

FCC Test Report

Report No.: RF170809E06

FCC ID: MAD-RU00-M06

Test Model: RU00-M06

Series Model: RU00-M06-XXXX (X= 0~9 , A~Z , Configuration Code)

Received Date: Aug. 09, 2017

Test Date: Aug. 25 to Sep. 08, 2017

Issued Date: Sep. 21, 2017

Applicant: Microelectronics Technology Inc.

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Hsin Chu Laboratory

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Release Control Record

Issue No.	Description	Date Issued
RF170809E06	Original release.	Sep. 21, 2017

1 Certificate of Conformity

Product: RFID PCA MODULE PCIE M.2 UHF US/JP BAND

Brand: MTI

Test Model: RU00-M06

Series Model: RU00-M06-XXXX (X= 0~9 , A~Z , Configuration Code)


Sample Status: ENGINEERING SAMPLE


Applicant: Microelectronics Technology Inc.

Test Date: Aug. 25 to Sep. 08, 2017

Standards: 47 CFR FCC Part 15, Subpart C (Section 15.247)
ANSI C63.10: 2013

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

Prepared by :  _____ , **Date:** Sep. 21, 2017
Wendy Wu / Specialist

Approved by :  _____ , **Date:** Sep. 21, 2017
May Chen / Manager

2 Summary of Test Results

47 CFR FCC Part 15, Subpart C (SECTION 15.247)			
FCC Clause	Test Item	Result	Remarks
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -23.81dB at 0.54844MHz.
15.247(a)(1)(iii)	Number of Hopping Frequency Used	PASS	Meet the requirement of limit.
15.247(a)(1)(iii)	Dwell Time on Each Channel	PASS	Meet the requirement of limit.
15.247(a)(1)	1. Hopping Channel Separation 2. Spectrum Bandwidth of a Frequency Hopping Sequence Spread Spectrum System	PASS	Meet the requirement of limit.
15.247(b)	Maximum Peak Output Power	PASS	Meet the requirement of limit.
15.205 & 209 & 15.247(d)	Radiated Emissions & Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -3.4dB at 399.3MHz
15.247(d)	Antenna Port Emission	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	Antenna connector is SMA Female not a standard connector.

2.1 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:

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	1.84 dB
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	5.32 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	5.14 dB
	6GHz ~ 18GHz	5.04 dB
	18GHz ~ 40GHz	5.25 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	RFID PCA MODULE PCIE M.2 UHF US/JP BAND
Brand	MTI
Test Model	RU00-M06
Series Model	RU00-M06-XXXX (X= 0~9 , A~Z , Configuration Code)
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	DC 3.3V from host equipment
Modulation Type	ASK
Modulation Technology	FHSS
Operating Frequency	902.75MHz ~ 927.25MHz
Number of Channel	50
Output Power	554.626mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	NA
Data Cable Supplied	NA

Note:

- The EUT has below model names which are identical to each other in all aspects except for the following table:

Brand	Model Name	Description
MTI	RU00-M06	X= 0~9 , A~Z , Configuration Code
	RU00-M06-XXXX	

From the above models, model: RU00-M06 was selected as representative model for the test and its data was recorded in this report.

- The EUT has three different Link Profile designs as following table:

Type No	Link Profile
1	PR_ASK/M4/250KHz
2	DSB_ASK/FM0/40KHz
3	DSB_ASK/FM0/400KHz

- The antenna provided to the EUT, please refer to the following table:

Antenna Net Gain(dBi)	Antenna Type	Connector type	Frequency range	Cable Loss(dB)
5.25	Patch	SMA Female	902MHz~928MHz	0.75

- The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 Description of Test Modes

50 channels are provided to this EUT.

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
0	902.75	21	913.25	42	923.75
1	903.25	22	913.75	43	924.25
2	903.75	23	914.25	44	924.75
3	904.25	24	914.75	45	925.25
4	904.75	25	915.25	46	925.75
5	905.25	26	915.75	47	926.25
6	905.75	27	916.25	48	926.75
7	906.25	28	916.75	49	927.25
8	906.75	29	917.25		
9	907.25	30	917.75		
10	907.75	31	918.25		
11	908.25	32	918.75		
12	908.75	33	919.25		
13	909.25	34	919.75		
14	909.75	35	920.25		
15	910.25	36	920.75		
16	910.75	37	921.25		
17	911.25	38	921.75		
18	911.75	39	922.25		
19	912.25	40	922.75		
20	912.75	41	923.25		

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE \geq 1G	RE $<$ 1G	PLC	APCM	
1	√	√	√	√	With Link Profile design: Type 1
2	√	√	-	√	With Link Profile design: Type 2
3	√	√	-	√	With Link Profile design: Type 3

Where **RE \geq 1G**: Radiated Emission above 1GHz
PLC: Power Line Conducted Emission

RE $<$ 1G: Radiated Emission below 1GHz
APCM: Antenna Port Conducted Measurement

NOTE: “-” means no effect.

Radiated Emission Test (Above 1GHz):

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

Available Channel	Tested Channel	Modulation Technology	Modulation Technology
0 to 49	0, 24, 49	FHSS	ASK

Radiated Emission Test (Below 1GHz):

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

Available Channel	Tested Channel	Modulation Technology	Modulation Technology
0 to 49	0, 24, 49	FHSS	ASK

Power Line Conducted Emission Test:

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

Available Channel	Tested Channel	Modulation Technology	Modulation Technology
0 to 49	49	FHSS	ASK

Antenna Port Conducted Measurement:

- This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

Available Channel	Tested Channel	Modulation Technology	Modulation Technology
0 to 49	0, 24, 49	FHSS	ASK

Test Condition:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (SYSTEM)	TESTED BY
RE \geq 1G	23deg. C, 66%RH	120Vac, 60Hz	Weiwei Lo
RE<1G	24deg. C, 69%RH	120Vac, 60Hz	Weiwei Lo
PLC	25deg. C, 75%RH	120Vac, 60Hz	Andy Ho
APCM	25deg. C, 60%RH	120Vac, 60Hz	Anderson Chen

3.3 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.

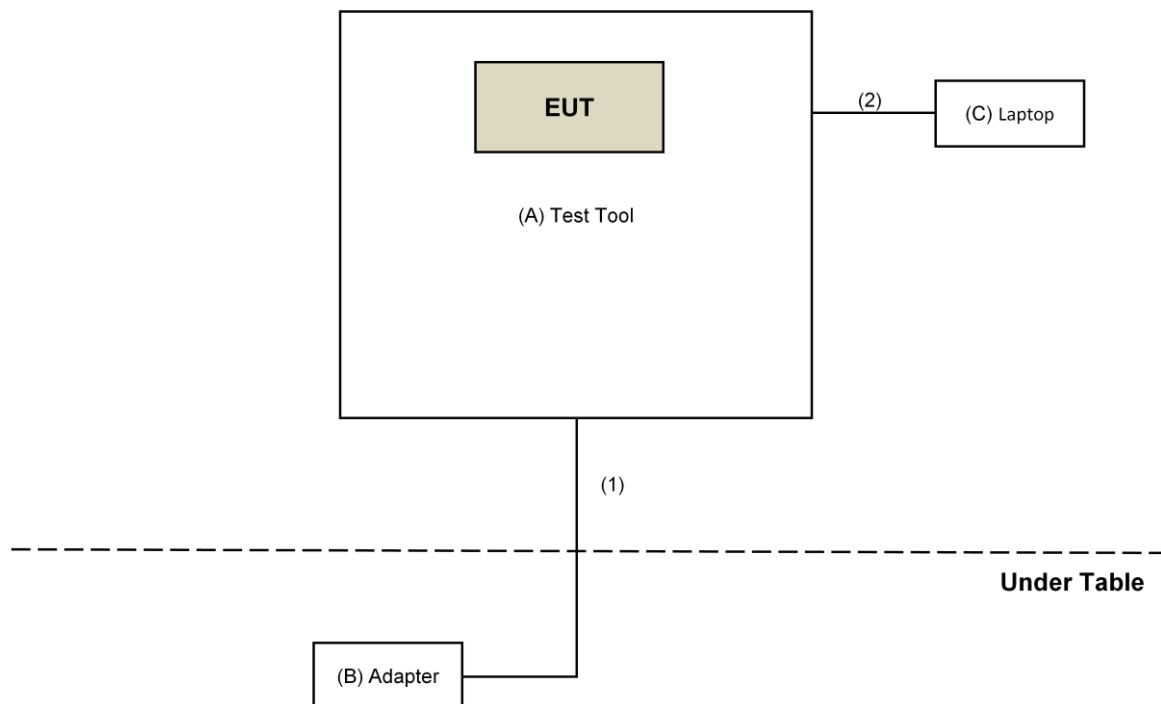
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Test Tool	MTI	NA	NA	NA	Supplied by client
B.	Adapter	LTD	TR15RA050	TR15RA050-01E03 Level V	NA	Supplied by client
C.	Laptop	DELL	E5440	6FC7F12	FCC DoC	Provided by Lab

Note:

1. All power cords of the above support units are non-shielded (1.8m).

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	DC Cable	1	1.8	No	0	Supplied by client
2.	USB Cable	1	1	Yes	0	Supplied by client(for RF Setup)

3.3.1 Configuration of System under Test



3.4 General Description of Applied Standards

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart C (15.247)

ANSI C63.10-2013

All test items have been performed and recorded as per the above standards.

Note: The EUT has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20dB below the highest level of the desired power:

Frequencies (MHz)	Field Strength (microvolts/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

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

4.1.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Agilent	N9038A	MY50010156	July 12, 2017	July 11, 2018
Pre-Amplifier ^(*) EMCI	EMC001340	980142	Jan. 20, 2016	Jan. 19, 2018
Loop Antenna ^(*) Electro-Metrics	EM-6879	264	Dec. 16, 2016	Dec. 15, 2018
RF Cable	NA	LOOPCAB-001 LOOPCAB-002	Jan. 17, 2017	Jan. 16, 2018
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-05	May 06, 2017	May 05, 2018
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-361	Dec. 29, 2016	Dec. 28, 2017
RF Cable	8D	966-3-1 966-3-2 966-3-3	Apr. 01, 2017	Mar. 31, 2018
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-3-01	Oct. 05, 2016	Oct. 04, 2017
Horn_Antenna SCHWARZBECK	BBHA9120-D	9120D-406	Dec. 28, 2016	Dec. 27, 2017
Pre-Amplifier EMCI	EMC12630SE	980384	Feb. 02, 2017	Feb. 01, 2018
RF Cable	EMC104-SM-SM-1200 EMC104-SM-SM-2000 EMC104-SM-SM-5000	160922 150317 150322	Feb. 02, 2017 Mar. 29, 2017 Mar. 29, 2017	Feb. 01, 2018 Mar. 28, 2018 Mar. 28, 2018
Spectrum Analyzer Keysight	N9030A	MY54490679	July 25, 2017	July 24, 2018
Pre-Amplifier EMCI	EMC184045SE	980386	Feb. 02, 2017	Feb. 01, 2018
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170608	Dec. 15, 2016	Dec. 14, 2017
RF Cable	SUCOFLEX 102	36432/2 36433/2	Jan. 15, 2017	Jan. 14, 2018
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208406	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
Spectrum Analyzer R&S	FSV40	100964	July 1, 2017	June 30, 2018

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. *The calibration interval of the above test instruments is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. Loop antenna was used for all emissions below 30 MHz.
4. The test was performed in 966 Chamber No. 3.
5. The CANADA Site Registration No. is 20331-1.
6. Tested Date: Aug. 25 to Sep. 04, 2017.

