RADIO TEST REPORT

Test Report No. : 10004954H-C-R1

Applicant	:	**Sony Corporation**
Type of Equipment	:	**Personal Computer**
Model No.	:	**SVD132A1WL**
Test standard	:	**FCC Part 27 Subpart C: 2013**
FCC ID	:	**AK8SVD132A1WL**
Test Result	:	**Complied**

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2. The results in this report apply only to the sample tested.
3. This sample tested is in compliance with above regulation.
4. The test results in this report are traceable to the national or international standards.
5. This test report must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.
6. This report is a revised version of 10004954H-C. 10004954H-C is replaced with this report.

Date of test: March 15 to April 8, 2013

Representative test engineer:

Katsunori Okai
Engineer of WiSE Japan,
UL Verification Service

Approved by:

Takahiro Hatakeda
Leader of WiSE Japan,
UL Verification Service

NVLAP LAB CODE: 200572-0

This laboratory is accredited by the NVLAP LAB CODE 200572-0, U.S.A. The tests reported herein have been performed in accordance with its terms of accreditation.
*As for the range of Accreditation in NVLAP, you may refer to the WEB address,
http://www.ul.com/japan/jpn/pages/services/emc/about/mark1/index.jsp#nvlap

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REVISION HISTORY

Original Test Report No.: 10004954H-C

Revision	Test report No.	Date	Page revised	Contents
- (Original)	10004954H-C	May 7, 2013	-	-
1	10004954H-C-R1	May 17, 2013	P. 4, 6	Added the information about NFC module in section 2.2
1	10004954H-C-R1	May 17, 2013	P. 16	Power result of LTE band IV 1.4MHz band width 16QAM 1710.7MHz(Low ch/ 19957ch) had a clerical error. Incorrect: 23.01 dBm This data was changed. Correct: 22.98 dBm Power result of LTE band IV 5MHz band width 16QAM 1712.5MHz(Low ch/ 19975ch) had a clerical error. Incorrect: 23.02 dBm This data was changed. Correct: 22.99 dBm

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SECTION 1: Customer information

Company Name	:	Sony Corporation.
Address	:	1-7-1 Konan, Minato-ku, Tokyo, 399-8282 Japan
Telephone Number	:	+81-3-6748-2569
Facsimile Number	:	+81-3-6748-2574
Contact Person	:	Hirofumi Kojima

SECTION 2: Equipment under test (E.U.T.)

2.1 Identification of E.U.T.

Type of Equipment	:	Personal Computer
Model No.	:	SVD132A1WL
Serial No.	:	Refer to Clause 4.2
Rating	:	INPUT: 100-240V, 1.2A, 50/60Hz OUTPUT: DC 10.5V, 3.8A, 39.9W DC 5V, 1A, 5W
Receipt Date of Sample	:	February 28, 2013
Country of Mass-production	:	Japan
Condition of EUT	:	Engineering prototype (Not for Sale: This sample is equivalent to mass-produced items.)
Modification of EUT	:	No Modification by the test lab

2.2 Product Description

General Specification

Feature of EUT	This model is co-located with Wireless LAN and Bluetooth module(IEEE802.11 a/b/g/n, Bluetooth) and Wireless-WAN module(GSM850/PCS/UMTS/LTE) and NFC module. Each antenna is included in the Personal computer. This model can co-operate Wireless LAN(5GHz band) + Bluetooth + Wireless WAN + NFC.
Operation Clock	CPU: 1.0GHz

Radio Specification

Bluetooth (BDR/EDR)

Equipment Type	Transceiver
Frequency of Operation	2402-2480MHz
Type of Modulation	FHSS
Bandwidth & Channel spacing	1MHz & 1MHz
Antenna Type	PIFA
Antenna Gain	-0.56 dBi (peak) (Including Cable Loss)

Bluetooth (Low Energy)

Equipment Type	Transceiver
Frequency of Operation	2402-2480MHz
Type of Modulation	GFSK
Bandwidth & Channel spacing	1MHz & 2MHz
Antenna Type	PIFA
Antenna Gain	-0.56 dBi (peak) (Including Cable Loss)

WLAN (IEEE802.11a/b/g/n-20)

Equipment Type	Transceiver	
Frequency of Operation	2412-2462MHz	5180-5320MHz 5500-5700MHz * 5745-5825MHz
Type of Modulation	DSSS, OFDM	OFDM
Bandwidth & Channel spacing	20MHz & 5MHz	20MHz & 20MHz
Antenna Type	PIFA	
Antenna Gain	Ant 0: -0.56dBi (peak) Ant 1: -4.07dBi (peak) (Including Cable Loss)	Ant 0: 5150-5350MHz -0.46dBi (peak) 5470-5725MHz -1.25dBi (peak) 5825-5850MHz -2.63dBi (peak) Ant 1: 5150-5350MHz +1.32dBi (peak) 5470-5725MHz +1.20dBi (peak) 5825-5850MHz -2.73dBi (peak) (Including Cable Loss)

*5600MHz-5640MHz is not used in Canada.

WLAN (IEEE802.11n-40)

Equipment Type	Transceiver	
Frequency of Operation	2422-2452MHz	5190-5310MHz 5510-5670MHz * 5755-5795MHz
Type of Modulation	OFDM	OFDM
Bandwidth & Channel spacing	40MHz & 5MHz	40MHz & 40MHz
Antenna Type	PIFA	
Antenna Gain	Ant 0: -0.56dBi (peak) Ant 1: -4.07dBi (peak) (Including Cable Loss)	Ant 0: 5150-5350MHz -0.46dBi (peak) 5470-5725MHz -1.25dBi (peak) 5825-5850MHz -2.63dBi (peak) Ant 1: 5150-5350MHz +1.32dBi (peak) 5470-5725MHz +1.20dBi (peak) 5825-5850MHz -2.73dBi (peak) (Including Cable Loss)

*5590MHz-5630MHz is not used in Canada.

GSM

Equipment Type	Transceiver
Frequency of Operation	[Up Link] GSM850: 824 – 849MHz PCS: 1850 – 1910MHz [Down Link] GSM850: 869 – 894MHz PCS: 1930 – 1990MHz
Type of Modulation	GMSK , 8PSK
Emission Designator	GSM850: 249KGXW, 248KG7W PCS: 247KGXW, 247KG7W
Antenna Type	PIFA
Antenna Gain	GSM850: 824-849MHz: +0.64dBi (peak) PCS: 1850-1910MHz: +1.21dBi (peak) (Including Cable Loss)

W-CDMA

Equipment Type	Transceiver
Frequency of Operation	[Up Link] Band V: 824 – 849MHz Band II: 1850 – 1910MHz [Down Link] Band V: 869 – 894MHz Band II: 1930 – 1990MHz
Type of Modulation	QPSK
Emission Designator	Band V: 4M17F9W Band II: 4M16F9W
Antenna Type	PIFA
Antenna Gain	Band V: 824-849MHz: +0.64dBi (peak) Band II: 1850-1910MHz: +1.21dBi (peak) (Including Cable Loss)

LTE

Equipment Type	Transceiver
Frequency of Operation	[Up Link] Band IV: 1710 – 1755MHz Band X VII: 704 – 716MHz [Down Link] Band IV: 2110 – 2155MHz Band X VII: 734 – 746MHz
Type of Modulation	QPSK, 16QAM
Emission Designator	Band IV: 1M11G7D, 1M09W7D, 2M71G7D, 2M70W7D, 4M50G7D, 4M50W7D, 8M97G7D, 8M98W7D, 13M43G7D, 13M45W7D, 17M95G7D, 17M95W7D Band X VII: 4M51G7D, 4M52W7D, 8M96G7D, 8M97W7D
Antenna Type	PIFA
Antenna Gain	Band IV: 1710-1755MHz: +1.21dBi (peak) Band X VII: 704-716MHz: -1.35dBi (peak) (Including Cable Loss)

NFC (FCC ID: NKR-DFCN67H)

Equipment Type	Transceiver
Frequency of Operation	13.56MHz
Type of Modulation	ASK

*This test report applies for LTE.

*NFC module was operated by polling mode during the testing.

SECTION 3: Test specification, procedures & results

3.1 Test Specification

Test Specification : FCC Part 27 Subpart C: 2013, final revised on February 11, 2013

Title : FCC 47CFR Part 27 Subpart C Technical Standards
MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES

3.2 Procedures and results

Item	Test Specification & Procedure	Remarks	Deviation	Worst margin	Results
RF Output Power(Conducted/ Radiated) (Conducted Output Power / Effective radiated power(ERP)(Band 17)/ Equivalent isotropic radiated power(EIRP)(Band 4))	FCC 2.1046 FCC 27.50	Conducted/ Radiated	N/A	-	Complied
Peak to Average power Ratio	FCC 27.50	Conducted	N/A	-	Complied
Emission Bandwidth, 99% Occupied Bandwidth	FCC 2.1049	Conducted	N/A	-	Complied
Band-Edge	FCC 2.1051 FCC 2.1053 FCC 27.53	Conducted/ Radiated	N/A	**Band 4** [Conducted] 3.76dB 1755.0000MHz [Radiated] 2.7dB 1710.00MHz, Horizontal **Band 17** [Conducted] 2.76dB 704.0000MHz [Radiated] 12.3dB 704.00MHz, Vertical	Complied
Spurious Emission(Conducted)	FCC 2.1051 FCC 27.53	Conducted	N/A	-	Complied
Spurious Emission(Radiated)	FCC 2.1053 FCC 27.53	Radiated	N/A	**Band 4** 14.2dB 5261.58MHz, Horizontal **Band 17** 33.5dB 1415.68MHz, Horizontal	Complied
Frequency Stability (Temperature Variation/ Voltage Variation)	FCC 2.1055 FCC 27.54	Conducted	N/A	-	Complied
Note: UL Japan's EMI Work Procedures No. 13-EM-W0420					

*These tests were also referred to ANSI/TIA 603-C-2004 " Land Mobile FM or PM Communications Equipment Measurement and Performance Standards."
*These tests were also referred to KDB 971168 D01 "Procedures for Compliance Measurement of the Fundamental Emission Power of Licensed Wideband (> 1 MHz) Digital Transmission Systems"
*These tests were performed without any deviations from test procedure except for additions or exclusions.

3.3 Uncertainty

EMI
The following uncertainties have been calculated to provide a confidence level of 95% using a coverage factor k=2.

Radiated Emission (EUT height: 0.8m) (±dB)	
Measurement Distance 3m	
30MHz-300MHz	5.5dB
300MHz-1000MHz	4.2dB
1GHz-12.75GHz	4.6dB
Measurement Distance 1m	
1GHz-18GHz	5.3dB
15GHz-26.5GHz	3.7dB
26.5GHz-40GHz	3.7dB

Power meter (±dB)	
Below 1GHz	Above 1GHz
0.7dB	1.5dB

Antenna terminal conducted emission and Power density (±dB)			**Antenna terminal conducted emission (±dB)**		**Channel power (±dB)**
Below 1GHz	1GHz-3GHz	3GHz-18GHz	18GHz-26.5GHz	26.5GHz-40GHz	
1.5dB	1.7dB	2.8dB	2.8dB	2.9dB	2.6dB

Antenna Terminal Conducted emission test
The data listed in this test report has enough margin, more than the site margin.

