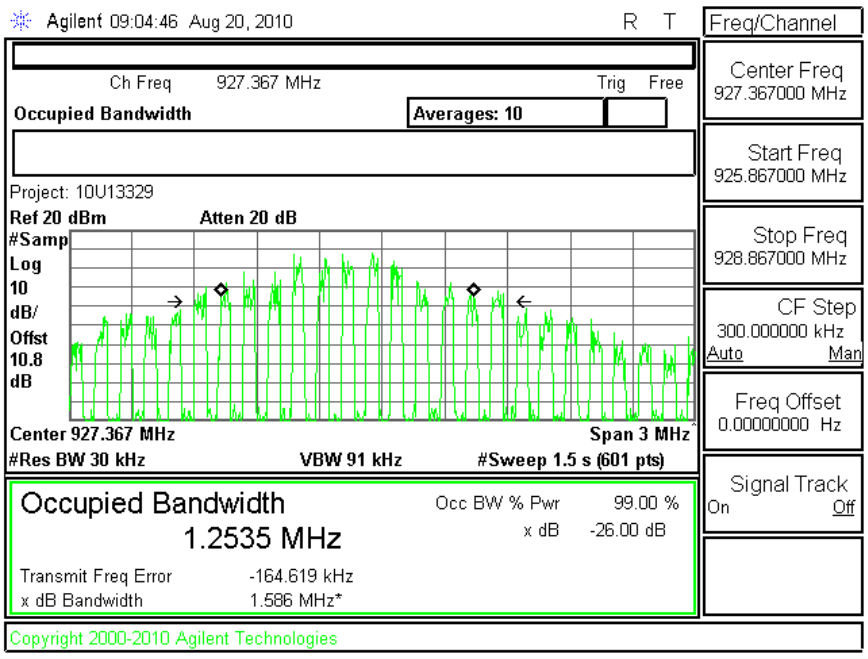
99% BANDWIDTH



99% BANDWIDTH MID CH



99% BANDWIDTH HIGH CH



7.1.3. OUTPUT POWER

LIMITS

FCC §15.247 (b) (3)

IC RSS-210 A8.4

The maximum antenna gain is less than or equal to 6 dBi, therefore the limit is 30 dBm.

TEST PROCEDURE

Peak power is measured by the power meter.

RESULTS

2FSK Mode

Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	902.500	13.33	30	-16.67
Middle	914.945	13.19	30	-16.81
High	927.488	13.03	30	-16.97

MSK Mode

Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	902.809	13.34	30	-16.66
Middle	914.952	13.21	30	-16.79
High	927.190	13.03	30	-16.97

7.1.4. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

RESULTS

The cable assembly insertion loss of 1dB was entered as an offset in the power meter to allow for direct reading of power.

2FSK

Channel	Frequency (MHz)	Power (dBm)
Low	902.500	11.47
Middle	914.945	11.27
High	927.488	10.96

MSK

Channel	Frequency (MHz)	Power (dBm)
Low	902.809	10.28
Middle	914.952	10.07
High	927.190	9.79

7.1.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)

IC RSS-210 A8.2 (b)

The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

TEST PROCEDURE

Output power was measured based on the use of a peak measurement, therefore the power spectral density was measured using PSD Option 1 in accordance with FCC document "Measurement of Digital Transmission Systems Operating under Section 15.247", March 23, 2005.

RESULTS

2FSK MODE

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
Low	902.500	4.53	8	-3.47
Middle	914.945	4.31	8	-3.69
High	927.488	4.00	8	-4.00

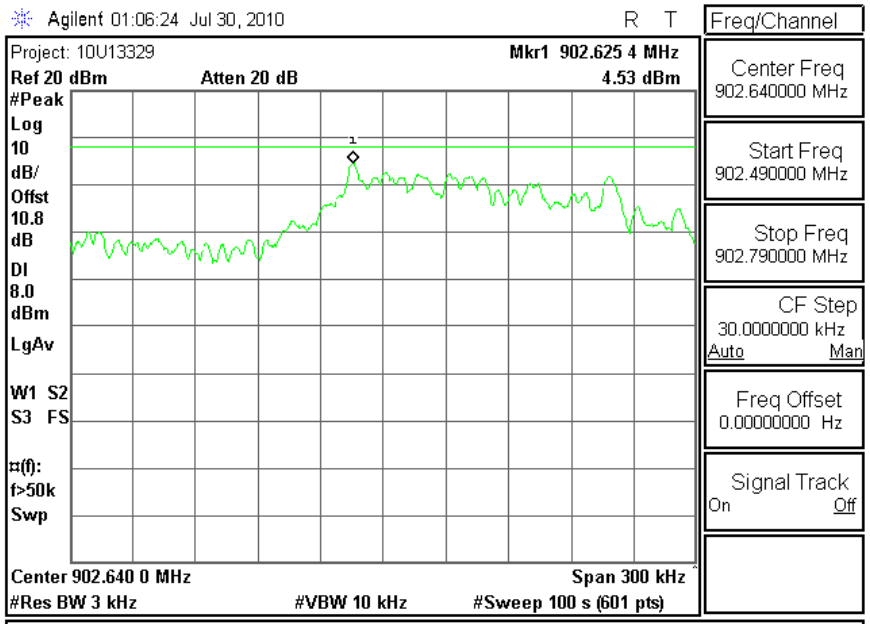
MSK MODE

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
Low	902.809	4.11	8	-3.89
Middle	914.952	3.92	8	-4.08
High	927.190	3.83	8	-4.17

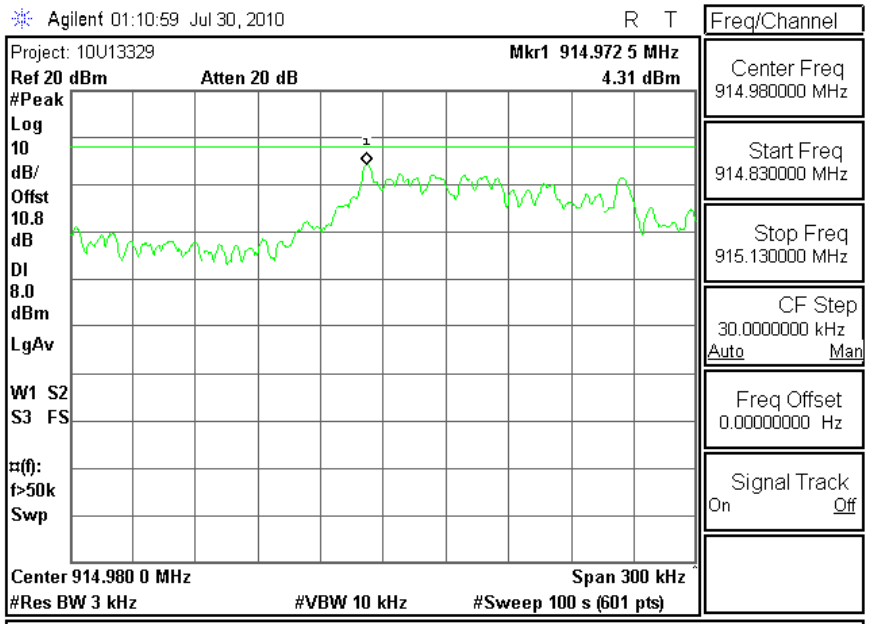
2FSK MODE

POWER SPECTRAL DENSITY

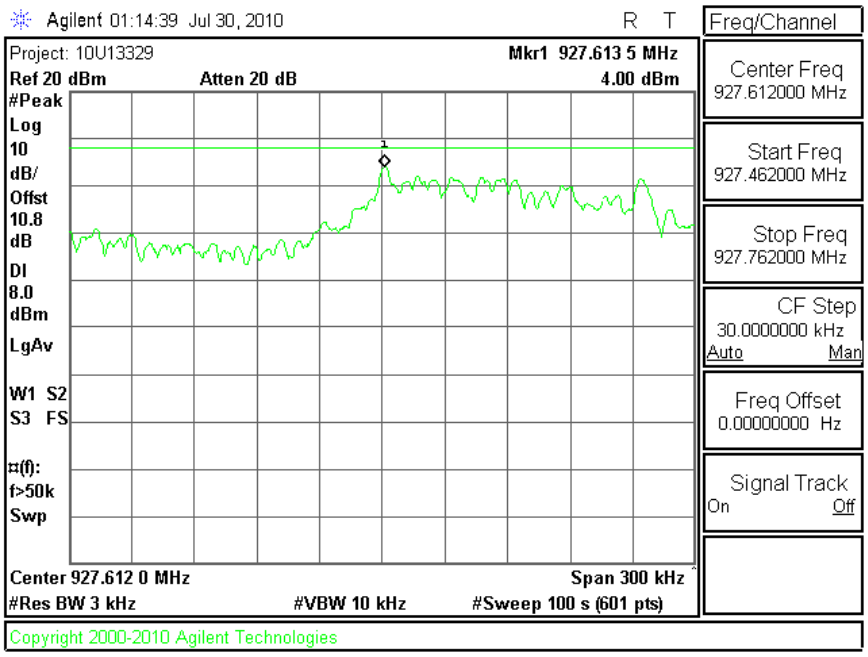
PSD LOW CH



PSD MID CH



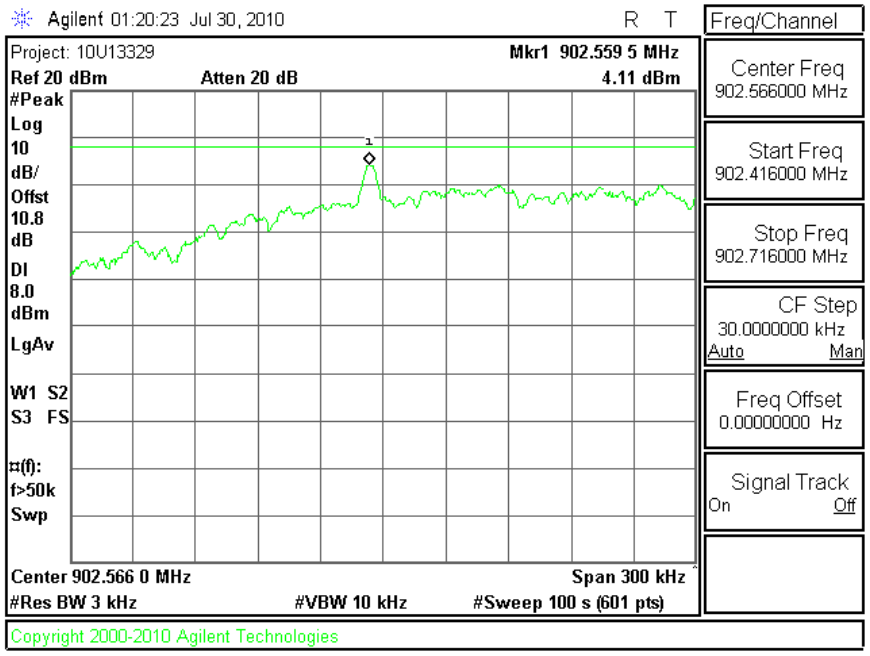
PSD HIGH CH



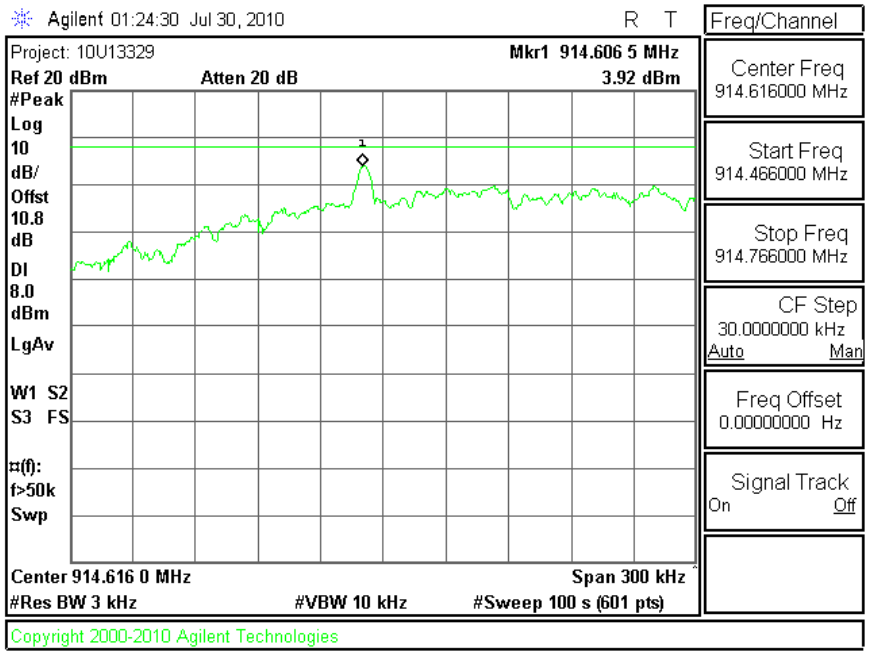
MSK MODE

POWER SPECTRAL DENSITY

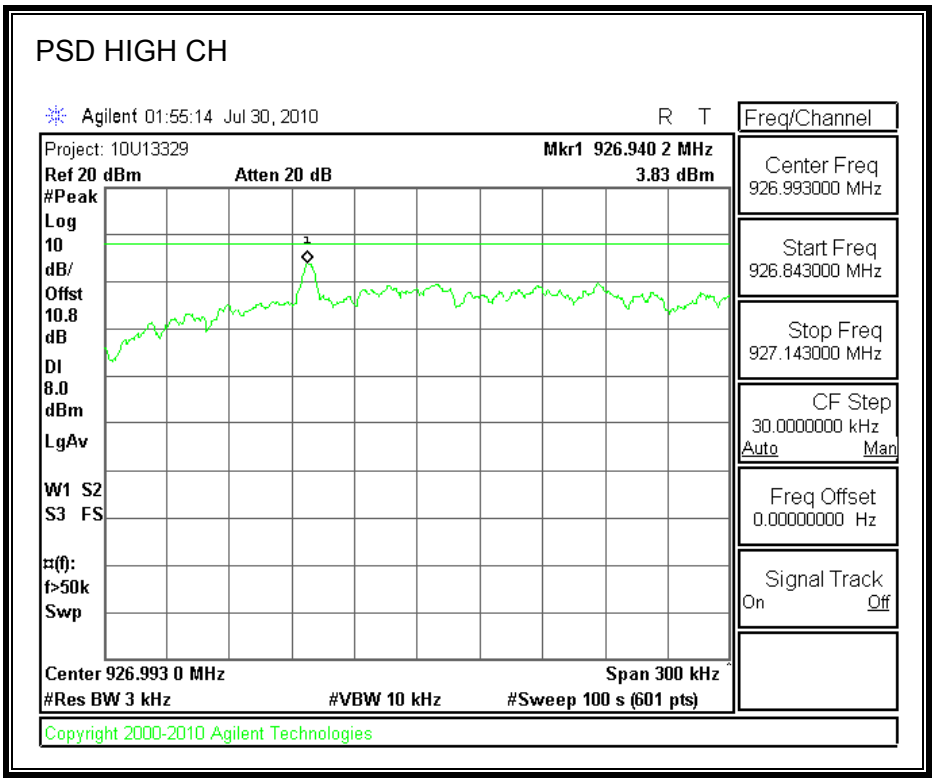
PSD LOW CH



PSD MID CH



PSD HIGH CH



7.1.6. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

IC RSS-210 A8.5

Output power was measured based on the use of a peak measurement, therefore the required attenuation is 20 dB.

TEST PROCEDURE

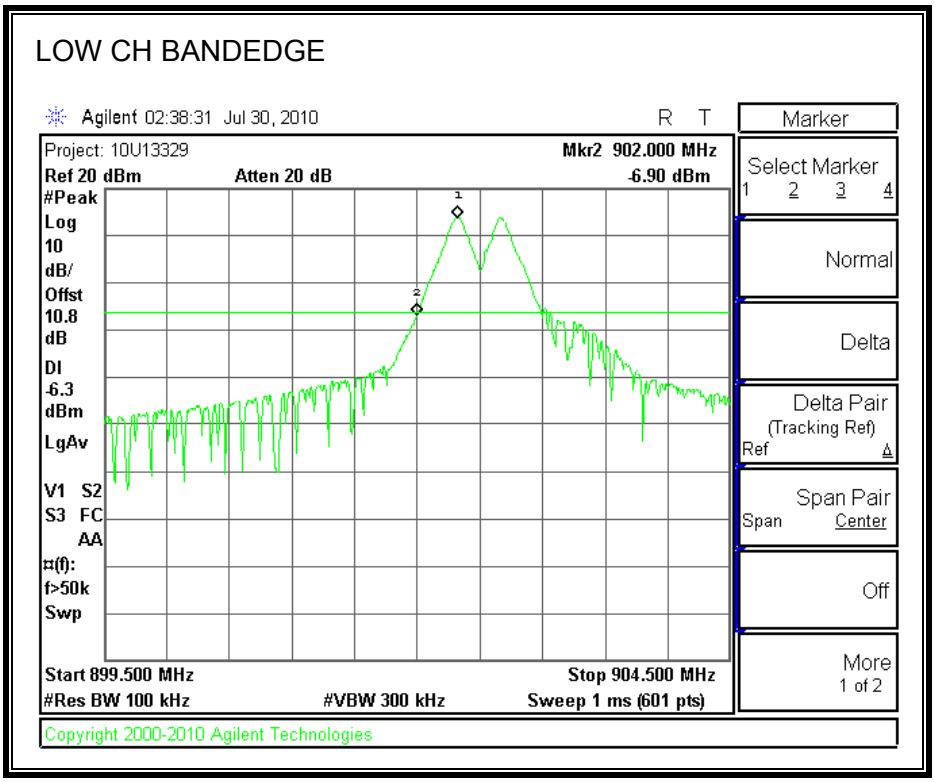
The transmitter output is connected to a spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz.

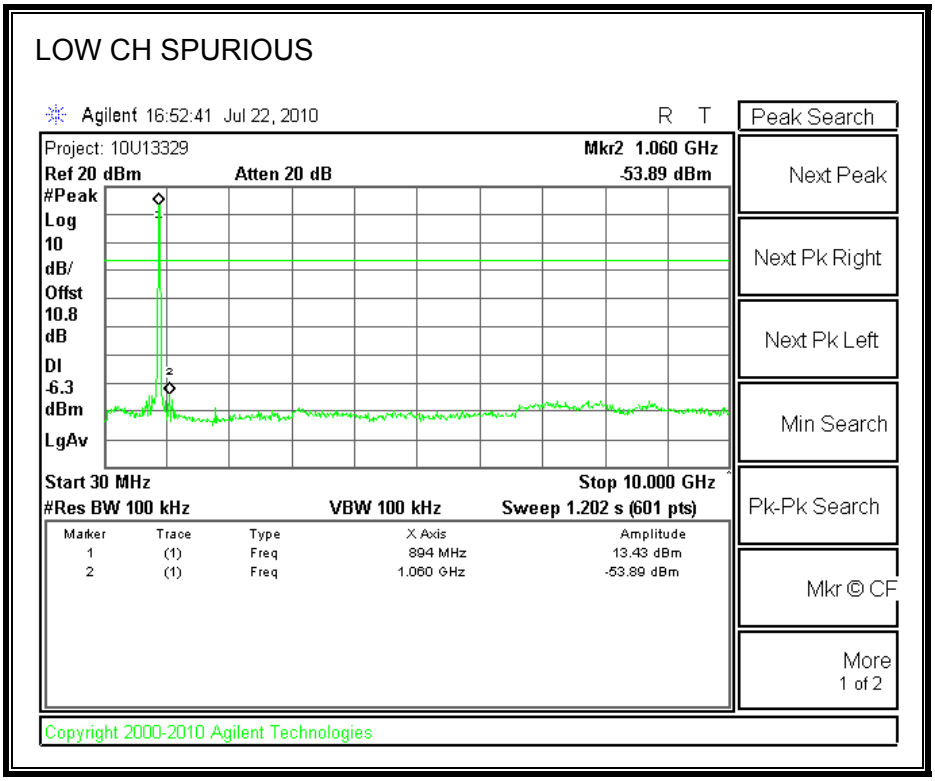
The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels.

