

FCC Test Report

Equipment : Wireless Base Station Gen1.0
Brand Name : MobileHelp
Model No. : WBS GEN1.0
Marketing Name : WBS GEN1.0
FCC ID : PXTWBS-01
Standard : 47 CFR FCC Part 15.231
Operating Band : 433.92 MHz
Operation : Manually operated within 5 sec &
Periodic transmissions
(all transmit time 2 sec)
Equipment Class : DSC
Applicant : Integrity Tracking LLC, dba MobileHelp
3701 FAU Blvd., Suite 300, Boca Raton
FL 33431, USA
Manufacturer : Daviscomms (Malaysia) Sdn Bhd
Plot 18, Lorong Perusahaan Maju 1,
Kawasan, Perusahaan Perai 4,
13600 Perai, Malaysia

The product sample received on Jan. 15, 2013 and completely tested on Feb. 27, 2013. We, SPORTON, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2009 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Reviewed by:

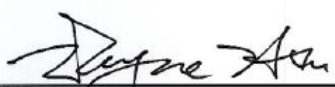

Wayne Hsu / Assistant Manager

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Summary of Test Result

Conformance Test Specifications					
Report Clause	Ref. Std. Clause	Description	Measured	Limit	Result
1.1.2	15.203	Antenna Requirement	Antenna connector mechanism complied	FCC 15.203	Complied
3.1	15.207	AC Power-line Conducted Emissions	[dBuV]: 0.151 MHz 36.42 (Margin 19.52dB) - AV 50.81 (Margin 15.13dB) - QP	FCC 15.207	Complied
3.2	15.231(c)	Emission Bandwidth	54.80 kHz	Fc(70~900MHz): BW ≤ fc x 0.25%	Complied
3.3	15.231(b)	Fundamental Emissions	[dBuV/m at 3m]: 76.76 (Margin 4.07dB) average	[dBuV/m at 3m]: average: 80.83	Complied
3.4	15.231(b)	Transmitter Radiated Unwanted Emissions	[dBuV/m at 3m]: 40.67MHz 27.10 (Margin 12.90dB) - PK	FCC 15.231 (b)/(e) or FCC 15.209, whichever limit permits higher field strength.	Complied
3.5	15.231(a)	Operation Restriction	Operated time and silent time are less than limits.	Manually operated within 5 sec & Periodic transmissions (all transmit time 2 sec)	Complied



SPORTON INTERNATIONAL INC.
TEL : 886-3-327-3456
FAX : 886-3-327-0973

1 General Description

1.1 Information

1.1.1 RF General Information

RF General Information					
Frequency Range (MHz)	Modulation	Ch. Frequency (MHz)	Channel Number	Fundamental Field Strength (dBuV/m)	Co-location
433.92	ASK	433.92	1	76.76	N/A
Note 1: Field strength performed average level at 3m. Note 2: Co-location, Co-location is generally defined as simultaneously transmitting (co-transmitting) antennas within 20 cm of each other.					

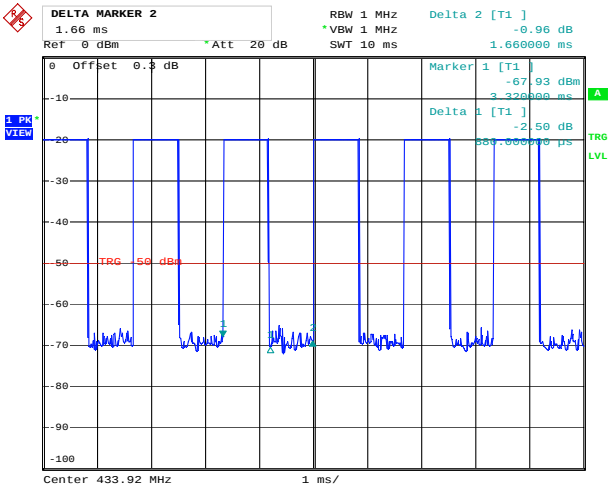
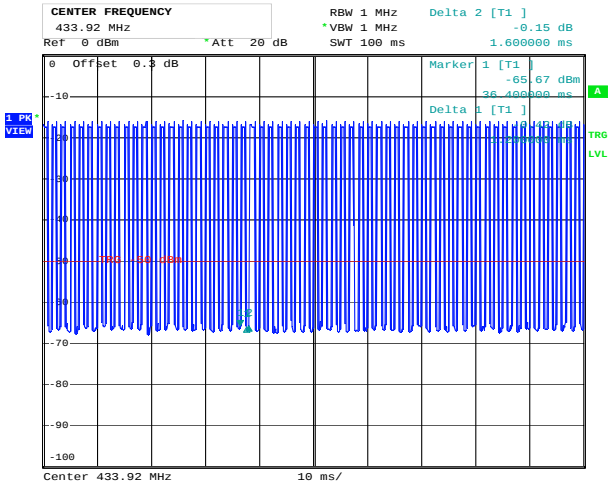
1.1.2 Antenna Information

Antenna Category	
☒	Integral antenna (antenna permanently attached)
☐	External antenna (dedicated antennas) ; Unique antenna connector

1.1.3 Type of EUT

Identify EUT	
EUT Serial Number	N/A
Presentation of Equipment	☐ Production ; ☒ Pre-Production ; ☐ Prototype
Type of EUT	
☒	Stand-alone
☐	Combined (EUT where the radio part is fully integrated within another device) Combined Equipment - Brand Name / Model No.: ...
☐	Plug-in radio (EUT intended for a variety of host systems) Host System - Brand Name / Model No.: ...
☐	Other:

1.1.4 Test Signal Duty Cycle

Operated Mode for Worst Duty Cycle (Emergency Button)	
☒ Operated normally mode for worst duty cycle for emergency button acknowledgement	
Test Signal Duty Cycle (x)	Duty Cycle Correction Factor [dB] – (20 log x)
☒ 52.8%	-5.55
Pulse Width = 880us Total = Pulse = 60 in 100ms Duty Factor = $20 \log [(60 \times 0.88) / 100\text{ms}] = -5.55$	
	
	

If worst duty < 100%, average emission = peak emission + 20 log (x)

Emergency button mode duty is worse than periodically beacon mode duty.

Operated Mode for Worst Duty Cycle (Periodically Beacon)
☒ Operated normally mode for worst duty cycle for periodically beacon

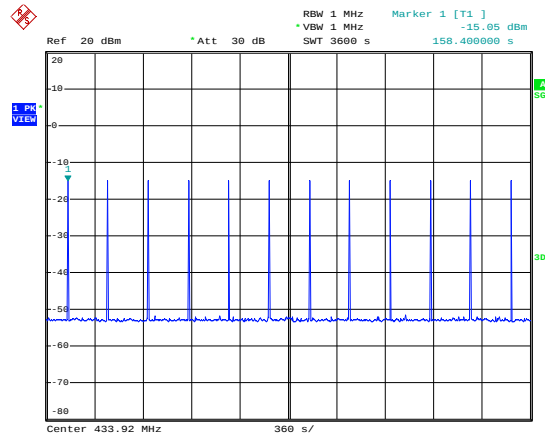
Test Signal Duty Cycle (x)
Duty Cycle Correction Factor [dB] – (20 log x)
☒ 48.25%

-6.33

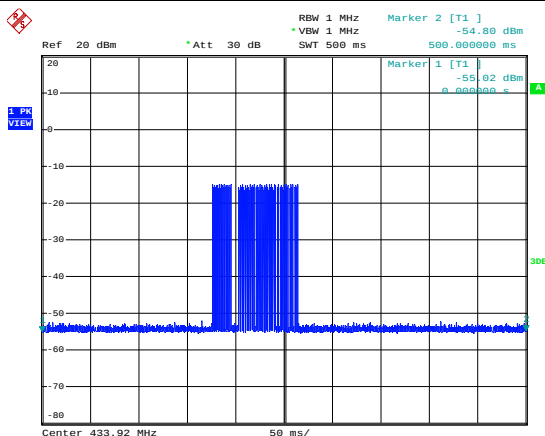
12 bursts in 1 hours

Each burst = 48.25ms (total sample = 8001bins [500ms], total on time = 772 bins [772/8001x500ms])

Duty Factor = 20 log [48.25/100ms] = -6.33



Date: 27.FEB.2013 13:46:37



Date: 27.FEB.2013 13:52:51

VISA session	Marker 1 (sec)	Set Points (501)	Space Time of Point	No. of Pulse
GPB0-21	0	8001	0.000063	772
FSP & FSL	Marker 2 (sec)	Set Sweep Time	Mark 1 Point	Close TX Time
	0.5	0.5	1	0.04825
Total Trace of Points	Threshold (dBm)	Mark 2 Point	Trace Data	
8001	-50	8001	-55.0211	

If worst duty < 100%, average emission = peak emission + 20 log (x)

1.1.5 EUT Operational Condition

Supply Voltage	☒ AC mains	☒ DC	
Type of DC Source	☐ Internal DC supply	☒ External DC adapter	☒ Battery

1.2 Product Details

The WBS Gen 1.0 has two transmission mode.

First, The WBS Gen 1.0 will periodically send 433MHz beacon.

Second, The WBS Gen1.0. If you need help, WBS press the EMERGENCY button for acknowledgement.

Please refer to the manufacturer's specifications or user's manual.

1.3 Accessories

AC Adapter	Brand Name	Gee High	Model Name	GH-053000W
	Power Rating	Input : 100-240Vac ~ 50/60Hz, 0.8A Max ; Output: 5V  3000mA		
	Power Cord	1.6 meter, non-shielded cable without ferrite core		
Li-ion Battery	Brand Name	B&K	Model Name	804169N
	Power Rating	3.7Vdc, 2500mAh	Type	Li-ion, Polymer

Note: Regarding to more detail and other information, please refer to user manual.

