ETSI EN 300 113-1 V1.7.1 (2011-11)
ETSI EN 300 113-2 V1.5.1 (2011-11)

TEST REPORT

For

TYT ELECTRONICS CO., LTD

Block 39-1, Optoelectronics-information industry b, Nan’an, Quanzhou, Fujian China

Tested Model: MD-380
Multiple Model: MD-390, MD-368, MD-398

Report Type:	**Product Type:**
Original Report	DMR

Test Engineer: William Li (William Li)

Report Number: RSZ150527001-22A

Report Date: 2015-07-02

Reviewed By: Jimmy Xiao (Jimmy Xiao), RF Engineer

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *TYT ELECTRONICS CO., LTD*'s product, model number: *MD-380* or the "EUT" in this report was a *DMR*, which was measured approximately: 131 mm (L) × 61 mm (W) × 36 mm (H), rated with input voltage: DC 7.4VLi-io rechargeable battery.

Note: This series products model: MD-390, MD-368, MD-398 and MD-380 are identical schematics, the difference among them is just the model number due to marketing purpose, and model MD-380 was selected for fully testing, the detailed information can be referred to the attached declaration letter that stated and guaranteed by the applicant.

** All measurement and test data in this report was gathered from production sample serial number: 1505197 (Assigned by BACL, Shenzhen). The EUT supplied by the applicant was received on 2015-05-27.*

Objective

This report is prepared on behalf of *TYT ELECTRONICS CO., LTD* in accordance with ETSI EN 300 113-1 V1.7.1 (2011-11), Electromagnetic compatibility and Radio spectrum Matters (ERM); Land mobile service; Radio equipment intended for the transmission of data (and/or speech) using constant or non-constant envelope modulation and having an antenna connector; Part 1: Technical characteristics and methods of measurement; ETSI EN 300 113-2 V1.5.1 (2011-11), Electromagnetic compatibility and Radio spectrum Matters (ERM); Land mobile service; Radio equipment intended for the transmission of data (and/or speech) using constant or non-constant envelope modulation and having an antenna connector; Part 2: Harmonized EN covering essential requirements of article 3.2 of the R&TTE Directive

The objective is to determine the compliance of the EUT with ETSI EN 300 113-1 V1.7.1 (2011-11) and ETSI EN 300 113-2 V1.5.1 (2011-11).

Related Submittal(s)/Grant(s)

No related submittal(s).

Test Methodology

All measurements contained in this report were conducted with ETSI EN 300 113-1 V1.7.1 (2011-11).

Measurement uncertainty:

Parameter	Uncertainty
Radio Frequency	±1×10^{-7}
RF Couducted Power	±0.5 dB
Radiated RF power	±4.92 dB
Adjacent channel power	±1.5 dB
Conducted spurious emission of transmitter	±1.5 dB
Conducted spurious emission of Receiver	±1.5 dB
Two-signal measurement	±2.5 dB
Three-signal measurement	±2.5 dB
Radiated emission of the transmitter	±4.9 dB
Radiated emission of the receiver	±4.9 dB
Tranmitter attack time	±20 %
Tranmitter release time	±20 %
Transmitter transient frequency	±200 Hz
Transmitter intermodulation	±2.0 dB
Receiver desensitization	±0.5 dB
Temperature	±1.0 ℃
Humidity	±6 %

Test Facility

The test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China.

Test site at Bay Area Compliance Laboratories Corp. (Shenzhen) has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on December 06, 2010. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2009.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 382179. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in an engineering mode, which is provided by manufacturer.

EUT Exercise Software

No exercise software was used.

Special Accessories

No special accessory was used.

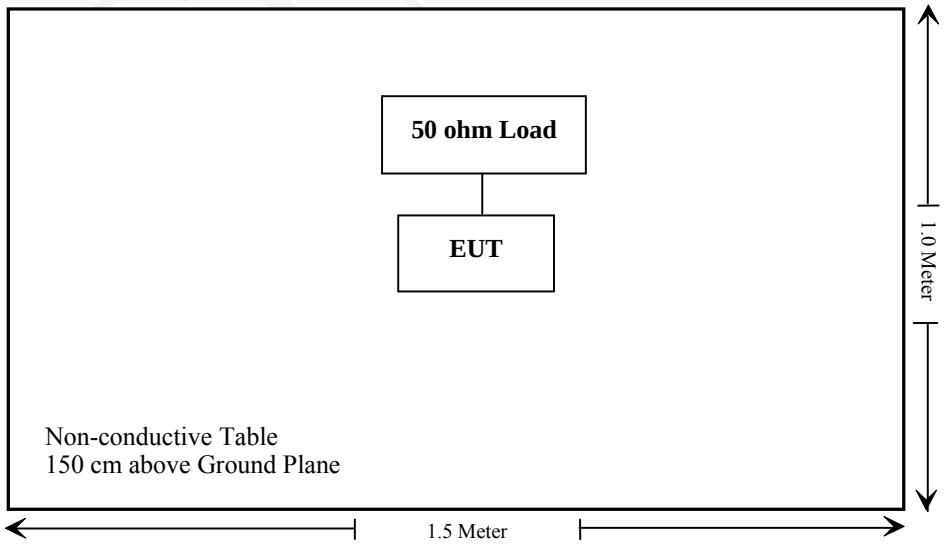
Equipment Modifications

No modification was made to the EUT tested.

Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
N/A	50 ohm Load	N/A	N/A

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

ETSI EN 300 113-2 V1.5.1 (2011-11)

ETSI EN 300 113-2 V1.5.1 (2011-11)	Description of Test	Test Result
§ 4.2.1	Frequency error	Compliance
§ 4.2.2	Transmitter power (conducted)	Compliance
§ 4.2.3	Maximum effective radiated power	Not Applicable
§ 4.2.4	Adjacent and alternate channel power	Compliance
§ 4.2.5	Unwanted emissions in the spurious domain	Compliance
§ 4.2.6	Intermodulation attenuation	Not Applicable*
§4.2.7	Transient frequency behaviour of the transmitter	Compliance
§ 4.2.8	Transmitter time out timer	Not Applicable**
§ 4.3.7	Receiver spurious radiations	Compliance

Not Applicable: The EUT has an internal antenna connector.
Not Applicable*: The equipment not be used in base stations.
Not Applicable**: The equipment not having a transmitter time out timer.

ETSI EN 300 113-2 V1.5.1 (2011-11) §4.2.1 - FREQUENCY ERROR

Applicable Standard

According to ETSI EN 300 113-1 V1.7.1 (2011-11) §7.1.1, the frequency error of the transmitter is the difference between the measured carrier frequency in the absence of modulation (or with modulation, provided that the presence of modulation allows sufficiently accurate measurement of the carrier frequency,) and the nominal frequency of the transmitter.

Limits

The frequency error shall not exceed the values given in table 2, under normal and extreme test conditions, or in any intermediate set of conditions. However, for practical reasons the measurement shall be performed only at nominal and extreme test conditions.

Table 2: Frequency error

Channel separation (kHz)	Frequency error limit (kHz)				
	below 47 MHz	47 MHz to 137 MHz	above 137 MHz to 300 MHz	above 300 MHz to 500 MHz	above 500 MHz to 1 000 MHz
20 and 25	±0,60	±1,35	±2,00	±2,00 (see note 2)	±2,50 (see note 2)
12,5	±0,60	±1,00	±1,00 (B) ±1,50 (M)	±1,00 (B) ±1,50 (M) (see note 2)	No value specified

NOTE 1: For handportable stations having integral power supplies, these limits only apply to the reduced extreme temperature range 0°C to +40°C.
NOTE 2: However for the full extreme temperature conditions (see clause 5.4.1), exceeding the reduced extreme temperature range above, the following frequency error limits apply:
±2,50 kHz between 300 MHz and 500 MHz;
±3,00 kHz between 500 MHz and 1 000 MHz.
NOTE 3: (B) base station.
NOTE 4: (M)mobile station.

Method of measurement

The equipment shall operate in continuous transmission mode during the time necessary to perform the measurement of the frequency.

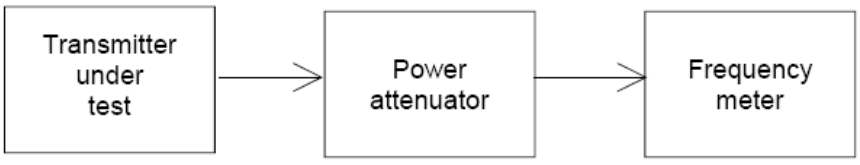


Figure 3a: Measurement arrangement

The equipment shall be connected to the artificial antenna (see clause 6.7).
The carrier frequency shall be measured in the absence of modulation. The measurement shall be made under normal test conditions (see clause 5.3) and extreme test conditions (see clauses 5.4.1 and 5.4.2). The transmitter shall be set in continuous transmission mode. If this is not possible, the measurement shall be carried out in a period shorter than the duration of the transmitted burst. It may be necessary to extend the duration of the burst.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Hewlett-Packard	Frequency Counter	5343A	2232A00827	2013-05-09	2016-05-08
Long Wei	DC Power Supply	TPR-6420D	398363	NCR	NCR
ESPEC	Temperature & Humidity Chamber	EL-10KA	09107726	2014-11-01	2015-11-01

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	25 ℃
Relative Humidity:	55 %
ATM Pressure:	101.0 kPa

The testing was performed by William Li on 2015-06-30.

Frequency: 400.0125 MHz--Lowest Power						
Reference Frequency (MHz)	**Channel Separation (kHz)**	**Temperature (℃)**	**Power Supplied (V_{DC})**	**Measured Frequency (MHz)**	**Frequency Error (kHz)**	**Limit (kHz)**
Normal test condition						
400.0125	12.5	25.0	7.4	400.012555	0.055	±1.5
Extreme test condition						
400.0125	12.5	Tmin = -20	Vmax =7.4	400.012564	0.064	±2.5
		Tmin = -20	Vmin =6.4	400.012572	0.072	
		Tmax = +55	Vmax =7.4	400.012581	0.081	
		Tmax = +55	Vmin =6.4	400.012574	0.074	

Frequency: 400.0125 MHz--Highest Power						
Reference Frequency (MHz)	**Channel Separation (kHz)**	**Temperature (℃)**	**Power Supplied (V_{DC})**	**Measured Frequency (MHz)**	**Frequency Error (kHz)**	**Limit (kHz)**
Normal test condition						
400.0125	12.5	25.0	7.2	400.012562	0.062	±1.5
Extreme test condition						
400.0125	12.5	Tmin = -20	Vmax =7.4	400.012563	0.063	±2.5
		Tmin = -20	Vmin =6.4	400.012574	0.074	
		Tmax = +55	Vmax =7.4	400.012566	0.066	
		Tmax = +55	Vmin =6.4	400.012582	0.082	

Frequency: 450.0125 MHz--Lowest Power						
Reference Frequency (MHz)	**Channel Separation (kHz)**	**Temperature (℃)**	**Power Supplied (V_{DC})**	**Measured Frequency (MHz)**	**Frequency Error (kHz)**	**Limit (kHz)**
Normal test condition						
450.0125	12.5	25.0	7.4	450.012567	0.067	±1.5
Extreme test condition						
450.0125	12.5	Tmin = -20	Vmax =7.4	450.012576	0.076	±2.5
		Tmin = -20	Vmin =6.4	450.012595	0.095	
		Tmax = +55	Vmax =7.4	450.012572	0.072	
		Tmax = +55	Vmin =6.4	450.012564	0.064	

Frequency: 450.0125 MHz--Highest Power						
Reference Frequency (MHz)	**Channel Separation (kHz)**	**Temperature (℃)**	**Power Supplied (V_{DC})**	**Measured Frequency (MHz)**	**Frequency Error (kHz)**	**Limit (kHz)**
Normal test condition						
450.0125	12.5	25.0	7.4	450.012572	0.072	±1.5
Extreme test condition						
450.0125	12.5	Tmin = -20	Vmax =7.4	450.012584	0.084	±2.5
		Tmin = -20	Vmin =6.4	450.012572	0.072	
		Tmax = +55	Vmax =7.4	450.012585	0.085	
		Tmax = +55	Vmin =6.4	450.012573	0.073	

Frequency: 479.9875MHz--Lowest Power						
Reference Frequency (MHz)	**Channel Separation (kHz)**	**Temperature (℃)**	**Power Supplied (V_{DC})**	**Measured Frequency (MHz)**	**Frequency Error (kHz)**	**Limit (kHz)**
Normal test condition						
479.9875	12.5	25.0	7.4	479.987576	0.076	±1.5
Extreme test condition						
479.9875	12.5	Tmin = -20	Vmax =7.4	479.987575	0.075	±2.5
		Tmin = -20	Vmin =6.4	479.987584	0.084	
		Tmax = +55	Vmax =7.4	479.987576	0.076	
		Tmax = +55	Vmin =6.4	479.987574	0.074	

Frequency: 479.9875 MHz--Highest Power						
Reference Frequency (MHz)	**Channel Separation (kHz)**	**Temperature (℃)**	**Power Supplied (V_{DC})**	**Measured Frequency (MHz)**	**Frequency Error (kHz)**	**Limit (kHz)**
Normal test condition						
479.9875	12.5	25.0	7.4	479.987572	0.072	±1.5
Extreme test condition						
479.9875	12.5	Tmin = -20	Vmax =7.4	479.987584	0.084	±2.5
		Tmin = -20	Vmin =6.4	479.987575	0.075	
		Tmax = +55	Vmax =7.4	479.987573	0.073	
		Tmax = +55	Vmin =6.4	479.987572	0.072	

Test Result: Compliance

ETSI EN 300 113-2 V1.5.1 (2011-11) §4.2.2 - TRANSMITTER POWER (CONDUCTED)

Applicable Standard

According to ETSI EN 300 113-1 V1.7.1 (2011-11) §7.2.1, the transmitter power (conducted) is the mean power delivered to the artificial antenna during a radio frequency cycle. If the equipment is designed to operate with different transmitter powers, the rated power for each level, or range of levels, shall be declared by the manufacturer. The power adjustment control shall not be accessible to the user.

The requirements of the present document shall be met for all power levels at which the transmitter is intended to operate.

The rated output power is the carrier power (conducted) of the equipment declared by the manufacturer.

Limits

The transmitter power (conducted) under the specified conditions of measurement (see clause 7.2.2) and at normal test conditions (see clause 5.3), shall be within ± 1,5 dB of the rated carrier power (conducted).

The transmitter power (conducted) under extreme test conditions shall be within +2,0 dB and -3,0 dB of the rated output power.

