ARRISTA
Technologies Inc.

Test Report:
ATEMC000030

Applicant:
Arrista Technologies Inc.
5-55 Henlow Bay
Winnipeg, MB, CA
R3Y 1G4

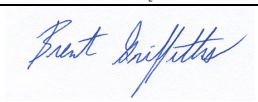
Equipment Under Test (EUT):
iDEN Cellular Amplifier

MODEL:
SA300

FCC ID:
P35K7P9YE8S

IN ACCORDANCE WITH:
FCC PART 90
PRIVATE LAND RADIO MOBILE SERVICE

TEST LAB PERSONNEL:

Test Performed by:	Date	Signature
Paul Eberling, CNA **Electronic Engineering Technologist**	**March, 2003**	
Brent Griffiths, **Engineer**	**March, 2003**	

APPROVALS:

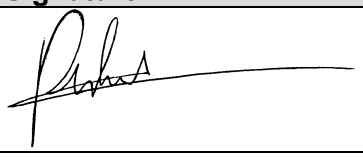
Date	Name	Title	Signature
March 2003	Roman Wroczynski	Director Development & Test	

Table of Contents

Table of Figures/Tables/Photos

1. GENERAL INFORMATION

1.1. PURPOSE

This document details the results of the following tests performed by Arrista Technologies Inc. (Arrista) on February 12, 2003 – March 3, 2003 on the SA300 iDEN Band Cellular Signal Amplifier for Arrista Technologies Incorporated. Section numbers reference test methods and descriptions. Article numbers reference diagrams, tables and plots.

1.2. TEST METHODOLOGY

Arrista performed these tests on a production sample of the product for the purpose of demonstrating compliance with FCC Part(s) 90. The conducted and radiated emissions testing were performed according to methods of ANSI C63.4:1992. This test report relates only to the item(s) tested.

1.3. TEST EQUIPMENT LIST

All test equipment calibrations are NIST traceable to national standards. All calibration data can be made available on request

Article 01- Table:Test Equipment

Description	Manufacture	Model Number	Last Cal Date (mm/dd/yyyy)	Cal Interval
EMI Receiver	Dynamic Sciences	DSI-2020	04/18/2002	Annual
Turntable and Mast Controller	EMCO	2090	N/A	N/A
Coaxial Cable	Sucoflex	106A	N/A	N/A
Antenna Mast	EMCO Mini-Mast	2075-2	N/A	N/A
Horn Antenna (1-18GHz)	EMCO	3115	01/23/2003	Annual
Bilog EMC Antenna (30-2000MHz)	Schaffner-Chase	CBL6112A	01/29/2003	Annual
Metal Top Turntable	EMCO	2081-2.03	N/A	N/A
3m Semi-Anechoic Chamber	EMC Test Systems	N/A	02/20/2003	Bi-Annual
Desktop Computer	Dell Optiplex	GX110	N/A	N/A
6 dB Attenuator	Hewlett-Packard	6dB	N/A	N/A
Spectrum Analyzer	Agilent	HPE4407B	11/15/2002	Annual
Directional Coupler	Weinschel	1538RA-20	N/A	N/A
Amplifier 10-4200MHz	Mini-Circuits	ZHL-42W	N/A	N/A
Signal Generator	Hewlett Packard	8648C	07/04/2001	Bi-Annual
Signal Generator	Agilent	E4432B	04/24/2002	Bi-Annual

1.4. EQUIPMENT UNDER TEST DESCRIPTION

The E.U.T. is sold under the following trade name:

- **SA300**

The SA300 is a Bi-directional iDEN signal amplifier providing amplification of land radio mobile transmit and receive signals for improved in-vehicle mobile telephone use. Designed for use with mobile cellular iDEN telephones, the signal amplifier reduces problems with signal fades and dropped calls while improving voice quality, service range and access. The signal amplifier enhances the performance of in-vehicle cradle mounted mobile handsets, resulting in wider coverage, less signal fades between buildings in urban environments, and increased coverage when traveling in rural areas. This product is designed to operate with iDEN signals from cellular service providers in the 806 to 824MHz cellular band. The amplifier is designed to work with a variety of cradles and hands-free systems.

The product has two RF coaxial connection interfaces, one to an external antenna (not sold with the product) and the other the to the cell phone side, see Article 02. In addition, the unit provides for a DC power connection through a fused 3-amp 18 AWG cable, which can be connected to a automobile DC power distribution system, a green LED indicates when power is applied to the unit.

The EUT's input connects to an FCC approved cellular device to increase the cellular device's power output up to a maximum leveled output of 3 Watts output with typical mobile antenna. Further, the signal amplification provided by the amplifier receive circuitry is appropriately optimized for network operation with the intent of avoiding false hand-offs when a vehicle moves between cell sites.

1.5. GENERAL EQUIPMENT SPECIFICATION

1.5.1. POWER SUPPLY SPECIFICATIONS

Input Voltage:	10 to 30 V DC
Input Current:	2 Amps max

1.5.2. TRANSMITTER (800 MHZ BAND)

Frequency Range:	806 – 824 MHz
Tunable Bands:	Not Applicable
Necessary Bandwidth:	Not Applicable
Type of Modulation:	Not Applicable
Internal/External Data Source:	Not Applicable
Emission Designator:	F1D (paging), DXW (iDEN)
Output Impedance:	50 Ohms
RF Power Output (rated):	Single, leveled, up to 3 Watts
Number of Channels:	Not Applicable
Duty Cycle:	Continuous, Linear Class A
Channel Spacing:	Not Applicable
Band Selection	Duplexer

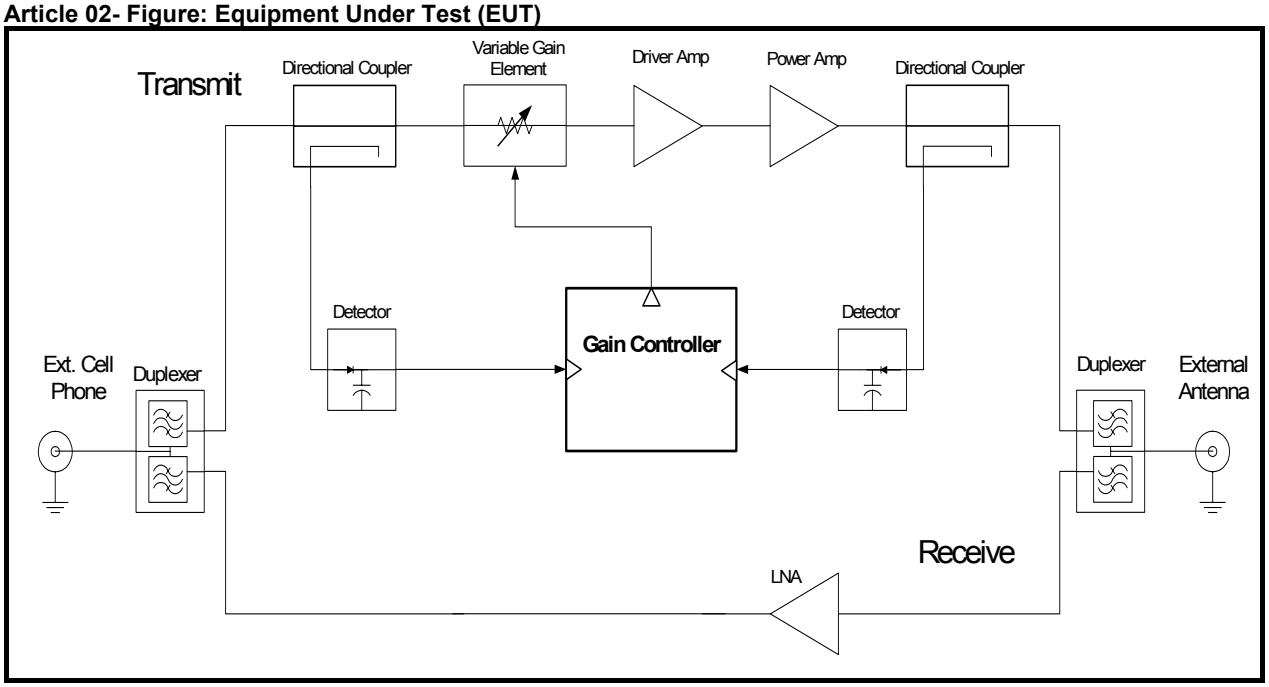
1.5.3. RECEIVER (800 MHZ BAND)

Frequency Range:	851 – 870 MHz

Tunable Bands:	Not Applicable
Necessary Bandwidth:	Not Applicable
Type of Modulation:	Not Applicable
Local Oscillator:	Not Applicable
1st IF:	Not Applicable
2nd IF:	Not Applicable

1.5.4. EQUIPMENT UNDER TEST (EUT) FUNCTIONAL BLOCK DIAGRAM

Article 02- Figure: Equipment Under Test (EUT)



1.6. TEST RESULT SUMMARY

Testing was performed using procedures or criteria contained in the regulatory documents and standards specified below.

Article 03- Table: Results Summary

NAME OF TEST	FCC PARA. NO.	SPEC.	MEAS.	RESULT
RF Power Output	2.1046 90.635(d)	Mobile spec; 100W ERP	1.6 W	Complies
Emissions Limits:	2.1049(c) 90.210	Mask	Plots	Complies
Conducted Spurious Emission at Antenna Terminals	2.1051 90.669	-13dBm	-22.4dBm	Complies
Radiated Field Strength of Spurious Emissions	2.1053 90.689	-13dBm	Plots, Tables	Complies
Frequency Tolerance	90.213	1.5ppm	N/A	N/A

Notes:

(1) Since the EUT does not contain modulation circuitry, modulation testing was not performed.

(2) Since the EUT is not designed to generate or translate frequencies, and only amplifies the signal it receives, frequency stability was not tested.

1.7. DEVIATIONS

The following deviations from, additions to, or exclusions from the test specifications have been made:

None

1.8. TEST SCHEDULE DESCRIPTION

Testing was performed using the procedures and requirements of CFR 47 Part 2 for type acceptance.

1.8.1. RF POWER OUTPUT

For transmitters other than SSB, ISB and controlled carrier radiotelephone, the power output shall be measured at the RF output terminals with electrical characteristics of the RF load attached.

1.8.2. EMISSIONS LIMITATION & OCCUPIED BANDWIDTH

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean power radiated are equal to 0.5 percent of the total mean power radiated by the given emission.

1.8.3. CONDUCTED SPURIOUS EMISSIONS AT ANTENNA TERMINALS

The radio frequency voltage or power generated within the equipment and appearing on a spurious frequency shall be checked at the equipment output terminal when properly loaded with a suitable artificial

antenna.

