ECMG Worldwide Certification Solutions
ECMG Worldwide Certification Solution, Inc.
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EMI Test Report

On Model Name: Fingerprint Time Attendance
Model Numbers: FTA600 / FTA601 / FTA602
Brand Name: MIAXIS
Trade Mark: MIAXIS

FCC ID: WLRMIAXIS-FTA600

Prepared for Miaxis Biometrics Co., Ltd.

According to FCC Part 15, Class B

Test Report #:	*MIA-0807-8003-FCC*
Prepared by:	*Cloud Feng*
Reviewed by:	*Harry Zhao*
QC Manager:	*Paul Chen*

Test Report Released by: Paul J. Chen — *Paul Chen*

2008, July 31 — *Date*

Test Location

Tests performed in a Certified ANSI Semi-Anechoic Chamber and Shielded Room performed testing.

Test Site Location: *ECMG Worldwide Certification Solution, Inc. (China)*
Building 2, 1298 Lian Xi Road,
Pu Dong New Area, Shanghai,
P.R. China 201204

Tel: *86-21-51909300*
Fax: *86-21-51909333*

FCC Registration Number: *172634*

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Administrative Data

Test Sample : Fingerprint Time Attendance

Model Numbers : FTA600 / FTA601 / FTA602

Model of test : FTA600 / FTA601 / FTA602

Trade Mark : MIAXIS

Serial Number : Engineering Sample

Date Tested : 2008, July 11th

Applicant : Miaxis Biometrics Co., Ltd.
12F Technology Building, East Software Park,
No.90 Wensan Rd., Hangzhou, P. R. China

Telephone : 86-571-89986385

Fax : 86-571-81951600

Manufacturer : Miaxis Biometrics Co., Ltd.
12F Technology Building, East Software Park,
No.90 Wensan Rd., Hangzhou, P. R. China

EUT Description

Miaxis Biometrics Co., Ltd., models FTA600 (referred to as the EUT in this report) is a Fingerprint.

The highest frequency generated by the EUT is 208 MHz, so the frequency range tested is from 30MHz – 2000MHz.

Type of Deriver

All the other models are identical to the original model FTA600 except for the different type of the communication to PC.

Test Summary

The Electromagnetic Compatibility requirements on model FTA600 for this test are stated below. All results listed in this report relate exclusively to this above-mentioned model as the Equipment under Test. This report confers no approval or endorsement upon any other component, host or subsystem used in the test set-up.

Emission Tests				
Specifications	***Description***	***Test Results***	***Test Point***	***Remark***
FCC Part 15.107 (150kHz – 30MHz)	*Conducted Emission*	***For FTA600:*** *Passed by 29.38 dB of QP* *Passed by 29.80 dB of AVE*	*AC Input Port*	*Attachment 1*
FCC Part 15.109 (30MHz – 2000MHz)	*Radiated Emission*	***For FTA600:*** *Passed by 1.72 dB of QP*	*Enclosure*	*Attachment 2*

Test Mode Justification

This device complies with Part 15 Class B of the FCC rules. The system was tested in the activating mode.

EUT Exercise Software

The software New Miaxis Att runs on windowsXP, which was used to exercise the EUT during testing. No other data was transmitted to the EUT during testing.

Equipment Modification

Any modifications installed previous to testing by Miaxis Biometrics Co., Ltd. will be incorporated in each production model sold or leased in United States.

There were no modifications installed by ECMG Worldwide Certification Solution, Inc (China) test personnel.

Test System Details

EUT	
Model Numbers:	FTA600 / FTA601 / FTA602
Trade Mark:	MIAXIS
Input Voltage:	AC 120V/60Hz
Serial Number:	Engineering Sample
Description:	Fingerprint Time Attendance
Manufacturer:	Miaxis Biometrics Co., Ltd.
EUT Power Supply	
Model Name:	AC Adapter
Model Number:	SPS-06C12-2
Serial Number:	N/A
Input:	100-120V, 50/60Hz,
Output:	12V DC, 2A
Manufacturer:	GRE

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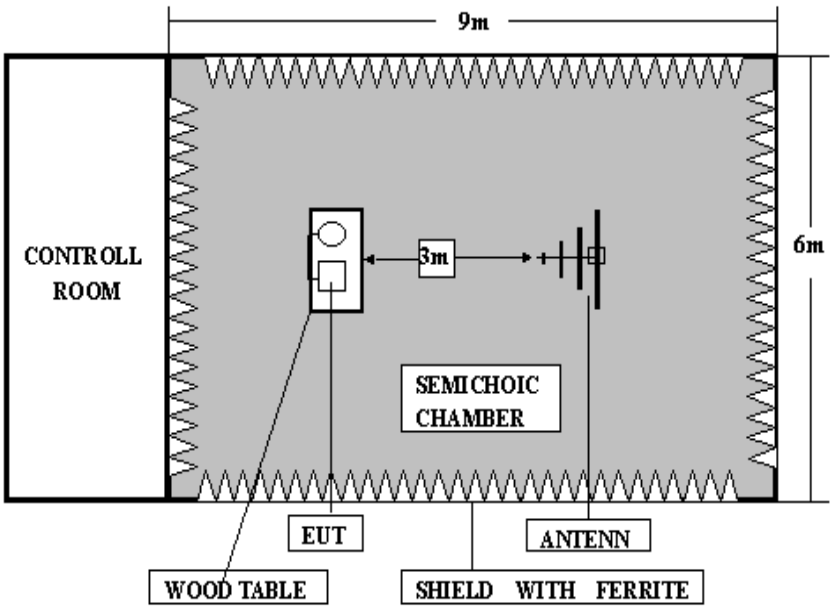
Support Equipment				
Description	**Model Number**	**Serial Number**	**Manufacturer**	**Power Cable Description**
PC	OPTIPLEX 330	HBSF92X	DELL	1.8m unshielded
Monitor	E178FPC	CN0WR979641 807CA7L4C	DELL	1.8m unshielded
Keyboard	L100	CN0RH656658 907C401F9	DELL	N/A
Mouse	MOC5UO	G1D02BPQ	DELL	N/A
Printer converter	45CV	961217	INTEL LIGENT	N/A
Remote control box	IT-251B	N/A	N/A	N/A

Cable Description					
Description	**From**	**To**	**Length (Meters)**	**Shielded (Y/N)**	**Ferrite (Y/N)**
Serial Cable	EUT	PC	1.2m	N	N
LAN Cable	EUT	PC	1.2m	N	N
Power Cable	Adapter	EUT	1.2m	N	YX1
Parallel Cable	Converter	PC	0.5m	N	N
Serial Cable	Remote box	PC	1.5m	N	N