4.1.3 Test Procedures

For Radiated emission below 30MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. Both X and Y axes of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

For Radiated emission above 30MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. 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 from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- f. The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

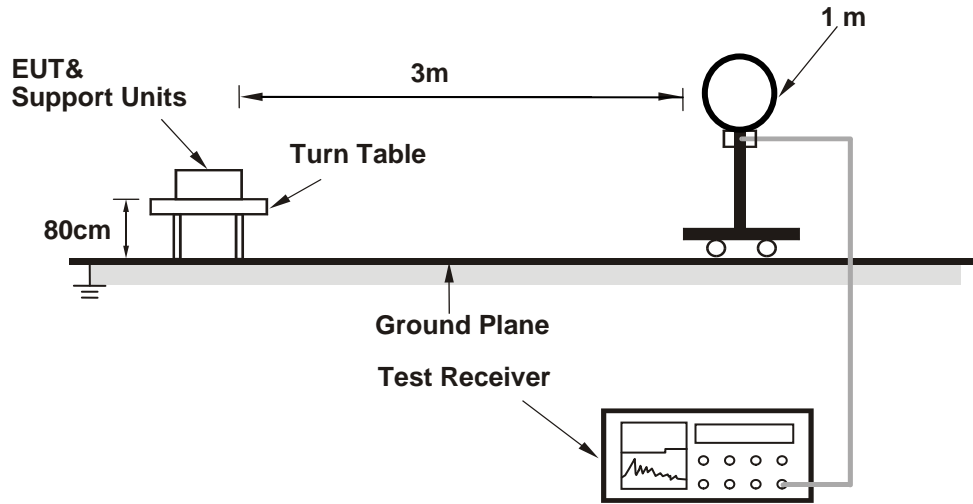
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

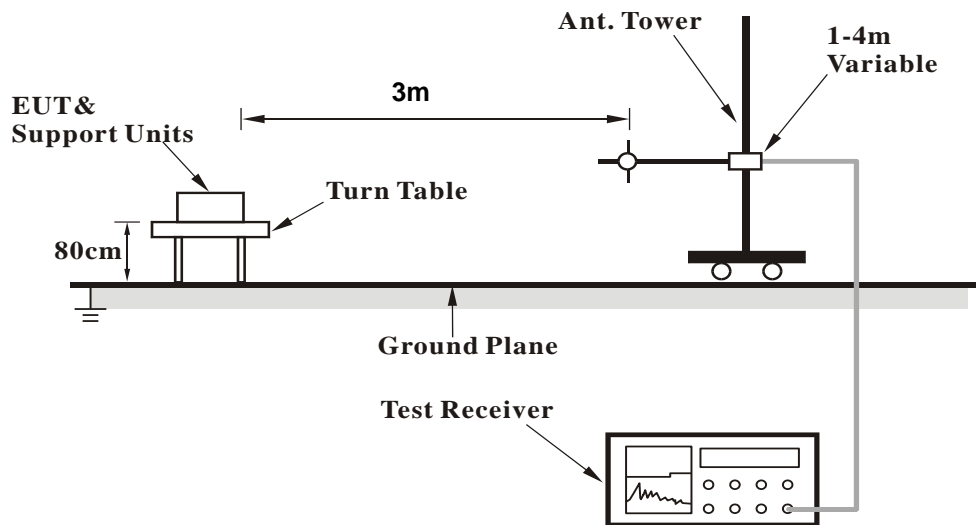
No deviation.

4.1.5 Test Setup

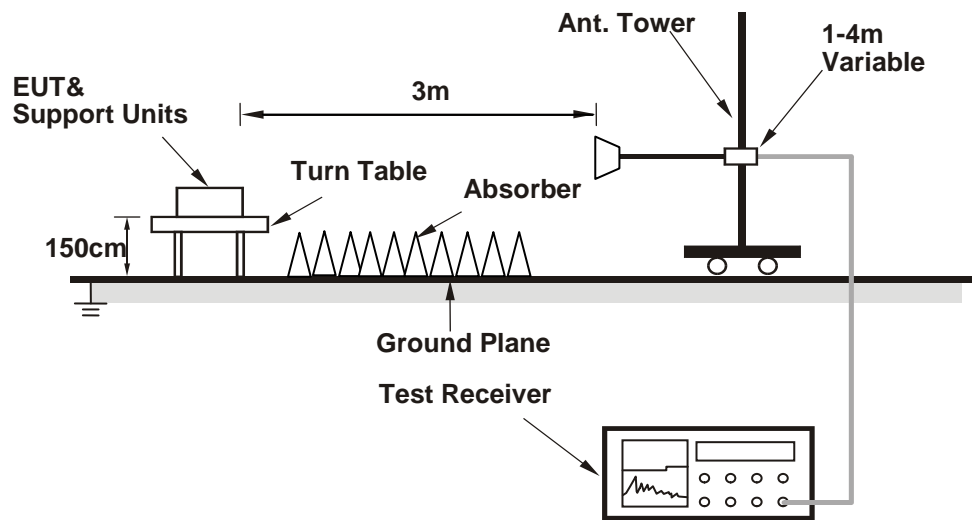
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.1.6 EUT Operating Conditions

- a. Placed the EUT on the testing table.
- b. Controlling software (MTI RFID Explorer) has been activated to set the EUT on specific status.

4.1.7 Test Results (Mode 1)

Below 1GHz Data:

CHANNEL	TX Channel 0	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	96.76	26.8 QP	43.5	-16.7	2.00 H	360	39.8	-13.0
2	144.00	25.0 QP	43.5	-18.5	3.00 H	0	33.2	-8.2
3	218.88	26.4 QP	46.0	-19.6	2.00 H	360	37.6	-11.2
4	318.94	35.3 QP	46.0	-10.7	1.00 H	232	42.1	-6.8
5	358.35	34.8 QP	46.0	-11.2	3.00 H	213	41.1	-6.3
6	399.74	33.1 QP	46.0	-12.9	3.00 H	221	38.4	-5.3
7	902.00	54.1 QP	107.9	-53.8	1.19 H	172	23.1	31.0
8*	902.75	127.9 QP			1.19 H	172	96.9	31.0

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	210.76	34.7 QP	43.5	-8.8	1.00 V	206	46.2	-11.5
2	280.99	32.7 QP	46.0	-13.3	1.00 V	268	40.8	-8.1
3	380.51	34.7 QP	46.0	-11.3	1.00 V	304	40.5	-5.8
4	399.86	39.2 QP	46.0	-6.8	1.00 V	360	44.5	-5.3
5	517.52	35.9 QP	46.0	-10.1	1.00 V	6	38.5	-2.6
6	562.12	31.6 QP	46.0	-14.4	1.00 V	75	33.5	-1.9
7	902.00	53.7 QP	107.6	-53.9	1.42 V	173	22.7	31.0
8*	902.75	127.6 QP			1.42 V	173	96.6	31.0

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 24	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	97.39	25.8 QP	43.5	-17.7	2.00 H	12	38.7	-12.9
2	145.77	24.8 QP	43.5	-18.7	2.00 H	0	33.0	-8.2
3	197.32	25.8 QP	43.5	-17.7	1.00 H	346	37.0	-11.2
4	219.56	26.2 QP	46.0	-19.8	1.00 H	360	37.4	-11.2
5	324.13	36.4 QP	46.0	-9.6	1.00 H	203	42.9	-6.5
6	399.28	34.4 QP	46.0	-11.6	2.00 H	0	39.7	-5.3
7*	914.75	128.0 QP			1.18 H	176	96.6	31.4

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	54.44	25.9 QP	40.0	-14.1	1.00 V	157	34.1	-8.2
2	210.03	32.5 QP	43.5	-11.0	1.00 V	211	44.0	-11.5
3	279.97	32.8 QP	46.0	-13.2	1.00 V	223	41.0	-8.2
4	399.21	40.8 QP	46.0	-5.2	1.00 V	234	46.1	-5.3
5	517.52	37.0 QP	46.0	-9.0	1.00 V	28	39.6	-2.6
6	559.86	35.7 QP	46.0	-10.3	1.00 V	80	37.6	-1.9
7*	914.75	127.7 QP			1.48 V	177	96.3	31.4

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 49	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	97.90	26.4 QP	43.5	-17.1	2.00 H	360	39.3	-12.9
2	145.14	24.9 QP	43.5	-18.6	2.00 H	24	33.1	-8.2
3	216.51	27.0 QP	46.0	-19.0	1.00 H	360	38.3	-11.3
4	317.90	35.9 QP	46.0	-10.1	1.00 H	240	42.7	-6.8
5	398.19	36.7 QP	46.0	-9.3	3.00 H	211	42.1	-5.4
6	517.52	28.1 QP	46.0	-17.9	3.00 H	92	30.7	-2.6
7*	927.25	128.1 QP			1.14 H	165	96.5	31.6
8	928.00	55.7 QP	108.1	-52.4	1.14 H	165	24.1	31.6

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	209.98	33.9 QP	43.5	-9.6	1.00 V	174	45.4	-11.5
2	280.38	30.8 QP	46.0	-15.2	1.00 V	212	38.9	-8.1
3	320.88	31.0 QP	46.0	-15.0	1.00 V	110	37.7	-6.7
4	393.90	37.7 QP	46.0	-8.3	1.00 V	249	43.3	-5.6
5	420.11	37.7 QP	46.0	-8.3	1.00 V	63	42.4	-4.7
6	517.50	34.7 QP	46.0	-11.3	1.00 V	168	37.3	-2.6
7*	927.25	127.6 QP			1.41 V	183	96.0	31.6
8	928.00	55.4 QP	107.6	-52.2	1.41 V	183	23.8	31.6

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

Above 1GHz Data:

CHANNEL	TX Channel 0	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 10GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2708.25	47.3 PK	74.0	-26.7	2.25 H	286	48.2	-0.9
2	2708.25	43.9 AV	54.0	-10.1	2.25 H	286	44.8	-0.9
3	3611.00	45.5 PK	74.0	-28.5	1.99 H	360	44.7	0.8
4	3611.00	41.5 AV	54.0	-12.5	1.99 H	360	40.7	0.8
5	4513.75	38.0 PK	74.0	-36.0	1.49 H	3	35.5	2.5
6	4513.75	25.5 AV	54.0	-28.5	1.49 H	3	23.0	2.5
7	5416.50	43.8 PK	74.0	-30.2	1.37 H	216	39.7	4.1
8	5416.50	35.9 AV	54.0	-18.1	1.37 H	216	31.8	4.1
9	#7222.00	50.2 PK	74.0	-23.8	2.60 H	260	41.3	8.9
10	#7222.00	45.3 AV	54.0	-8.7	2.60 H	260	36.4	8.9
11	8124.75	49.8 PK	74.0	-24.2	3.18 H	217	39.5	10.3
12	8124.75	40.3 AV	54.0	-13.7	3.18 H	217	30.0	10.3
13	9027.50	47.5 PK	74.0	-26.5	3.59 H	260	36.9	10.6
14	9027.50	38.1 AV	54.0	-15.9	3.59 H	260	27.5	10.6

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2708.25	49.4 PK	74.0	-24.6	1.48 V	336	50.3	-0.9
2	2708.25	46.2 AV	54.0	-7.8	1.48 V	336	47.1	-0.9
3	3611.00	45.3 PK	74.0	-28.7	1.39 V	329	44.5	0.8
4	3611.00	42.0 AV	54.0	-12.0	1.39 V	329	41.2	0.8
5	4513.75	37.7 PK	74.0	-36.3	2.05 V	227	35.2	2.5
6	4513.75	26.7 AV	54.0	-27.3	2.05 V	227	24.2	2.5
7	5416.50	47.7 PK	74.0	-26.3	1.43 V	313	43.6	4.1
8	5416.50	40.6 AV	54.0	-13.4	1.43 V	313	36.5	4.1
9	#7222.00	50.9 PK	74.0	-23.1	2.93 V	226	42.0	8.9
10	#7222.00	45.3 AV	54.0	-8.7	2.93 V	226	36.4	8.9
11	8124.75	48.2 PK	74.0	-25.8	2.41 V	146	37.9	10.3
12	8124.75	43.0 AV	54.0	-11.0	2.41 V	146	32.7	10.3
13	9027.50	44.6 PK	74.0	-29.4	2.69 V	197	34.0	10.6
14	9027.50	35.7 AV	54.0	-18.3	2.69 V	197	25.1	10.6

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 24	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 10GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2744.25	47.6 PK	74.0	-26.4	2.22 H	289	48.5	-0.9
2	2744.25	44.1 AV	54.0	-9.9	2.22 H	289	45.0	-0.9
3	3659.00	45.4 PK	74.0	-28.6	2.02 H	360	44.7	0.7
4	3659.00	41.7 AV	54.0	-12.3	2.02 H	360	41.0	0.7
5	4573.75	37.4 PK	74.0	-36.6	1.51 H	11	34.9	2.5
6	4573.75	25.1 AV	54.0	-28.9	1.51 H	11	22.6	2.5
7	#5488.50	43.7 PK	74.0	-30.3	1.37 H	207	39.5	4.2
8	#5488.50	35.5 AV	54.0	-18.5	1.37 H	207	31.3	4.2
9	7318.00	49.7 PK	74.0	-24.3	2.62 H	263	40.8	8.9
10	7318.00	45.0 AV	54.0	-9.0	2.62 H	263	36.1	8.9
11	8232.75	50.1 PK	74.0	-23.9	3.20 H	220	39.8	10.3
12	8232.75	40.7 AV	54.0	-13.3	3.20 H	220	30.4	10.3
13	9147.50	47.1 PK	74.0	-26.9	3.53 H	261	36.5	10.6
14	9147.50	37.8 AV	54.0	-16.2	3.53 H	261	27.2	10.6

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2744.25	49.2 PK	74.0	-24.8	1.50 V	340	50.1	-0.9
2	2744.25	46.3 AV	54.0	-7.7	1.50 V	340	47.2	-0.9
3	3659.00	45.8 PK	74.0	-28.2	1.37 V	330	45.1	0.7
4	3659.00	42.4 AV	54.0	-11.6	1.37 V	330	41.7	0.7
5	4573.75	38.3 PK	74.0	-35.7	2.05 V	228	35.8	2.5
6	4573.75	27.2 AV	54.0	-26.8	2.05 V	228	24.7	2.5
7	#5488.50	47.3 PK	74.0	-26.7	1.45 V	306	43.1	4.2
8	#5488.50	40.2 AV	54.0	-13.8	1.45 V	306	36.0	4.2
9	7318.00	50.4 PK	74.0	-23.6	2.92 V	218	41.5	8.9
10	7318.00	45.0 AV	54.0	-9.0	2.92 V	218	36.1	8.9
11	8232.75	47.9 PK	74.0	-26.1	2.38 V	149	37.6	10.3
12	8232.75	42.5 AV	54.0	-11.5	2.38 V	149	32.2	10.3
13	9147.50	45.2 PK	74.0	-28.8	2.65 V	191	34.6	10.6
14	9147.50	36.1 AV	54.0	-17.9	2.65 V	191	25.5	10.6