1.4 Support Equipment

The EUT was tested alone.

1.5 Testing Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ 47 CFR FCC Part 15
- ♦ ANSI C63.10-2009

1.6 Testing Location Information

Testing Location				
☒	HWA YA	ADD : No. 52, Hwa Ya 1 st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.		
		TEL : 886-3-327-3456 FAX : 886-3-327-0973		
Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
RF Conducted	TH01-HY	Cain	20.4°C / 42%	Jan. 30, 2013~ Feb. 27, 2013
AC Conduction	CO01-HY	David	23.8°C / 50.9%	Feb. 01, 2013
Radiated Emission	03CH02-HY	Daniel	22.9°C / 52%	Jan. 29, 2013

1.7 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))

Measurement Uncertainty			
Test Item		Uncertainty	Limit
AC power-line conducted emissions		±2.26 dB	N/A
Emission bandwidth		±1.42 %	N/A
RF output power, conducted		±0.63 dB	N/A
Power density, conducted		±0.81 dB	N/A
Unwanted emissions, conducted	30 – 1000 MHz	±0.51 dB	N/A
	1 – 18 GHz	±0.67 dB	N/A
	18 – 40 GHz	±0.83 dB	N/A
	40 – 200 GHz	N/A	N/A
All emissions, radiated	30 – 1000 MHz	±2.56 dB	N/A
	1 – 18 GHz	±3.59 dB	N/A
	18 – 40 GHz	±3.82 dB	N/A
	40 – 200 GHz	N/A	N/A
Temperature		±0.8 °C	N/A
Humidity		±3 %	N/A
DC and low frequency voltages		±3 %	N/A
Time		±1.42 %	N/A
Duty Cycle		±1.42 %	N/A

2 Test Configuration of EUT

2.1 The Worst Case Modulation Configuration

Modulation Used for Conformance Testing	
Test Mode	Field Strength (dBuV/m at 3 m)
ASK-Transmit	76.76

2.2 Test Channel Frequencies Configuration

Test Channel Frequencies Configuration	
Test Mode	Test Channel Frequencies (MHz)
ASK-Transmit	433.92-(F1)

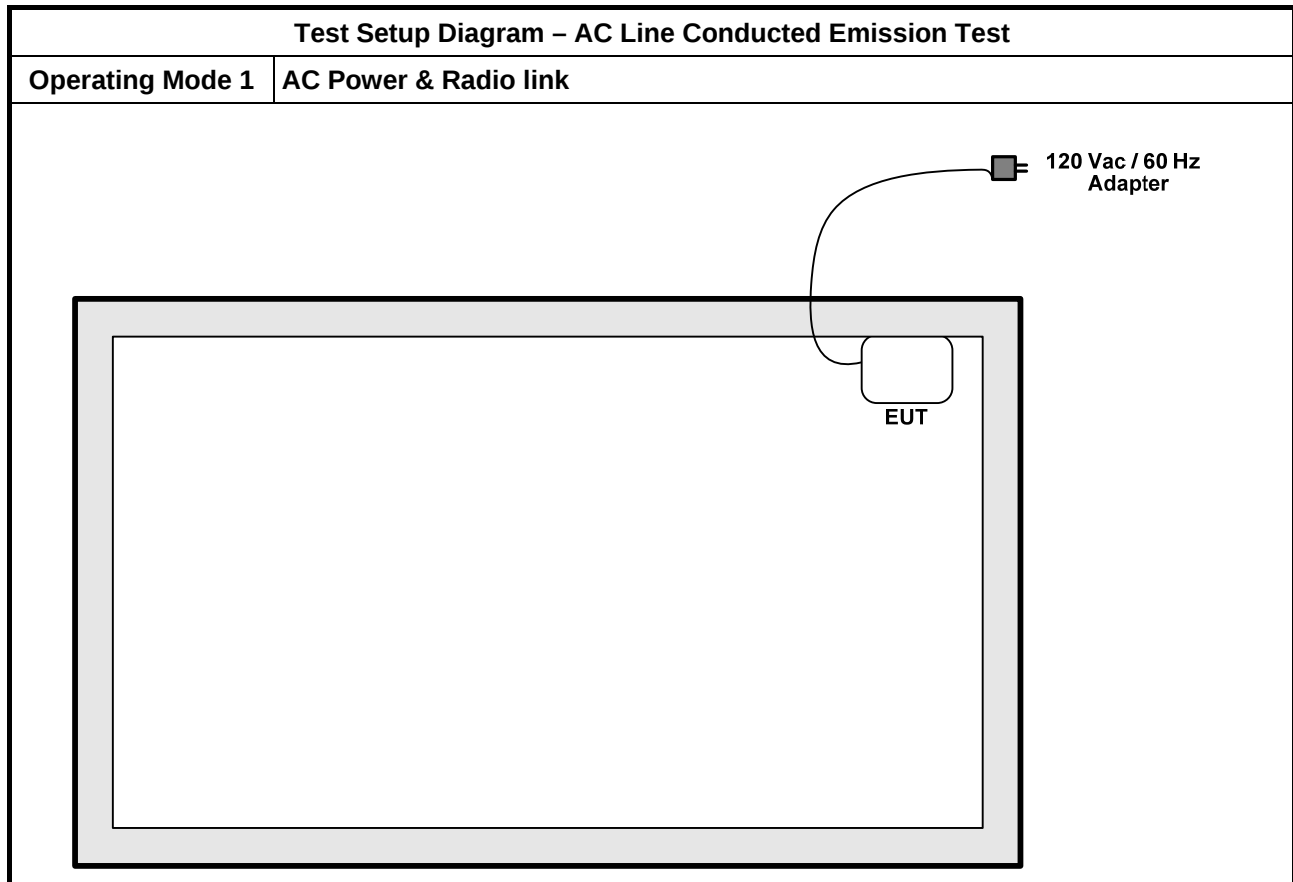
2.3 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	AC power-line conducted emissions
Condition	AC power-line conducted measurement for line and neutral (120Vac / 60Hz)
Operating Mode	Operating Mode Description
1	AC Power & Radio link

The Worst Case Mode for Following Conformance Tests			
Tests Item	Emission Bandwidth, Fundamental Emissions, Radiated Unwanted Emissions		
Test Condition	Radiated measurement		
User Position	☒ EUT will be placed in fixed position. The worst planes is X.		
	☐ EUT will be placed in mobile position and operating multiple positions. EUT shall be performed two orthogonal planes.		
	☐ EUT will be a hand-held or body-worn battery-powered devices and operating multiple positions. EUT shall be performed three orthogonal planes.		
Operating Mode < 1GHz	☒ 1. AC Power & Radio link		
Test Mode	ASK-Transmit		
Orthogonal Planes of EUT	X Plane	Y Plane	Z Plane
			

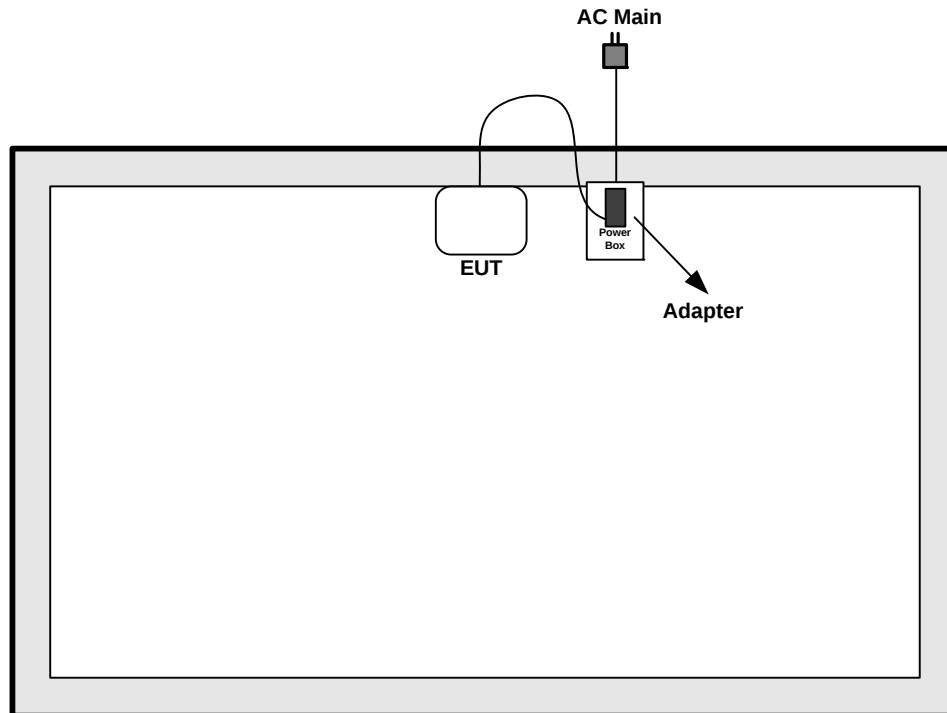
The Worst Case Mode for Following Conformance Tests	
Tests Item	Operation Restriction (silent time and operated time)
Test Condition	Radiated measurement
Test Mode	Operated normally mode for worst duty cycle condition.