RESULTS

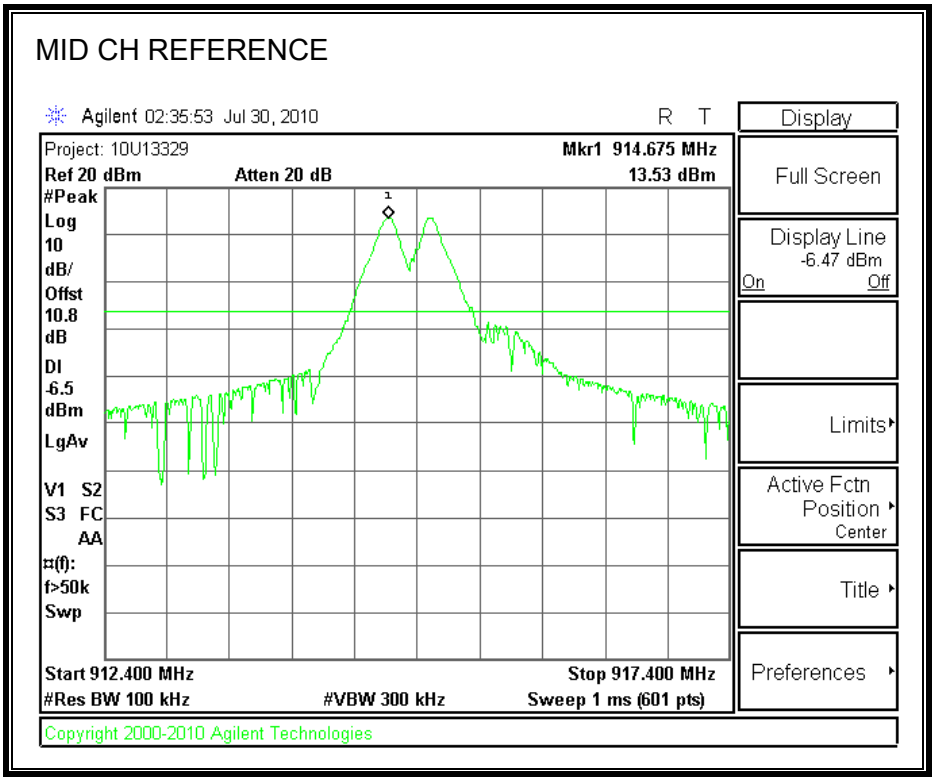
2FSK MODE

SPURIOUS EMISSIONS, LOW CHANNEL

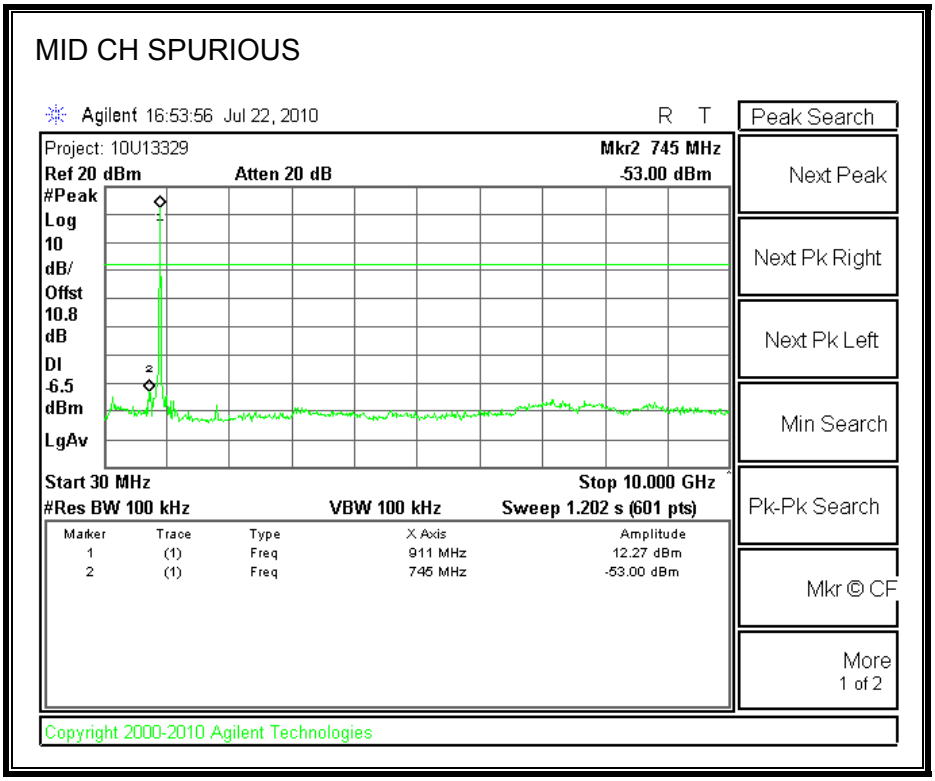




SPURIOUS EMISSIONS, MID CHANNEL

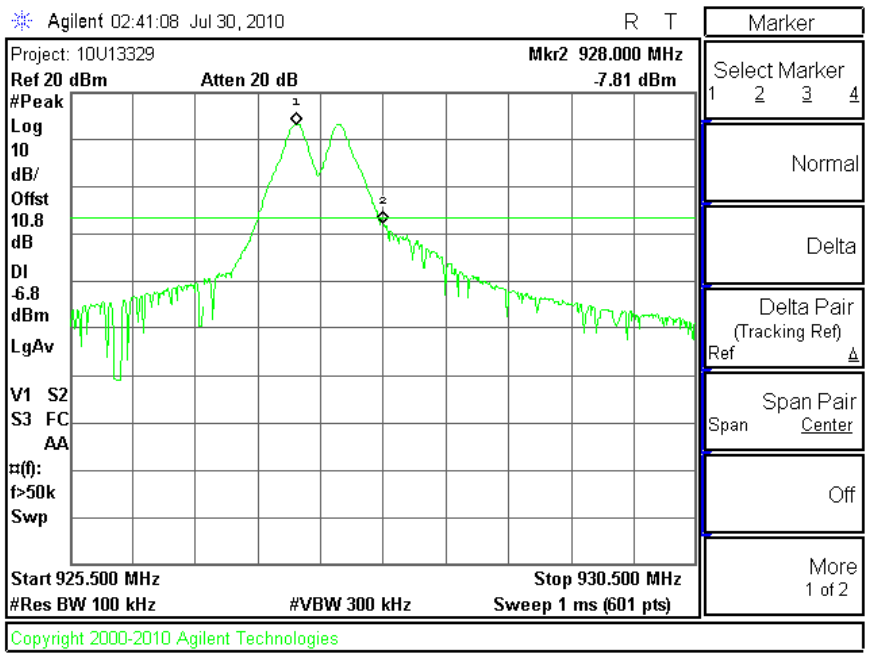


MID CH SPURIOUS

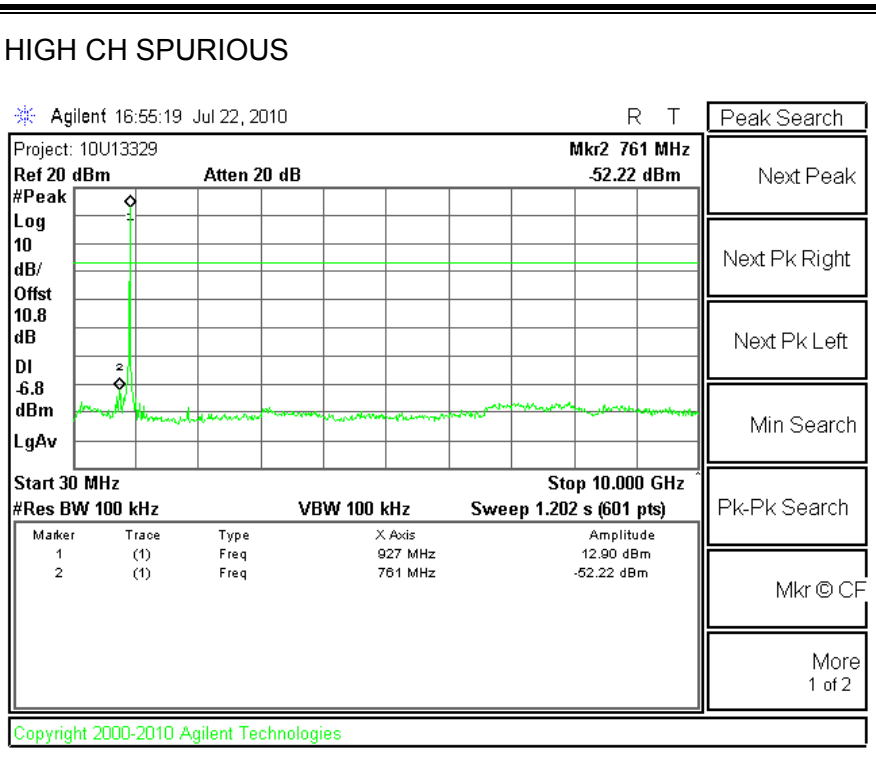


SPURIOUS EMISSIONS, HIGH CHANNEL

HIGH CH BANDEDGE

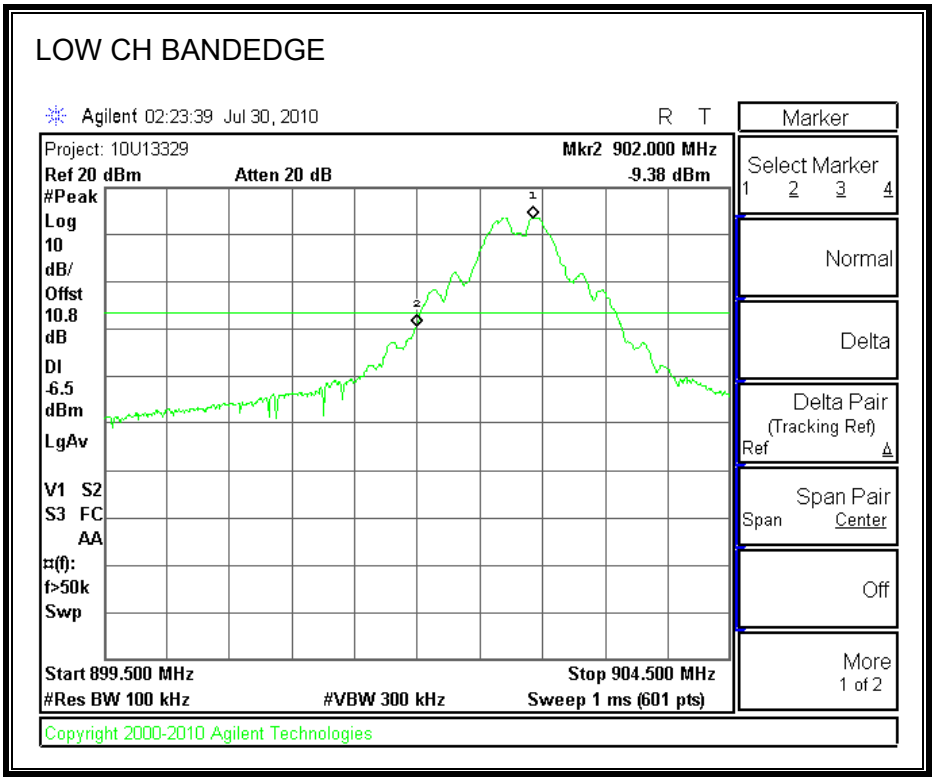


HIGH CH SPURIOUS

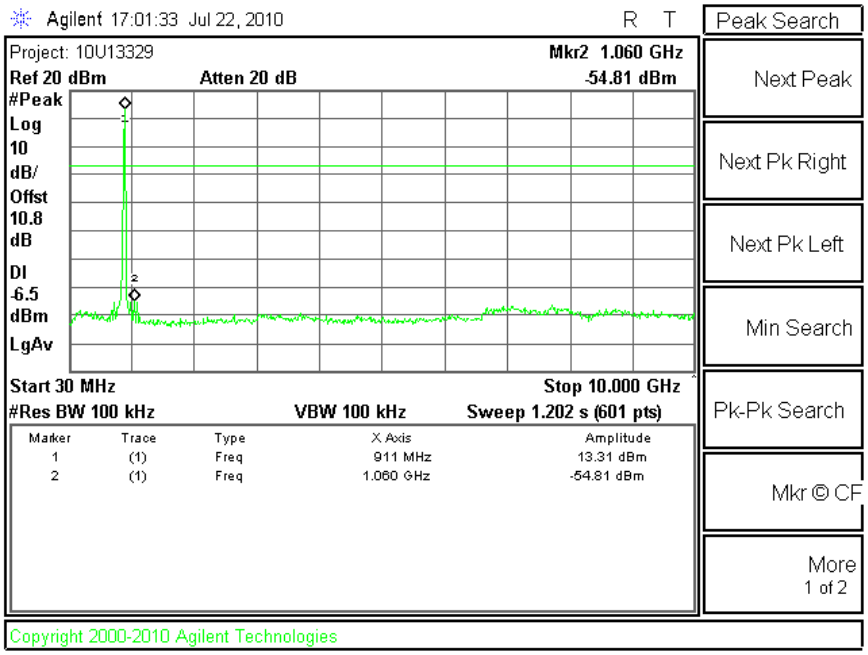


MSK MODE

SPURIOUS EMISSIONS, LOW CHANNEL

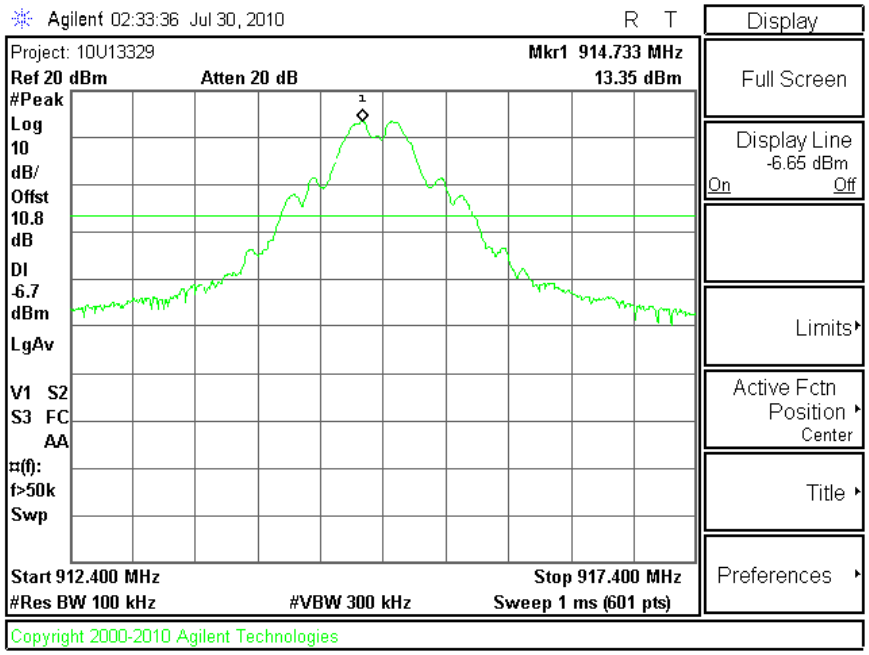


LOW CH SPURIOUS

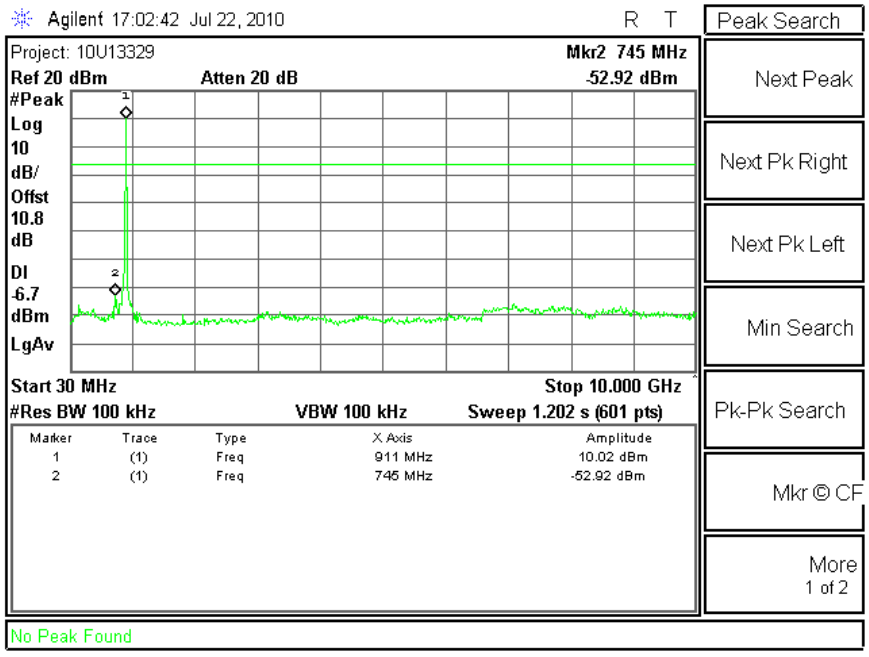


SPURIOUS EMISSIONS, MID CHANNEL

MID CH REFERENCE

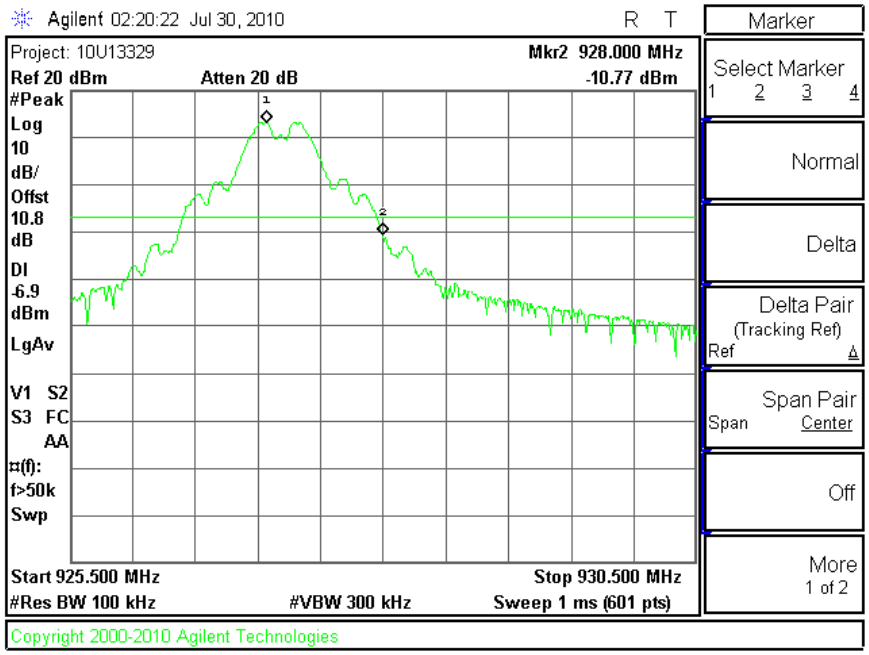


MID CH SPURIOUS

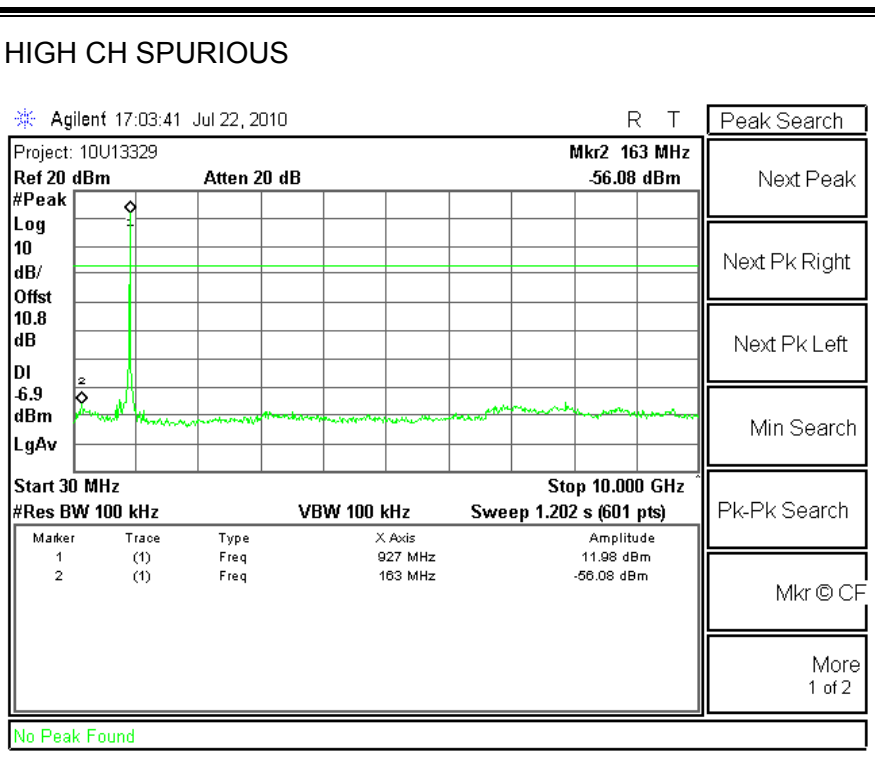


SPURIOUS EMISSIONS, HIGH CHANNEL

HIGH CH BANDEDGE



HIGH CH SPURIOUS



8. RADIATED TEST RESULTS

8.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

IC RSS-210 Clause 2.6 (Transmitter)

IC RSS-GEN Clause 6 (Receiver)

Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.4. The EUT is set to transmit in a continuous mode.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 1 MHz for peak measurements and 10 Hz for average measurements.

The spectrum from 30 MHz to 10 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 900 MHz band.

The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

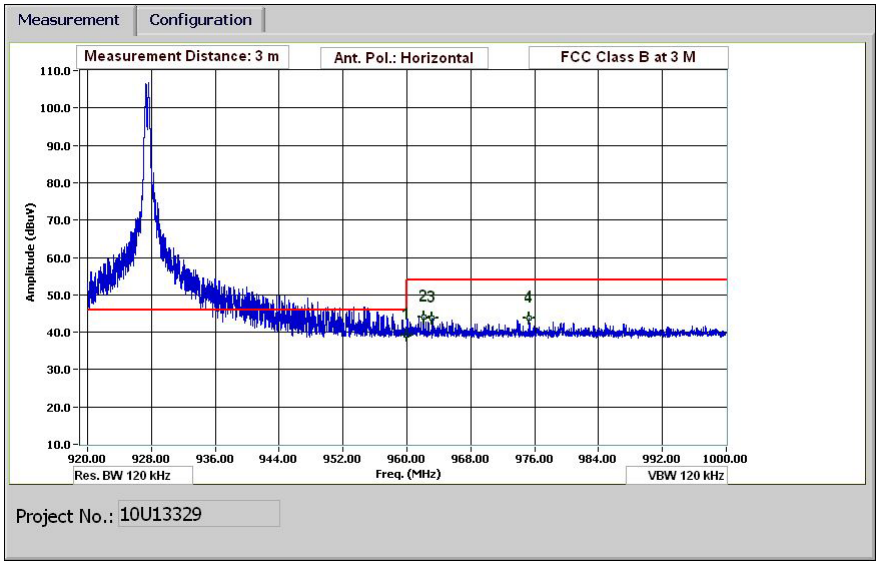
8.2. TRANSMITTER BELOW 1 GHz

8.2.1. TRANSMITTER BELOW 1 GHz FOR 2FSK MODE

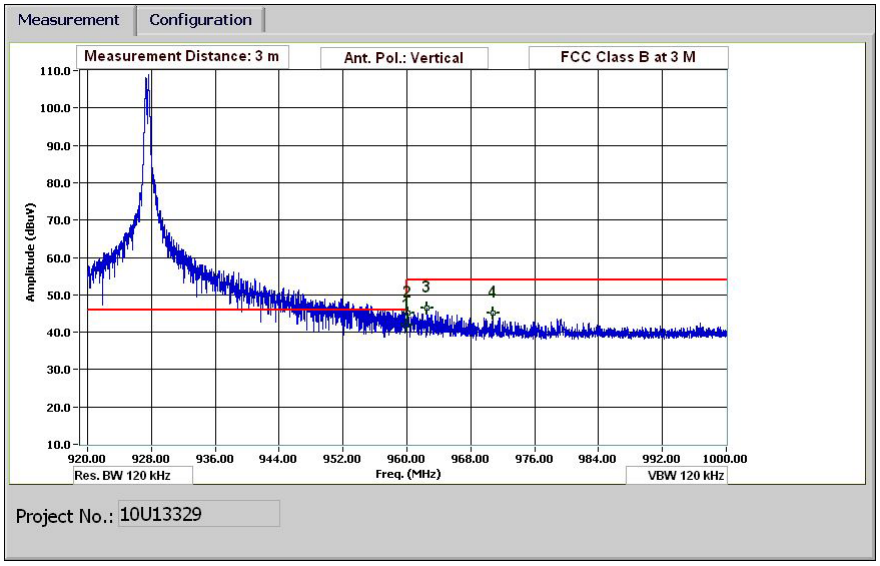
3dBi MONOPOLE ANTENNA

RESTRICTED BANDEDGE (HIGH CHANNEL)

HIGH CHANNEL RESTRICTED, PEAK, HORIZ



HIGH CHANNEL RESTRICTED, PEAK, VERT



HIGH CHANNEL RESTRICTED (VERTICAL AND HORIZONTAL DATA)

30-1000MHz Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

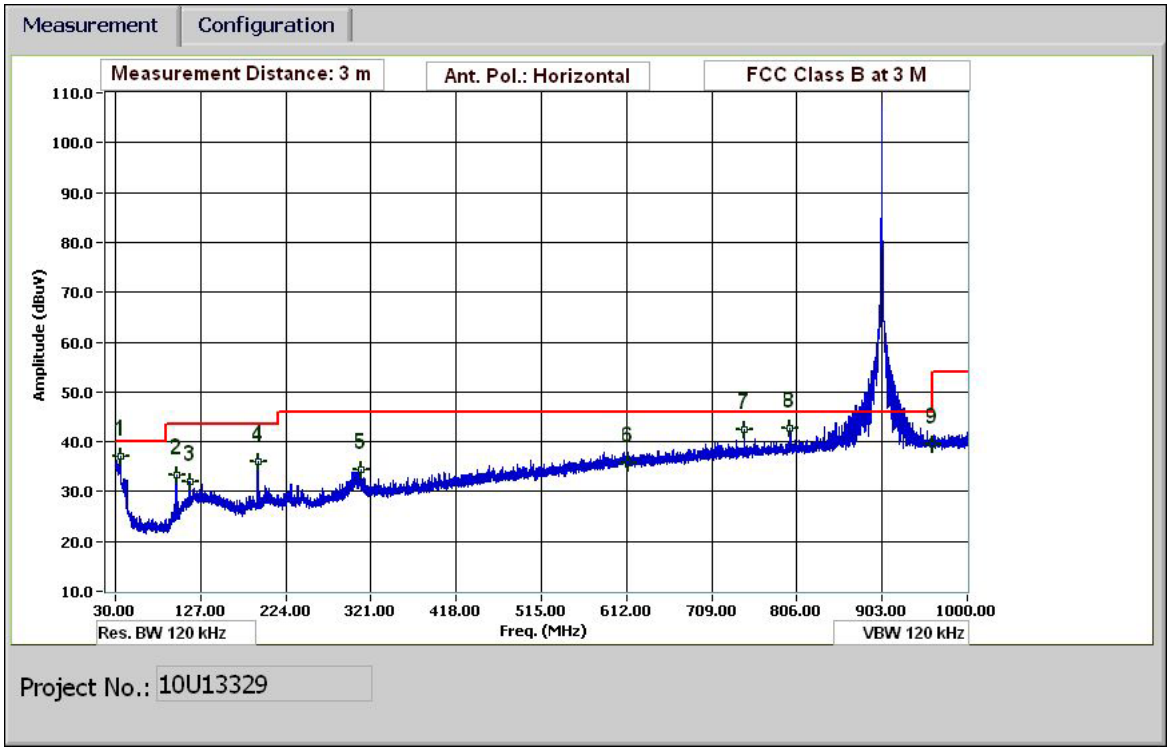
Test Engr: William Zhuang
Date: 07/26/10
Project #: 10U13329
Company: Anaren Inc.
EUT Description: Low Power Sub-1 GHz RF Transceiver 902-928 MHz for FCC/IC; 3 dBi monopole
EUT M/N: 09C and 09A
Test Target: FCC 15.247
Mode Oper: Tx, 2FSK-250K Baud 165K Dev.

f	Measurement Frequency	Amp	Preamp Gain	Margin	Margin vs. Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters		
Read	Analyzer Reading	Filter	Filter Insert Loss		
AF	Antenna Factor	Corr.	Calculated Field Strength		
CL	Cable Loss	Limit	Field Strength Limit		

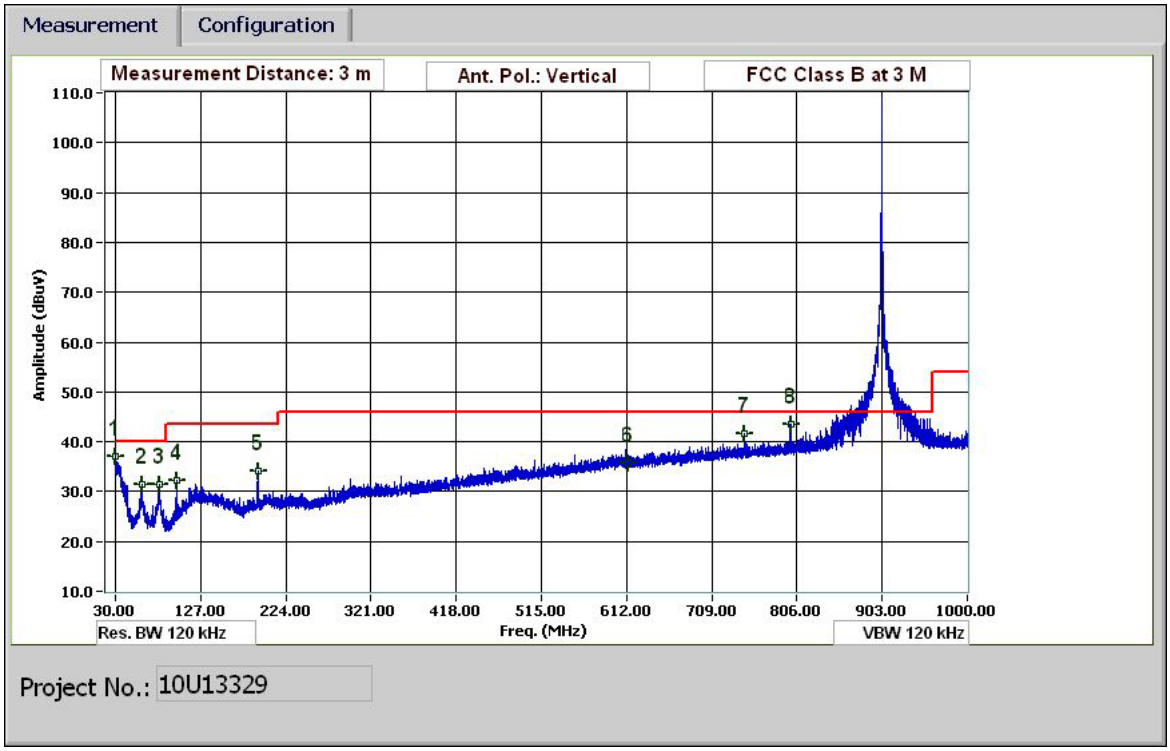
f MHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Filter dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Ant. High cm	Table Angle Degree	Notes
High Bandedge, Vertical															
960.000	3.0	34.7	22.2	2.9	27.9	0.0	10.0	42.0	46.0	-4.0	V	P			
960.163	3.0	37.7	22.2	2.9	27.9	0.0	10.0	45.0	54.0	-9.0	V	P			
962.539	3.0	39.0	22.2	2.9	27.9	0.0	10.0	46.3	54.0	-7.7	V	P			
970.744	3.0	37.7	22.3	2.9	27.9	0.0	10.0	45.0	54.0	-9.0	V	P			
High Bandedge, Horizontal															
960.000	3.0	32.1	22.2	2.9	27.9	0.0	10.0	39.3	46.0	-6.7	H	P			
962.123	3.0	36.9	22.2	2.9	27.9	0.0	10.0	44.2	54.0	-9.8	H	P			
963.192	3.0	36.6	22.2	2.9	27.9	0.0	10.0	43.8	54.0	-10.2	H	P			
975.356	3.0	36.4	22.3	2.9	27.9	0.0	10.0	43.8	54.0	-10.2	H	P			

Rev. 1.27.09
Note: No other emissions were detected above the system noise floor.

