FCC Radio Test Report

FCC ID: 2AECT-CARYMART-CWB2

This report concerns (check one): ☒**Original Grant** ☐**Class II Change**

Project No.	:	1612C221
Equipment	:	RF Transmitter
Model Name	:	CWB-2
Applicant	:	Shenzhen Guiyuan Industry Development Co., Ltd.
Address	:	12B, Buliding 7, No. 4, JinXiuJiangNanm, MeiLong Road, LongHua, ShenZhen, GuangDong, China

Date of Receipt	:	Dec. 20, 2016
Date of Test	:	Dec. 20, 2016 ~ Dec. 30, 2016
Issued Date	:	Jan. 03, 2017
Tested by	:	BTL Inc.

Testing Engineer : shawn xiao
(Shawn Xiao)

Technical Manager : David Mao
(David Mao)

Authorized Signatory : Steven Lu
(Steven Lu)

BTL INC.

No.3,Jinshagang 1st Road, Shixia,Dalang Town, Dongguan, Guangdong, China.
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Declaration

BTL represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with the standards traceable to international standard(s) and/or national standard(s).

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Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

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REPORT ISSUED HISTORY

Issued No.	Description	Issued Date
BTL-FCCP-1-1612C221	Original Issue.	Jan. 03, 2017

1. CERTIFICATION

Equipment	:	RF Transmitter
Brand Name	:	N/A
Model Name	:	CWB-2
Applicant	:	Shenzhen Guiyuan Industry Development Co., Ltd.
Manufacturer	:	Shenzhen Guiyuan Industry Development Co., Ltd.
Address	:	12B, Buliding 7, No. 4, JinXiuJiangNanm, MeiLong Road, LongHua, ShenZhen, GuangDong, China
Factory	:	Shenzhen Guiyuan Industry Development Co., Ltd.
Address	:	12B, Buliding 7, No. 4, JinXiuJiangNanm, MeiLong Road, LongHua, ShenZhen, GuangDong, China
Date of Test	:	Dec. 20, 2016 ~ Dec. 30, 2016
Test Sample	:	Enginnering Sample
Standard(s)	:	FCC Part15, Subpart C(15.231) ANSI C63.10-2013

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.
The test data, data evaluation, and equipment configuration contained in our test report (Ref No. BTL-FCCP-1-1612C221) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of TAF according to the ISO-17025 quality assessment standard and technical standard(s).

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

FCC Part15, Subpart C (15.231)			
Standard(s) Section	Test Item	Judgment	Remark
15.207	Conducted Emission	N/A	NOTE (1)
15.209& 15.231(b)	Radiated Spurious Emission	PASS	
15.231(c)	20dB Occupied Bandwidth Measurement	PASS	
15.231(a)	Timing Testing	PASS	

NOTE:

(1)" N/A" denotes test is not applicable to this device.

2.1 TEST FACILITY

The test facilities used to collect the test data in this report is at the location of No.3, Jinshagang 1st Road, Shixia, Dalang Town, Dongguan, Guangdong, China.
BTL's test firm number for FCC 319330

2.2 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. The BTL measurement uncertainty is less than the CISPR 16-4-2 U_{cispr} requirement.

The reported uncertainty of measurement **y** ± **U**, where expanded uncertainty **U** is based on astandard uncertainty multiplied by a coverage factor of **k=2**, providing a level of confidence of approximately **95**%.

A. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	Ant. H / V	U,(dB)
DG-CB03 (3m)	CISPR	9KHz ~ 30MHz	V	3.79
		9KHz ~ 30MHz	H	3.57
		30MHz ~ 200MHz	V	3.82
		30MHz ~ 200MHz	H	3.78
		200MHz ~ 1,000MHz	V	4.10
		200MHz ~ 1,000MHz	H	4.06

Test Site	Method	Measurement Frequency Range	Ant. H / V	U,(dB)
DG-CB03 (3m)	CISPR	1GHz ~ 18GHz	V	3.12
		1GHz ~ 18GHz	H	3.68
		18GHz ~ 40GHz	V	4.15
		18GHz ~ 40GHz	H	4.14

Note: Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment	RF Transmitter	
Trade Name	N/A	
Model Name	CWB-2	
Model Difference	N/A	
Product Description	Product Type	Low Power Communication Device
	Operation Frequency	315 MHz
	Modulation Technology	ASK
	Number Of Channel	1CH, please see note 2.
	Antenna Designation	Internal antenna
	Field Strength	70.26dBuV/m (Peak Max.) 59.80dBuV/m (AVG Max.)
PowerSource	Supplied from battery.	
Power Rating	DC 6V	

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. Channel List:

Channel	Frequency (MHz)
01	315

3.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generated from EUT, the test system was pre-scanning tested based on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Test Mode	Description
Mode 1	TX 315MHz

3.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

3.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.
-	-	-	-	-	-

Item	Shielded Type	Ferrite Core	Length	Note
-	-	-	-	-

4.EMC EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 POWER LINE CONDUCTED EMISSIONLIMITS (Frequency Range 150KHz-30MHz)

Frequency of Emission (MHz)	Conducted Limit (dBμV)	
	Quasi-peak	Average
0.15 -0.5	66 to 56*	56 to 46*
0.50 -5.0	56	46
5.0 -30.0	60	50

Note:

(1) The limit of " * " decreases with the logarithm of the frequency

(2) The test result calculated as following:
Measurement Value = Reading Level + Correct Factor
Correct Factor = Insertion Loss + Cable Loss + Attenuator Factor(if use)
Margin Level = Measurement Value - Limit Value

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

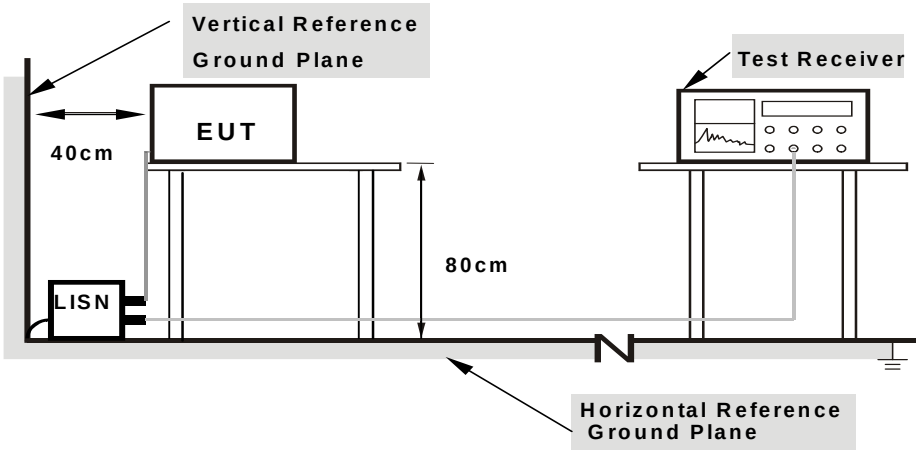
4.1.2 TEST PROCEDURE

a. The EUT was placed 0.4 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipment powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
b. Interconnecting cables that hang closer than 40 cm to the groundplane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
d. LISN at least 80 cm from nearest part of EUT chassis.
e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.1.3 DEVIATION FROM TEST STANDARD

No deviation

4.1.4 TEST SETUP



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

4.1.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it).The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

4.1.6 EUT TEST CONDITIONS

Temperature: N/A
Relative Humidity: N/A
Test Voltage: N/A

4.1.7 TEST RESULTS

Please refer to the Attachment A.

Remark:

(1) All readings are QP Mode value unless otherwise stated AVG in column of『Note』. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits,the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform.In this case, a " * " marked in AVG Mode column of Interference Voltage Measured.
(2) Measuring frequency range from 150KHz to 30MHz.
(3) " N/A" denotes test is not applicable to this device.

4.2 RADIATED EMISSION MEASUREMENT

4.2.1 FIELD STRENGTH OF FUNDAMENTAL EMISSIONS MEASUREMENT LIMIT

Fundamental Frequency (MHz)	Field Strength of Fundamental (microvolts/meter)
40.66-40.70	2,250
70-130	1,250
130-174	1,250 to 3,750(**)
174-260	3,750
260-470	3,750 to 12,500(**)
Above 470	12,500

[Where F is the frequency in MHz, the formulas for calculating the maximum permitted fundamental field strengths are as follows: for the band 130-174 MHz, uV/m at 3meters = 56.81818(F) - 6136.3636; for the band 260-470 MHz, uV/m at 3meters =41.6667(F) - 7083.3333. The maximum permitted unwanted emission levcel is 20 dBV below the maximum permitted fundamental level.]