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 49	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 10GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2781.75	46.9 PK	74.0	-27.1	2.23 H	274	47.7	-0.8
2	2781.75	43.7 AV	54.0	-10.3	2.23 H	274	44.5	-0.8
3	3709.00	45.4 PK	74.0	-28.6	2.02 H	358	44.6	0.8
4	3709.00	41.6 AV	54.0	-12.4	2.02 H	358	40.8	0.8
5	4636.25	37.7 PK	74.0	-36.3	1.45 H	2	35.1	2.6
6	4636.25	25.2 AV	54.0	-28.8	1.45 H	2	22.6	2.6
7	#5563.50	44.1 PK	74.0	-29.9	1.37 H	204	39.9	4.2
8	#5563.50	36.2 AV	54.0	-17.8	1.37 H	204	32.0	4.2
9	7418.00	50.7 PK	74.0	-23.3	2.58 H	256	41.6	9.1
10	7418.00	45.6 AV	54.0	-8.4	2.58 H	256	36.5	9.1
11	8345.25	49.8 PK	74.0	-24.2	3.15 H	231	39.5	10.3
12	8345.25	40.5 AV	54.0	-13.5	3.15 H	231	30.2	10.3
13	#9272.50	47.4 PK	74.0	-26.6	3.55 H	244	36.6	10.8
14	#9272.50	37.8 AV	54.0	-16.2	3.55 H	244	27.0	10.8

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2781.75	49.5 PK	74.0	-24.5	1.43 V	339	50.3	-0.8
2	2781.75	46.6 AV	54.0	-7.4	1.43 V	339	47.4	-0.8
3	3709.00	45.4 PK	74.0	-28.6	1.38 V	316	44.6	0.8
4	3709.00	42.0 AV	54.0	-12.0	1.38 V	316	41.2	0.8
5	4636.25	37.7 PK	74.0	-36.3	2.06 V	238	35.1	2.6
6	4636.25	26.6 AV	54.0	-27.4	2.06 V	238	24.0	2.6
7	#5563.50	47.8 PK	74.0	-26.2	1.45 V	300	43.6	4.2
8	#5563.50	40.7 AV	54.0	-13.3	1.45 V	300	36.5	4.2
9	7418.00	50.7 PK	74.0	-23.3	2.95 V	231	41.6	9.1
10	7418.00	45.0 AV	54.0	-9.0	2.95 V	231	35.9	9.1
11	8345.25	48.0 PK	74.0	-26.0	2.35 V	160	37.7	10.3
12	8345.25	42.9 AV	54.0	-11.1	2.35 V	160	32.6	10.3
13	#9272.50	44.6 PK	74.0	-29.4	2.75 V	184	33.8	10.8
14	#9272.50	35.5 AV	54.0	-18.5	2.75 V	184	24.7	10.8

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " # ": The radiated frequency is out of the restricted band.

4.1.8 Test Results (Mode 2)

Below 1GHz Data:

CHANNEL	TX Channel 0	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	95.57	26.7 QP	43.5	-16.8	2.00 H	360	39.9	-13.2
2	149.41	26.1 QP	43.5	-17.4	1.00 H	360	34.3	-8.2
3	195.38	25.2 QP	43.5	-18.3	1.00 H	360	36.4	-11.2
4	330.65	33.8 QP	46.0	-12.2	1.00 H	222	40.4	-6.6
5	393.07	31.7 QP	46.0	-14.3	1.00 H	184	37.3	-5.6
6	517.50	27.0 QP	46.0	-19.0	2.00 H	279	29.6	-2.6
7	902.00	57.4 QP	108.0	-50.6	1.14 H	170	26.4	31.0
8*	902.75	128.0 QP			1.14 H	170	97.0	31.0

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	210.01	32.6 QP	43.5	-10.9	1.00 V	163	44.1	-11.5
2	281.11	31.5 QP	46.0	-14.5	1.00 V	193	39.6	-8.1
3	399.30	42.6 QP	46.0	-3.4	1.00 V	360	47.9	-5.3
4	421.59	38.9 QP	46.0	-7.1	1.00 V	94	43.6	-4.7
5	517.52	35.3 QP	46.0	-10.7	2.00 V	43	37.9	-2.6
6	559.86	32.6 QP	46.0	-13.4	1.00 V	104	34.5	-1.9
7	902.00	57.2 QP	107.9	-50.7	1.46 V	174	26.2	31.0
8*	902.75	127.9 QP			1.46 V	174	96.9	31.0

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 24	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	96.20	26.4 QP	43.5	-17.1	2.00 H	15	39.5	-13.1
2	149.41	26.4 QP	43.5	-17.1	3.00 H	0	34.6	-8.2
3	315.57	34.0 QP	46.0	-12.0	1.00 H	227	41.0	-7.0
4	331.60	34.9 QP	46.0	-11.1	1.00 H	161	41.5	-6.6
5	398.79	32.9 QP	46.0	-13.1	2.00 H	222	38.3	-5.4
6	517.52	31.4 QP	46.0	-14.6	2.00 H	100	34.0	-2.6
7*	914.75	128.2 QP			1.11 H	164	96.8	31.4

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	54.47	25.9 QP	40.0	-14.1	1.00 V	285	34.1	-8.2
2	146.96	28.4 QP	43.5	-15.1	1.00 V	232	36.6	-8.2
3	209.96	33.2 QP	43.5	-10.3	1.00 V	183	44.7	-11.5
4	399.91	40.6 QP	46.0	-5.4	1.00 V	91	45.9	-5.3
5	420.01	38.7 QP	46.0	-7.3	1.00 V	69	43.4	-4.7
6	517.52	34.3 QP	46.0	-11.7	1.00 V	355	36.9	-2.6
7*	914.75	127.7 QP			1.48 V	169	96.3	31.4

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 49	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	96.78	26.9 QP	43.5	-16.6	2.00 H	5	39.9	-13.0
2	157.22	27.7 QP	43.5	-15.8	2.00 H	342	35.9	-8.2
3	318.19	34.7 QP	46.0	-11.3	1.00 H	242	41.5	-6.8
4	399.33	35.7 QP	46.0	-10.3	1.00 H	159	41.0	-5.3
5	420.84	32.0 QP	46.0	-14.0	3.00 H	231	36.7	-4.7
6	517.52	29.8 QP	46.0	-16.2	1.00 H	291	32.4	-2.6
7*	927.25	128.1 QP			1.14 H	163	96.5	31.6
8	928.00	59.3 QP	108.1	-48.8	1.14 H	163	27.7	31.6

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	54.44	27.7 QP	40.0	-12.3	1.00 V	291	35.9	-8.2
2	155.45	29.2 QP	43.5	-14.3	1.00 V	222	37.4	-8.2
3	209.96	33.0 QP	43.5	-10.5	1.00 V	203	44.5	-11.5
4	279.99	33.1 QP	46.0	-12.9	1.00 V	229	41.3	-8.2
5	398.58	35.4 QP	46.0	-10.6	1.00 V	2	40.8	-5.4
6	517.52	33.0 QP	46.0	-13.0	1.00 V	194	35.6	-2.6
7*	927.25	127.9 QP			1.43 V	179	96.3	31.6
8	928.00	59.1 QP	107.9	-48.8	1.43 V	179	27.5	31.6

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

Above 1GHz Data:

CHANNEL	TX Channel 0	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 10GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2708.25	48.3 PK	74.0	-25.7	3.14 H	285	49.2	-0.9
2	2708.25	45.8 AV	54.0	-8.2	3.14 H	285	46.7	-0.9
3	3611.00	45.6 PK	74.0	-28.4	2.03 H	360	44.8	0.8
4	3611.00	41.5 AV	54.0	-12.5	2.03 H	360	40.7	0.8
5	4513.75	38.5 PK	74.0	-35.5	1.50 H	8	36.0	2.5
6	4513.75	26.0 AV	54.0	-28.0	1.50 H	8	23.5	2.5
7	5416.50	43.5 PK	74.0	-30.5	1.32 H	211	39.4	4.1
8	5416.50	35.4 AV	54.0	-18.6	1.32 H	211	31.3	4.1
9	#7222.00	49.8 PK	74.0	-24.2	2.58 H	267	40.9	8.9
10	#7222.00	44.9 AV	54.0	-9.1	2.58 H	267	36.0	8.9
11	8124.75	50.2 PK	74.0	-23.8	3.16 H	211	39.9	10.3
12	8124.75	40.5 AV	54.0	-13.5	3.16 H	211	30.2	10.3
13	9027.50	48.1 PK	74.0	-25.9	3.54 H	259	37.5	10.6
14	9027.50	38.5 AV	54.0	-15.5	3.54 H	259	27.9	10.6

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2708.25	48.5 PK	74.0	-25.5	1.41 V	336	49.4	-0.9
2	2708.25	45.2 AV	54.0	-8.8	1.41 V	336	46.1	-0.9
3	3611.00	45.8 PK	74.0	-28.2	1.33 V	313	45.0	0.8
4	3611.00	42.0 AV	54.0	-12.0	1.33 V	313	41.2	0.8
5	4513.75	37.2 PK	74.0	-36.8	2.06 V	200	34.7	2.5
6	4513.75	26.4 AV	54.0	-27.6	2.06 V	200	23.9	2.5
7	5416.50	48.1 PK	74.0	-25.9	1.44 V	291	44.0	4.1
8	5416.50	41.2 AV	54.0	-12.8	1.44 V	291	37.1	4.1
9	#7222.00	51.0 PK	74.0	-23.0	2.91 V	211	42.1	8.9
10	#7222.00	45.1 AV	54.0	-8.9	2.91 V	211	36.2	8.9
11	8124.75	47.8 PK	74.0	-26.2	2.44 V	138	37.5	10.3
12	8124.75	43.1 AV	54.0	-10.9	2.44 V	138	32.8	10.3
13	9027.50	44.6 PK	74.0	-29.4	2.74 V	191	34.0	10.6
14	9027.50	35.6 AV	54.0	-18.4	2.74 V	191	25.0	10.6

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 24	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 10GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2744.25	48.6 PK	74.0	-25.4	3.20 H	299	49.5	-0.9
2	2744.25	46.1 AV	54.0	-7.9	3.20 H	299	47.0	-0.9
3	3659.00	46.2 PK	74.0	-27.8	2.04 H	360	45.5	0.7
4	3659.00	41.9 AV	54.0	-12.1	2.04 H	360	41.2	0.7
5	4573.75	38.2 PK	74.0	-35.8	1.48 H	9	35.7	2.5
6	4573.75	25.5 AV	54.0	-28.5	1.48 H	9	23.0	2.5
7	#5488.50	43.4 PK	74.0	-30.6	1.34 H	207	39.2	4.2
8	#5488.50	35.4 AV	54.0	-18.6	1.34 H	207	31.2	4.2
9	7318.00	50.3 PK	74.0	-23.7	2.59 H	274	41.4	8.9
10	7318.00	45.5 AV	54.0	-8.5	2.59 H	274	36.6	8.9
11	8232.75	49.6 PK	74.0	-24.4	3.16 H	208	39.3	10.3
12	8232.75	40.2 AV	54.0	-13.8	3.16 H	208	29.9	10.3
13	9147.50	47.3 PK	74.0	-26.7	3.54 H	247	36.7	10.6
14	9147.50	37.8 AV	54.0	-16.2	3.54 H	247	27.2	10.6

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2744.25	48.8 PK	74.0	-25.2	1.38 V	333	49.7	-0.9
2	2744.25	45.7 AV	54.0	-8.3	1.38 V	333	46.6	-0.9
3	3659.00	46.2 PK	74.0	-27.8	1.38 V	331	45.5	0.7
4	3659.00	42.8 AV	54.0	-11.2	1.38 V	331	42.1	0.7
5	4573.75	37.8 PK	74.0	-36.2	2.10 V	207	35.3	2.5
6	4573.75	26.8 AV	54.0	-27.2	2.10 V	207	24.3	2.5
7	#5488.50	47.9 PK	74.0	-26.1	1.40 V	315	43.7	4.2
8	#5488.50	41.1 AV	54.0	-12.9	1.40 V	315	36.9	4.2
9	7318.00	51.4 PK	74.0	-22.6	2.94 V	225	42.5	8.9
10	7318.00	45.5 AV	54.0	-8.5	2.94 V	225	36.6	8.9
11	8232.75	47.9 PK	74.0	-26.1	2.36 V	144	37.6	10.3
12	8232.75	43.0 AV	54.0	-11.0	2.36 V	144	32.7	10.3
13	9147.50	45.3 PK	74.0	-28.7	2.70 V	188	34.7	10.6
14	9147.50	36.1 AV	54.0	-17.9	2.70 V	188	25.5	10.6