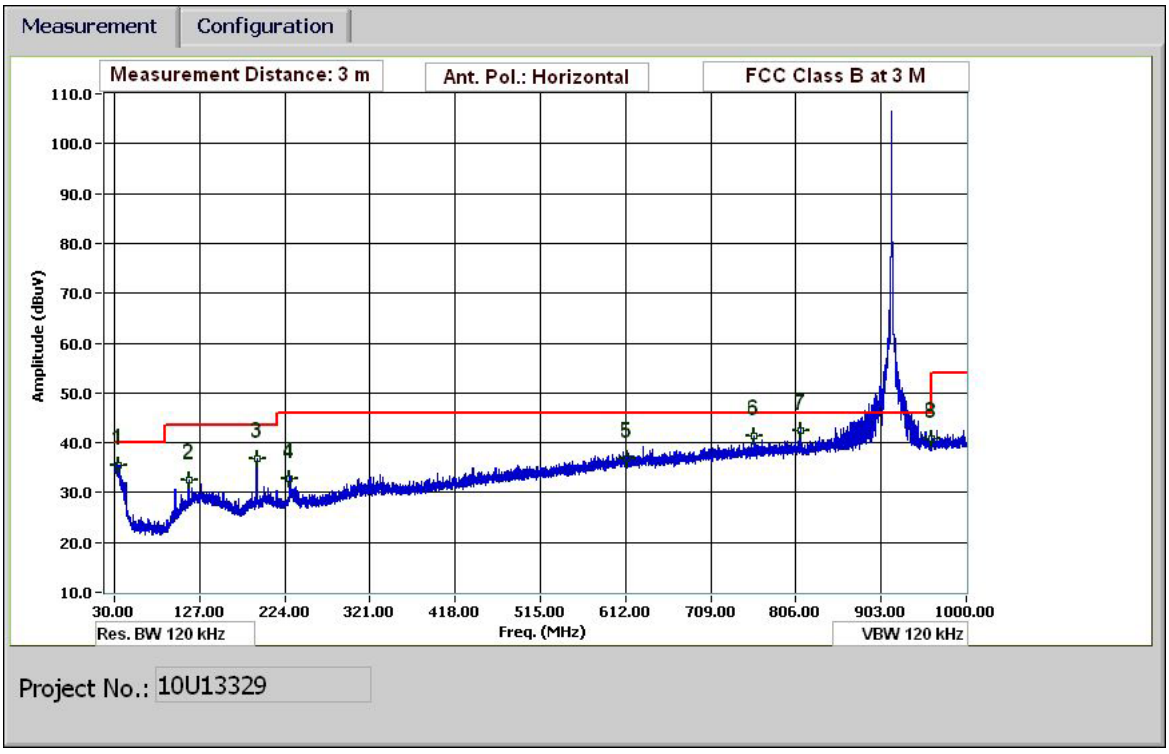
LOW CHANNEL HORIZONTAL PLOT



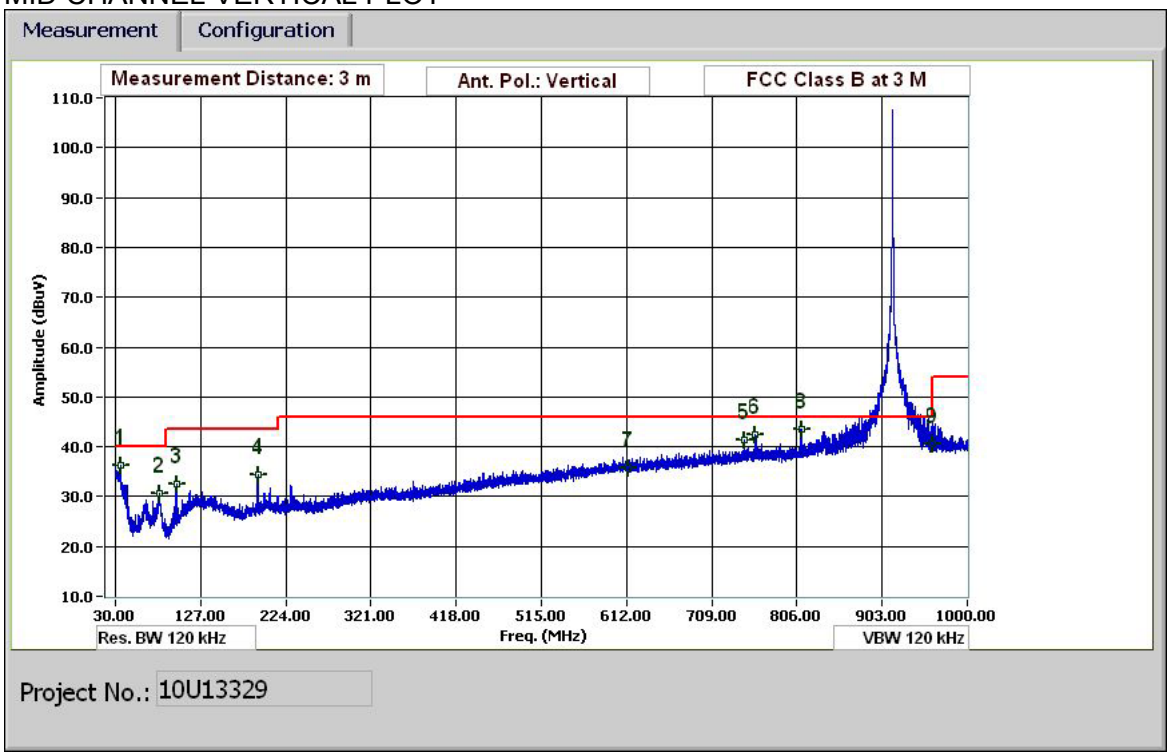
LOW CHANNEL VERTICAL PLOT



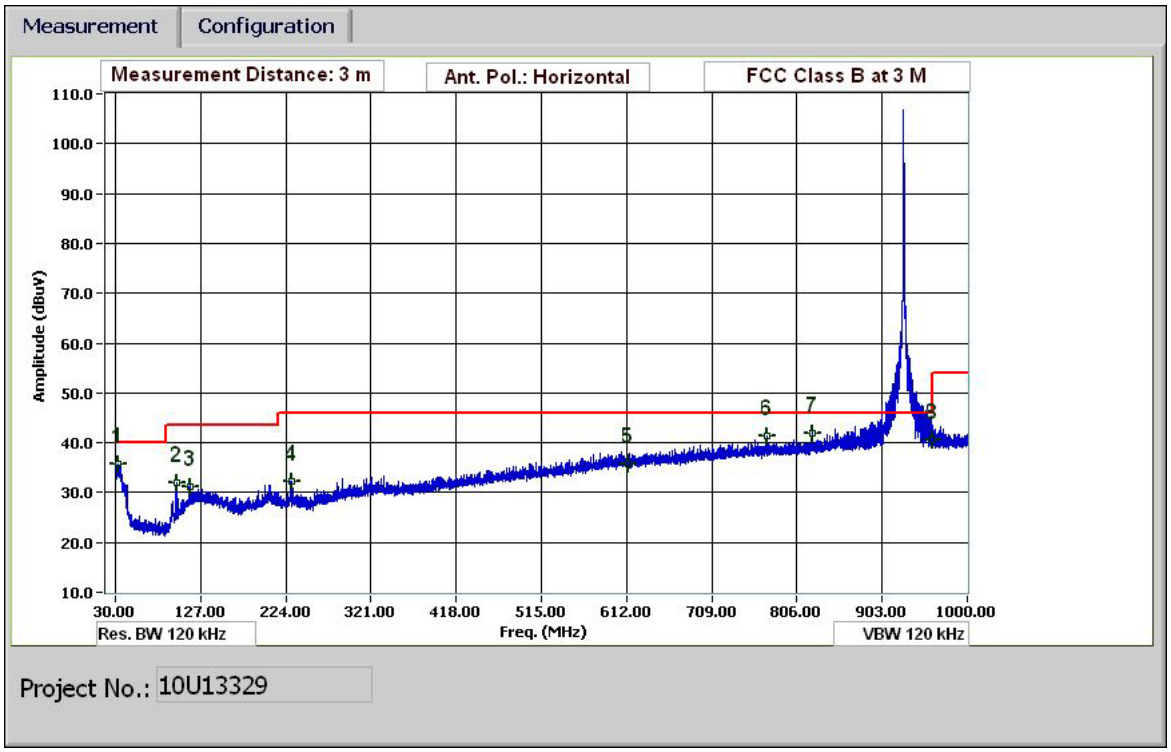
MID CHANNEL HORIZONTAL PLOT



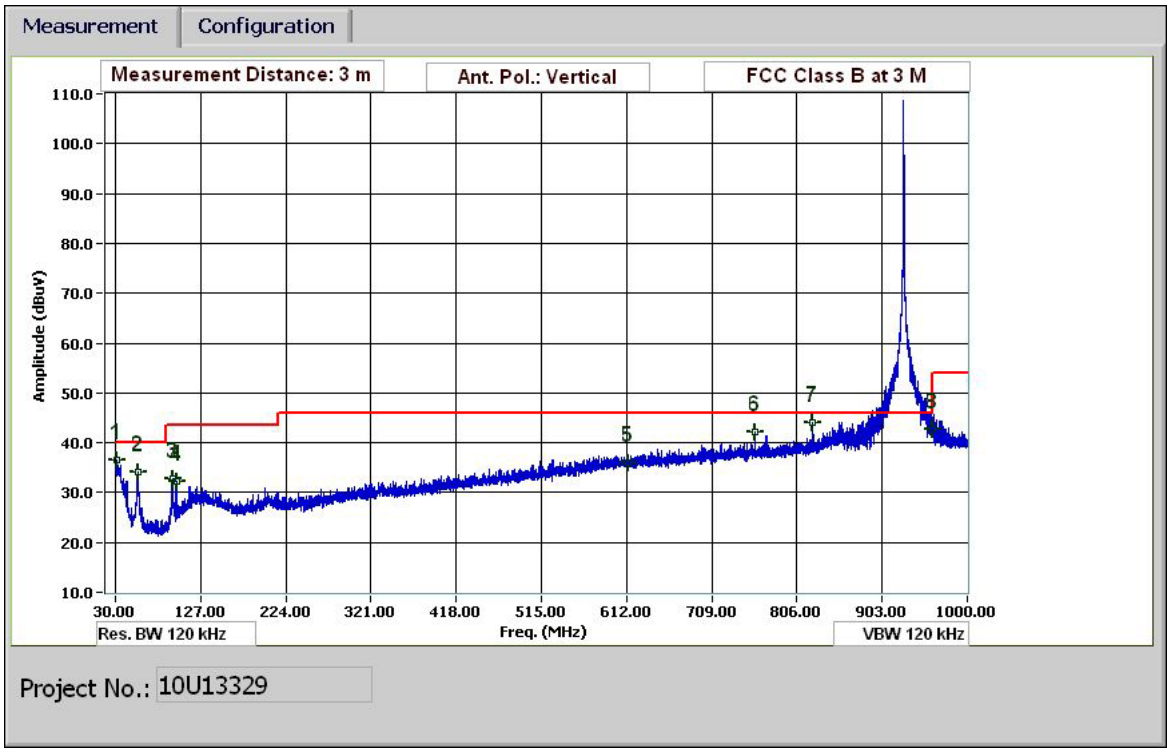
MID CHANNEL VERTICAL PLOT



HIGH CHANNEL HORIZONTAL PLOT



HIGH CHANNEL VERTICAL PLOT



VERTICAL AND HORIZONTAL DATA

30-1000MHz Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Test Engr: William Zhuang
Date: 07/26/10
Project #: 10U13329
Company: Anaren Inc.
EUT Description: Low Power Sub-1 GHz RF Transceiver 902-928 MHz for FCC/IC; 3 dBi monopole
EUT M/N: 09C and 09A
Test Target: FCC 15.247
Mode Oper: Tx, 2FSK-250K Baud 165K Dev.

f	Measurement Frequency	Amp	Preamp Gain	Margin Margin vs. Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters	
Read	Analyzer Reading	Filter	Filter Insert Loss	
AF	Antenna Factor	Corr.	Calculated Field Strength	
CL	Cable Loss	Limit	Field Strength Limit	

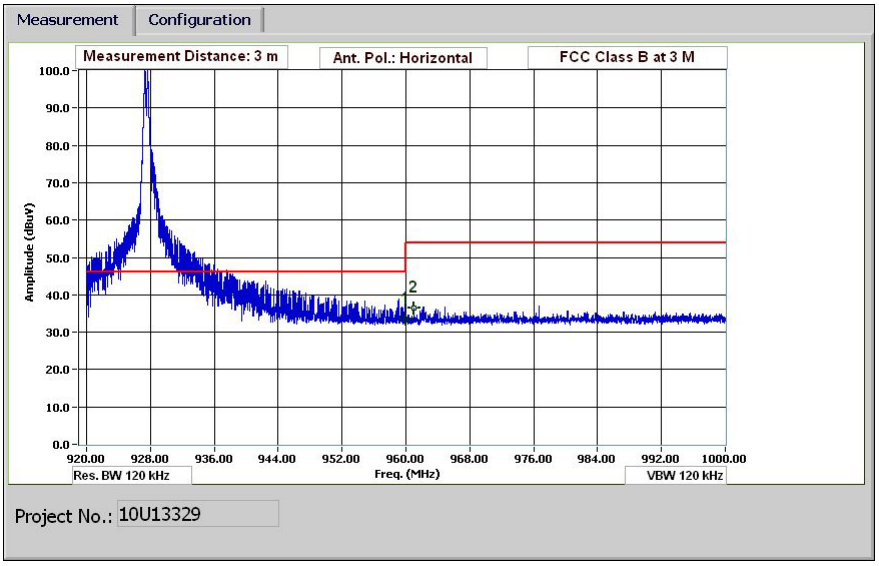
f MHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Filter dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Ant. High cm	Table Angle Degree	Notes
Low Ch															
30.120	3.0	34.8	20.0	0.5	28.4	0.0	10.0	37.0	40.0	-3.0	V	P	100.0	0 - 360	Prescan
60.001	3.0	41.3	7.9	0.7	28.4	0.0	10.0	31.5	40.0	-8.5	V	P	100.0	0 - 360	Prescan
80.402	3.0	41.7	7.3	0.8	28.3	0.0	10.0	31.5	40.0	-8.5	V	P	100.0	0 - 360	Prescan
100.323	3.0	39.7	10.0	0.9	28.3	0.0	10.0	32.3	43.5	-11.2	V	P	100.0	0 - 360	Prescan
192.127	3.0	39.7	11.5	1.2	28.2	0.0	10.0	34.2	43.5	-9.4	V	P	100.0	0 - 360	Prescan
614.064	3.0	32.4	18.6	2.3	27.5	0.0	10.0	35.8	46.0	-10.2	V	P	100.0	0 - 360	Prescan
746.310	3.0	36.3	20.2	2.5	27.3	0.0	10.0	41.8	46.0	-4.2	V	P	100.0	0 - 360	Prescan
798.632	3.0	37.4	20.9	2.6	27.4	0.0	10.0	43.5	46.0	-2.5	V	P	100.0	0 - 360	Prescan
35.760	3.0	37.5	17.3	0.6	28.4	0.0	10.0	37.0	40.0	-3.0	H	P	100.0	0 - 360	Prescan
100.203	3.0	40.7	10.0	0.9	28.3	0.0	10.0	33.3	43.5	-10.2	H	P	100.0	0 - 360	Prescan
114.483	3.0	36.8	12.6	1.0	28.3	0.0	10.0	32.1	43.5	-11.4	H	P	100.0	0 - 360	Prescan
192.127	3.0	41.7	11.5	1.2	28.2	0.0	10.0	36.1	43.5	-7.4	H	P	100.0	0 - 360	Prescan
309.972	3.0	37.4	13.6	1.5	28.1	0.0	10.0	34.4	46.0	-11.6	H	P	100.0	0 - 360	Prescan
614.064	3.0	32.3	18.6	2.3	27.5	0.0	10.0	35.7	46.0	-10.3	H	P	100.0	0 - 360	Prescan
746.670	3.0	36.9	20.2	2.5	27.3	0.0	10.0	42.4	46.0	-3.6	H	P	100.0	0 - 360	Prescan
798.272	3.0	36.5	20.9	2.6	27.4	0.0	10.0	42.6	46.0	-3.4	H	P	100.0	0 - 360	Prescan
960.038	3.0	32.2	22.2	2.9	27.9	0.0	10.0	39.5	54.0	-14.5	H	P	100.0	0 - 360	Prescan
Mid Ch.															
35.760	3.0	36.8	17.3	0.6	28.4	0.0	10.0	36.3	40.0	-3.7	V	P	100.0	0 - 360	Prescan
80.642	3.0	40.9	7.3	0.8	28.3	0.0	10.0	30.6	40.0	-9.4	V	P	100.0	0 - 360	Prescan
100.203	3.0	39.8	10.0	0.9	28.3	0.0	10.0	32.4	43.5	-11.1	V	P	100.0	0 - 360	Prescan
192.127	3.0	40.1	11.5	1.2	28.2	0.0	10.0	34.5	43.5	-9.0	V	P	100.0	0 - 360	Prescan
614.064	3.0	32.3	18.6	2.3	27.5	0.0	10.0	35.6	46.0	-10.4	V	P	100.0	0 - 360	Prescan
746.070	3.0	36.0	20.2	2.5	27.3	0.0	10.0	41.5	46.0	-4.5	V	P	100.0	0 - 360	Prescan
758.670	3.0	36.8	20.4	2.6	27.3	0.0	10.0	42.4	46.0	-3.6	V	P	100.0	0 - 360	Prescan
810.752	3.0	37.4	21.1	2.7	27.5	0.0	10.0	43.6	46.0	-2.4	V	P	100.0	0 - 360	Prescan
960.038	3.0	33.3	22.2	2.9	27.9	0.0	10.0	40.6	54.0	-13.4	V	P	100.0	0 - 360	Prescan
34.200	3.0	35.0	18.3	0.5	28.4	0.0	10.0	35.4	40.0	-4.6	H	P	100.0	0 - 360	Prescan
114.603	3.0	37.2	12.6	1.0	28.3	0.0	10.0	32.5	43.5	-11.0	H	P	100.0	0 - 360	Prescan
192.127	3.0	42.4	11.5	1.2	28.2	0.0	10.0	36.8	43.5	-6.7	H	P	100.0	0 - 360	Prescan
229.448	3.0	37.9	11.9	1.3	28.2	0.0	10.0	32.8	46.0	-13.2	H	P	100.0	0 - 360	Prescan
614.064	3.0	33.3	18.6	2.3	27.5	0.0	10.0	36.7	46.0	-9.3	H	P	100.0	0 - 360	Prescan
758.670	3.0	35.8	20.4	2.6	27.3	0.0	10.0	41.4	46.0	-4.6	H	P	100.0	0 - 360	Prescan
810.992	3.0	36.2	21.1	2.7	27.5	0.0	10.0	42.5	46.0	-3.5	H	P	100.0	0 - 360	Prescan
960.038	3.0	33.7	22.2	2.9	27.9	0.0	10.0	41.0	54.0	-13.0	H	P	100.0	0 - 360	Prescan
High Ch.															
31.560	3.0	34.9	19.4	0.5	28.4	0.0	10.0	36.5	40.0	-3.5	V	P	100.0	0 - 360	Prescan
56.041	3.0	43.7	8.1	0.7	28.4	0.0	10.0	34.1	40.0	-5.9	V	P	100.0	0 - 360	Prescan
96.123	3.0	41.1	9.0	0.9	28.3	0.0	10.0	32.7	43.5	-10.8	V	P	100.0	0 - 360	Prescan
100.323	3.0	39.7	10.0	0.9	28.3	0.0	10.0	32.3	43.5	-11.2	V	P	100.0	0 - 360	Prescan
614.064	3.0	32.8	18.6	2.3	27.5	0.0	10.0	36.1	46.0	-9.9	V	P	100.0	0 - 360	Prescan
758.310	3.0	36.5	20.4	2.6	27.3	0.0	10.0	42.1	46.0	-3.9	V	P	100.0	0 - 360	Prescan
823.713	3.0	37.6	21.2	2.7	27.5	0.0	10.0	43.9	46.0	-2.1	V	P	100.0	0 - 360	Prescan
960.038	3.0	35.5	22.2	2.9	27.9	0.0	10.0	42.8	54.0	-11.2	V	P	100.0	0 - 360	Prescan
33.240	3.0	34.9	18.7	0.5	28.4	0.0	10.0	35.8	40.0	-4.2	H	P	100.0	0 - 360	Prescan
100.203	3.0	39.3	10.0	0.9	28.3	0.0	10.0	31.9	43.5	-11.6	H	P	100.0	0 - 360	Prescan
114.483	3.0	36.0	12.6	1.0	28.3	0.0	10.0	31.3	43.5	-12.2	H	P	100.0	0 - 360	Prescan
230.168	3.0	37.3	11.9	1.3	28.2	0.0	10.0	32.3	46.0	-13.7	H	P	100.0	0 - 360	Prescan
614.064	3.0	32.3	18.6	2.3	27.5	0.0	10.0	35.7	46.0	-10.3	H	P	100.0	0 - 360	Prescan
771.631	3.0	35.5	20.6	2.6	27.4	0.0	10.0	41.3	46.0	-4.7	H	P	100.0	0 - 360	Prescan
823.233	3.0	35.7	21.2	2.7	27.5	0.0	10.0	42.0	46.0	-4.0	H	P	100.0	0 - 360	Prescan
960.038	3.0	33.3	22.2	2.9	27.9	0.0	10.0	40.6	54.0	-13.4	H	P	100.0	0 - 360	Prescan

Rev. 1.27.09
Note: No other emissions were detected above the system noise floor.