Configuration of Tested System

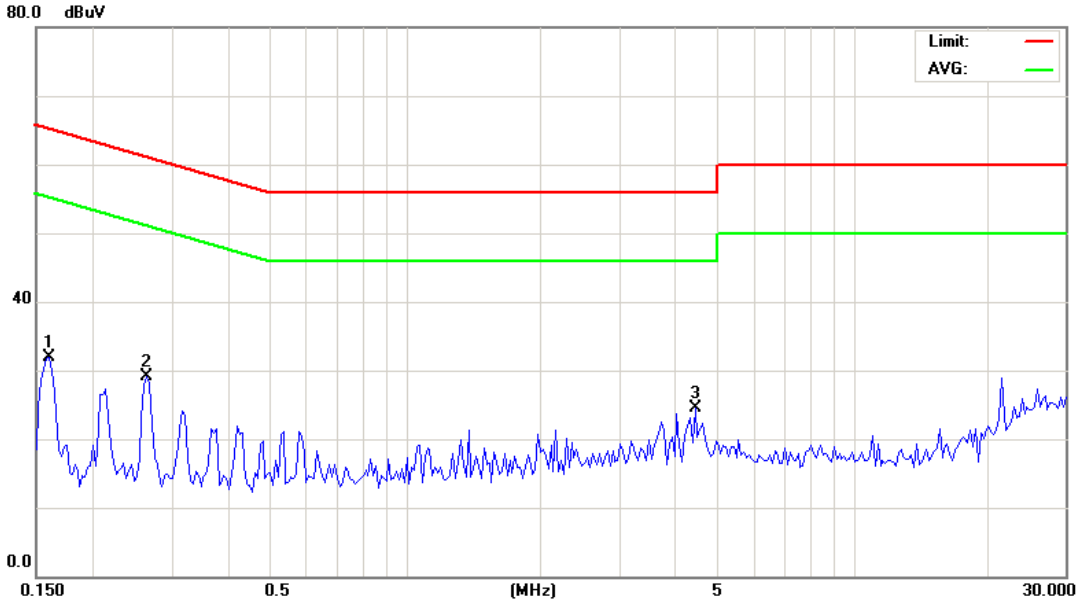


ATTACHMENT 1 - CONDUCTED EMISSION TEST RESULTS

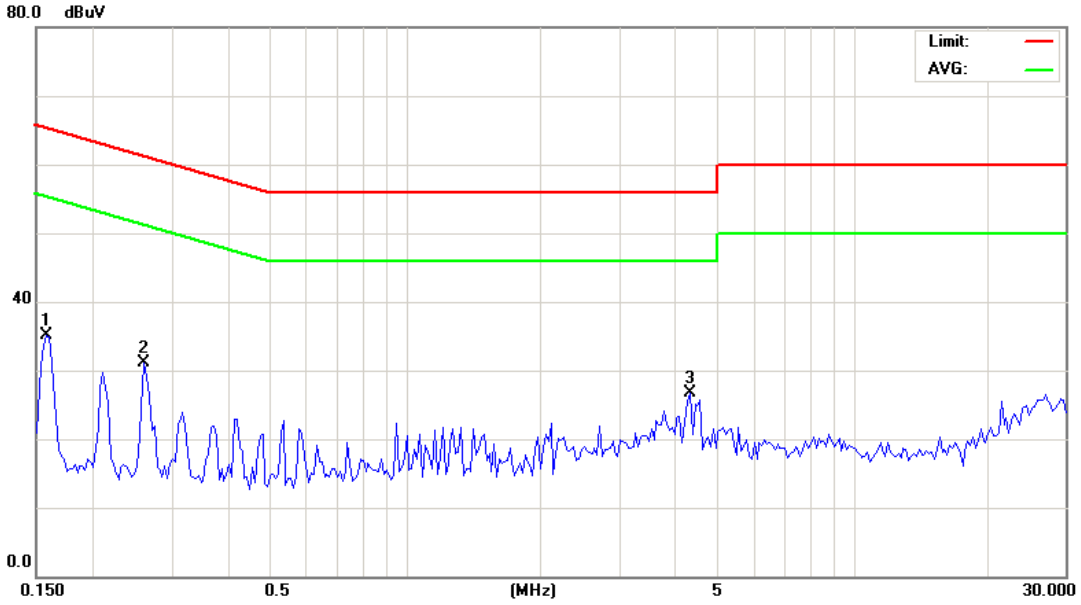
CLIENT:	Miaxis Biometrics Co., Ltd.	**TEST REFERENCE:**	FCC Part 15 subpart B Class B
MODEL TESTED:	FTA600 / FTA601 / FTA602	**PRODUCT:**	Fingerprint Time Attendance
MODEL NUMBERS:	FTA600 / FTA601 / FTA602		
SERIAL NO.:	Engineering Sample	**EUT DESIGNATION:**	ITE equipment
TEMPERATURE:	26°C	**HUMIDITY:**	50%
ATM PRESSURE:	102.1Pa	**GROUNDING:**	None
TESTED BY:	Cloud Feng	**DATE OF TEST:**	2008, July 11

SETUP METHOD:	ANSI C63.4-2003
TEST PROCEDURE:	a. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface. b. Connect EUT to the power mains through a line impedance stabilization network(LISN) c. The LISN provides 50ohm coupling impedance for the measuring instrument d. Both sides of AC line were checked for maximum conduced interference. e. The frequency range from 150KHz to 30MHz was searched.. f. Set the test-receiver system to Peak Detect Function and Specified bandwidth. g. If the emission level of the EUT in peak mode was 20 dB lower than the specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be tested using the quasi-peak method in about six maximal points and the results will be reported.
TESTED RANGE:	150kHz to 30MHz
TEST VOLTAGE:	120VAC/60Hz
RESULTS:	**For FTA600:** The EUT meets the requirements of test reference for Conducted Emissions on line N by 29.38 dB of Quasi-Peak detector and by 29.80 dB of Average detector. The test results relate only to the equipment under test provided by client.
CHANGES OR MODIFICATIONS:	There were no modifications installed by ECMG Worldwide Certification Solution, Inc (China) test personnel.
M. UNCERTAINTY:	Freq. $\pm$ 2x10^{-7} x Center Freq., Amp $\pm$ 2.6 dB

For FTA600:



Line L Conducted Emission Graph



Line N Conducted Emission Graph

Line L (Hot Lead)								
Signal	**Frequency (MHz)**	**Corrected QP Level (dBuV)**	**Limits QP (dBuV)**	**Margin QP (dB)**	**Frequency (MHz)**	**Corrected AVE Level (dBuV)**	**Limits AVE (dBuV)**	**Margin AVE (dB)**
1	0.161	31.81	65.45	-33.64	0.161	23.80	55.45	-31.65
2	0.265	29.14	61.27	-32.13	0.265	17.80	51.27	-33.47
3	4.454	24.42	56.00	-31.58	4.454	10.10	46.00	-35.90
Line N (Neutral Lead)								
Signal	**Frequency (MHz)**	**Corrected QP Level (dBuV)**	**Limits QP (dBuV)**	**Margin QP (dB)**	**Frequency (MHz)**	**Corrected AVE Level (dBuV)**	**Limits AVE (dBuV)**	**Margin AVE (dB)**
1	0.158	35.01	65.55	-30.54	0.158	25.40	55.55	-30.15
2	0.262	31.13	61.38	-30.25	0.262	15.80	51.38	-35.58
3	4.338	26.62	56.00	-29.38	4.338	16.20	46.00	-29.80
Note: All readings are using a bandwidth of 9 kHz, with a 30 ms sweep time. A video filter was not used.								

Test Equipment	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due Date
EMI Receiver	HP	85462A	3650A00363	11/29/07	11/28/08
LISN	R&S	ESH3-Z5	844249/018	12/04/07	12/03/08
Note: All testing were performed using internationally recognized standards. All test instruments were calibrated.					

SIGNED BY: Cloud Feng _____ **REVIEWED BY:** Hang Zhao _____

ENGINEER **SENIOR ENGINEER**

ATTACHMENT 2 - RADIATED EMISSION TEST RESULTS

CLIENT:	Miaxis Biometrics Co., Ltd.	**TEST REFERENCE:**	FCC Part 15, Class B
MODEL TESTED:	FTA600 / FTA601 / FTA602	**PRODUCT:**	Fingerprint Time Attendance
MODEL NUMBERS:	FTA600 / FTA601 / FTA602		
SERIAL NO.:	Engineering Sample	**EUT DESIGNATION:**	ITE equipment
TEMPERATURE:	26°C	**HUMIDITY:**	50%
ATM PRESSURE:	102.1Pa	**GROUNDING:**	None
TESTED BY:	Cloud Feng	**DATE OF TEST:**	2008, July 11
SETUP METHOD:	ANSI C63.4-2003		
TEST PROCEDURE:	a. The EUT was placed on a rotatable table with 0.8 meters above ground. b. The EUT was set 3 meters from the interference-receiving antenna, which was mounted on the top of a variable height antenna tower. c. For each suspected emission the EUT was arranged to its worst case and turn table (from 0 degree to 360 degree) to find the maximum reading. d. If the emission level of the EUT in peak mode was 20 dB lower than the specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be tested using the quasi-peak method in about six maximal points and the results will be reported. Explanation of the Correction Factor are given as follows: FS= RA + AF + CF - AG Where: FS = Field Strength RA = Receiver Amplitude AF = Antenna Factor CF = Cable Attenuation Factor AG = Amplifier Gain		
TESTED RANGE:	30MHz to 2000MHz		

Continue on to next page...

TEST VOLTAGE:	120VAC / 60Hz
RESULTS:	**For FTA600:** The EUT meets the requirements of test reference for Radiated Emissions on Horizontal polarization by 1.72 dB at 313.72 MHz. **For FTA601:** The EUT meets the requirements of test reference for Radiated Emissions on Horizontal polarization by 2.85 dB at 333.13 MHz. **For FTA602:** The EUT meets the requirements of test reference for Radiated Emissions on Horizontal polarization by 2.53 dB at 316.14 MHz. The test results relate only to the equipment under test provided by client.
CHANGES OR MODIFICATIONS:	There were no modifications installed by ECMG Worldwide Certification Solution, Inc (China) test personnel.
M. UNCERTAINTY:	Freq. $\pm$ 2x10^{-7} x Center Freq., Amp $\pm$ 2.6 dB

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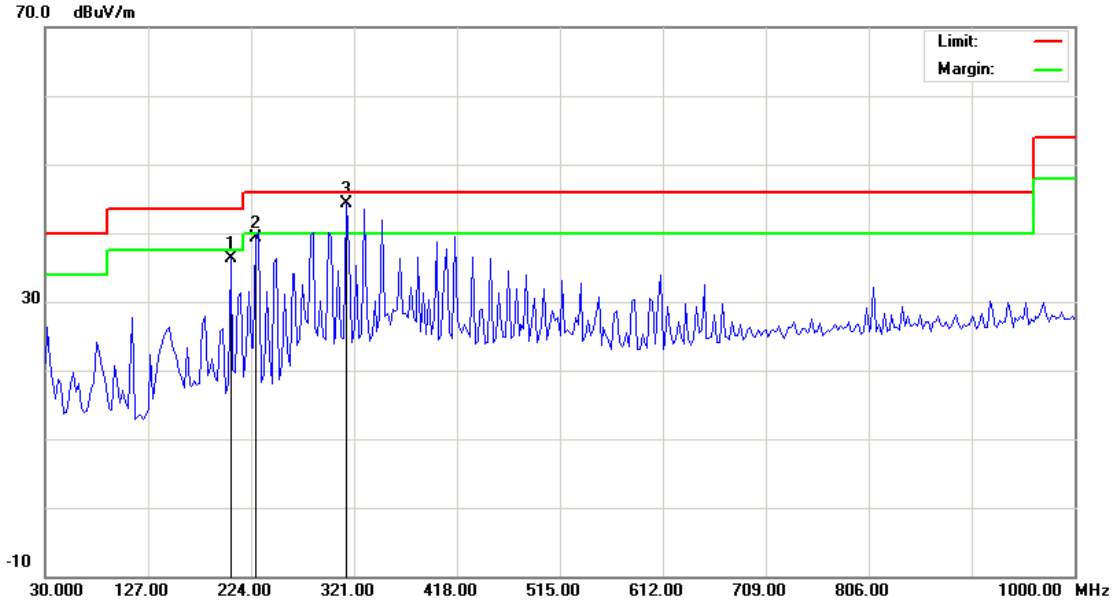
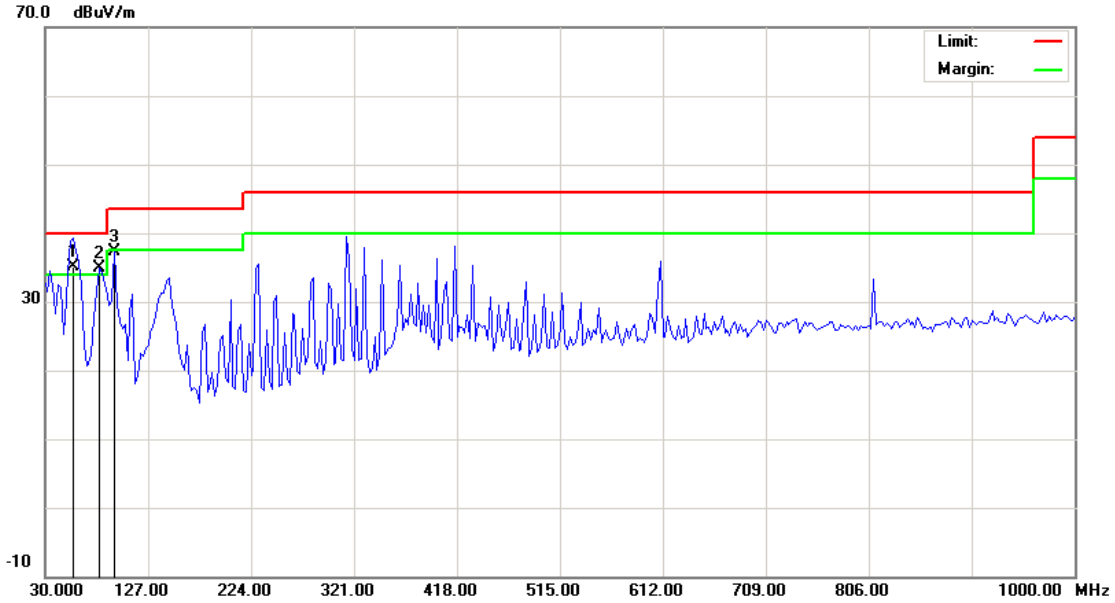
For FTA600:

30MHz-1GHz



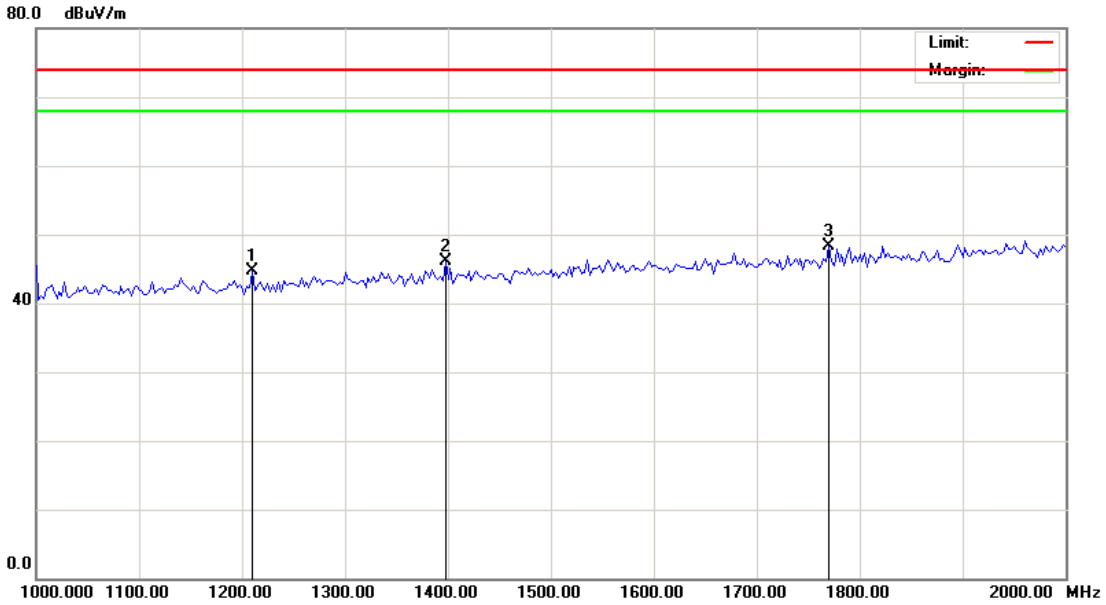
Field strength Emission Plot (Peak, Max Hold Mode Horizontal)



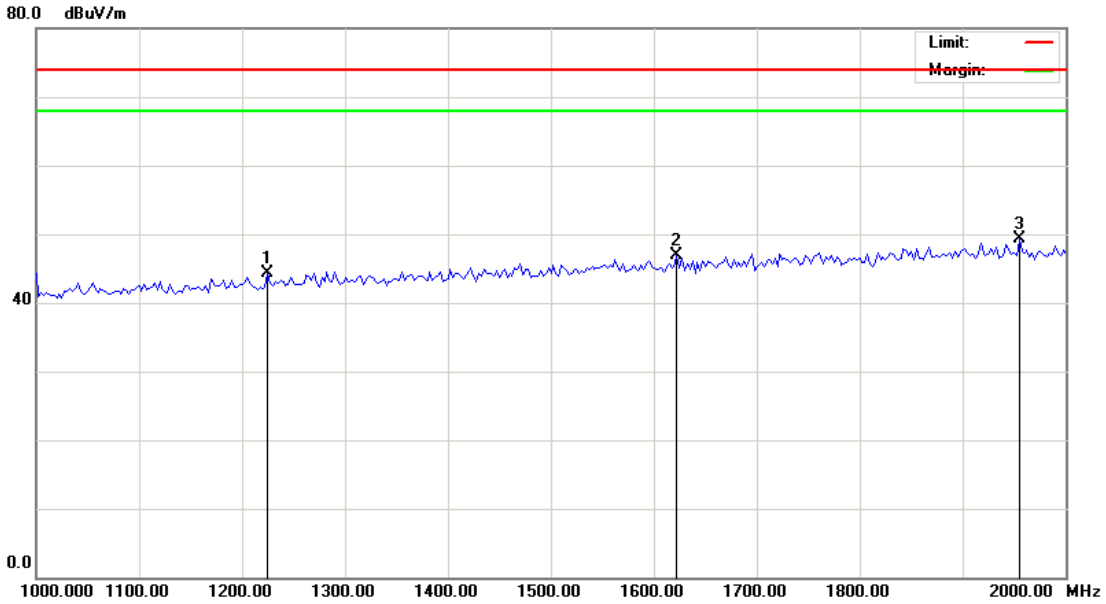
Field strength Emission Plot (Peak, Max Hold Mode Vertical)