So the field strength of emission limits have been calculated in below table.

Carrier Frequency (MHz)	Fundamental EmissionsLimit(dBuV/m) at 3m
315 MHz	75.62 (Average)
315 MHz	95.62 (Peak)

4.2.2 MEASURING INSTRUMENTS AND SETTING (FIELD STRENGTH OF FUNDAMENTAL EMISSIONS)

Receiver Parameter	Setting
Attenuation	Auto
Center Frequency	Fundamental Frequency
RBW	120 kHz
Detector	Peak / Average

4.2.3 RADIATED EMISSIONS MEASUREMENT

Devices complying with 47 CFR FCC part 15 subpart C, section 15.231(b). The field strength of emissions from intentional radiators at 3 meters operated under this Section shall not exceed the following:

Fundamental Frequency (MHz)	Field Strength of Spurious Emissions (microvolts/meter)
40.66-40.70	225
70-130	125
130-174	125 to 375(**)
174-260	375
260-470	375 to1,250(**)
Above 470	1,250

(1) [Where F is the frequency in MHz, the formulas for calculating the maximum permitted fundamental field strengths are as follows: for the band 130-174 MHz, uV/m at 3meters = 56.81818(F) - 6136.3636; for the band 260-470 MHz, uV/m at 3meters =41.6667(F) - 7083.3333. The maximum permitted unwanted emission levcel is 20 dBV below the maximum permitted fundamental level.]

(2) The maximum permitted unwanted emissions level is 20 dB below the maximum permitted fundamental level. In addition field strength of any emissions which appear inside of the restriction band shall not exceed the general radiated emissions limits in Section 15.209(a).

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~90kHz for PK/AVG detector
Start ~ Stop Frequency	90kHz~110kHz for QP detector
Start ~ Stop Frequency	110kHz~490kHz for PK/AVG detector
Start ~ Stop Frequency	490kHz~30MHz for QP detector
Start ~ Stop Frequency	30MHz~1000MHz for QP detector

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (emission in restricted band)	1MHz / 1MHz for Peak, AV Mode with Dwell time
RB / VB (other emission)	100KHz / 100KHz for peak

4.2.4 DWELL TIME OF PERIODIC OPERATION MEASUREMENT

Dwell time=ON/ON+OFF

ON: (1.8ms*10+0.8ms*15=30msec),

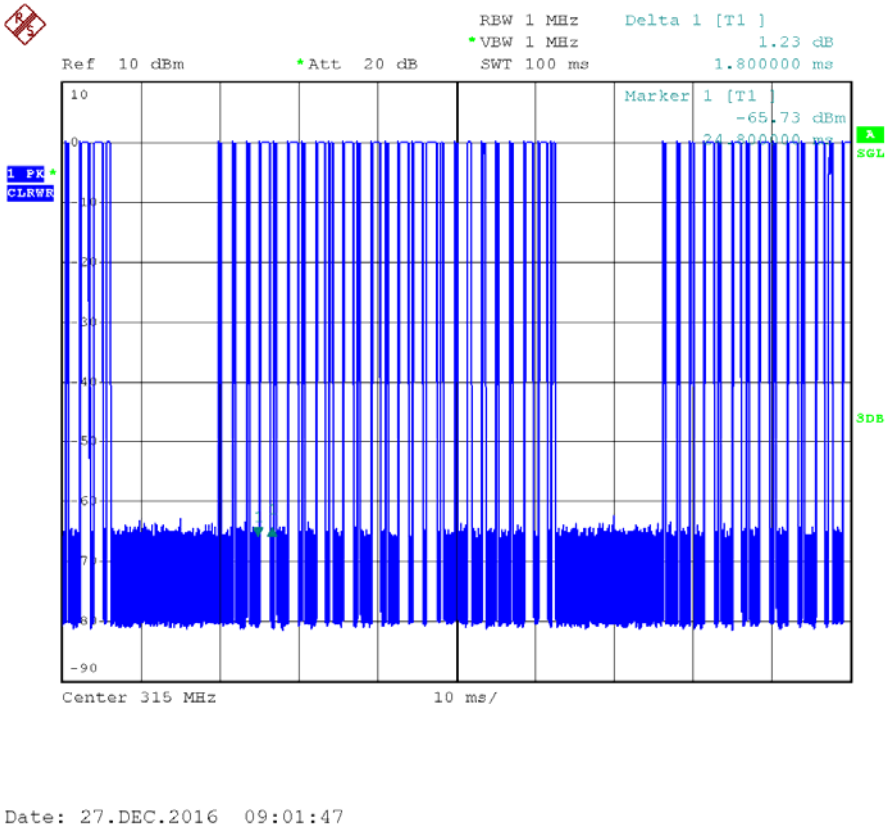
ON+OFF: (total time): 100 ms

Duty Cycle = 30/100 ms=30%

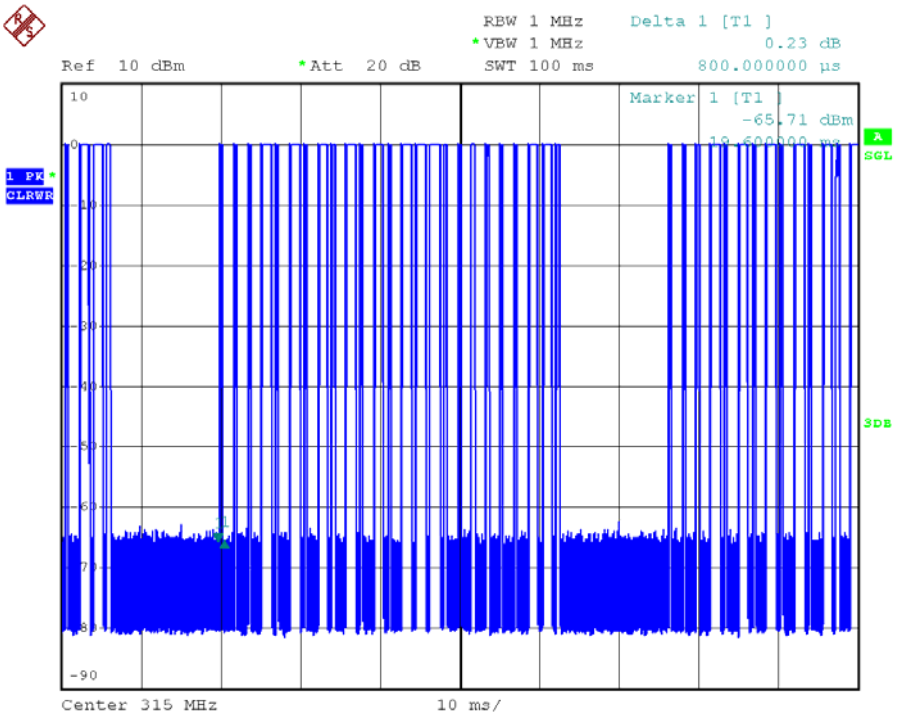
AV=PK+20 log (Dwell time)