2.4 Test Setup Diagram



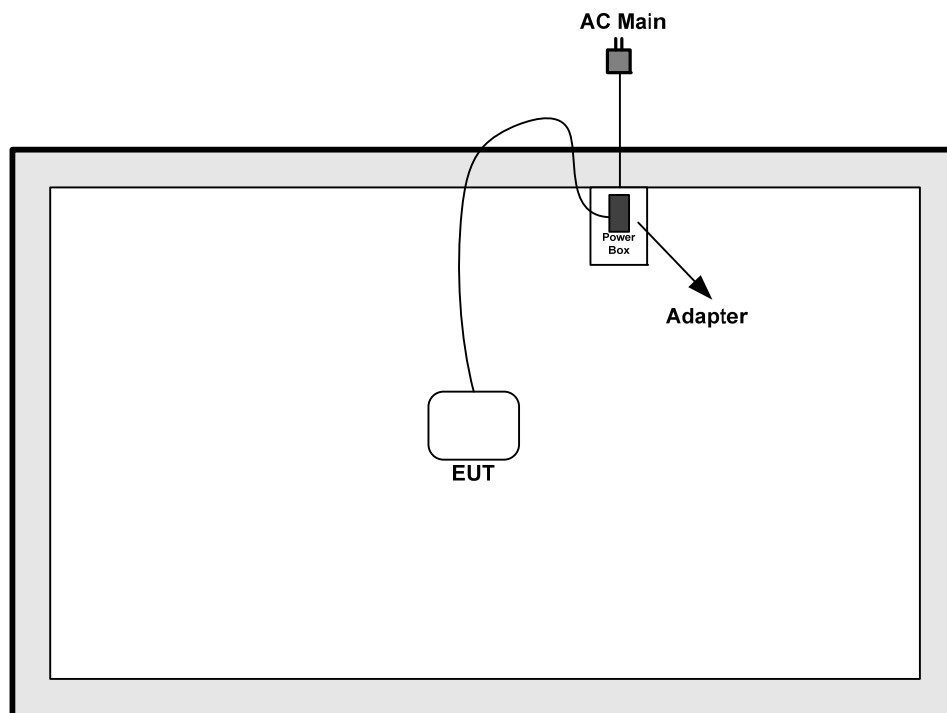
Test Setup Diagram - Radiated Test Below 1GHz

Operating Mode 1 AC Power & Radio link



Test Setup Diagram - Radiated Test Above 1GHz

Operating Mode 1 AC Power & Radio link



3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

AC Power-line Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50

Note 1: * Decreases with the logarithm of the frequency.

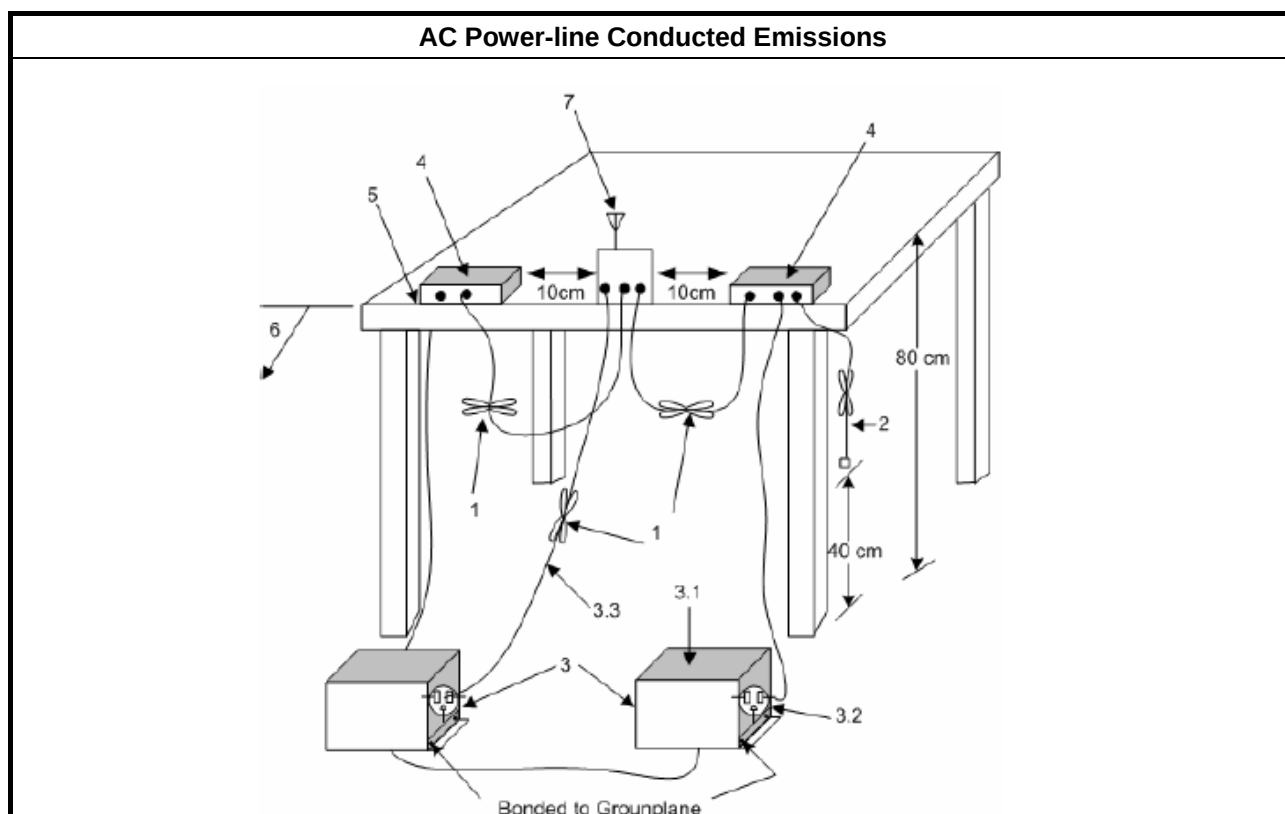
3.1.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

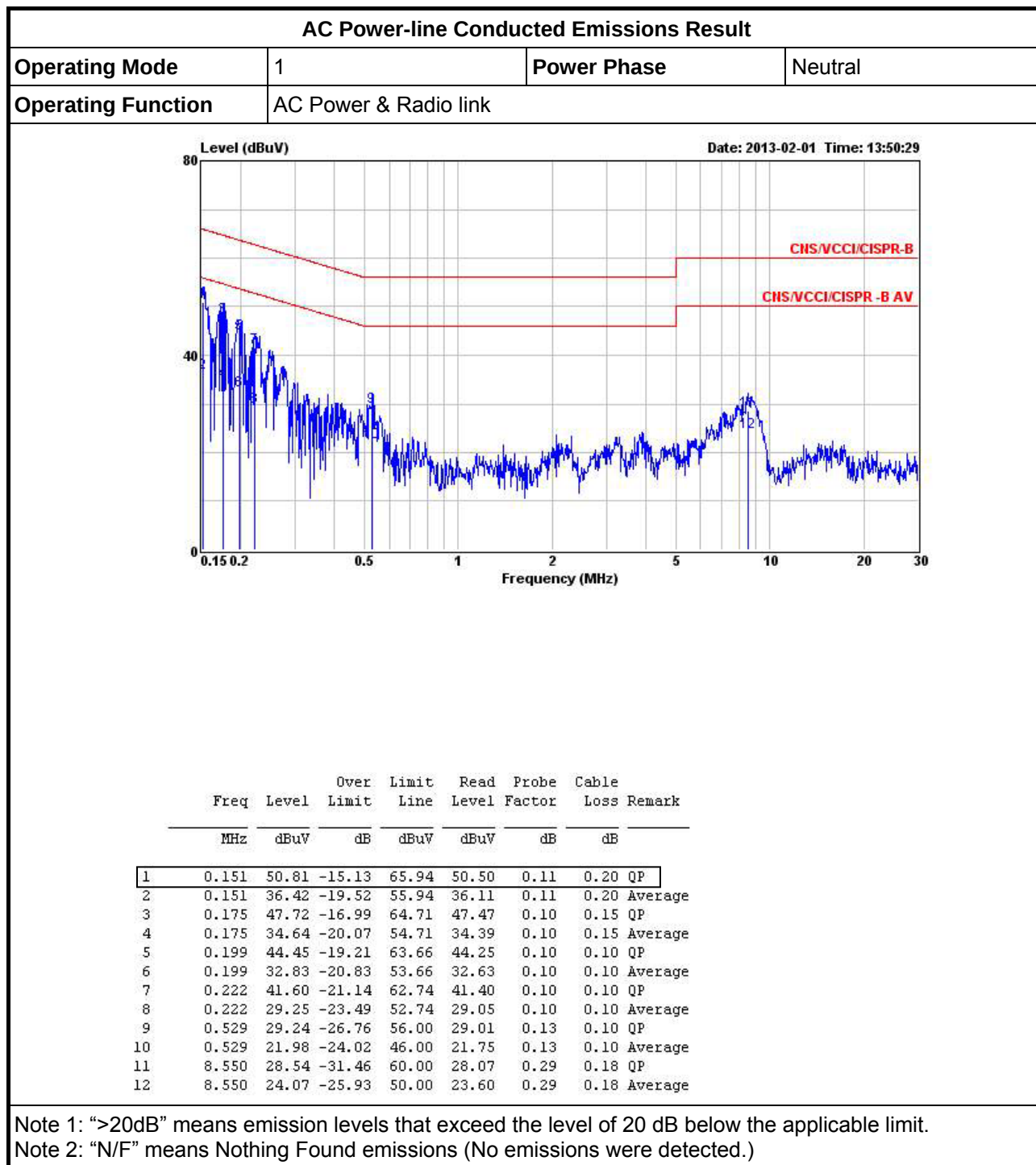
3.1.3 Test Procedures

Test Method
☒ Refer as ANSI C63.10-2009, clause 6.2 for AC power-line conducted emissions.