It is assumed that the appropriate National Administration will state the maximum permitted transmitter output power.

Method of measurement

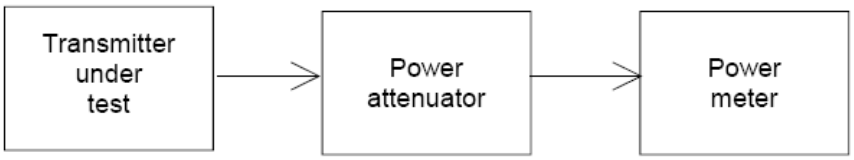


Figure 3b: Measurement arrangement

For practical reasons, measurements shall be performed only at the lowest and highest power level at which the transmitter is intended to operate. The measurement arrangement in figure 3b shall be used.

The measurement shall be performed preferably in the absence of modulation.

When it is not possible to measure it in the absence of modulation, this fact shall be stated in test reports (see clause 6.11).

The transmitter shall be set in continuous transmission mode. If this is not possible, the measurements shall be carried out in a period shorter than the duration of the transmitted burst. It may be necessary to extend the duration of the burst.

The transmitter shall be connected to an artificial antenna (see clause 6.7) and the power delivered to this artificial antenna shall be measured.

The measurement shall be made under normal test conditions (see clause 5.3) and extreme test conditions (see clauses 5.4.1 and 5.4.2 applied simultaneously).

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Signal Analyzer	FSIQ26	837405/023	2014-08-22	2015-08-22
ESPEC	Temperature & Humidity Chamber	EL-10KA	09107726	2014-11-01	2015-11-01
Long Wei	DC Power Supply	TPR-6420D	398363	NCR	NCR

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	25 ℃
Relative Humidity:	51 %
ATM Pressure:	101.0 kPa

The testing was performed by William Li on 2015-06-09.

Test Result: Pass

Highest RF output power (conducted) for Low channel: 400.0125MHz

Test Conditions		Measured Power (dBm)	Rated Power (dBm)	Limit (dB)	Channel Separation (kHz)
Temperature (^{O}C)	Power Supply (V_{DC})				
Tnor = 25	Vnor =7.4	37.04	37	±1.5	12.5
Tmin = -20	Vmin =6.4	37.01	37	-3.0,+2.0	
	Vmax =7.4	37.06	37	-3.0,+2.0	
Tmax = +55	Vmin =6.4	37.04	37	-3.0,+2.0	
	Vmax =7.4	37.02	37	-3.0,+2.0	

Lowest RF output power (conducted) for Low channel: 400.0125MHz

Test Conditions		Measured Power (dBm)	Rated Power (dBm)	Limit (dB)	Channel Separation (kHz)
Temperature (^{O}C)	Power Supply (V_{DC})				
Tnor = 25	Vnor =7.4	30.13	30	±1.5	12.5
Tmin = -20	Vmin =6.4	30.11	30	-3.0,+2.0	
	Vmax =7.4	30.09	30	-3.0,+2.0	
Tmax = +55	Vmin =6.4	30.08	30	-3.0,+2.0	
	Vmax =7.4	30.06	30	-3.0,+2.0	

Highest RF output power (conducted) for Middle channel: 450.0125MHz

Test Conditions		Measured Power (dBm)	Rated Power (dBm)	Limit (dB)	Channel Separation (kHz)
Temperature (^{O}C)	Power Supply (V_{DC})				
Tnor = 25	Vnor =7.4	37.48	37	±1.5	12.5
Tmin = -20	Vmin =6.4	37.47	37	-3.0,+2.0	
	Vmax =7.4	37.39	37	-3.0,+2.0	
Tmax = +55	Vmin =6.4	37.46	37	-3.0,+2.0	
	Vmax =7.4	37.40	37	-3.0,+2.0	

Lowest RF output power (conducted) for Middle channel: 450.0125MHz

Test Conditions		Measured Power (dBm)	Rated Power (dBm)	Limit (dB)	Channel Separation (kHz)
Temperature (^{O}C)	Power Supply (V_{DC})				
Tnor = 25	Vnor =7.4	30.36	30	±1.5	12.5
Tmin = -20	Vmin =6.4	30.33	30	-3.0,+2.0	
	Vmax =7.4	30.31	30	-3.0,+2.0	
Tmax = +55	Vmin =6.4	30.29	30	-3.0,+2.0	
	Vmax =7.4	30.32	30	-3.0,+2.0	

Highest RF output power (conducted) for High channel: 479.9875MHz

Test Conditions		Measured Power (dBm)	Rated Power (dBm)	Limit (dB)	Channel Separation (kHz)
Temperature (^{O}C)	Power Supply (V_{DC})				
Tnor = 25	Vnor =7.4	37.09	37	±1.5	12.5
Tmin = -20	Vmin =6.4	37.08	37	-3.0,+2.0	
	Vmax =7.4	37.03	37	-3.0,+2.0	
Tmax = +55	Vmin =6.4	37.01	37	-3.0,+2.0	
	Vmax =7.4	37.06	37	-3.0,+2.0	

Lowest RF output power (conducted) for Hign channel: 479.9875 MHz

Test Conditions		Measured Power (dBm)	Rated Power (dBm)	Limit (dB)	Channel Separation (kHz)
Temperature (^{O}C)	Power Supply (V_{DC})				
Tnor = 25	Vnor =7.4	30.01	30	±1.5	12.5
Tmin = -20	Vmin =6.4	29.98	30	-3.0,+2.0	
	Vmax =7.4	29.97	30	-3.0,+2.0	
Tmax = +55	Vmin =6.4	29.96	30	-3.0,+2.0	
	Vmax =7.4	29.93	30	-3.0,+2.0	

Note: The rated high power: 5W=37dBm
The rated low power: 1W=30dBm

ETSI EN 300 113-2 V1.5.1 (2011-11) §4.2.4 - ADJACENT CHANNELS POWER

Applicable Standard

According to ETSI EN 300 113-2 V1.5.1 (2011-11) §7.4.1, the adjacent channel power is that part of the total power output of a transmitter under defined conditions of modulation, which falls within a specified pass-band centred on the nominal frequency of either of the adjacent channels. This power is the sum of the mean power produced by the modulation, hum and noise of the transmitter.

Limits

For a channel separation of 12, 5, 20 kHz and 25 kHz, the adjacent channel power shall not exceed a value of 60, 0 dB below the transmitter power (conducted) without the need to be below 0, 2 µW (-37 dBm).

Method of Measurement

This test measures the power transmitted in the adjacent channel(s) during continuous modulation. This measurement is complemented by adjacent channel transient power measurements.

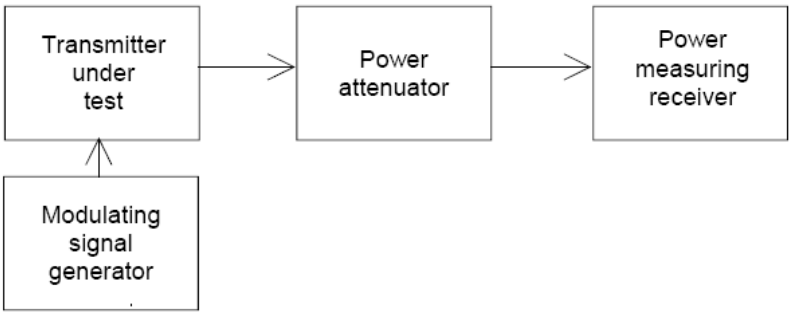


Figure 6: Measurement arrangement

During the test, the transmitter shall be set in continuous transmission mode. If this is not possible, the measurements shall be carried out in a period shorter than the duration of the transmitted burst. It may be necessary to extend the duration of the burst. Averaging measurements with 100 samples are possible for constant and non-constant envelope modulated equipment.

The measurement arrangement in figure 6 shall be used.

The adjacent channel power may be measured, as follows, with a power measuring receiver which conforms to annex B (referred to in the present clause clause as the "receiver"):

a) the transmitter shall be operated at the carrier power determined in clause 7.2 under normal test conditions (see clause 5.3). The output of the transmitter shall be linked to the input of the "receiver" by a connecting device such that the impedance presented to the transmitter is 50 Ω and the level at the "receiver input" is appropriate;

b) with the transmitter unmodulated, the tuning of the "receiver" shall be adjusted so that a maximum response is obtained. This is the 0 dB response point. The "receiver" attenuator setting and the reading of the meter shall be recorded. If an unmodulated carrier cannot be obtained, then the measurement shall be made with the transmitter modulated with the normal test signal D-M2, D-M4, D-M5 or D-M7 as appropriate, according to clause 6.3, in which case this fact shall be recorded in test reports;

c) the frequency of the "receiver" shall be adjusted above the carrier so that the "receiver" -6 dB response nearest to the transmitter carrier frequency is located at a displacement from the nominal carrier frequency as given in table 3:

Table 3: Frequency displacement

Channel separation (kHz)	Specified necessary bandwidth (kHz)	Displacement of the -6 dB point from the nominal carrier frequency (kHz)
12,5	8,5	8,25
20	14	13
25	16	17

d) the transmitter shall be modulated by a normal test signal D-M2, D-M4, D-M5, or D-M7 as appropriate, according to clause 6.3;

e) the "receiver" variable attenuator shall be adjusted to obtain the same meter reading as in step b), or a known relation to it;

f) the ratio of the adjacent channel power to the carrier power is the difference between the attenuator settings in steps b) and e), corrected for any differences in the reading of the meter.

For each adjacent channel, the adjacent channel power shall be recorded:
• the measurement shall be repeated with the frequency of the "receiver" adjusted below the carrier so that the"receiver" -6 dB response nearest to the transmitter carrier frequency is located at a displacement from the nominal carrier frequency as given in table 3;

• the adjacent channel power of the equipment under test shall be expressed as the higher of the two values recorded in step f) for the upper and lower channels nearest to the channel considered;

• when it is not possible to perform the measurement of frequency error in the absence of modulation (see clause 7.1), this measurement shall be repeated under extreme test conditions (see clauses 5.4.1 and 5.4.2 applied simultaneously).

Alternatively, if a spectrum analyser is being used (see annex B) that is capable of measuring rms adjacent channel power automatically, the adjacent channel power (in dB) may be measured directly with the transmitter modulated by normal test signal D-M2, D-M4, D-M5, or D-M7 as appropriate, according to clause 6.3. The spectrum analyser should use a measurement method without frequency weighting and should not use an accelerated method. The adjacent channel power ratio is the value of the measurement results showing the smallest difference between the power in the pass-band and the power in either adjacent channel.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Signal Analyzer	FSIQ26	837405/023	2014-08-22	2015-08-22

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	25 ℃
Relative Humidity:	55 %
ATM Pressure:	101.0 kPa

The testing was performed by William Li on 2015-07-06.

Test Result: Pass

Channel Frequency: 400.0125 MHz

For Highest Output Power:

Channel Frequency (MHz)	Channel Separation (kHz)	Adjacent Channel (kHz)	Adjacent Channel Ratio (dB)	EN 300 113-2 Limit (dB)
400.0125	12.5	-12.5	-61.34	-60.0
		+12.5	-61.50	-60.0

For Lowest output power:

Channel Frequency (MHz)	Channel Separation (kHz)	Adjacent Channel (kHz)	Adjacent Channel Ratio (dB)	EN 300 113-2 Limit (dB)
400.0125	12.5	-12.5	-62.15	-60.0
		+12.5	-64.38	-60.0

Channel Frequency: 450.0125MHz

For Highest Output Power:

Channel Frequency (MHz)	Channel Separation (kHz)	Adjacent Channel (kHz)	Adjacent Channel Ratio (dB)	EN 300 113-2 Limit (dB)
450.0125	12.5	-12.5	-61.60	-60.0
		+12.5	-63.94	-60.0

For Lowest output power:

Channel Frequency (MHz)	Channel Separation (kHz)	Adjacent Channel (kHz)	Adjacent Channel Ratio (dB)	EN 300 113-2 Limit (dB)
450.0125	12.5	-12.5	-62.15	-60.0
		+12.5	-64.38	-60.0

Channel Frequency: 479.9875 MHz

For Highest Output Power:

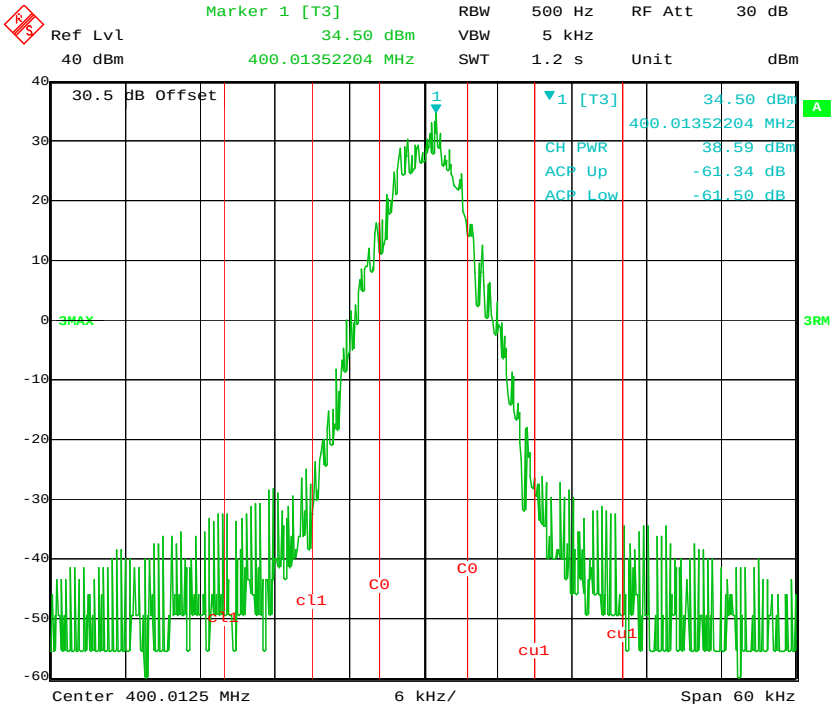
Channel Frequency (MHz)	Channel Separation (kHz)	Adjacent Channel (kHz)	Adjacent Channel Ratio (dB)	EN 300 113-2 Limit (dB)
479.9875	12.5	-12.5	-61.69	-60.0
		+12.5	-65.81	-60.0

For Lowest output power:

Channel Frequency (MHz)	Channel Separation (kHz)	Adjacent Channel (kHz)	Adjacent Channel Ratio (dB)	EN 300 113-2 Limit (dB)
479.9875	12.5	-12.5	-61.08	-60.0
		+12.5	-64.05	-60.0