Radiated emission test(3m)
The data listed in this report meets the limits unless the uncertainty is taken into consideration.

3.4 Test Location

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	FCC Registration Number	IC Registration Number	Width x Depth x Height (m)	Size of reference ground plane (m) / horizontal conducting plane	Other rooms
No.1 semi-anechoic chamber	313583	2973C-1	19.2 x 11.2 x 7.7m	7.0 x 6.0m	No.1 Power source room
No.2 semi-anechoic chamber	655103	2973C-2	7.5 x 5.8 x 5.2m	4.0 x 4.0m	-
No.3 semi-anechoic chamber	148738	2973C-3	12.0 x 8.5 x 5.9m	6.8 x 5.75m	No.3 Preparation room
No.3 shielded room	-	-	4.0 x 6.0 x 2.7m	N/A	-
No.4 semi-anechoic chamber	134570	2973C-4	12.0 x 8.5 x 5.9m	6.8 x 5.75m	No.4 Preparation room
No.4 shielded room	-	-	4.0 x 6.0 x 2.7m	N/A	-
No.5 semi-anechoic chamber	-	-	6.0 x 6.0 x 3.9m	6.0 x 6.0m	-
No.6 shielded room	-	-	4.0 x 4.5 x 2.7m	4.75 x 5.4 m	-
No.6 measurement room	-	-	4.75 x 5.4 x 3.0m	4.75 x 4.15 m	-
No.7 shielded room	-	-	4.7 x 7.5 x 2.7m	4.7 x 7.5m	-
No.8 measurement room	-	-	3.1 x 5.0 x 2.7m	N/A	-
No.9 measurement room	-	-	8.0 x 4.5 x 2.8m	2.0 x 2.0m	-
No.10 measurement room	-	-	2.6 x 2.8 x 2.5m	2.4 x 2.4m	-
No.11 measurement room	-	-	3.1 x 3.4 x 3.0m	2.4 x 3.4m	-

* Size of vertical conducting plane (for Conducted Emission test): 2.0 x 2.0m for No.1, No.2, No.3, and No.4 semi-anechoic chambers and No.3 and No.4 shielded rooms.

3.5 Test set up, Test instruments and Data of EMI

Refer to APPENDIX.

SECTION 4: Operation of E.U.T. during testing

4.1 Operating Modes

<LTE Band 4>

Test	Operating mode	BW	UL RB Allocation/Start	Channel
RF output Power(Conducted)	Transmitting (Tx) LTE (QPSK) Transmitting (Tx) LTE (16QAM)	1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz	100% RB allocation, 50% RB/lower, 50% RB/upper, 50% RB/center, 1 RB/lower, 1 RB/upper, 1 RB/center	Low Mid High
RF output Power (Radiated)	Transmitting (Tx) LTE(QPSK) Transmitting (Tx) LTE (16QAM)	1.4MHz	1 RB, 3 RB *1)	Low Mid High
		3MHz, 5MHz, 10MHz, 15MHz, 20MHz	1 RB *1)	
Spurious Emission(Radiated)	Transmitting (Tx) LTE(QPSK)	1.4MHz *2)	1 RB *1)	Low Mid High
Spurious Emission(Conducted)	Transmitting (Tx) LTE(QPSK)	1.4MHz *2)	1 RB *1)	Low Mid High
	Transmitting (Tx) LTE (16QAM)	5MHz *2)	1 RB *1)	Low Mid High
Band Edge (Conducted)	Transmitting (Tx) LTE(QPSK) Transmitting (Tx) LTE (16QAM)	3MHz *3)	100% RB allocation, 1 RB/lower 1 RB/upper	Low High
		1.4MHz, 5MHz, 10MHz, 15MHz, 20MHz	1 RB/lower 1 RB/upper	
Band Edge (Radiated)	Transmitting (Tx) LTE(QPSK) Transmitting (Tx) LTE (16QAM)	3MHz *3)	100% RB allocation, 1 RB/lower 1 RB/upper	Low High
Peak to Average power Ratio (Conducted)	Transmitting (Tx) LTE(QPSK) Transmitting (Tx) LTE (16QAM)	1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz	100% RB allocation,	Mid
Emission Bandwidth, 99% Occupied bandwidth	Transmitting (Tx) LTE(QPSK) Transmitting (Tx) LTE (16QAM)	1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz	100% RB allocation, 50% RB/center, 1 RB/center	Mid
Frequency Stability (Temperature/Voltage Variation)	Transmitting (Tx) LTE(QPSK)	20MHz	100% RB allocation	Mid

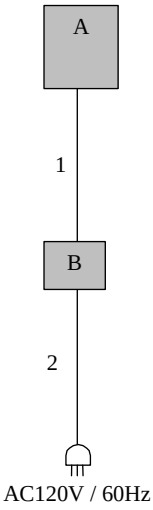
*1) The UL RB Allocation was used for testing as a representative, because it had the highest RF output power (conducted).
*2) The Bandwidth was used for testing as a representative, because it had the highest RF output power (conducted).
*3) Test was performed with BW:3MHz as a representative as it had the highest result at Band edge (conducted) test under the condition of 1RB and QPSK modulation.

<LTE Band 17>

Test	Operating mode	BW	UL RB Allocation/Start	Channel
RF output Power(Conducted)	Transmitting (Tx) LTE(QPSK) Transmitting (Tx) LTE (16QAM)	5MHz, 10MHz	100% RB allocation, 50% RB/lower, 50% RB/upper, 50% RB/center, 1 RB/lower, 1 RB/upper, 1 RB/center	Low Mid High
RF output Power (Radiated)	Transmitting (Tx) LTE(QPSK) Transmitting (Tx) LTE (16QAM)	5MHz, 10MHz	1 RB *1)	Low Mid High
Spurious Emission(Radiated)	Transmitting (Tx) LTE(QPSK)	10MHz *2)	1 RB *1)	Low Mid High
Spurious Emission(Conducted)	Transmitting (Tx) LTE(QPSK)	5MHz *2)	1 RB *1)	Low Mid High
	Transmitting (Tx) LTE (16QAM)	10MHz *2)	1 RB *1)	Low Mid High
Band Edge (Conducted)	Transmitting (Tx) LTE(QPSK) Transmitting (Tx) LTE (16QAM)	5MHz *3)	100% RB allocation, 1 RB/lower 1 RB/upper	Low High
		10MHz	1 RB/lower 1 RB/upper	
Band Edge (Radiated)	Transmitting (Tx) LTE(QPSK) Transmitting (Tx) LTE (16QAM)	5MHz *3)	100% RB allocation, 1 RB/lower 1 RB/upper	Low High
Peak to Average power Ratio (Conducted)	Transmitting (Tx) LTE(QPSK) Transmitting (Tx) LTE (16QAM)	5MHz, 10MHz	100% RB allocation,	Mid
Emission Bandwidth, 99% Occupied bandwidth	Transmitting (Tx) LTE(QPSK) Transmitting (Tx) LTE (16QAM)	5MHz, 10MHz	100% RB allocation, 50% RB/center, 1 RB/center	Mid
Frequency Stability (Temperature/Voltage Variation)	Transmitting (Tx) LTE(QPSK)	10MHz	100% RB allocation	Mid

*1) The UL RB Allocation was used for testing as a representative, because it had the highest RF output power (conducted).
*2) The Bandwidth was used for testing as a representative, because it had the highest RF output power (conducted).
*3) Test was performed with BW:5MHz as a representative as it had the highest result at Band edge (conducted) test under the condition of 1RB and QPSK modulation.

4.2 Configuration and peripherals



* Cabling and setup(s) were taken into consideration and test data was taken under worse case conditions.

Description of EUT and Support equipment

No.	Item	Model number	Serial number	Manufacturer	Remarks
A	Personal Computer	SVD132A1WL	XTS3-23 *1) XTS2-17 *2) XTS2-18 *3) XTS2-1 12 *4)	SONY	EUT
B	AC Adaptor	VGP-AC10V10	000006701 0000346	SONY	EUT

*1) Used for Radiated Emission test
*2) Used for RF Output Power (Conducted) test
*3) Used for Frequency stability test
*4) Used for Antenna Terminal Conducted test except for RF Output Power (Conducted) and Frequency stability tests

List of cables used

No.	Name	Length (m)	Shield		Remarks
			Cable	Connector	
1	DC Cable	1.7	Unshielded	Unshielded	-
2	AC Cable	1.5	Unshielded	Unshielded	-

SECTION 5: RF Output Power (Conducted/Radiated)

[Conducted: Conducted Output Power]

Test Procedure

The RF output power (conducted) was measured with a Wideband Radio Communication Tester and an attenuator at the antenna port.

[Radiated : Effective radiated power(ERP)/ Equivalent isotropic radiated power(EIRP)]

Test Procedure

1) EUT was placed on a platform of nominal size, 0.5 m by 1.0m, raised 80cm above the conducting ground plane.
Test was made with the antenna positioned in both the horizontal and vertical planes of polarization.
The Radiated Electric Field Strength intensity has been measured in a semi anechoic chamber with a ground plane and at a distance of 3m.
The measuring antenna height varied between 1 and 4m and EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity.

2) Exchanged the EUT to the Substitution Antenna, the antenna was set for the same height as EUT on the table.
Half wave dipole antenna was used as a substitution antenna for testing at the frequency below 1GHz, which is harmonized with the measured frequency in 1).
Horn antenna calibrated with the Half wave dipole antenna was used as a substitution antenna for testing at the frequency above 1GHz, which is harmonized with the measured frequency in 1).
The Substitution Antenna was connected with the Signal Generator, and the polarized electromagnetic radiation of the Substitution Antenna was matched with the one of the measuring Antenna, which was set with the Signal Generator to the measured frequency in 1). Then, we set with the Output power (CW) of the Signal Generator where the measuring electromagnetic field is equal to the measured value in 1).
The measuring antenna height varied between 1 and 4m to obtain the maximum receiving level.
Its Output power of Signal Generator was recorded.

3) Effective radiated power(ERP) and Equivalent isotropic radiated power(EIRP) were calculated by subtracting the cable loss and the attenuator loss connected between the Signal Generator and the Substitution Antenna from the Output power of the Signal Generator recorded in 2).

- The carrier level and noise levels were confirmed at each position of X, Y and Z axis of EUT with Laptop and Tablet Styles to see the position of maximum noise, and the test was made at the position that has the maximum noise.

Test data : APPENDIX 1
Test result : Pass

SECTION 6: Bandwidth (Conducted)

Test Procedure
The Emission Bandwidth and 99% Occupied Bandwidth was measured with a spectrum analyzer and attenuator connected to the antenna port.