AV=PK-10.46

On Time 1: 1.8ms*10



On Time 1: 0.8ms*15



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4.2.5 TEST PROCEDURE

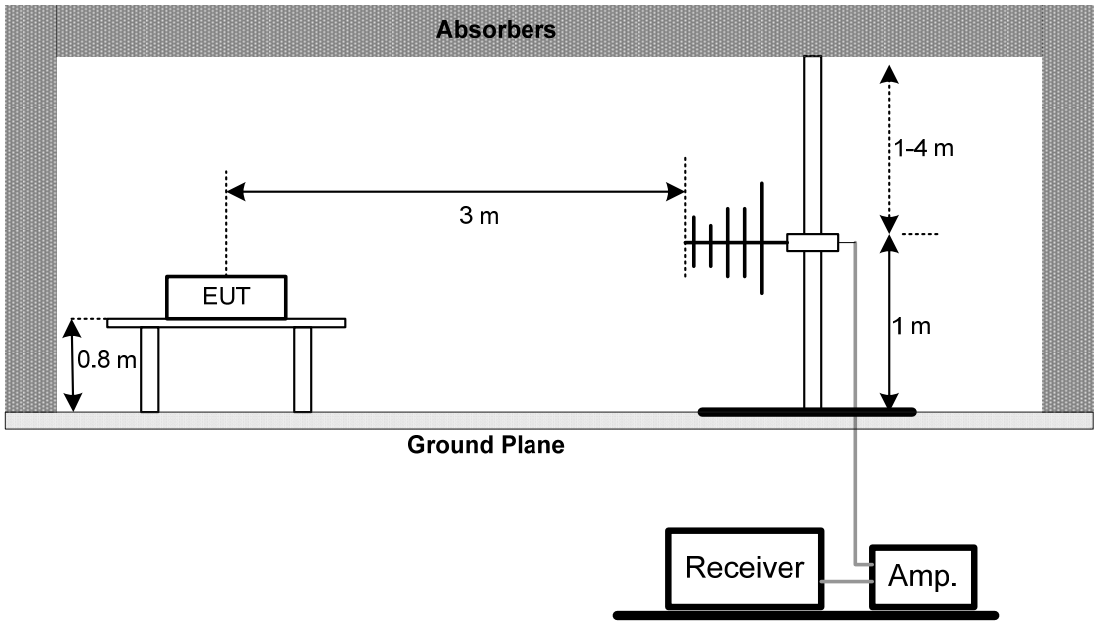
a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
b. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 1.5 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(above 1GHz)
c. The height of the equipment or of the substitution antenna shall be 0.8 m or 1.5 m, the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights find the maximum reading (used Bore sight function).
e. The receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1GHz.
f. The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
g. All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn‘t perform. (below 1GHz)
h. All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn‘t perform. (above 1GHz)
i. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.2.6 DEVIATION FROM TEST STANDARD

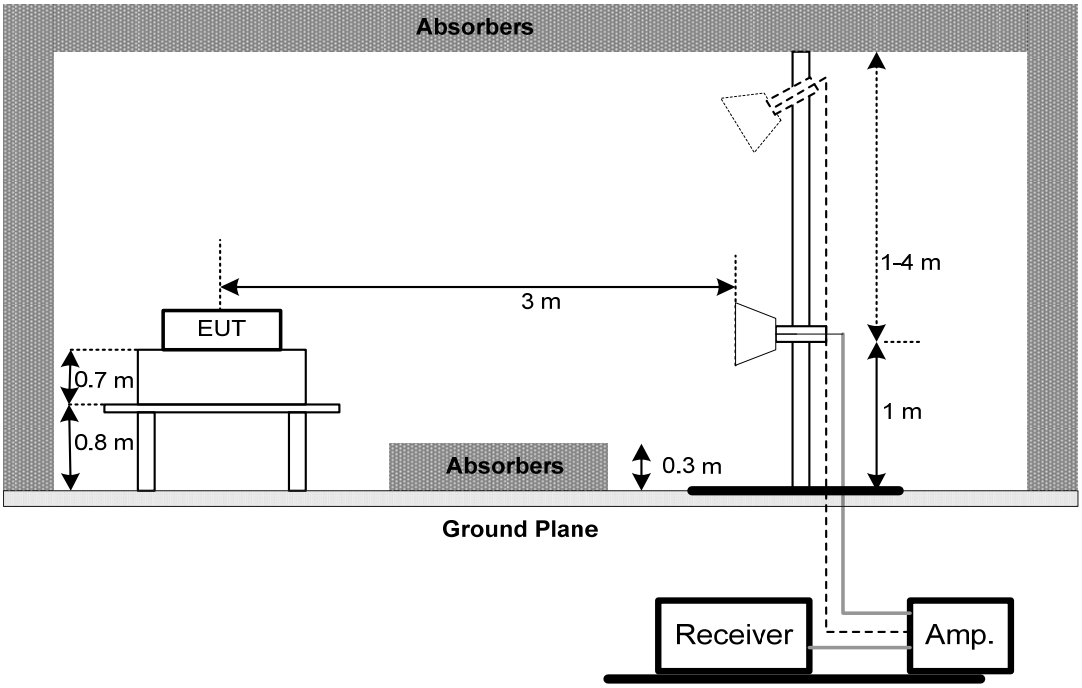
No deviation

4.2.7 TEST SETUP

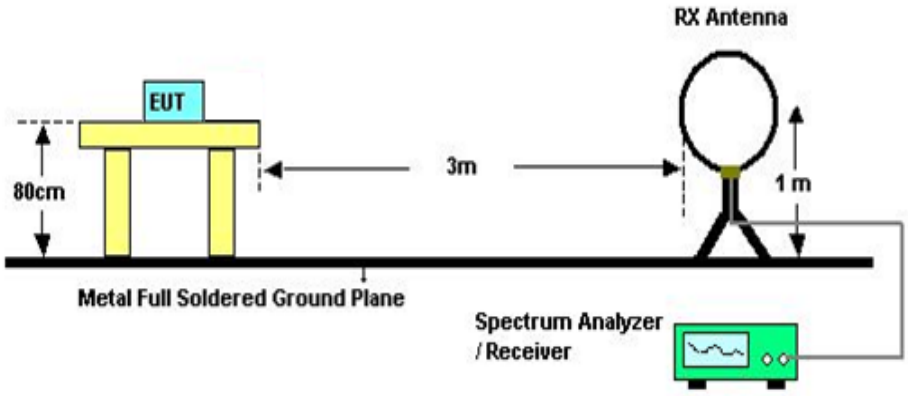
(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



(B) Radiated Emission Test Set-Up Frequency Above 1 GHz



(C) For Radiated Emissions Below 30MHz



4.2.8 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **4.1.5** unless otherwise a special operating condition is specified in the follows during the testing.

4.2.9 EUT TEST CONDITIONS

Temperature: 25° C
Relative Humidity: 60%
Test Voltage: DC 6V

4.2.10 TEST RESULTS (9kHz to 30MHz)

Please refer to the Attachment B.

Remark:

(1) The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
(2) Distance extrapolation factor = 40 log (specific distance / test distance) (dB);.
(3) Limit line = specific limits (dBuV) + distance extrapolation factor..

4.2.11 TEST RESULTS (30MHz to 1000MHz)

Please refer to the Attachment C.

Remark:

(1) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission
(2) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
(3) EUT Orthogonal Axis:
"X" - denotes Laid on Table; "Y" - denotes Vertical Stand; "Z" - denotes Side Stand
(4) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

4.2.12 TEST RESULTS (Above 1000 MHz)

Please refer to the Attachment D.

Remark:

(1) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission
(2) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
(3) EUT Orthogonal Axis:
"X" - denotes Laid on Table; "Y" - denotes Vertical Stand; "Z" - denotes Side Stand
(4) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

5. 20dB SPECTRUM BANDWIDTH MEASUREMENT

Limit

The bandwidth of the emissions shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. So the emission bandwidth limits have been calcuated in below table.

Fundamental Frequency	20dB Bandwidth Limits (kHz)
315 MHz	787.5

5.1 MEASURING INSTRUMENTS AND SETTING

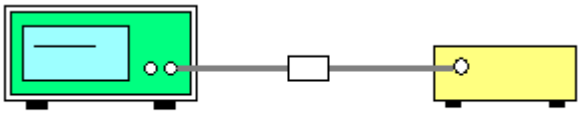
Please refer to section 5 in this report. The following table is the setting of the Spectrum Analyzer.

Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	> 20dB Bandwidth
RB	10 kHz
VB	10 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

5.2 TEST PROCEDURES

1. The transmitter output (antenna port) was connected to the spectrum analyser in peak hold mode.
2. The resolution bandwidth of 10 kHz and the video bandwidth of 10 kHz were used.
3. Measured the spectrum width with power higher than 20dB below carrier.

5.3 TEST SETUP LAYOUT



5.4 TEST DEVIATION

There is no deviation with the original standard.

5.5 EUT OPERATION DURING TEST

The EUT was programmed to be in continuously transmitting mode.

5.6 EUT TEST CONDITIONS

Temperature: 25° C
Relative Humidity: 60%
Test Voltage: DC 6V

5.7 TESTRESULTS

Please refer to the Attachment E.

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6. TIMING TESTING

Limit

A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.