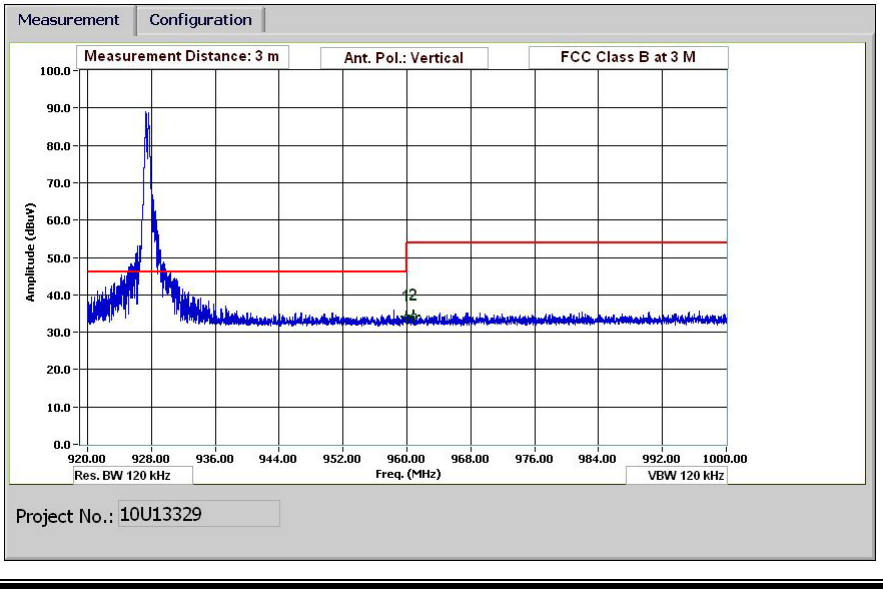
2dBi PCB ANTENNA

RESTRICTED BANDEDGE (HIGH CHANNEL)

HIGH CHANNEL RESTRICTED, PEAK, HORIZ



HIGH CHANNEL RESTRICTED, PEAK, VERT



HIGH CHANNEL RESTRICTED (VERTICAL AND HORIZONTAL DATA)

30-1000MHz Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

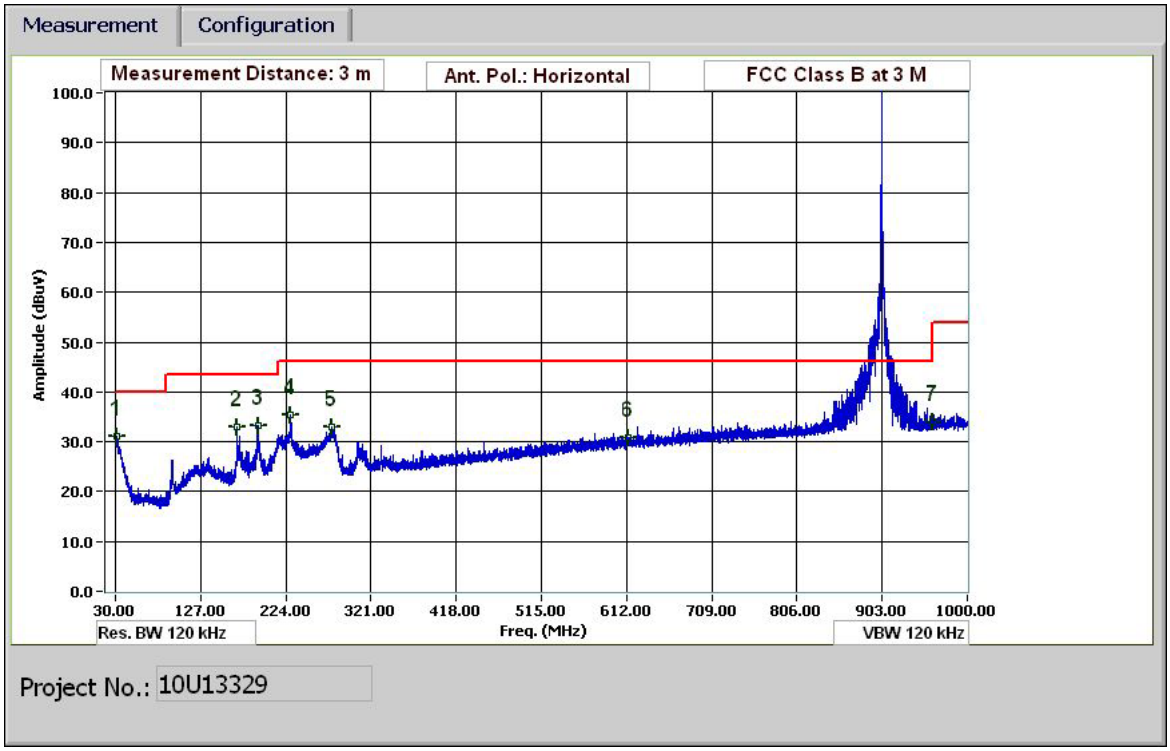
Test Engr: William Zhuang
Date: 07/28/10
Project #: 10U13329
Company: Anaren Inc.
EUT Description: Low Power Sub-1 GHz RF Transceiver 902-928 MHz for FCC/IC; 2 dBi PCB
EUT M/N: 09C and 09A
Test Target: FCC 15.247
Mode Oper: Tx, 2FSK-250K Baud 165K Dev.

f	Measurement Frequency	Amp	Preamp Gain	Margin	Margin vs. Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters		
Read	Analyzer Reading	Filter	Filter Insert Loss		
AF	Antenna Factor	Corr.	Calculated Field Strength		
CL	Cable Loss	Limit	Field Strength Limit		

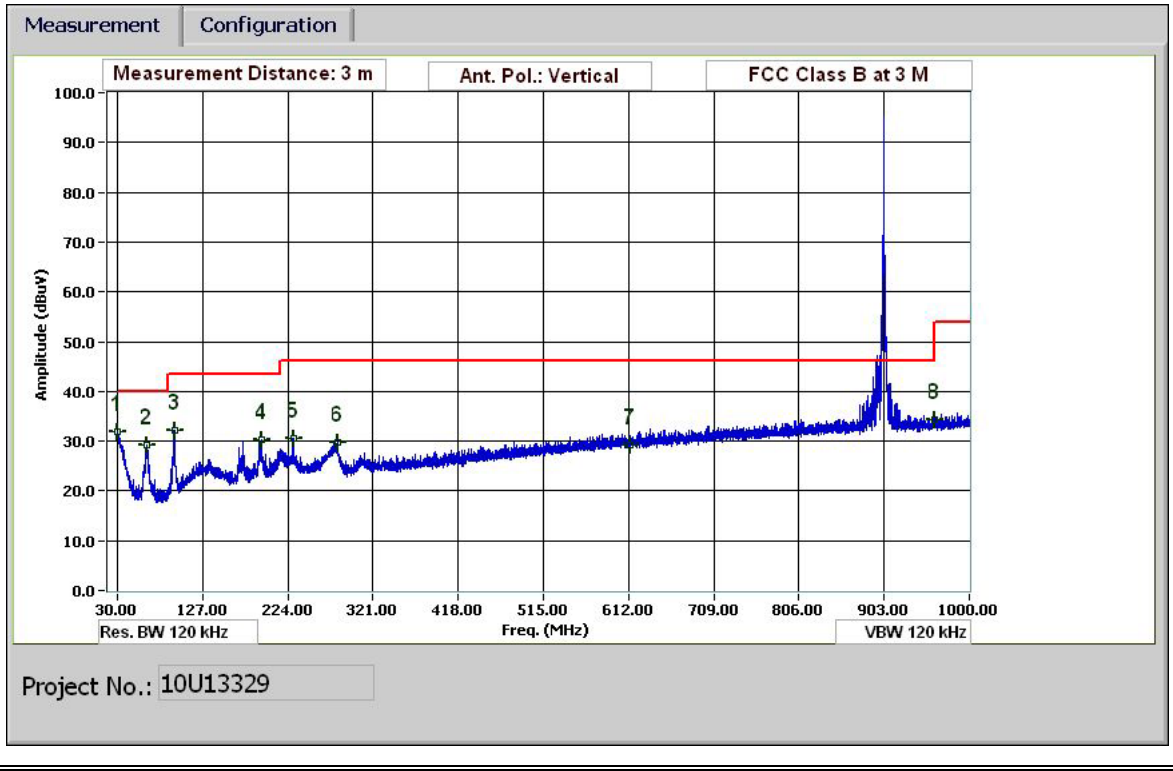
f MHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Filter dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Ant. High cm	Table Angle Degree	Notes
High Bandedge, Horizontal															
960.000	3.0	26.3	22.2	2.9	27.9	0.0	10.0	33.6	46.0	-12.4	H	P			
960.975	3.0	29.1	22.2	2.9	27.9	0.0	10.0	36.4	54.0	-17.6	H	P			
High Bandedge, Vertical															
960.000	3.0	26.9	22.2	2.9	27.9	0.0	10.0	34.2	46.0	-11.8	V	P			
960.906	3.0	27.1	22.2	2.9	27.9	0.0	10.0	34.4	54.0	-19.6	V	P			

Rev. 1.27.09
Note: No other emissions were detected above the system noise floor.

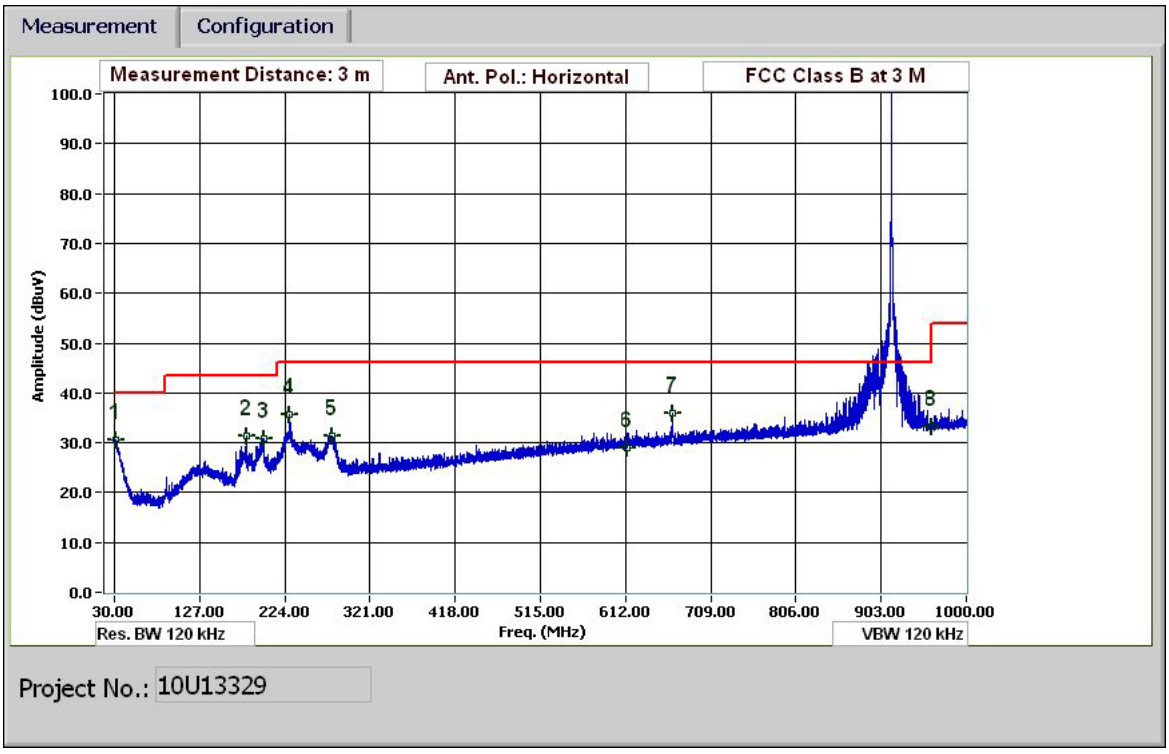
LOW CHANNEL HORIZONTAL PLOT



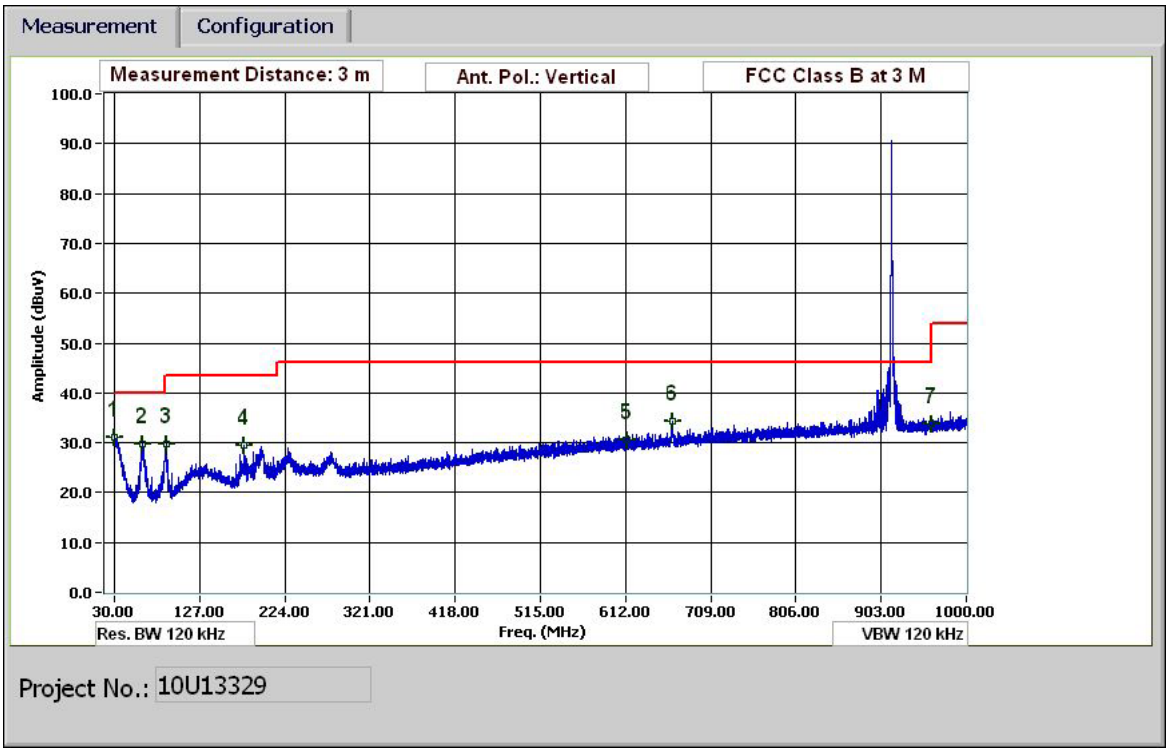
LOW CHANNEL VERTICAL PLOT



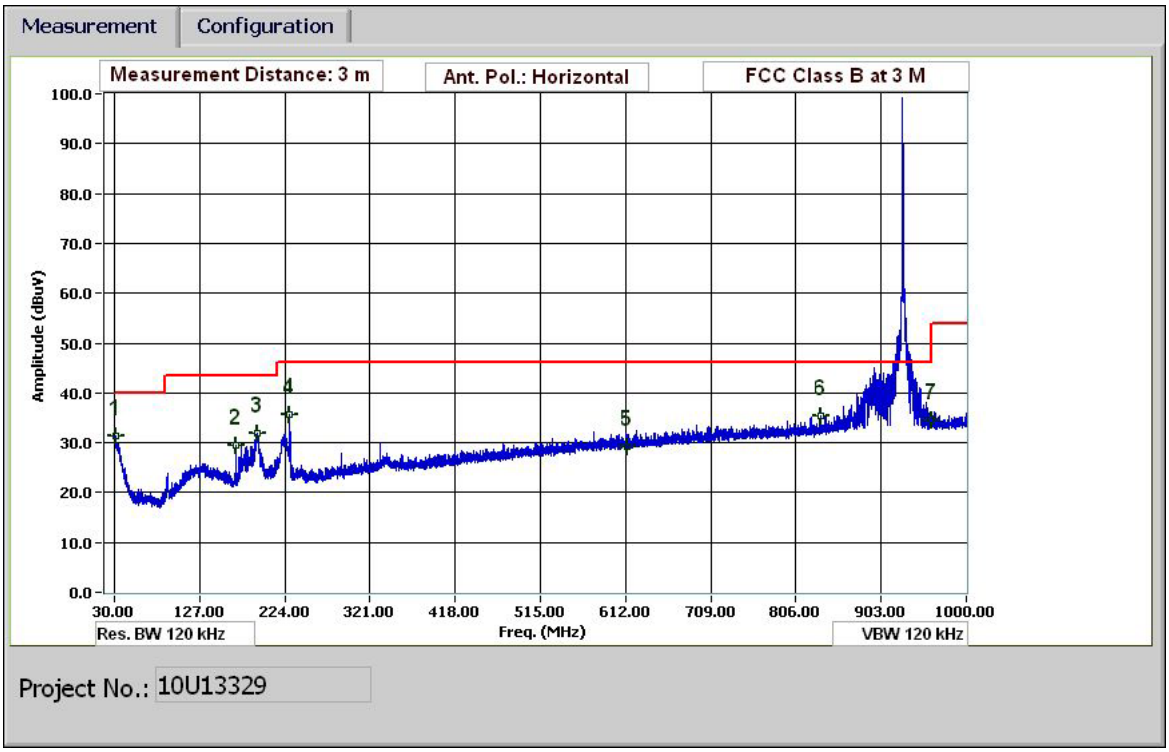
MID CHANNEL HORIZONTAL PLOT



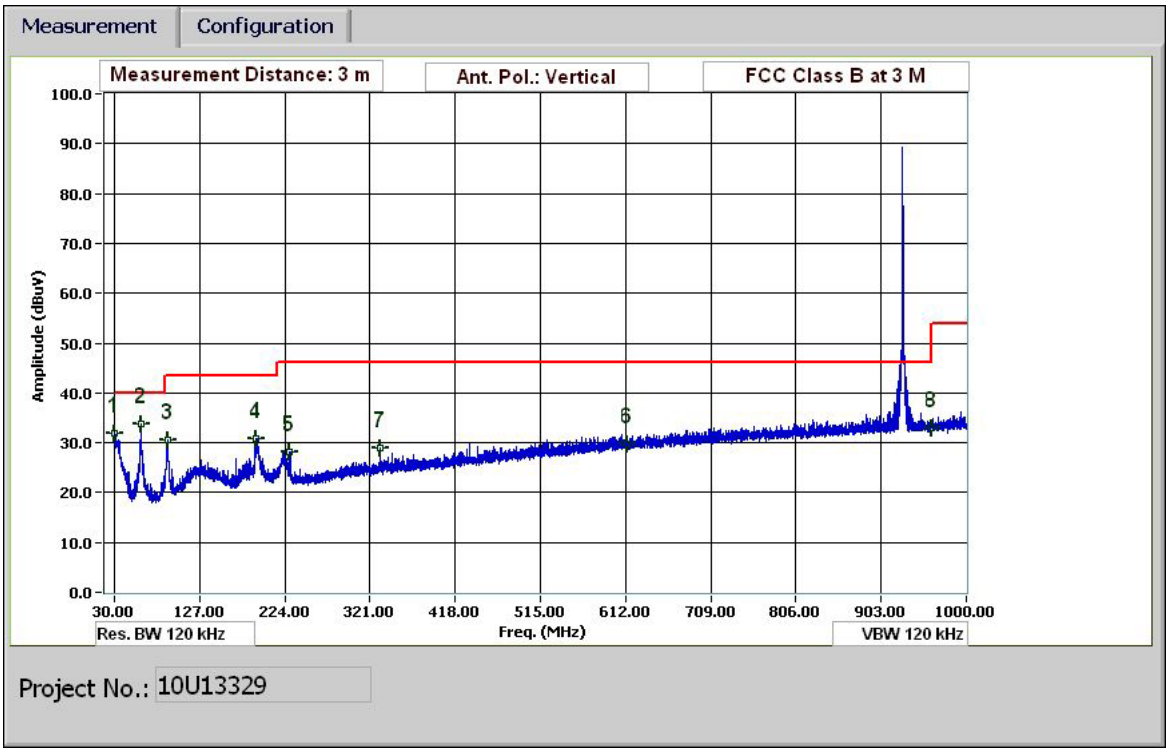
MID CHANNEL VERTICAL PLOT



HIGH CHANNEL HORIZONTAL PLOT



HIGH CHANNEL VERTICAL PLOT



VERTICAL AND HORIZONTAL DATA

30-1000MHz Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Test Engr: William Zhuang
Date: 07/28/10
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Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters		
Read	Analyzer Reading	Filter	Filter Insert Loss		
AF	Antenna Factor	Corr.	Calculated Field Strength		
CL	Cable Loss	Limit	Field Strength Limit		

f MHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Filter dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Ant. High cm	Table Angle Degree	Notes
Low Ch.															
30.360	3.0	29.8	19.9	0.5	28.4	0.0	10.0	31.8	40.0	-8.2	V	P	100.0	0 - 360	Prescan
63.481	3.0	39.0	8.0	0.7	28.4	0.0	10.0	29.3	40.0	-10.7	V	P	100.0	0 - 360	Prescan
94.683	3.0	40.9	8.7	0.9	28.3	0.0	10.0	32.1	43.5	-11.4	V	P	100.0	0 - 360	Prescan
193.567	3.0	35.8	11.6	1.2	28.2	0.0	10.0	30.4	43.5	-13.1	V	P	100.0	0 - 360	Prescan
230.048	3.0	35.6	11.9	1.3	28.2	0.0	10.0	30.5	46.0	-15.5	V	P	100.0	0 - 360	Prescan
280.690	3.0	33.6	12.8	1.5	28.1	0.0	10.0	29.7	46.0	-16.3	V	P	100.0	0 - 360	Prescan
614.064	3.0	25.8	18.6	2.3	27.5	0.0	10.0	29.2	46.0	-16.8	V	P	100.0	0 - 360	Prescan
960.038	3.0	27.0	22.2	2.9	27.9	0.0	10.0	34.3	54.0	-19.7	V	P	100.0	0 - 360	Prescan
31.800	3.0	29.7	19.3	0.5	28.4	0.0	10.0	31.2	40.0	-8.8	H	P	100.0	0 - 360	Prescan
168.006	3.0	39.1	11.0	1.2	28.2	0.0	10.0	33.0	43.5	-10.5	H	P	100.0	0 - 360	Prescan
192.007	3.0	38.9	11.5	1.2	28.2	0.0	10.0	33.4	43.5	-10.1	H	P	100.0	0 - 360	Prescan
229.448	3.0	40.4	11.9	1.3	28.2	0.0	10.0	35.4	46.0	-10.6	H	P	100.0	0 - 360	Prescan
276.010	3.0	37.1	12.6	1.4	28.1	0.0	10.0	33.0	46.0	-13.0	H	P	100.0	0 - 360	Prescan
614.064	3.0	27.6	18.6	2.3	27.5	0.0	10.0	31.0	46.0	-15.0	H	P	100.0	0 - 360	Prescan
960.038	3.0	26.7	22.2	2.9	27.9	0.0	10.0	33.9	54.0	-20.1	H	P	100.0	0 - 360	Prescan
Mid Ch.															
30.960	3.0	28.8	19.7	0.5	28.4	0.0	10.0	30.6	40.0	-9.4	H	P	100.0	0 - 360	Prescan
180.846	3.0	37.3	11.1	1.2	28.2	0.0	10.0	31.4	43.5	-12.1	H	P	100.0	0 - 360	Prescan
199.807	3.0	35.8	12.0	1.3	28.2	0.0	10.0	30.8	43.5	-12.7	H	P	100.0	0 - 360	Prescan
229.328	3.0	40.6	11.9	1.3	28.2	0.0	10.0	35.5	46.0	-10.5	H	P	100.0	0 - 360	Prescan
277.090	3.0	35.3	12.7	1.4	28.1	0.0	10.0	31.3	46.0	-14.7	H	P	100.0	0 - 360	Prescan
614.064	3.0	25.6	18.6	2.3	27.5	0.0	10.0	29.0	46.0	-17.0	H	P	100.0	0 - 360	Prescan
666.026	3.0	31.8	19.2	2.4	27.3	0.0	10.0	36.0	46.0	-10.0	H	P	100.0	0 - 360	Prescan
960.038	3.0	26.0	22.2	2.9	27.9	0.0	10.0	33.3	54.0	-20.7	H	P	100.0	0 - 360	Prescan
30.720	3.0	29.3	19.8	0.5	28.4	0.0	10.0	31.1	40.0	-8.9	V	P	100.0	0 - 360	Prescan
61.921	3.0	39.4	7.9	0.7	28.4	0.0	10.0	29.7	40.0	-10.3	V	P	100.0	0 - 360	Prescan
89.402	3.0	39.7	7.5	0.8	28.3	0.0	10.0	29.8	43.5	-13.7	V	P	100.0	0 - 360	Prescan
178.086	3.0	35.6	10.9	1.2	28.2	0.0	10.0	29.4	43.5	-14.1	V	P	100.0	0 - 360	Prescan
614.064	3.0	27.1	18.6	2.3	27.5	0.0	10.0	30.5	46.0	-15.5	V	P	100.0	0 - 360	Prescan
666.266	3.0	29.9	19.2	2.4	27.3	0.0	10.0	34.2	46.0	-11.8	V	P	100.0	0 - 360	Prescan
960.038	3.0	26.5	22.2	2.9	27.9	0.0	10.0	33.7	54.0	-20.3	V	P	100.0	0 - 360	Prescan
High Ch.															
30.120	3.0	29.8	20.0	0.5	28.4	0.0	10.0	31.9	40.0	-8.1	V	P	100.0	0 - 360	Prescan
60.001	3.0	43.5	7.9	0.7	28.4	0.0	10.0	33.8	40.0	-6.2	V	P	100.0	0 - 360	Prescan
90.602	3.0	40.3	7.7	0.8	28.3	0.0	10.0	30.5	43.5	-13.0	V	P	100.0	0 - 360	Prescan
191.887	3.0	36.3	11.5	1.2	28.2	0.0	10.0	30.8	43.5	-12.7	V	P	100.0	0 - 360	Prescan
229.328	3.0	33.1	11.9	1.3	28.2	0.0	10.0	28.1	46.0	-17.9	V	P	100.0	0 - 360	Prescan
333.133	3.0	31.7	13.9	1.6	28.1	0.0	10.0	29.1	46.0	-16.9	V	P	100.0	0 - 360	Prescan
614.064	3.0	26.4	18.6	2.3	27.5	0.0	10.0	29.8	46.0	-16.2	V	P	100.0	0 - 360	Prescan
960.038	3.0	25.7	22.2	2.9	27.9	0.0	10.0	33.0	54.0	-21.0	V	P	100.0	0 - 360	Prescan
30.840	3.0	29.6	19.7	0.5	28.4	0.0	10.0	31.4	40.0	-8.6	H	P	100.0	0 - 360	Prescan
168.126	3.0	35.5	11.0	1.2	28.2	0.0	10.0	29.4	43.5	-14.1	H	P	100.0	0 - 360	Prescan
192.607	3.0	37.5	11.5	1.2	28.2	0.0	10.0	32.0	43.5	-11.5	H	P	100.0	0 - 360	Prescan
229.448	3.0	40.5	11.9	1.3	28.2	0.0	10.0	35.5	46.0	-10.5	H	P	100.0	0 - 360	Prescan
614.064	3.0	25.9	18.6	2.3	27.5	0.0	10.0	29.3	46.0	-16.7	H	P	100.0	0 - 360	Prescan
834.753	3.0	28.9	21.3	2.7	27.6	0.0	10.0	35.3	46.0	-10.7	H	P	100.0	0 - 360	Prescan
960.038	3.0	27.3	22.2	2.9	27.9	0.0	10.0	34.5	54.0	-19.5	H	P	100.0	0 - 360	Prescan

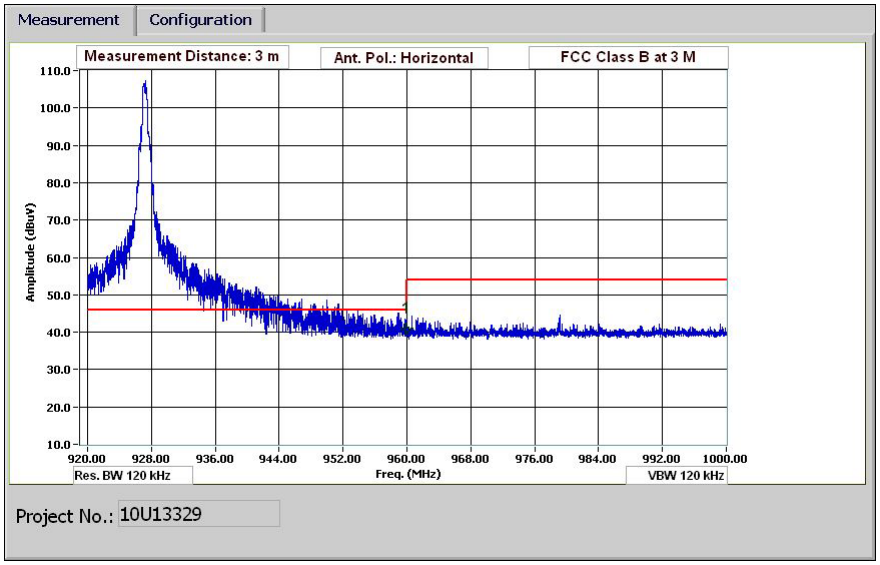
Rev. 1.27.09
Note: No other emissions were detected above the system noise floor.