1.8.4. RADIATED FIELD STRENGTH OF SPURIOUS EMISSIONS

Measurements shall be made to detect spurious emission that may be radiated directly from the cabinet, control circuits, power leads, or intermediate circuit elements under normal condition of installation and power.

1.9. TEST FACILITIES DESCRIPTION

1.9.1. INTERNAL FACILITIES

Arrista Product Compliance & Test (PCT) laboratory is located at 5-55 Henlow Bay, Winnipeg, Manitoba, Canada at Arrista main facility. The laboratory has test equipment for Electromagnetic Compatibility (EMC) testing i.e. ESD, EFT, Surge, and radiated emissions.

The PCT Laboratory is registered with the FCC and has submitted the information required by Section 2.948 of the FCC Rules for measuring devices. Test equipment used to perform all measurements listed in paragraph 1.3 of this test report.

1.9.2. RADIATED EMISSIONS TEST SITE

Radiated emissions testing was performed in Arrista's semi-anechoic 3m test chamber.

The site consists of a 28'x 20'x 20' shielded chamber with absorptive materials on the walls and ceiling. The floor of the chamber is a raised conductive ground plane and includes a 2 m conductive top turntable. The measuring antenna is mounted on a non-conductive mast, which can be raised between 1 to 4 meters. Measurement equipment is located in the adjacent control room which is a 12' x 12' x 8' shielded structure.

2. TEST RESULTS

2.1. RF POWER OUTPUT

Test Type:	RF Output Power
FCC Para No.:	2.1033(c)7 and 90.635(d)
Tested By:	Paul Eberling
Date:	February 13, 2003

2.1.1. SPECIFICATION REQUIREMENT:

According to § **90.635 (d);**

(d) The maximum output power of the transmitter for mobile stations is 100 watts (20 dBw).

2.1.2. MEASUREMENT PROCEDURE:

The peak power at EUT antenna terminals is measured using the Agilent E4407B spectrum analyzer. See Appendix A; for test set-up. Power output of multiple carriers is not measured as the EUT is designed to amplify a single carrier.

2.1.3. TEST RESULTS:

Complies

2.1.4. MEASUREMENT DATA:

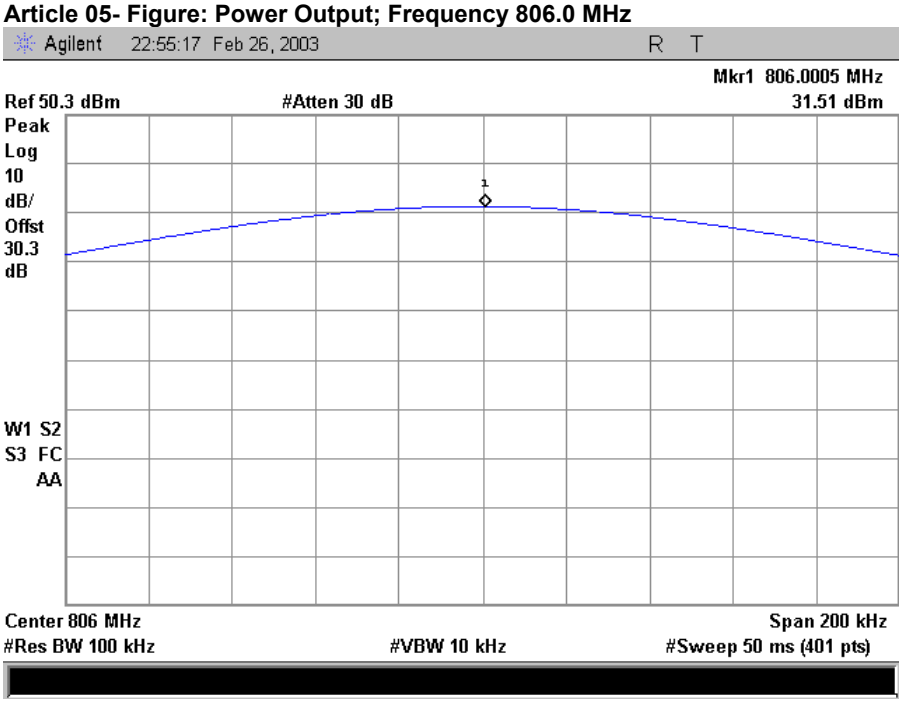
Article 04- Table: Measurement Data

Freq (MHz)	SA Reading (dBm)	Cable (dB)	Attenuation (dB)	Result (dBm)	Output Power (W)	Limit (W) ERP
806	31.5	Corrected	Corrected	31.5	1.41	100 ERP
815	32.0	Corrected	Corrected	32.0	1.58	100 ERP
824	31.0	Corrected	Corrected	31.0	1.26	100 ERP

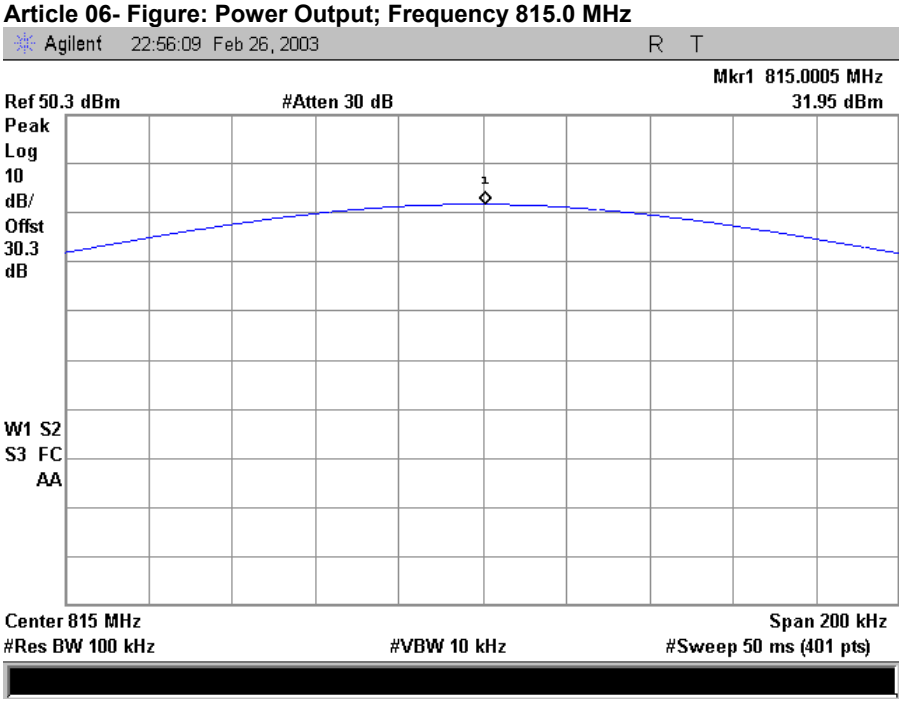
Note:
Attenuation of cable and attenuator is corrected automatically by spectrum analyzer correction function.

2.1.5. PLOT DATA

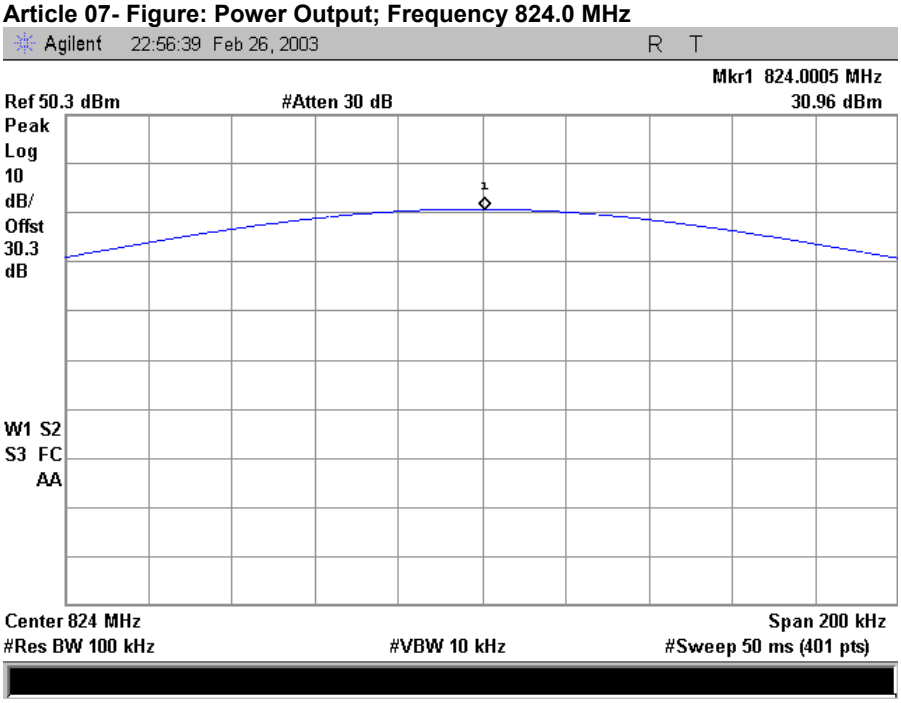
Article 05- Figure: Power Output; Frequency 806.0 MHz



Article 06- Figure: Power Output; Frequency 815.0 MHz



Article 07- Figure: Power Output; Frequency 824.0 MHz



2.2. EMISSIONS LIMITATIONS

Test Type:	Emissions Limits
FCC Para No.:	2.1033(c)7 and 90.635(d))
Tested By:	Paul Eberling
Date:	February 13, 2003

2.2.1. SPECIFICATION REQUIREMENT:

According to § **90.210 (g);**

(1) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in kHz) of more than 5 kHz up to and including 10 kHz:
At least 83 $\log_{10}$ (fd/5) decibels.

(2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in kHz) of more than 10 kHz up to and including 250 percent of the authorized bandwidth:
At least 116 $\log_{10}$ (fd/6.1) decibels or 50 plus 10 $\log_{10}$ (Unmodulated Carrier Power) decibels or 70 decibels, whichever is lesser attenuation.

(3) On any frequency removed from the center of the authorized bandwidth by more than 250 percent of the authorized bandwidth:
At least 43 plus 10 $\log_{10}$ (Output Power in Watts) decibels or 80 decibels, whichever is lesser attenuation.

According to § **90.691 (a);**

(1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 116 $\log_{10}$ (f/6.1) decibels or 50 + 10 $\log_{10}$ (P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center channel of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.