3.1.4 Test Setup

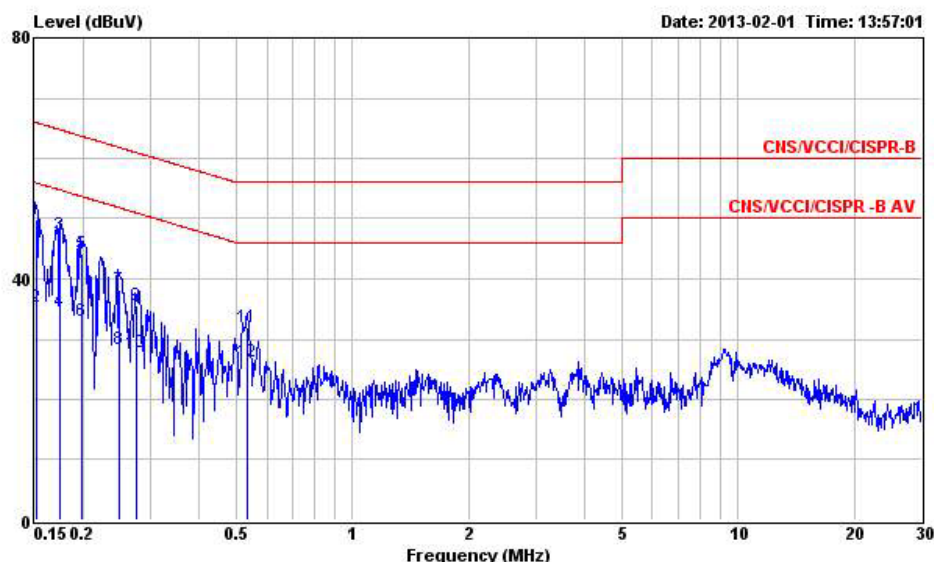


3.1.5 Test Result of AC Power-line Conducted Emissions



AC Power-line Conducted Emissions Result

Operating Mode	1	Power Phase	Line
Operating Function	AC Power & Radio link		



	Freq	Level	Over	Limit	Read	Probe	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.151	49.93	-16.01	65.94	49.60	0.13	0.20	QP
2	0.151	35.40	-20.54	55.94	35.07	0.13	0.20	Average
3	0.174	47.25	-17.52	64.77	46.96	0.14	0.15	QP
4	0.174	34.50	-20.27	54.77	34.21	0.14	0.15	Average
5	0.198	44.12	-19.57	63.69	43.88	0.14	0.10	QP
6	0.198	33.07	-20.62	53.69	32.83	0.14	0.10	Average
7	0.248	38.09	-23.73	61.82	37.85	0.14	0.10	QP
8	0.248	28.41	-23.41	51.82	28.17	0.14	0.10	Average
9	0.275	35.51	-25.47	60.98	35.27	0.14	0.10	QP
10	0.275	27.69	-23.29	50.98	27.45	0.14	0.10	Average
11	0.532	31.83	-24.17	56.00	31.57	0.16	0.10	QP
12	0.532	26.36	-19.64	46.00	26.10	0.16	0.10	Average

Note 1: ">20dB" means emission levels that exceed the level of 20 dB below the applicable limit.
 Note 2: "N/F" means Nothing Found emissions (No emissions were detected.)

3.2 Emission Bandwidth

3.2.1 Emission Bandwidth Limit

Emission Bandwidth Limit	
☒	Emission bandwidth falls completely within authorized band.
☒	$F_c(70\sim 900\text{MHz}): BW \leq f_c \times 0.25\%$
☐	$F_c(>900\text{MHz}): BW \leq f_c \times 0.5\%$

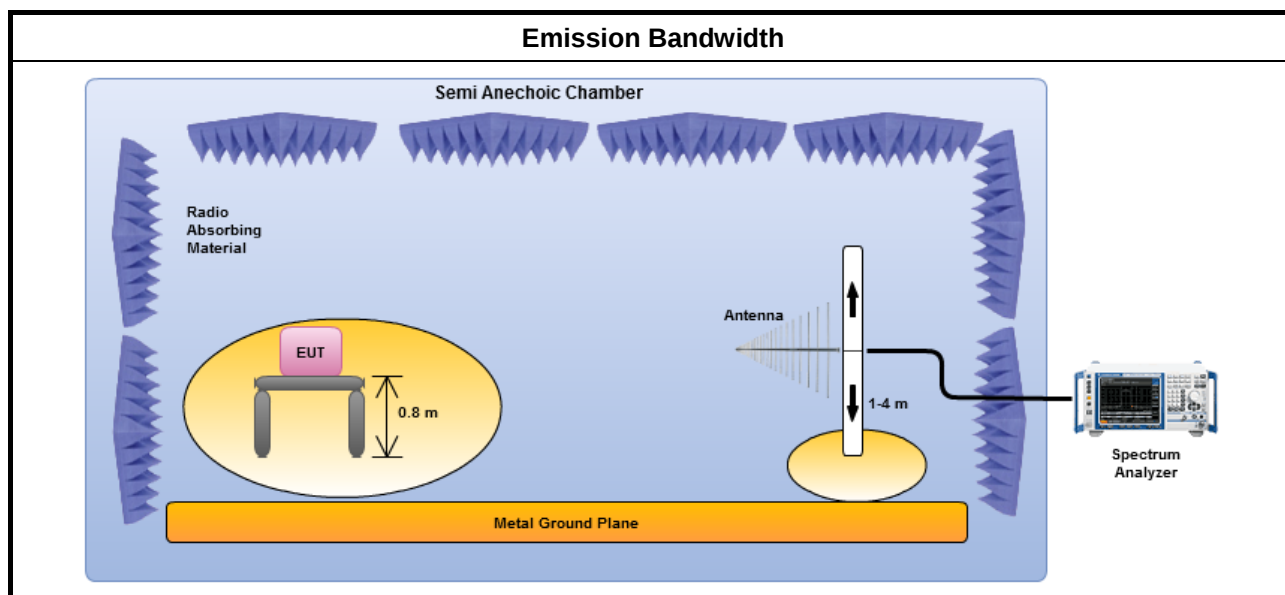
3.2.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.2.3 Test Procedures

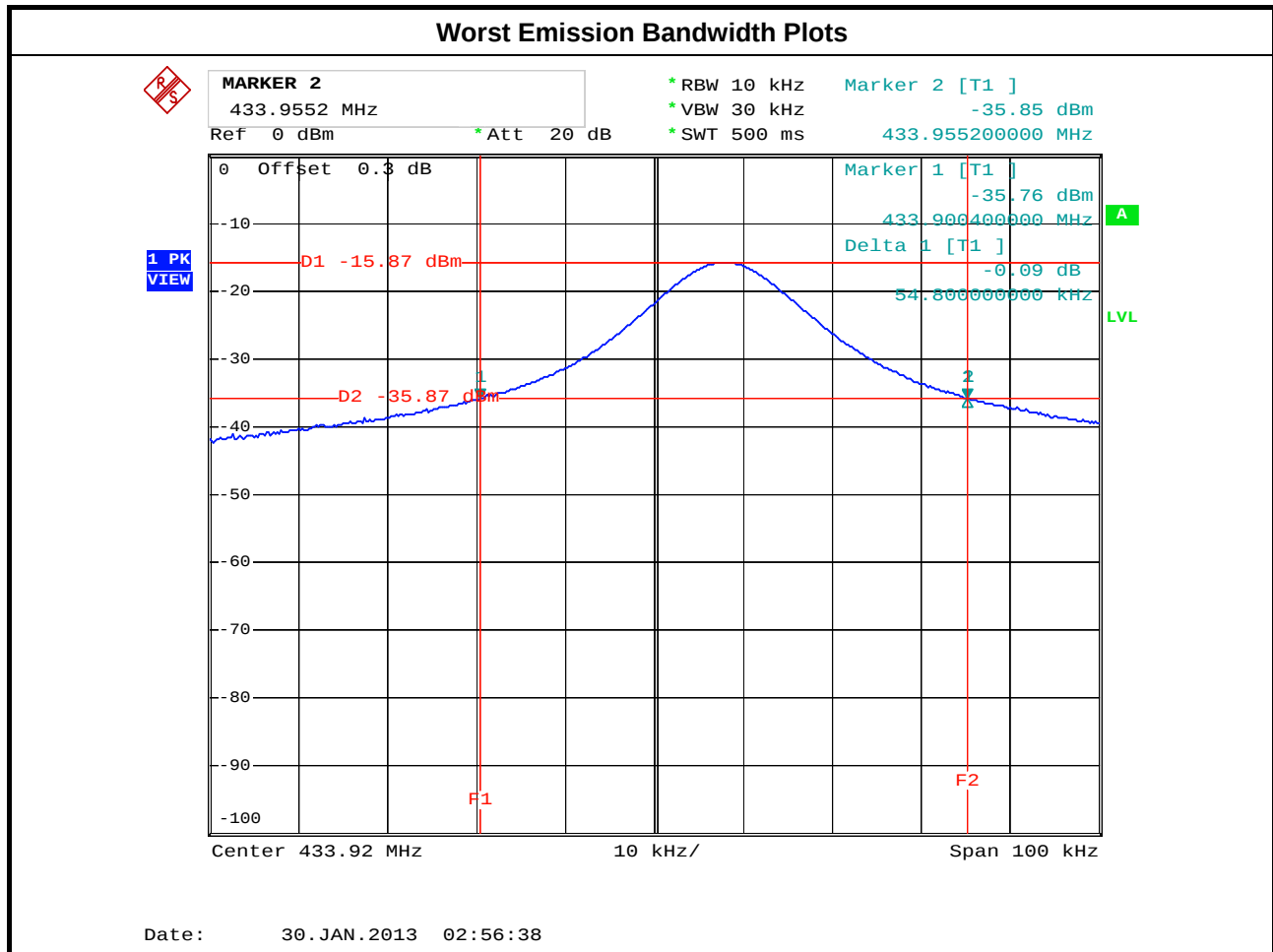
Test Method	
☒	Refer as ANSI C63.10, clause 6.9.1 for 20 dB emission bandwidth and 99% occupied bandwidth measurement.