30MHz-1GHz							
Horizontal							
Signal	**Frequency (MHz)**	**Factor (dB)**	**Corrected QP Level dB(uV/m)**	**3 Meter Limits dB(uV/m)**	**Margin (dB)**	**Angle of Turner (degree)**	**Height of Tower (cm)**
1	204.61	13.69	36.29	43.50	-7.21	143	205
2	228.17	14.16	39.34	46.00	-6.66	167	141
3	313.72	15.80	44.28	46.00	-1.72	158	118
Vertical							
Signal	**Frequency (MHz)**	**Factor (dB)**	**Corrected QP Level dB(uV/m)**	**3 Meter Limits dB(uV/m)**	**Margin (dB)**	**Angle of Turner (degree)**	**Height of Tower (cm)**
1	54.32	8.86	35.08	40.00	-4.92	197	116
2	80.92	8.85	34.81	40.00	-5.19	164	157
3	95.47	9.28	37.38	43.50	-6.12	228	139
Set-up/Configuration: ANSI C63.4-2003							
Comments: None							
Note: All readings are quasi-peak unless stated otherwise, using a QPA bandwidth of 120kHz, with a 30 ms sweep time. A video filter was not used.							

1GHZ- 2GHZ



Horizontal Radiated Emission Plot (Peak, Max Hold Mode)



Vertical Radiated Emission Plot (Peak, Max Hold Mode)

1000MHz-2000MHz

Horizontal

Signal	Frequency (MHz)	Factor (dB)	Corrected PK Level (dBuV/m)	3 Meter PK Limits (dB uV/m)	Margin (dB)	Corrected AV Level (dBuV/m)	3 Meter AV Limits (dBuV/m)	Margin (dB)
1	1210.4	24.32	44.70	74.00	-29.30	26.72	54.00	-27.28
2	1397.5	25.50	46.11	74.00	-27.89	25.44	54.00	-28.56
3	1770.6	27.85	48.21	74.00	-25.79	22.97	54.00	-31.03

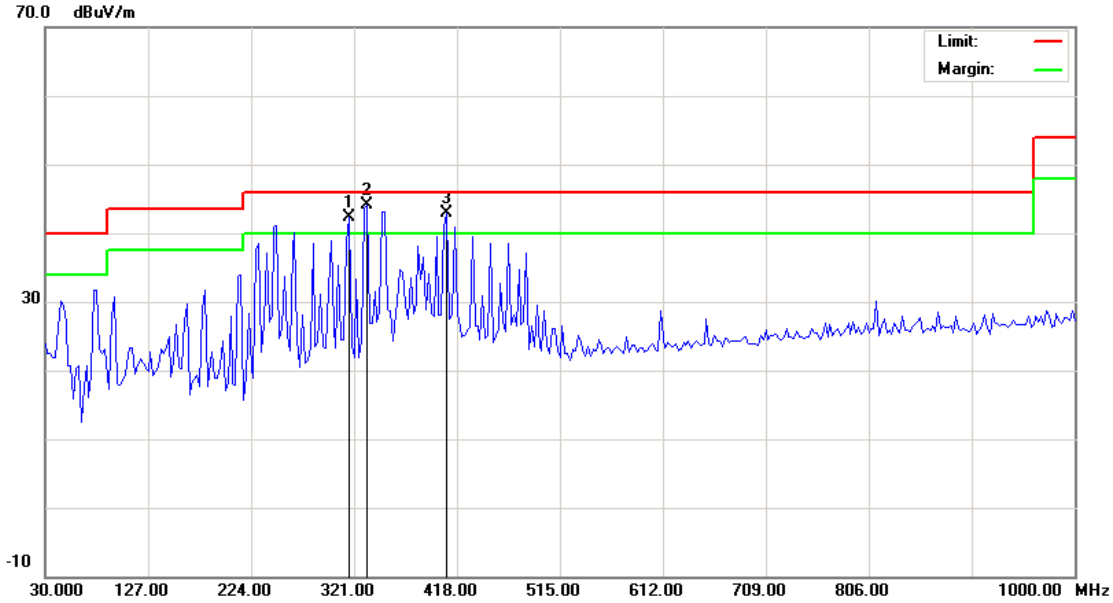
Vertical

Signal	Frequency (MHz)	Factor (dB)	Corrected PK Level (dBuV/m)	3 Meter PK Limits (dB uV/m)	Margin (dB)	Corrected AV Level (dBuV/m)	3 Meter AV Limits (dBuV/m)	Margin (dB)
1	1225.2	24.42	44.35	74.00	-29.65	25.48	54.00	-28.52
2	1622.5	26.92	46.84	74.00	-27.16	21.37	54.00	-32.63
3	1955.1	29.02	49.23	74.00	-24.77	24.19	54.00	-29.81

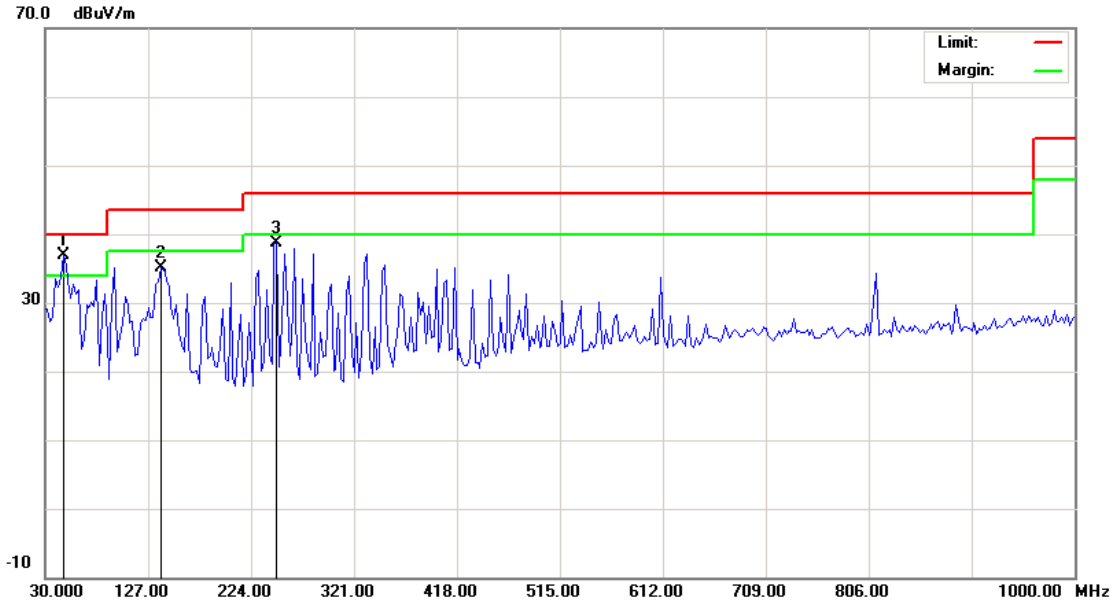
Note: All readings are peak and average unless stated otherwise, using a bandwidth of 1000kHz, with a 30 ms sweep time. A video filter was not used.