(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 $\log_{10}$ (P) decibels (i.e. –13 dBm) or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

2.2.2. MEASUREMENT PROCEDURE:

A single modulated tone was used to demonstrate it operability in iDEN cell systems. A signal generator was setup to provide a modulated 16-QAM signal. The signal generator output was verified on a spectrum analyzer as shown. The signal generator output was then connected to the EUT cell phone coaxial interface connector. See Appendix A; for test set-up

Agilent Spectrum Analyzer Settings:

RBW: 300Hz
VBV: 1kHz
Span: 100 kHz
Sweep: 20 sec
Mask: DXW (iDEN)

Input Signal Characteristics:
Agilent E4432B Signal Generator
4 Carrier 16-QAM

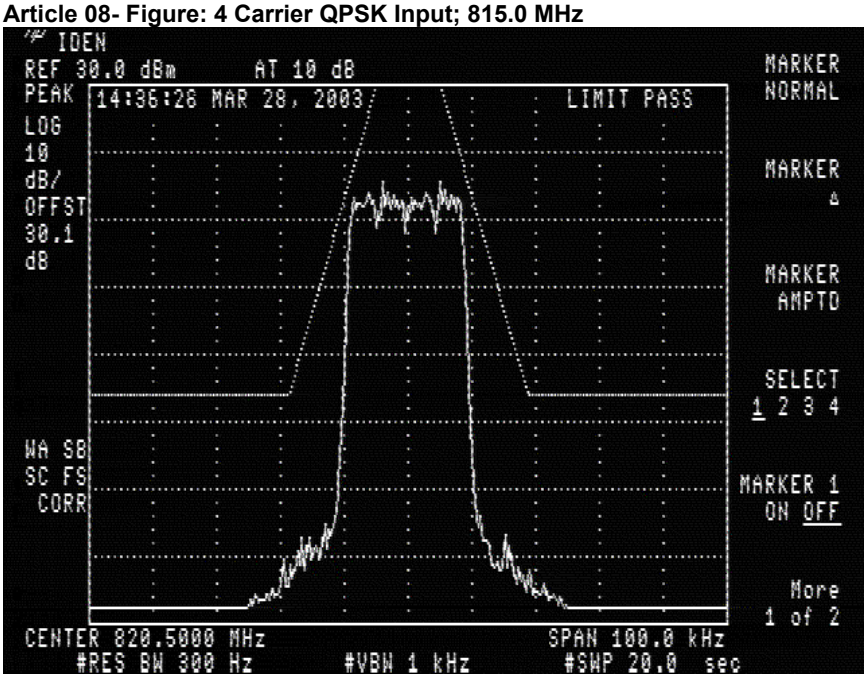
2.2.3. TEST RESULTS:

Complies

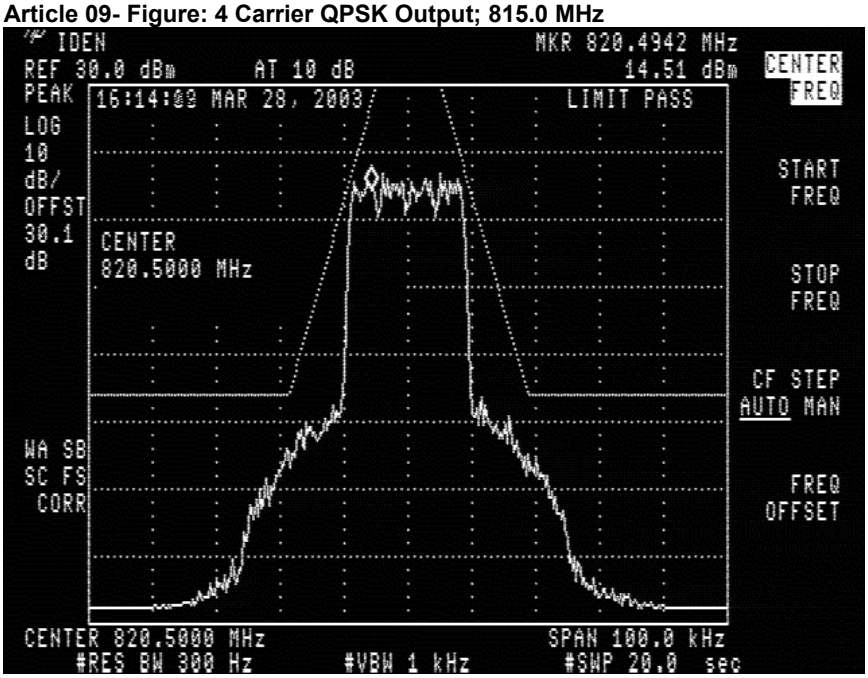
2.2.4. MEASUREMENT DATA:

iDEN Validation

Article 08- Figure: 4 Carrier QPSK Input; 815.0 MHz



Article 09- Figure: 4 Carrier QPSK Output; 815.0 MHz



2.3. CONDUCTED SPURIOUS EMISSIONS AT ANTENNA TERMINALS

Test Type:	Spurious Emissions at Antenna Terminals
FCC Para No.:	2.1051(e), 90.210(g), 90.691(a).
Tested By:	Paul Eberling
Date:	February 27, 2003

2.3.1. SPECIFICATION REQUIREMENT:

§ **2.1051** (e) *Out of band emissions.* The mean power of emissions must be attenuated below the mean power of the un-modulated carrier (P) on any frequency twice or more than twice the fundamental frequency by: at least 43+10 log P dB.

§**90.210** (g) *Emission Mask G.*

(3) On any frequency removed from the center of the authorized bandwidth by more than 250 percent of the authorized bandwidth: At least 43 + 10 log (P) dB.

§**90.691** (a)The mean power of emissions must be attenuated below the mean power of the un-modulated carrier (P) as follows:

(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 43 + 10Log_{10}(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

2.3.2. MEASUREMENT PROCEDURE

A signal generator providing a CW tone at 806, 815, & 824Mhz respectively was connected to the EUT cell phone coaxial interface connector. The output of the EUT was connected to a spectrum analyzer and the emissions spectrum of the EUT was measured from 30MHz to the 10th harmonic of the fundamental of the CW input signal. See Appendix A; Article 61 for test set-up

Agilent Spectrum Analyzer Settings:
RBW: 300kHz < 1GHz, 1MHz > 1GHz
VBW: various
Bandwidth of measurement: 30MHz to 9GHz
Span: various
Sweep: 2 sec
Mask: Cell F1D

Input Signal Characteristics:
CW Frequency: 806, 815 and 824 MHz
CW Power Level: RF level input of the signal to produce maximum EUT output. See Appendix A; for test set-up.

Spur limit is defined in the following formula:

Po – (43 + 10logP) **[1]**

Using the measured values the limit is calculated below:

32.0 – [43 + 10log(Po in Watts)]= -13.0 **[2]**

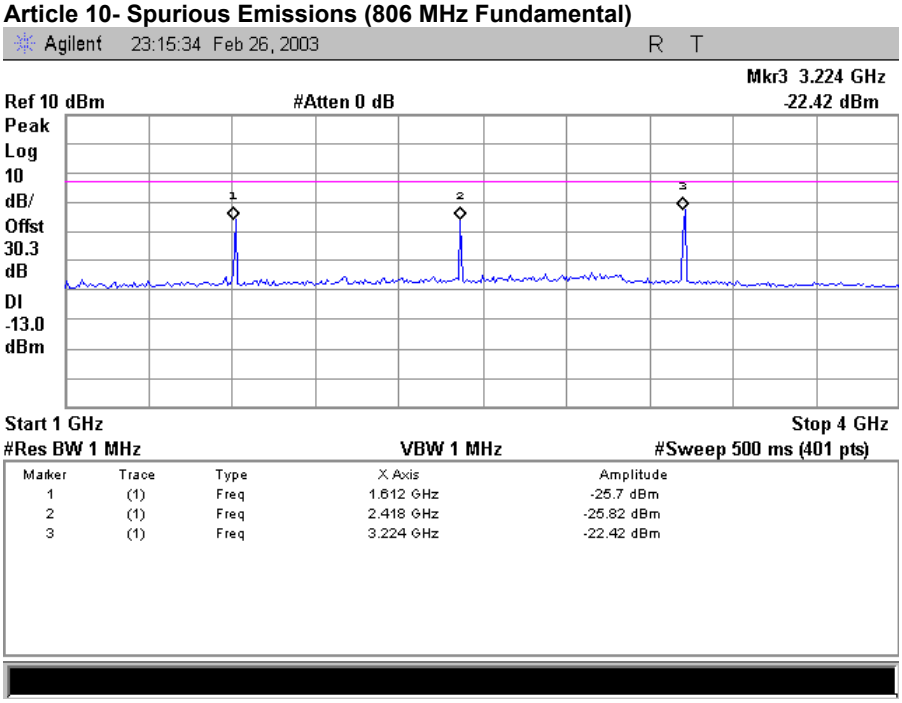
2.3.3. TEST RESULTS

Complies

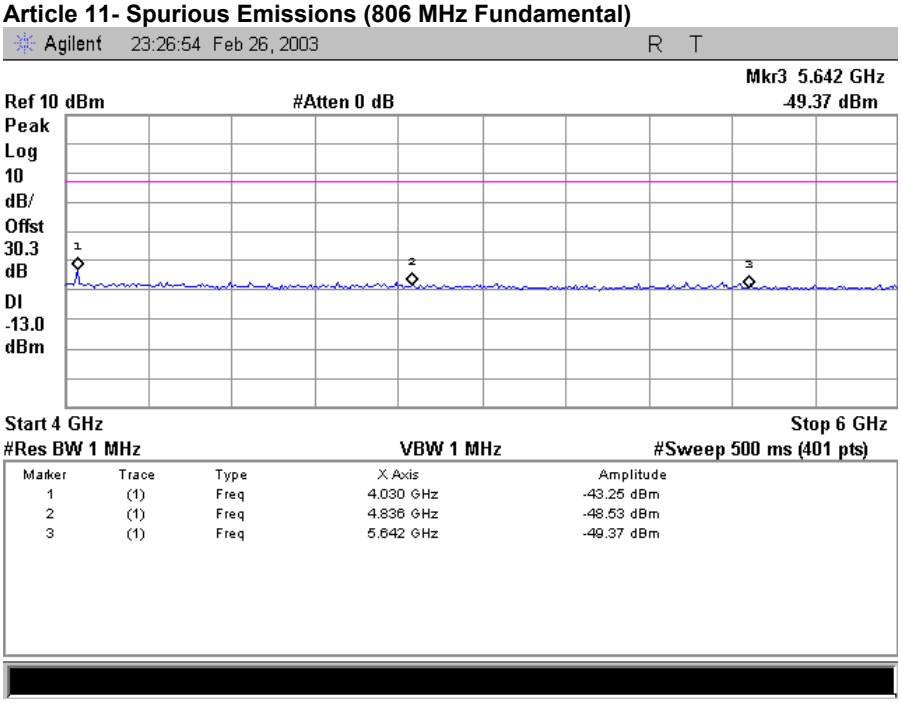
2.3.4. PLOT DATA

The following plots depict the harmonic emissions for each of the three fundamental frequencies; 806.0, 815.0, 824.0 respectively. A display line shown in each plot indicates the –13.0 dBm limit. Values for each harmonic emission are shown in the table below each plot.