6.1 MEASURING INSTRUMENTS AND SETTING

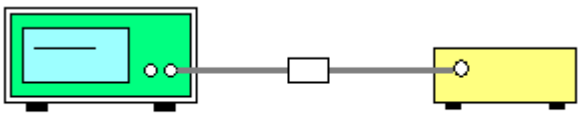
Please refer to section 6 in this report. The following table is the setting of the Spectrum Analyzer.

Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	Zero Span
RB	1MHz
VB	1MHz
Detector	Peak
Trace	Max Hold
Sweep Time	10 seconds

6.2 TEST PROCEDURES

1. The transmitter output (antenna port) was connected to the spectrum analyser in peak hold mode.
2. The resolution bandwidth of 1MHz and the video bandwidth of 1MHz were used.

6.3 TEST SETUP LAYOUT



6.4 TEST DEVIATION

There is no deviation with the original standard.

6.5 EUT OPERATION DURING TEST

The EUT was programmed to be in normal mode.

6.6 EUT OPERATION DURING TEST

Temperature: 25° C
Relative Humidity: 60%
Test Voltage: DC 6V

6.7 TEST RESULTS

Please refer to the Attachment F.

7. MEASUREMENT INSTRUMENTS LIST AND SETTING

Radiated Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Antenna	Schwarbeck	VULB9160	9160-3232	Mar. 27, 2017
2	Amplifier	HP	8447D	2944A09673	Oct. 20, 2017
3	Receiver	AGILENT	N9038A	MY52130039	Sep. 04, 2017
4	Test Cable	emci	LMR-400(30MHz-1GHz)	C-01	Jun. 26, 2017
5	Controller	CT	SC100	N/A	N/A
6	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
7	Antenna	ETS	3115	00075789	Mar. 27, 2017
8	Amplifier	Agilent	8449B	3008A02274	Mar. 10, 2017
9	Test Cable	emci	EMC104-SM-SM-10000(1GHz-26.5GHz)	C-68	Jun. 26, 2017
10	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170319	Mar. 27, 2017
11	Microwave Preamplifier With Adaptor	EMC INSTRUMENT	EMC2654045	980039 & HA01	Mar. 27, 2017

20dB Spectrum Bandwidth Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100185	Sep. 04, 2017
2	Attenuator	WOKEN	6SM3502	VAS1214NL	Mar. 09, 2017
3	Test Cable	N/A	RG316	Cable4-001	Jul. 14, 2017

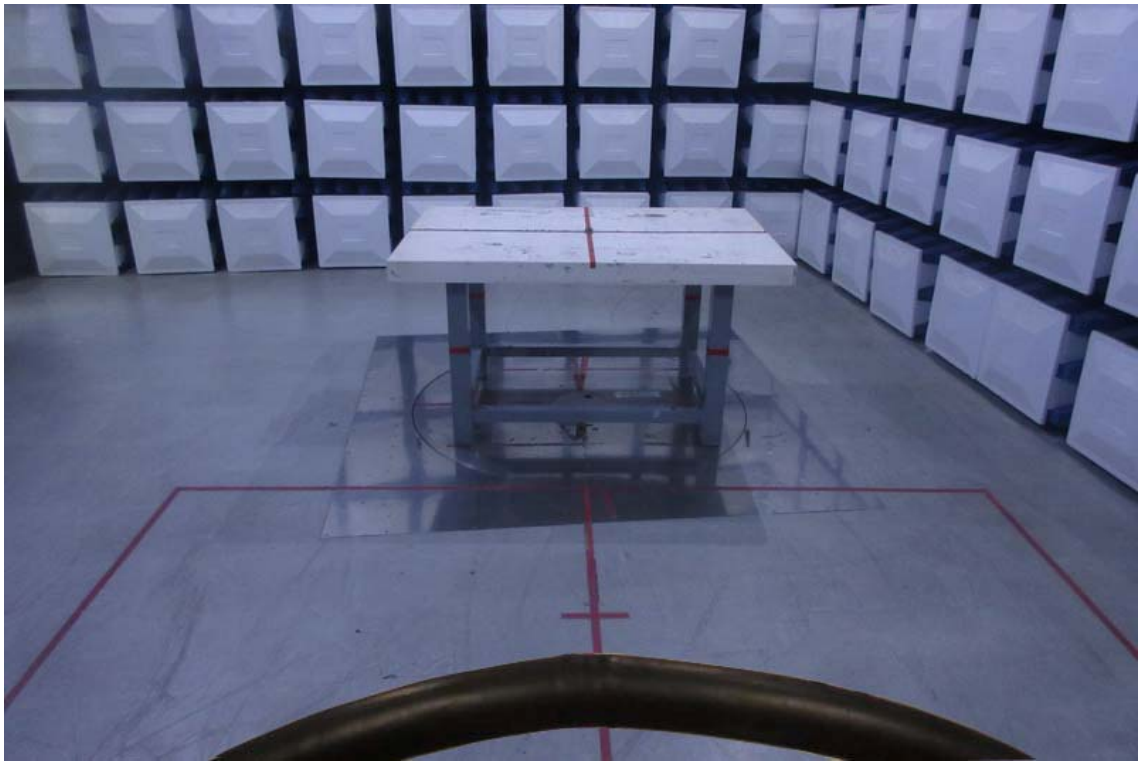
Timing Testing					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100185	Sep. 04, 2017
2	Attenuator	WOKEN	6SM3502	VAS1214NL	Mar. 09, 2017
3	Test Cable	N/A	RG316	Cable4-001	Jul. 14, 2017

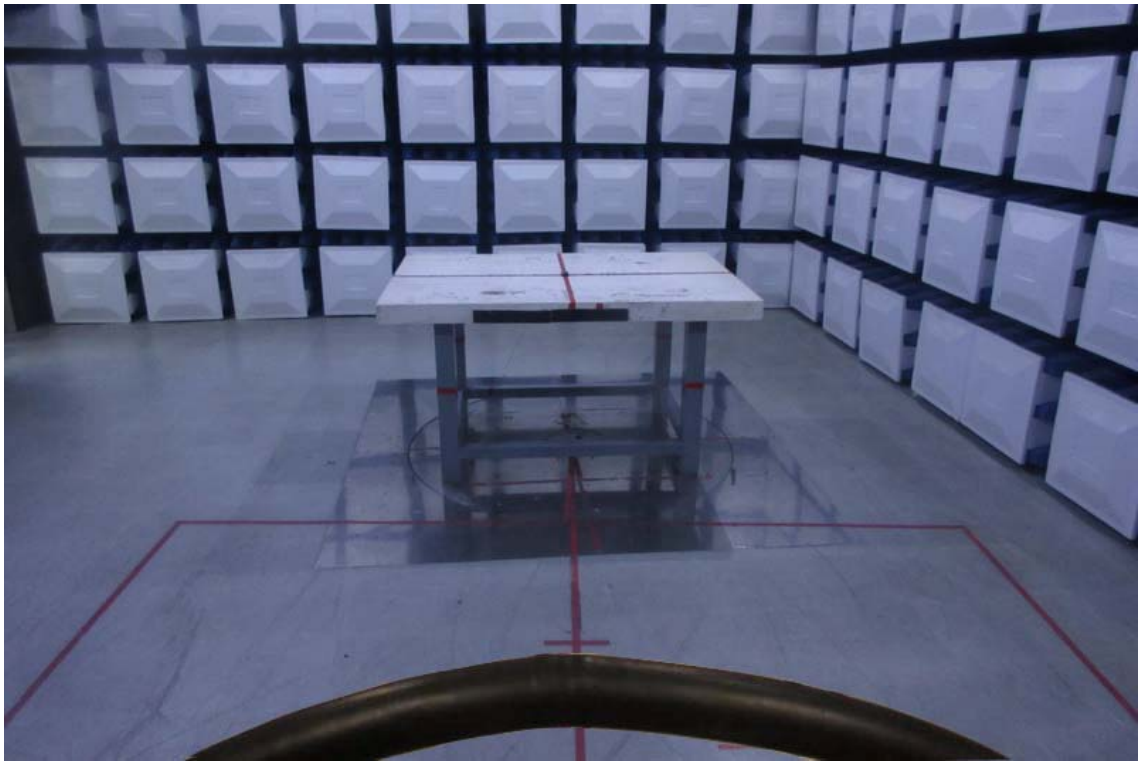
Remark: "N/A" denotes no model name, serial no. or calibration specified.
All calibration period of equipment list is one year.