8.2.2. TRANSMITTER BELOW 1 GHz FOR MSK MODE

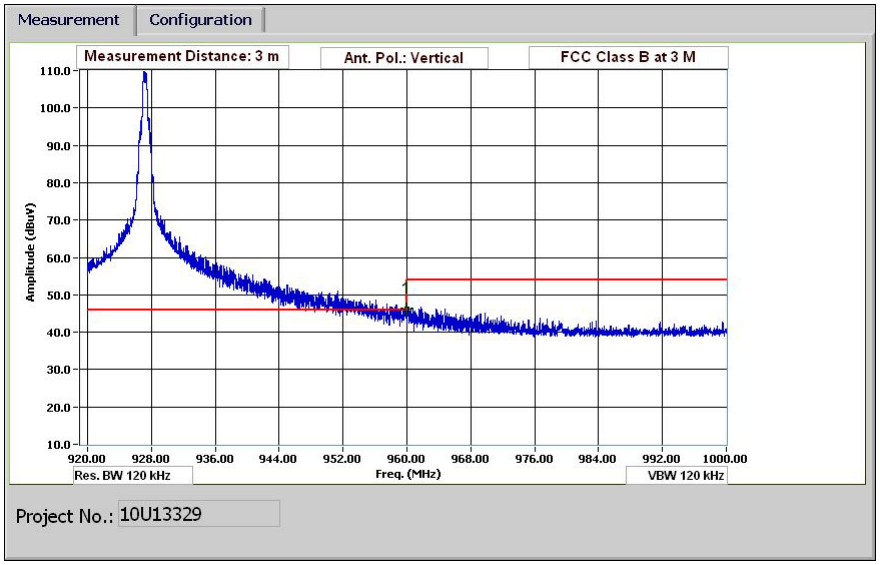
3dBi MONOPOLE ANTENNA

RESTRICTED BANDEDGE (HIGH CHANNEL)

HIGH CHANNEL RESTRICTED, PEAK, HORIZ



HIGH CHANNEL RESTRICTED, PEAK, VERT



HIGH CHANNEL RESTRICTED (VERTICAL AND HORIZONTAL DATA)

30-1000MHz Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

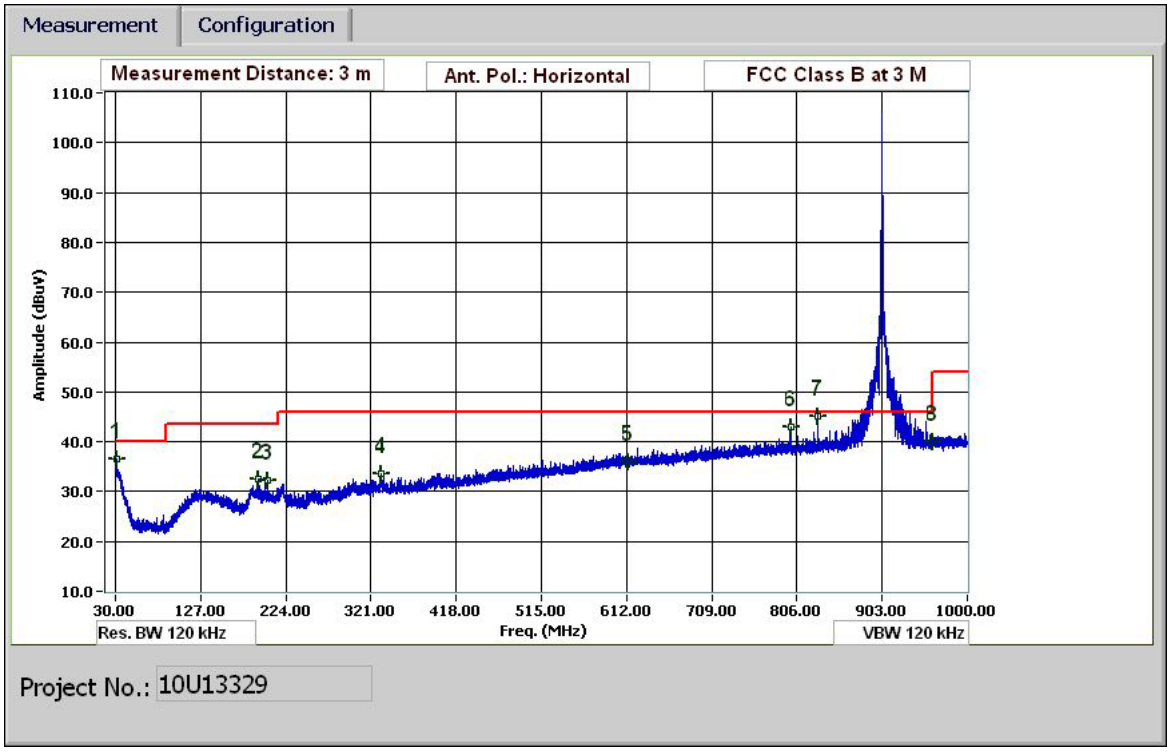
Test Engr: William Zhuang
Date: 07/27/10
Project #: 10U13329
Company: Anaren Inc.
EUT Description: Low Power Sub-1 GHz RF Transceiver 902-928 MHz for FCC/IC; 3 dBi monopole
EUT M/N: 09C and 09A
Test Target: FCC 15.247
Mode Oper: Tx, MSK-500K Baud 0 Dev.

f	Measurement Frequency	Amp	Preamp Gain	Margin Margin vs. Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters	
Read	Analyzer Reading	Filter	Filter Insert Loss	
AF	Antenna Factor	Corr.	Calculated Field Strength	
CL	Cable Loss	Limit	Field Strength Limit	

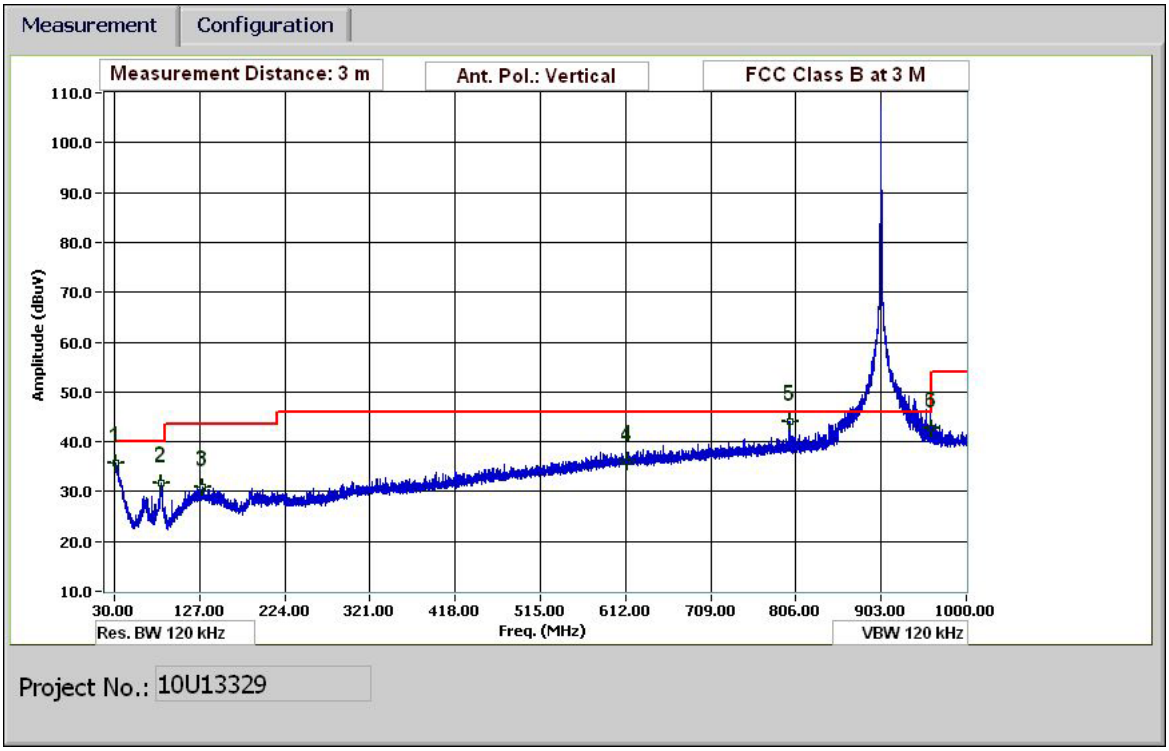
f MHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Filter dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Ant. High cm	Table Angle Degree	Notes
High Bandedge, Vertical															
960.000	3.0	36.5	22.2	2.9	27.9	0.0	10.0	43.8	46.0	-2.2	V	Q			
High Bandedge, Horizontal															
960.000	3.0	33.6	22.2	2.9	27.9	0.0	10.0	40.9	46.0	-5.1	H	P			

Rev. 1.27.09
Note: No other emissions were detected above the system noise floor.

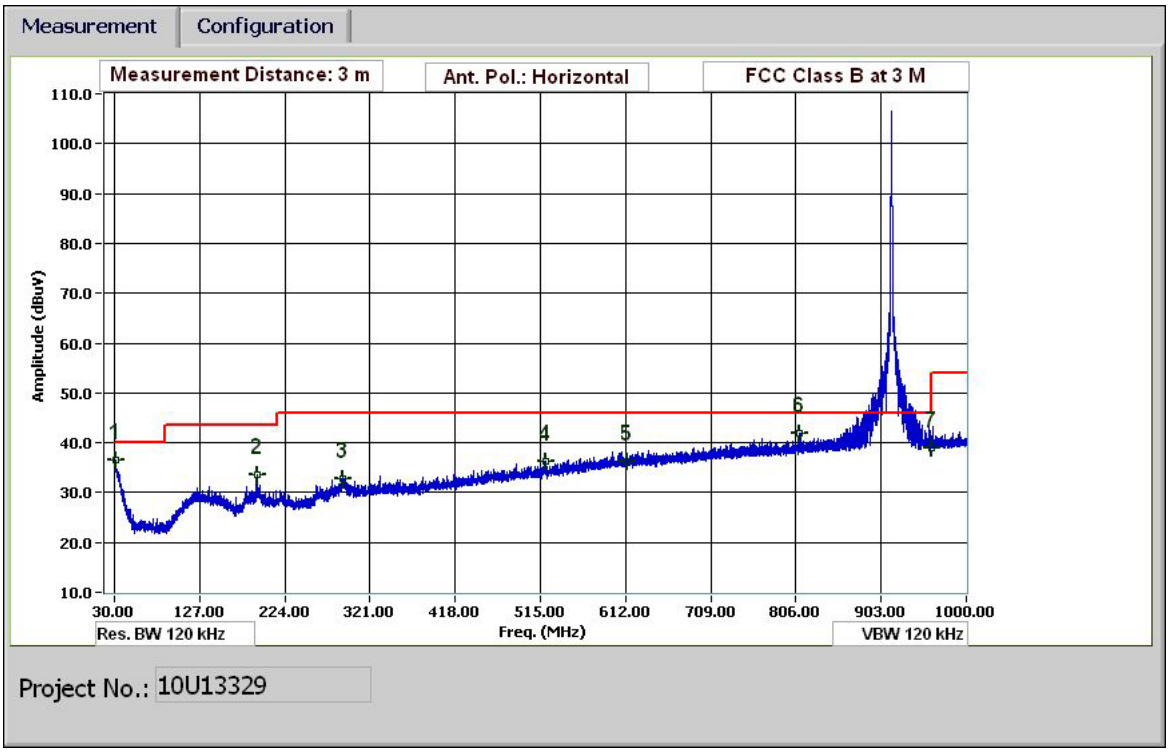
LOW CHANNEL HORIZONTAL PLOT



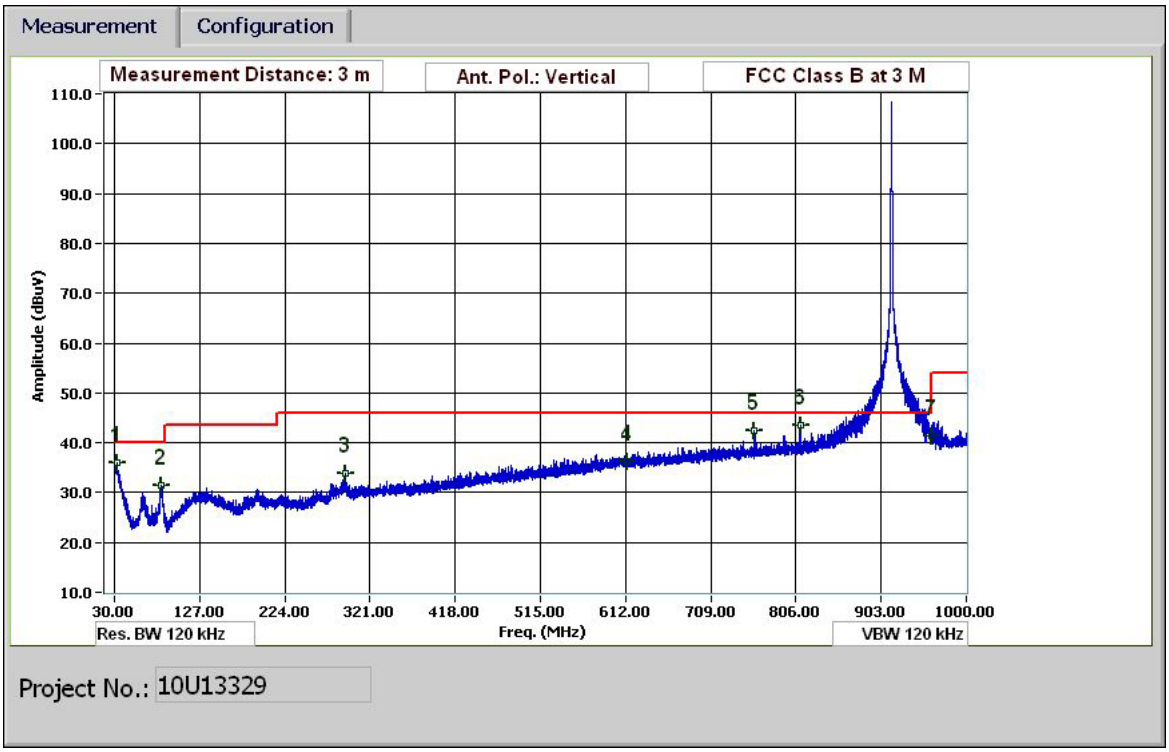
LOW CHANNEL VERTICAL PLOT



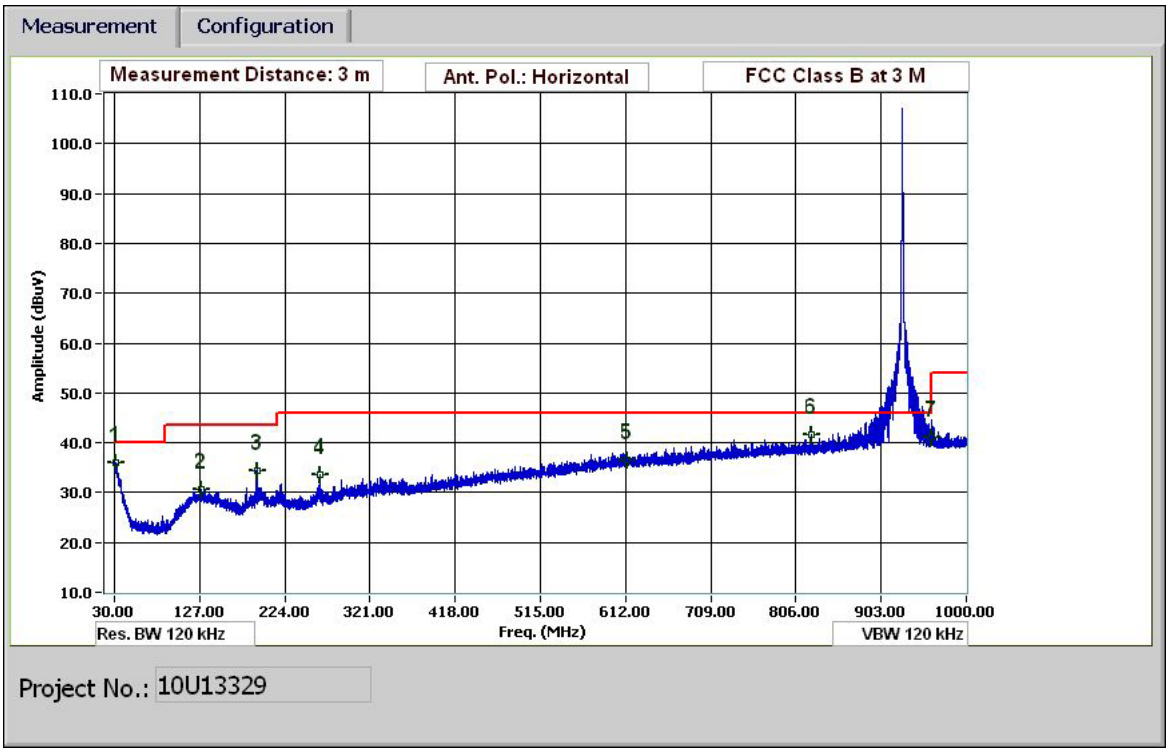
MID CHANNEL HORIZONTAL PLOT



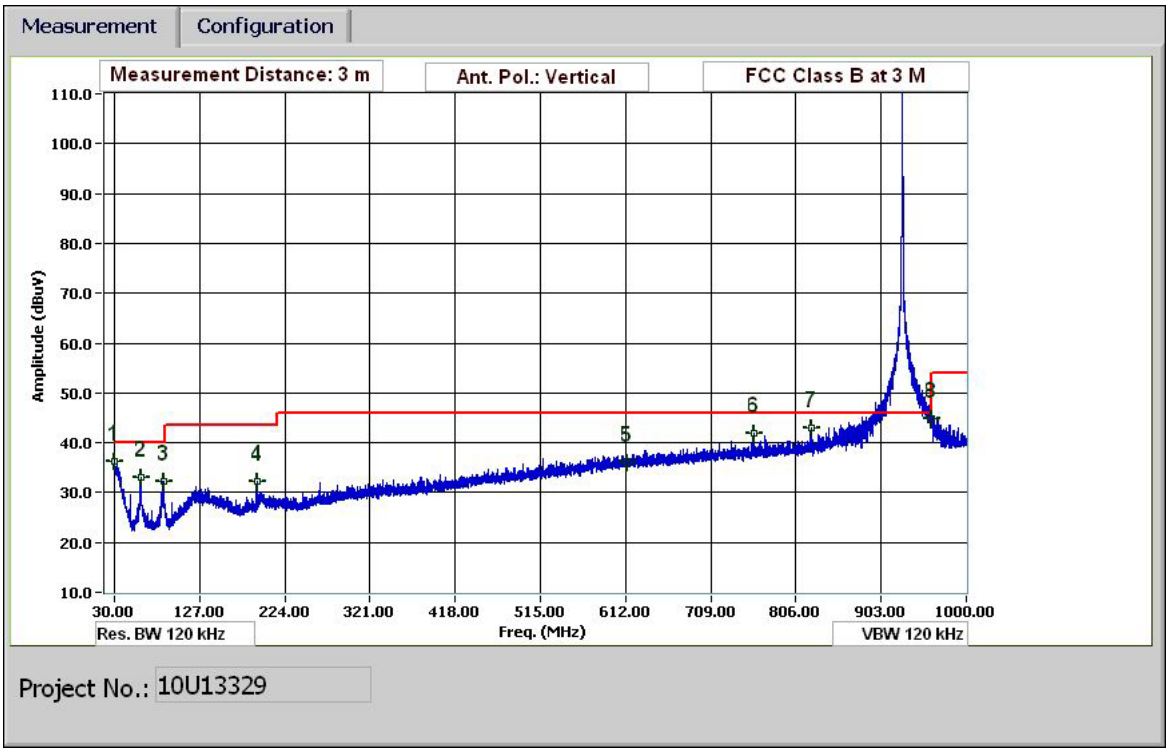
MID CHANNEL VERTICAL PLOT



HIGH CHANNEL HORIZONTAL PLOT



HIGH CHANNEL VERTICAL PLOT



VERTICAL AND HORIZONTAL DATA

30-1000MHz Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Test Engr: William Zhuang
Date: 07/27/10
Project #: 10U13329
Company: Anaren Inc.
EUT Description: Low Power Sub-1 GHz RF Transceiver 902-928 MHz for FCC/IC; 3 dBi monopole
EUT M/N: 09C and 09A
Test Target: FCC 15.247
Mode Oper: Tx, MSK-500K Baud 0 Dev.

f	Measurement Frequency	Amp	Preamp Gain	Margin	Margin vs. Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters		
Read	Analyzer Reading	Filter	Filter Insert Loss		
AF	Antenna Factor	Corr.	Calculated Field Strength		
CL	Cable Loss	Limit	Field Strength Limit		