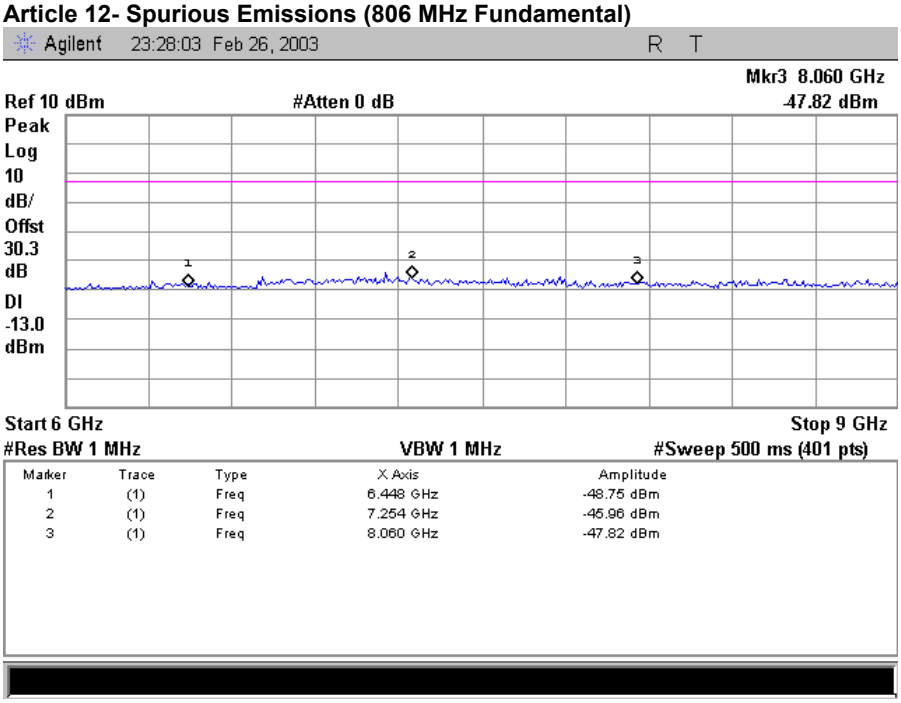
Article 10- Spurious Emissions (806 MHz Fundamental)



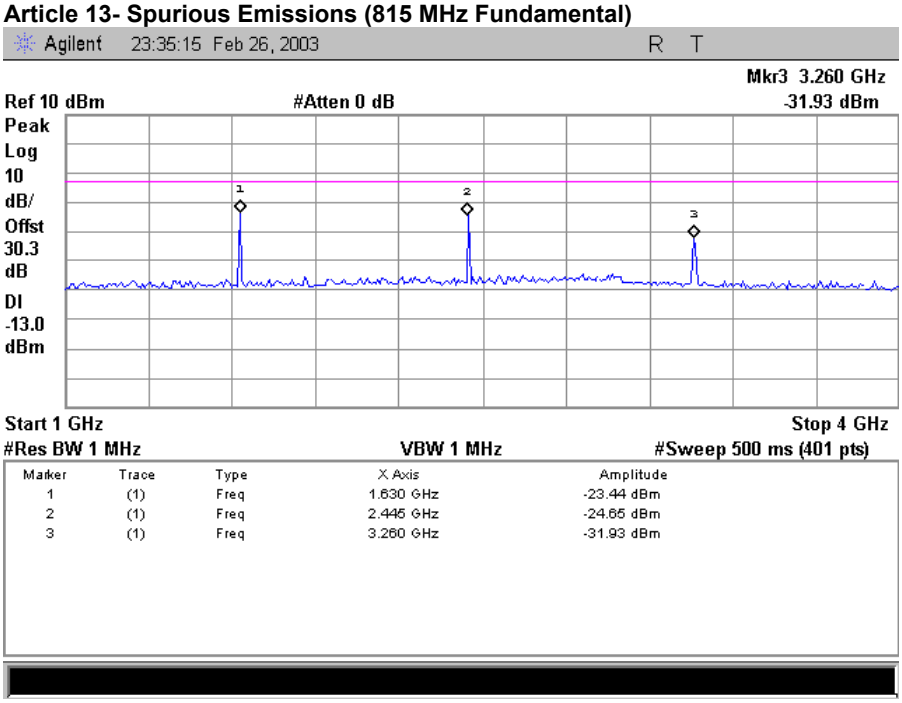
Article 11- Spurious Emissions (806 MHz Fundamental)



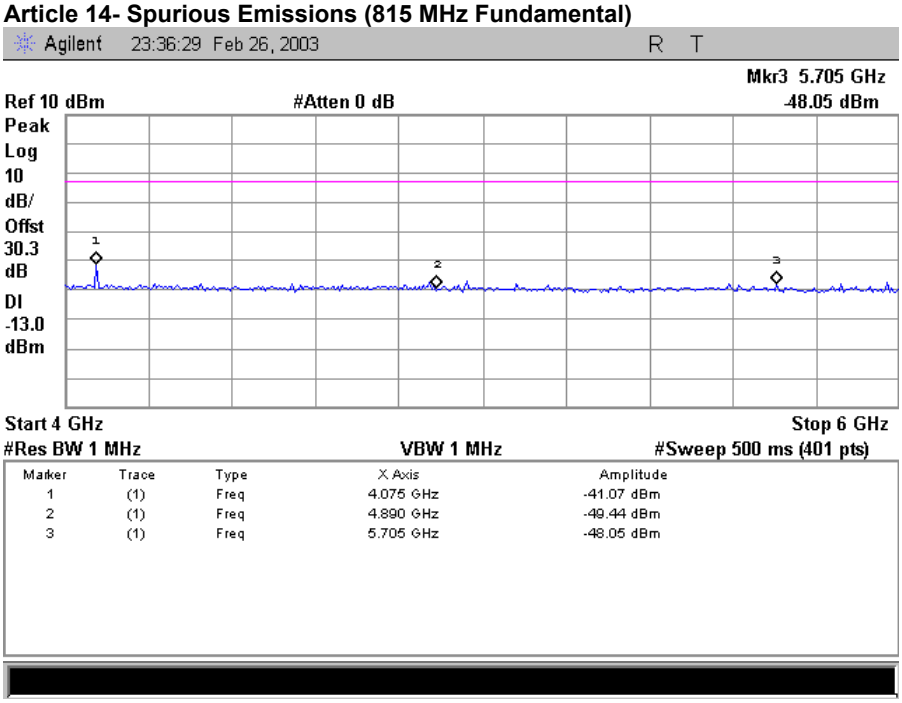
Article 12- Spurious Emissions (806 MHz Fundamental)



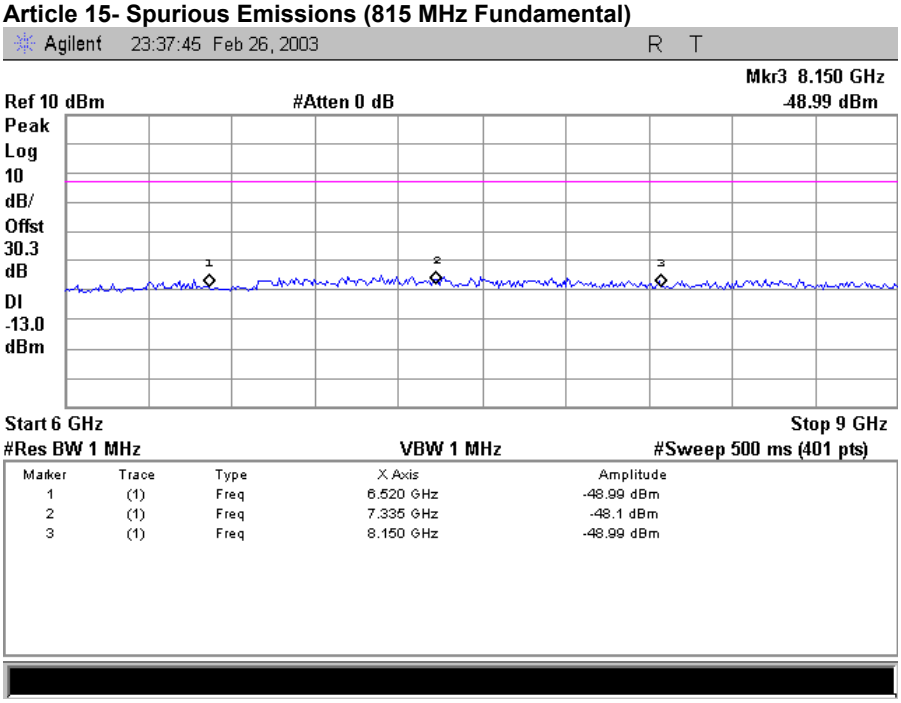
Article 13- Spurious Emissions (815 MHz Fundamental)



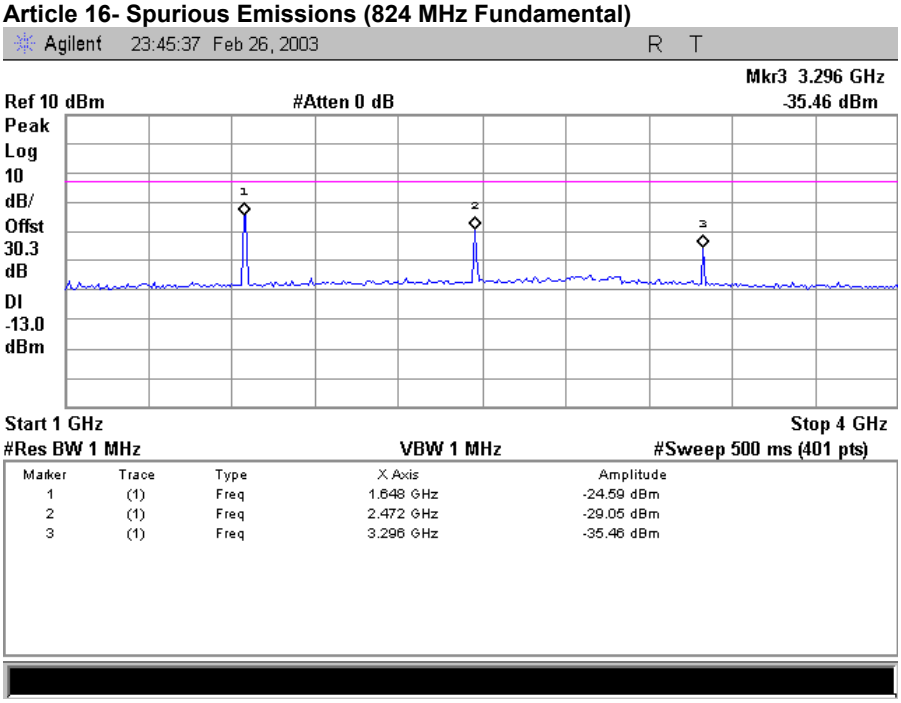
Article 14- Spurious Emissions (815 MHz Fundamental)