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 49	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 10GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2781.75	48.9 PK	74.0	-25.1	3.10 H	296	49.7	-0.8
2	2781.75	46.3 AV	54.0	-7.7	3.10 H	296	47.1	-0.8
3	3709.00	45.9 PK	74.0	-28.1	2.04 H	360	45.1	0.8
4	3709.00	41.7 AV	54.0	-12.3	2.04 H	360	40.9	0.8
5	4636.25	38.2 PK	74.0	-35.8	1.52 H	0	35.6	2.6
6	4636.25	25.9 AV	54.0	-28.1	1.52 H	0	23.3	2.6
7	#5563.50	43.4 PK	74.0	-30.6	1.33 H	218	39.2	4.2
8	#5563.50	35.4 AV	54.0	-18.6	1.33 H	218	31.2	4.2
9	7418.00	49.7 PK	74.0	-24.3	2.64 H	266	40.6	9.1
10	7418.00	45.0 AV	54.0	-9.0	2.64 H	266	35.9	9.1
11	8345.25	49.9 PK	74.0	-24.1	3.23 H	230	39.6	10.3
12	8345.25	40.7 AV	54.0	-13.3	3.23 H	230	30.4	10.3
13	#9272.50	47.4 PK	74.0	-26.6	3.59 H	261	36.6	10.8
14	#9272.50	38.1 AV	54.0	-15.9	3.59 H	261	27.3	10.8

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2781.75	49.0 PK	74.0	-25.0	1.41 V	321	49.8	-0.8
2	2781.75	45.6 AV	54.0	-8.4	1.41 V	321	46.4	-0.8
3	3709.00	46.3 PK	74.0	-27.7	1.32 V	321	45.5	0.8
4	3709.00	42.7 AV	54.0	-11.3	1.32 V	321	41.9	0.8
5	4636.25	37.8 PK	74.0	-36.2	2.05 V	207	35.2	2.6
6	4636.25	26.7 AV	54.0	-27.3	2.05 V	207	24.1	2.6
7	#5563.50	47.7 PK	74.0	-26.3	1.34 V	298	43.5	4.2
8	#5563.50	41.1 AV	54.0	-12.9	1.34 V	298	36.9	4.2
9	7418.00	51.0 PK	74.0	-23.0	2.96 V	227	41.9	9.1
10	7418.00	45.4 AV	54.0	-8.6	2.96 V	227	36.3	9.1
11	8345.25	48.6 PK	74.0	-25.4	2.37 V	148	38.3	10.3
12	8345.25	43.7 AV	54.0	-10.3	2.37 V	148	33.4	10.3
13	#9272.50	44.5 PK	74.0	-29.5	2.67 V	199	33.7	10.8
14	#9272.50	35.9 AV	54.0	-18.1	2.67 V	199	25.1	10.8

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " # ": The radiated frequency is out of the restricted band.

4.1.9 Test Results (Mode 3)

Below 1GHz Data:

CHANNEL	TX Channel 0	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	95.57	25.9 QP	43.5	-17.6	3.00 H	0	39.1	-13.2
2	144.00	26.0 QP	43.5	-17.5	2.00 H	360	34.2	-8.2
3	197.35	25.8 QP	43.5	-17.7	1.00 H	359	37.0	-11.2
4	345.01	36.2 QP	46.0	-9.8	2.00 H	225	42.7	-6.5
5	398.84	34.3 QP	46.0	-11.7	1.00 H	183	39.6	-5.3
6	770.52	30.9 QP	46.0	-15.1	2.00 H	247	29.3	1.6
7	902.00	67.8 QP	107.8	-40.0	1.17 H	179	36.8	31.0
8*	902.75	127.8 QP			1.17 H	179	96.8	31.0

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	210.01	34.3 QP	43.5	-9.2	1.00 V	187	45.8	-11.5
2	280.84	32.2 QP	46.0	-13.8	1.00 V	234	40.3	-8.1
3	399.45	40.4 QP	46.0	-5.6	1.00 V	260	45.7	-5.3
4	421.59	37.9 QP	46.0	-8.1	1.00 V	63	42.6	-4.7
5	517.47	35.4 QP	46.0	-10.6	1.00 V	170	38.0	-2.6
6	632.39	34.6 QP	46.0	-11.4	1.00 V	213	35.0	-0.4
7	902.00	67.6 QP	107.7	-40.1	1.48 V	177	36.6	31.0
8*	902.75	127.7 QP			1.48 V	177	96.7	31.0

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 24	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	95.52	26.2 QP	43.5	-17.3	2.00 H	360	39.4	-13.2
2	146.42	26.3 QP	43.5	-17.2	2.00 H	0	34.5	-8.2
3	216.43	25.4 QP	46.0	-20.6	1.00 H	17	36.7	-11.3
4	316.54	30.9 QP	46.0	-15.1	1.00 H	253	37.8	-6.9
5	336.13	34.3 QP	46.0	-11.7	1.00 H	209	40.8	-6.5
6	399.16	33.8 QP	46.0	-12.2	1.00 H	191	39.1	-5.3
7*	914.75	128.4 QP			1.13 H	172	97.0	31.4

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	146.45	28.5 QP	43.5	-15.0	1.00 V	230	36.7	-8.2
2	210.78	32.9 QP	43.5	-10.6	1.00 V	169	44.4	-11.5
3	279.94	33.9 QP	46.0	-12.1	1.00 V	236	42.1	-8.2
4	399.45	42.4 QP	46.0	-3.6	2.00 V	360	47.7	-5.3
5	421.44	40.2 QP	46.0	-5.8	1.00 V	84	44.9	-4.7
6	517.50	36.8 QP	46.0	-9.2	1.00 V	10	39.4	-2.6
7*	914.75	127.5 QP			1.50 V	178	96.1	31.4

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 49	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	96.18	27.5 QP	43.5	-16.0	2.00 H	22	40.6	-13.1
2	149.36	25.6 QP	43.5	-17.9	1.00 H	342	33.8	-8.2
3	217.48	25.8 QP	46.0	-20.2	2.00 H	360	37.1	-11.3
4	334.77	34.7 QP	46.0	-11.3	2.00 H	221	41.2	-6.5
5	398.50	37.2 QP	46.0	-8.8	1.00 H	176	42.6	-5.4
6	441.01	29.3 QP	46.0	-16.7	2.00 H	183	33.1	-3.8
7*	927.25	127.8 QP			1.10 H	159	96.2	31.6
8	928.00	69.1 QP	107.8	-38.7	1.10 H	159	37.5	31.6

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	209.98	35.0 QP	43.5	-8.5	1.00 V	201	46.5	-11.5
2	279.99	33.5 QP	46.0	-12.5	1.00 V	227	41.7	-8.2
3	399.21	41.5 QP	46.0	-4.5	1.00 V	360	46.8	-5.3
4	419.92	37.8 QP	46.0	-8.2	1.00 V	78	42.6	-4.8
5	517.50	35.1 QP	46.0	-10.9	1.00 V	39	37.7	-2.6
6	562.17	32.1 QP	46.0	-13.9	1.00 V	187	34.0	-1.9
7*	927.25	128.0 QP			1.44 V	183	96.4	31.6
8	928.00	68.8 QP	108.0	-39.2	1.44 V	183	37.2	31.6

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

Above 1GHz Data:

CHANNEL	TX Channel 0	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 10GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2708.25	47.5 PK	74.0	-26.5	3.38 H	280	48.4	-0.9
2	2708.25	42.3 AV	54.0	-11.7	3.38 H	280	43.2	-0.9
3	3611.00	45.4 PK	74.0	-28.6	2.04 H	360	44.6	0.8
4	3611.00	41.2 AV	54.0	-12.8	2.04 H	360	40.4	0.8
5	4513.75	37.5 PK	74.0	-36.5	1.50 H	0	35.0	2.5
6	4513.75	25.2 AV	54.0	-28.8	1.50 H	0	22.7	2.5
7	5416.50	43.2 PK	74.0	-30.8	1.39 H	214	39.1	4.1
8	5416.50	35.6 AV	54.0	-18.4	1.39 H	214	31.5	4.1
9	#7222.00	49.5 PK	74.0	-24.5	2.60 H	265	40.6	8.9
10	#7222.00	44.9 AV	54.0	-9.1	2.60 H	265	36.0	8.9
11	8124.75	49.2 PK	74.0	-24.8	3.24 H	226	38.9	10.3
12	8124.75	39.9 AV	54.0	-14.1	3.24 H	226	29.6	10.3
13	9027.50	47.6 PK	74.0	-26.4	3.64 H	246	37.0	10.6
14	9027.50	38.2 AV	54.0	-15.8	3.64 H	246	27.6	10.6

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2708.25	48.7 PK	74.0	-25.3	1.41 V	338	49.6	-0.9
2	2708.25	43.4 AV	54.0	-10.6	1.41 V	338	44.3	-0.9
3	3611.00	45.9 PK	74.0	-28.1	1.37 V	320	45.1	0.8
4	3611.00	42.4 AV	54.0	-11.6	1.37 V	320	41.6	0.8
5	4513.75	37.5 PK	74.0	-36.5	2.08 V	215	35.0	2.5
6	4513.75	26.5 AV	54.0	-27.5	2.08 V	215	24.0	2.5
7	5416.50	47.7 PK	74.0	-26.3	1.39 V	301	43.6	4.1
8	5416.50	40.9 AV	54.0	-13.1	1.39 V	301	36.8	4.1
9	#7222.00	50.9 PK	74.0	-23.1	2.95 V	212	42.0	8.9
10	#7222.00	45.2 AV	54.0	-8.8	2.95 V	212	36.3	8.9
11	8124.75	48.2 PK	74.0	-25.8	2.40 V	153	37.9	10.3
12	8124.75	43.3 AV	54.0	-10.7	2.40 V	153	33.0	10.3
13	9027.50	44.5 PK	74.0	-29.5	2.70 V	186	33.9	10.6
14	9027.50	35.6 AV	54.0	-18.4	2.70 V	186	25.0	10.6

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 24	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 10GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2744.25	47.9 PK	74.0	-26.1	3.39 H	276	48.8	-0.9
2	2744.25	42.8 AV	54.0	-11.2	3.39 H	276	43.7	-0.9
3	3659.00	45.5 PK	74.0	-28.5	2.07 H	360	44.8	0.7
4	3659.00	41.6 AV	54.0	-12.4	2.07 H	360	40.9	0.7
5	4573.75	37.9 PK	74.0	-36.1	1.45 H	13	35.4	2.5
6	4573.75	25.7 AV	54.0	-28.3	1.45 H	13	23.2	2.5
7	#5488.50	43.6 PK	74.0	-30.4	1.41 H	202	39.4	4.2
8	#5488.50	36.1 AV	54.0	-17.9	1.41 H	202	31.9	4.2
9	7318.00	49.7 PK	74.0	-24.3	2.58 H	272	40.8	8.9
10	7318.00	45.1 AV	54.0	-8.9	2.58 H	272	36.2	8.9
11	8232.75	48.6 PK	74.0	-25.4	3.26 H	219	38.3	10.3
12	8232.75	39.4 AV	54.0	-14.6	3.26 H	219	29.1	10.3
13	9147.50	47.2 PK	74.0	-26.8	3.69 H	251	36.6	10.6
14	9147.50	38.1 AV	54.0	-15.9	3.69 H	251	27.5	10.6

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2744.25	48.4 PK	74.0	-25.6	1.42 V	350	49.3	-0.9
2	2744.25	43.3 AV	54.0	-10.7	1.42 V	350	44.2	-0.9
3	3659.00	45.7 PK	74.0	-28.3	1.38 V	311	45.0	0.7
4	3659.00	42.0 AV	54.0	-12.0	1.38 V	311	41.3	0.7
5	4573.75	37.5 PK	74.0	-36.5	2.10 V	199	35.0	2.5
6	4573.75	26.3 AV	54.0	-27.7	2.10 V	199	23.8	2.5
7	#5488.50	48.0 PK	74.0	-26.0	1.34 V	301	43.8	4.2
8	#5488.50	41.3 AV	54.0	-12.7	1.34 V	301	37.1	4.2
9	7318.00	51.2 PK	74.0	-22.8	2.93 V	203	42.3	8.9
10	7318.00	45.5 AV	54.0	-8.5	2.93 V	203	36.6	8.9
11	8232.75	47.6 PK	74.0	-26.4	2.37 V	168	37.3	10.3
12	8232.75	42.9 AV	54.0	-11.1	2.37 V	168	32.6	10.3
13	9147.50	44.5 PK	74.0	-29.5	2.68 V	172	33.9	10.6
14	9147.50	35.8 AV	54.0	-18.2	2.68 V	172	25.2	10.6