Test data : APPENDIX 1
Test result : Pass

SECTION 7: Spurious Emission and Band-Edge (Conducted/Radiated)

[Conducted]
Test Procedure
The Spurious Emission and Band-Edge was measured with a spectrum analyzer and attenuator connected to the antenna port.

[Radiated]
Test Procedure
1) EUT was placed on a platform of nominal size, 0.5m by 1.0m, raised 80cm above the conducting ground plane.
Test was made with the antenna positioned in both the horizontal and vertical planes of polarization.
The Radiated Electric Field Strength intensity has been measured in a semi anechoic chamber with a ground plane and at a distance of 3m.
The measuring antenna height varied between 1 and 4m and EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity.

2) Exchanged the EUT to the Substitution Antenna, the antenna was set for the same height as EUT on the table.
Half wave dipole antenna was used as a substitution antenna for testing at the frequency below 1GHz, which is harmonized with the measured frequency in 1).
Horn antenna calibrated with the Half wave dipole antenna was used as a substitution antenna for testing at the frequency above 1GHz, which is harmonized with the measured frequency in 1).
The Substitution antenna was connected with the Signal Generator, and the polarized electromagnetic radiation of the Substitution antenna was matched with the one of the measuring antenna, which was set with the Signal Generator to the measured frequency in 1). Then, we set with the Output power (CW) of the Signal Generator where the measuring electromagnetic field is equal to the measured value in 1).
The measuring antenna height varied between 1 and 4m to obtain the maximum receiving level.
Its Output power of Signal Generator was recorded.

3) Effective radiated power (ERP) and Equivalent isotropic radiated power(EIRP) were calculated by subtracting the cable loss and the attenuator loss connected between the Signal Generator and the Substitution Antenna from the Output power of the Signal Generator recorded in 2).
For the usage of the antenna (Shorted dipole and Horn antenna) except for the Half wave dipole antenna (2.15dBi) for the Substitution antenna, the Effective radiated power was calculated by compensating the finite difference in the antenna gain of the Half wave dipole antenna, and Substitution antenna.

- The carrier level and noise levels were confirmed at each position of X, Y and Z axis of EUT with Laptop and Tablet Styles to see the position of maximum noise, and the test was made at the position that has the maximum noise.

Test data : APPENDIX 1
Test result : Pass

SECTION 8: Frequency Stability(Temperature/Voltage Variation)

Test Procedure

The Frequency Stability was measured with a Digital Radio Test Set and attenuator connected to the antenna port.
The Frequency Drift was measured with the 10 deg. C steps from –30 deg. C to 50 deg. C, and it is presented as the ppm unit. The Frequency Drift was measured with the normal temperature (20 deg. C) and Voltage tolerance (AC 102V to AC 138V), and it is presented as the ppm unit.

Temperature	:	-30deg. C to +50deg. C (10 deg. C step)
Voltage	:	Normal Voltage AC 120V
		Maximum Voltage AC 138V(AC 120V +15%)
		Minimum Voltage AC 102V (AC 120V -15%)

As the operating input voltage of the EUT is between AC 102V to AC 138V (nominal voltage: AC 120V), Frequency Stability test was performed under the above condition.

Test data : APPENDIX 1
Test result : Pass

APPENDIX 1: Data of EMI test

RF Output Power (Conducted)

Band 4

Test place	Head Office EMC Lab. No.7 Shielded Room
Report No.	10004954H
Date	03/19/2013
Temperature/ Humidity	19deg. C / 41% RH
Engineer	Yutaka Yoshida
Mode	Transmitting (Tx) LTE (QPSK)
	Transmitting (Tx) LTE (16QAM)

Test Frequency ID	Bandwidth [MHz]	N_{UL}	Frequency of Uplink [MHz]	N_{DL}	Frequency of Downlink [MHz]
Low Range	1.4	19957	1710.7	1957	2110.7
	3	19965	1711.5	1965	2111.5
	5	19975	1712.5	1975	2112.5
	10	20000	1715	2000	2115
	15	20025	1717.5	2025	2117.5
	20	20050	1720	2050	2120
Mid Range	1.4/3/5/10/15/20	20175	1732.5	2175	2132.5
High Range	1.4	20393	1754.3	2393	2154.3
	3	20385	1753.5	2385	2153.5
	5	20375	1752.5	2375	2152.5
	10	20350	1750	2350	2150
	15	20325	1747.5	2325	2147.5
	20	20300	1745	2300	2145

BW	Mode	UL RB Allocation (Count)		UL RB Start	MPR [dB]	Result (dBm) Low ch	Result (dBm) Mid ch	Result (dBm) High ch
1.4	QPSK	1/lower	1	0	0	**23.71**	23.40	**23.74**
		1/center	1	2	0	**23.71**	23.54	23.57
		1/upper	1	5	0	23.58	**23.68**	23.67
		50%/lower	3	0	0	23.66	23.50	23.66
		50%/center	3	1	0	23.57	23.39	23.53
		50%/upper	3	3	0	23.70	23.61	23.66
		100%/center	6	0	1	22.70	22.46	22.58
	16QAM	1/lower	1	0	1	**22.98**	21.94	22.23
		1/center	1	2	1	22.93	21.97	22.32
		1/upper	1	5	1	22.93	22.08	22.35
		50%/lower	3	0	1	22.92	22.48	22.78
		50%/center	3	1	1	22.55	22.45	22.76
		50%/upper	3	3	1	22.85	**22.59**	**22.87**
		100%/center	6	0	2	21.81	21.67	21.79
3	QPSK	1/lower	1	0	0	23.68	23.60	23.49
		1/center	1	7	0	23.61	23.57	23.51
		1/upper	1	14	0	**23.71**	**23.61**	**23.53**
		50%/lower	8	0	1	22.79	22.45	22.58
		50%/center	8	4	1	22.77	22.44	22.50
		50%/upper	8	7	1	22.70	22.60	22.60
		100%/center	15	0	1	22.77	22.40	22.52
	16QAM	1/lower	1	0	1	22.11	22.87	21.98
		1/center	1	7	1	**22.33**	22.92	**22.17**
		1/upper	1	14	1	22.06	**22.94**	22.04
		50%/lower	8	0	2	21.78	21.45	21.59
		50%/center	8	4	2	21.72	21.41	21.64
		50%/upper	8	7	2	21.74	21.63	21.60
		100%/center	15	0	2	21.73	21.46	21.66
5	QPSK	1/lower	1	0	0	**23.71**	23.47	23.47
		1/center	1	12	0	**23.71**	**23.67**	23.54
		1/upper	1	24	0	23.71	23.59	**23.55**
		50%/lower	12	0	1	22.73	22.78	22.58
		50%/center	12	6	1	22.67	22.69	22.57
		50%/upper	12	13	1	22.76	22.84	22.61
		100%/center	25	0	1	22.67	22.45	22.54
	16QAM	1/lower	1	0	1	22.70	22.54	22.46
		1/center	1	12	1	**22.99**	**22.85**	22.60
		1/upper	1	24	1	22.79	22.61	**22.66**
		50%/lower	12	0	2	21.68	21.71	21.63
		50%/center	12	6	2	21.74	21.50	21.76
		50%/upper	12	13	2	21.79	21.79	21.65
		100%/center	25	0	2	21.63	21.48	21.62

RF Output Power (Conducted)

Band 4

Test place	Head Office EMC Lab. No.7 Shielded Room
Report No.	10004954H
Date	03/19/2013
Temperature/ Humidity	19deg. C / 41% RH
Engineer	Yutaka Yoshida
Mode	Transmitting (Tx) LTE (QPSK)
	Transmitting (Tx) LTE (16QAM)

Test Frequency ID	Bandwidth [MHz]	N_{UL}	Frequency of Uplink [MHz]	N_{DL}	Frequency of Downlink [MHz]
Low Range	1.4	19957	1710.7	1957	2110.7
	3	19965	1711.5	1965	2111.5
	5	19975	1712.5	1975	2112.5
	10	20000	1715	2000	2115
	15	20025	1717.5	2025	2117.5
	20	20050	1720	2050	2120
Mid Range	1.4/3/5/10/15/20	20175	1732.5	2175	2132.5
High Range	1.4	20393	1754.3	2393	2154.3
	3	20385	1753.5	2385	2153.5
	5	20375	1752.5	2375	2152.5
	10	20350	1750	2350	2150
	15	20325	1747.5	2325	2147.5
	20	20300	1745	2300	2145

BW	Mode	UL RB Allocation (Count)		UL RB Start	MPR [dB]	Result (dBm) Low ch	Result (dBm) Mid ch	Result (dBm) High ch
10	QPSK	1/lower	1	0	0	**23.71**	**23.59**	23.41
		1/center	1	24	0	23.71	23.52	23.39
		1/upper	1	49	0	23.70	23.52	**23.63**
		50%/lower	25	0	1	22.69	22.41	22.32
		50%/center	25	12	1	22.57	22.45	22.44
		50%/upper	25	25	1	22.66	22.44	22.46
		100%/center	50	0	1	22.45	22.36	22.47
	16QAM	1/lower	1	0	1	22.85	**21.96**	22.10
		1/center	1	24	1	**22.97**	21.76	22.08
		1/upper	1	49	1	22.79	21.81	**22.29**
		50%/lower	25	0	2	21.77	21.53	21.49
		50%/center	25	12	2	21.73	21.52	21.50
		50%/upper	25	25	2	21.77	21.54	21.57
		100%/center	50	0	2	21.58	21.36	21.59
15	QPSK	1/lower	1	0	0	**23.61**	23.50	23.51
		1/center	1	37	0	23.60	23.58	23.54
		1/upper	1	74	0	23.60	**23.60**	**23.58**
		50%/lower	36	0	1	22.62	22.43	22.40
		50%/center	36	19	1	22.49	22.37	22.39
		50%/upper	36	39	1	22.50	22.44	22.39
		100%/center	75	0	1	22.37	22.33	22.45
	16QAM	1/lower	1	0	1	22.45	22.78	22.23
		1/center	1	37	1	**22.52**	22.84	22.22
		1/upper	1	74	1	22.47	**22.87**	**22.34**
		50%/lower	36	0	2	21.52	21.41	21.30
		50%/center	36	19	2	21.44	21.37	21.42
		50%/upper	36	39	2	21.50	21.50	21.37
		100%/center	75	0	2	21.35	21.38	21.26
20	QPSK	1/lower	1	0	0	**23.71**	23.58	23.55
		1/center	1	49	0	23.66	23.48	23.55
		1/upper	1	99	0	**23.71**	**23.70**	**23.60**
		50%/lower	50	0	1	22.40	22.38	22.40
		50%/center	50	25	1	22.44	22.38	22.38
		50%/upper	50	50	1	22.70	22.46	22.46
		100%/center	100	0	1	22.35	22.36	22.42
	16QAM	1/lower	1	0	1	22.64	22.00	22.68
		1/center	1	49	1	**22.81**	21.99	**22.95**
		1/upper	1	99	1	22.37	**22.16**	22.92
		50%/lower	50	0	2	21.33	21.51	21.34
		50%/center	50	25	2	21.59	21.44	21.50
		50%/upper	50	50	2	21.72	21.58	21.46
		100%/center	100	0	2	21.49	21.46	21.55