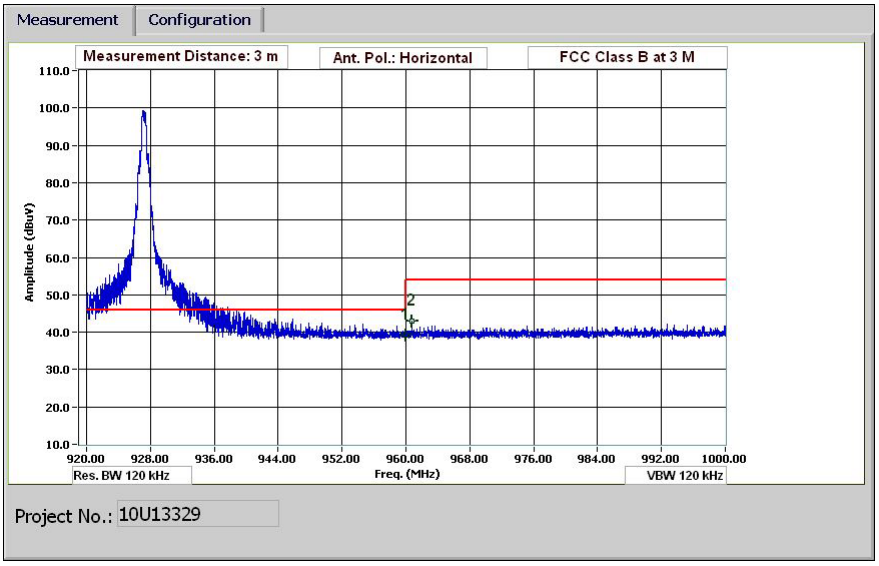
f MHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Filter dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Ant. High cm	Table Angle Degree	Notes
Low Ch.															
31.320	3.0	34.2	19.5	0.5	28.4	0.0	10.0	35.9	40.0	-4.1	V	P	100.0	0 - 360	Prescan
83.522	3.0	41.8	7.4	0.8	28.3	0.0	10.0	31.6	40.0	-8.4	V	P	100.0	0 - 360	Prescan
130.564	3.0	34.5	13.5	1.1	28.3	0.0	10.0	30.8	43.5	-12.7	V	P	100.0	0 - 360	Prescan
614.064	3.0	32.8	18.6	2.3	27.5	0.0	10.0	36.1	46.0	-9.9	V	P	100.0	0 - 360	Prescan
798.632	3.0	38.0	20.9	2.6	27.4	0.0	10.0	44.2	46.0	-1.8	V	P	100.0	0 - 360	Prescan
960.038	3.0	35.3	22.2	2.9	27.9	0.0	10.0	42.6	54.0	-11.4	V	P	100.0	0 - 360	Prescan
31.080	3.0	34.7	19.6	0.5	28.4	0.0	10.0	36.4	40.0	-3.6	H	P	100.0	0 - 360	Prescan
192.127	3.0	38.0	11.5	1.2	28.2	0.0	10.0	32.5	43.5	-11.0	H	P	100.0	0 - 360	Prescan
204.007	3.0	37.3	12.0	1.3	28.2	0.0	10.0	32.3	43.5	-11.2	H	P	100.0	0 - 360	Prescan
331.932	3.0	36.1	13.9	1.6	28.1	0.0	10.0	33.5	46.0	-12.5	H	P	100.0	0 - 360	Prescan
614.064	3.0	32.6	18.6	2.3	27.5	0.0	10.0	36.0	46.0	-10.0	H	P	100.0	0 - 360	Prescan
798.992	3.0	36.7	20.9	2.6	27.4	0.0	10.0	42.9	46.0	-3.1	H	P	100.0	0 - 360	Prescan
829.353	3.0	38.8	21.2	2.7	27.5	0.0	10.0	45.2	46.0	-0.8	H	P	100.0	0 - 360	Prescan
960.038	3.0	32.7	22.2	2.9	27.9	0.0	10.0	40.0	54.0	-14.0	H	P	100.0	0 - 360	Prescan
Mid Ch.															
33.360	3.0	35.1	18.6	0.5	28.4	0.0	10.0	35.9	40.0	-4.1	V	P	100.0	0 - 360	Prescan
83.522	3.0	41.7	7.4	0.8	28.3	0.0	10.0	31.5	40.0	-8.5	V	P	100.0	0 - 360	Prescan
292.931	3.0	37.3	13.2	1.5	28.1	0.0	10.0	33.9	46.0	-12.1	V	P	100.0	0 - 360	Prescan
614.064	3.0	32.9	18.6	2.3	27.5	0.0	10.0	36.2	46.0	-9.8	V	P	100.0	0 - 360	Prescan
758.790	3.0	36.8	20.4	2.6	27.3	0.0	10.0	42.4	46.0	-3.6	V	P	100.0	0 - 360	Prescan
811.112	3.0	37.2	21.1	2.7	27.5	0.0	10.0	43.4	46.0	-2.6	V	P	100.0	0 - 360	Prescan
960.038	3.0	34.0	22.2	2.9	27.9	0.0	10.0	41.3	54.0	-12.7	V	P	100.0	0 - 360	Prescan
31.320	3.0	35.0	19.5	0.5	28.4	0.0	10.0	36.6	40.0	-3.4	H	P	100.0	0 - 360	Prescan
192.127	3.0	39.0	11.5	1.2	28.2	0.0	10.0	33.5	43.5	-10.0	H	P	100.0	0 - 360	Prescan
290.171	3.0	36.5	13.1	1.5	28.1	0.0	10.0	32.9	46.0	-13.1	H	P	100.0	0 - 360	Prescan
520.340	3.0	34.8	17.1	2.1	27.8	0.0	10.0	36.2	46.0	-9.8	H	P	100.0	0 - 360	Prescan
613.944	3.0	32.8	18.6	2.3	27.5	0.0	10.0	36.2	46.0	-9.8	H	P	100.0	0 - 360	Prescan
810.632	3.0	35.7	21.1	2.7	27.5	0.0	10.0	41.9	46.0	-4.1	H	P	100.0	0 - 360	Prescan
960.038	3.0	31.8	22.2	2.9	27.9	0.0	10.0	39.1	54.0	-14.9	H	P	100.0	0 - 360	Prescan
High Ch.															
30.120	3.0	34.2	20.0	0.5	28.4	0.0	10.0	36.4	40.0	-3.6	V	P	100.0	0 - 360	Prescan
60.001	3.0	42.7	7.9	0.7	28.4	0.0	10.0	32.9	40.0	-7.1	V	P	100.0	0 - 360	Prescan
85.682	3.0	42.2	7.4	0.8	28.3	0.0	10.0	32.1	40.0	-7.9	V	P	100.0	0 - 360	Prescan
192.127	3.0	37.9	11.5	1.2	28.2	0.0	10.0	32.3	43.5	-11.2	V	P	100.0	0 - 360	Prescan
614.064	3.0	32.6	18.6	2.3	27.5	0.0	10.0	36.0	46.0	-10.0	V	P	100.0	0 - 360	Prescan
758.070	3.0	36.2	20.4	2.6	27.3	0.0	10.0	41.8	46.0	-4.2	V	P	100.0	0 - 360	Prescan
823.113	3.0	36.7	21.2	2.7	27.5	0.0	10.0	43.0	46.0	-3.0	V	P	100.0	0 - 360	Prescan
960.038	3.0	37.5	22.2	2.9	27.9	0.0	10.0	44.8	54.0	-9.2	V	P	100.0	0 - 360	Prescan
30.840	3.0	34.1	19.7	0.5	28.4	0.0	10.0	35.9	40.0	-4.1	H	P	100.0	0 - 360	Prescan
128.764	3.0	34.4	13.6	1.1	28.3	0.0	10.0	30.8	43.5	-12.7	H	P	100.0	0 - 360	Prescan
192.007	3.0	39.8	11.5	1.2	28.2	0.0	10.0	34.3	43.5	-9.2	H	P	100.0	0 - 360	Prescan
264.010	3.0	38.1	12.2	1.4	28.2	0.0	10.0	33.6	46.0	-12.4	H	P	100.0	0 - 360	Prescan
614.064	3.0	33.1	18.6	2.3	27.5	0.0	10.0	36.4	46.0	-9.6	H	P	100.0	0 - 360	Prescan
823.113	3.0	35.3	21.2	2.7	27.5	0.0	10.0	41.7	46.0	-4.3	H	P	100.0	0 - 360	Prescan
960.038	3.0	33.7	22.2	2.9	27.9	0.0	10.0	41.0	54.0	-13.0	H	P	100.0	0 - 360	Prescan

Rev. 1.27.09
Note: No other emissions were detected above the system noise floor.

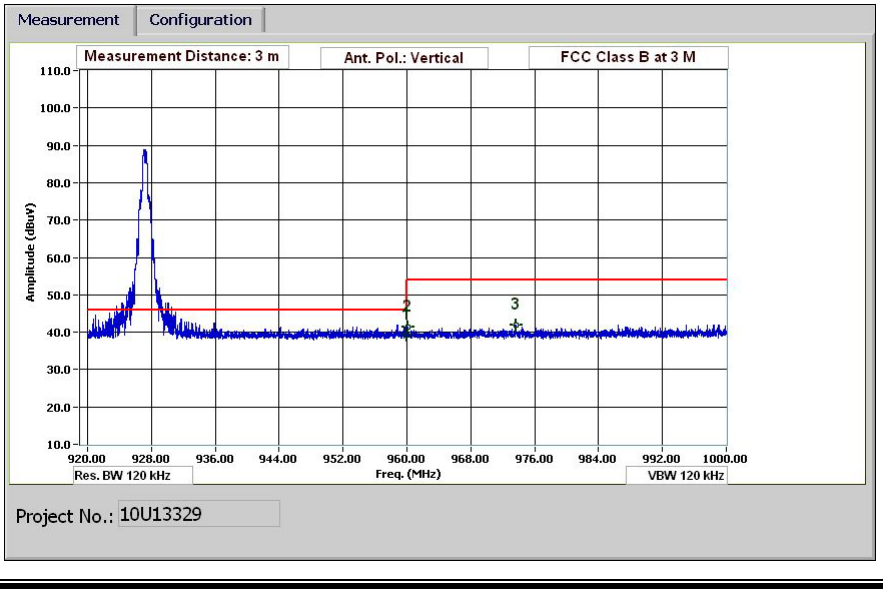
2dBi PCB ANTENNA

RESTRICTED BANDEDGE (HIGH CHANNEL)

HIGH CHANNEL RESTRICTED, PEAK, HORIZ



HIGH CHANNEL RESTRICTED, PEAK, VERT



HIGH CHANNEL RESTRICTED (VERTICAL AND HORIZONTAL DATA)

30-1000MHz Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

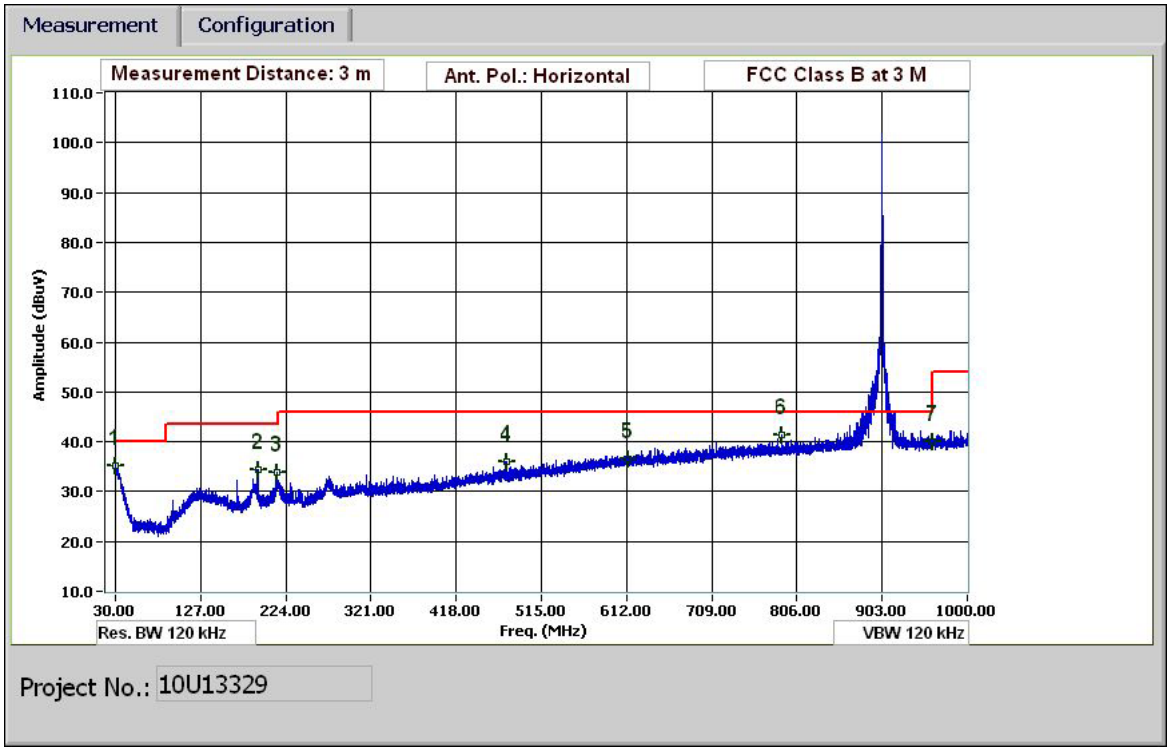
Test Engr: William Zhuang
Date: 07/29/10
Project #: 10U13329
Company: Anaren Inc.
EUT Description: Low Power Sub-1 GHz RF Transceiver 902-928 MHz for FCC/IC; 2 dBi PCB
EUT M/N: 09C and 09A
Test Target: FCC 15.247
Mode Oper: Tx, MSK-500K Baud 0 Dev.

f	Measurement Frequency	Amp	Preamp Gain	Margin	Margin vs. Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters		
Read	Analyzer Reading	Filter	Filter Insert Loss		
AF	Antenna Factor	Corr.	Calculated Field Strength		
CL	Cable Loss	Limit	Field Strength Limit		

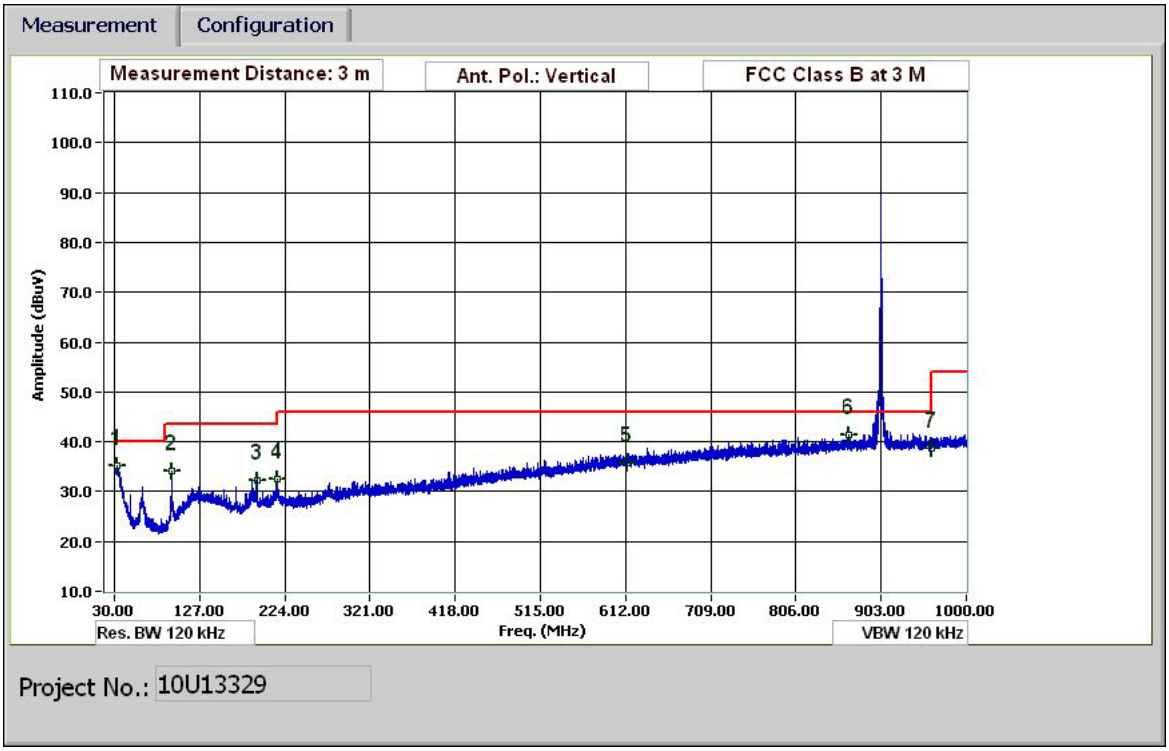
f MHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Filter dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Ant. High cm	Table Angle Degree	Notes
High Bandedge, Vertical															
960.000	3.0	32.1	22.2	2.9	27.9	0.0	10.0	39.3	46.0	-6.7	V	P			
960.064	3.0	34.1	22.2	2.9	27.9	0.0	10.0	41.4	54.0	-12.6	V	P			
973.614	3.0	34.6	22.3	2.9	27.9	0.0	10.0	42.0	54.0	-12.0	V	P			
High Bandedge, Horizontal															
960.000	3.0	31.8	22.2	2.9	27.9	0.0	10.0	39.1	46.0	-6.9	H	P			
960.777	3.0	35.8	22.2	2.9	27.9	0.0	10.0	43.1	54.0	-10.9	H	P			

Rev. 1.27.09
Note: No other emissions were detected above the system noise floor.

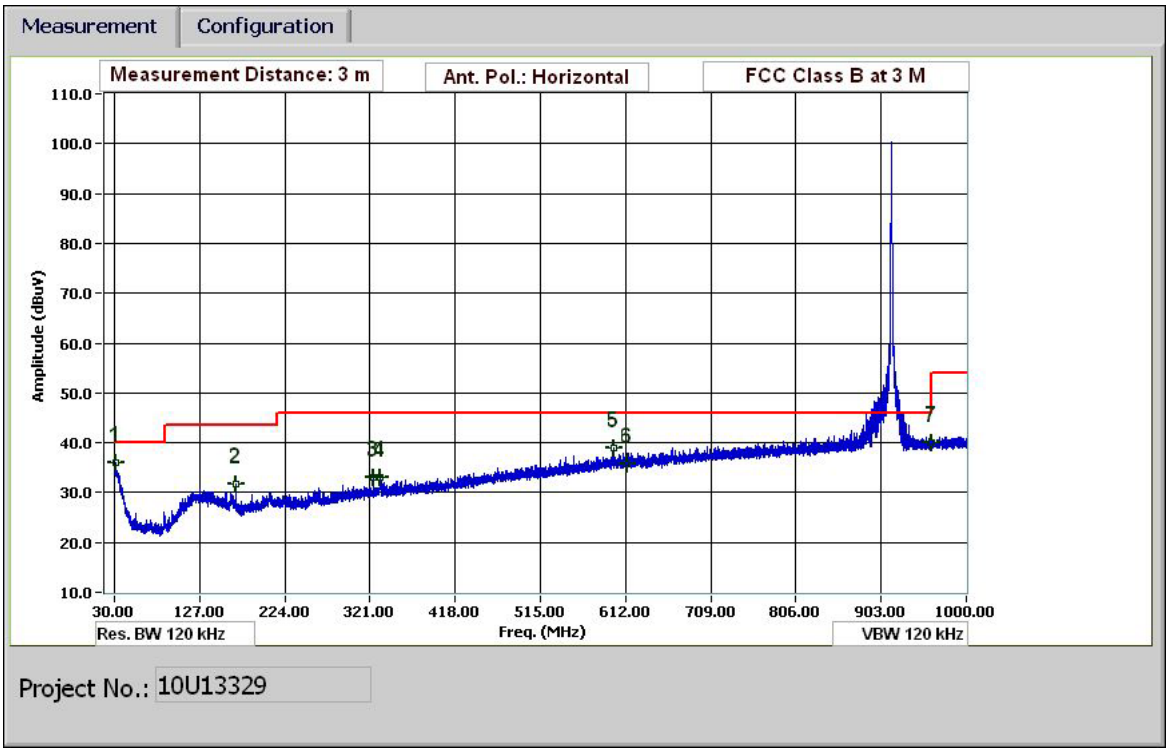
LOW CHANNEL HORIZONTAL PLOT



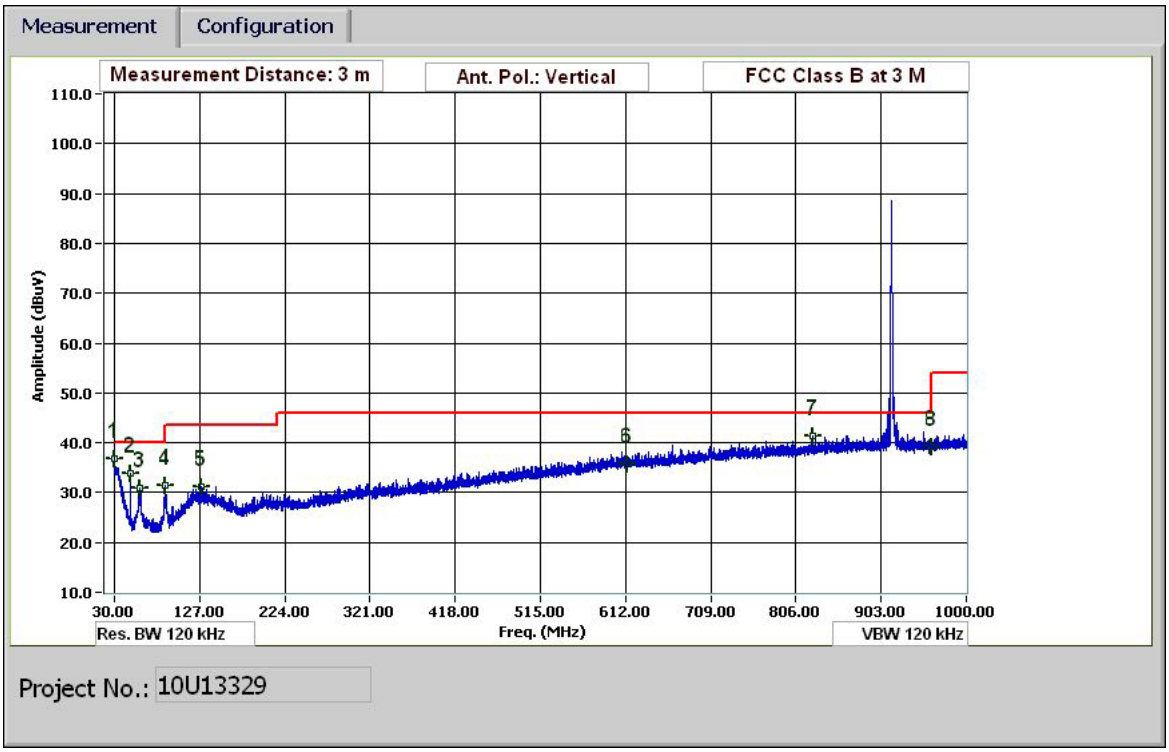
LOW CHANNEL VERTICAL PLOT



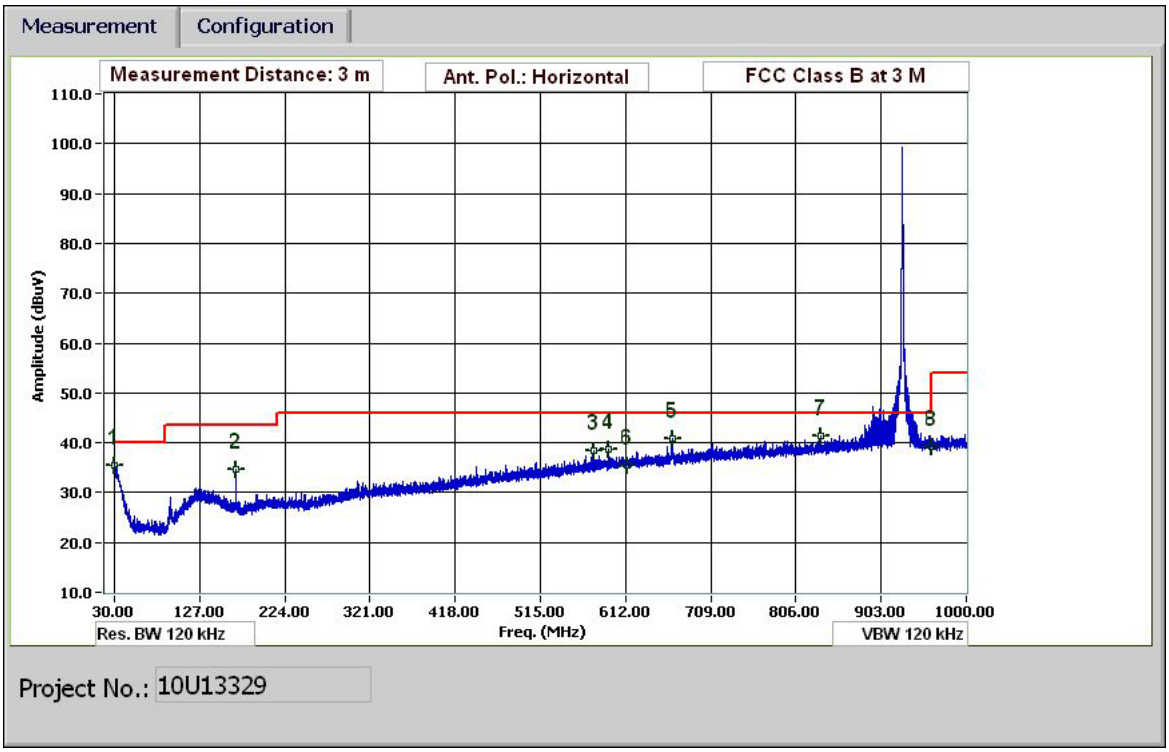
MID CHANNEL HORIZONTAL PLOT



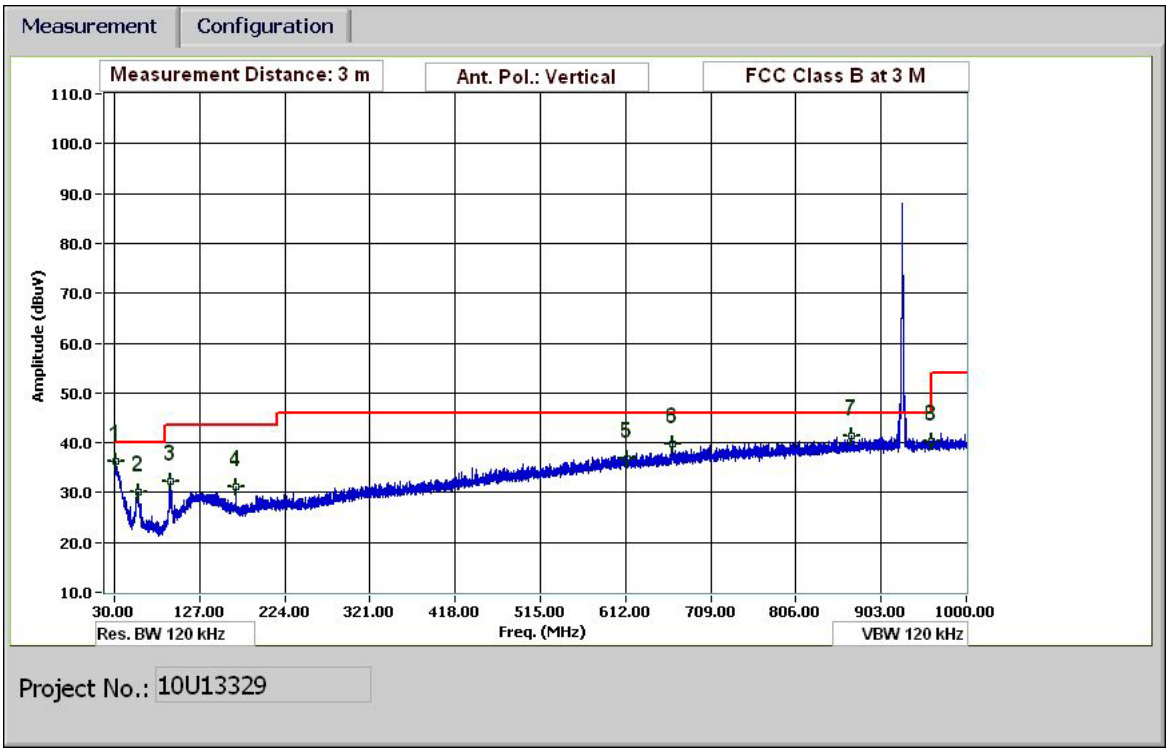
MID CHANNEL VERTICAL PLOT



HIGH CHANNEL HORIZONTAL PLOT



HIGH CHANNEL VERTICAL PLOT



VERTICAL AND HORIZONTAL DATA

30-1000MHz Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Test Engr: William Zhuang
Date: 07/29/10
Project #: 10U13329
Company: Anaren Inc.
EUT Description: Low Power Sub-1 GHz RF Transceiver 902-928 MHz for FCC/IC; 2 dBi PCB
EUT M/N: 09C and 09A
Test Target: FCC 15.247
Mode Oper: Tx, MSK-500K Baud 0 Dev.