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 49	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 10GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2781.75	47.2 PK	74.0	-26.8	3.43 H	291	48.0	-0.8
2	2781.75	42.1 AV	54.0	-11.9	3.43 H	291	42.9	-0.8
3	3709.00	45.6 PK	74.0	-28.4	2.06 H	360	44.8	0.8
4	3709.00	41.1 AV	54.0	-12.9	2.06 H	360	40.3	0.8
5	4636.25	36.9 PK	74.0	-37.1	1.48 H	15	34.3	2.6
6	4636.25	24.9 AV	54.0	-29.1	1.48 H	15	22.3	2.6
7	#5563.50	43.3 PK	74.0	-30.7	1.34 H	223	39.1	4.2
8	#5563.50	35.7 AV	54.0	-18.3	1.34 H	223	31.5	4.2
9	7418.00	49.9 PK	74.0	-24.1	2.55 H	268	40.8	9.1
10	7418.00	45.1 AV	54.0	-8.9	2.55 H	268	36.0	9.1
11	8345.25	48.5 PK	74.0	-25.5	3.30 H	213	38.2	10.3
12	8345.25	39.4 AV	54.0	-14.6	3.30 H	213	29.1	10.3
13	#9272.50	47.9 PK	74.0	-26.1	3.68 H	240	37.1	10.8
14	#9272.50	38.5 AV	54.0	-15.5	3.68 H	240	27.7	10.8

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2781.75	48.2 PK	74.0	-25.8	1.44 V	337	49.0	-0.8
2	2781.75	43.1 AV	54.0	-10.9	1.44 V	337	43.9	-0.8
3	3709.00	45.5 PK	74.0	-28.5	1.37 V	322	44.7	0.8
4	3709.00	41.9 AV	54.0	-12.1	1.37 V	322	41.1	0.8
5	4636.25	38.1 PK	74.0	-35.9	2.14 V	223	35.5	2.6
6	4636.25	26.9 AV	54.0	-27.1	2.14 V	223	24.3	2.6
7	#5563.50	48.1 PK	74.0	-25.9	1.39 V	296	43.9	4.2
8	#5563.50	41.3 AV	54.0	-12.7	1.39 V	296	37.1	4.2
9	7418.00	50.5 PK	74.0	-23.5	2.90 V	205	41.4	9.1
10	7418.00	45.0 AV	54.0	-9.0	2.90 V	205	35.9	9.1
11	8345.25	48.5 PK	74.0	-25.5	2.36 V	164	38.2	10.3
12	8345.25	43.5 AV	54.0	-10.5	2.36 V	164	33.2	10.3
13	#9272.50	44.3 PK	74.0	-29.7	2.74 V	175	33.5	10.8
14	#9272.50	35.3 AV	54.0	-18.7	2.74 V	175	24.5	10.8

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " # ": The radiated frequency is out of the restricted band.

4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

Note: 1. The lower limit shall apply at the transition frequencies.

2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

4.2.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver R&S	ESCS 30	847124/029	Oct. 24, 2016	Oct. 23, 2017
Line-Impedance Stabilization Network (for EUT) R&S	ESH3-Z5	848773/004	Oct. 26, 2016	Oct. 25, 2017
Line-Impedance Stabilization Network (for Peripheral) R&S	ENV216	100072	June 03, 2017	June 02, 2018
50 ohms Terminator	N/A	EMC-02	Sep. 29, 2016	Sep. 28, 2017
RF Cable	5D-FB	COCCAB-001	Sep. 30, 2016	Sep. 29, 2017
10 dB PAD Mini-Circuits	HAT-10+	CONATT-004	June 18, 2017	June 17, 2018
Software BVADT	BVADT_Cond_V7.3.7.4	NA	NA	NA

Note:

1. The calibration interval of the above test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Shielded Room No. 1.
3. Tested Date: Sep. 08, 2017

4.2.3 Test Procedures

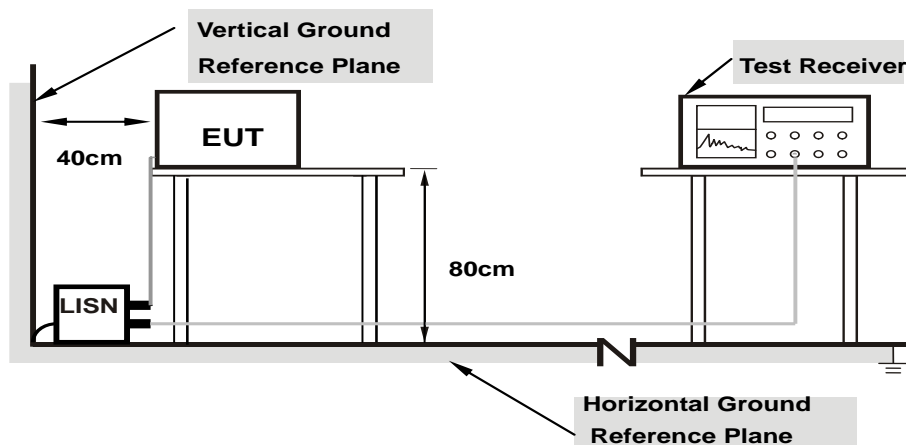
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

NOTE: The resolution bandwidth and video bandwidth of test receiver is 9kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15MHz-30MHz.

4.2.4 Deviation From Test Standard

No deviation.

4.2.5 Test Setup



Note: 1.Support units were connected to second LISN.

For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.2.6 EUT Operating Condition

Same as 4.1.6.

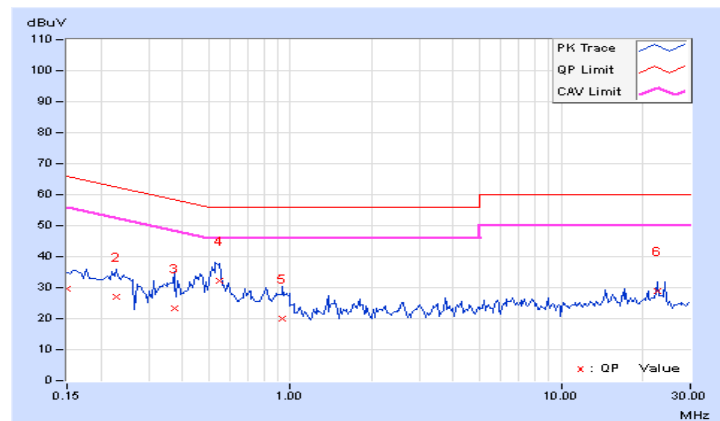
4.2.7 Test Results

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	
1	0.15000	10.08	19.38	7.89	29.46	17.97	66.00	56.00	-36.54	-38.03
2	0.22812	10.08	16.84	5.52	26.92	15.60	62.52	52.52	-35.60	-36.92
3	0.37266	10.11	13.24	0.90	23.35	11.01	58.44	48.44	-35.09	-37.43
4	0.54844	10.13	22.06	10.76	32.19	20.89	56.00	46.00	-23.81	-25.11
5	0.93906	10.16	9.86	-1.34	20.02	8.82	56.00	46.00	-35.98	-37.18
6	22.69922	11.62	17.32	14.01	28.94	25.63	60.00	50.00	-31.06	-24.37

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

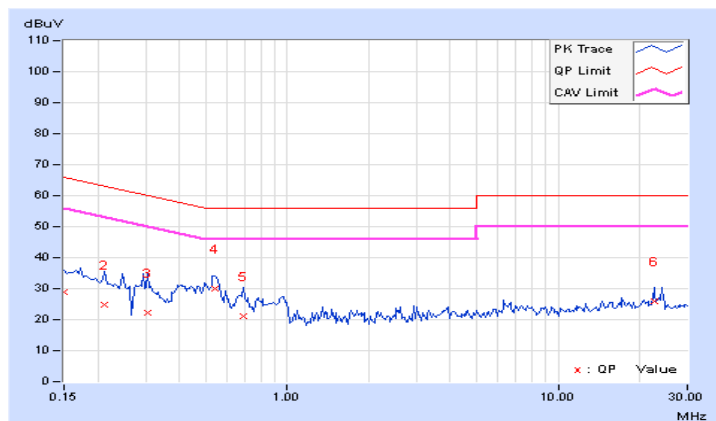


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	
1	0.15000	10.07	18.89	3.61	28.96	13.68	66.00	56.00	-37.04	-42.32
2	0.21250	10.05	14.75	-0.87	24.80	9.18	63.11	53.11	-38.31	-43.93
3	0.30625	10.08	12.28	3.55	22.36	13.63	60.07	50.07	-37.71	-36.44
4	0.54453	10.12	19.72	9.24	29.84	19.36	56.00	46.00	-26.16	-26.64
5	0.69297	10.12	11.08	-0.64	21.20	9.48	56.00	46.00	-34.80	-36.52
6	22.69531	11.28	14.51	12.43	25.79	23.71	60.00	50.00	-34.21	-26.29

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

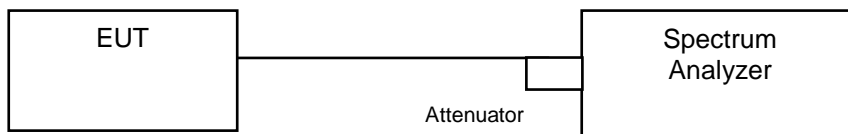


4.3 Number of Hopping Frequency Used

4.3.1 Limits of Hopping Frequency Used Measurement

CONDITION	HOPPING FREQUENCY USED	APPLICATION	MODE
20dB Bandwidth <250kHz	hopping channels ≥ 50	v	1, 2
20dB Bandwidth >250kHz	hopping channels ≥ 25	v	3

4.3.2 Test Setup



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

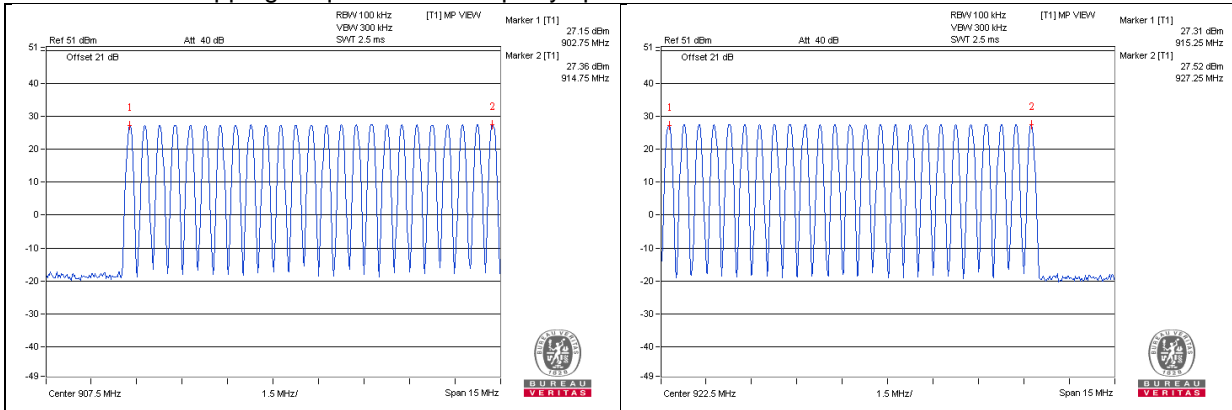
- Check the calibration of the measuring instrument (SA) using either an internal calibrator or a known signal from an external generator.
- Turn on the EUT and connect its antenna terminal to measurement via a low loss cable. Then set it to any one measured frequency within its operating range and make sure the instrument is operated in its linear range.
- Set the SA on MaxHold Mode, and then keep the EUT in hopping mode. Record all the signals from each channel until each one has been recorded.
- Set the SA on View mode and then plot the result on SA screen.
- Repeat above procedures until all frequencies measured were complete.

4.3.5 Deviation from Test Standard

No deviation.

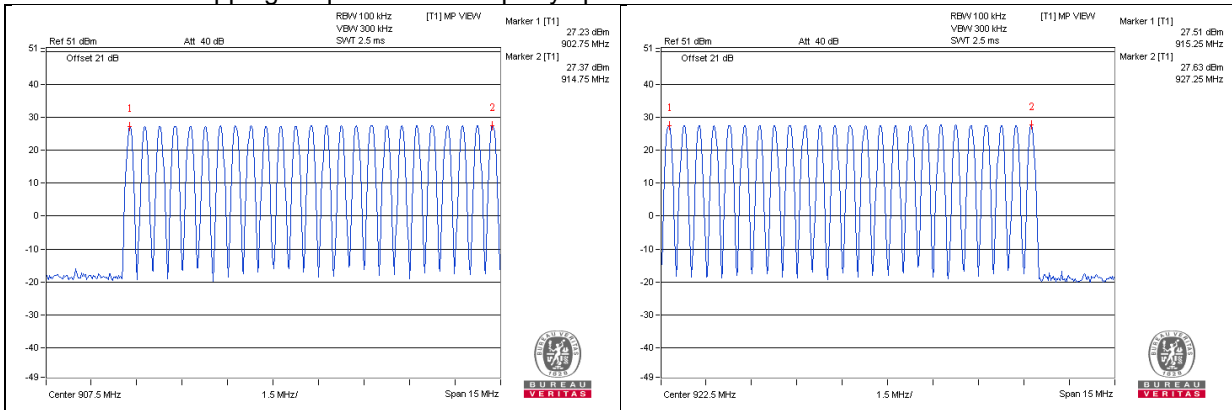
4.3.6 Test Results (Mode 1)

There are 50 hopping frequencies in the hopping mode. Please refer to the test result. On the plots, it shows that the hopping frequencies are equally spaced.