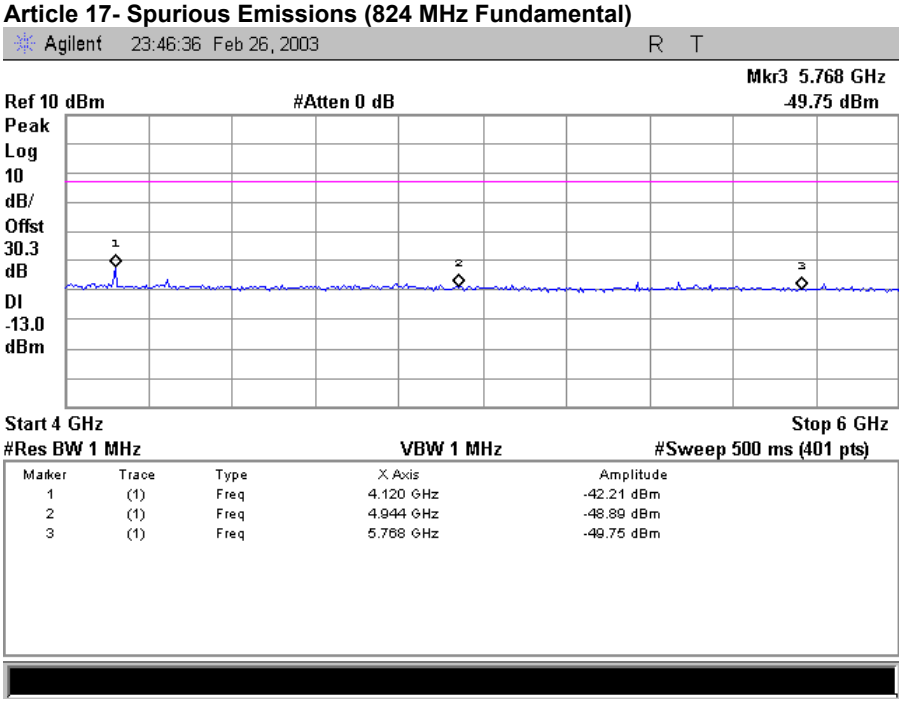
Article 15- Spurious Emissions (815 MHz Fundamental)



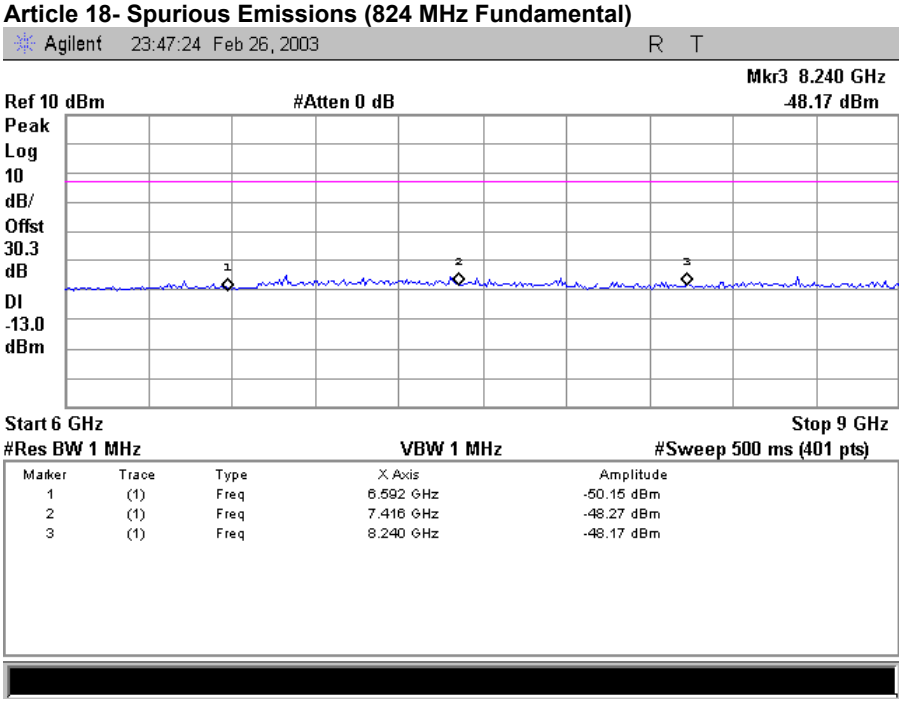
Article 16- Spurious Emissions (824 MHz Fundamental)



Article 17- Spurious Emissions (824 MHz Fundamental)



Article 18- Spurious Emissions (824 MHz Fundamental)



2.4. FIELD STRENGTH OF EMISSIONS

Test Type:	Emissions Limits for Cellular F1D emissions mask (AMPS/TDMA)
FCC Para No.:	2.1053, 90.210(g), 90.691(a)
Tested By:	Paul Eberling
Date:	February 27, 2003

2.4.1. SPECIFICATION REQUIREMENT:

The mean power of emissions must be attenuated below the mean power of the un-modulated carrier on any frequency twice or more than twice the fundamental emission by at least 43 + 10 log P. This is equivalent to –13 dBm absolute power.

§90.210 (g) *Emission Mask G.*

(3) On any frequency removed from the center of the authorized bandwidth by more than 250 percent of the authorized bandwidth: At least 43 + 10 log (P) dB.

§90.691 (a)The mean power of emissions must be attenuated below the mean power of the un-modulated carrier (P) as follows:

(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 43 + 10Log_{10}(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

2.4.2. MEASUREMENT PROCEDURE:

The EUT is placed in a 3-meter semi anechoic chamber on a wooden table resting on the metal turntable. The EUT is stimulated by a CW tone from a signal generator at three discrete frequencies for each mode of operation. More specifically, 806, 815 and 824 MHz respectively.

The EUT is not designed with an integral antenna nor sold with one, thus for this test, the EUT's output antenna interface coaxial connector is terminated into a coaxial cable with a 50 ohm load attached to it.

The EUT's radiated field strength emissions is measured from 30MHz to the tenth harmonic of the CW input signal. A CISPR 16 compliant receiver is used to for scans between 30MHz to 2GHz. A spectrum analyzer is used for measurements above 2GHz. A calculation follows to convert the spec limit power level (i.e.-13dBm) to an E field measurement limit. See Appendix A; for test set-up

Calculation of field strength limit corresponding to a power limit of –13dBm

An example of attenuation requirement of 43 + 10 Log P is equivalent to –13 dBm ($5\text{x}10^{-5}$ Watts) at the antenna terminal. We determine the field strength limit by using the plane wave relation.

$$GP/4\pi R^2 = E^2/120\pi \qquad [5]$$

For emissions ≤ 1 GHz:

G = 1.64 (Dipole Gain)
P = 10^{-5} Watts (Maximum spurious output power)
R = 3m (Measurement Distance)

E = 0.016533 V/m = 84.4 dBµV/m @*3m* **[6]**

For emissions >1 GHz:

G = 1 (Isotropic Gain)
P = 1 x 10^{-5} Watts (Maximum spurious output power)
R = 3m (Measurement Distance)

E = 84.4 – 20 Log = 82.3dBµV/m @*3m* **[7]**

DSI Receiver/Agilent Spectrum Analyzer Settings:
RBW: 120kHz @ f< 1GHz, 1MHz @ f > 1GHz
VBW: various
Bandwidth of measurement: 30MHz to 9GHz
Span: various

Input signal characteristics:
CW RF level input of the signal to produce maximum EUT leveled output
CW Frequencies: 806, 815, 824 MHz

2.4.3. TEST RESULTS:

Complies

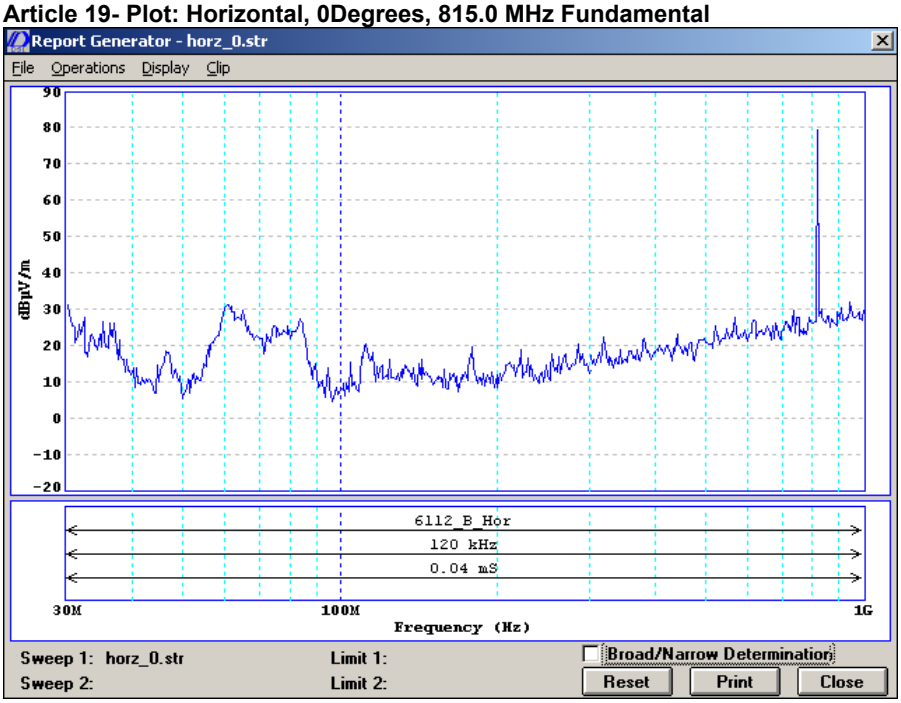
2.4.4. MEASUREMENT DATA; 806 – 824 MHz RANGE:

Data was collected using carrier frequencies of 806, 815 and 824 MHz respectively for measurements below 1GHz. Data for measurements taken using a carrier frequency of 815MHz are displayed in following plots. Additional data can be supplied upon request. Measurements above 1GHz are recorded in the following tables, at 806, 815 and 824 MHz respectively. Above frequencies of 1 GHz only harmonic emissions were measurable, all non-harmonic spurious emissions were not measurable, as they were below the noise floor of the instrument. The only signal measurable is the fundamental leakage from the enclosure as shown in the following plots. This is the same desired signal that is intentionally radiated from the antenna normally connected to the unit and thus does not impact system performance and is not considered a radiated spurious signal.