f	Measurement Frequency	Amp	Preamp Gain	Margin	Margin vs. Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters		
Read	Analyzer Reading	Filter	Filter Insert Loss		
AF	Antenna Factor	Corr.	Calculated Field Strength		
CL	Cable Loss	Limit	Field Strength Limit		

f MHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Filter dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Ant. High cm	Table Angle Degree	Notes
Low Ch.															
30.360	3.0	33.1	19.9	0.5	28.4	0.0	10.0	35.2	40.0	-4.8	H	P	100.0	0 - 360	Prescan
192.007	3.0	39.9	11.5	1.2	28.2	0.0	10.0	34.4	43.5	-9.1	H	P	100.0	0 - 360	Prescan
213.848	3.0	38.8	11.9	1.3	28.2	0.0	10.0	33.8	43.5	-9.7	H	P	100.0	0 - 360	Prescan
474.738	3.0	35.7	16.3	2.0	27.9	0.0	10.0	36.1	46.0	-9.9	H	P	100.0	0 - 360	Prescan
614.064	3.0	33.0	18.6	2.3	27.5	0.0	10.0	36.4	46.0	-9.6	H	P	100.0	0 - 360	Prescan
788.191	3.0	35.3	20.8	2.6	27.4	0.0	10.0	41.3	46.0	-4.7	H	P	100.0	0 - 360	Prescan
960.038	3.0	32.7	22.2	2.9	27.9	0.0	10.0	40.0	54.0	-14.0	H	P	100.0	0 - 360	Prescan
32.520	3.0	34.0	19.0	0.5	28.4	0.0	10.0	35.1	40.0	-4.9	V	P	100.0	0 - 360	Prescan
96.003	3.0	42.6	9.0	0.9	28.3	0.0	10.0	34.2	43.5	-9.3	V	P	100.0	0 - 360	Prescan
192.007	3.0	37.7	11.5	1.2	28.2	0.0	10.0	32.2	43.5	-11.3	V	P	100.0	0 - 360	Prescan
216.008	3.0	37.4	11.9	1.3	28.2	0.0	10.0	32.4	46.0	-13.6	V	P	100.0	0 - 360	Prescan
614.064	3.0	32.4	18.6	2.3	27.5	0.0	10.0	35.8	46.0	-10.2	V	P	100.0	0 - 360	Prescan
865.834	3.0	34.7	21.6	2.8	27.7	0.0	10.0	41.3	46.0	-4.7	V	P	100.0	0 - 360	Prescan
960.038	3.0	31.5	22.2	2.9	27.9	0.0	10.0	38.8	54.0	-15.2	V	P	100.0	0 - 360	Prescan
Mid Ch.															
30.720	3.0	34.9	19.8	0.5	28.4	0.0	10.0	36.8	40.0	-3.2	V	P	100.0	0 - 360	Prescan
48.241	3.0	42.3	9.2	0.6	28.4	0.0	10.0	33.8	40.0	-6.2	V	P	100.0	0 - 360	Prescan
58.561	3.0	40.6	8.0	0.7	28.4	0.0	10.0	30.9	40.0	-9.1	V	P	100.0	0 - 360	Prescan
88.202	3.0	41.5	7.5	0.8	28.3	0.0	10.0	31.5	43.5	-12.0	V	P	100.0	0 - 360	Prescan
128.524	3.0	34.7	13.6	1.1	28.3	0.0	10.0	31.1	43.5	-12.4	V	P	100.0	0 - 360	Prescan
614.064	3.0	32.2	18.6	2.3	27.5	0.0	10.0	35.6	46.0	-10.4	V	P	100.0	0 - 360	Prescan
824.793	3.0	35.1	21.2	2.7	27.5	0.0	10.0	41.4	46.0	-4.6	V	P	100.0	0 - 360	Prescan
960.038	3.0	31.8	22.2	2.9	27.9	0.0	10.0	39.1	54.0	-14.9	V	P	100.0	0 - 360	Prescan
31.560	3.0	34.4	19.4	0.5	28.4	0.0	10.0	35.9	40.0	-4.1	H	P	100.0	0 - 360	Prescan
168.006	3.0	37.8	11.0	1.2	28.2	0.0	10.0	31.7	43.5	-11.8	H	P	100.0	0 - 360	Prescan
324.972	3.0	35.8	13.8	1.6	28.1	0.0	10.0	33.0	46.0	-13.0	H	P	100.0	0 - 360	Prescan
331.932	3.0	35.5	13.9	1.6	28.1	0.0	10.0	32.9	46.0	-13.1	H	P	100.0	0 - 360	Prescan
598.703	3.0	35.7	18.4	2.2	27.5	0.0	10.0	38.9	46.0	-7.1	H	P	100.0	0 - 360	Prescan
614.064	3.0	32.5	18.6	2.3	27.5	0.0	10.0	35.9	46.0	-10.1	H	P	100.0	0 - 360	Prescan
960.038	3.0	32.9	22.2	2.9	27.9	0.0	10.0	40.1	54.0	-13.9	H	P	100.0	0 - 360	Prescan
High Ch.															
30.720	3.0	33.6	19.8	0.5	28.4	0.0	10.0	35.5	40.0	-4.5	H	P	100.0	0 - 360	Prescan
168.006	3.0	40.7	11.0	1.2	28.2	0.0	10.0	34.6	43.5	-8.9	H	P	100.0	0 - 360	Prescan
576.023	3.0	35.7	18.0	2.2	27.6	0.0	10.0	38.3	46.0	-7.7	H	P	100.0	0 - 360	Prescan
592.583	3.0	35.6	18.3	2.2	27.5	0.0	10.0	38.6	46.0	-7.4	H	P	100.0	0 - 360	Prescan
614.064	3.0	32.2	18.6	2.3	27.5	0.0	10.0	35.6	46.0	-10.4	H	P	100.0	0 - 360	Prescan
666.026	3.0	36.5	19.2	2.4	27.3	0.0	10.0	40.8	46.0	-5.2	H	P	100.0	0 - 360	Prescan
834.393	3.0	34.9	21.3	2.7	27.6	0.0	10.0	41.3	46.0	-4.7	H	P	100.0	0 - 360	Prescan
960.038	3.0	31.9	22.2	2.9	27.9	0.0	10.0	39.2	54.0	-14.8	H	P	100.0	0 - 360	Prescan
32.040	3.0	34.9	19.2	0.5	28.4	0.0	10.0	36.2	40.0	-3.8	V	P	100.0	0 - 360	Prescan
57.121	3.0	39.9	8.0	0.7	28.4	0.0	10.0	30.2	40.0	-9.8	V	P	100.0	0 - 360	Prescan
93.363	3.0	41.2	8.4	0.9	28.3	0.0	10.0	32.1	43.5	-11.4	V	P	100.0	0 - 360	Prescan
168.006	3.0	37.2	11.0	1.2	28.2	0.0	10.0	31.1	43.5	-12.4	V	P	100.0	0 - 360	Prescan
614.064	3.0	33.4	18.6	2.3	27.5	0.0	10.0	36.8	46.0	-9.2	V	P	100.0	0 - 360	Prescan
665.666	3.0	35.6	19.2	2.4	27.3	0.0	10.0	39.8	46.0	-6.2	V	P	100.0	0 - 360	Prescan
868.955	3.0	34.8	21.6	2.8	27.7	0.0	10.0	41.4	46.0	-4.6	V	P	100.0	0 - 360	Prescan
960.038	3.0	33.2	22.2	2.9	27.9	0.0	10.0	40.4	54.0	-13.6	V	P	100.0	0 - 360	Prescan

Rev. 1.27.09
Note: No other emissions were detected above the system noise floor.

8.3. TRANSMITTER ABOVE 1 GHz

8.3.1. HARMONIC AND SPURIOUS ABOVE 1 GHz FOR 2FSK MODE

3dBi MONOPOLE ANTENNA, 2FSK MODE

High Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Test Engr: William Zhuang
Date: 07/27/10
Project #: 10U13329
Company: Anaren Inc.
EUT Description: Low Power Sub-1 GHz RF Transceiver 902-928 MHz for FCC/IC; 3 dBi monopole
EUT M/N: 09C and 09A
Test Target: FCC 15.247
Mode Oper: Tx, 2-FSK-250K Baud 165K Dev.

f	Measurement Frequency	Amp	Preamp Gain		Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters		Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m		Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field Strength		Margin vs. Peak Limit
CL	Cable Loss	HPF	High Pass Filter		

f GHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Ant.High cm	Table Angle Degree	Notes
Low Ch.															
2.707	3.0	48.5	29.1	4.1	-37.4	0.0	0.6	44.9	74.0	-29.1	V	P	100.5	242.7	
2.707	3.0	37.0	29.1	4.1	-37.4	0.0	0.6	33.4	54.0	-20.6	V	A	100.5	242.7	
2.707	3.0	44.9	29.1	4.1	-37.4	0.0	0.6	41.2	74.0	-32.8	H	P	100.6	308.3	
2.707	3.0	32.7	29.1	4.1	-37.4	0.0	0.6	29.0	54.0	-25.0	H	A	100.6	308.3	
Mid Ch.															
2.744	3.0	48.9	29.2	4.1	-37.4	0.0	0.6	45.4	74.0	-28.6	V	P	100.4	240.7	
2.744	3.0	37.3	29.2	4.1	-37.4	0.0	0.6	33.8	54.0	-20.2	V	A	100.4	240.7	
2.744	3.0	45.4	29.2	4.1	-37.4	0.0	0.6	41.9	74.0	-32.1	H	P	114.9	41.1	
2.744	3.0	33.6	29.2	4.1	-37.4	0.0	0.6	30.1	54.0	-23.9	H	A	114.9	41.1	
High Ch.															
2.782	3.0	48.6	29.4	4.2	-37.4	0.0	0.6	45.3	74.0	-28.7	V	P	100.0	244.2	
2.782	3.0	37.1	29.4	4.2	-37.4	0.0	0.6	33.7	54.0	-20.3	V	A	100.0	244.2	
2.782	3.0	45.4	29.4	4.2	-37.4	0.0	0.6	42.1	74.0	-31.9	H	P	100.0	104.1	
2.782	3.0	33.3	29.4	4.2	-37.4	0.0	0.6	30.0	54.0	-24.0	H	A	100.0	104.1	

Rev. 4.1.2.7
Note: No other emissions were detected above the system noise floor.

2dBi PCB ANTENNA, 2FSK MODE

High Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Test Engr: William Zhuang
Date: 07/29/10
Project #: 10U13329
Company: Anaren Inc.
EUT Description: Low Power Sub-1 GHz RF Transceiver 902-928 MHz for FCC/IC; 2 dBi PCB
EUT M/N: 09C and 09A
Test Target: FCC 15.247
Mode Oper: Tx, 2 FSK-250K Baud 165K Dev.

f	Measurement Frequency	Amp	Preamp Gain		Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters		Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m		Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field Strength		Margin vs. Peak Limit
CL	Cable Loss	HPF	High Pass Filter		

f GHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Ant.High cm	Table Angle Degree	Notes
Low Ch.															
2.707	3.0	46.0	29.1	4.1	-37.4	0.0	0.6	42.4	74.0	-31.6	V	P	100.3	239.2	
2.707	3.0	34.6	29.1	4.1	-37.4	0.0	0.6	31.0	54.0	-23.0	V	A	100.3	239.2	
2.707	3.0	44.9	29.1	4.1	-37.4	0.0	0.6	41.3	74.0	-32.7	H	P	100.4	250.7	
2.707	3.0	32.6	29.1	4.1	-37.4	0.0	0.6	28.9	54.0	-25.1	H	A	100.4	250.7	
Mid Ch.															
2.744	3.0	45.6	29.2	4.1	-37.4	0.0	0.6	42.1	74.0	-31.9	H	P	100.8	251.8	
2.744	3.0	32.9	29.2	4.1	-37.4	0.0	0.6	29.4	54.0	-24.6	H	A	100.8	251.8	
2.744	3.0	43.7	29.2	4.1	-37.4	0.0	0.6	40.2	74.0	-33.8	V	P	100.0	250.4	
2.744	3.0	32.3	29.2	4.1	-37.4	0.0	0.6	28.8	54.0	-25.2	V	A	100.0	250.4	
High Ch.															
2.782	3.0	42.8	29.4	4.2	-37.4	0.0	0.6	39.4	74.0	-34.6	V	P	100.2	232.7	
2.782	3.0	30.8	29.4	4.2	-37.4	0.0	0.6	27.5	54.0	-26.5	V	A	100.2	232.7	
2.782	3.0	43.2	29.4	4.2	-37.4	0.0	0.6	39.9	74.0	-34.1	H	P	102.5	265.4	
2.782	3.0	31.2	29.4	4.2	-37.4	0.0	0.6	27.8	54.0	-26.2	H	A	102.5	265.4	

Rev. 4.1.2.7
Note: No other emissions were detected above the system noise floor.

8.3.2. HARMONIC AND SPURIOUS ABOVE 1 GHz FOR MSK MODE

3dBi MONOPOLE ANTENNA, MSK MODE

High Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Test Engr: William Zhuang
Date: 07/27/10
Project #: 10U13329
Company: Anaren Inc.
EUT Description: Low Power Sub-1 GHz RF Transceiver 902-928 MHz for FCC/IC; 3 dBi monopole
EUT M/N: 09C and 09A
Test Target: FCC 15.247
Mode Oper: Tx, MSK-500K Baud 0 Dev.

	f	Measurement Frequency	Amp	Preamp Gain	Average Field Strength Limit
	Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters	Peak Field Strength Limit
	Read	Analyzer Reading	Avg	Average Field Strength @ 3 m	Margin vs. Average Limit
	AF	Antenna Factor	Peak	Calculated Peak Field Strength	Margin vs. Peak Limit
	CL	Cable Loss	HPF	High Pass Filter	

f GHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Ant.High cm	Table Angle Degree	Notes
Low Ch.															
2.709	3.0	48.7	29.1	4.1	-37.4	0.0	0.6	45.0	74.0	-29.0	V	P	100.0	242.6	
2.709	3.0	35.2	29.1	4.1	-37.4	0.0	0.6	31.6	54.0	-22.5	V	A	100.0	242.6	
2.709	3.0	45.3	29.1	4.1	-37.4	0.0	0.6	41.6	74.0	-32.4	H	P	100.0	39.1	
2.709	3.0	32.7	29.1	4.1	-37.4	0.0	0.6	29.0	54.0	-25.0	H	A	100.0	39.1	
Mid Ch.															
2.744	3.0	48.2	29.2	4.1	-37.4	0.0	0.6	44.7	74.0	-29.3	V	P	100.9	243.4	
2.744	3.0	35.2	29.2	4.1	-37.4	0.0	0.6	31.7	54.0	-22.3	V	A	100.9	243.4	
2.744	3.0	46.2	29.2	4.1	-37.4	0.0	0.6	42.7	74.0	-31.3	H	P	100.2	44.6	
2.744	3.0	33.5	29.2	4.1	-37.4	0.0	0.6	30.0	54.0	-24.0	H	A	100.2	44.6	
High Ch.															
2.782	3.0	48.5	29.4	4.2	-37.4	0.0	0.6	45.2	74.0	-28.8	V	P	100.2	241.9	
2.782	3.0	35.0	29.4	4.2	-37.4	0.0	0.6	31.7	54.0	-22.3	V	A	100.2	241.9	
2.782	3.0	44.9	29.4	4.2	-37.4	0.0	0.6	41.6	74.0	-32.4	H	P	100.0	104.6	
2.782	3.0	32.6	29.4	4.2	-37.4	0.0	0.6	29.3	54.0	-24.8	H	A	100.0	104.6	

Rev. 4.1.2.7
Note: No other emissions were detected above the system noise floor.

2dBi PCB ANTENNA, MSK MODE

High Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Test Engr: William Zhuang
Date: 07/29/10
Project #: 10U13329
Company: Anaren Inc.
EUT Description: Low Power Sub-1 GHz RF Transceiver 902-928 MHz for FCC/IC; 2 dBi PCB
EUT M/N: 09C and 09A
Test Target: FCC 15.247
Mode Oper: Tx, MSK-500K Baud 0 Dev.

f	Measurement Frequency	Amp	Preamp Gain		Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters		Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m		Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field Strength		Margin vs. Peak Limit
CL	Cable Loss	HPF	High Pass Filter		

f GHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Ant.High cm	Table Angle Degree	Notes
Low Ch.															
2.709	3.0	45.9	29.1	4.1	-37.4	0.0	0.6	42.2	74.0	-31.8	V	P	100.0	239.0	
2.709	3.0	33.2	29.1	4.1	-37.4	0.0	0.6	29.5	54.0	-24.5	V	A	100.0	239.0	
2.709	3.0	44.1	29.1	4.1	-37.4	0.0	0.6	40.5	74.0	-33.5	H	P	105.6	265.1	
2.709	3.0	31.6	29.1	4.1	-37.4	0.0	0.6	28.0	54.0	-26.0	H	A	105.6	265.1	
Mid Ch.															
2.744	3.0	45.4	29.2	4.1	-37.4	0.0	0.6	42.0	74.0	-32.0	H	P	103.0	250.2	
2.744	3.0	32.1	29.2	4.1	-37.4	0.0	0.6	28.6	54.0	-25.4	H	A	103.0	250.2	
2.744	3.0	44.0	29.2	4.1	-37.4	0.0	0.6	40.5	74.0	-33.5	V	P	126.2	238.0	
2.744	3.0	31.1	29.2	4.1	-37.4	0.0	0.6	27.6	54.0	-26.4	V	A	126.2	238.0	
High Ch.															
2.782	3.0	42.3	29.4	4.2	-37.4	0.0	0.6	39.0	74.0	-35.0	V	P	151.7	209.1	
2.782	3.0	29.8	29.4	4.2	-37.4	0.0	0.6	26.4	54.0	-27.6	V	A	151.7	209.1	
2.782	3.0	43.9	29.4	4.2	-37.4	0.0	0.6	40.6	74.0	-33.4	H	P	100.1	267.6	
2.782	3.0	31.4	29.4	4.2	-37.4	0.0	0.6	28.1	54.0	-25.9	H	A	100.1	267.6	

Rev. 4.1.2.7
Note: No other emissions were detected above the system noise floor.

8.4. RECEIVER BELOW 1 GHz

2FSK Mode with 3dBi Monopole Antenna

30-1000MHz Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Test Engr: William Zhuang
Date: 07/26/10
Project #: 10U13329
Company: Anaren Inc.
EUT Description: Low Power Sub-1 GHz RF Transceiver 902-928 MHz for FCC/IC; 3 dBi monopole
EUT M/N: 09C and 09A
Test Target: FCC 15.247
Mode Oper: Rx, Mid Ch., 2FSK-250K Baud 165K Dev.

f	Measurement Frequency	Amp	Preamp Gain	Margin	Margin vs. Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters		
Read	Analyzer Reading	Filter	Filter Insert Loss		
AF	Antenna Factor	Corr.	Calculated Field Strength		
CL	Cable Loss	Limit	Field Strength Limit		

f MHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Filter dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Ant. High cm	Table Angle Degree	Notes
34.200	3.0	38.2	18.3	0.5	28.4	0.0	0.0	28.6	40.0	-11.4	V	P	100.0	0 - 360	Prescan
57.481	3.0	50.5	8.0	0.7	28.4	0.0	0.0	30.8	40.0	-9.2	V	P	100.0	0 - 360	Prescan
91.563	3.0	47.2	7.9	0.9	28.3	0.0	0.0	27.7	43.5	-15.8	V	P	100.0	0 - 360	Prescan
192.007	3.0	42.6	11.5	1.2	28.2	0.0	0.0	27.0	43.5	-16.5	V	P	100.0	0 - 360	Prescan
229.448	3.0	43.0	11.9	1.3	28.2	0.0	0.0	28.0	46.0	-18.0	V	P	100.0	0 - 360	Prescan
236.048	3.0	42.2	11.8	1.3	28.2	0.0	0.0	27.2	46.0	-18.8	V	P	100.0	0 - 360	Prescan
624.145	3.0	33.0	18.7	2.3	27.4	0.0	0.0	26.5	46.0	-19.5	V	P	100.0	0 - 360	Prescan
663.986	3.0	34.2	19.2	2.4	27.3	0.0	0.0	28.4	46.0	-17.6	V	P	100.0	0 - 360	Prescan
980.799	3.0	38.1	22.3	3.0	27.9	0.0	0.0	35.5	54.0	-18.5	V	P	100.0	0 - 360	Prescan
35.880	3.0	35.1	17.2	0.6	28.4	0.0	0.0	24.5	40.0	-15.5	H	P	100.0	0 - 360	Prescan
100.203	3.0	40.6	10.0	0.9	28.3	0.0	0.0	23.2	43.5	-20.3	H	P	100.0	0 - 360	Prescan
168.006	3.0	41.2	11.0	1.2	28.2	0.0	0.0	25.1	43.5	-18.4	H	P	100.0	0 - 360	Prescan
192.007	3.0	44.0	11.5	1.2	28.2	0.0	0.0	28.5	43.5	-15.0	H	P	100.0	0 - 360	Prescan
203.167	3.0	42.5	12.0	1.3	28.2	0.0	0.0	27.6	43.5	-15.9	H	P	100.0	0 - 360	Prescan
230.168	3.0	43.8	11.9	1.3	28.2	0.0	0.0	28.8	46.0	-17.2	H	P	100.0	0 - 360	Prescan
332.412	3.0	37.2	13.9	1.6	28.1	0.0	0.0	24.6	46.0	-21.4	H	P	100.0	0 - 360	Prescan
456.018	3.0	36.3	15.9	1.9	27.9	0.0	0.0	26.2	46.0	-19.8	H	P	100.0	0 - 360	Prescan
576.143	3.0	33.8	18.0	2.2	27.6	0.0	0.0	26.4	46.0	-19.6	H	P	100.0	0 - 360	Prescan
624.145	3.0	35.7	18.7	2.3	27.4	0.0	0.0	29.2	46.0	-16.8	H	P	100.0	0 - 360	Prescan
663.866	3.0	34.2	19.2	2.4	27.3	0.0	0.0	28.5	46.0	-17.5	H	P	100.0	0 - 360	Prescan
825.993	3.0	48.1	21.2	2.7	27.5	0.0	0.0	44.5	46.0	-1.5	H	P	100.0	0 - 360	Prescan

Rev. 1.27.09
Note: No other emissions were detected above the system noise floor.