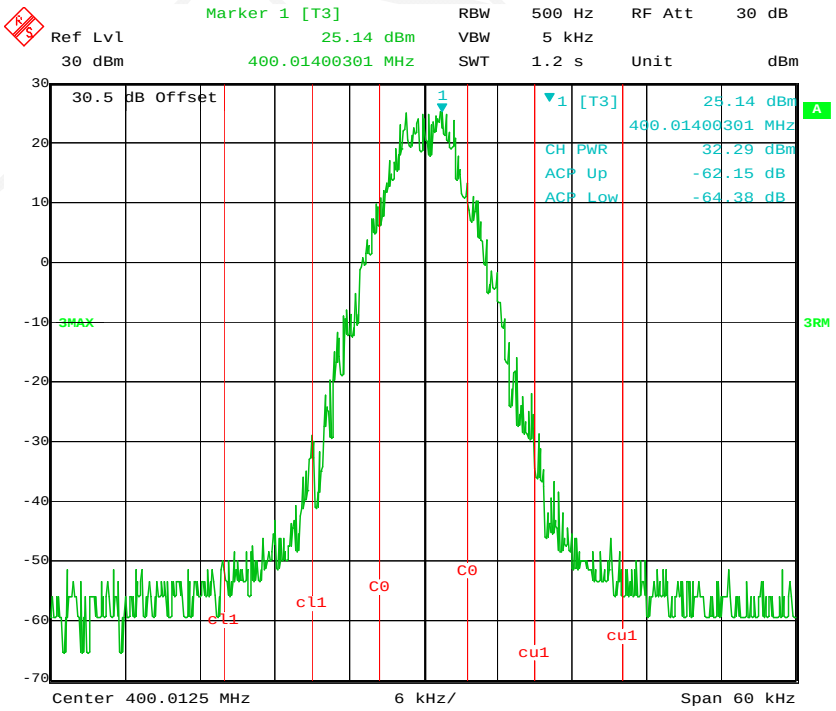
\Result: Pass

400.0125 MHz, Highest Output Power, 12.5 kHz



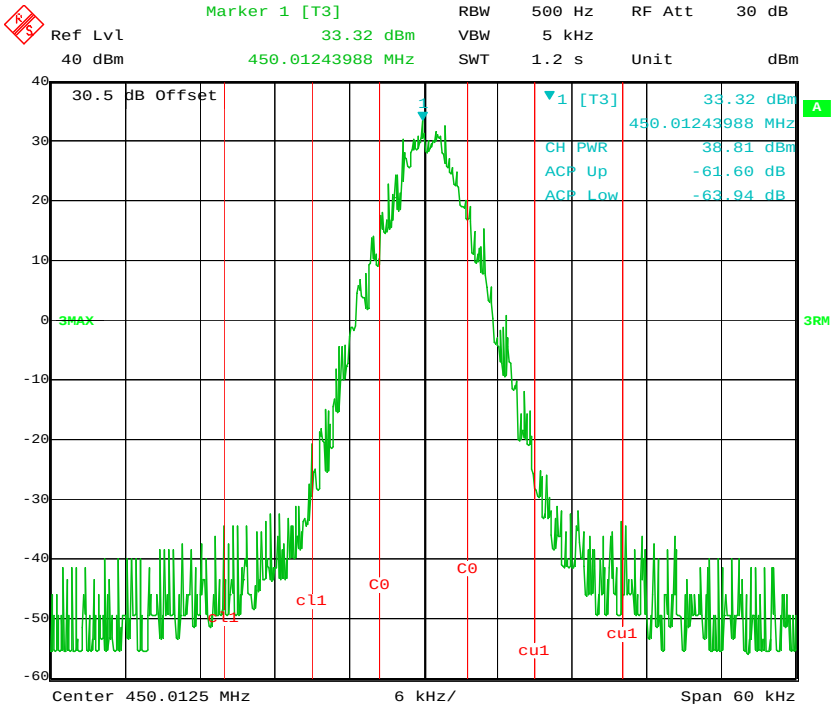
Date: 6.JUL.2015 14:41:11

400.0125 MHz, Lowest Output Power, 12.5 kHz

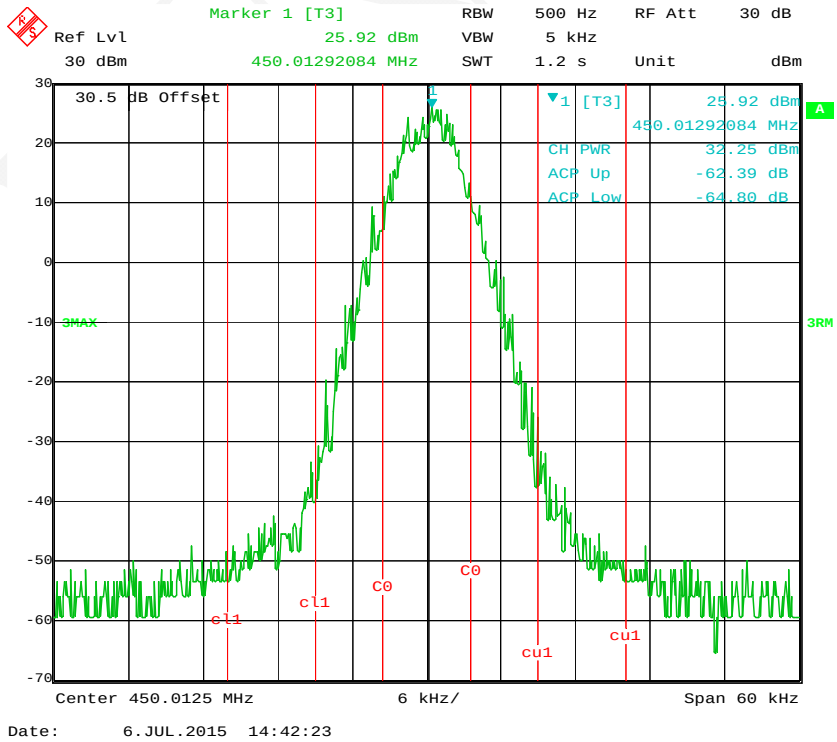


Date: 6.JUL.2015 14:39:25

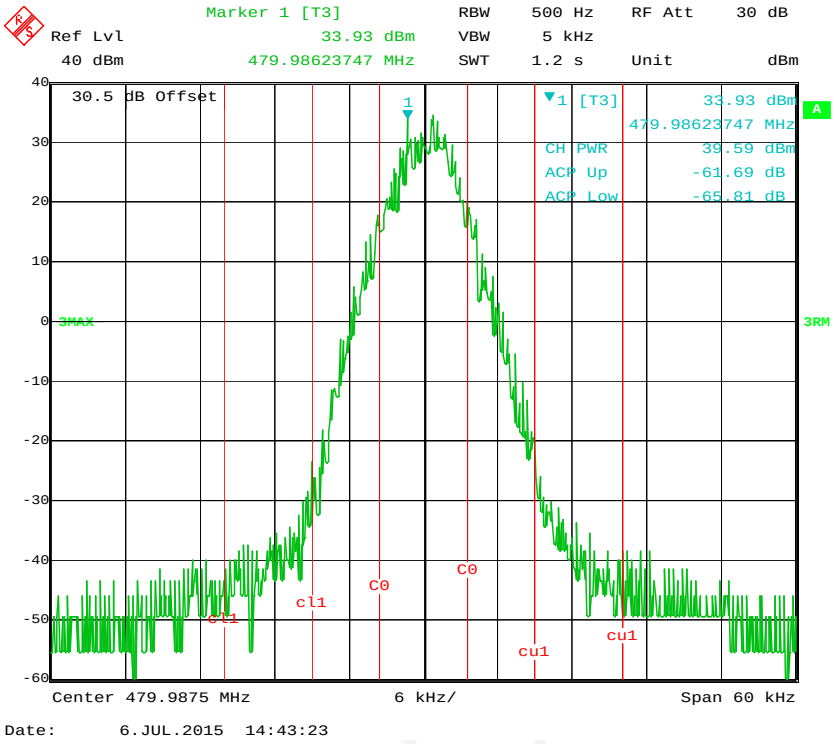
450.0125 MHz, Highest Output Power, 12.5 kHz



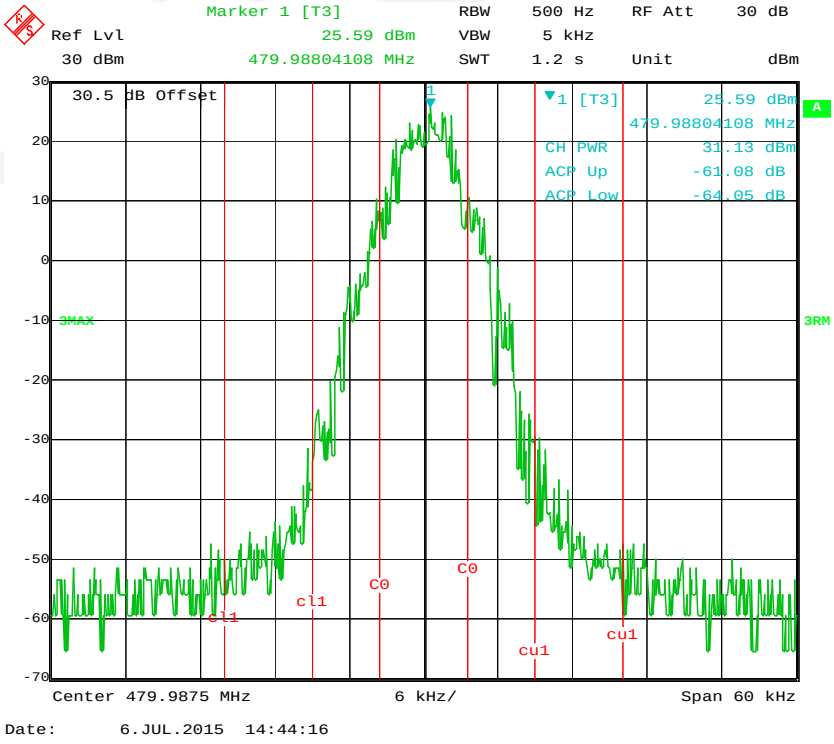
450.0125 MHz, Lowest Output Power, 12.5 kHz



479.9875 MHz, Highest Output Power, 12.5 kHz



479.9875 MHz, Lowest Output Power, 12.5 kHz



ETSI EN 300 113-2 V1.5.1 (2011-11) §4.2.5 – UNWANTED EMISSIONS IN THE SPURIOUS DOMAIN

Applicable Standard

According to ETSI EN 300 113-1 V1.7.1 (2011-11) §7.5.1, Spurious emissions are emissions at frequencies other than those of the carrier and sidebands associated with normal modulation.

The level of spurious emissions shall be measured by either:
a) their power level in a specified load (conducted spurious emission); and
b) their effective radiated power when radiated by the cabinet and structure of the equipment (cabinet radiation); or
c) their effective radiated power when radiated by the cabinet and by the integral antenna, in the case of handportable equipment fitted with such an antenna and no external RF connector.

Limit

The power of any spurious emission shall not exceed the values given in tables 4 and 5.

Table 4: Conducted emissions

Frequency range	Tx operating	Tx standby
9 kHz to 1 GHz	0,25 µW (-36 dBm)	2,0 nW (-57 dBm)
above 1 GHz to 4 GHz, or above 1 GHz to 12,75 GHz	1,00 µW (-30 dBm)	20 nW (-47 dBm)

Table 5: Radiated emissions

Frequency range	Tx operating	Tx standby
30 MHz to 1 GHz	0,25 µW (-36 dBm)	2,0 nW (-57 dBm)
above 1 GHz to 4 GHz, or above 1 GHz to 12,75 GHz	1,00 µW (-30 dBm)	20 nW (-47 dBm)

In the case of radiated measurements for handportable stations the following conditions apply:

- for equipment with an internal integral antenna, the normal antenna shall remain connected;
- for equipment with an external antenna socket, an artificial load shall be connected to the socket for the test.

In the case of equipment measured as non-constant envelope modulation equipment, the reference bandwidths used shall be as stated in tables 6a, 6b and 6c.

Table 6a: Reference bandwidths to be used for the measurement of spurious emissions outside the frequency offsets specified in tables 6b and 6c

Frequency range	RBW
9 kHz to 150 kHz	1 kHz
150 kHz to 30 MHz	10 kHz
30 MHz to 1 GHz	100 kHz
1 GHz to 12,75 GHz	1 MHz

Table 6b: Reference bandwidths to be used close to the wanted emission for equipment operating below 1 GHz

Frequency offset from carrier	RBW
250 % of the CSP to 100 KHz	1 kHz
100 kHz to 500 kHz	10 kHz

Table 6c: Reference bandwidths to be used close to the wanted emission for equipment operating above 1 GHz

Frequency offset from carrier	RBW
250 % of the CSP to 100 kHz	1 kHz
100 kHz to 500 kHz	30 kHz
500 kHz to 1 MHz	300 kHz

Best measurement practice:

The resolution bandwidth of the measuring receiver should be equal to the reference bandwidth as given in the tables above. To improve measurement accuracy, sensitivity and efficiency, the resolution bandwidth can be different from the reference bandwidth. When the resolution bandwidth is smaller than the reference bandwidth, the result should be integrated over the reference bandwidth. When the resolution bandwidth is greater than the reference bandwidth, the result for broadband spurious emissions should be normalized to the bandwidth ratio. For discrete spurious emissions, normalization is not applicable, while integration over the reference bandwidth is still applicable.

Method of Measurement

According to ETSI EN 300 113-1 V1.7.1 (2011-11) §7.5.2&§7.5.3

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on CISPR 16-4-2:2011, the expended combined standard uncertainty of radiation emissions at Bay Area Compliance Laboratories Corp. (Shenzhen) is 5.91 dB for 30MHz-1GHz.and 4.92 dB for above 1GHz, and it will not be taken into consideration for the test data recorded in the report.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Sunol Sciences	Horn Antenna	DRH-118	A052304	2012-12-01	2015-11-30
Sunol Sciences	Broadband Antenna	JB3	A111513	2014-06-18	2017-06-17
Rohde & Schwarz	Signal Analyzer	FSIQ26	837405/023	2014-08-22	2015-08-22
Rohde & Schwarz	EMI Test Receiver	ESCI	101120	2014-11-03	2015-11-03
Mini-Circuits	Amplifier	ZVA-183-S+	5969001149	2015-04-23	2016-04-23
HP	Signal Generator	8657A	3217A04699	2014-12-19	2015-12-18
HP	Amplifier	8447E	1937A01046	2014-09-30	2015-09-30
HP	Synthesized Sweeper	8341B	2624A00116	2015-05-09	2016-05-09
COM POWER	Dipole Antenna	AD-100	041000	2015-06-06	2016-06-05
A.H. System	Horn Antenna	SAS-200/571	135	2013-02-11	2016-02-10

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	24 ℃
Relative Humidity:	48 %
ATM Pressure:	101.0 kPa

The testing was performed by William Li from 2015-06-07 to2015-07-06.