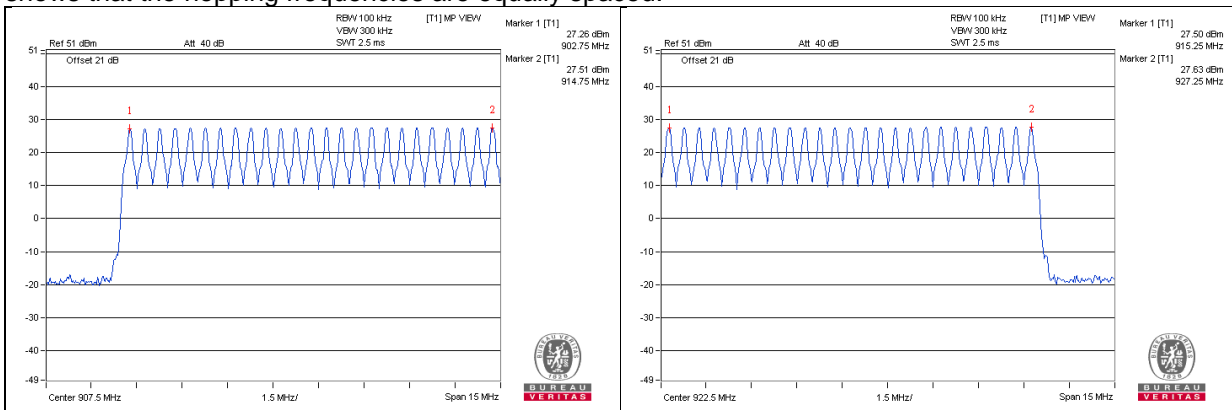
4.3.7 Test Results (Mode 2)

There are 50 hopping frequencies in the hopping mode. Please refer to the test result. On the plots, it shows that the hopping frequencies are equally spaced.



4.3.8 Test Results (Mode 3)

There are 50 hopping frequencies in the hopping mode. Please refer to the test result. On the plots, it shows that the hopping frequencies are equally spaced.

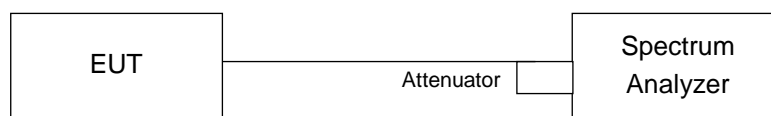


4.4 Dwell Time on Each Channel

4.4.1 Limits of Dwell Time on Each Channel Measurement

CONDITION	DWELL TIME	APPLICATION	MODE
20dB Bandwidth <250kHz (hopping channels ≥ 50)	0.4 seconds within a 20 second period	v	1, 2
20dB Bandwidth >250kHz (hopping channels ≥ 25)	0.4 seconds within a 10 second period	v	3

4.4.2 Test Setup



4.4.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.4 Test Procedures

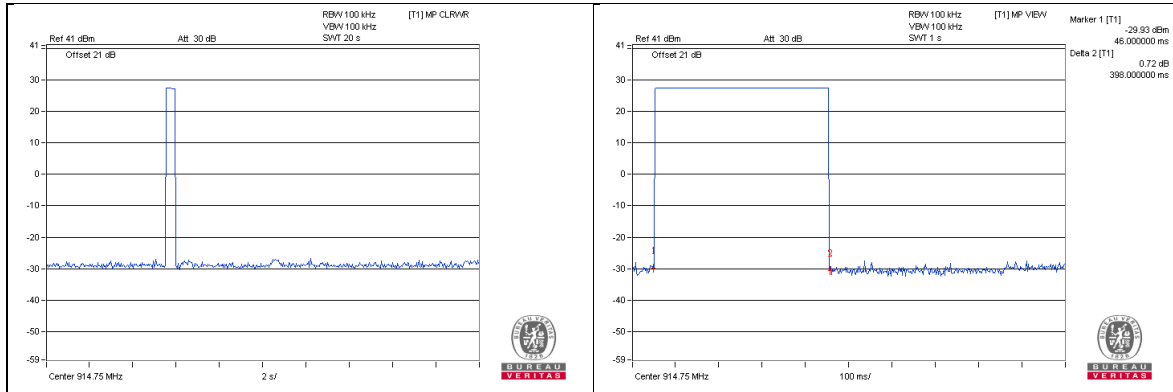
- Check the calibration of the measuring instrument (SA) using either an internal calibrator or a known signal from an external generator.
- Turn on the EUT and connect its antenna terminal to measurement via a low loss cable. Then set it to any one measured frequency within its operating range and make sure the instrument is operated in its linear range.
- Adjust the center frequency of SA on any frequency be measured and set SA to zero span mode. And then, set RBW and VBW of spectrum analyzer to proper value.
- Measure the time duration of one transmission on the measured frequency. And then plot the result with time difference of this time duration.
- Repeat above procedures until all different time-slot modes have been completed.

4.4.5 Deviation from Test Standard

No deviation.

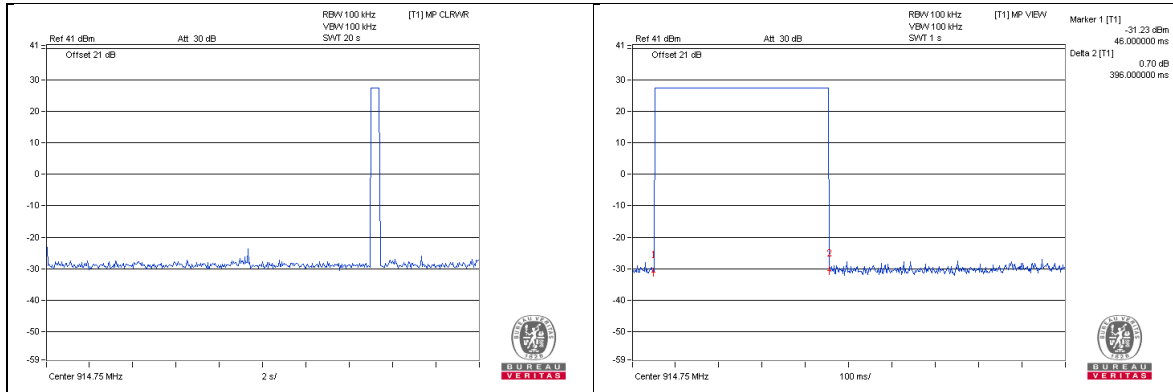
4.4.6 Test Results (Mode 1)

Number of transmission in a 20 s	Length of transmission time (msec)	Result (msec)	Limit (msec)
1 time	398	398	400



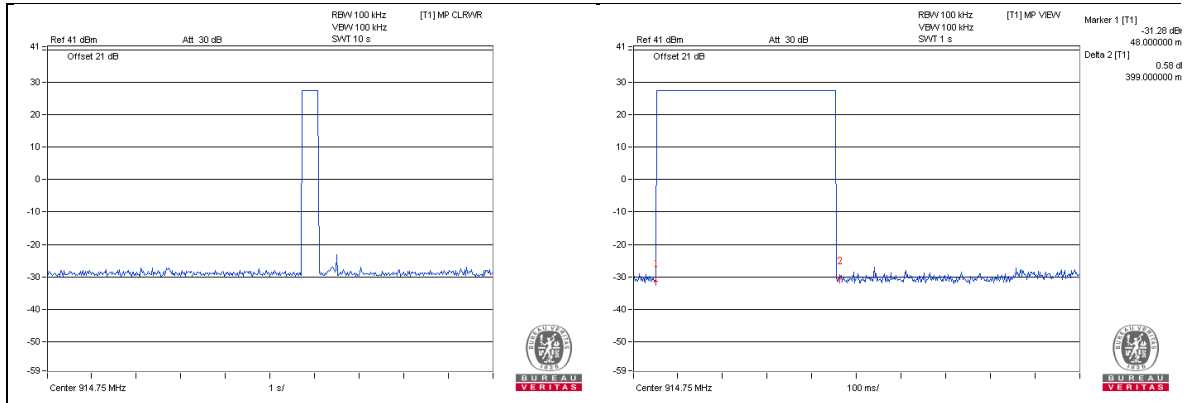
4.4.7 Test Results (Mode 2)

Number of transmission in a 20 s	Length of transmission time (msec)	Result (msec)	Limit (msec)
1 time	396	396	400



4.4.8 Test Results (Mode 3)

Number of transmission in a 20 s	Length of transmission time (msec)	Result (msec)	Limit (msec)
1 time	399	399	400

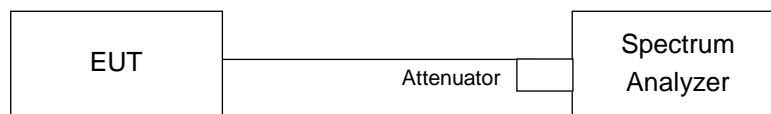


4.5 Channel Bandwidth

4.5.1 Limits of Channel Bandwidth Measurement

CONDITION	APPLICATION	MODE
20dB Bandwidth <250kHz (hopping channels ≥ 50)	v	1, 2
20dB Bandwidth >250kHz (hopping channels ≥ 25)	v	3

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedure

- Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
- Measure the frequency difference of two frequencies that were attenuated 20dB from the reference level. Record the frequency difference as the emission bandwidth.
- Repeat above procedures until all frequencies measured were complete.

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

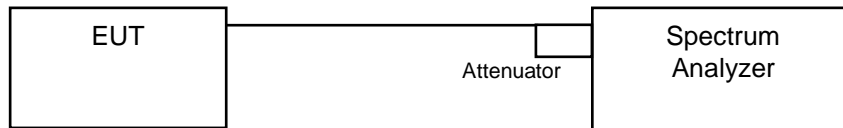
The software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel frequencies individually.

4.6 Hopping Channel Separation

4.6.1 Limits of Hopping Channel Separation Measurement

At least 25kHz or 20dB hopping channel bandwidth (whichever is greater).

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 Test Procedure

Measurement Procedure REF

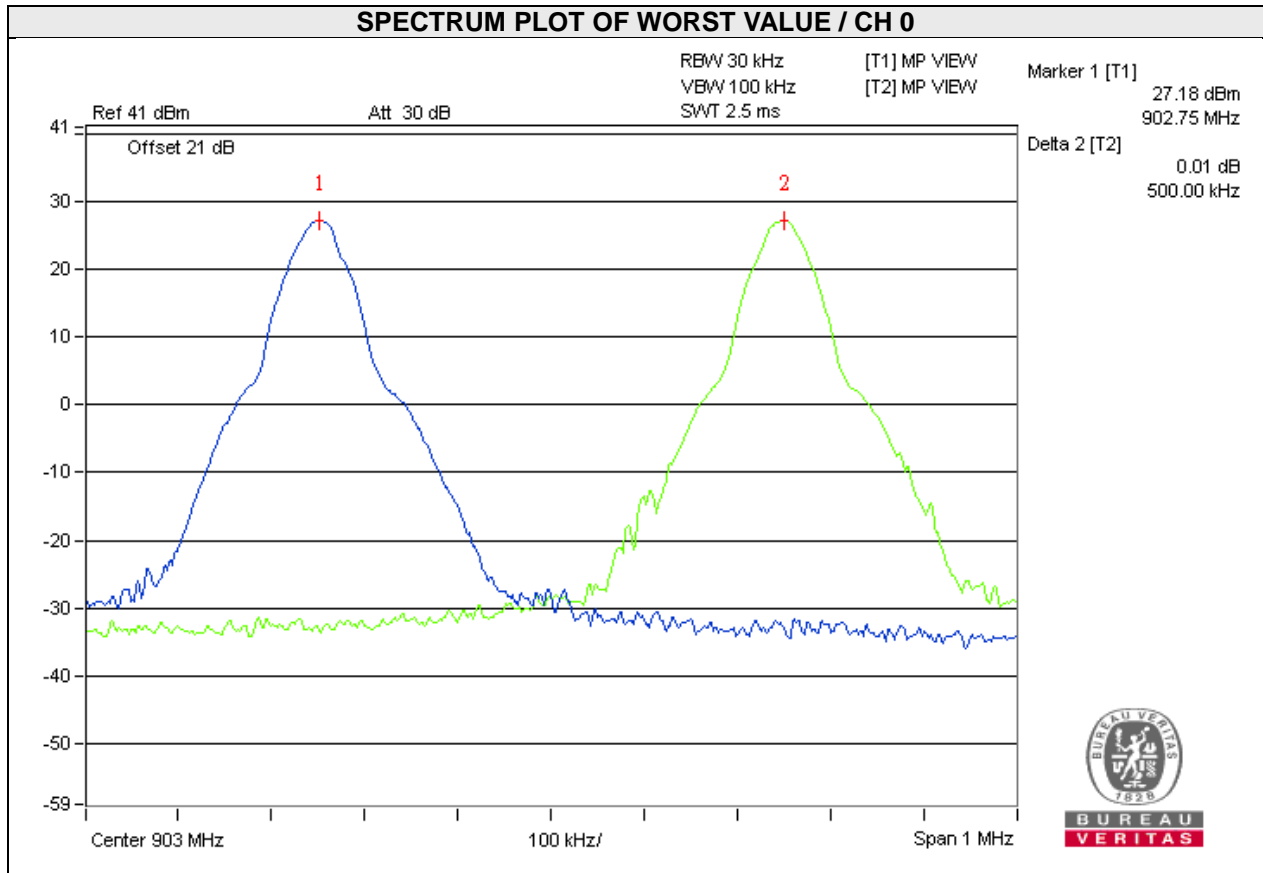
- a. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- b. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range.
- c. By using the MaxHold function record the separation of two adjacent channels.
- d. Measure the frequency difference of these two adjacent channels by SA MARK function. And then plot the result on SA screen.
- e. Repeat above procedures until all frequencies measured were complete.