RF Output Power (Conducted)

Band 17

Test place	Head Office EMC Lab. No.7 Shielded Room
Report No.	10004954H
Date	03/19/2013
Temperature/ Humidity	19deg. C / 41% RH
Engineer	Yutaka Yoshida
Mode	Transmitting (Tx) LTE (QPSK)
	Transmitting (Tx) LTE (16QAM)

Test Frequency ID	Bandwidth [MHz]	N_{UL}	Frequency of Uplink [MHz]	N_{DL}	Frequency of Downlink [MHz]
Low Range	5	23755	706.5	5755	736.5
	10	23780	709	5780	739
Mid Range	5 /10	23790	710	5790	740
High Range	5	23825	713.5	5825	743.5
	10	23800	711	5800	741

BW	Mode	UL RB Allocation (Count)		UL RB Start	MPR [dB]	Result (dBm) Low ch	Result (dBm) Mid ch	Result (dBm) High ch
5	QPSK	1/lower	1	0	0	**23.31**	**23.19**	**23.24**
		1/center	1	12	0	23.26	23.17	**23.24**
		1/upper	1	24	0	23.21	23.19	22.63
		50%/lower	12	0	1	22.20	22.08	22.06
		50%/center	12	6	1	22.18	22.09	22.03
		50%/upper	12	13	1	22.19	22.05	22.00
		100%/center	25	0	1	22.09	21.99	21.87
	16QAM	1/lower	1	0	1	**22.24**	22.19	**22.10**
		1/center	1	12	1	**22.24**	22.27	**22.10**
		1/upper	1	24	1	22.21	**22.29**	21.61
		50%/lower	12	0	2	21.27	21.12	21.08
		50%/center	12	6	2	21.35	21.06	21.13
		50%/upper	12	13	2	21.25	21.09	21.11
		100%/center	25	0	2	21.19	20.88	21.02
10	QPSK	1/lower	1	0	0	**23.08**	23.15	**23.17**
		1/center	1	24	0	22.93	22.96	23.09
		1/upper	1	49	0	22.71	**23.19**	23.14
		50%/lower	25	0	1	21.96	22.08	21.94
		50%/center	25	12	1	21.92	22.24	21.98
		50%/upper	25	25	1	21.89	22.09	21.92
		100%/center	50	0	1	21.96	22.13	21.97
	16QAM	1/lower	1	0	1	**21.62**	22.47	22.21
		1/center	1	24	1	21.50	22.38	22.23
		1/upper	1	49	1	21.15	**22.52**	**22.27**
		50%/lower	25	0	2	21.05	21.28	21.06
		50%/center	25	12	2	21.01	21.29	20.98
		50%/upper	25	25	2	21.02	21.28	21.05
		100%/center	50	0	2	21.06	21.11	21.02

RF Output Power (Radiated)

Equivalent Isotropically Radiated Power(EIRP)

Band 4

Report No.	10004954H
Test place	Head Office EMC Lab.
Semi Anechoic Chamber	No.2
Date	03/21/2013
Temperature / Humidity	25 deg. C / 38 % RH
Engineer	Katsunori Okai
Mode	Transmitting (Tx) LTE (QPSK)
	Transmitting (Tx) LTE (16QAM)

[BW 1.4MHz, QPSK]

Frequency	Rx SA/TR Reading [dBuV]		Tx SG Reading [dBm]		Tx Cable Loss	Tx Ant. Gain	Tx Ant. Atten. Loss	Result (EIRP) [dBm]		Limit (EIRP) [dBm]	Margin [dB]		Horizontal		Vertical		UL RB Allocation-start
													Rx Ant. Height	Turn Table	Rx Ant. Height	Turn Table	
[MHz]	HOR	VER	HOR	VER	[dB]	[dBi]	[dB]	HOR	VER		HOR	VER	[cm]	[deg.]	[cm]	[deg.]	
1710.70	92.4	91.2	16.6	13.5	3.2	9.4	0.0	22.8	19.7	30.0	7.2	10.3	107	238	100	26	RB 1-0
1732.50	92.8	91.2	17.3	13.7	3.2	9.5	0.0	23.6	20.0	30.0	6.4	10.0	107	238	100	26	RB 1-5
1754.30	93.7	91.5	17.9	14.1	3.2	9.6	0.0	24.3	20.5	30.0	5.7	9.5	107	238	100	26	RB 1-0

Calculation Result = SG Reading - Tx Cable Loss + Tx Antenna Gain - Tx Antenna Attenuator Loss
Rx-ANTENNA : Biconical Antenna(30M-300MHz), Logperiodic Antenna(300M-1000MHz), Horn Antenna(1G-40GHz)
Tx-ANTENNA : 120MHz tuned Dipole Antenna(30M-120MHz), Dipole Antenna(120M-1000MHz), Horn Antenna(1G-40GHz)
Other frequency noises omitted in this report were not seen or had enough margin (more than 20dB).
Detector : S/A RMS Average (RBW: 100kHz , VBW: 300kHz)

[BW 1.4MHz, 16QAM]

Frequency	Rx SA/TR Reading [dBuV]		Tx SG Reading [dBm]		Tx Cable Loss	Tx Ant. Gain	Tx Ant. Atten. Loss	Result (EIRP) [dBm]		Limit (EIRP) [dBm]	Margin [dB]		Horizontal		Vertical		UL RB Allocation-start
													Rx Ant. Height	Turn Table	Rx Ant. Height	Turn Table	
[MHz]	HOR	VER	HOR	VER	[dB]	[dBi]	[dB]	HOR	VER		HOR	VER	[cm]	[deg.]	[cm]	[deg.]	
1710.70	91.3	90.0	15.5	12.3	3.2	9.4	0.0	21.7	18.5	30.0	8.3	11.5	107	238	100	26	RB 1-0
1732.50	91.7	90.0	16.2	12.5	3.2	9.5	0.0	22.5	18.8	30.0	7.5	11.2	107	238	100	26	RB 3-3
1754.30	92.8	90.6	17.0	13.2	3.2	9.6	0.0	23.4	19.6	30.0	6.6	10.4	107	238	100	26	RB 3-3

Calculation Result = SG Reading - Tx Cable Loss + Tx Antenna Gain - Tx Antenna Attenuator Loss
Rx-ANTENNA : Biconical Antenna(30M-300MHz), Logperiodic Antenna(300M-1000MHz), Horn Antenna(1G-40GHz)
Tx-ANTENNA : 120MHz tuned Dipole Antenna(30M-120MHz), Dipole Antenna(120M-1000MHz), Horn Antenna(1G-40GHz)
Other frequency noises omitted in this report were not seen or had enough margin (more than 20dB).
Detector : S/A RMS Average (RBW: 100kHz , VBW: 300kHz)

RF Output Power (Radiated)

Equivalent Isotropically Radiated Power(EIRP)

Band 4

Report No.	10004954H
Test place	Head Office EMC Lab.
Semi Anechoic Chamber	No.2
Date	03/21/2013
Temperature / Humidity	25 deg. C / 38 % RH
Engineer	Katsunori Okai
Mode	Transmitting (Tx) LTE (QPSK)
	Transmitting (Tx) LTE (16QAM)

[BW 3MHz, QPSK]

Frequency	Rx SA/TR Reading [dBuV]		Tx SG Reading [dBm]		Tx Cable Loss	Tx Ant. Gain	Tx Ant. Atten. Loss	Result (EIRP) [dBm]		Limit (EIRP) [dBm]	Margin [dB]		Horizontal		Vertical		UL RB Allocation-start
													Rx Ant. Height	Turn Table	Rx Ant. Height	Turn Table	
[MHz]	HOR	VER	HOR	VER	[dB]	[dBi]	[dB]	HOR	VER		HOR	VER	[cm]	[deg.]	[cm]	[deg.]	
1711.50	92.2	90.9	16.4	13.3	3.2	9.4	0.0	22.6	19.6	30.0	7.4	10.5	107	238	100	25	RB 1-14
1732.50	93.2	91.1	17.7	13.6	3.2	9.5	0.0	24.0	19.9	30.0	6.0	10.1	107	238	100	25	RB 1-14
1753.50	93.6	91.5	17.7	14.0	3.2	9.6	0.0	24.1	20.4	30.0	5.9	9.6	107	238	100	25	RB 1-14

Calculation Result = SG Reading - Tx Cable Loss + Tx Antenna Gain - Tx Antenna Attenuator Loss
Rx-ANTENNA : Biconical Antenna(30M-300MHz), Logperiodic Antenna(300M-1000MHz), Horn Antenna(1G-40GHz)
Tx-ANTENNA : 120MHz tuned Dipole Antenna(30M-120MHz), Dipole Antenna(120M-1000MHz), Horn Antenna(1G-40GHz)
Other frequency noises omitted in this report were not seen or had enough margin (more than 20dB).
Detector : S/A RMS Average (RBW: 100kHz , VBW: 300kHz)

[BW 3MHz, 16QAM]

Frequency	Rx SA/TR Reading [dBuV]		Tx SG Reading [dBm]		Tx Cable Loss	Tx Ant. Gain	Tx Ant. Atten. Loss	Result (EIRP) [dBm]		Limit (EIRP) [dBm]	Margin [dB]		Horizontal		Vertical		UL RB Allocation-start
													Rx Ant. Height	Turn Table	Rx Ant. Height	Turn Table	
[MHz]	HOR	VER	HOR	VER	[dB]	[dBi]	[dB]	HOR	VER		HOR	VER	[cm]	[deg.]	[cm]	[deg.]	
1711.50	91.5	89.9	15.7	12.3	3.2	9.4	0.0	21.9	18.6	30.0	8.1	11.5	107	238	100	25	RB 1-7
1732.50	91.9	90.1	16.4	12.6	3.2	9.5	0.0	22.7	18.9	30.0	7.3	11.1	107	238	100	25	RB 1-14
1753.50	92.4	90.3	16.5	12.8	3.2	9.6	0.0	22.9	19.2	30.0	7.1	10.8	107	238	100	25	RB 1-7

Calculation Result = SG Reading - Tx Cable Loss + Tx Antenna Gain - Tx Antenna Attenuator Loss
Rx-ANTENNA : Biconical Antenna(30M-300MHz), Logperiodic Antenna(300M-1000MHz), Horn Antenna(1G-40GHz)
Tx-ANTENNA : 120MHz tuned Dipole Antenna(30M-120MHz), Dipole Antenna(120M-1000MHz), Horn Antenna(1G-40GHz)
Other frequency noises omitted in this report were not seen or had enough margin (more than 20dB).
Detector : S/A RMS Average (RBW: 100kHz , VBW: 300kHz)

RF Output Power (Radiated)

Equivalent Isotropically Radiated Power(EIRP)