3.2.4 Test Setup



3.2.5 Test Result of Emission Bandwidth

Emission Bandwidth Result			
Modulation Mode	Frequency (MHz)	99% Bandwidth (kHz)	20dB BW (kHz)
ASK-Transmit	433.92	70.40	54.80
Limit		1080	N/A
Result		Complied	



3.3 Fundamental Emissions

3.3.1 Fundamental Emissions Limit

For manually operated within 5 sec, activated automatically within 5 sec, periodic transmissions		
Frequency Band (MHz)	Fundamental Limit (uV/m) at 3m	Fundamental Limit (dBuV/m) at 3m
40.66-40.70	2250	67
70-130	1250	61.9
130-174	1250-3750(**)	61.9-71.5
174-260	3750	71.5
260-470	3750-12500(**)	71.5-81.9
Above 470	12500	81.9

****1.** Linear interpolations, the formulas for calculating the maximum permitted fundamental field strengths are as follows:
 (1) for the band 130 - 174 MHz, $\mu\text{V/m}$ at 3 meters = $56.81818 \times (\text{operating frequency, MHz}) - 6136.3636$;
 (2) for the band 260 - 470 MHz, $\mu\text{V/m}$ at 3 meters = $41.6667 \times (\text{operating frequency, MHz}) - 7083.3333$.
 Based on the average value of the measured emissions.

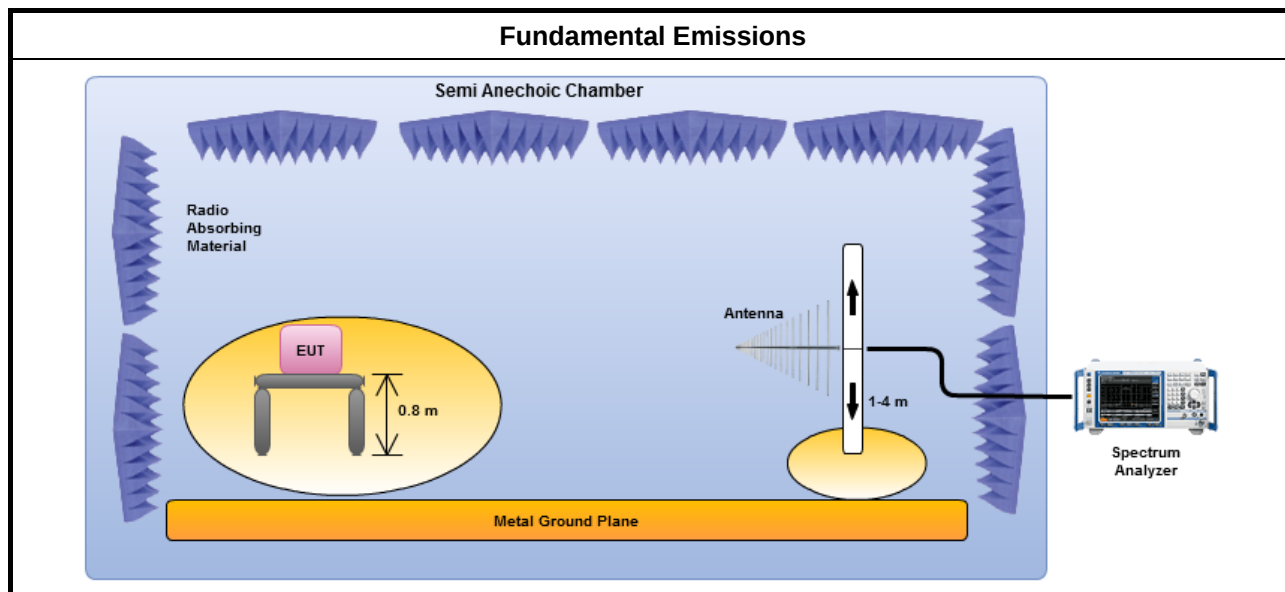
3.3.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.3.3 Test Procedures

☒	For the transmitter emissions shall be measured using following options below:
☐	Refer as ANSI C63.10, clause 4.2.3.2.3 (Reduced VBW) – Duty cycle $\geq 100\%$.
☒	Refer as ANSI C63.10, clause 4.2.3.2.4 average value of pulsed emissions. Adjusted by a “duty cycle correction factor”, derived from $20\log(\text{dwell time}/100 \text{ ms})$. Average emission = peak emission + $20 \log(\text{duty cycle})$.
☒	Refer as ANSI C63.10, clause 4.2.3.2.2 measurement procedure peak limit.
☒	For radiated measurement, refer as ANSI C63.10, clause 6.5 for radiated emissions

3.3.4 Test Setup



3.3.5 Test Result of Fundamental Emissions

Field Strength of Fundamental Emissions Result					
Modulation Mode	Frequency (MHz)	Fundamental (dBuV/m)@3m	Margin (dB)	Limit (dBuV/m)@3m	Type
ASK-Transmit	433.92	82.31	18.52	100.83	peak
ASK-Transmit	433.92	76.76	4.07	80.83	average
Result		Complied			
Note 1: Measurement worst emissions of receive antenna polarization: Horizontal. Note 2: If duty cycle < 100%, average emission = peak emission + 20 log (duty cycle). Note 3: Emergency button mode duty is worse than periodically beacon mode duty.					

3.4 Transmitter Radiated Unwanted Emissions

3.4.1 Transmitter Radiated Unwanted Emissions Limit

For manually operated within 5 sec, activated automatically within 5 sec, periodic transmissions		
Unwanted emissions limit follow this table or the general limits FCC 15.209, whichever limit permits higher field strength.		
Frequency Band (MHz)	Spurious Limit (uV/m) at 3m	Spurious Limit (dBuV/m) at 3m
40.66-40.70	225	47
70-130	125	41.9
130-174	125-375(**)	41.9-51.5
174-260	375	51.5
260-470	375-1250(**)	51.5-61.9
Above 470	1250	61.9
**1. Linear interpolations, the formulas for calculating the maximum permitted fundamental field strengths are as follows: (1) for the band 130 - 174 MHz, $\mu\text{V/m}$ at 3 meters = $56.81818 \times (\text{operating frequency, MHz}) - 6136.3636$; (2) for the band 260 - 470 MHz, $\mu\text{V/m}$ at 3 meters = $41.6667 \times (\text{operating frequency, MHz}) - 7083.3333$. Based on the average value of the measured emissions.		

3.4.2 Measuring Instruments

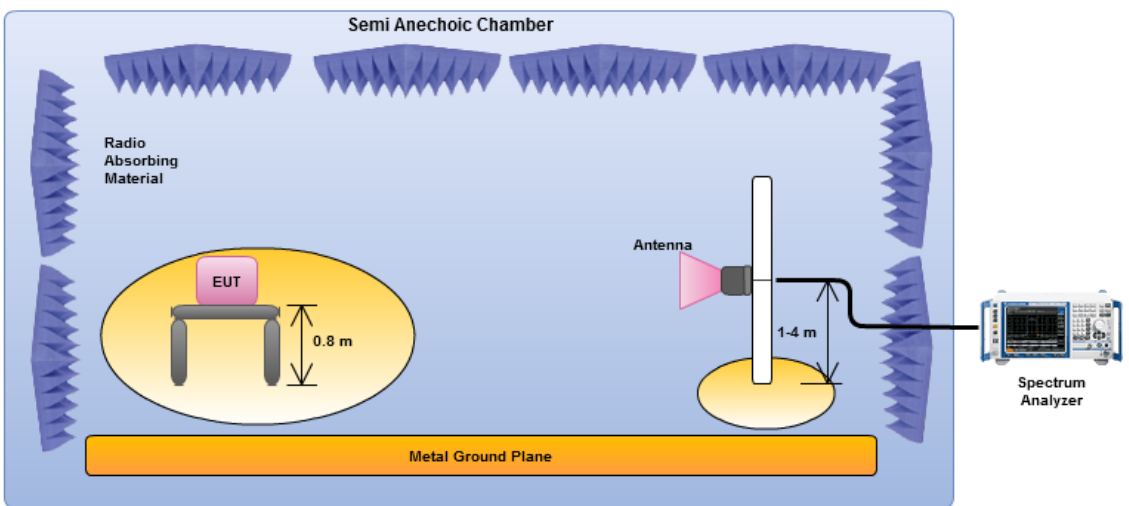
Refer a test equipment and calibration data table in this test report.

3.4.3 Test Procedures

Test Method – General Information	
☒	The average emission levels shall be measured in [duty cycle $\geq$ 98 or duty factor].
☒	Refer as ANSI C63.10, clause 6.9.2.2 bandedge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.
☒	For the transmitter unwanted emissions shall be measured using following options below:
☐	Refer as ANSI C63.10, clause 4.2.3.2.3 (Reduced VBW) – Duty cycle $\geq$ 100%.
☒	Refer as ANSI C63.10, clause 4.2.3.2.4 average value of pulsed emissions. Adjusted by a “duty cycle correction factor”, derived from $20\log(\text{dwell time}/100 \text{ ms})$. Average emission = peak emission + 20 log (duty cycle).
☒	Refer as ANSI C63.10, clause 4.2.3.2.2 measurement procedure peak limit.
☒	For the transmitter bandedge emissions shall be measured using following options below:
☒	Refer as ANSI C63.10, clause 6.9.2 for band-edge testing.
☐	Refer as ANSI C63.10, clause 6.9.3 for marker-delta method for band-edge measurements.
☒	For radiated measurement.
☒	Refer as ANSI C63.10, clause 6.4 for radiated emissions from below 30 MHz.
☒	Refer as ANSI C63.10, clause 6.5 for radiated emissions from 30 MHz to 1000 MHz.
☒	Refer as ANSI C63.10, clause 6.6 for radiated emissions from above 1 GHz.