Test Result: Pass

Please refer to the following tables and plots.

Test mode: Transmitting

Frequency (MHz)	Receiver Reading (dBμV)	Turn Table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	EN 300 113-2	
			Height (m)	Polar (H/V)	SG Level (dBm)	Cable (dB)	Antenna Gain (dB)		Limit (dBm)	Margin (dB)
Frequency: 400.0125 MHz										
800.03	50.17	26	1.2	H	-46.8	0.67	0	-47.47	-36	11.47
800.03	58.22	77	2.0	V	-38.8	0.67	0	-39.47	-36	3.47
1200.04	58.93	313	1.0	H	-41.4	1.50	6.20	-36.70	-30	6.70
1200.04	52.11	105	1.6	V	-48.4	1.50	6.20	-43.70	-30	13.70
1600.05	46.87	219	1.9	H	-48.6	1.30	6.70	-43.20	-30	13.20
1600.05	46.33	155	1.0	V	-53.9	1.30	6.70	-48.50	-30	18.50
Frequency: 450.0125 MHz										
900.03	50.41	189	2.3	H	-46.6	0.70	0	-47.30	-36	11.30
900.03	58.49	6	1.6	V	-38.5	0.70	0	-39.20	-36	3.20
1350.04	60.99	163	1.7	H	-38.5	1.20	6.40	-33.30	-30	3.30
1350.04	53.51	263	2.0	V	-46.8	1.20	6.40	-41.60	-30	11.60
1800.05	45.12	97	1.0	H	-51.7	1.40	7.10	-46.00	-30	16.00
1800.05	43.01	82	1.5	V	-54.1	1.40	7.10	-48.40	-30	18.40
Frequency: 479.9875 MHz										
959.98	50.04	121	2.2	H	-47.0	0.74	0	-47.74	-36	11.74
959.98	57.89	273	2.2	V	-39.1	0.74	0	-39.84	-36	3.84
1439.96	60.24	140	1.6	H	-39.2	1.20	6.40	-34.00	-30	4.00
1439.96	51.46	73	2.1	V	-48.9	1.20	6.40	-43.70	-30	13.70
1919.95	47.22	3	2.3	H	-49.5	1.40	7.30	-43.60	-30	13.60
1919.95	46.94	112	1.5	V	-48.2	1.40	7.30	-42.30	-30	12.30

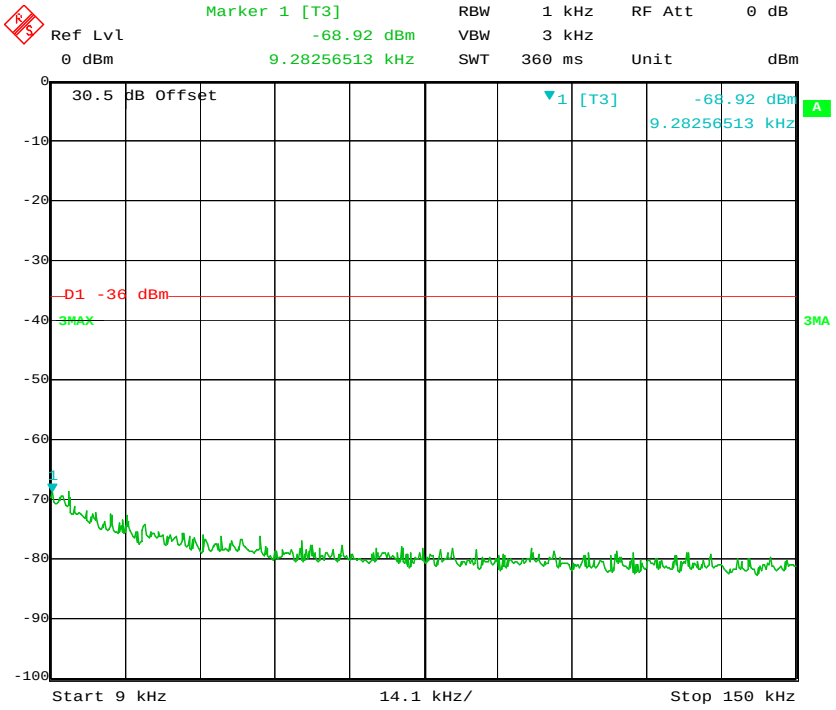
Test mode: Standby

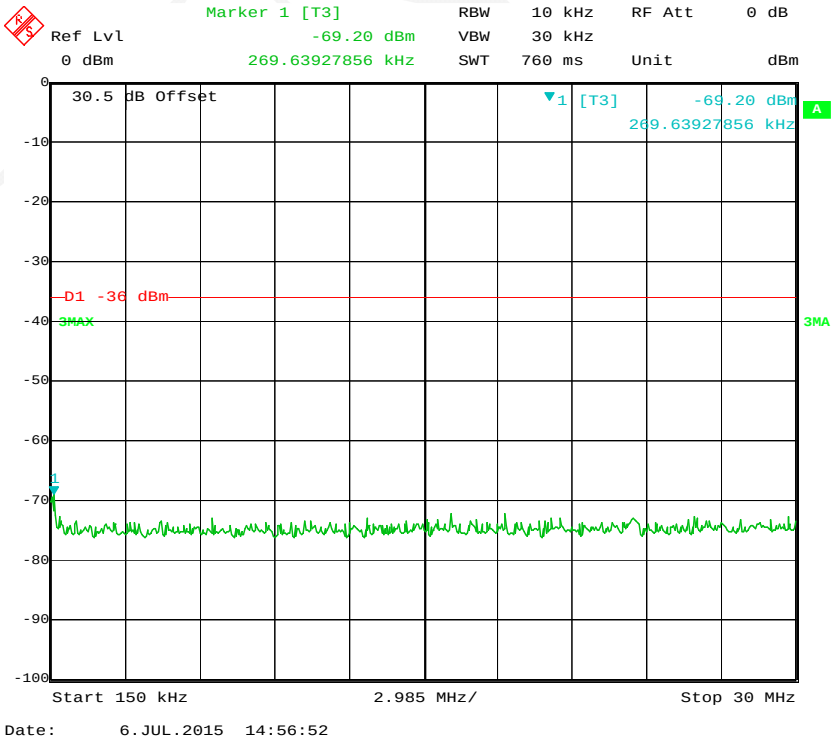
Frequency (MHz)	Receiver Reading (dBμV)	Turn Table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	EN 300 113-2	
			Height (m)	Polar (H/V)	SG Level (dBm)	Cable (dB)	Antenna Gain (dB)		Limit (dBm)	Margin (dB)
152.65	31.56	144	2.1	H	-65.4	0.27	0	-65.67	-57	8.67
152.65	30.47	142	1.6	V	-66.5	0.27	0	-66.77	-57	9.77
1334.12	35.44	206	2.5	H	-64.9	1.27	6.30	-59.87	-47	12.87
1334.12	35.40	194	1.9	V	-65.2	1.27	6.30	-60.17	-47	13.17

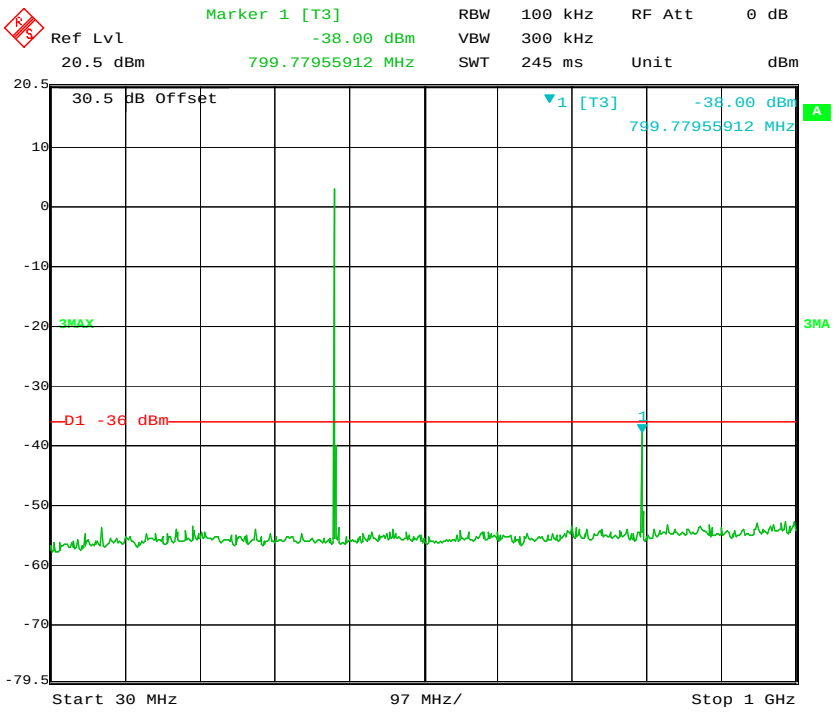
Note:
1) Absolute Level = SG Level - Cable Loss + Antenna Gain
2) Margin = Limit - Absolute Level

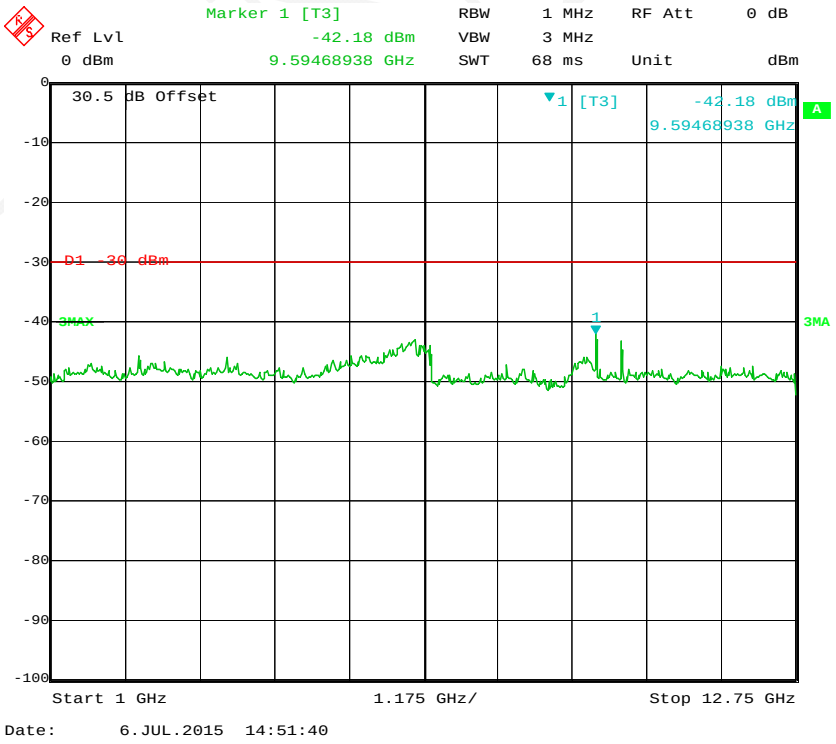
Plots for Conducted Emission of transmitting mode:

Frequency: 400.0125 MHz

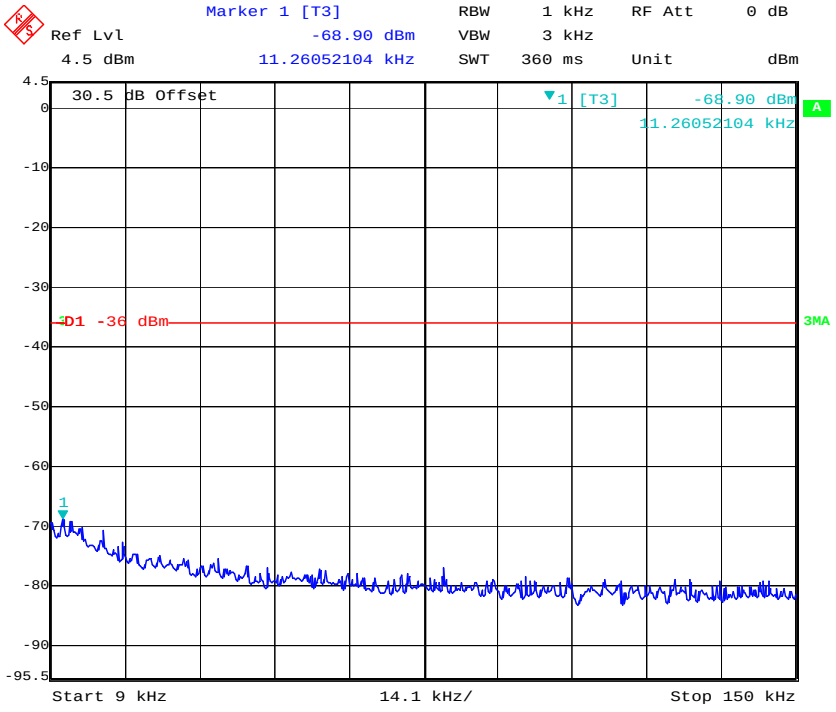


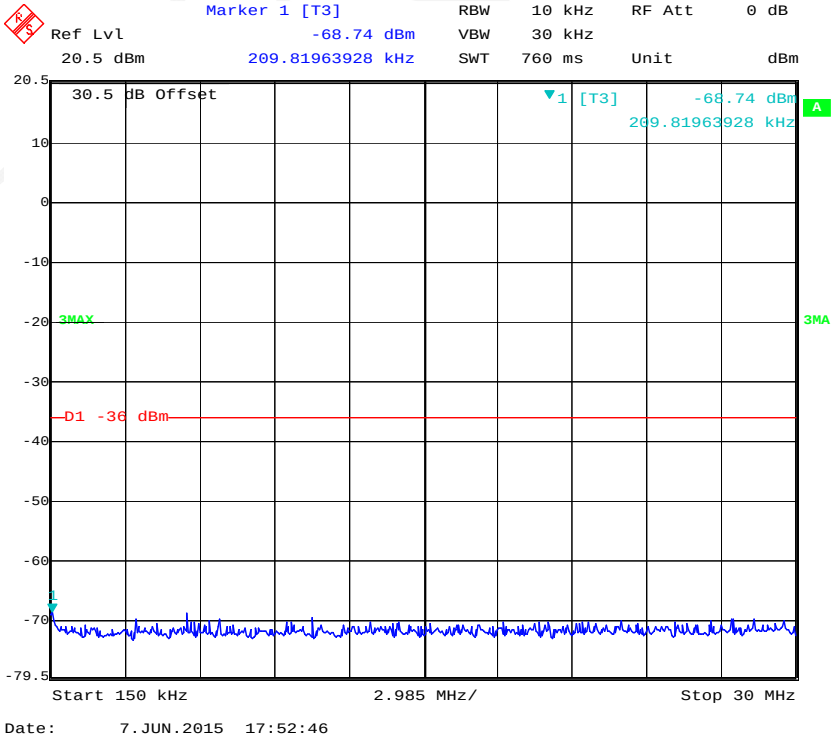


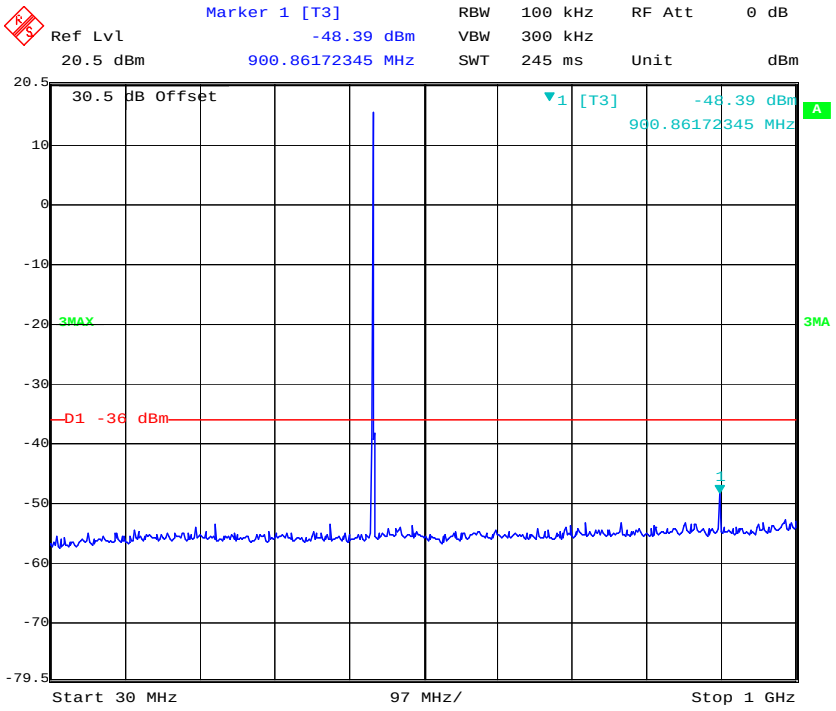

Marker 1 [T3]
RBW 100 kHz
RF Att 0 dB
Ref Lvl
-38.00 dBm
VBW 300 kHz
20.5 dBm
799.77955912 MHz
SWT 245 ms
Unit dBm
30.5 dB Offset
1 [T3] -38.00 dBm
799.77955912 MHz
A
3MAX
3MA
D1 -36 dBm
Start 30 MHz
97 MHz/
Stop 1 GHz
Date: 6.JUL.2015 14:50:45

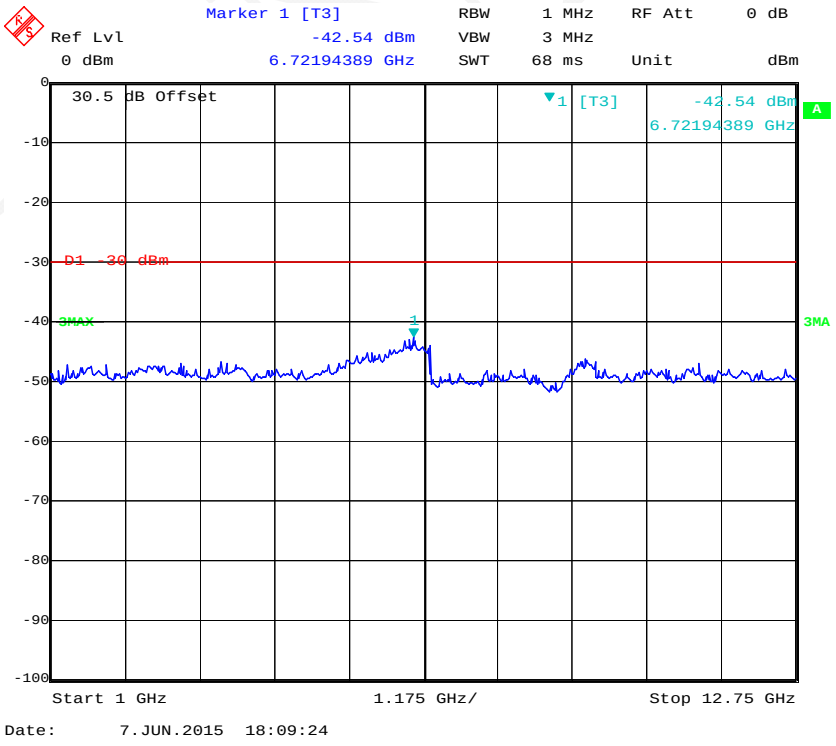

Marker 1 [T3]
RBW 1 MHz
RF Att 0 dB
Ref Lvl
-42.18 dBm
VBW 3 MHz
0 dBm
9.59468938 GHz
SWT 68 ms
Unit dBm
30.5 dB Offset
1 [T3] -42.18 dBm
9.59468938 GHz
A
3MAX
3MA
D1 -30 dBm
Start 1 GHz
1.175 GHz/
Stop 12.75 GHz
Date: 6.JUL.2015 14:51:40

Frequency: 450.0125 MHz

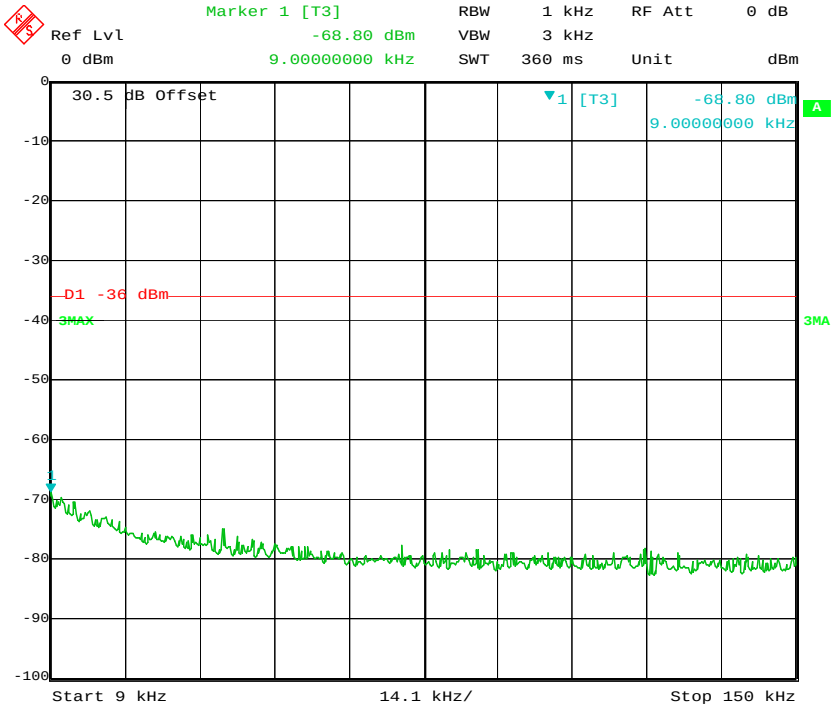


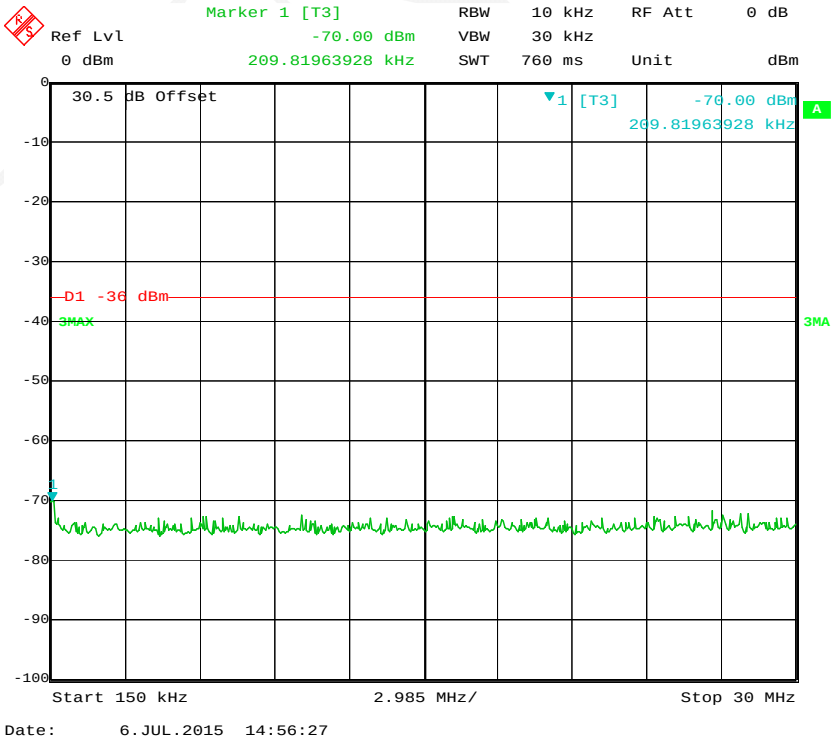


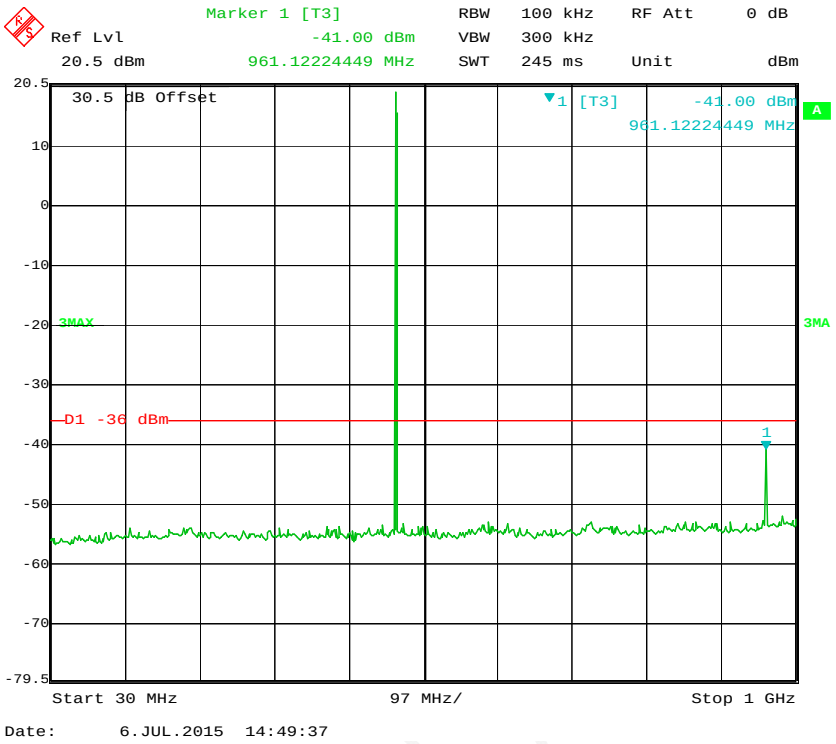

Marker 1 [T3]
RBW 100 kHz
RF Att 0 dB
Ref Lvl
-48.39 dBm
VBW 300 kHz
20.5 dBm
900.86172345 MHz
SWT 245 ms
Unit dBm
30.5 dB Offset
1 [T3] -48.39 dBm
900.86172345 MHz
A
3MAX
3MA
D1 -36 dBm
Start 30 MHz
97 MHz/
Stop 1 GHz
Date: 7.JUN.2015 17:51:47

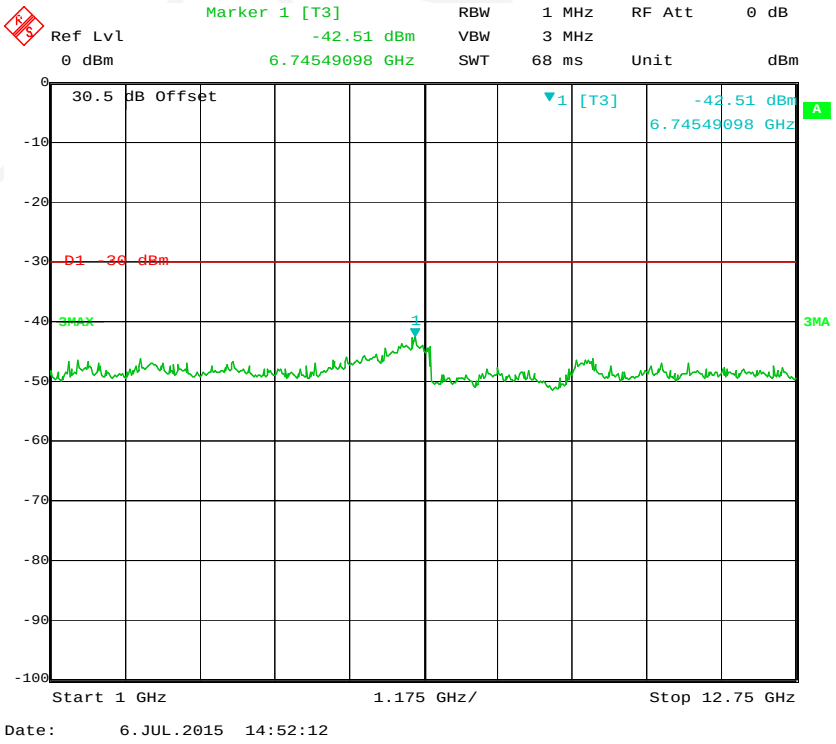

Marker 1 [T3]
RBW 1 MHz
RF Att 0 dB
Ref Lvl
-42.54 dBm
VBW 3 MHz
0 dBm
6.72194389 GHz
SWT 68 ms
Unit dBm
30.5 dB Offset
1 [T3] -42.54 dBm
6.72194389 GHz
A
3MAX
3MA
D1 -30 dBm
Start 1 GHz
1.175 GHz/
Stop 12.75 GHz
Date: 7.JUN.2015 18:09:24