Band 4

Report No.	10004954H
Test place	Head Office EMC Lab.
Semi Anechoic Chamber	No.2
Date	03/21/2013
Temperature / Humidity	25 deg. C / 38 % RH
Engineer	Katsunori Okai
Mode	Transmitting (Tx) LTE (QPSK)
	Transmitting (Tx) LTE (16QAM)

[BW 5MHz, QPSK]

Frequency	Rx SA/TR Reading [dBuV]		Tx SG Reading [dBm]		Tx Cable Loss	Tx Ant. Gain	Tx Ant. Atten. Loss	Result (EIRP) [dBm]		Limit (EIRP) [dBm]	Margin [dB]		Horizontal		Vertical		UL RB Allocation-start
													Rx Ant. Height	Turn Table	Rx Ant. Height	Turn Table	
[MHz]	HOR	VER	HOR	VER	[dB]	[dBi]	[dB]	HOR	VER		HOR	VER	[cm]	[deg.]	[cm]	[deg.]	
1712.50	92.4	91.2	16.7	13.7	3.2	9.4	0.0	22.9	19.9	30.0	7.1	10.1	107	238	100	24	RB 1-0
1732.50	92.9	91.1	17.4	13.6	3.2	9.5	0.0	23.7	19.9	30.0	6.3	10.1	107	238	100	24	RB 1-12
1752.50	93.5	91.5	17.6	14.0	3.2	9.6	0.0	24.0	20.4	30.0	6.0	9.6	107	238	100	24	RB 1-24

Calculation Result = SG Reading - Tx Cable Loss + Tx Antenna Gain - Tx Antenna Attenuator Loss
Rx-ANTENNA : Biconical Antenna(30M-300MHz), Logperiodic Antenna(300M-1000MHz), Horn Antenna(1G-40GHz)
Tx-ANTENNA : 120MHz tuned Dipole Antenna(30M-120MHz), Dipole Antenna(120M-1000MHz), Horn Antenna(1G-40GHz)
Other frequency noises omitted in this report were not seen or had enough margin (more than 20dB).
Detector : S/A RMS Average (RBW: 430kHz , VBW: 1.5MHz)

[BW 5MHz, 16QAM]

Frequency	Rx SA/TR Reading [dBuV]		Tx SG Reading [dBm]		Tx Cable Loss	Tx Ant. Gain	Tx Ant. Atten. Loss	Result (EIRP) [dBm]		Limit (EIRP) [dBm]	Margin [dB]		Horizontal		Vertical		UL RB Allocation-start
													Rx Ant. Height	Turn Table	Rx Ant. Height	Turn Table	
[MHz]	HOR	VER	HOR	VER	[dB]	[dBi]	[dB]	HOR	VER		HOR	VER	[cm]	[deg.]	[cm]	[deg.]	
1712.50	91.2	90.0	15.5	12.5	3.2	9.4	0.0	21.7	18.7	30.0	8.3	11.3	107	238	100	24	RB 1-12
1732.50	92.1	90.0	16.6	12.5	3.2	9.5	0.0	22.9	18.8	30.0	7.1	11.2	107	238	100	24	RB 1-12
1752.50	92.4	90.6	16.5	13.1	3.2	9.6	0.0	22.9	19.5	30.0	7.1	10.5	107	238	100	24	RB 1-24

Calculation Result = SG Reading - Tx Cable Loss + Tx Antenna Gain - Tx Antenna Attenuator Loss
Rx-ANTENNA : Biconical Antenna(30M-300MHz), Logperiodic Antenna(300M-1000MHz), Horn Antenna(1G-40GHz)
Tx-ANTENNA : 120MHz tuned Dipole Antenna(30M-120MHz), Dipole Antenna(120M-1000MHz), Horn Antenna(1G-40GHz)
Other frequency noises omitted in this report were not seen or had enough margin (more than 20dB).
Detector : S/A RMS Average (RBW: 430kHz , VBW: 1.5MHz)

RF Output Power (Radiated)

Equivalent Isotropically Radiated Power(EIRP)

Band 4

Report No.	10004954H
Test place	Head Office EMC Lab.
Semi Anechoic Chamber	No.2
Date	03/21/2013
Temperature / Humidity	25 deg. C / 38 % RH
Engineer	Katsunori Okai
Mode	Transmitting (Tx) LTE (QPSK)
	Transmitting (Tx) LTE (16QAM)

[BW 10MHz, QPSK]

Frequency	Rx SA/TR Reading [dBuV]		Tx SG Reading [dBm]		Tx Cable Loss	Tx Ant. Gain	Tx Ant. Atten. Loss	Result (EIRP) [dBm]		Limit (EIRP) [dBm]	Margin [dB]		Horizontal		Vertical		UL RB Allocation-start
													Rx Ant. Height	Turn Table	Rx Ant. Height	Turn Table	
[MHz]	HOR	VER	HOR	VER	[dB]	[dBi]	[dB]	HOR	VER		HOR	VER	[cm]	[deg.]	[cm]	[deg.]	
1715.00	92.4	91.2	16.8	13.8	3.2	9.4	0.0	23.0	20.0	30.0	7.0	10.0	104	242	100	25	RB 1-0
1732.50	92.5	91.0	17.0	13.5	3.2	9.5	0.0	23.3	19.8	30.0	6.7	10.2	104	242	100	25	RB 1-0
1750.00	93.8	91.5	17.9	14.0	3.2	9.6	0.0	24.3	20.4	30.0	5.8	9.7	104	242	100	25	RB 1-49

Calculation Result = SG Reading - Tx Cable Loss + Tx Antenna Gain - Tx Antenna Attenuator Loss
Rx-ANTENNA : Biconical Antenna(30M-300MHz), Logperiodic Antenna(300M-1000MHz), Horn Antenna(1G-40GHz)
Tx-ANTENNA : 120MHz tuned Dipole Antenna(30M-120MHz), Dipole Antenna(120M-1000MHz), Horn Antenna(1G-40GHz)
Other frequency noises omitted in this report were not seen or had enough margin (more than 20dB).
Detector : S/A RMS Average (RBW: 430kHz , VBW: 1.5MHz)

[BW 10MHz, 16QAM]

Frequency	Rx SA/TR Reading [dBuV]		Tx SG Reading [dBm]		Tx Cable Loss	Tx Ant. Gain	Tx Ant. Atten. Loss	Result (EIRP) [dBm]		Limit (EIRP) [dBm]	Margin [dB]		Horizontal		Vertical		UL RB Allocation-start
													Rx Ant. Height	Turn Table	Rx Ant. Height	Turn Table	
[MHz]	HOR	VER	HOR	VER	[dB]	[dBi]	[dB]	HOR	VER		HOR	VER	[cm]	[deg.]	[cm]	[deg.]	
1715.00	91.6	89.6	16.0	12.2	3.2	9.4	0.0	22.2	18.4	30.0	7.8	11.6	104	242	100	25	RB 1-24
1732.50	91.2	90.4	15.7	12.9	3.2	9.5	0.0	22.0	19.2	30.0	8.0	10.8	104	242	100	25	RB 1-0
1750.00	92.4	90.2	16.5	12.7	3.2	9.6	0.0	22.9	19.1	30.0	7.2	11.0	104	242	100	25	RB 1-49

Calculation Result = SG Reading - Tx Cable Loss + Tx Antenna Gain - Tx Antenna Attenuator Loss
Rx-ANTENNA : Biconical Antenna(30M-300MHz), Logperiodic Antenna(300M-1000MHz), Horn Antenna(1G-40GHz)
Tx-ANTENNA : 120MHz tuned Dipole Antenna(30M-120MHz), Dipole Antenna(120M-1000MHz), Horn Antenna(1G-40GHz)
Other frequency noises omitted in this report were not seen or had enough margin (more than 20dB).
Detector : S/A RMS Average (RBW: 430kHz , VBW: 1.5MHz)

RF Output Power (Radiated)

Equivalent Isotropically Radiated Power(EIRP)

Band 4

Report No.	10004954H
Test place	Head Office EMC Lab.
Semi Anechoic Chamber	No.2
Date	03/21/2013
Temperature / Humidity	25 deg. C / 38 % RH
Engineer	Katsunori Okai
Mode	Transmitting (Tx) LTE (QPSK)
	Transmitting (Tx) LTE (16QAM)

[BW 15MHz, QPSK]

Frequency	Rx SA/TR Reading [dBuV]		Tx SG Reading [dBm]		Tx Cable Loss	Tx Ant. Gain	Tx Ant. Atten. Loss	Result (EIRP) [dBm]		Limit (EIRP) [dBm]	Margin [dB]		Horizontal		Vertical		UL RB Allocation-start
													Rx Ant. Height	Turn Table	Rx Ant. Height	Turn Table	
[MHz]	HOR	VER	HOR	VER	[dB]	[dBi]	[dB]	HOR	VER		HOR	VER	[cm]	[deg.]	[cm]	[deg.]	
1717.50	92.3	90.1	16.9	12.9	3.2	9.4	0.0	23.1	19.1	30.0	6.9	10.9	105	241	100	28	RB 1-0
1732.50	92.7	90.6	17.2	13.1	3.2	9.5	0.0	23.5	19.4	30.0	6.5	10.6	105	241	100	28	RB 1-74
1747.50	93.5	91.0	17.8	13.6	3.2	9.6	0.0	24.2	20.0	30.0	5.9	10.1	105	241	100	28	RB 1-74

Calculation Result = SG Reading - Tx Cable Loss + Tx Antenna Gain - Tx Antenna Attenuator Loss
Rx-ANTENNA : Biconical Antenna(30M-300MHz), Logperiodic Antenna(300M-1000MHz), Horn Antenna(1G-40GHz)
Tx-ANTENNA : 120MHz tuned Dipole Antenna(30M-120MHz), Dipole Antenna(120M-1000MHz), Horn Antenna(1G-40GHz)
Other frequency noises omitted in this report were not seen or had enough margin (more than 20dB).
Detector : S/A RMS Average (RBW: 430kHz , VBW: 1.5MHz)

[BW 15MHz, 16QAM]

Frequency	Rx SA/TR Reading [dBuV]		Tx SG Reading [dBm]		Tx Cable Loss	Tx Ant. Gain	Tx Ant. Atten. Loss	Result (EIRP) [dBm]		Limit (EIRP) [dBm]	Margin [dB]		Horizontal		Vertical		UL RB Allocation-start
													Rx Ant. Height	Turn Table	Rx Ant. Height	Turn Table	
[MHz]	HOR	VER	HOR	VER	[dB]	[dBi]	[dB]	HOR	VER		HOR	VER	[cm]	[deg.]	[cm]	[deg.]	
1717.50	91.4	88.7	16.0	11.5	3.2	9.4	0.0	22.2	17.7	30.0	7.8	12.3	105	241	100	28	RB 1-37
1732.50	91.6	89.9	16.1	12.4	3.2	9.5	0.0	22.4	18.7	30.0	7.6	11.3	105	241	100	28	RB 1-74
1747.50	92.6	90.3	16.9	12.9	3.2	9.6	0.0	23.3	19.3	30.0	6.8	10.8	105	241	100	28	RB 1-74