For FTA601:

30MHz-1GHz



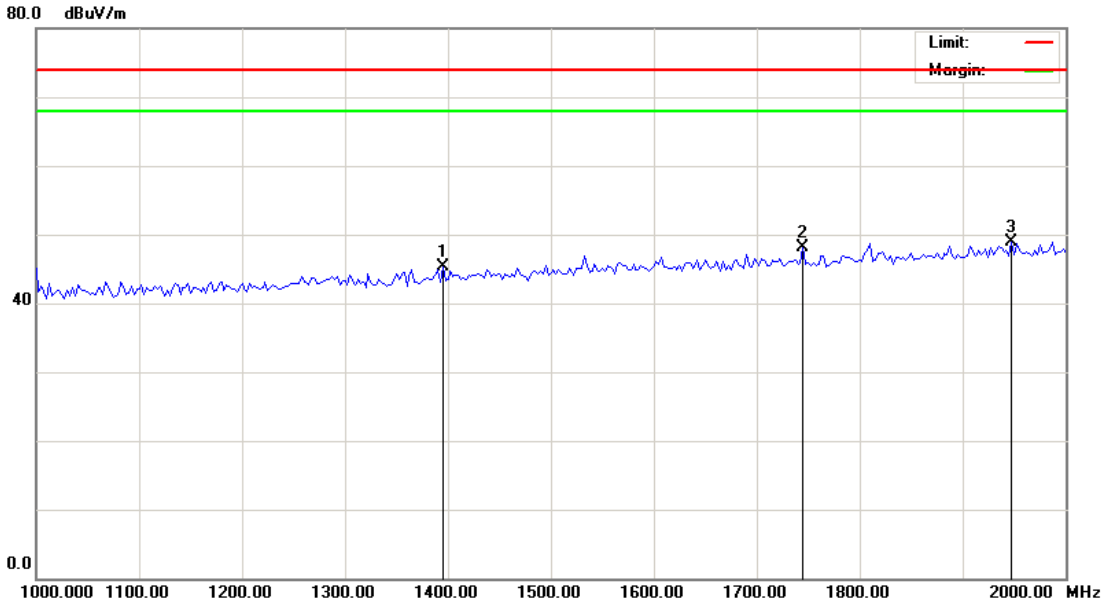
Field strength Emission Plot (Peak, Max Hold Mode Horizontal)



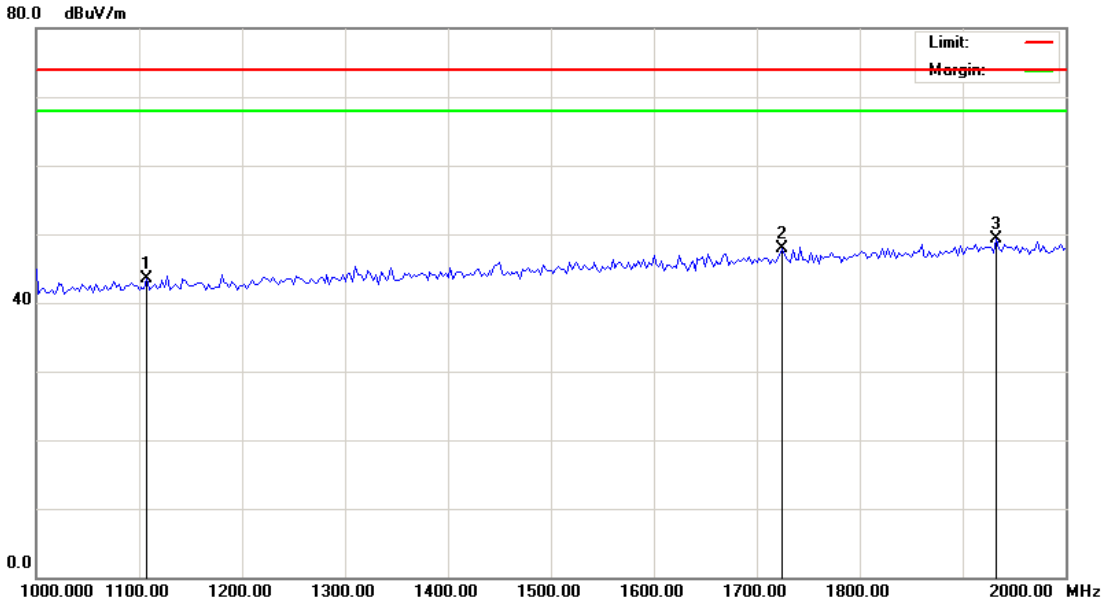
Field strength Emission Plot (Peak, Max Hold Mode Vertical)

30MHz-1GHz							
Horizontal							
Signal	**Frequency (MHz)**	**Factor (dB)**	**Corrected QP Level dB(uV/m)**	**3 Meter Limits dB(uV/m)**	**Margin (dB)**	**Angle of Turner (degree)**	**Height of Tower (cm)**
1	316.15	15.85	42.36	46.00	-3.64	198	157
2	333.13	16.23	43.15	46.00	-2.85	205	226
3	408.30	17.90	42.95	46.00	-3.05	184	172
Vertical							
Signal	**Frequency (MHz)**	**Factor (dB)**	**Corrected QP Level dB(uV/m)**	**3 Meter Limits dB(uV/m)**	**Margin (dB)**	**Angle of Turner (degree)**	**Height of Tower (cm)**
1	46.98	10.47	36.94	40.00	-3.06	224	103
2	139.13	11.52	35.05	43.50	-8.45	253	124
3	248.25	14.56	38.68	46.00	-7.32	231	162
Set-up/Configuration: ANSI C63.4-2003							
Comments: None							
Note: All readings are quasi-peak unless stated otherwise, using a QPA bandwidth of 120kHz, with a 30 ms sweep time. A video filter was not used.							