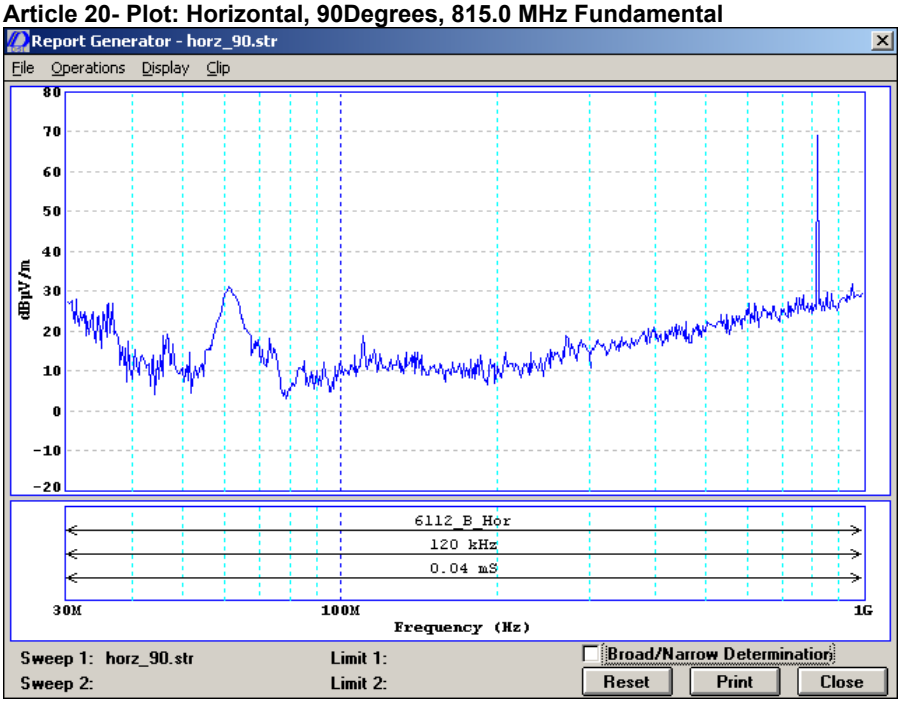
Equipment Under Test is configured as per **Fig 9(c) Test Configuration – Tabletop Equipment Radiated Emissions** in **ANSI C63.4-1992**.
See Tables and Plot Data below:

2.4.4.1. PLOT DATA

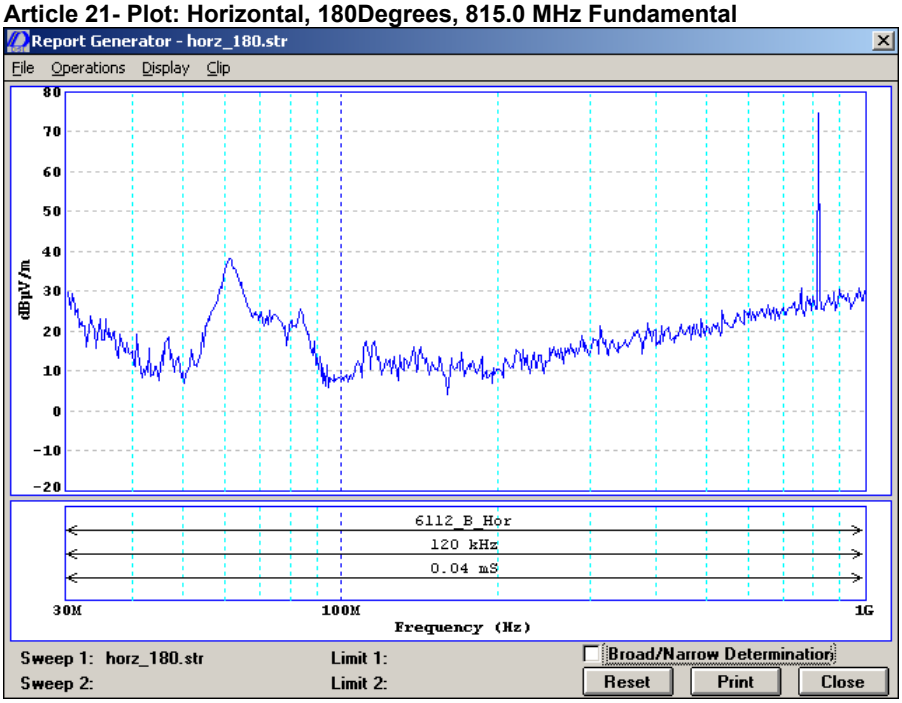
Article 19- Plot: Horizontal, 0Degrees, 815.0 MHz Fundamental



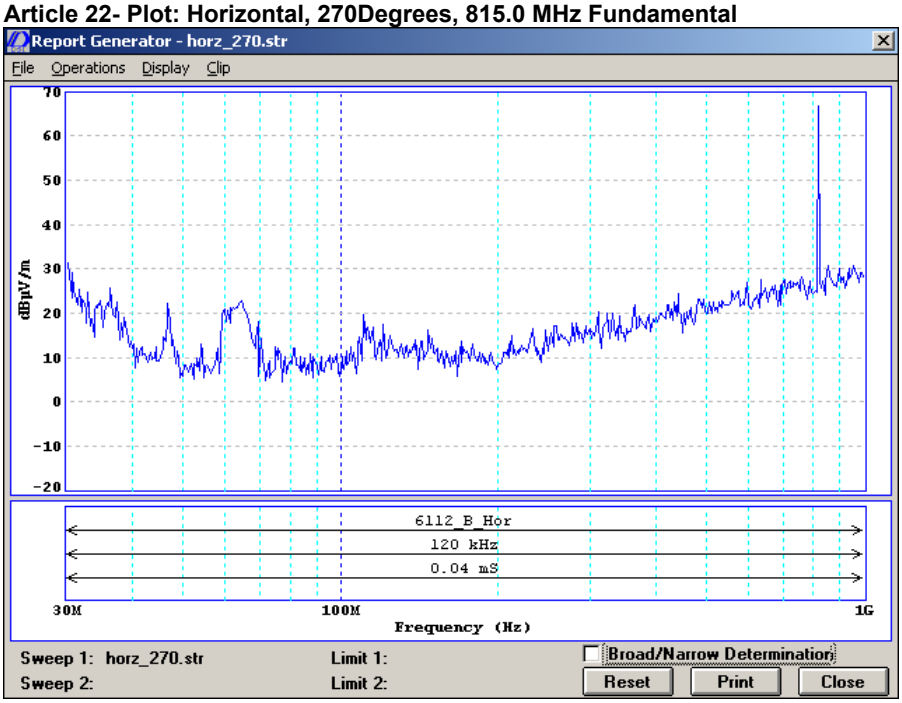
Article 20- Plot: Horizontal, 90Degrees, 815.0 MHz Fundamental



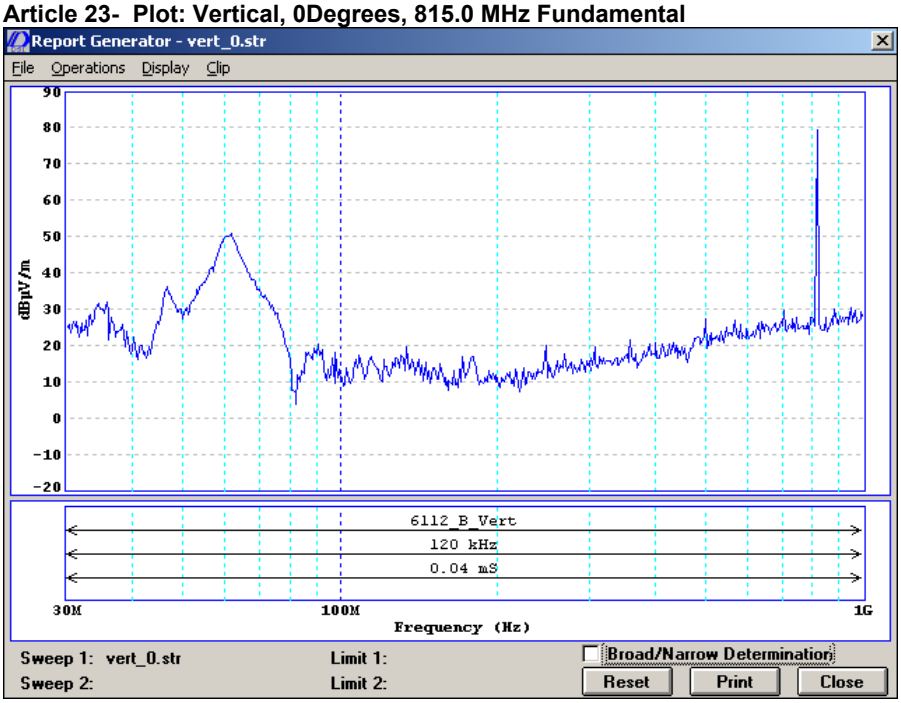
Article 21- Plot: Horizontal, 180Degrees, 815.0 MHz Fundamental



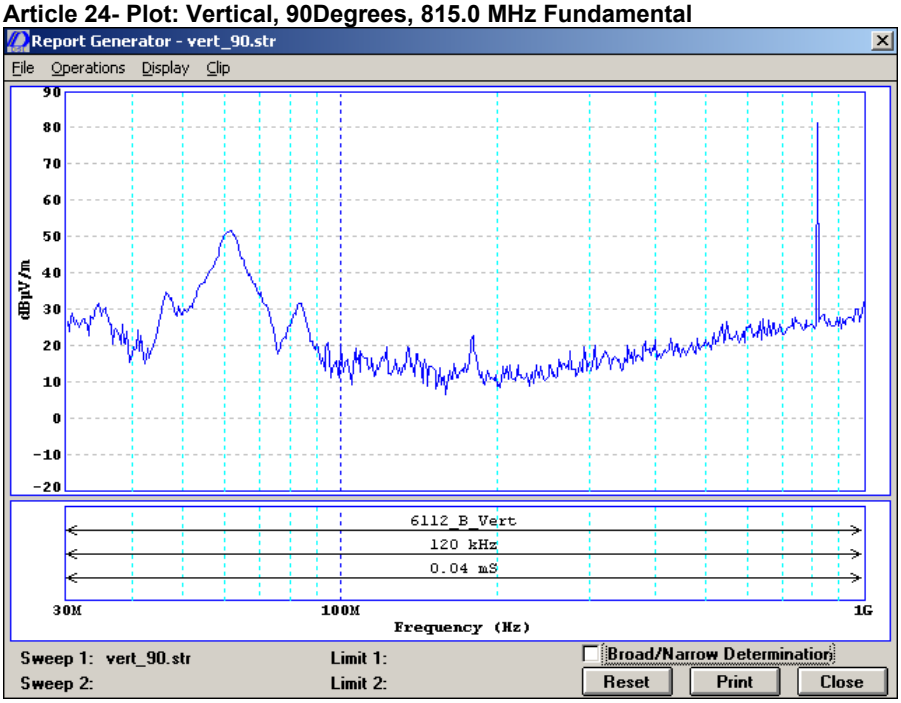
Article 22- Plot: Horizontal, 270Degrees, 815.0 MHz Fundamental