Calculation Result = SG Reading - Tx Cable Loss + Tx Antenna Gain - Tx Antenna Attenuator Loss
Rx-ANTENNA : Biconical Antenna(30M-300MHz), Logperiodic Antenna(300M-1000MHz), Horn Antenna(1G-40GHz)
Tx-ANTENNA : 120MHz tuned Dipole Antenna(30M-120MHz), Dipole Antenna(120M-1000MHz), Horn Antenna(1G-40GHz)
Other frequency noises omitted in this report were not seen or had enough margin (more than 20dB).
Detector : S/A RMS Average (RBW: 430kHz , VBW: 1.5MHz)

RF Output Power (Radiated)

Equivalent Isotropically Radiated Power(EIRP)

Band 4

Report No.	10004954H
Test place	Head Office EMC Lab.
Semi Anechoic Chamber	No.2
Date	03/22/2013
Temperature / Humidity	22 deg. C / 35 % RH
Engineer	Katsunori Okai
Mode	Transmitting (Tx) LTE (QPSK)
	Transmitting (Tx) LTE (16QAM)

[BW 20MHz, QPSK]

Frequency	Rx SA/TR Reading [dBuV]		Tx SG Reading [dBm]		Tx Cable Loss	Tx Ant. Gain	Tx Ant. Atten. Loss	Result (EIRP) [dBm]		Limit (EIRP) [dBm]	Margin [dB]		Horizontal		Vertical		UL RB Allocation-start
													Rx Ant. Height	Turn Table	Rx Ant. Height	Turn Table	
[MHz]	HOR	VER	HOR	VER	[dB]	[dBi]	[dB]	HOR	VER		HOR	VER	[cm]	[deg.]	[cm]	[deg.]	
1720.00	92.4	90.8	17.0	13.5	3.2	9.5	0.0	23.2	19.7	30.0	6.8	10.3	107	242	100	26	RB 1-0
1732.50	93.1	90.4	17.6	12.9	3.2	9.5	0.0	23.9	19.2	30.0	6.1	10.8	107	242	100	26	RB 1-99
1745.00	92.9	90.1	17.5	12.8	3.2	9.6	0.0	23.8	19.1	30.0	6.2	10.9	107	242	100	26	RB 1-99

Calculation Result = SG Reading - Tx Cable Loss + Tx Antenna Gain - Tx Antenna Attenuator Loss
Rx-ANTENNA : Biconical Antenna(30M-300MHz), Logperiodic Antenna(300M-1000MHz), Horn Antenna(1G-40GHz)
Tx-ANTENNA : 120MHz tuned Dipole Antenna(30M-120MHz), Dipole Antenna(120M-1000MHz), Horn Antenna(1G-40GHz)
Other frequency noises omitted in this report were not seen or had enough margin (more than 20dB).
Detector : S/A RMS Average (RBW: 430kHz , VBW: 1.5MHz)

[BW 20MHz, 16QAM]

Frequency	Rx SA/TR Reading [dBuV]		Tx SG Reading [dBm]		Tx Cable Loss	Tx Ant. Gain	Tx Ant. Atten. Loss	Result (EIRP) [dBm]		Limit (EIRP) [dBm]	Margin [dB]		Horizontal		Vertical		UL RB Allocation-start
													Rx Ant. Height	Turn Table	Rx Ant. Height	Turn Table	
[MHz]	HOR	VER	HOR	VER	[dB]	[dBi]	[dB]	HOR	VER		HOR	VER	[cm]	[deg.]	[cm]	[deg.]	
1720.00	91.2	89.4	15.8	12.1	3.2	9.5	0.0	22.0	18.3	30.0	8.0	11.7	107	242	100	26	RB 1-49
1732.50	91.7	89.3	16.2	11.8	3.2	9.5	0.0	22.5	18.1	30.0	7.5	11.9	107	242	100	26	RB 1-99
1745.00	91.7	89.1	16.3	11.8	3.2	9.6	0.0	22.6	18.1	30.0	7.4	11.9	107	242	100	26	RB 1-49

Calculation Result = SG Reading - Tx Cable Loss + Tx Antenna Gain - Tx Antenna Attenuator Loss
Rx-ANTENNA : Biconical Antenna(30M-300MHz), Logperiodic Antenna(300M-1000MHz), Horn Antenna(1G-40GHz)
Tx-ANTENNA : 120MHz tuned Dipole Antenna(30M-120MHz), Dipole Antenna(120M-1000MHz), Horn Antenna(1G-40GHz)
Detector : S/A RMS Average (RBW: 430kHz , VBW: 1.5MHz)

RF Output Power (Radiated)

Effective radiated power(ERP)

Band 17

Report No.	10004954H
Test place	Head Office EMC Lab.
Semi Anechoic Chamber	No.2
Date	03/20/2013
Temperature / Humidity	21 deg. C / 38 % RH
Engineer	Katsunori Okai
Mode	Transmitting (Tx) LTE (QPSK)
	Transmitting (Tx) LTE (16QAM)

[BW 5MHz, QPSK]

Frequency	Rx SA/TR Reading [dBuV]		Tx SG Reading [dBm]		Tx Cable Loss	Tx Ant. Gain	Tx Ant. Atten. Loss	Result (ERP) [dBm]		Limit (ERP) [dBm]	Margin [dB]		Horizontal		Vertical		UL RB Allocation-start
													Rx Ant. Height	Turn Table	Rx Ant. Height	Turn Table	
[MHz]	HOR	VER	HOR	VER	[dB]	[dBi]	[dB]	HOR	VER		HOR	VER	[cm]	[deg.]	[cm]	[deg.]	
706.50	88.3	86.3	33.5	34.1	5.2	2.15	9.9	18.3	19.0	34.7	16.4	15.7	124	51	100	107	RB 1-0
710.00	88.7	85.9	34.2	34.4	5.2	2.15	9.9	19.0	19.3	34.7	15.7	15.5	130	47	100	113	RB 1-0
713.50	88.4	86.0	34.2	35.3	5.3	2.15	9.9	19.0	20.1	34.7	15.7	14.6	122	51	100	105	RB 1-12

Calculation Result = SG Reading - Tx Cable Loss + Tx Antenna Gain - Tx Antenna Attenuator Loss -2.15
Rx-ANTENNA : Biconical Antenna(30M-300MHz), Logperiodic Antenna(300M-1000MHz), Horn Antenna(1G-12.75GHz)
Tx-ANTENNA : 120MHz tuned Dipole Antenna(30M-120MHz), Dipole Antenna(120M-1000MHz), Horn Antenna(1G-12.75GHz)
Other frequency noises omitted in this report were not seen or had enough margin (more than 20dB).
Detector : S/A RMS Average (RBW: 430kHz , VBW: 1.5MHz)

[BW 5MHz, 16QAM]

Frequency	Rx SA/TR Reading [dBuV]		Tx SG Reading [dBm]		Tx Cable Loss	Tx Ant. Gain	Tx Ant. Atten. Loss	Result (ERP) [dBm]		Limit (ERP) [dBm]	Margin [dB]		Horizontal		Vertical		UL RB Allocation-start
													Rx Ant. Height	Turn Table	Rx Ant. Height	Turn Table	
[MHz]	HOR	VER	HOR	VER	[dB]	[dBi]	[dB]	HOR	VER		HOR	VER	[cm]	[deg.]	[cm]	[deg.]	
706.50	87.1	85.0	32.3	32.8	5.2	2.15	9.9	17.1	17.7	34.7	17.6	17.0	124	51	100	107	RB 1-0
710.00	87.8	84.7	33.3	33.2	5.2	2.15	9.9	18.1	18.1	34.7	16.6	16.7	130	47	100	113	RB 1-24
713.50	87.6	84.9	33.4	34.2	5.3	2.15	9.9	18.2	19.0	34.7	16.5	15.7	122	51	100	105	RB 1-0

Calculation Result = SG Reading - Tx Cable Loss + Tx Antenna Gain - Tx Antenna Attenuator Loss -2.15
Rx-ANTENNA : Biconical Antenna(30M-300MHz), Logperiodic Antenna(300M-1000MHz), Horn Antenna(1G-12.75GHz)
Tx-ANTENNA : 120MHz tuned Dipole Antenna(30M-120MHz), Dipole Antenna(120M-1000MHz), Horn Antenna(1G-12.75GHz)
Other frequency noises omitted in this report were not seen or had enough margin (more than 20dB).
Detector : S/A RMS Average (RBW: 430kHz , VBW: 1.5MHz)

RF Output Power (Radiated)

Effective radiated power(ERP)
Band 17

Report No.	10004954H
Test place	Head Office EMC Lab.
Semi Anechoic Chamber	No.2
Date	03/20/2013
Temperature / Humidity	21 deg. C / 38 % RH
Engineer	Katsunori Okai
Mode	Transmitting (Tx) LTE (QPSK)
	Transmitting (Tx) LTE (16QAM)

[BW 10MHz, QPSK]

Frequency	Rx SA/TR Reading [dBuV]		Tx SG Reading [dBm]		Tx Cable Loss	Tx Ant. Gain	Tx Ant. Atten. Loss	Result (ERP) [dBm]		Limit (ERP) [dBm]	Margin [dB]		Horizontal		Vertical		UL RB Allocation-start
													Rx Ant. Height	Turn Table	Rx Ant. Height	Turn Table	
[MHz]	HOR	VER	HOR	VER	[dB]	[dBi]	[dB]	HOR	VER		HOR	VER	[cm]	[deg.]	[cm]	[deg.]	
709.00	88.3	86.3	33.7	34.6	5.2	2.15	9.9	18.6	19.5	34.7	16.2	15.3	124	53	100	105	RB 1-0
710.00	89.3	86.3	34.8	34.8	5.2	2.15	9.9	19.6	19.7	34.7	15.1	15.1	130	47	100	113	RB 1-49
711.00	88.9	86.2	34.5	35.0	5.3	2.15	9.9	19.3	19.8	34.7	15.4	14.9	124	51	100	105	RB 1-0

Calculation Result = SG Reading - Tx Cable Loss + Tx Antenna Gain - Tx Antenna Attenuator Loss -2.15
Rx-ANTENNA : Biconical Antenna(30M-300MHz), Logperiodic Antenna(300M-1000MHz), Horn Antenna(1G-12.75GHz)
Tx-ANTENNA : 120MHz tuned Dipole Antenna(30M-120MHz), Dipole Antenna(120M-1000MHz), Horn Antenna(1G-12.75GHz)
Other frequency noises omitted in this report were not seen or had enough margin (more than 20dB).
Detector : S/A RMS Average (RBW: 430kHz , VBW: 1.5MHz)

[BW 10MHz, 16QAM]