8. EUT TEST PHOTO

Radiated Measurement Photos

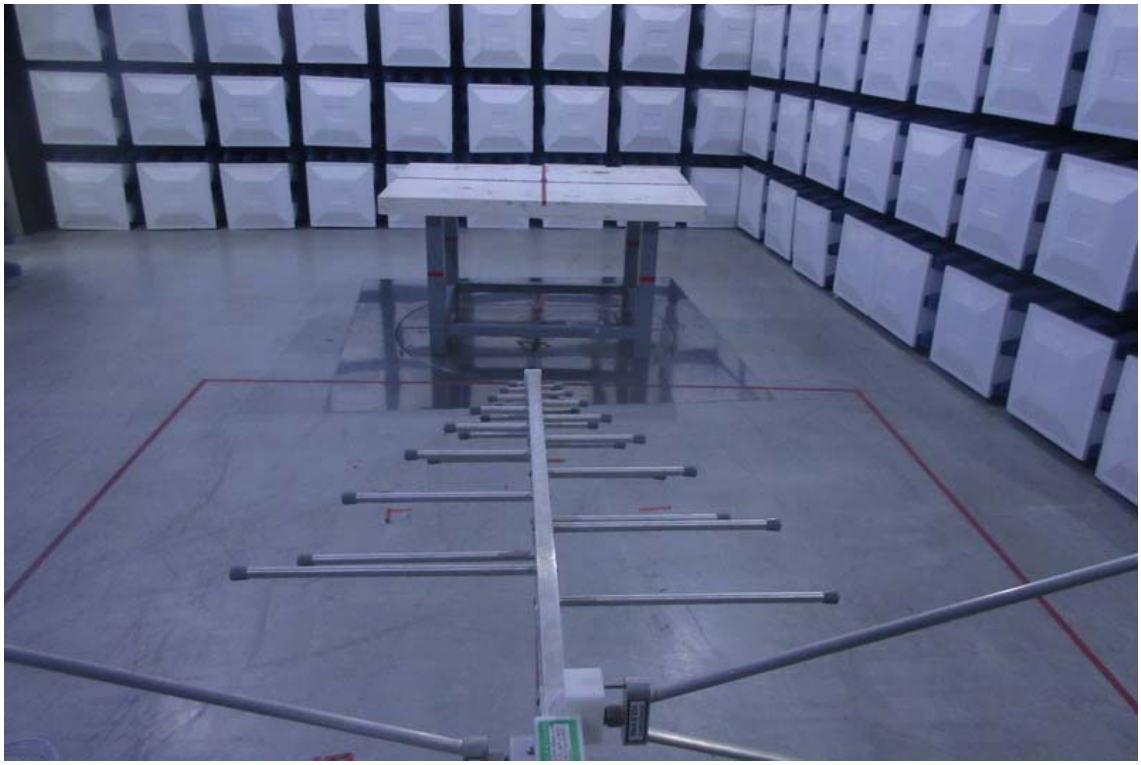
9KHz to 30MHz





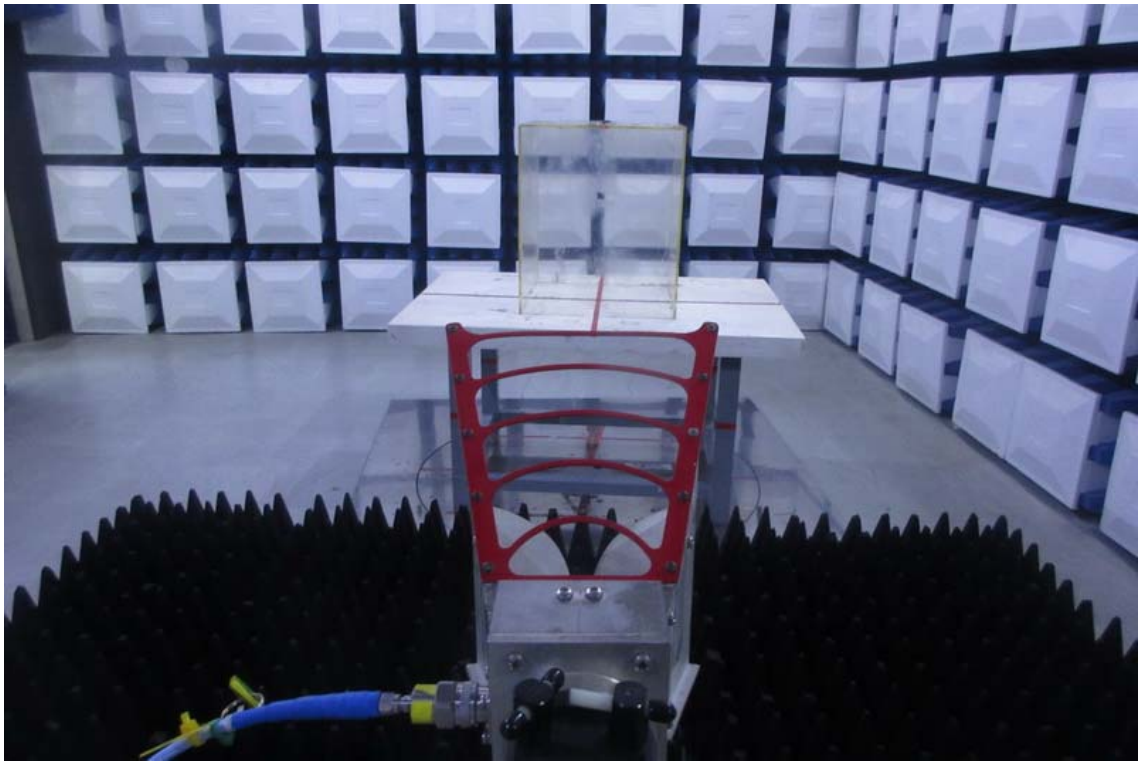
Radiated Measurement Photos

30MHz to 1000MHz



Radiated Measurement Photos

Above 1000MHz



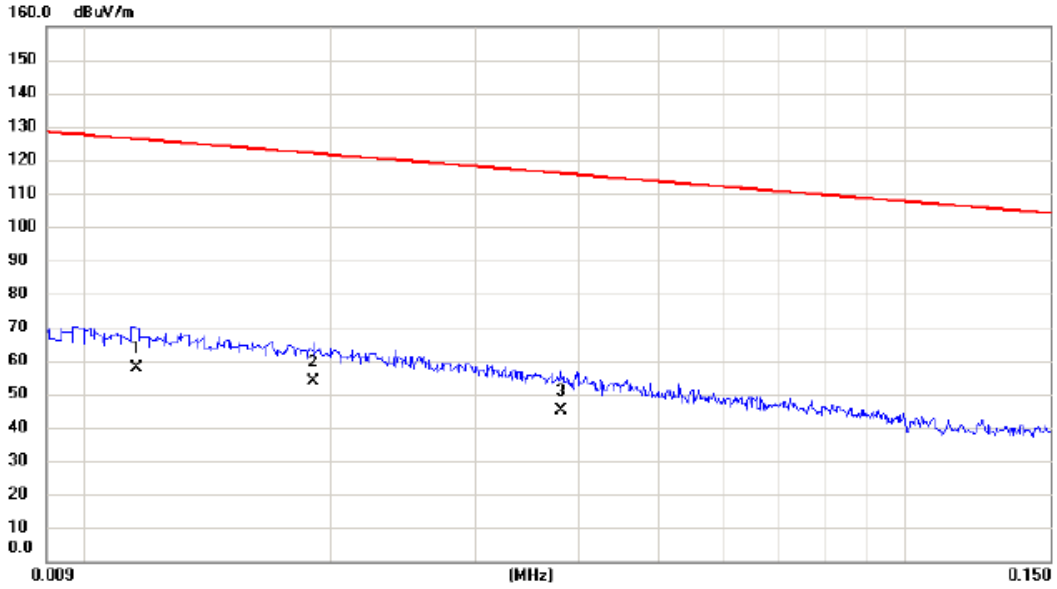
ATTACHMENT A - CONDUCTED EMISSION

Test Mode :	N/A
Note:	” N/A” denotes test is not applicable to this device.