3.4.4 Test Setup

Transmitter Radiated Bandedge Emissions

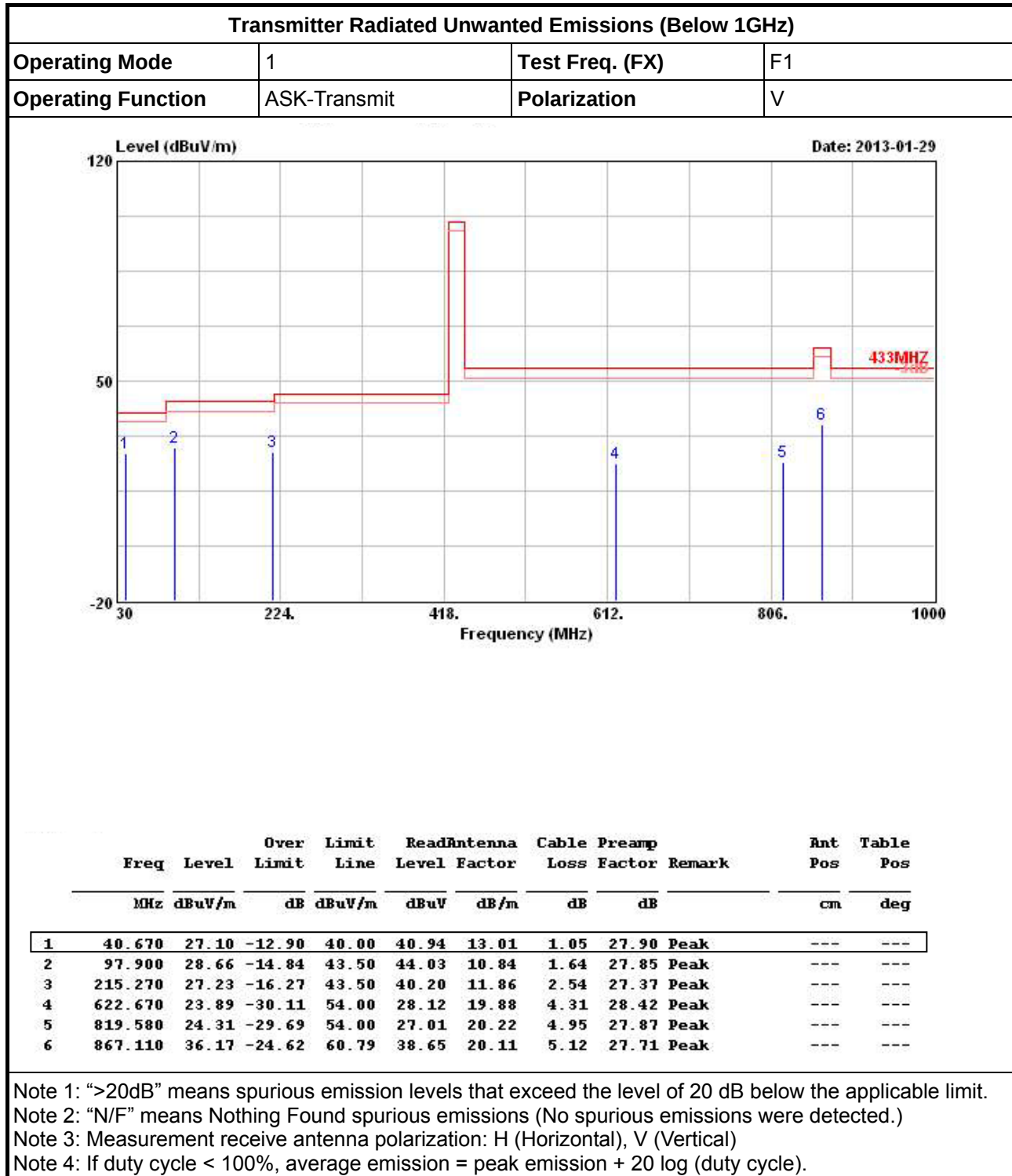


Magnetic field tests shall be performed in the frequency range of 9 kHz to 30 MHz using a calibrated loop antenna. Electric field tests shall be performed in the frequency range of 30 MHz to 1000 MHz using a calibrated bi-log antenna and the frequency range of 1 GHz to 40 GHz using a calibrated horn antenna.

3.4.5 Transmitter Radiated Unwanted Emissions (Below 30MHz)

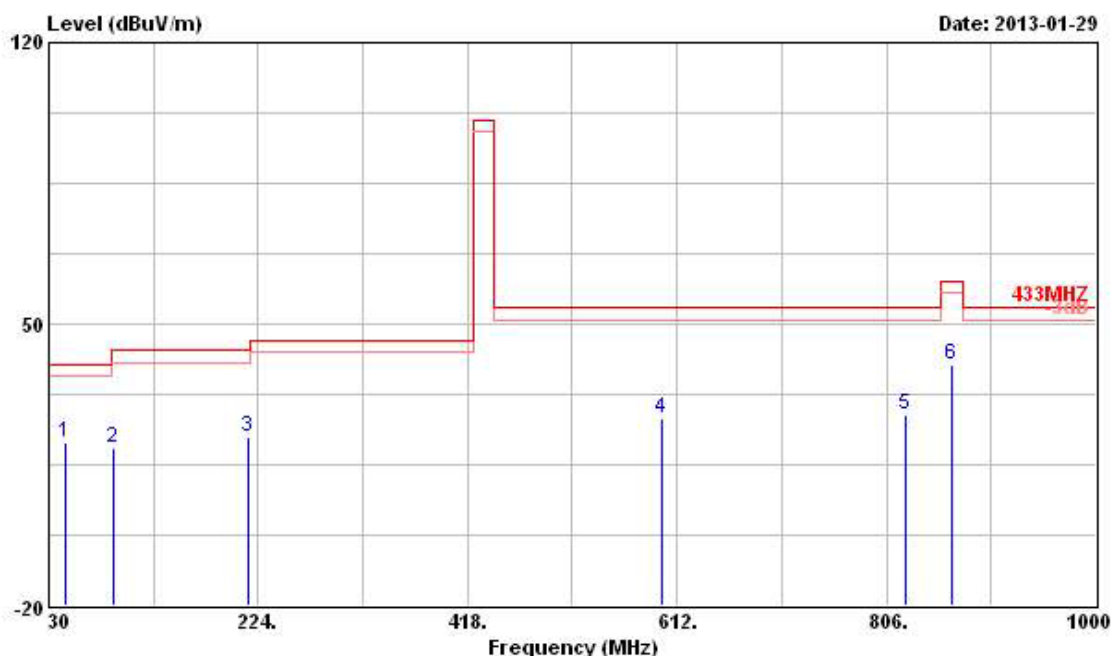
All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

3.4.6 Transmitter Radiated Unwanted Emissions (Below 1GHz)



Transmitter Radiated Unwanted Emissions (Below 1GHz)

Operating Mode	1	Test Freq. (FX)	F1
Operating Function	ASK-Transmit	Polarization	H



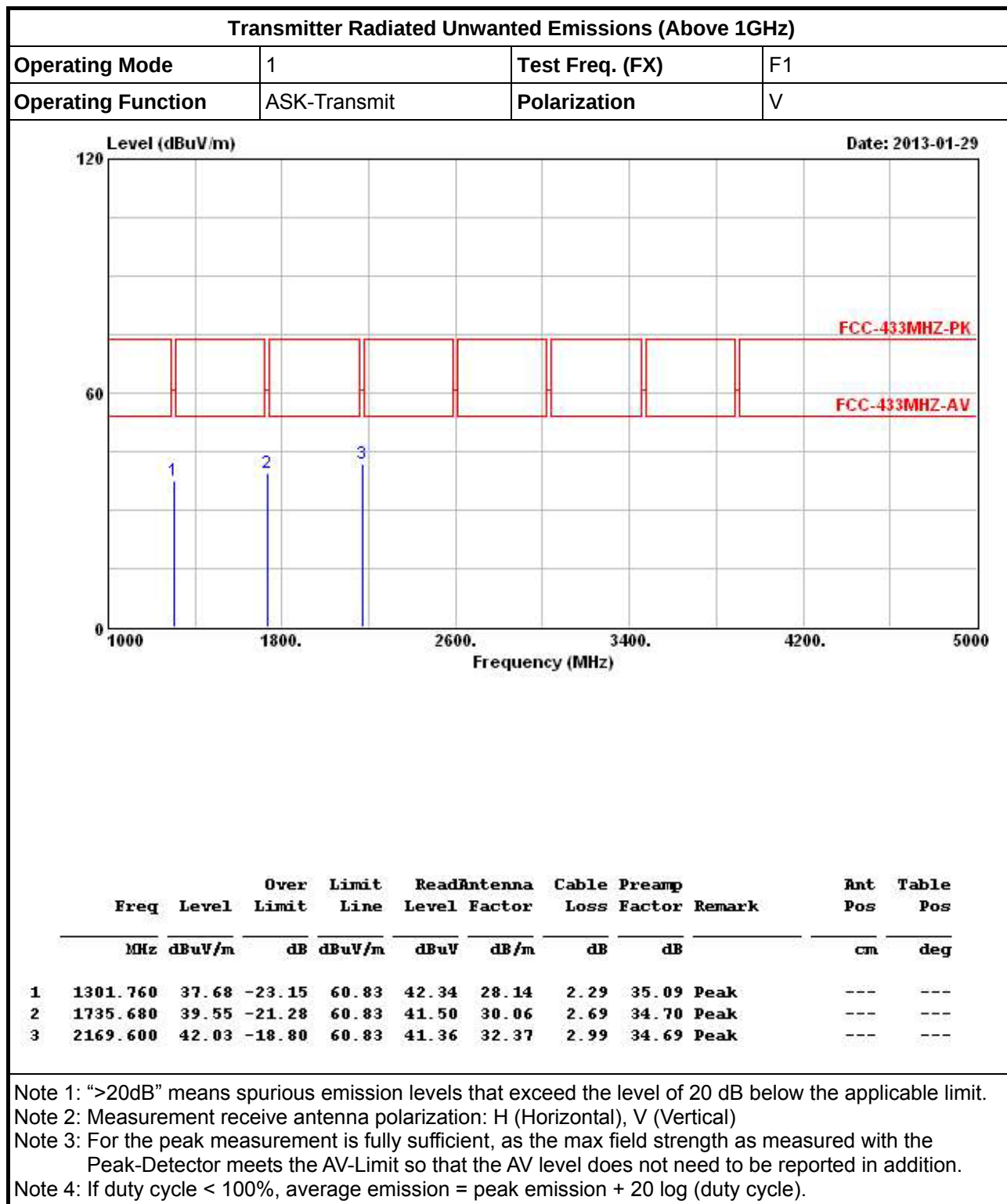
	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp		Ant	Table
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	44.550	20.69	-19.31	40.00	35.45	12.02	1.10	27.88	Peak	---	---
2	90.140	19.24	-24.26	43.50	36.01	9.50	1.58	27.85	Peak	---	---
3	215.270	22.13	-21.37	43.50	35.10	11.86	2.54	27.37	Peak	---	---
4	598.420	26.30	-27.70	54.00	30.41	20.12	4.23	28.46	Peak	---	---
5	823.460	27.59	-26.41	54.00	30.27	20.21	4.97	27.86	Peak	---	---
6	867.110	39.97	-20.82	60.79	42.45	20.11	5.12	27.71	Peak	---	---