Frequency	Rx SA/TR Reading [dBuV]		Tx SG Reading [dBm]		Tx Cable Loss	Tx Ant. Gain	Tx Ant. Atten. Loss	Result (ERP) [dBm]		Limit (ERP) [dBm]	Margin [dB]		Horizontal		Vertical		UL RB Allocation-start
													Rx Ant. Height	Turn Table	Rx Ant. Height	Turn Table	
[MHz]	HOR	VER	HOR	VER	[dB]	[dBi]	[dB]	HOR	VER		HOR	VER	[cm]	[deg.]	[cm]	[deg.]	
709.00	87.5	85.4	32.9	33.7	5.2	2.15	9.9	17.8	18.6	34.7	17.0	16.2	124	53	100	105	RB 1-0
710.00	88.1	85.2	33.6	33.7	5.2	2.15	9.9	18.4	18.6	34.7	16.3	16.2	130	47	100	113	RB 1-49
711.00	88.0	85.8	33.6	34.6	5.3	2.15	9.9	18.4	19.4	34.7	16.3	15.3	124	51	100	105	RB 1-49

Calculation Result = SG Reading - Tx Cable Loss + Tx Antenna Gain - Tx Antenna Attenuator Loss -2.15
Rx-ANTENNA : Biconical Antenna(30M-300MHz), Logperiodic Antenna(300M-1000MHz), Horn Antenna(1G-12.75GHz)
Tx-ANTENNA : 120MHz tuned Dipole Antenna(30M-120MHz), Dipole Antenna(120M-1000MHz), Horn Antenna(1G-12.75GHz)
Other frequency noises omitted in this report were not seen or had enough margin (more than 20dB).
Detector : S/A RMS Average (RBW: 430kHz , VBW: 1.5MHz)

Peak to Average power Ratio (Conducted)

Band 4

Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	10004954H
Date	03/15/2013
Temperature/ Humidity	21deg. C / 47% RH
Engineer	Yutaka Yoshida
Mode	Transmitting (Tx) LTE (QPSK) Transmitting (Tx) LTE (16QAM) 1732.5MHz

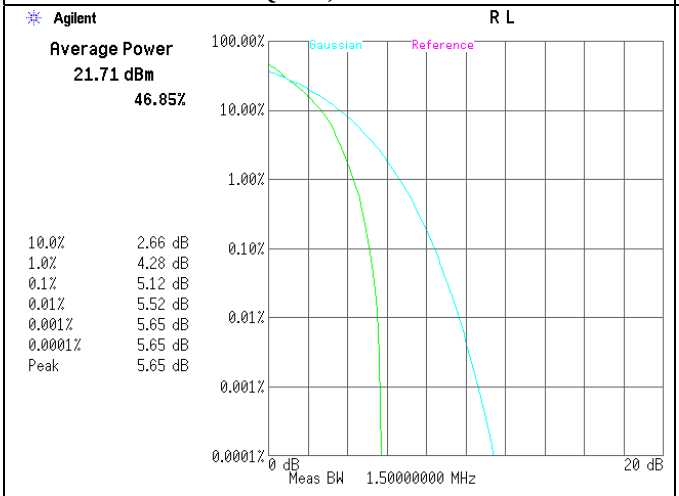
BW	Mode	UL RB Allocation	UL RB Start	Peak to Average power Ratio [dB]	Limit [dB]
1.4MHz	QPSK	6	0	5.12	13
	16QAM	6	0	6.08	13
3MHz	QPSK	15	0	5.02	13
	16QAM	15	0	6.03	13
5MHz	QPSK	25	0	5.41	13
	16QAM	25	0	6.17	13
10MHz	QPSK	50	0	5.25	13
	16QAM	50	0	6.35	13
15MHz	QPSK	75	0	5.74	13
	16QAM	75	0	6.79	13
20MHz	QPSK	100	0	6.24	13
	16QAM	100	0	7.18	13

*In order to decide the largest deviation between the average and the peak power of the EUT in a bandwidth, Complementary Cumulative Distribution Function (CCDF) curves of the spectrum analyzer were used for LTE Signals.

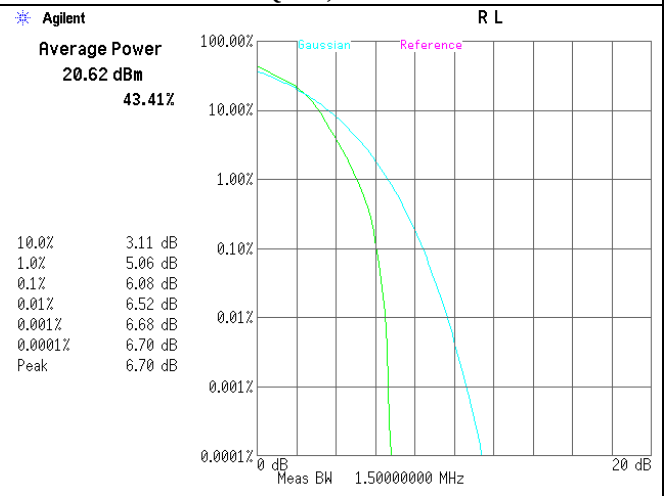
Peak to Average power Ratio (Conducted)

Band 4

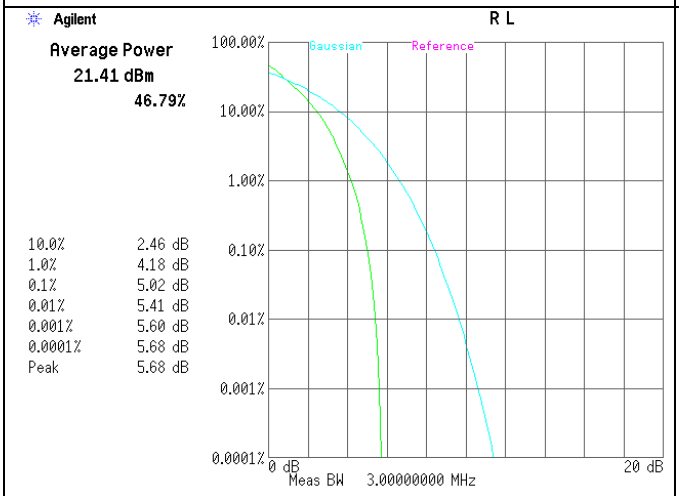
QPSK, RB 6-0



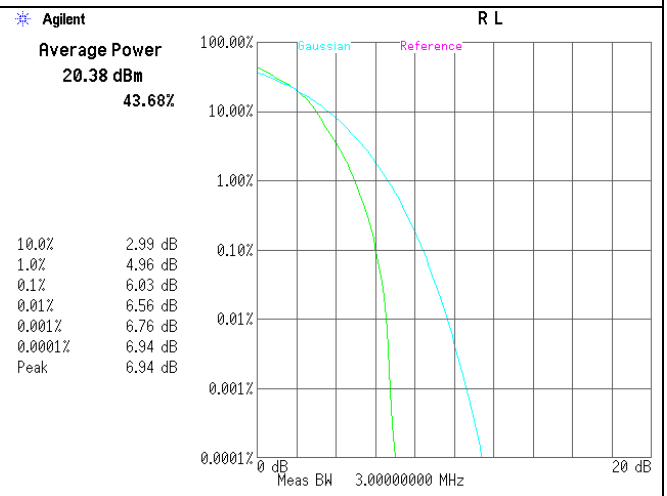
16QAM, RB 6-0



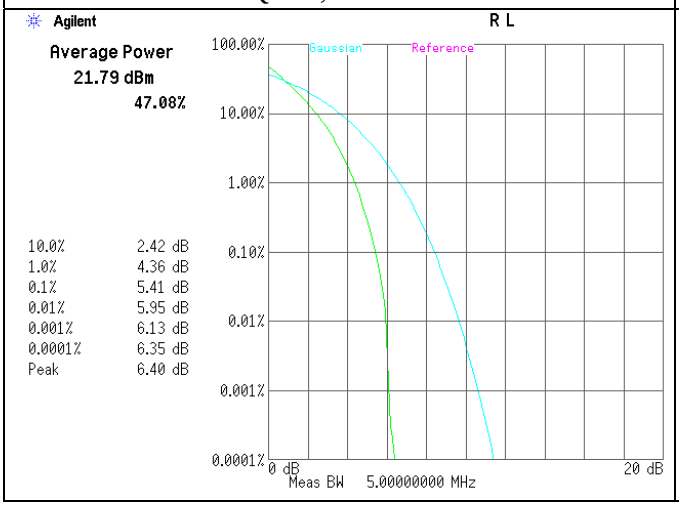
QPSK, RB 15-0



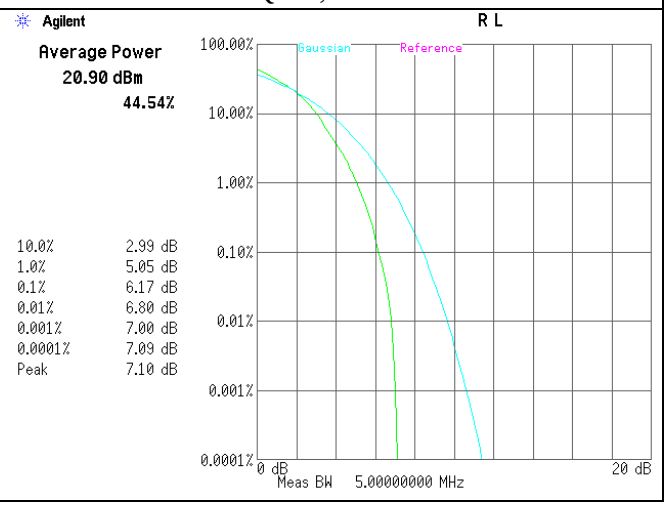
16QAM, RB 15-0



QPSK, RB 25-0



16QAM, RB 25-0

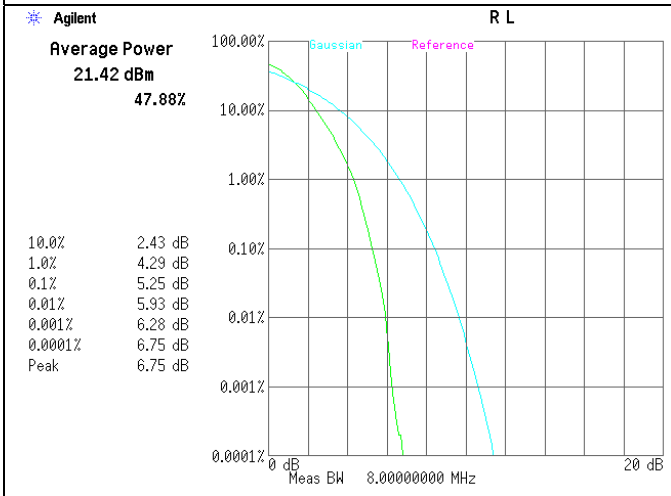


*Set the spectrum analyzer radio mode to Power Stat CCDF.