ATTACHMENT B - RADIATED EMISSION (9KHz to 30MHz)

Test Mode:	TX 315MHz

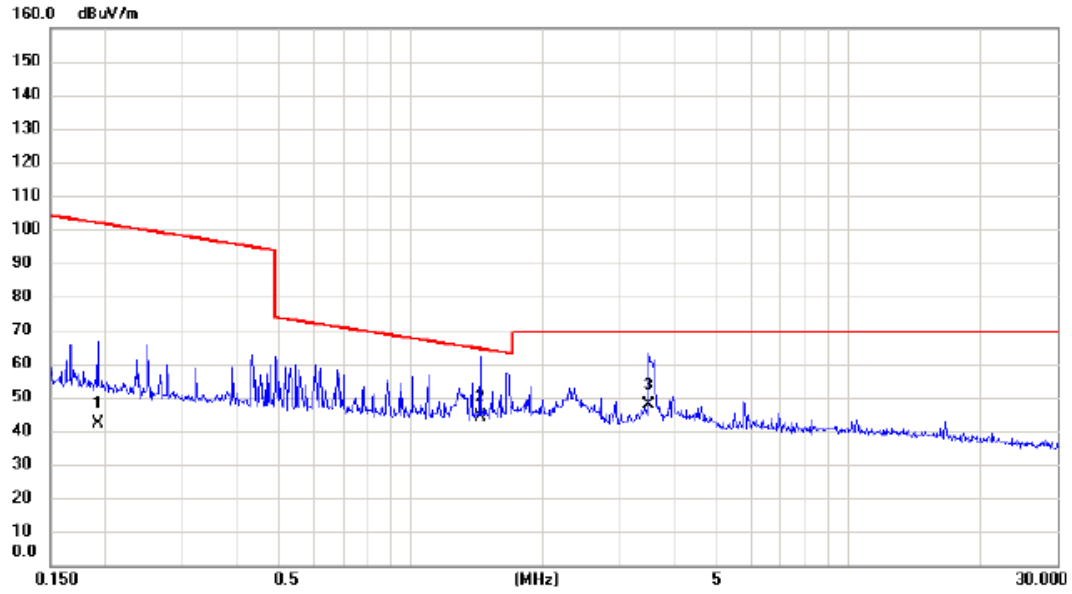
Ant 0°



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.0116	33.60	24.02	57.62	126.32	-68.70	AVG	
2	*	0.0190	30.30	23.58	53.88	122.03	-68.15	AVG	
3		0.0381	23.80	21.29	45.09	115.99	-70.90	AVG	

Test Mode:	TX 315MHz

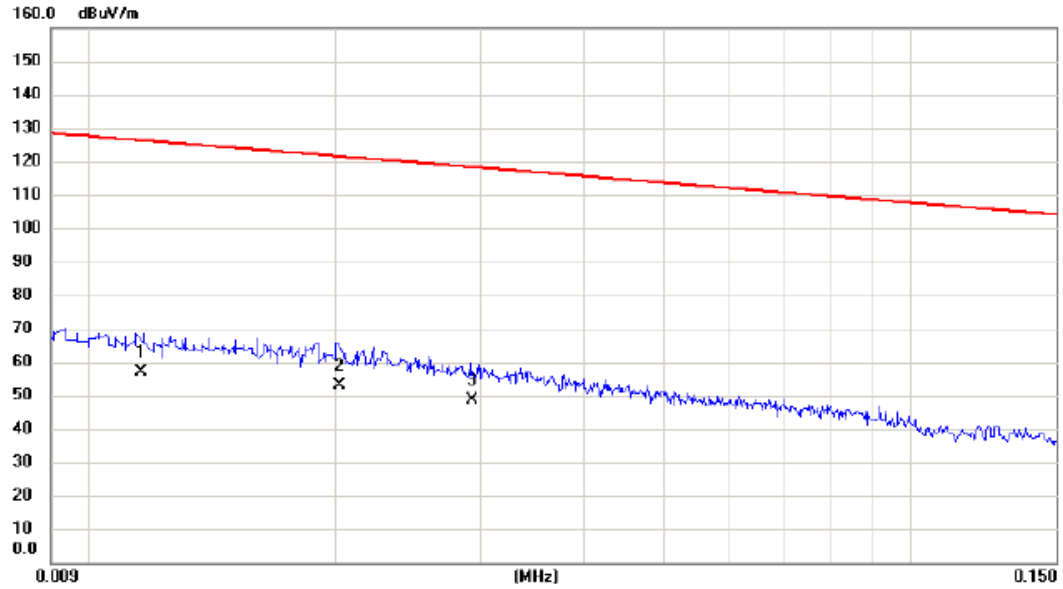
Ant 0°



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.1924	23.50	18.70	42.20	101.92	-59.72	AVG	
2	*	1.4408	26.60	17.78	44.38	64.43	-20.05	QP	
3		3.4906	30.30	17.67	47.97	69.54	-21.57	QP	

Test Mode:	TX 315MHz

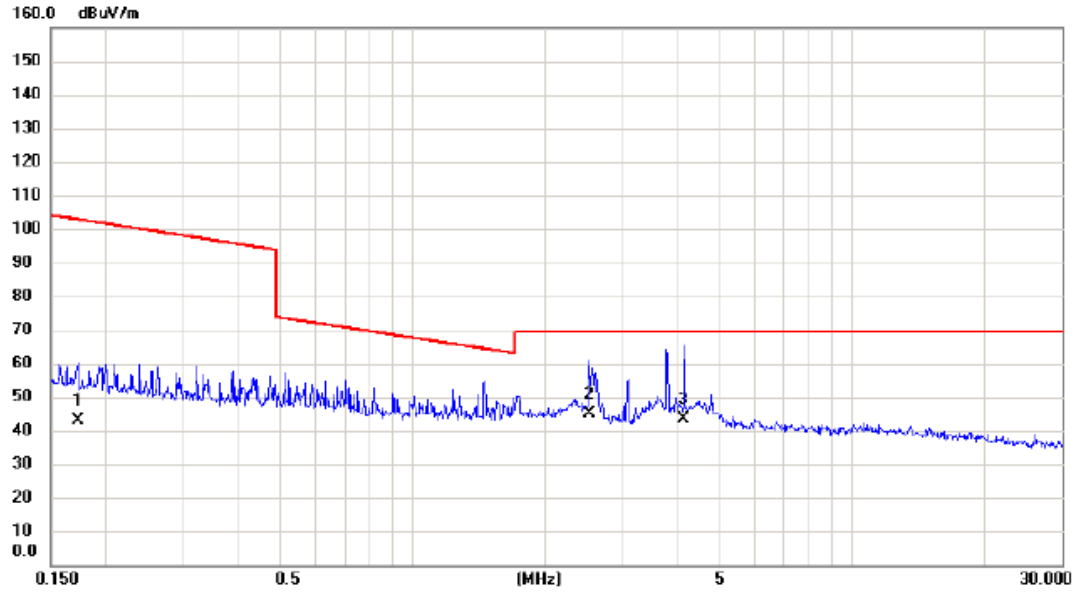
Ant 90°



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.0116	33.10	24.02	57.12	126.32	-69.20	AVG	
2	*	0.0202	29.60	23.50	53.10	121.50	-68.40	AVG	
3		0.0293	26.10	22.37	48.47	118.27	-69.80	AVG	

Test Mode:	TX 315MHz

Ant 90°



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.1731	24.30	18.72	43.02	102.84	-59.82	AVG	
2	*	2.5133	27.80	17.25	45.05	69.54	-24.49	QP	
3		4.1356	25.10	18.48	43.58	69.54	-25.96	QP	

ATTACHMENT C - RADIATED EMISSION (30MHz to 1000MHz)

Test Mode :	TX 315MHz
About the duty cycle correction factor calculated, please refer to the page 15~16	