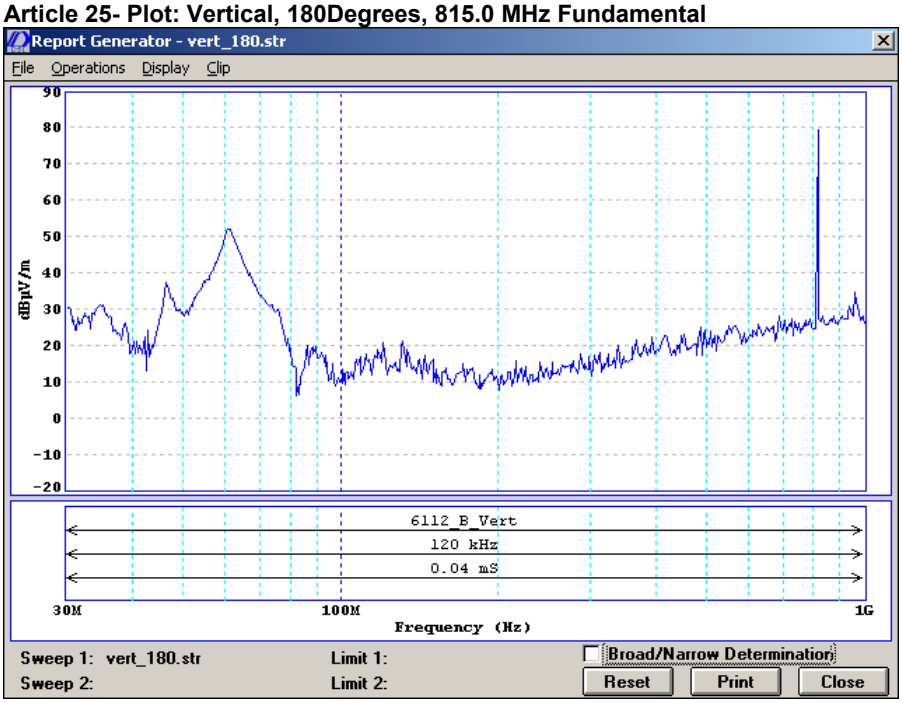
Article 23- Plot: Vertical, 0Degrees, 815.0 MHz Fundamental



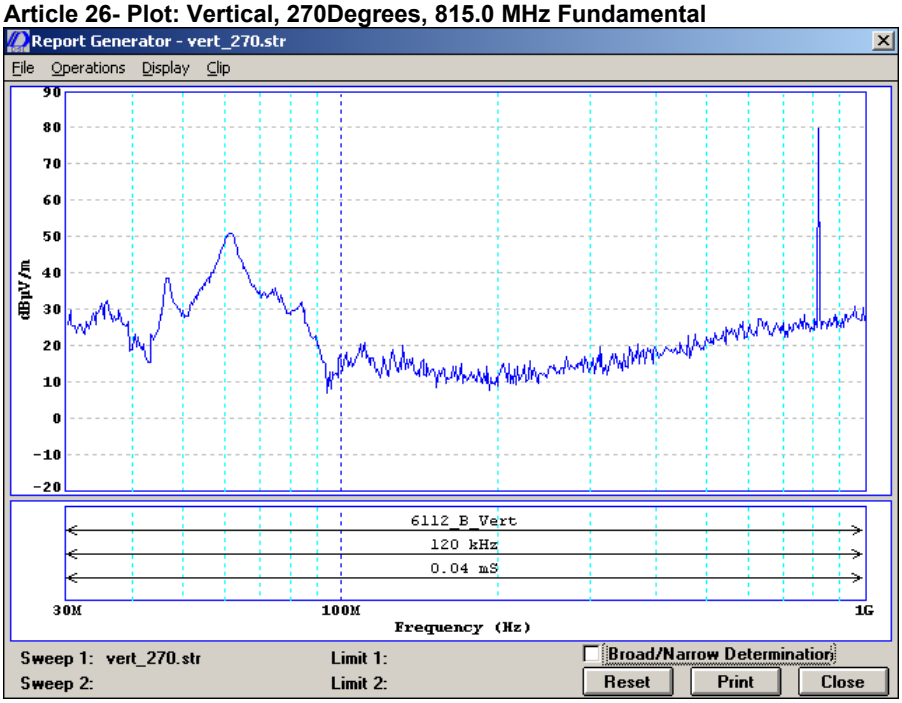
Article 24- Plot: Vertical, 90Degrees, 815.0 MHz Fundamental



Article 25- Plot: Vertical, 180Degrees, 815.0 MHz Fundamental



Article 26- Plot: Vertical, 270Degrees, 815.0 MHz Fundamental



2.4.4.2. HARMONIC EMISSIONS 1GHz – 9GHz (824 - 849MHz)

Article 27- Table: Harmonic Emissions; 806.0 MHz

Fundamental: 806

Harmonic	MHz	TT Pos (deg)	Ant Pos (cm)	Polar	Ant Corr (dB/m)	Cable Corr (dB)	Rec Sig (dBuV)	Corr Amp (dBuV/m)	Limit (dBuV/m)	Margin (dB)
2nd	1612	300	105.00	H	26.9	2.00	33.5	62.4	82.2	19.8
	1612	300	105.00	V	26.7	2.00	29.2	57.9	82.2	24.3
3rd	2418	300	105.00	H	30.4	2.50	27.0	59.9	82.2	22.3
	2418	300	105.00	V	30.4	2.50	26.1	59.0	82.2	23.2
4th	3224	300	105.00	H	32.8	2.83	26.5	62.1	82.2	20.1
	3224	300	105.00	V	32.6	2.83	25.5	60.9	82.2	21.3
5th	4030	300	105.00	H	34.4	3.34	24.0	61.7	82.2	20.5
	4030	300	105.00	V	34.4	3.34	24.9	62.6	82.2	19.6
6th	4836	300	105.00	H	35.1	3.67	24.5	63.3	82.2	18.9
	4836	300	105.00	V	35.3	3.67	25.5	64.5	82.2	17.7
7th	5642	300	105.00	H	36.9	3.83	24.1	64.8	82.2	17.4
	5642	300	105.00	V	36.9	3.83	26.1	66.8	82.2	15.4
8th	6448	300	105.00	H	36.3	4.00	25.5	65.8	82.2	16.4
	6448	300	105.00	V	36.3	4.00	26.3	66.6	82.2	15.6
9th	7254	300	105.00	H	38	4.34	26.7	69.0	82.2	13.2
	7254	300	105.00	V	38	4.34	25.8	68.1	82.2	14.1
10th	8060	300	105.00	H	37.7	4.84	26.1	68.6	82.2	13.6
	8060	300	105.00	V	37.5	4.84	26.9	69.2	82.2	13.0

Article 28- Table: Harmonic Emissions; 815.0 MHz

Fundamental: 815

Harmonic	MHz	TT Pos (deg)	Ant Pos (cm)	Polar	Ant Corr (dB/m)	Cable Corr (dB)	Rec Sig (dBuV)	Corr Amp (dBuV/m)	Limit (dBuV/m)	Margin (dB)
2nd	1630	290	100.00	H	26.9	2.00	29.2	58.1	82.2	24.1
	1630	290	100.00	V	26.7	2.00	28.1	56.8	82.2	25.4
3rd	2445	290	100.00	H	30.4	2.50	26.2	59.1	82.2	23.1
	2445	290	100.00	V	30.4	2.50	26.1	59.0	82.2	23.2
4th	3260	290	100.00	H	32.8	2.83	26.5	62.1	82.2	20.1
	3260	290	100.00	V	32.6	2.83	25.6	61.0	82.2	21.2
5th	4075	290	100.00	H	34.4	3.34	25.7	63.4	82.2	18.8
	4075	290	100.00	V	34.4	3.34	25.2	62.9	82.2	19.3
6th	4890	290	100.00	H	35.1	3.67	25.8	64.6	82.2	17.6
	4890	290	100.00	V	35.3	3.67	25.2	64.2	82.2	18.0
7th	5705	290	100.00	H	36.9	3.83	26.1	66.8	82.2	15.4
	5705	290	100.00	V	36.9	3.83	26.5	67.2	82.2	15.0
8th	6520	290	100.00	H	36.3	4.00	25.5	65.8	82.2	16.4
	6520	290	100.00	V	36.3	4.00	25.7	66.0	82.2	16.2
9th	7335	290	100.00	H	38	4.34	26.7	69.0	82.2	13.2
	7335	290	100.00	V	38	4.34	26.8	69.1	82.2	13.1
10th	8150	290	100.00	H	37.7	4.84	26.1	68.6	82.2	13.6
	8150	290	100.00	V	37.5	4.84	26.1	68.4	82.2	13.8

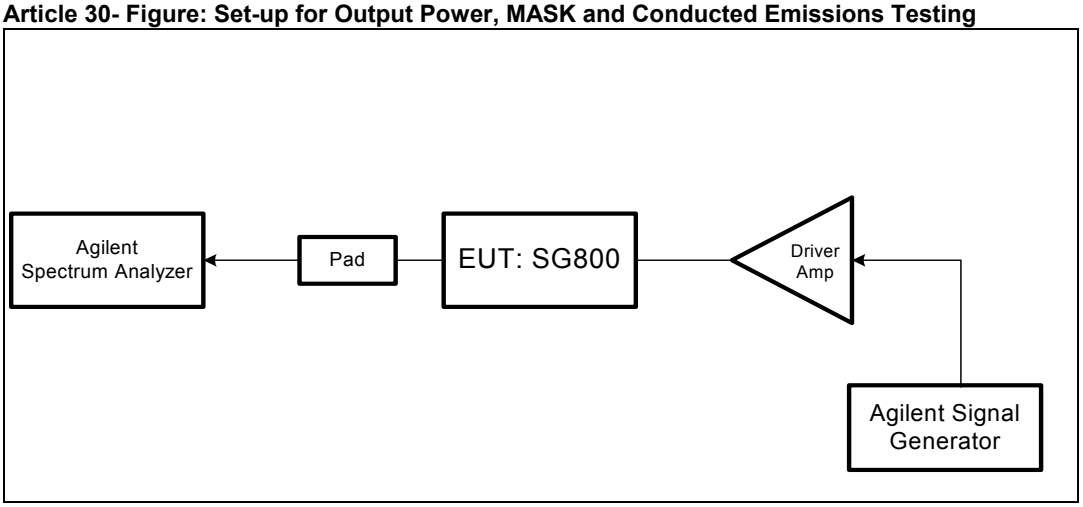
Article 29- Table: Harmonic Emissions; 824.0 MHz