4.6.5 Deviation from Test Standard

No deviation.

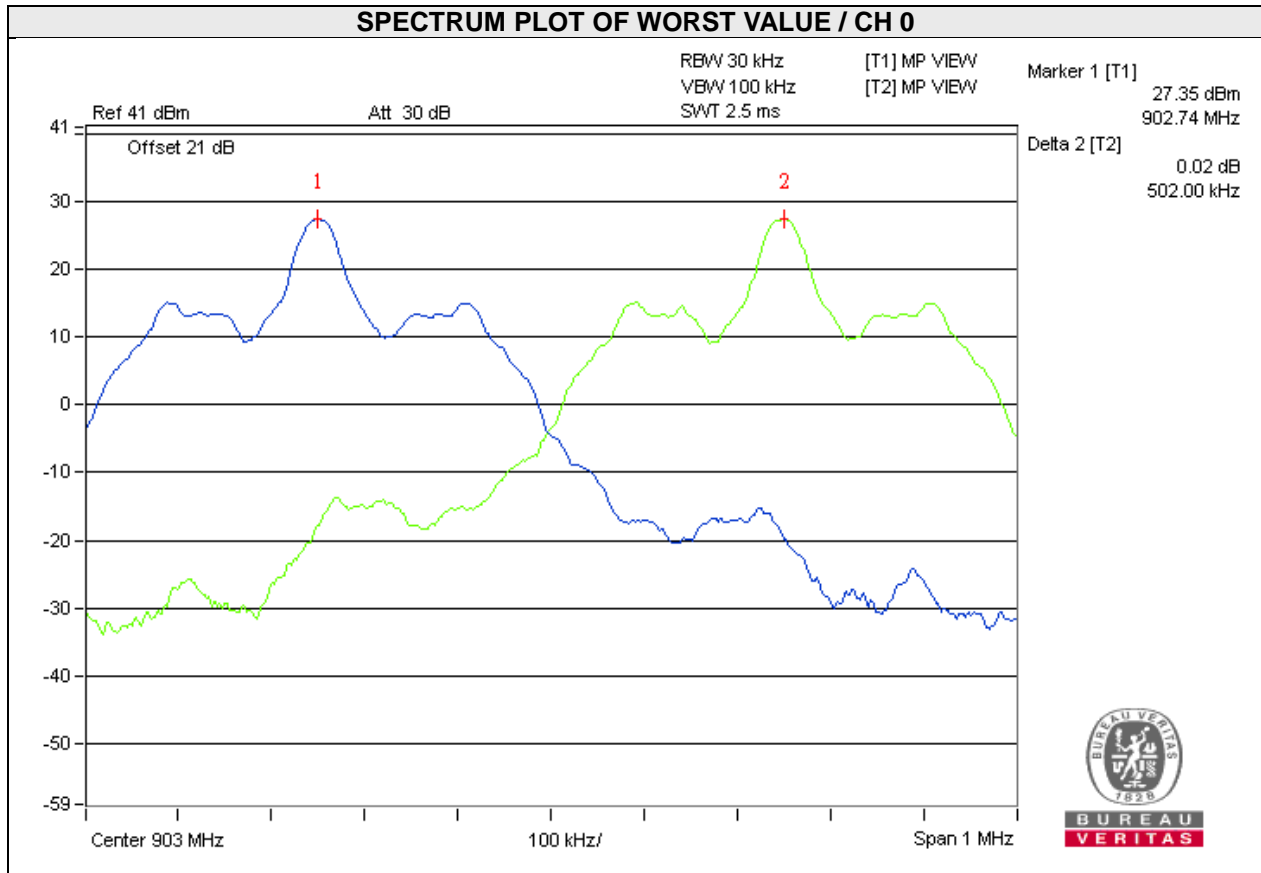
4.6.6 Test Results (Mode 1)

Channel	Frequency (MHz)	Adjacent Channel Separation (MHz)	Minimum Limit (MHz)	Pass / Fail
0	902.75	0.50	0.11	Pass
24	914.75	0.50	0.11	Pass
49	927.25	0.50	0.11	Pass



4.6.8 Test Results (Mode 3)

Channel	Frequency (MHz)	Adjacent Channel Separation (MHz)	Minimum Limit (MHz)	Pass / Fail
0	902.75	0.50	0.41	Pass
24	914.75	0.50	0.41	Pass
49	927.25	0.50	0.41	Pass

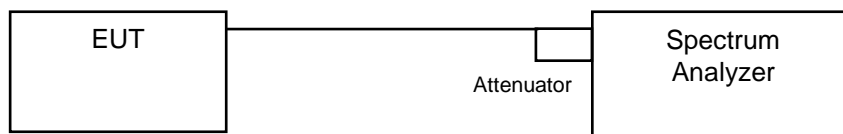


4.7 Maximum Output Power

4.7.1 Limits of Maximum Output Power Measurement

CONDITION	OUTPUT POWER	APPLICATION
hopping channels ≥ 50	1 W	v
hopping channels ≥ 25 & ≤ 50	0.25W	-

4.7.2 Test Setup



4.7.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.7.4 Test Procedure

- Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
- The center frequency of the spectrum analyzer is set to the fundamental frequency and using 3MHz RBW and 10 MHz VBW.
- Measure the captured power within the band and recording the plot.
- Repeat above procedures until all frequencies required were complete.

4.7.5 Deviation from Test Standard

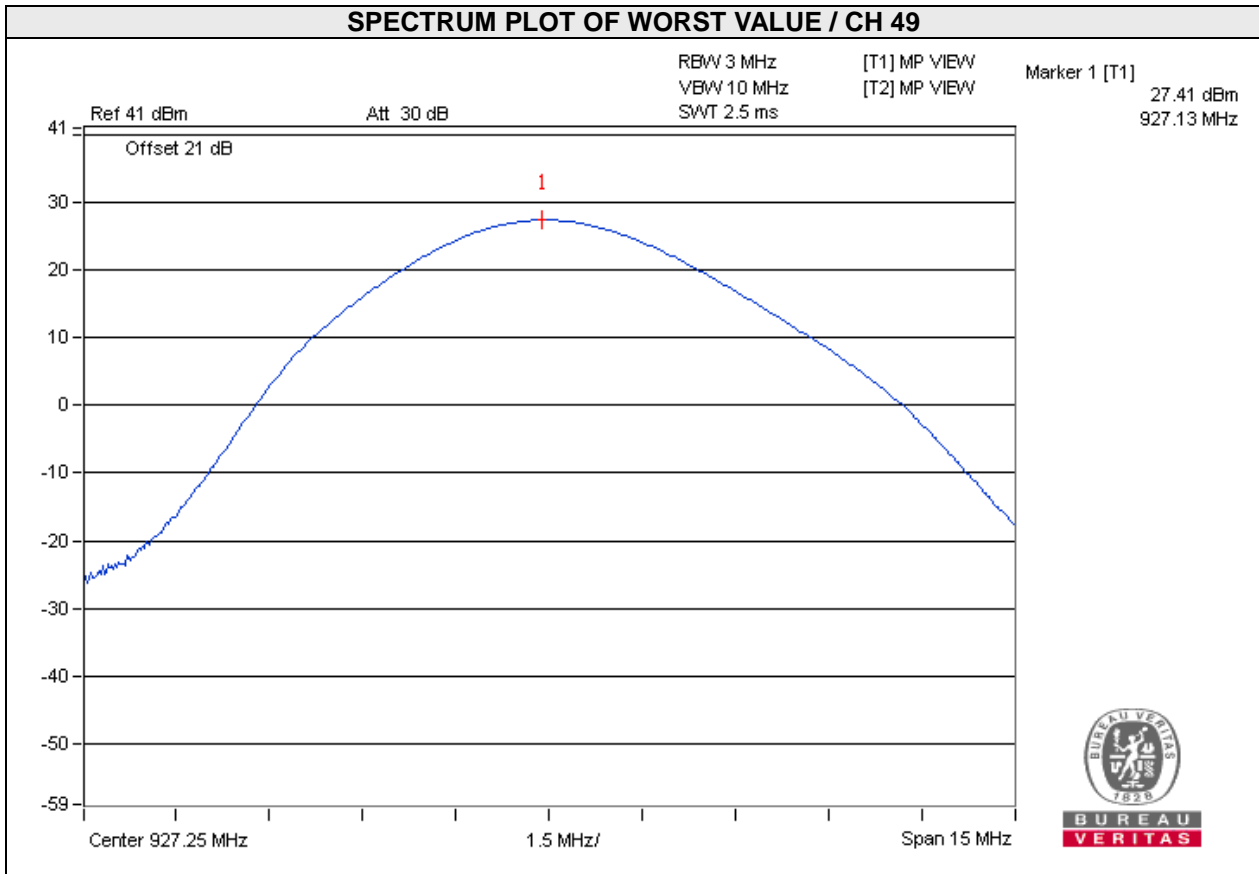
No deviation.

4.7.6 EUT Operating Condition

The software provided by client enabled the EUT to transmit and receive data at lowest and highest channel frequencies individually.

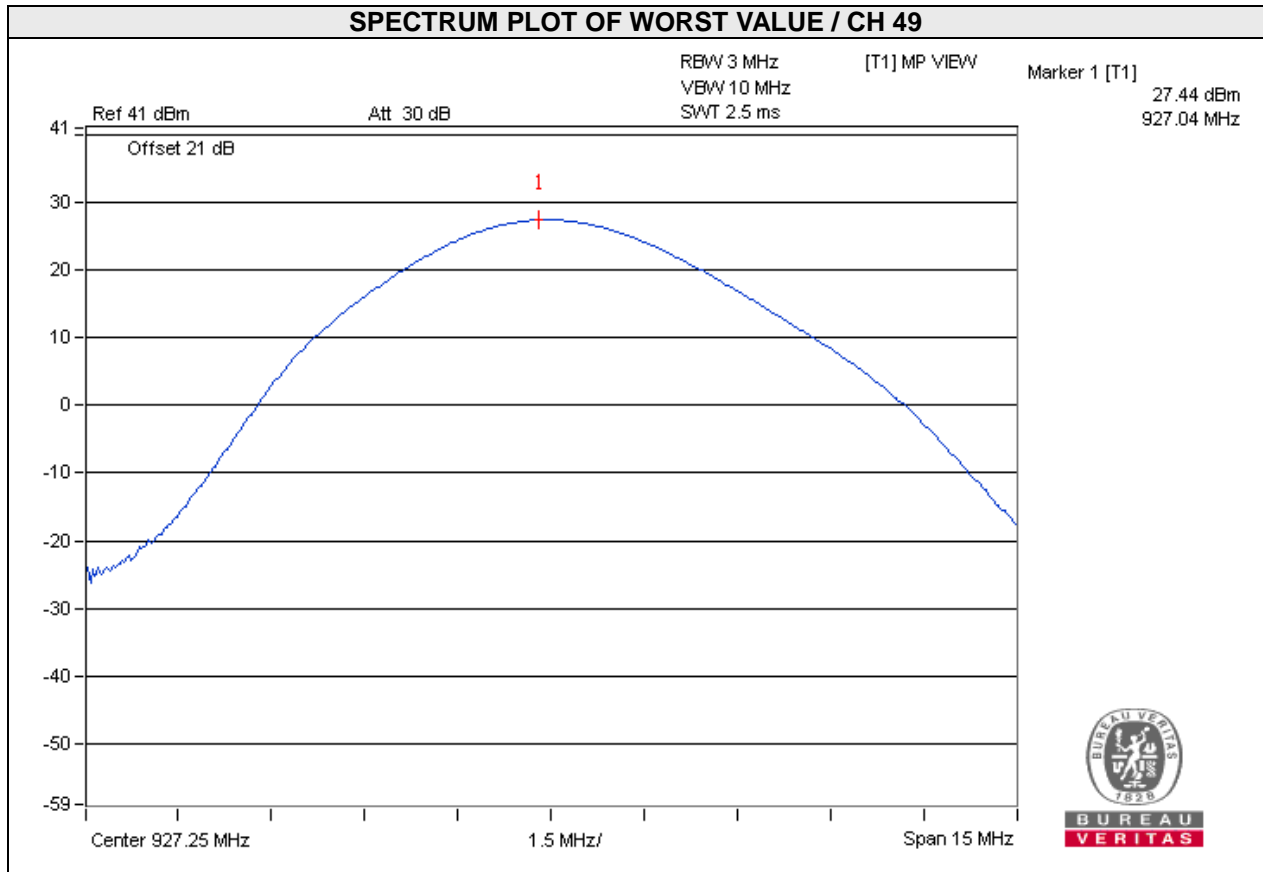
4.7.7 Test Results (Mode 1)

CHANNEL	Frequency (MHz)	Output Power (mW)	Output Power (dBm)	Power Limit (dBm)	Pass / Fail
0	902.75	514.044	27.11	30.00	Pass
24	914.75	524.807	27.20	30.00	Pass
49	927.25	550.808	27.41	30.00	Pass



4.7.8 Test Results (Mode 2)

CHANNEL	Frequency (MHz)	Output Power (mW)	Output Power (dBm)	Power Limit (dBm)	Pass / Fail
0	902.75	514.044	27.11	30.00	Pass
24	914.75	532.108	27.26	30.00	Pass
49	927.25	554.626	27.44	30.00	Pass



4.8 Conducted Out of Band Emission Measurement

4.8.1 Limits of Conducted Out of Band Emission Measurement

Below -20dB of the highest emission level of operating band (in 100kHz RBW).