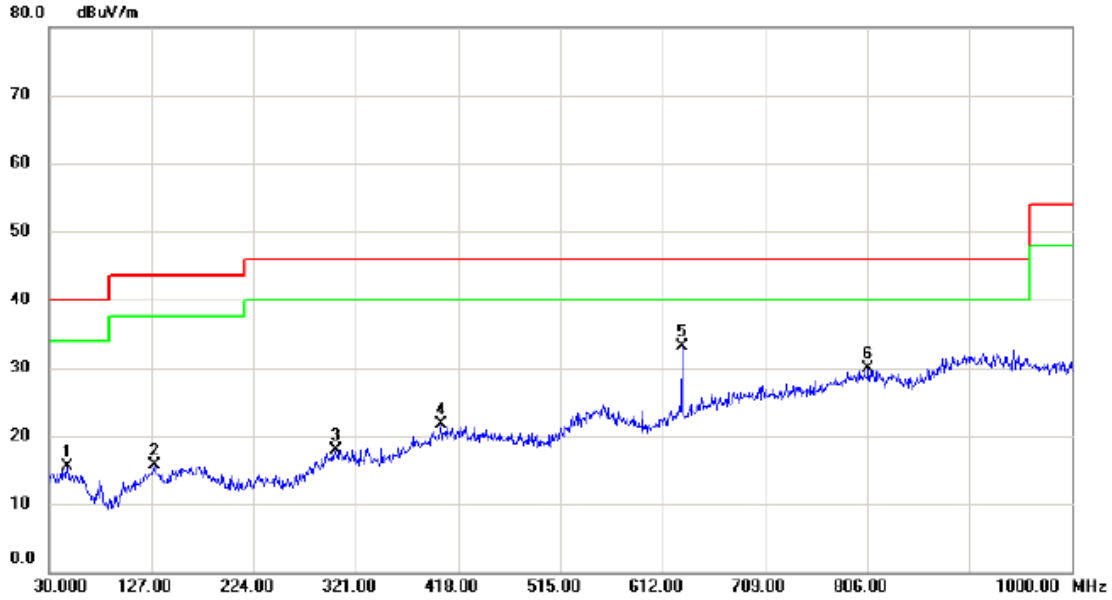
Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
315.05	**V**	**65.02**		**-10.48**	**54.54**	**44.08**	**95.62**	**75.62**	**Z/F**
315.05	**H**	**80.74**		**-10.48**	**70.26**	**59.80**	**95.62**	**75.62**	**Z/F**

Remark:

(1) The average value of fundamental frequency is:
Average = Peak value + 20log(Duty cycle), Final AV=PK-10.46

Test Mode :	TX 315MHz

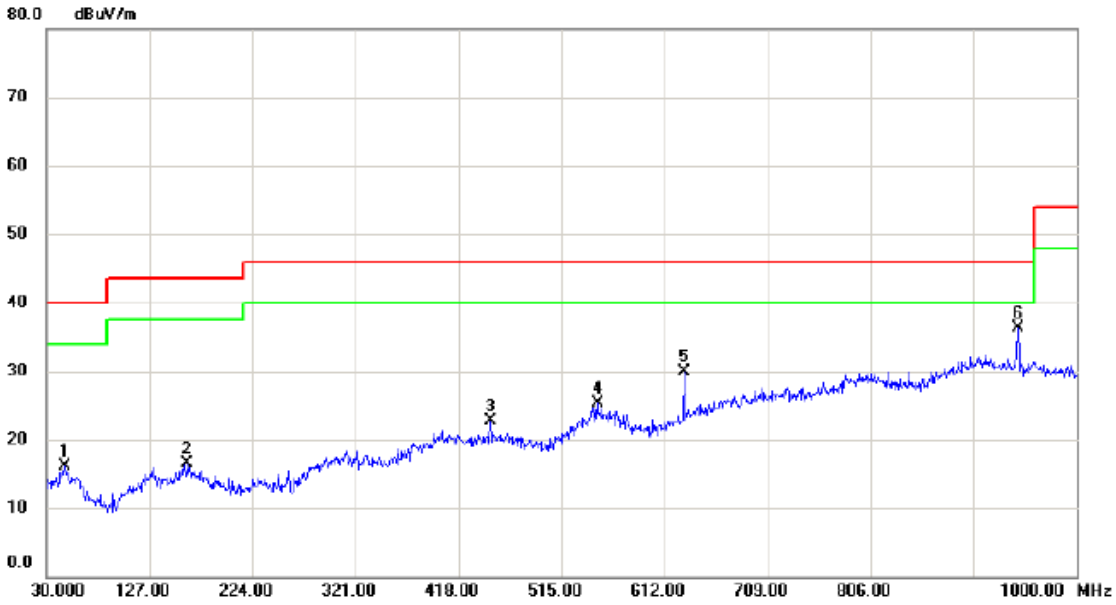
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		47.460	28.42	-12.87	15.55	40.00	-24.45	peak	
2		129.910	27.98	-12.36	15.62	43.50	-27.88	peak	
3		301.600	28.18	-10.19	17.99	46.00	-28.01	peak	
4		401.510	29.44	-7.79	21.65	46.00	-24.35	peak	
5	*	630.430	38.40	-5.31	33.09	46.00	-12.91	peak	
6		806.970	29.93	0.06	29.99	46.00	-16.01	peak	

Test Mode :	TX 315MHz

Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		47.460	28.99	-12.87	16.12	40.00	-23.88	peak	
2		162.890	28.71	-12.18	16.53	43.50	-26.97	peak	
3		448.070	30.72	-7.99	22.73	46.00	-23.27	peak	
4		548.950	29.98	-4.64	25.34	46.00	-20.66	peak	
5		630.430	35.24	-5.31	29.93	46.00	-16.07	peak	
6	*	944.710	33.88	2.46	36.34	46.00	-9.66	peak	

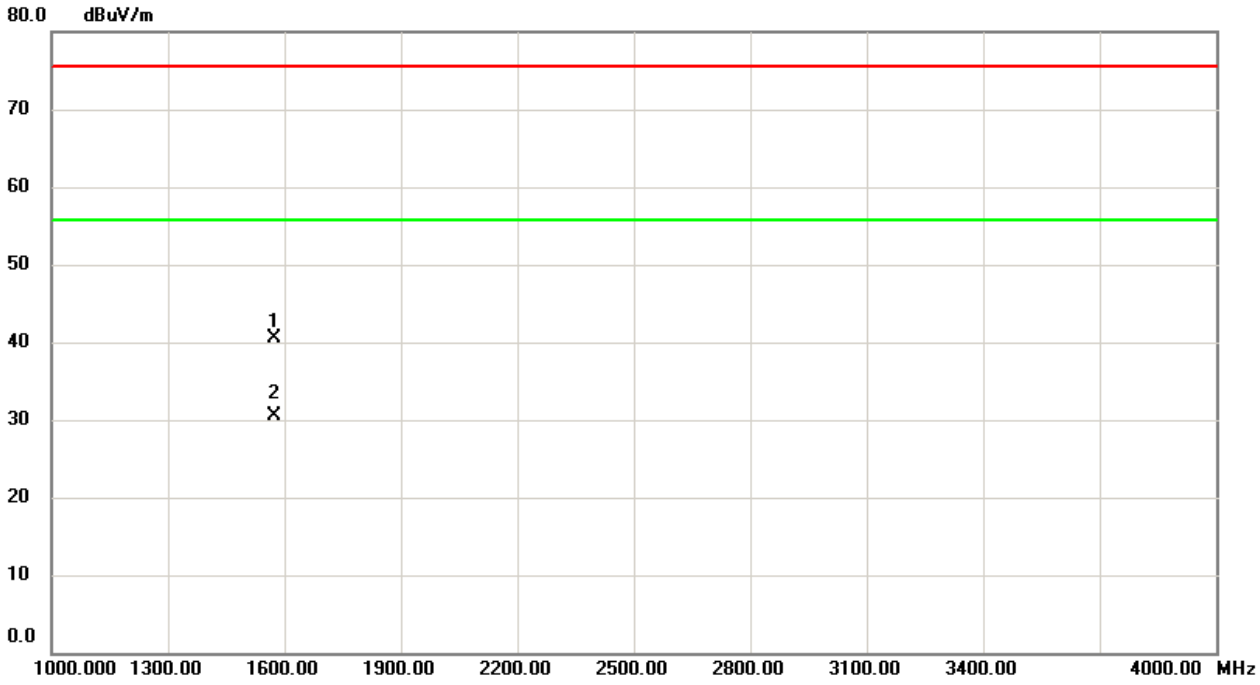
ATTACHMENT D - RADIATED EMISSION (ABOVE 1000MHz)

Test Mode :	TX 315MHz
About the duty cycle correction factor calculated, please refer to the page 15~16	

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Margin		Note
		Peak	AV		Peak	AV	Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
1575.22	V	46.66		-6.07	40.59		75.60		-35.01		Z/E

Remark:

(1) Peak value is much lower than the limit, so AV value isn't shown on this test item.