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

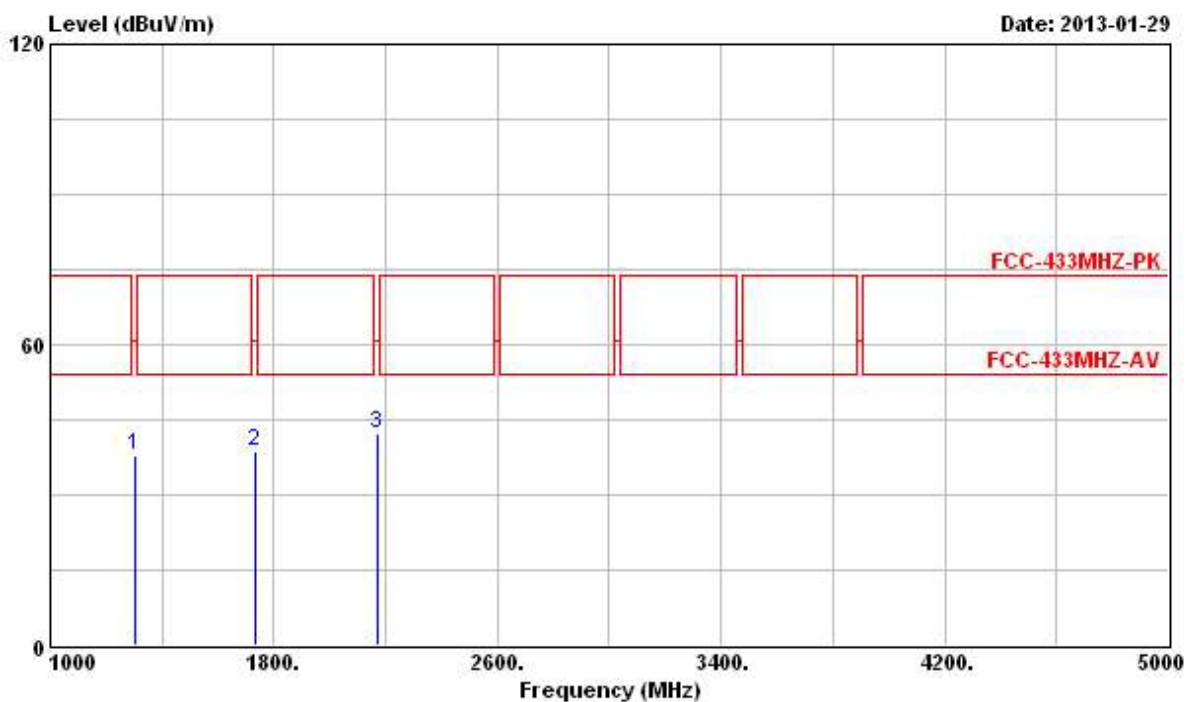
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: If duty cycle < 100%, average emission = peak emission + 20 log (duty cycle).

3.4.7 Transmitter Radiated Unwanted Emissions (Above 1GHz)


Transmitter Radiated Unwanted Emissions (Above 1GHz)

Operating Mode	1	Test Freq. (FX)	F1
Operating Function	ASK-Transmit	Polarization	H



	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp		Ant	Table
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	1301.760	37.78	-23.05	60.83	42.44	28.14	2.29	35.09	Peak	---
2	1735.680	38.86	-21.97	60.83	40.81	30.06	2.69	34.70	Peak	---
3	2169.600	42.15	-18.68	60.83	41.48	32.37	2.99	34.69	Peak	---

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 3: For the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 4: If duty cycle < 100%, average emission = peak emission + 20 log (duty cycle).

3.5 Operation Restriction

3.5.1 Operation Restriction Limit

Operation Restriction Limit	
☒	Manually operated: manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 sec of being released.
☐	Activated automatically: transmitter activated automatically shall cease transmission within 5 sec after activation.
☒	Periodic transmissions: permitted with total transmission time of 2 sec per hour or less.
☐	Periodic transmissions (lower field strength): each transmission is not greater than 1 sec and the silent period between transmissions is at least 30 times the duration of the transmission but in no case less than 10 sec.

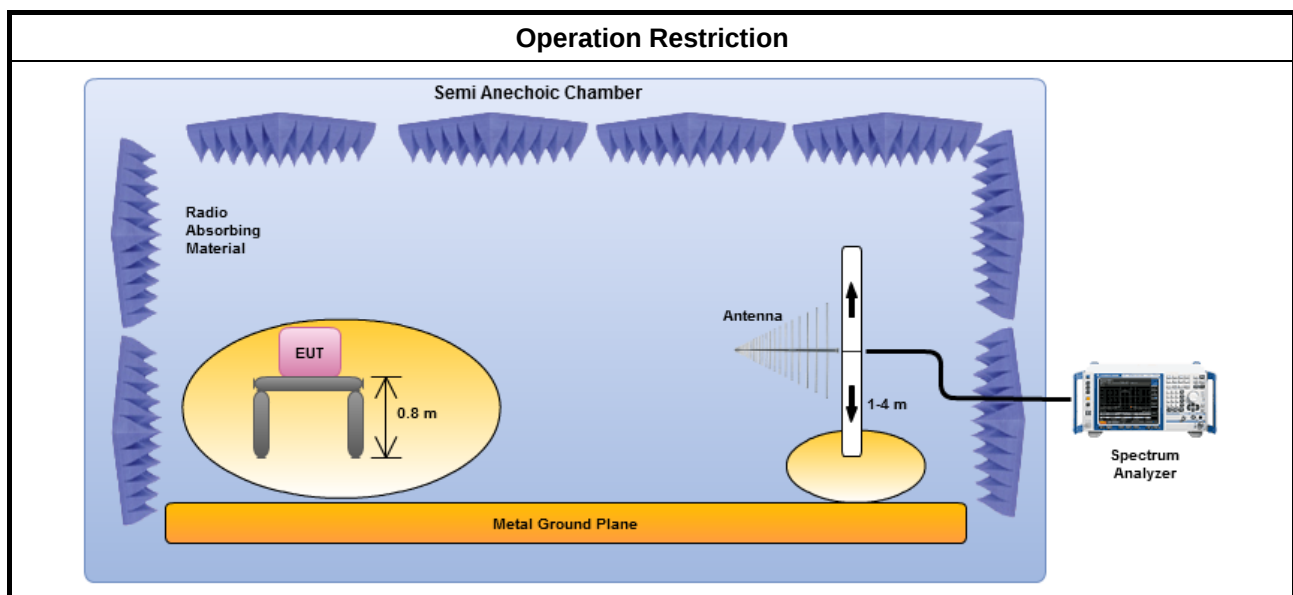
3.5.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.5.3 Test Procedures