MSK Mode with 3dBi Monopole Antenna

30-1000MHz Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Test Engr: William Zhuang
Date: 07/27/10
Project #: 10U13329
Company: Anaren Inc.
EUT Description: Low Power Sub-1 GHz RF Transceiver 902-928 MHz for FCC/IC; 3 dBi monopole
EUT M/N: 09C and 09A
Test Target: FCC 15.247
Mode Oper: Rx, Mid Ch., MSK-500K Baud 0 Dev.

f	Measurement Frequency	Amp	Preamp Gain	Margin	Margin vs. Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters		
Read	Analyzer Reading	Filter	Filter Insert Loss		
AF	Antenna Factor	Corr.	Calculated Field Strength		
CL	Cable Loss	Limit	Field Strength Limit		

f MHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Filter dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Ant. High cm	Table Angle Degree	Notes
34.080	3.0	40.2	18.3	0.5	28.4	0.0	0.0	30.6	40.0	-9.4	V	P	100.0	0 - 360	Prescan
59.881	3.0	49.6	7.9	0.7	28.4	0.0	0.0	29.8	40.0	-10.2	V	P	100.0	0 - 360	Prescan
92.523	3.0	50.3	8.2	0.9	28.3	0.0	0.0	31.0	43.5	-12.5	V	P	100.0	0 - 360	Prescan
96.003	3.0	49.3	9.0	0.9	28.3	0.0	0.0	30.9	43.5	-12.6	V	P	100.0	0 - 360	Prescan
118.804	3.0	40.6	13.4	1.0	28.3	0.0	0.0	26.8	43.5	-16.7	V	P	100.0	0 - 360	Prescan
192.007	3.0	44.6	11.5	1.2	28.2	0.0	0.0	29.0	43.5	-14.5	V	P	100.0	0 - 360	Prescan
293.171	3.0	37.5	13.2	1.5	28.1	0.0	0.0	24.1	46.0	-21.9	V	P	100.0	0 - 360	Prescan
333.012	3.0	36.2	13.9	1.6	28.1	0.0	0.0	23.6	46.0	-22.4	V	P	100.0	0 - 360	Prescan
576.143	3.0	33.7	18.0	2.2	27.6	0.0	0.0	26.3	46.0	-19.7	V	P	100.0	0 - 360	Prescan
816.032	3.0	31.1	21.1	2.7	27.5	0.0	0.0	27.4	46.0	-18.6	V	P	100.0	0 - 360	Prescan
30.240	3.0	29.2	20.0	0.5	28.4	0.0	0.0	21.3	40.0	-18.7	H	P	100.0	0 - 360	Prescan
88.682	3.0	40.1	7.5	0.8	28.3	0.0	0.0	20.1	43.5	-23.4	H	P	100.0	0 - 360	Prescan
192.007	3.0	47.6	11.5	1.2	28.2	0.0	0.0	32.1	43.5	-11.4	H	P	100.0	0 - 360	Prescan
288.131	3.0	42.9	13.0	1.5	28.1	0.0	0.0	29.3	46.0	-16.7	H	P	100.0	0 - 360	Prescan
333.012	3.0	42.4	13.9	1.6	28.1	0.0	0.0	29.9	46.0	-16.1	H	P	100.0	0 - 360	Prescan
672.026	3.0	34.0	19.3	2.4	27.3	0.0	0.0	28.3	46.0	-17.7	H	P	100.0	0 - 360	Prescan
816.152	3.0	32.3	21.1	2.7	27.5	0.0	0.0	28.5	46.0	-17.5	H	P	100.0	0 - 360	Prescan
912.036	3.0	31.1	21.9	2.8	27.8	0.0	0.0	28.0	46.0	-18.0	H	P	100.0	0 - 360	Prescan

Rev. 1.27.09
Note: No other emissions were detected above the system noise floor.

2FSK Mode with 2dBi PCB Antenna

30-1000MHz Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Test Engr: William Zhuang
Date: 07/28/10
Project #: 10U13329
Company: Anaren Inc.
EUT Description: Low Power Sub-1 GHz RF Transceiver 902-928 MHz for FCC/IC; 2 dBi PCB
EUT M/N: 09C and 09A
Test Target: FCC 15.247
Mode Oper: Rx, Mid Ch., 2FSK-250K Baud 165K Dev.

f	Measurement Frequency	Amp	Preamp Gain	Margin	Margin vs. Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters		
Read	Analyzer Reading	Filter	Filter Insert Loss		
AF	Antenna Factor	Corr.	Calculated Field Strength		
CL	Cable Loss	Limit	Field Strength Limit		

f MHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Filter dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Ant. High cm	Table Angle Degree	Notes
33.240	3.0	36.6	18.7	0.5	28.4	0.0	0.0	27.4	40.0	-12.6	V	P	100.0	0 - 360	Prescan
48.481	3.0	44.4	9.1	0.6	28.4	0.0	0.0	25.7	40.0	-14.3	V	P	100.0	0 - 360	Prescan
59.761	3.0	48.8	7.9	0.7	28.4	0.0	0.0	29.1	40.0	-10.9	V	P	100.0	0 - 360	Prescan
89.522	3.0	49.3	7.5	0.8	28.3	0.0	0.0	29.4	43.5	-14.1	V	P	100.0	0 - 360	Prescan
129.244	3.0	36.0	13.6	1.1	28.3	0.0	0.0	22.3	43.5	-21.2	V	P	100.0	0 - 360	Prescan
168.006	3.0	43.9	11.0	1.2	28.2	0.0	0.0	27.8	43.5	-15.7	V	P	100.0	0 - 360	Prescan
191.887	3.0	45.2	11.5	1.2	28.2	0.0	0.0	29.6	43.5	-13.9	V	P	100.0	0 - 360	Prescan
666.146	3.0	32.1	19.2	2.4	27.3	0.0	0.0	26.4	46.0	-19.6	V	P	100.0	0 - 360	Prescan
671.906	3.0	32.8	19.3	2.4	27.3	0.0	0.0	27.2	46.0	-18.8	V	P	100.0	0 - 360	Prescan
168.006	3.0	47.6	11.0	1.2	28.2	0.0	0.0	31.5	43.5	-12.0	H	P	100.0	0 - 360	Prescan
192.007	3.0	48.4	11.5	1.2	28.2	0.0	0.0	32.9	43.5	-10.6	H	P	100.0	0 - 360	Prescan
229.448	3.0	43.6	11.9	1.3	28.2	0.0	0.0	28.6	46.0	-17.4	H	P	100.0	0 - 360	Prescan
575.903	3.0	36.7	18.0	2.2	27.6	0.0	0.0	29.3	46.0	-16.7	H	P	100.0	0 - 360	Prescan
672.026	3.0	36.1	19.3	2.4	27.3	0.0	0.0	30.5	46.0	-15.5	H	P	100.0	0 - 360	Prescan
719.908	3.0	33.8	19.9	2.5	27.2	0.0	0.0	28.9	46.0	-17.1	H	P	100.0	0 - 360	Prescan
767.910	3.0	31.8	20.5	2.6	27.4	0.0	0.0	27.5	46.0	-18.5	H	P	100.0	0 - 360	Prescan
815.912	3.0	34.3	21.1	2.7	27.5	0.0	0.0	30.6	46.0	-15.4	H	P	100.0	0 - 360	Prescan

Rev. 1.27.09
Note: No other emissions were detected above the system noise floor.

MSK Mode with 2dBi PCB Antenna

30-1000MHz Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Test Engr: William Zhuang
Date: 07/28/10
Project #: 10U13329
Company: Anaren Inc.
EUT Description: Low Power Sub-1 GHz RF Transceiver 902-928 MHz for FCC/IC; 2 dBi PCB
EUT M/N: 09C and 09A
Test Target: FCC 15.247
Mode Oper: Rx, Mid Ch., MSK-500K Baud 0 Dev.

f	Measurement Frequency	Amp	Preamp Gain	Margin	Margin vs. Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters		
Read	Analyzer Reading	Filter	Filter Insert Loss		
AF	Antenna Factor	Corr.	Calculated Field Strength		
CL	Cable Loss	Limit	Field Strength Limit		

f MHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Filter dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Ant. High cm	Table Angle Degree	Notes
167.886	3.0	45.4	11.0	1.2	28.2	0.0	0.0	29.3	43.5	-14.2	H	P	100.0	0 - 360	Prescan
192.007	3.0	49.9	11.5	1.2	28.2	0.0	0.0	34.3	43.5	-9.2	H	P	100.0	0 - 360	Prescan
229.688	3.0	47.8	11.9	1.3	28.2	0.0	0.0	32.8	46.0	-13.2	H	P	100.0	0 - 360	Prescan
576.023	3.0	37.3	18.0	2.2	27.6	0.0	0.0	29.9	46.0	-16.1	H	P	100.0	0 - 360	Prescan
663.866	3.0	41.3	19.2	2.4	27.3	0.0	0.0	35.5	46.0	-10.5	H	P	100.0	0 - 360	Prescan
671.906	3.0	37.0	19.3	2.4	27.3	0.0	0.0	31.4	46.0	-14.6	H	P	100.0	0 - 360	Prescan
683.907	3.0	35.0	19.4	2.4	27.2	0.0	0.0	29.6	46.0	-16.4	H	P	100.0	0 - 360	Prescan
720.028	3.0	35.7	19.9	2.5	27.2	0.0	0.0	30.8	46.0	-15.2	H	P	100.0	0 - 360	Prescan
731.909	3.0	33.6	20.0	2.5	27.3	0.0	0.0	28.8	46.0	-17.2	H	P	100.0	0 - 360	Prescan
815.792	3.0	34.1	21.1	2.7	27.5	0.0	0.0	30.4	46.0	-15.6	H	P	100.0	0 - 360	Prescan
33.840	3.0	41.7	18.4	0.5	28.4	0.0	0.0	32.3	40.0	-7.7	V	P	100.0	0 - 360	Prescan
64.921	3.0	47.0	8.0	0.7	28.4	0.0	0.0	27.3	40.0	-12.7	V	P	100.0	0 - 360	Prescan
96.003	3.0	44.5	9.0	0.9	28.3	0.0	0.0	26.0	43.5	-17.5	V	P	100.0	0 - 360	Prescan
168.006	3.0	42.4	11.0	1.2	28.2	0.0	0.0	26.3	43.5	-17.2	V	P	100.0	0 - 360	Prescan
192.007	3.0	46.0	11.5	1.2	28.2	0.0	0.0	30.5	43.5	-13.0	V	P	100.0	0 - 360	Prescan
230.168	3.0	42.5	11.9	1.3	28.2	0.0	0.0	27.5	46.0	-18.5	V	P	100.0	0 - 360	Prescan
663.866	3.0	39.6	19.2	2.4	27.3	0.0	0.0	33.8	46.0	-12.2	V	P	100.0	0 - 360	Prescan
666.026	3.0	39.3	19.2	2.4	27.3	0.0	0.0	33.5	46.0	-12.5	V	P	100.0	0 - 360	Prescan
940.598	3.0	31.9	22.1	2.9	27.8	0.0	0.0	29.0	46.0	-17.0	V	P	100.0	0 - 360	Prescan

Rev. 1.27.09
Note: No other emissions were detected above the system noise floor.

8.5. RECEIVER ABOVE 1 GHz

2FSK Mode with 3dBi Monopole Antenna

High Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Test Engr: William Zhuang
Date: 07/27/10
Project #: 10U13329
Company: Anaren Inc.
EUT Description: Low Power Sub-1 GHz RF Transceiver 902-928 MHz for FCC/IC; 3 dBi monopole
EUT M/N: 09C and 09A
Test Target: FCC 15.247
Mode Oper: Rx, Mid Ch., 2-FSK-250K Baud 165 Dev.

f	Measurement Frequency	Amp	Preamp Gain		Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters		Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m		Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field Strength		Margin vs. Peak Limit
CL	Cable Loss	HPF	High Pass Filter		

f GHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Ant.High cm	Table Angle Degree	Notes
1.017	3.0	47.4	23.9	2.4	-39.5	0.0	0.0	34.2	74.0	-39.8	V	P	100.2	66.8	
1.017	3.0	40.0	23.9	2.4	-39.5	0.0	0.0	26.8	54.0	-27.2	V	A	100.2	66.8	
1.017	3.0	50.0	23.9	2.4	-39.5	0.0	0.0	36.8	74.0	-37.2	H	P	106.1	301.3	
1.017	3.0	43.2	23.9	2.4	-39.5	0.0	0.0	30.0	54.0	-24.0	H	A	106.1	301.3	

Rev. 4.1.2.7
Note: No other emissions were detected above the system noise floor.

MSK Mode with 3dBi Monopole Antenna

High Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Test Engr: William Zhuang
Date: 07/27/10
Project #: 10U13329
Company: Anaren Inc.
EUT Description: Low Power Sub-1 GHz RF Transceiver 902-928 MHz for FCC/IC; 3 dBi monopole
EUT M/N: 09C and 09A
Test Target: FCC 15.247
Mode Oper: Rx, Mid Ch., MSK-500K Baud 0 Dev.

f	Measurement Frequency	Amp	Preamp Gain		Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters		Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m		Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field Strength		Margin vs. Peak Limit
CL	Cable Loss	HPF	High Pass Filter		

f GHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Ant.High cm	Table Angle Degree	Notes
1.108	3.0	47.7	24.2	2.5	-39.3	0.0	0.0	35.1	74.0	-38.9	V	P	100.5	1.6	
1.108	3.0	40.5	24.2	2.5	-39.3	0.0	0.0	27.8	54.0	-26.2	V	A	100.5	1.6	
1.108	3.0	50.2	24.2	2.5	-39.3	0.0	0.0	37.6	74.0	-36.4	H	P	101.2	298.9	
1.108	3.0	44.2	24.2	2.5	-39.3	0.0	0.0	31.5	54.0	-22.5	H	A	101.2	298.9	

Rev. 4.1.2.7
Note: No other emissions were detected above the system noise floor.

2FSK Mode with 2dBi PCB Antenna

High Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Test Engr: William Zhuang
Date: 07/29/10
Project #: 10U13329
Company: Anaren Inc.
EUT Description: Low Power Sub-1 GHz RF Transceiver 902-928 MHz for FCC/IC; 2 dBi PCB
EUT M/N: 09C and 09A
Test Target: FCC 15.247
Mode Oper: Rx, Mid Ch., 2 FSK-250K Baud 165K Dev.

f	Measurement Frequency	Amp	Preamp Gain		Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters		Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m		Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field Strength		Margin vs. Peak Limit
CL	Cable Loss	HPF	High Pass Filter		

f GHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Ant.High cm	Table Angle Degree	Notes
1.017	3.0	46.4	23.9	2.4	-39.5	0.0	0.0	33.2	74.0	-40.8	H	P	104.5	160.7	
1.017	3.0	36.6	23.9	2.4	-39.5	0.0	0.0	23.4	54.0	-30.6	H	A	104.5	160.7	
1.017	3.0	46.1	23.9	2.4	-39.5	0.0	0.0	32.9	74.0	-41.1	V	P	154.4	18.2	
1.017	3.0	33.9	23.9	2.4	-39.5	0.0	0.0	20.8	54.0	-33.2	V	A	154.4	18.2	

Rev. 4.1.2.7
Note: No other emissions were detected above the system noise floor.

MSK Mode with 2dBi PCB Antenna

High Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Test Engr: William Zhuang
Date: 07/29/10
Project #: 10U13329
Company: Anaren Inc.
EUT Description: Low Power Sub-1 GHz RF Transceiver 902-928 MHz for FCC/IC; 2 dBi PCB
EUT M/N: 09C and 09A
Test Target: FCC 15.247
Mode Oper: Rx, Mid Ch., MSK-500K Baud 0 Dev.

f	Measurement Frequency	Amp	Preamp Gain		Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters		Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m		Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field Strength		Margin vs. Peak Limit
CL	Cable Loss	HPF	High Pass Filter		

f GHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Ant.High cm	Table Angle Degree	Notes
1.104	3.0	46.2	24.2	2.5	-39.3	0.0	0.0	33.5	74.0	-40.5	V	P	199.0	359.4	
1.104	3.0	33.3	24.2	2.5	-39.3	0.0	0.0	20.6	54.0	-33.4	V	A	199.0	359.4	
1.104	3.0	45.8	24.2	2.5	-39.3	0.0	0.0	33.1	74.0	-40.9	H	P	143.9	300.0	
1.104	3.0	33.3	24.2	2.5	-39.3	0.0	0.0	20.7	54.0	-33.3	H	A	143.9	300.0	

Rev. 4.1.2.7
Note: No other emissions were detected above the system noise floor.

9. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 7.2.2

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 *	56 to 46 *
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

TEST PROCEDURE

ANSI C63.4

RESULTS

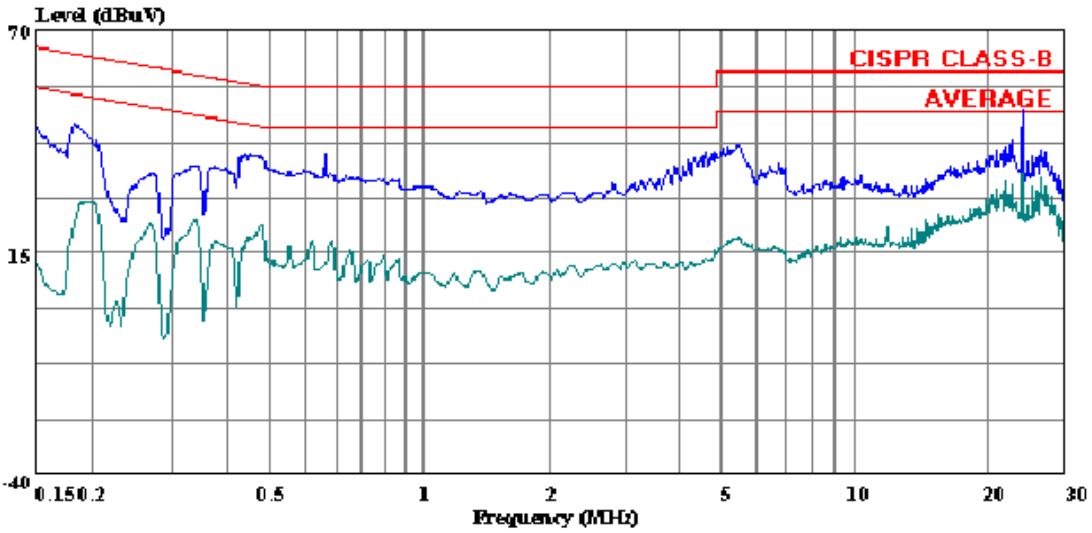
6 WORST EMISSIONS (WORST CASE)

CONDUCTED EMISSIONS DATA									
Freq.	Reading			Closs	Limit	FCC_B	Margin		Remark
(MHz)	PK (dBuV)	QP (dBuV)	AV (dBuV)	(dB)	QP	AV	QP (dB)	AV (dB)	L1 / L2
0.18	46.46	--	27.48	0.00	64.30	54.30	-17.84	-26.82	L1
5.59	41.81	--	18.91	0.00	60.00	50.00	-18.19	-31.09	L1
24.01	50.53	--	44.16	0.00	60.00	50.00	-9.47	-5.84	L1
0.18	45.78	--	25.50	0.00	64.35	54.35	-18.57	-28.85	L2
5.62	41.81	--	21.93	0.00	60.00	50.00	-18.19	-28.07	L2
24.01	50.39	--	43.64	0.00	60.00	50.00	-9.61	-6.36	L2
6 Worst Data									

LINE 1 RESULTS

Compliance Certification Services
47173 Benicia Street
Fremont, CA 94538
Tel: (510) 771-1000
Fax: (510) 661-0888

Data#: 7 File#: 10U13329-LC.EMI Date: 08-03-2010 Time: 11:21:15



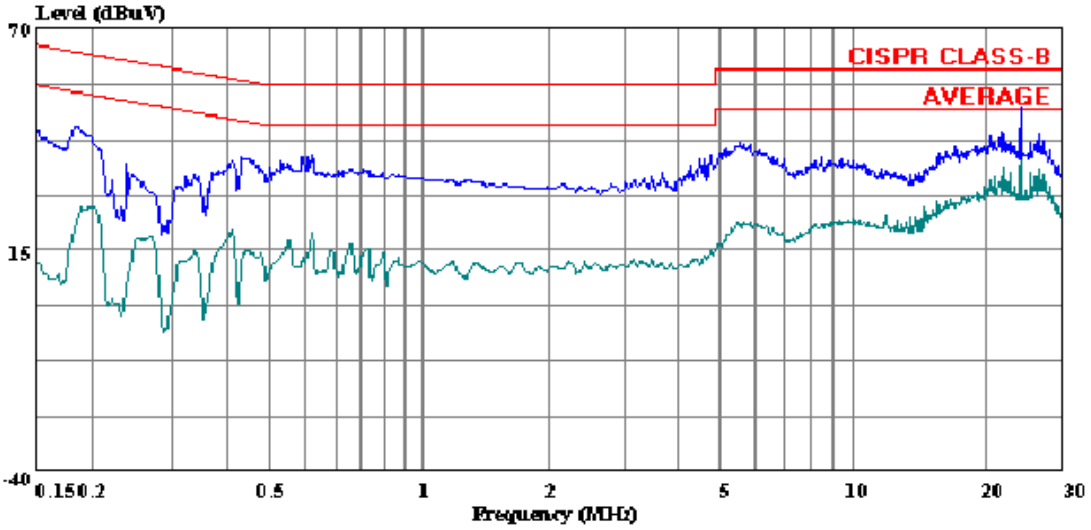
Trace: 5 Ref Trace:

Condition: CISPR CLASS-B
Test Operator: : William Zhuang
Project #: : 10U13329
Company: : Anaren Inc.
EUT Description:: Low-Power Sub-1GHz RF Transceiver
Model: : 09C and 09A
Configuration: : EUT, Laptop and minimum configuration
Mode: : TX , Mid Ch.
Target: : FCC Class B
Voltage: : 115V / 60Hz
: L1: Peak (Blue); Average (Green)

LINE 2 RESULTS

Compliance Certification Services
47173 Benicia Street
Fremont, CA 94538
Tel: (510) 771-1000
Fax: (510) 661-0888

Data#: 14 File#: 10U13329-LC.EMI Date: 08-03-2010 Time: 11:33:28



Trace: 12 Ref Trace:

Condition: CISPR CLASS-B
Test Operator: : William Zhuang
Project #: : 10U13329
Company: : Anaren Inc.
EUT Description:: Low-Power Sub-1GHz RF Transceiver
Model: : 09C and 09A
Configuration: : EUT, Laptop and minimum configuration
Mode: : TX , Mid Ch.
Target: : FCC Class B
Voltage: : 115V / 60Hz
: L2: Peak (Blue); Average (Green)

10. MAXIMUM PERMISSIBLE EXPOSURE

FCC RULES

§1.1310 The criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio-frequency (RF) radiation as specified in §1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of §2.1093 of this chapter.

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.89/f	*($900/f^2$)	6
30–300	61.4	0.163	1.0	6
300–1500			f/300	6
1500–100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*($180/f^2$)	30

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)—Continued

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
30–300	27.5	0.073	0.2	30
300–1500			f/1500	30
1500–100,000			1.0	30

f = frequency in MHz
* = Plane-wave equivalent power density

NOTE 1 TO TABLE 1: Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

NOTE 2 TO TABLE 1: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

IC RULES

IC Safety Code 6, Section 2.2.1 (a) A person other than an RF and microwave exposed worker shall not be exposed to electromagnetic radiation in a frequency band listed in Column 1 of Table 5, if the field strength exceeds the value given in Column 2 or 3 of Table 5, when averaged spatially and over time, or if the power density exceeds the value given in Column 4 of Table 5, when averaged spatially and over time.

Table 5
Exposure Limits for Persons Not Classed As RF and Microwave Exposed Workers (Including the General Public)

1 Frequency (MHz)	2 Electric Field Strength; rms (V/m)	3 Magnetic Field Strength; rms (A/m)	4 Power Density (W/m^2)	5 Averaging Time (min)
0.003–1	280	2.19		6
1–10	$280/f$	$2.19/f$		6
10–30	28	$2.19/f$		6
30–300	28	0.073	2*	6
300–1 500	$1.585f^{0.5}$	$0.0042f^{0.5}$	$f/150$	6
1 500–15 000	61.4	0.163	10	6
15 000–150 000	61.4	0.163	10	$616\,000/f^{1.2}$
150 000–300 000	$0.158f^{0.5}$	$4.21 \times 10^{-4}f^{0.5}$	$6.67 \times 10^{-5}f$	$616\,000/f^{1.2}$

* Power density limit is applicable at frequencies greater than 100 MHz.

Notes: 1. Frequency, f, is in MHz.
2. A power density of 10 W/m^2 is equivalent to 1 mW/cm^2.
3. A magnetic field strength of 1 A/m corresponds to 1.257 microtesla (μT) or 12.57 milligauss (mG).

EQUATIONS

Power density is given by:

S = EIRP / (4 * Pi * D^2)

where

S = Power density in W/m^2
EIRP = Equivalent Isotropic Radiated Power in W
D = Separation distance in m

Power density in units of W/m^2 is converted to units of mWc/m^2 by dividing by 10.

Distance is given by:

D = SQRT (EIRP / (4 * Pi * S))

where

D = Separation distance in m
EIRP = Equivalent Isotropic Radiated Power in W
S = Power density in W/m^2

For multiple colocated transmitters operating simultaneously in frequency bands where the limit is identical, the total power density is calculated using the total EIRP obtained by summing the Power * Gain product (in linear units) of each transmitter.

Total EIRP = (P1 * G1) + (P2 * G2) + ... + (Pn * Pn)

where

Px = Power of transmitter x
Gx = Numeric gain of antenna x

In the table(s) below, Power and Gain are entered in units of dBm and dBi respectively and conversions to linear forms are used for the calculations.

LIMITS

From FCC §1.1310 Table 1 (B), the maximum value of S = 1.0 mW/cm^2

From IC Safety Code 6, Section 2.2 Table 5 Column 4, S = 10 W/m^2

RESULTS

Band	Mode	Separation Distance (m)	Output Power (dBm)	Antenna Gain (dBi)	IC Power Density (W/m^2)	FCC Power Density (mW/cm^2)
900 MHz	DSSS	0.20	13.34	3.00	0.09	0.009