Fundamental: 824

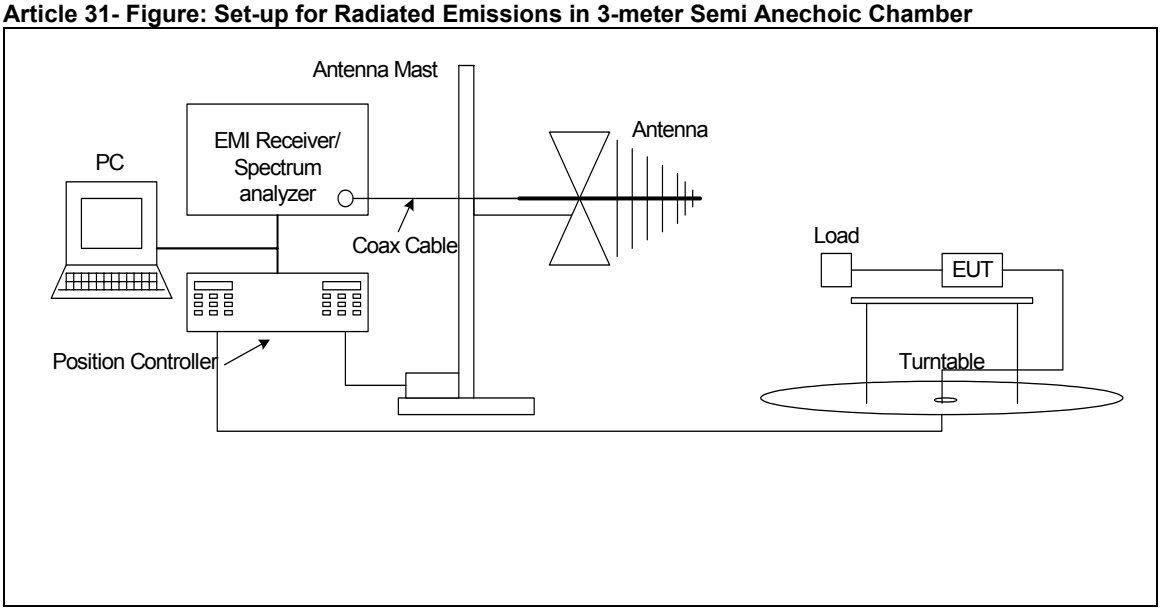
Harmonic	MHz	TT Pos (deg)	Ant Pos (cm)	Polar	Ant Corr (dB/m)	Cable Corr (dB)	Rec Sig (dBuV)	Corr Amp (dBuV/m)	Limit (dBuV/m)	Margin (dB)
2nd	1648	331	102.00	H	26.9	2.00	26.5	55.4	82.2	26.8
	1648	331	102.00	V	26.7	2.00	26.7	55.4	82.2	26.8
3rd	2472	331	102.00	H	30.4	2.50	26.2	59.1	82.2	23.1
	2472	331	102.00	V	30.4	2.50	26.1	59.0	82.2	23.2
4th	3296	331	102.00	H	32.8	2.83	26.5	62.1	82.2	20.1
	3296	331	102.00	V	32.6	2.83	26.5	61.9	82.2	20.3
5th	4120	331	102.00	H	34.4	3.34	25.7	63.4	82.2	18.8
	4120	331	102.00	V	34.4	3.34	25.8	63.5	82.2	18.7
6th	4944	331	102.00	H	35.1	3.67	25.8	64.6	82.2	17.6
	4944	331	102.00	V	35.3	3.67	25.9	64.9	82.2	17.3
7th	5768	331	102.00	H	36.9	3.83	26.4	67.1	82.2	15.1
	5768	331	102.00	V	36.9	3.83	26.1	66.8	82.2	15.4
8th	6592	331	102.00	H	36.3	4.00	25.7	66.0	82.2	16.2
	6592	331	102.00	V	36.3	4.00	25.7	66.0	82.2	16.2
9th	7416	331	102.00	H	38	4.34	26.5	68.8	82.2	13.4
	7416	331	102.00	V	38	4.34	27.1	69.4	82.2	12.8
10th	8240	331	102.00	H	37.7	4.84	26.9	69.4	82.2	12.8
	8240	331	102.00	V	37.5	4.84	27.3	69.6	82.2	12.6

3. APPENDIX A: TEST SET-UP DIAGRAMS

Article 30- Figure: Set-up for Output Power, MASK and Conducted Emissions Testing

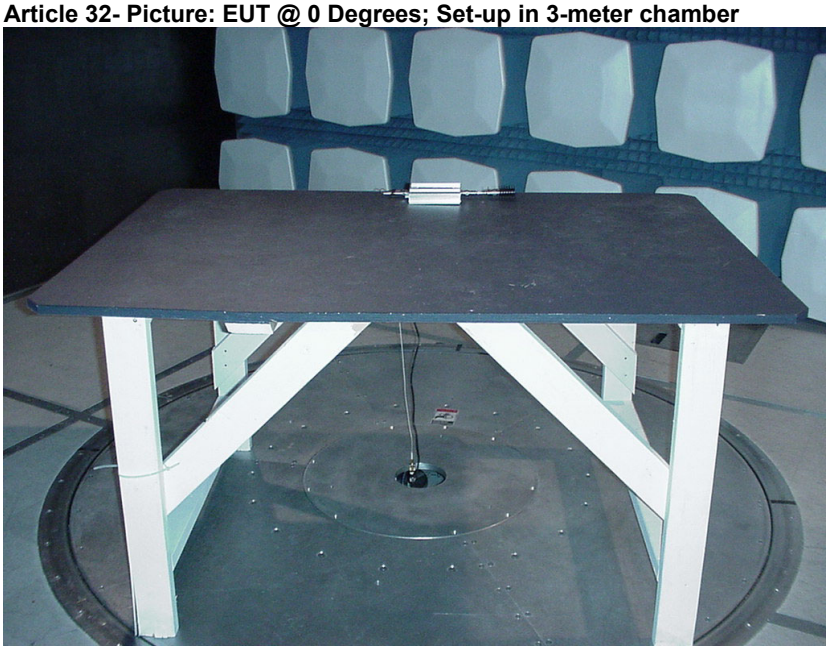


Article 31- Figure: Set-up for Radiated Emissions in 3-meter Semi Anechoic Chamber

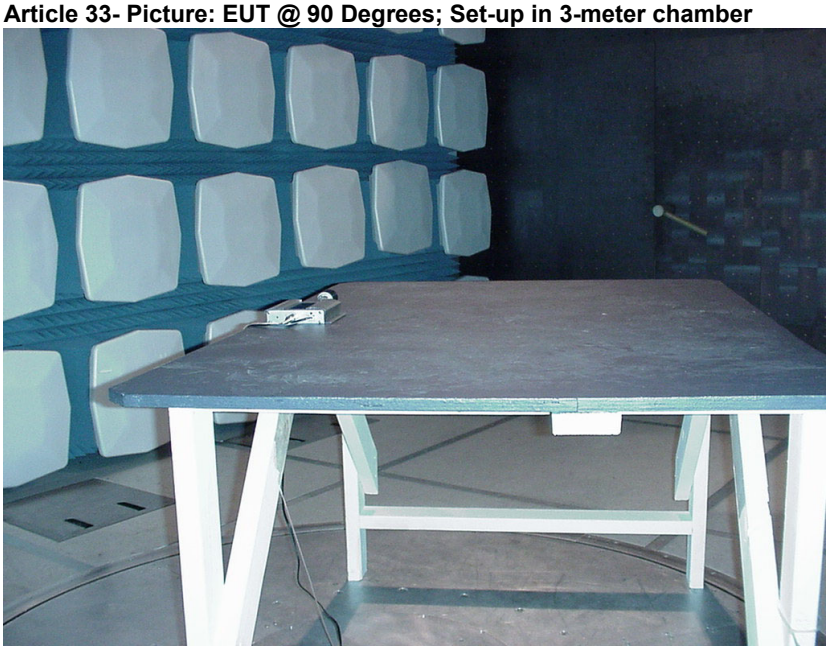


4. APPENDIX B: PICTURES OF EUT SETUP

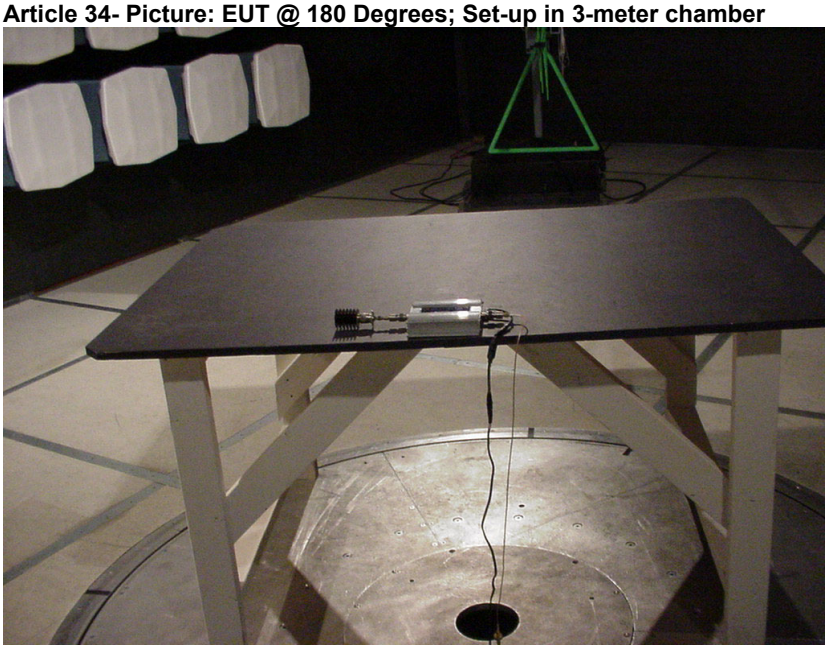
Article 32- Picture: EUT @ 0 Degrees; Set-up in 3-meter chamber



Article 33- Picture: EUT @ 90 Degrees; Set-up in 3-meter chamber



Article 34- Picture: EUT @ 180 Degrees; Set-up in 3-meter chamber



Article 35- Picture: EUT @ 270 Degrees; Set-up in 3-meter chamber