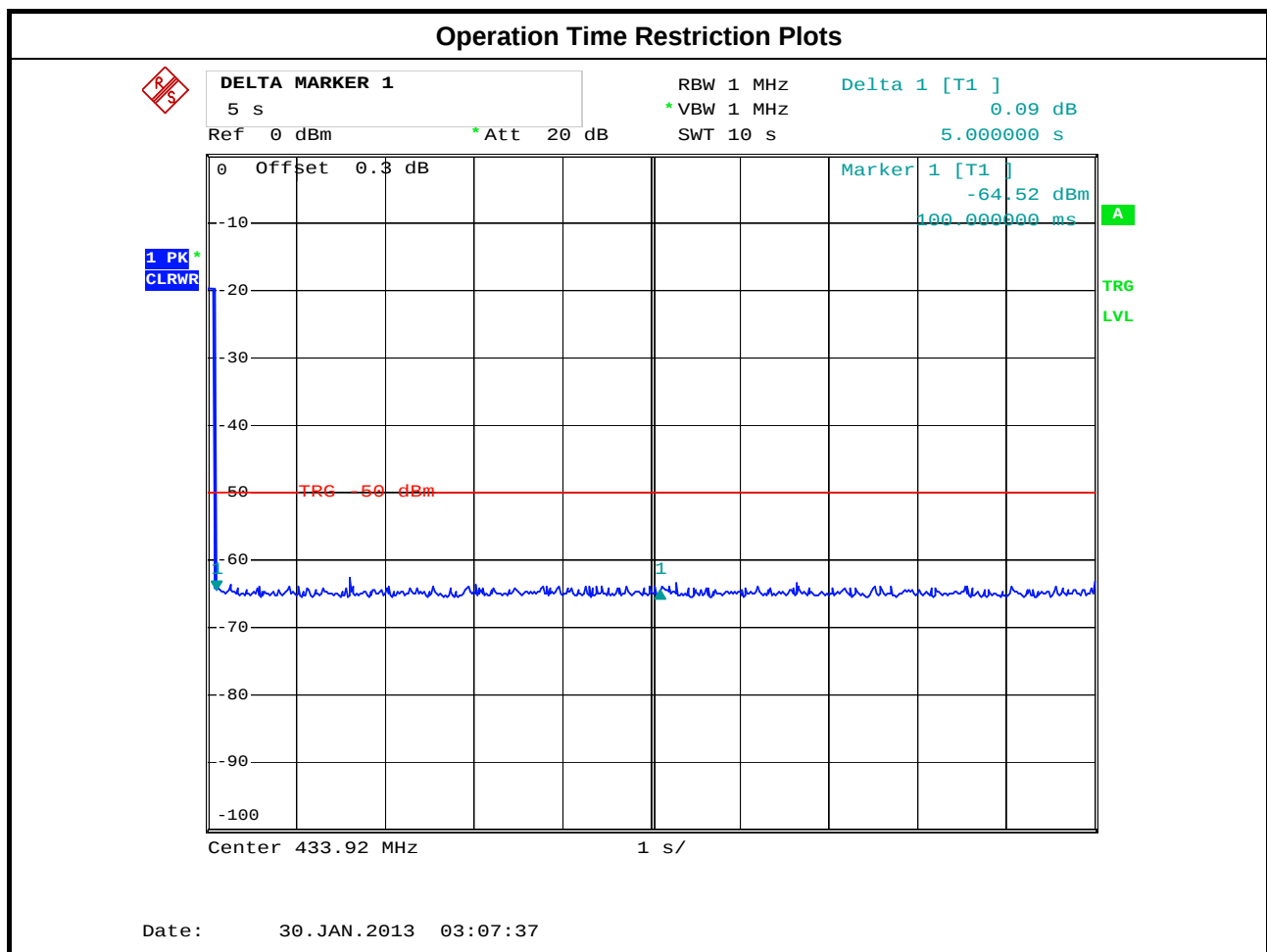
Test Method	
☒	Refer as ANSI C63.10, clause 7.4 for periodic operation measurement.

3.5.4 Test Setup



3.5.5 Test Result of Operation Restriction

Operation Restriction Limit	
☒	Manually operated: manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 sec of being released.
☐	Activated automatically: transmitter activated automatically shall cease transmission within 5 sec after activation.
☒	Periodic transmissions: permitted with total transmission time of 2 sec per hour or less.
☐	Periodic transmissions (lower field strength): each transmission is not greater than 1 sec and the silent period between transmissions is at least 30 times the duration of the transmission but in no case less than 10 sec.



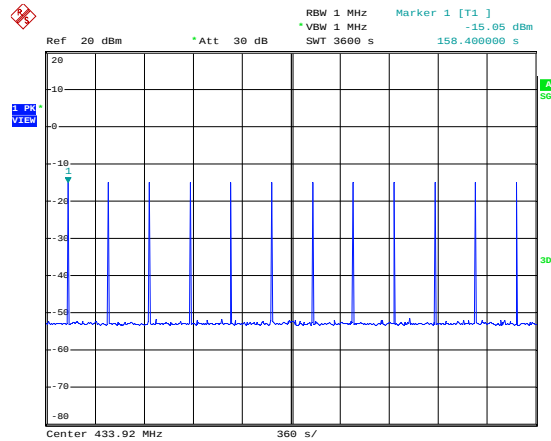
Note: Manually operated transmitter press EMERGENCY button.

Operation Time Restriction Plots (Periodically Beacon)

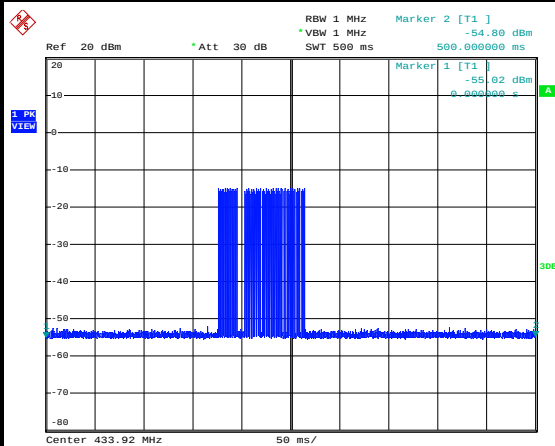
12 bursts in 1 hours

Each burst = 48.25ms (total sample = 8001bins [500ms], total on time = 772 bins [772/8001x500ms])

Total pulse time [in 1 hours] = 12 x 48.25ms = 579 ms ≤ limit 2 sec



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VISA session	Marker 1 (sec)	Set Points (501)	Space Time of Point	No. of Pulse
GPIB0::21:	0	8001	0.000063	772
FSP & FSL	Marker 2 (sec)	Set Sweep Time	Mark 1 Point	Close TX Time
	0.5	0.5	1	0.04825
Total Trace of Points	Threshold (dBm)	Mark 2 Point	Trace Data	
8001	-50	8001	0 -55.0211	

Note: Manually operated transmitter periodically beacon.

4 Test Equipment and Calibration Data

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
EMC Receiver	R&S	ESCS 30	100132	9kHz ~ 2.75GHz	Nov. 14, 2012	Conduction (CO01-HY)
LISN	MessTec	NNB-2/16Z	2001/004	9kHz ~ 30MHz	Dec. 28, 2012	Conduction (CO01-HY)
LISN (Support Unit)	MessTec	NNB-2/16Z	2001/009	9kHz ~ 30MHz	Jan. 08, 2013	Conduction (CO01-HY)
RF Cable-CON	HUBER+SUHNER	RG213/U	07611832010001	9kHz ~ 30MHz	Mar. 02, 2012	Conduction (CO01-HY)

Note: Calibration Interval of instruments listed above is one year.

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Spectrum Analyzer	R&S	FSP40	100593	9kHz ~ 40GHz	Sep. 14, 2012	Conducted (TH01-HY)
DC Power Source	G.W.	GPC-6030D	C671845	DC 1V ~ 60V	Jun. 19, 2012	Conducted (TH01-HY)
AC Power Source	G.W.	APS-9102	EL920581	AC 0V ~ 300V	Jul. 02, 2012	Conducted (TH01-HY)
Temp. and Humidity Chamber	Giant Force	GTH-225-20-SP-SD	MAA1112-007	-20 ~ 100℃	Nov. 21, 2012	Conducted (TH01-HY)
Signal Generator	R&S	SMR40	100116	10MHz ~ 40GHz	Jun. 26, 2012	Conducted (TH01-HY)
Power Sensor	Anritsu	MA2411B	1027452	300MHz ~ 40GHz	Sep. 08, 2012	Conducted (TH01-HY)
Power Meter	Anritsu	ML2495A	1124009	300MHz ~ 40GHz	Sep. 08, 2012	Conducted (TH01-HY)
RF Cable-2m	HUBER+SUHNER	SUCOFLEX_104	SN 345675/4	1GHz ~ 26.5GHz	NA	Conducted (TH01-HY)
RF Cable-3m	HUBER+SUHNER	SUCOFLEX_104	SN 345669/4	1GHz ~ 26.5GHz	NA	Conducted (TH01-HY)

Note: Calibration Interval of instruments listed above is one year.

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Spectrum Analyzer	R&S	FSP40	100593	9kHz ~ 40GHz	Sep. 14, 2012	Radiation (03CH02-HY)
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH02-HY	30MHz ~ 1GHz 3m	May 10, 2012	Radiation (03CH02-HY)
Amplifier	Agilent	8447D	2944A11146	100kHz ~ 1.3GHz	Jul. 23, 2012	Radiation (03CH02-HY)
Amplifier	Agilent	8449B	3008A02373	1GHz ~ 26.5GHz	Aug. 10, 2012	Radiation (03CH02-HY)
Horn Antenna	ETS-LINDGREN	3117	00091920	1GHz ~ 18GHz	Nov. 16, 2012	Radiation (03CH02-HY)
RF Cable-R03m	Jye Bao	RG142	CB021	9kHz ~ 1GHz	Nov. 10, 2012	Radiation (03CH02-HY)
RF Cable-high	SUHNER	SUCOFLEX106	03CH02-HY	1GHz ~ 40GHz	Mar. 06, 2012	Radiation (03CH02-HY)
Bilog Antenna	SCHAFFNER	CBL61128	2723	30MHz ~ 2GHz	Oct. 22, 2012	Radiation (03CH02-HY)
Turn Table	HD	DS 420	420/649/00	0~ 360 degree	N/A	Radiation (03CH02-HY)
Antenna Mast	HD	MA 240	240/559/00	1 ~ 4 m	N/A	Radiation (03CH02-HY)

Note: Calibration Interval of instruments listed above is one year.

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Loop Antenna	R&S	HFH2-Z2	860004/0001	9 kHz - 30 MHz	Jul. 03, 2012	Radiation (03CH02-HY)

Note: Calibration Interval of instruments listed above is two year.