4.8.2 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.8.3 Test Procedure

The transmitter output was connected to the spectrum analyzer via a low lose cable. Set both RBW and VBW of spectrum analyzer to 100 kHz and 300 kHz with suitable frequency span including 100 MHz bandwidth from band edge. The band edges was measured and recorded.

4.8.4 Deviation from Test Standard

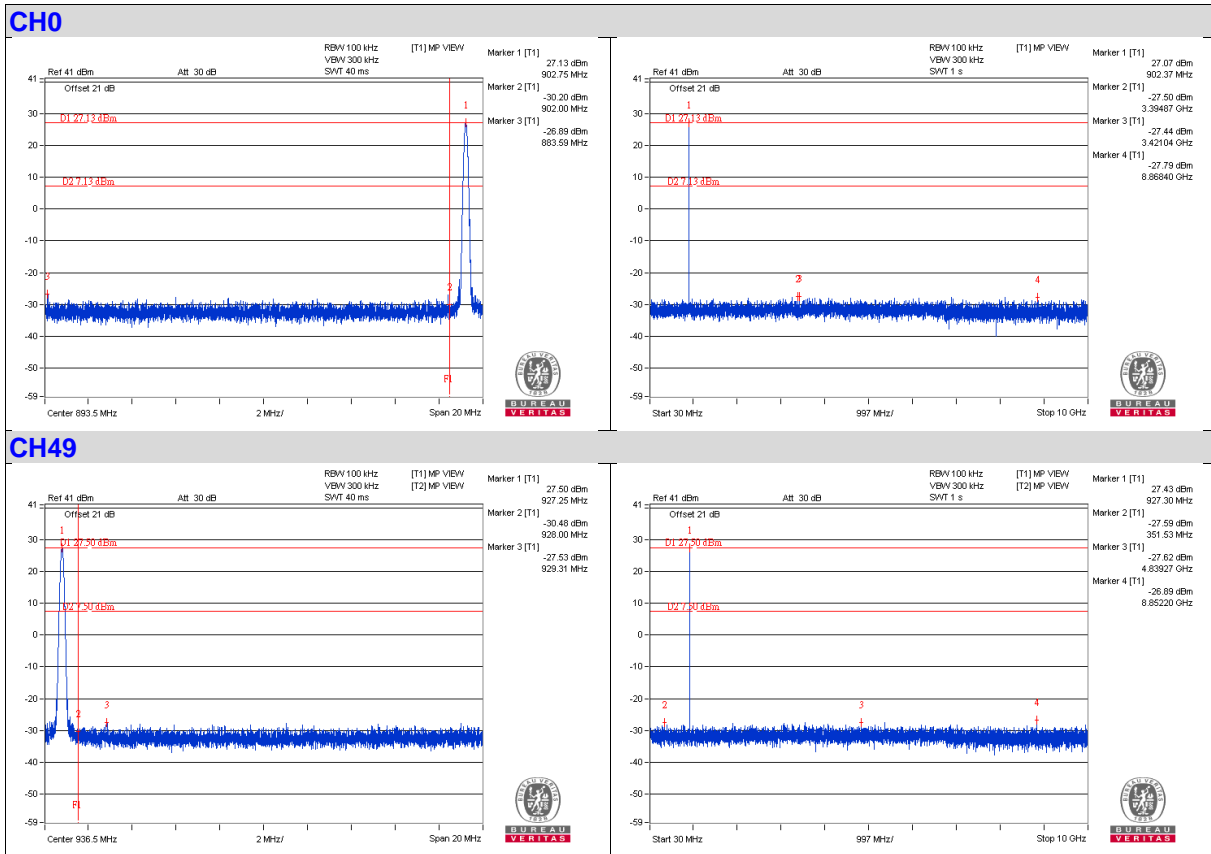
No deviation.

4.8.5 EUT Operating Condition

The software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel frequencies individually.

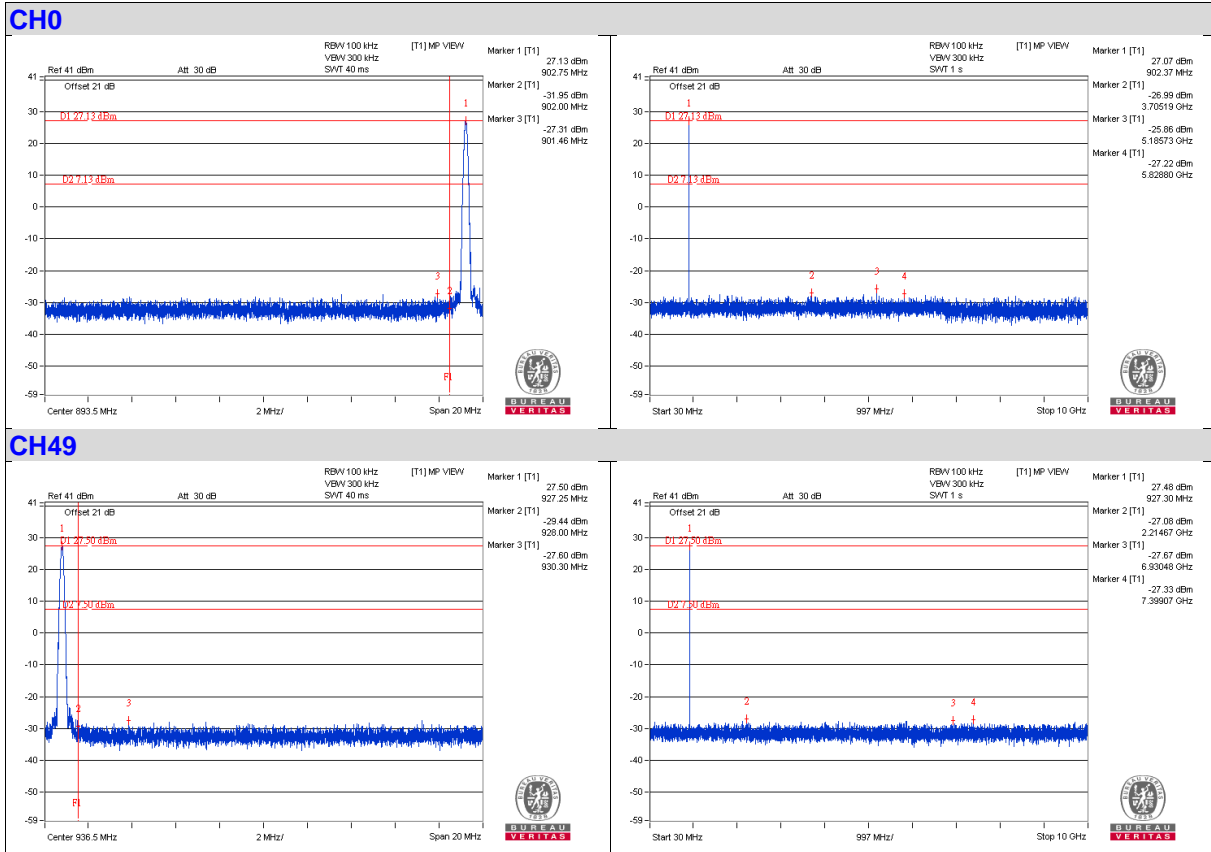
4.8.6 Test Results (Mode 1)

The spectrum plots are attached on the following images. D1 line indicates the highest level, D2 line indicates the 20dB offset below D1. It shows compliance with the requirement.



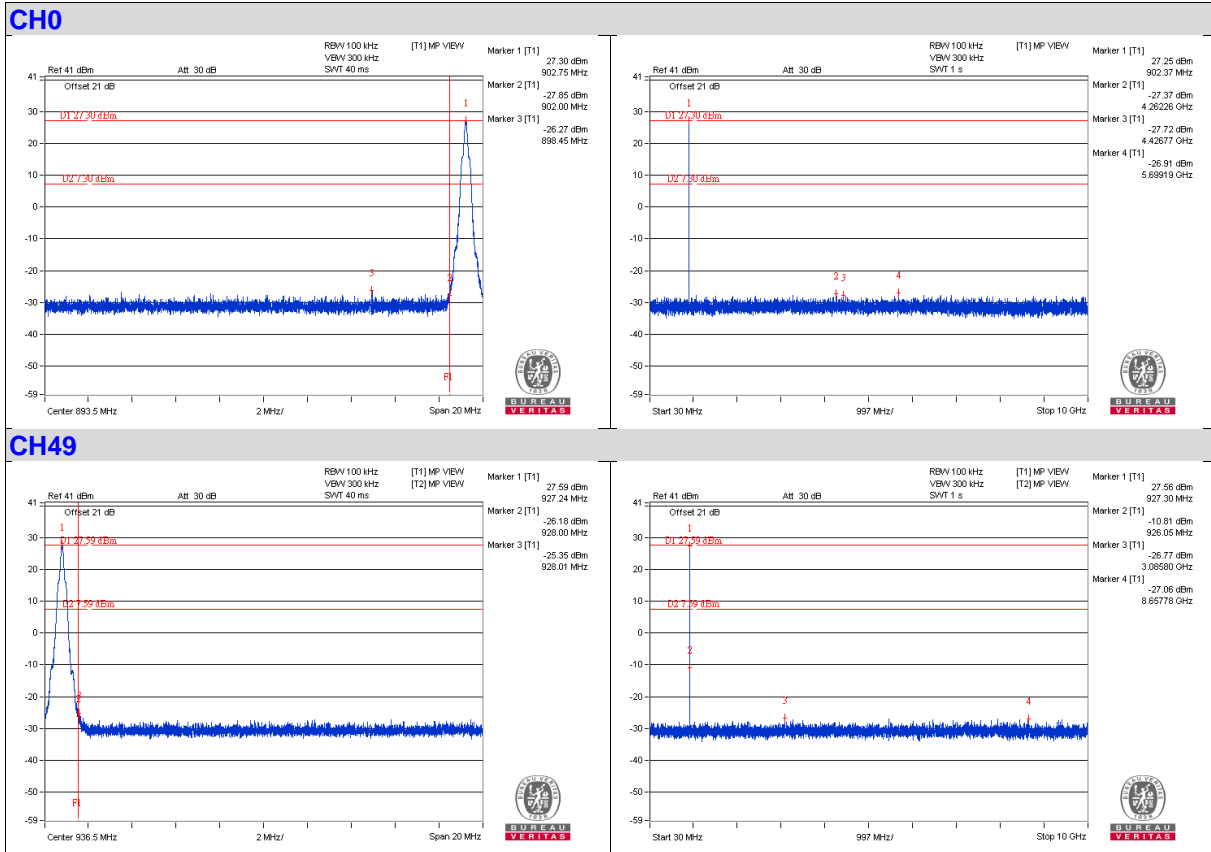
4.8.7 Test Results (Mode 2)

The spectrum plots are attached on the following images. D1 line indicates the highest level, D2 line indicates the 20dB offset below D1. It shows compliance with the requirement.



4.8.8 Test Results (Mode 3)

The spectrum plots are attached on the following images. D1 line indicates the highest level, D2 line indicates the 20dB offset below D1. It shows compliance with the requirement.



5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).

Appendix – Information on the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

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The address and road map of all our labs can be found in our web site also.

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