Frequency: 479.9875 MHz

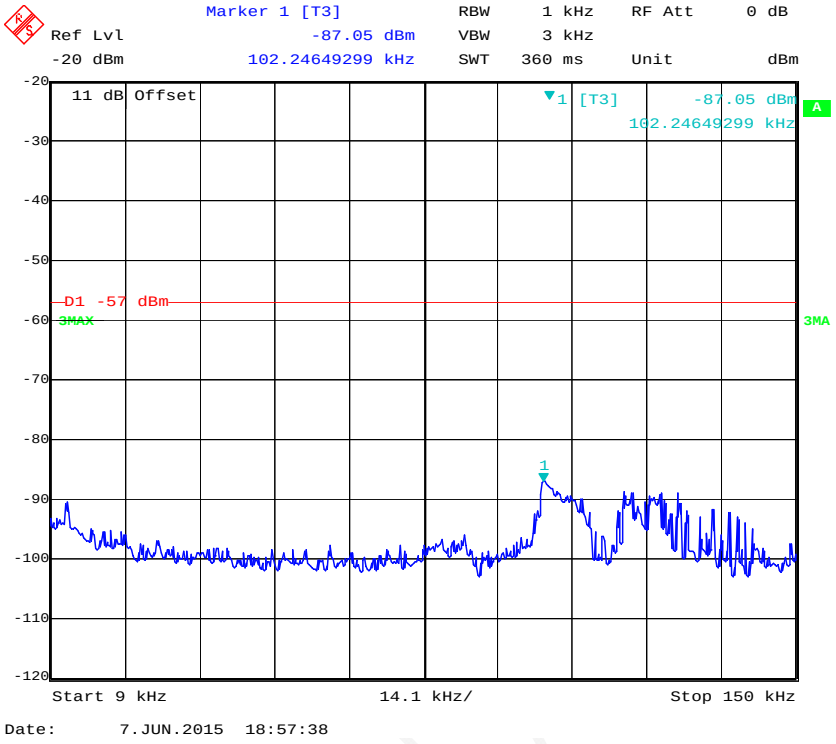


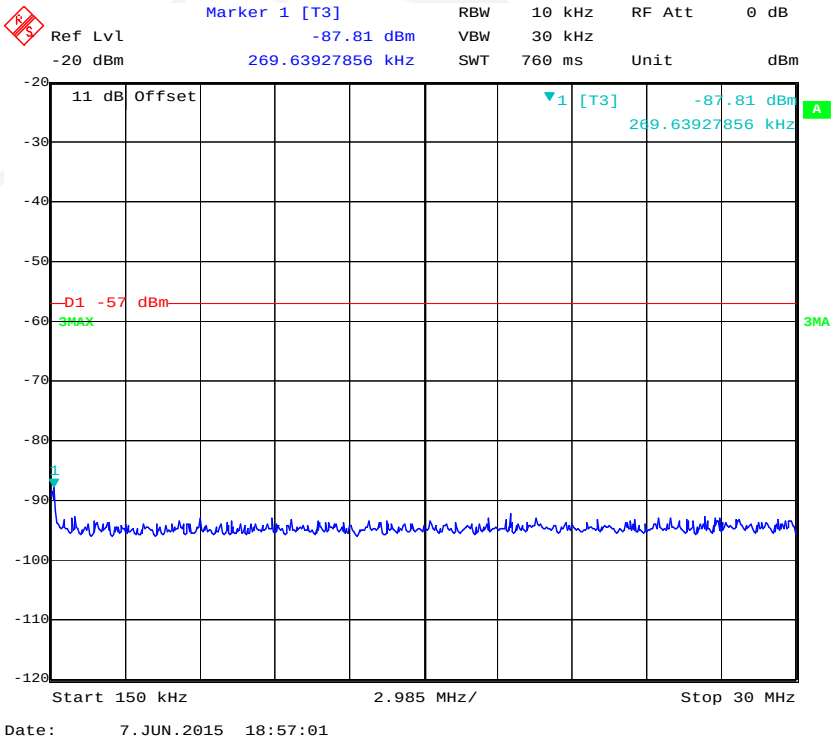


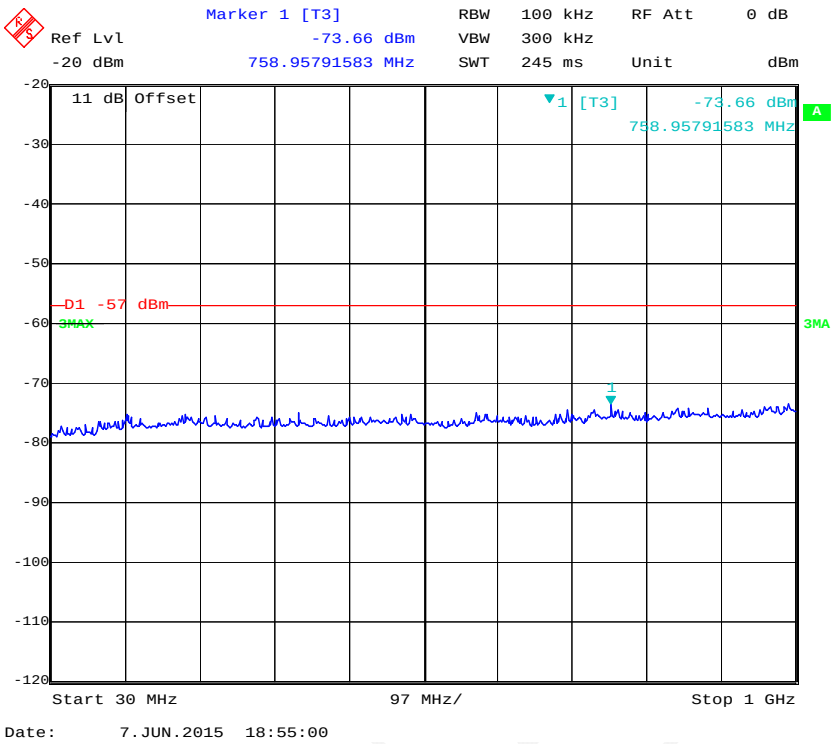

Marker 1 [T3]
RBW 100 kHz
RF Att 0 dB
Ref Lvl
-41.00 dBm
VBW 300 kHz
20.5 dBm
961.12224449 MHz
SWT 245 ms
Unit dBm
30.5 dB Offset
1 [T3] -41.00 dBm
961.12224449 MHz
A
3MAX
3MA
D1 -36 dBm
Start 30 MHz
97 MHz/
Stop 1 GHz
Date: 6.JUL.2015 14:49:37

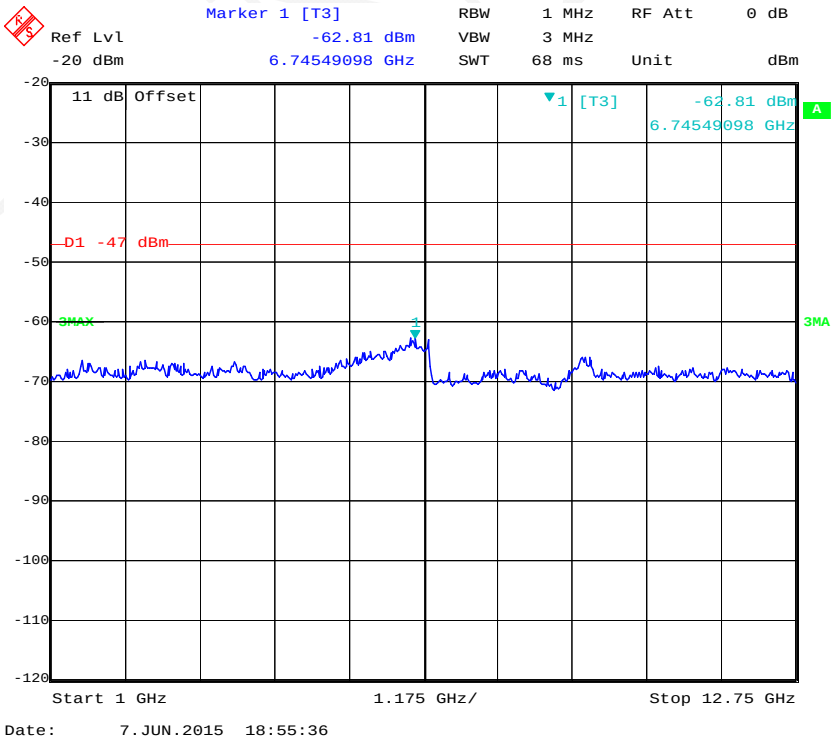

Marker 1 [T3]
RBW 1 MHz
RF Att 0 dB
Ref Lvl
-42.51 dBm
VBW 3 MHz
0 dBm
6.74549098 GHz
SWT 68 ms
Unit dBm
30.5 dB Offset
1 [T3] -42.51 dBm
6.74549098 GHz
A
D1 -36 dBm
3MAX
3MA
Start 1 GHz
1.175 GHz/
Stop 12.75 GHz
Date: 6.JUL.2015 14:52:12

Plots for Conducted Emission of standby mode:






Marker 1 [T3]
RBW 100 kHz
RF Att 0 dB
Ref Lvl
-73.66 dBm
VBW 300 kHz
-20 dBm
758.95791583 MHz
SWT 245 ms
Unit dBm
11 dB Offset
1 [T3]
-73.66 dBm
758.95791583 MHz
D1 -57 dBm
3MAX
3MA
Start 30 MHz
97 MHz/
Stop 1 GHz
Date: 7.JUN.2015 18:55:00


Marker 1 [T3]
RBW 1 MHz
RF Att 0 dB
Ref Lvl
-62.81 dBm
VBW 3 MHz
-20 dBm
6.74549098 GHz
SWT 68 ms
Unit dBm
11 dB Offset
1 [T3]
-62.81 dBm
6.74549098 GHz
D1 -47 dBm
3MAX
3MA
Start 1 GHz
1.175 GHz/
Stop 12.75 GHz
Date: 7.JUN.2015 18:55:36

ETSI EN 300 113-2 V1.5.1 (2011-11) §4.2.7 – TRANSIENT FREQUENCY BEHAVIOUR OF THE TRANSMITTER

Standard Applicable

According to ETSI EN 300 113-1 V1.7.1 (2011-11) §7.9

Limits

Transients may occur very often in some types of equipment (e.g. packet data systems) and are a potential source of interference for equipment operating both in adjacent channels and much further away in the spectrum. The effects of transients can be very different from case to case because there are a number of possible mechanisms relating to such phenomena. For that reason, the method of measurement provided in the present document is expected to capture events that may have a high probability of happening, but some other unacceptable effects of transients may require specific methods to be detected and measured. The method and limits provided in the present document are therefore the result of a compromise between an acceptable level of confidence and an acceptable complexity of the measurement.

1) Time domain analysis of power and frequency for constant envelope transmissions

When appropriate, the plots of carrier power (conducted) and carrier frequency as a function of time, covering in an appropriate way the transients, shall be included in test reports. At any time when the carrier power is above Pc - 30 dB, the carrier frequency shall remain within half a channel separation (dfc) from the steady carrier frequency (Fc). In case of equipment operating with channel separation of 12,5 kHz, the slopes of the plots "power as a function of time" corresponding to both attack and release times, shall be such that:

- tp ⩾ 0,10 ms and td ⩾ 0,10 ms, for attack and release time;
- between the Pc - 30 dB point and the Pc - 6 dB point, both in the case of attack and release time, the sign of the slope shall not change.

In case of equipment operating with channel separation of 20 kHz or 25 kHz, the slopes of the plots "power as a function of time" corresponding to both attack and release times, shall be such that:

- tp ⩾ 0,05 ms and td ⩾ 0,05 ms, for attack and release time;
- between the Pc - 30 dB point and the Pc - 6 dB point, both in the case of attack and release time, the sign of the slope shall not change.

2) Adjacent and alternate channel transient power

a) Equipment measured as constant envelope angle modulation equipment

The transient power, in the adjacent channels shall not exceed a value of:

- 60,0 dB below the transmitter power (conducted) without the need to be below 2 µW (-27,0 dBm), for channel separations of 20 kHz and 25 kHz;
- 50,0 dB below the transmitter power (conducted) without the need to be below 2 µW (-27,0 dBm), for a channel separation of 12,5 kHz.

b) Equipment measured as non-constant envelope modulation equipment

Figure 1 shows the position of adjacent and alternate channels with respect to the wanted channel.
The transient power, in the adjacent channels shall not exceed a value of:
- 60,0 dB below the transmitter power (conducted) without the need to be below 2 µW (-27,0 dBm), for channel separations of 20 kHz and 25 kHz;
- 50,0 dB below the transmitter power (conducted) without the need to be below 2 µW (-27,0 dBm), for a channel separation of 12,5 kHz.

The transient power, in the alternate channels shall not exceed a value of:
- 65,0 dB below the transmitter power (conducted) without the need to be below 2 µW (-27,0 dBm), for channel separations of 20 kHz and 25 kHz;
- 60,0 dB below the transmitter power (conducted) without the need to be below 2 µW (-27,0 dBm), for a channel separation of 12,5 kHz.

For measurements at 100 kHz and 1 MHz (from the wanted channel), the transient power shall not exceed a value:
- 65,0 dB below the transmitter power (conducted) without the need to be below 2 µW (-27,0 dBm), for channel separations of 20 kHz and 25 kHz;
- 60,0 dB below the transmitter power (conducted) without the need to be below 2 µW (-27,0 dBm), for a channel separation of 12,5 kHz.

Note: The transmitter power (conducted) is measured in clause 7.2; it is the mean power for constant envelope modulation and the peak envelope power for non constant envelope modulation.