1GHZ- 2GHZ



Horizontal Radiated Emission Plot (Peak, Max Hold Mode)

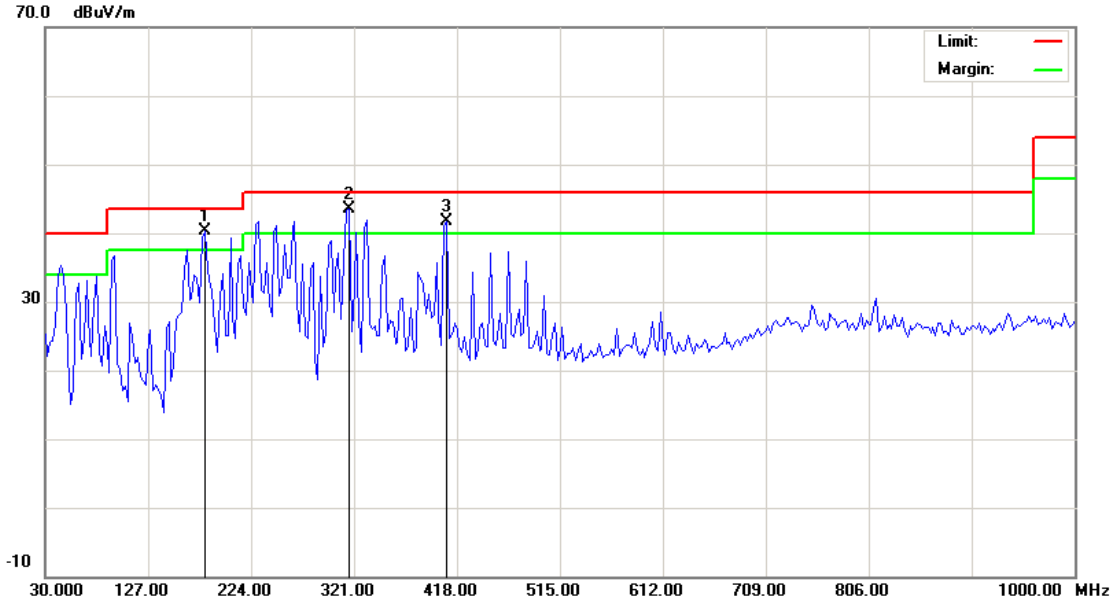


Vertical Radiated Emission Plot (Peak, Max Hold Mode)

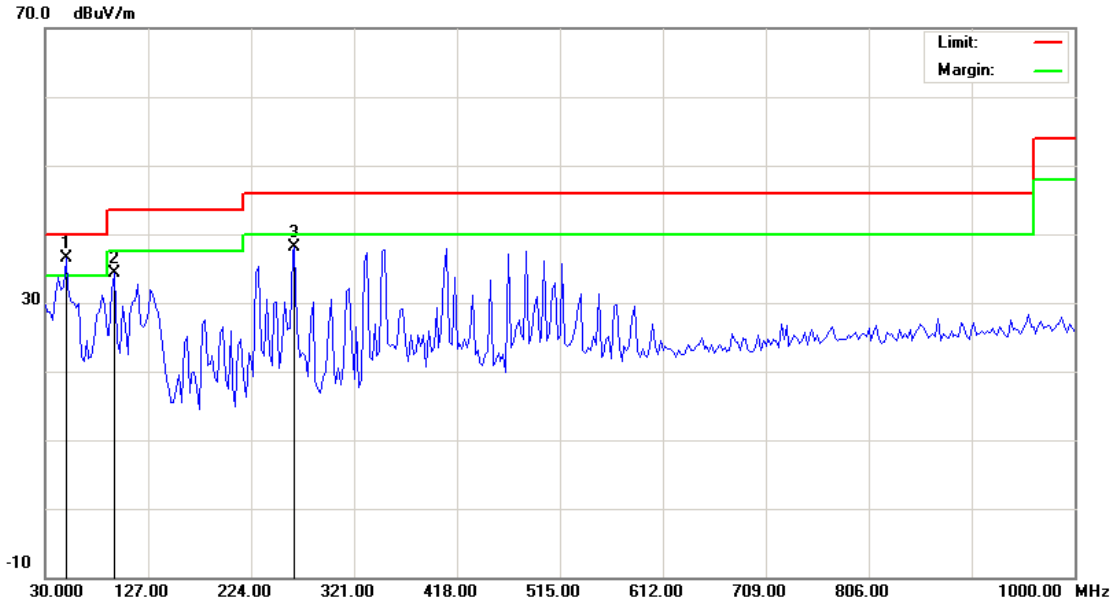
1000MHz-2000MHz								
Horizontal								
Signal	**Frequency (MHz)**	**Factor (dB)**	**Corrected PK Level (dBuV/m)**	**3 Meter PK Limits (dB uV/m)**	**Margin (dB)**	**Corrected AV Level (dBuV/m)**	**3 Meter AV Limits (dBuV/m)**	**Margin (dB)**
1	1395.2	25.49	45.36	74.00	-28.64	22.97	54.00	-31.03
2	1745.4	27.69	48.02	74.00	-25.98	24.74	54.00	-29.26
3	1947.5	28.97	48.93	74.00	-25.07	25.78	54.00	-28.22
Vertical								
Signal	**Frequency (MHz)**	**Factor (dB)**	**Corrected PK Level (dBuV/m)**	**3 Meter PK Limits (dB uV/m)**	**Margin (dB)**	**Corrected AV Level (dBuV/m)**	**3 Meter AV Limits (dBuV/m)**	**Margin (dB)**
1	1107.5	23.68	43.51	74.00	-30.49	23.41	54.00	-30.59
2	1725.3	27.57	47.95	74.00	-26.05	22.68	54.00	-31.32
3	1932.5	28.87	49.30	74.00	-24.70	25.47	54.00	-28.53
Note: All readings are peak and average unless stated otherwise, using a bandwidth of 1000kHz, with a 30 ms sweep time. A video filter was not used.								

For FTA602:

30MHz-1GHz



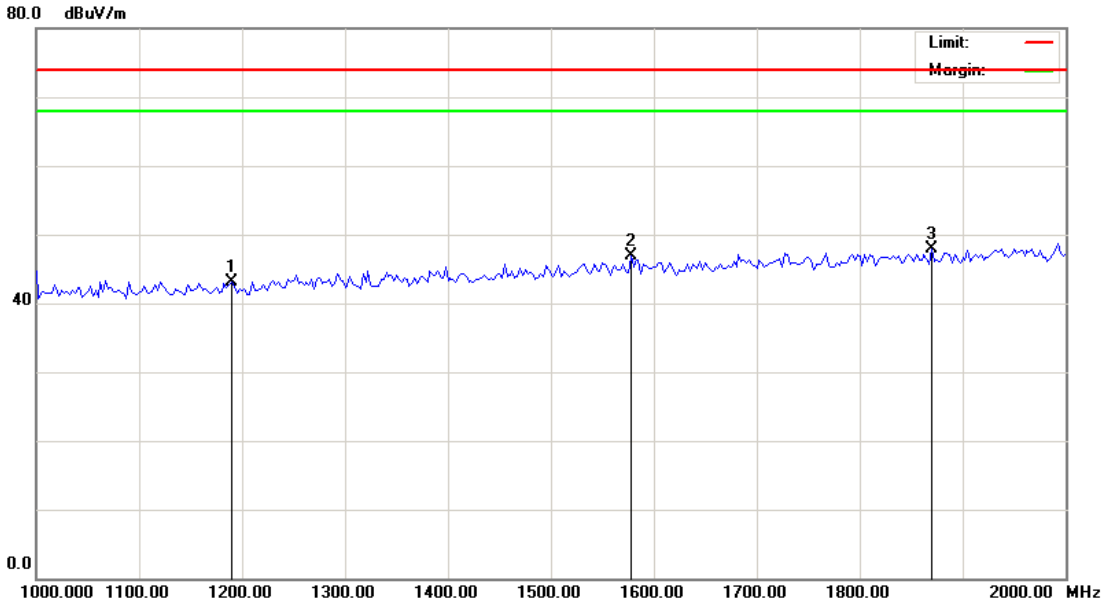
Field strength Emission Plot (Peak, Max Hold Mode Horizontal)



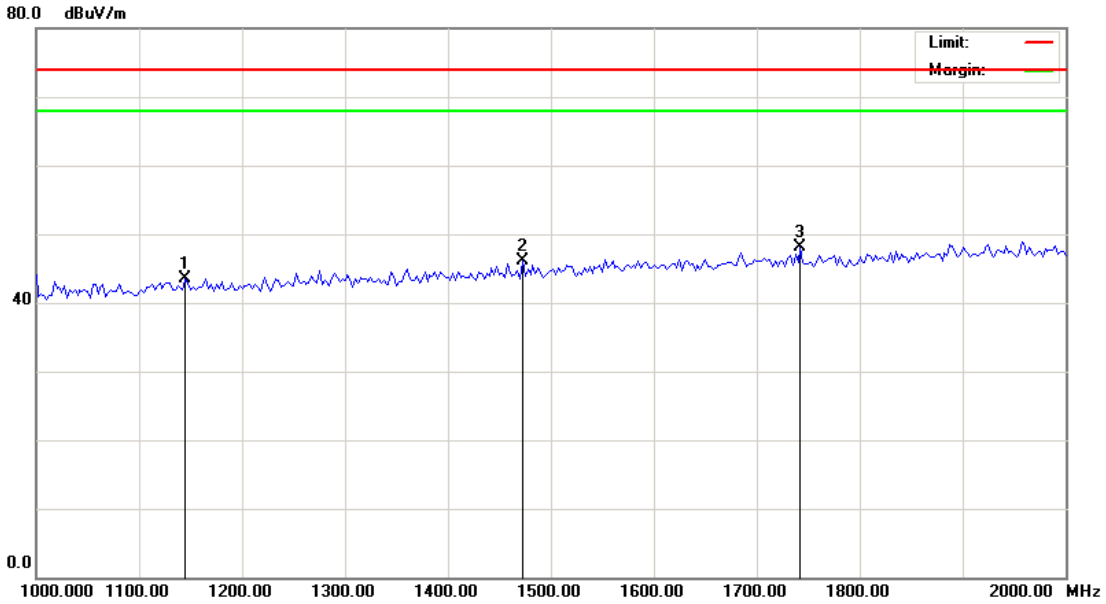
Field strength Emission Plot (Peak, Max Hold Mode Vertical)

30MHz-1GHz							
Horizontal							
Signal	**Frequency (MHz)**	**Factor (dB)**	**Corrected QP Level dB(uV/m)**	**3 Meter Limits dB(uV/m)**	**Margin (dB)**	**Angle of Turner (degree)**	**Height of Tower (cm)**
1	180.35	12.83	40.31	43.50	-3.19	115	154
2	316.14	15.85	43.47	46.00	-2.53	240	267
3	408.30	17.90	41.69	46.00	-4.31	167	120
Vertical							
Signal	**Frequency (MHz)**	**Factor (dB)**	**Corrected QP Level dB(uV/m)**	**3 Meter Limits dB(uV/m)**	**Margin (dB)**	**Angle of Turner (degree)**	**Height of Tower (cm)**
1	49.39	9.21	36.58	40.00	-3.42	114	148
2	95.47	9.28	34.25	43.50	-9.25	238	203
3	265.23	14.87	38.03	46.00	-7.97	295	124
Set-up/Configuration: ANSI C63.4-2003							
Comments: None							
Note: All readings are quasi-peak unless stated otherwise, using a QPA bandwidth of 120kHz, with a 30 ms sweep time. A video filter was not used.							

1GHZ- 2GHZ



Horizontal Radiated Emission Plot (Peak, Max Hold Mode)



Vertical Radiated Emission Plot (Peak, Max Hold Mode)

1000MHz-2000MHz

Horizontal

Signal	Frequency (MHz)	Factor (dB)	Corrected PK Level (dBuV/m)	3 Meter PK Limits (dB uV/m)	Margin (dB)	Corrected AV Level (dBuV/m)	3 Meter AV Limits (dBuV/m)	Margin (dB)
1	1190.0	24.20	43.08	74.00	-30.92	24.26	54.00	-29.74
2	1577.5	26.64	46.83	74.00	-27.17	24.59	54.00	-29.41
3	1870.0	28.48	47.98	74.00	-26.02	25.34	54.00	-28.66

Vertical

Signal	Frequency (MHz)	Factor (dB)	Corrected PK Level (dBuV/m)	3 Meter PK Limits (dB uV/m)	Margin (dB)	Corrected AV Level (dBuV/m)	3 Meter AV Limits (dBuV/m)	Margin (dB)
1	1145.0	23.91	43.46	74.00	-30.54	24.74	54.00	-29.26
2	1472.5	25.98	46.06	74.00	-27.94	25.64	54.00	-28.36
3	1742.5	27.68	48.14	74.00	-25.86	23.86	54.00	-30.14

Note: All readings are peak and average unless stated otherwise, using a bandwidth of 1000kHz, with a 30 ms sweep time. A video filter was not used.

Test Equipment	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due Date
EMI Receiver	HP	85462A	3650A00363	11/29/07	11/28/08
Broadband Antenna	Sunol	JB5	A110503	11/29/07	11/28/08

Note: All testing were performed using internationally recognized standards. All test instruments were calibrated.

SIGNED BY: Cloud Feng _____ **REVIEWED BY:** Hanyzhao _____

ENGINEER **SENIOR ENGINNER**