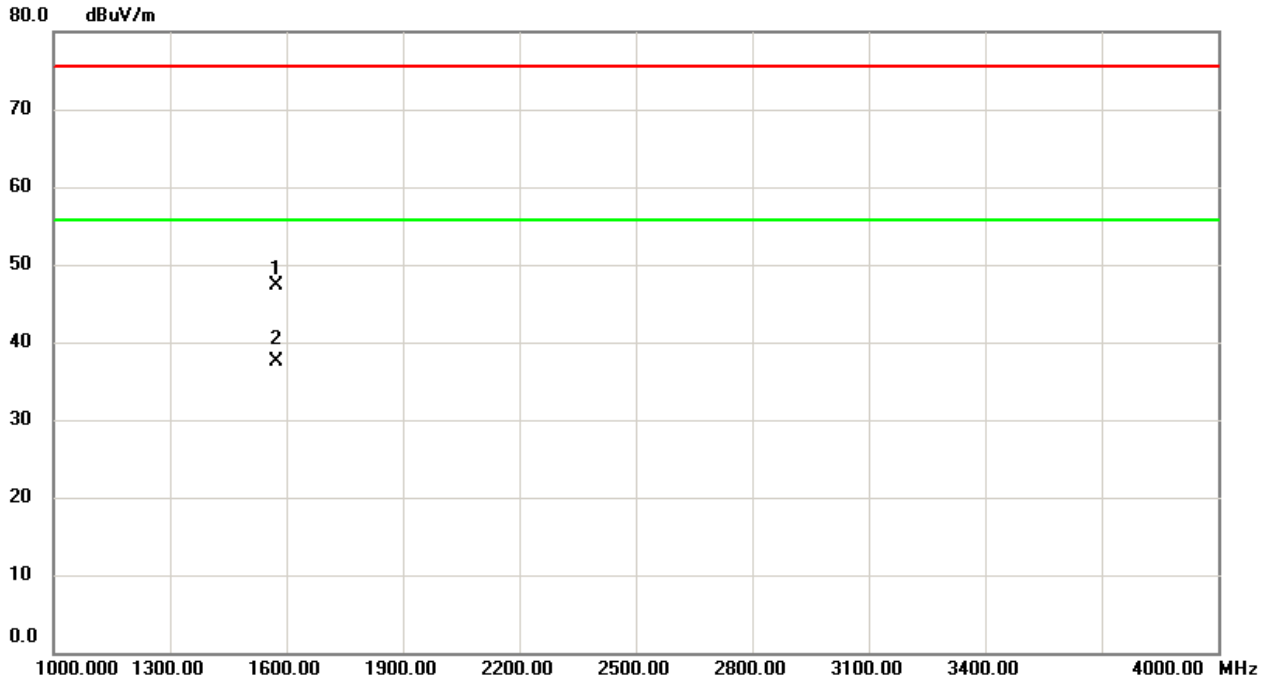


Test Mode :	TX 315MHz
About the duty cycle correction factor calculated, please refer to the page 15~16	

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Margin		Note
		Peak	AV		Peak	AV	Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
1575.19	H	53.40		-6.07	47.33		75.60		-28.27		Z/E

Remark:

(1) Peak value is much lower than the limit, so AV value isn't shown on this test item.

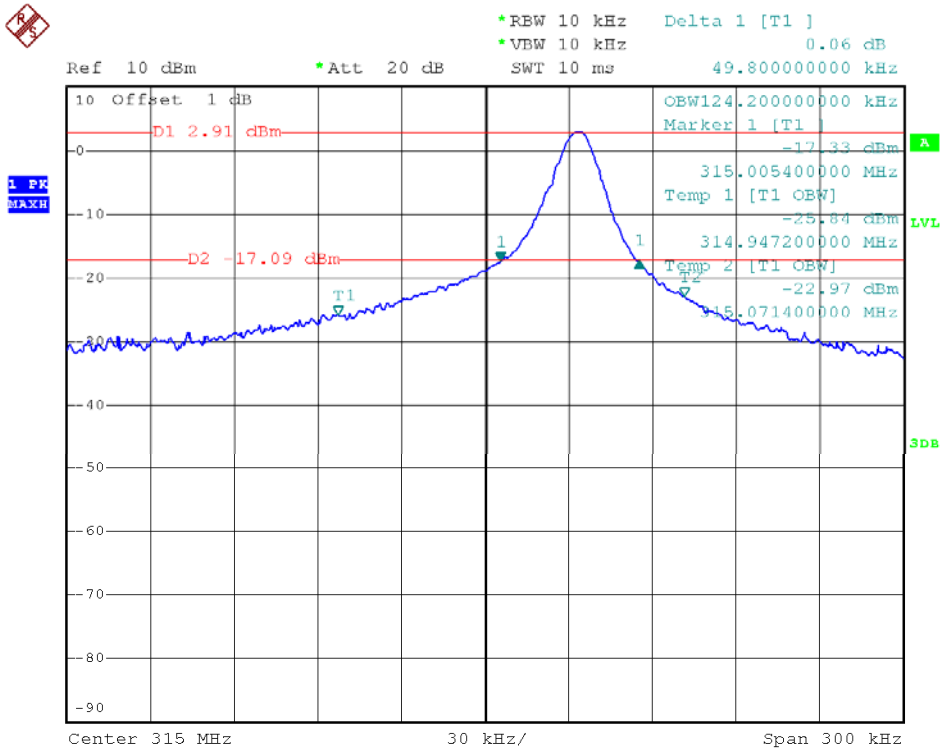


ATTACHMENT E - 20dB SPECTRUM BANDWIDTH

Test Mode:	TX 315MHz

Frequency (MHz)	20dB Bandwidth (kHz)	99% Occupied BW(kHz)	20 dB BW Limits (kHz)
315	49.80	124.20	787.5

TX CH01



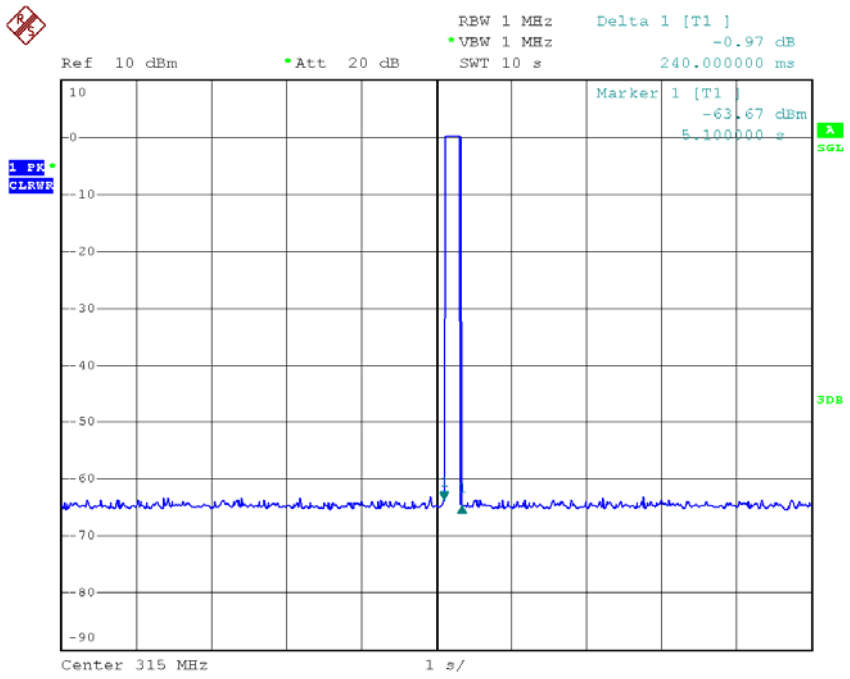
Date: 27.DEC.2016 09:29:19

ATTACHMENT F - TIMING TESTING

Test Mode:	TX 315MHz

Operation Condition	ON Time (s)	Limit (s)
	0.24	<5

On Time



Date: 27.DEC.2016 09:14:26