Method of measurement

According to ETSI EN 300 113-1 V1.7.1 (2011-11) §7.9.3

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Signal Analyzer	FSIQ26	837405/023	2014-08-22	2015-08-22

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

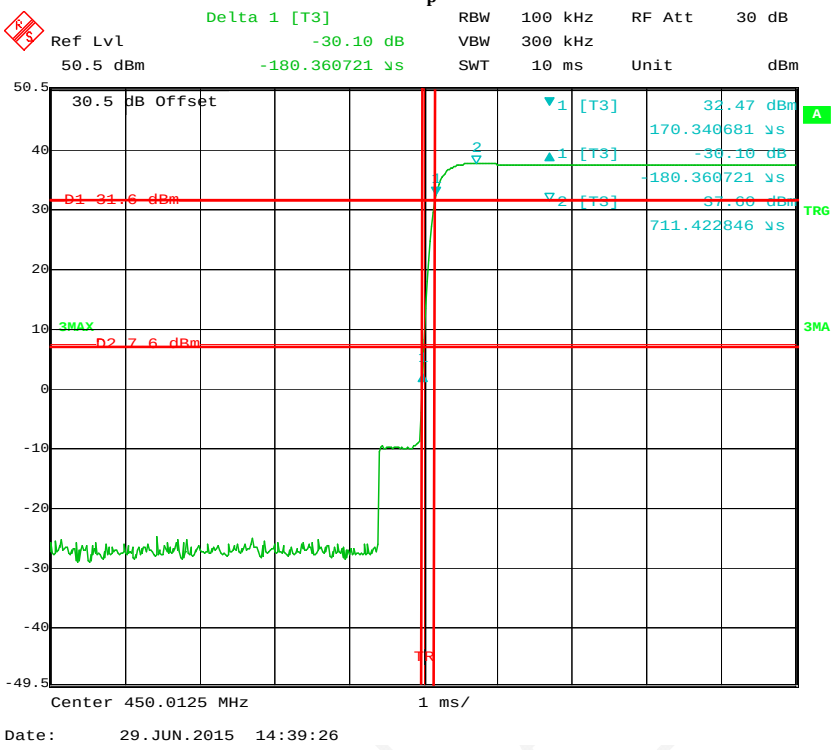
Temperature:	21 ℃
Relative Humidity:	50 %
ATM Pressure:	101.0 kPa

The testing was performed by William Li on 2015-06-29.

Test Mode: Transmitting (Middle channel)

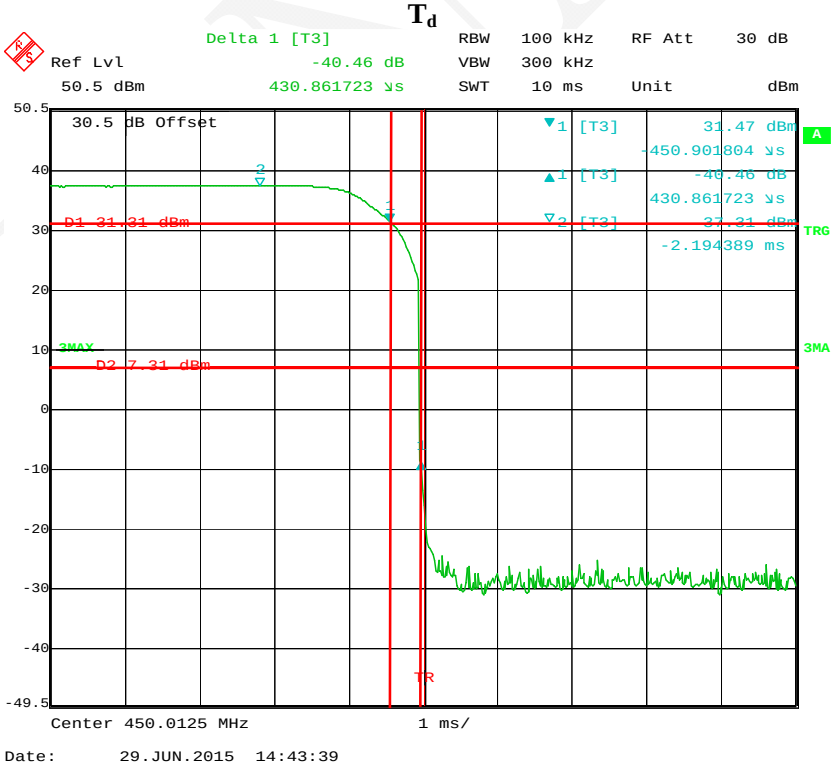
Test Result: Pass
Please refer to the following plots.

T_p



Note: Tp ⩾0.10 ms

T_d



Note: Td ⩾0.10 ms

Adjacent channel transient power

Channel Frequency (MHz)	Channel Separation (kHz)	Adjacent Channel (kHz)	Adjacent Channel Ratio (dB)	Limit (dB)
485.0125	12.5	-12.5	63.94	50.0
		+12.5	61.60	50.0

ETSI EN 300 113-2 V1.5.1 (2011-11) §4.3.7 – RECEIVER SPURIOUS RADIATIONS

Applicable Standard

According to ETSI EN 300 113-1 V1.7.1 (2011-11) §8.10.1, Spurious radiations from the receiver are emissions at any frequency, radiated by the equipment and its antenna.

The level of spurious radiations shall be measured by either:

a) their power level in a specified load (conducted spurious emission); and
b) their effective radiated power when radiated by the cabinet and structure of the equipment (cabinet radiation); or
c) their effective radiated power when radiated by the cabinet and by the integral antenna, in the case of handportable equipment fitted with such an antenna and no external RF connector.

Limits

The power of any spurious radiation shall not exceed the values given in tables 9 and 10.

Table 9: Conducted components

Frequency range	Limit
9 kHz to 1 GHz	2,0 nW (-57 dBm)
above 1 GHz to 4 GHz, or above 1 GHz to 12,75 GHz	20,0 nW (-47 dBm)

Table 10a: Radiated components

Frequency range	Limit
30 MHz to 1 GHz	2,0 nW (-57 dBm)
above 1 GHz to 4 GHz	20,0 nW (-47 dBm)

In the case of radiated measurements for handportable stations the following conditions apply:

- for equipment having an external antenna connector, an artificial load shall be connected to the socket during the test;
- for equipment having no external antenna connector, the normal integral antenna shall be used.

Table 10b: Reference bandwidths to be used for the measurement of spurious radiations

Frequency range	RBW
9 kHz to 150 kHz	1 kHz
150 kHz to 30 MHz	10 kHz
30 MHz to 1 GHz	100 kHz
1 GHz to 12,75 GHz	1 MHz

Method of Measurement

According to ETSI EN 300 113-1 V1.7.1 (2011-11) §8.10.2&§8.10.3

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on CISPR 16-4-2:2011, the expended combined standard uncertainty of radiation emissions at Bay Area Compliance Laboratories Corp. (Shenzhen) is 5.91 dB for 30MHz-1GHz.and 4.92 dB for above 1GHz, and it will not be taken into consideration for the test data recorded in the report.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Sunol Sciences	Horn Antenna	DRH-118	A052304	2012-12-01	2015-11-30
Sunol Sciences	Broadband Antenna	JB3	A111513	2014-06-18	2017-06-17
Rohde & Schwarz	EMI Test Receiver	ESCI	101120	2014-11-12	2015-11-12
Rohde & Schwarz	Signal Analyzer	FSIQ26	837405/023	2014-08-22	2015-08-22
Mini-Circuits	Amplifier	ZVA-183-S+	5969001149	2015-04-23	2016-04-23
HP	Signal Generator	8657A	3217A04699	2014-12-19	2015-12-18
HP	Amplifier	8447E	1937A01046	2014-09-30	2015-09-30
HP	Synthesized Sweeper	8341B	2624A00116	2015-05-09	2016-05-09
COM POWER	Dipole Antenna	AD-100	041000	NCR	NCR
A.H. System	Horn Antenna	SAS-200/571	135	2013-02-11	2016-02-10

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	21 ℃
Relative Humidity:	50 %
ATM Pressure:	101.0 kPa

The testing was performed by William Li on2015-06-07.

Test Result: Pass

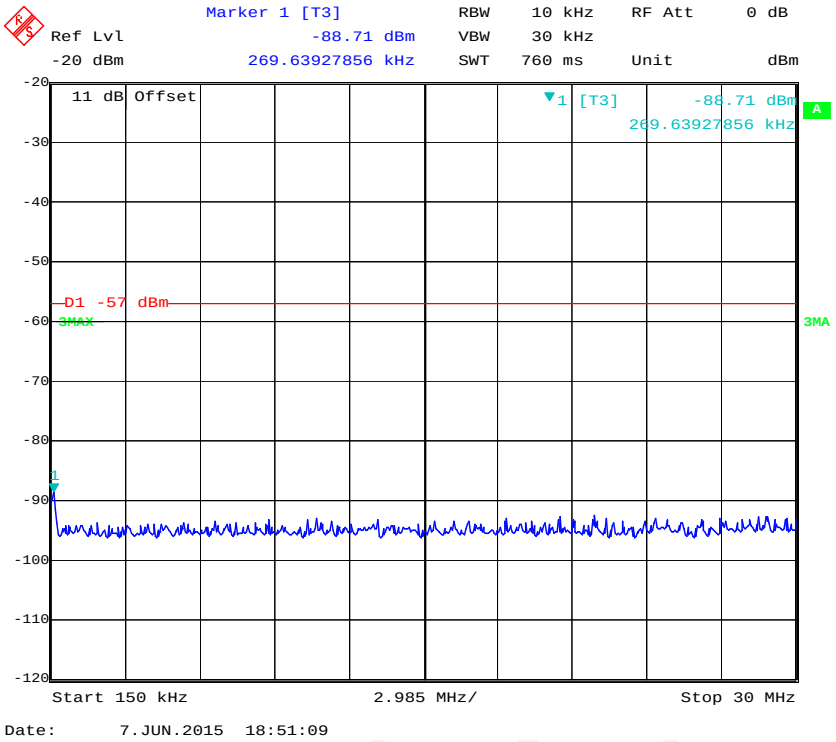
Please refer to the following tables.

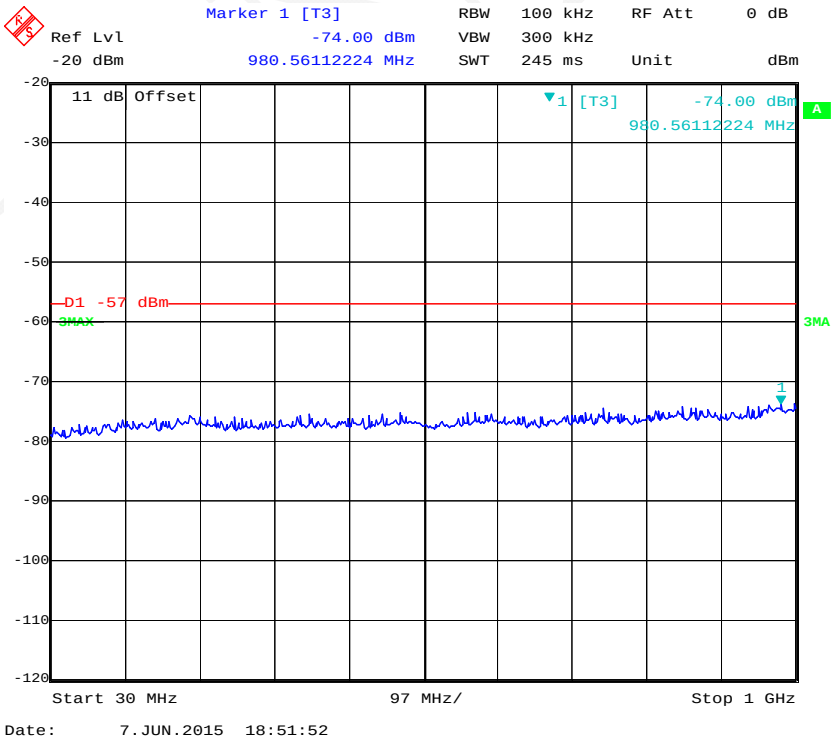
Test mode: Receiving

Frequency (MHz)	Receiver Reading (dBμV)	Turn Table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	EN 300 113-2	
			Height (m)	Polar (H/V)	SG Level (dBm)	Cable (dB)	Antenna Gain (dB)		Limit (dBm)	Margin (dB)
152.65	30.77	289	1.7	H	-66.2	0.27	0	-66.47	-57	9.47
152.65	31.98	187	2.4	V	-65.0	0.27	0	-65.27	-57	8.27
1334.12	35.64	232	1.1	H	-64.7	1.27	6.30	-59.67	-47	12.67
1334.12	34.06	103	1.2	V	-66.5	1.27	6.30	-61.47	-47	14.47

Note:
1) Absolute Level = SG Level - Cable Loss + Antenna Gain
2) Margin = Limit - Absolute Level

Plots for Conducted Emission of receiving mode:


Marker 1 [T3]
RBW 10 kHz
RF Att 0 dB
Ref Lvl
-88.71 dBm
VBW 30 kHz
-20 dBm
269.63927856 kHz
SWT 760 ms
Unit dBm
11 dB Offset
1 [T3] -88.71 dBm
269.63927856 kHz
D1 -57 dBm
3MAX
3MA
Start 150 kHz
2.985 MHz/
Stop 30 MHz
Date: 7.JUN.2015 18:51:09


Marker 1 [T3]
RBW 100 kHz
RF Att 0 dB
Ref Lvl
-74.00 dBm
VBW 300 kHz
-20 dBm
980.56112224 MHz
SWT 245 ms
Unit dBm
11 dB Offset
1 [T3] -74.00 dBm
980.56112224 MHz
D1 -57 dBm
3MAX
3MA
Start 30 MHz
97 MHz/
Stop 1 GHz
Date: 7.JUN.2015 18:51:52

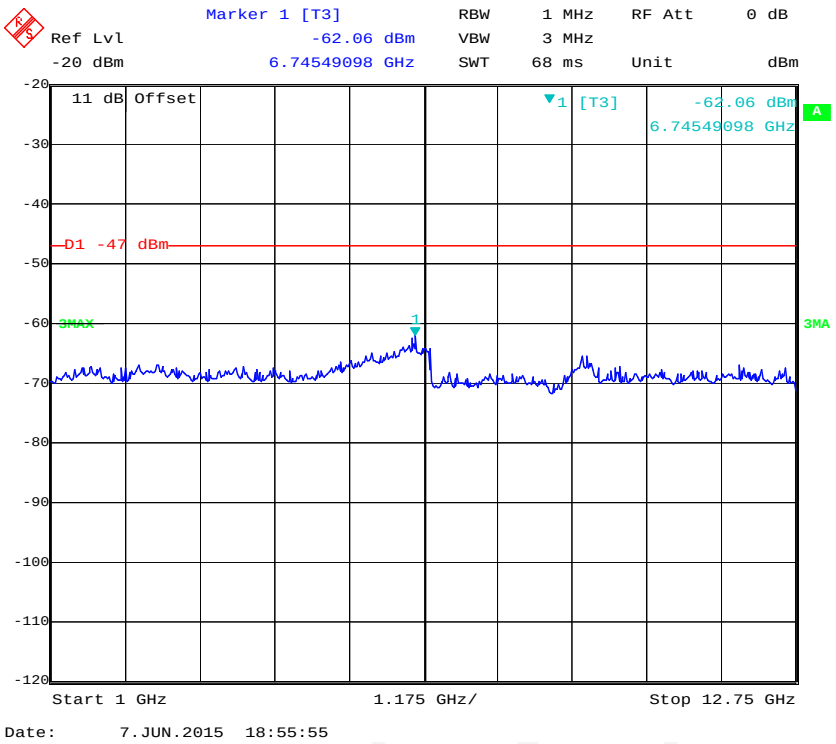

Marker 1 [T3]
RBW 1 MHz
RF Att 0 dB
Ref Lvl
-62.06 dBm
VBW 3 MHz
-20 dBm
6.74549098 GHz
SWT 68 ms
Unit dBm
11 dB Offset
1 [T3]
-62.06 dBm
6.74549098 GHz
D1 -47 dBm
3MAX
3MA
Start 1 GHz
1.175 GHz/
Stop 12.75 GHz
Date: 7.JUN.2015 18:55:55

EXHIBIT A - CE PRODUCT LABELING

CE Label Format

CE 1313 ①

Specifications: The marking set out above must be affixed to the apparatus or to its data plate and have a minimum height of 5 mm. The elements should be easily readable and indelible. They may be placed anywhere on the apparatus case or in its battery compartment. No tool should be needed to view the marking.
1313: 4 digit notified body number

Note: The label should contain the below content:

① The name of the manufacturer or the person responsible for placing the apparatus on the market
② Type
③ Batch and/or serial numbers

Proposed Label Location on EUT

EXHIBIT B - EUT PHOTOGRAPHS

EUT – Front View

EUT – Rear View

EUT – Top View

EUT – Bottom View

EUT – Left View

EUT – Right View

EUT – Cover off View 1

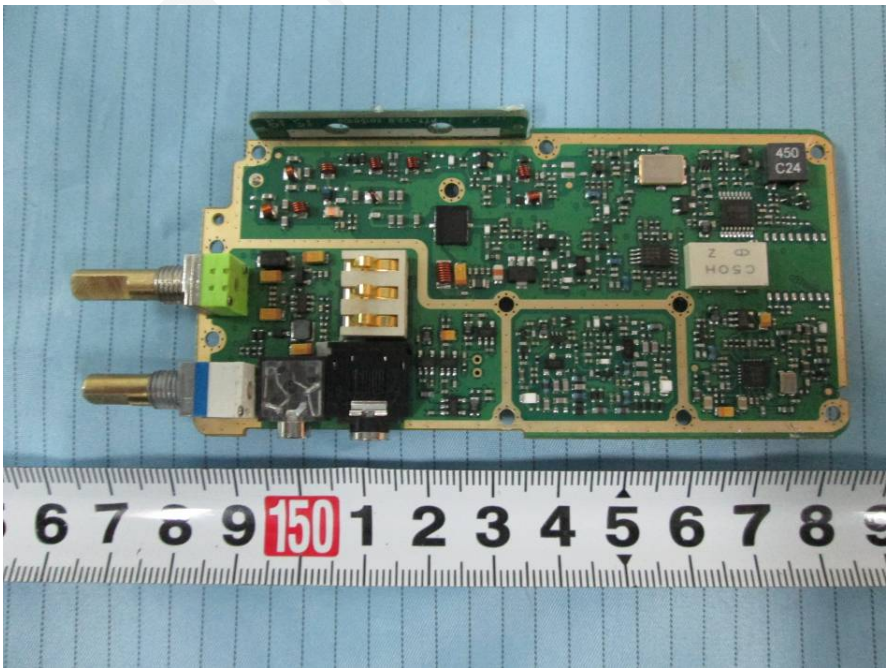
EUT – Cover off View 2

EUT –Cover off View 3

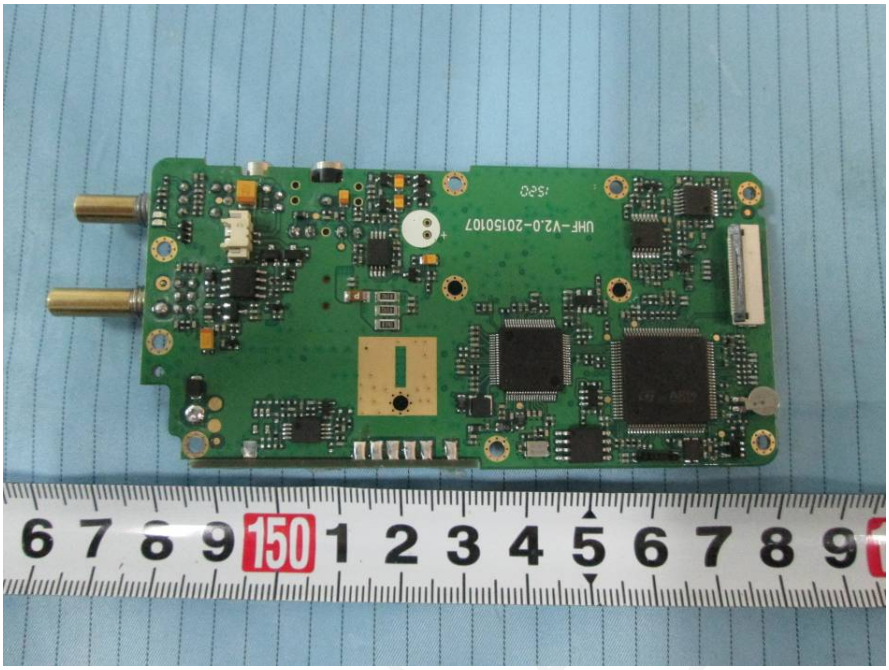
EUT –Cover off View 4

EUT –Cover off View 5

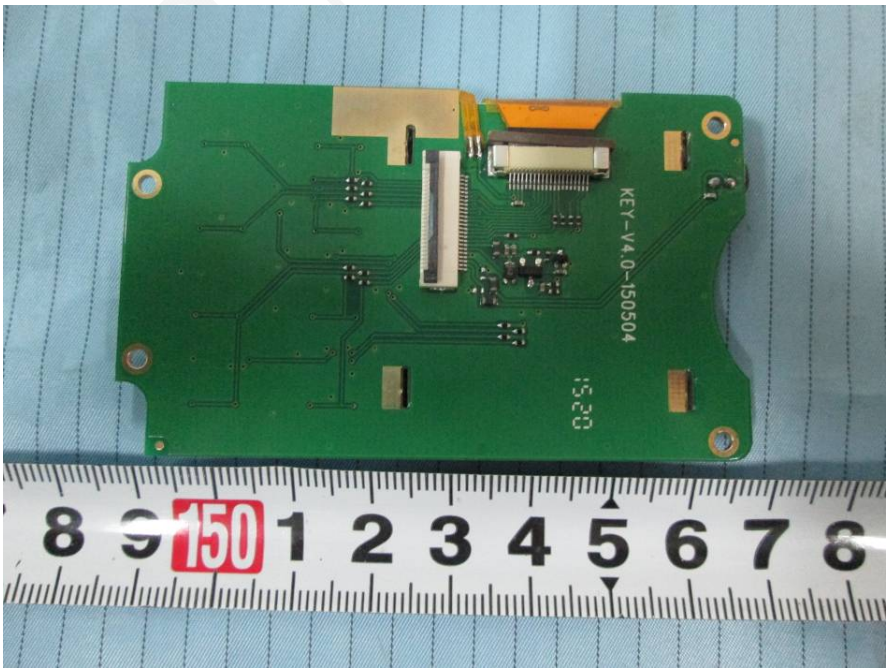
EUT – Main Board 1 View



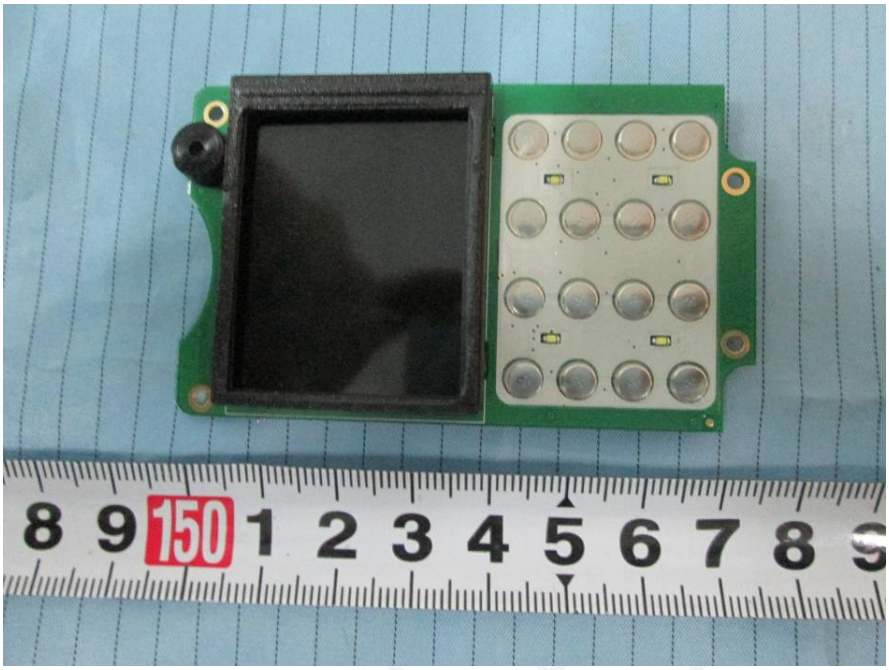
EUT – Main Board 2 View



EUT – Main Board 3 View

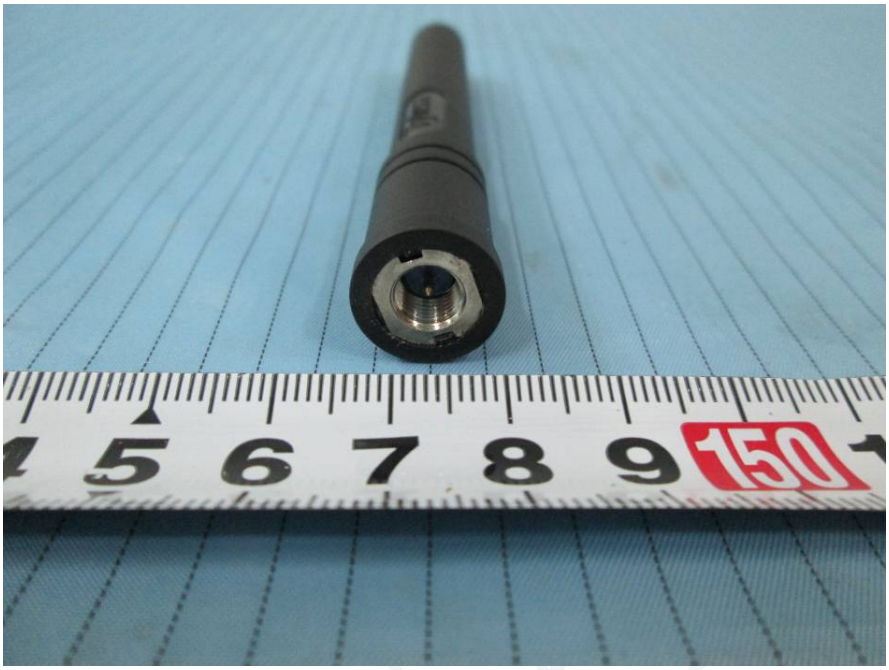


EUT – Main Board 4 View



EUT – Antenna View

EUT – Antenna Port View



EUT – Battery Front View

EUT – Battery Back View

EUT – Battery Lable View

EUT – Chip View

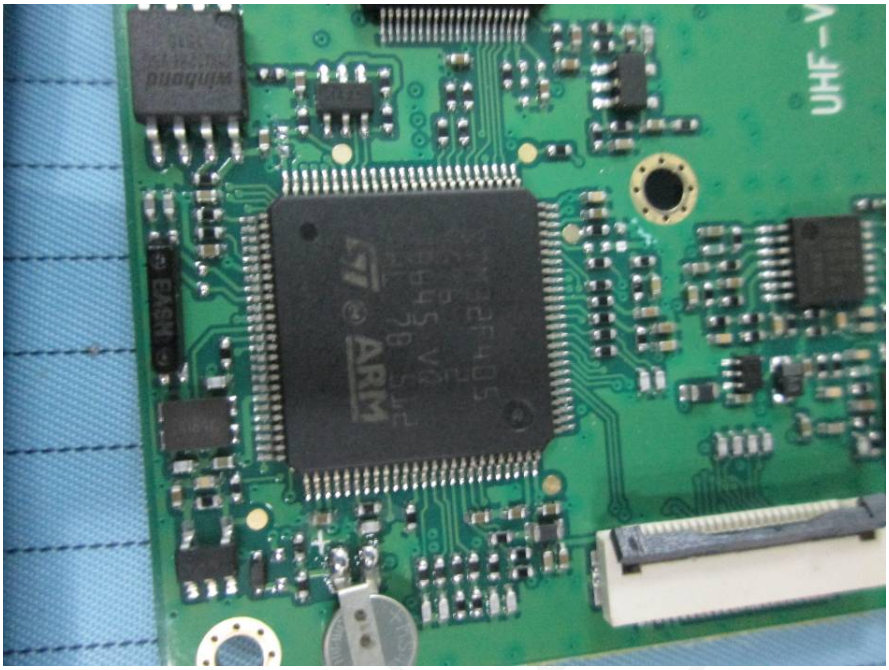


EXHIBIT C - TEST SETUP PHOTOGRAPHS

Radiated Spurious Emissions View (Below 1 GHz)

Radiated Spurious Emissions View (Above 1 GHz)

PRODUCT SIMILARITY DECLARATION LETTER

TYT ELECTRONICS CO., LTD
Block 39-1, Optoelectronics-information industry b, Nan'an, quanzhou, Fujian China
Fax: +86 595-27770858 Fax: +86 595-27770857

2015-7-8

Product Similarity Declaration

To Whom It May Concern,

We, TYT ELECTRONICS CO., LTD, hereby declare that we have a product named as DMR (Model number: MD-380) was tested by BACL, meanwhile, for our marketing purpose, we would like to list a series models (MD-390 MD-368 MD-398) on reports and certificate, all the models are identical schematics, just model number is different. No other changes are made to them.
We confirm that all information above is true, and we'll be responsible for all the consequences. Please contact me if you have any question.

Sincerely,

Jiamao Lin

Manager

******* END OF REPORT *******