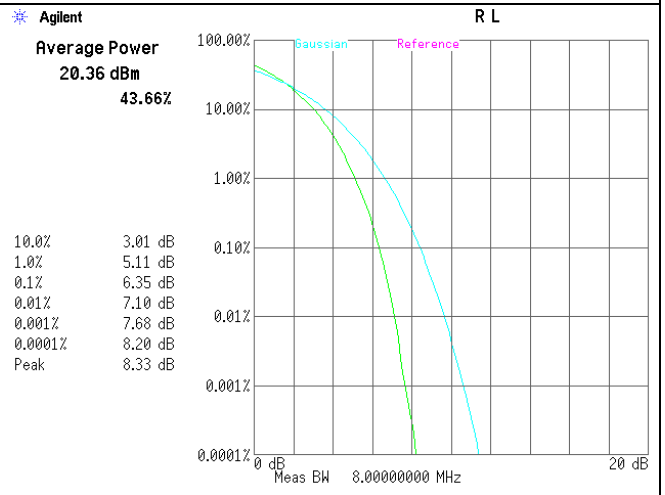
Peak to Average power Ratio (Conducted)

Band 4

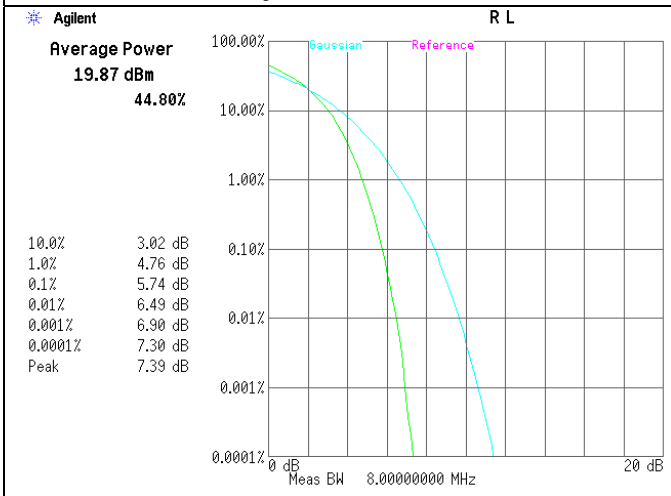
QPSK, RB 50-0



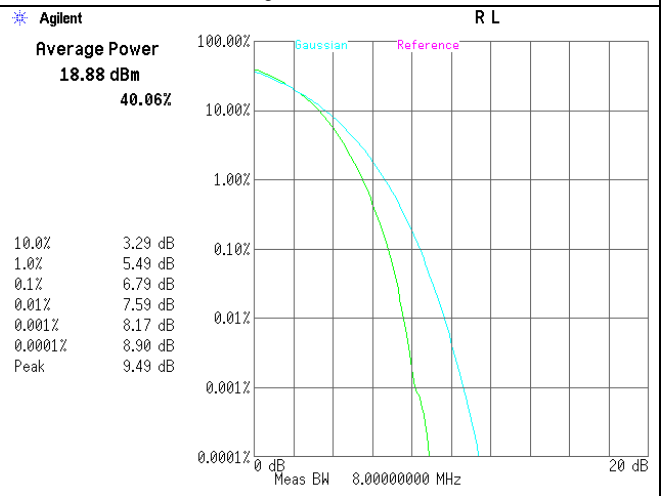
16QAM, RB 50-0



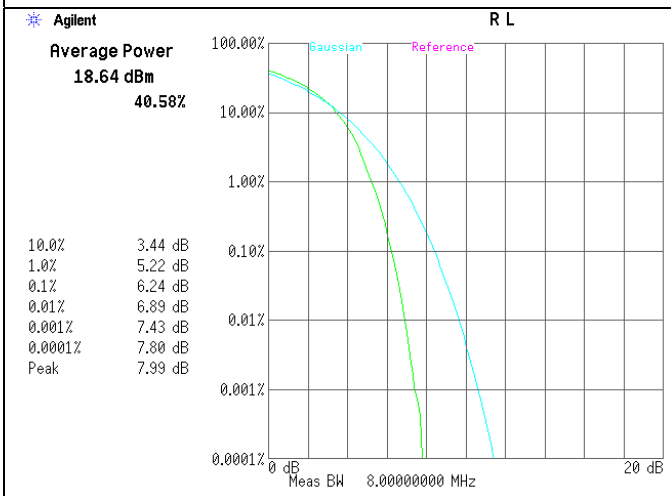
QPSK, RB 75-0



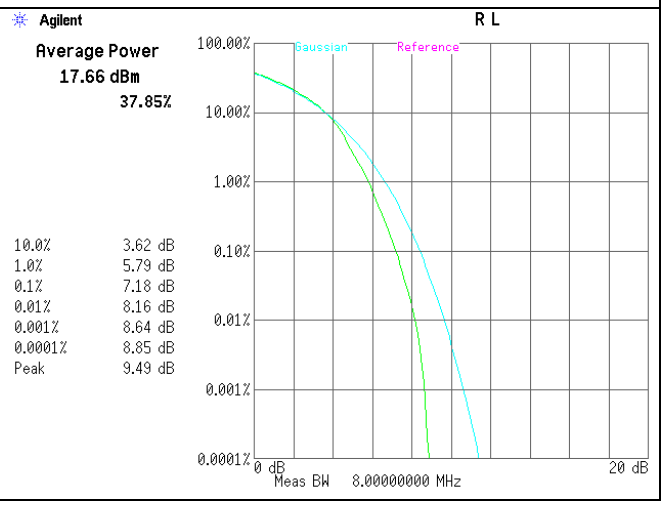
16QAM, RB 75-0



QPSK, RB 100-0



16QAM, RB 100-0



*Set the spectrum analyzer radio mode to Power Stat CCDF.

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Peak to Average power Ratio (Conducted)

Band 17

Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	10004954H
Date	03/15/2013
Temperature/ Humidity	21deg. C / 47% RH
Engineer	Yutaka Yoshida
Mode	Transmitting (Tx) LTE(QPSK) Transmitting (Tx) LTE (16QAM) 710MHz

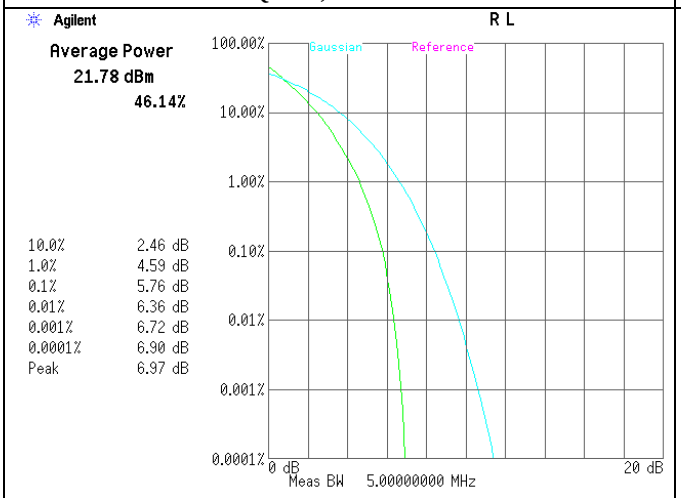
BW	Mode	UL RB Allocation	UL RB Start	Peak to Average power Ratio [dB]	Limit [dB]
5MHz	QPSK	25	0	5.76	13
	16QAM	25	0	6.54	13
10MHz	QPSK	50	0	5.54	13
	16QAM	50	0	6.56	13

*In order to decide the largest deviation between the average and the peak power of the EUT in a bandwidth, Complementary Cumulative Distribution Function (CCDF) curves of the spectrum analyzer were used for LTE Signals.

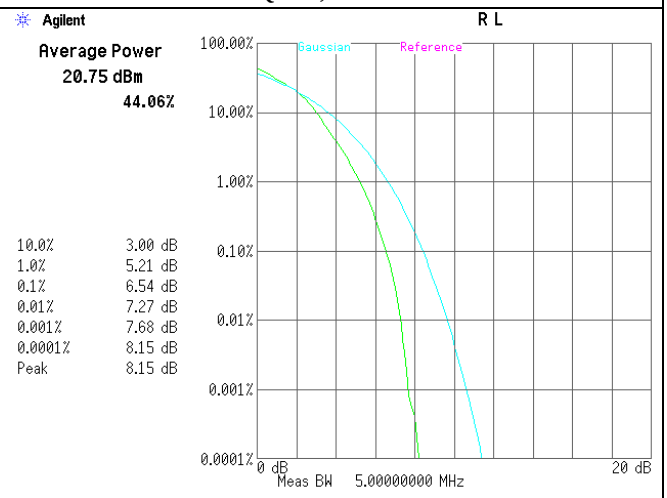
Peak to Average power Ratio (Conducted)

Band 17

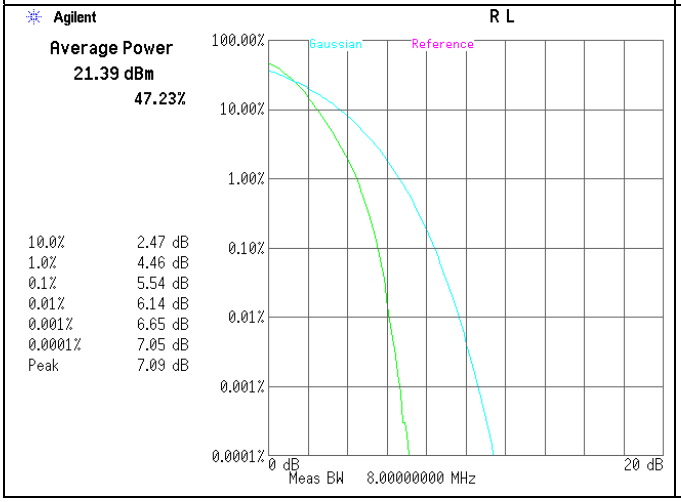
QPSK, RB 25-0



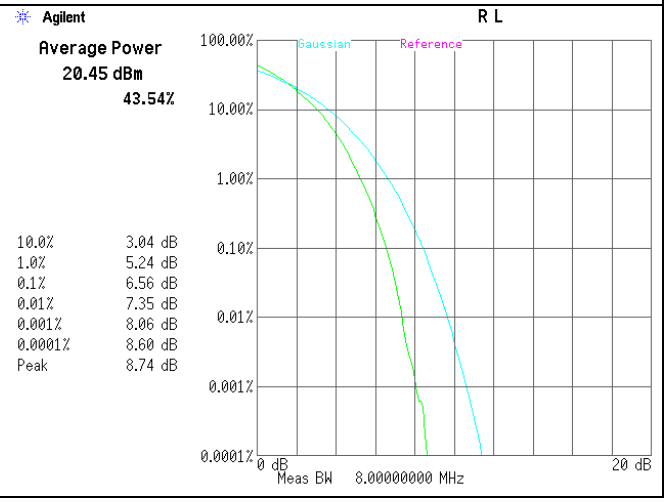
16QAM, RB 25-0



QPSK, RB 50-0



16QAM, RB 50-0



*Set the spectrum analyzer radio mode to Power Stat CCDF.

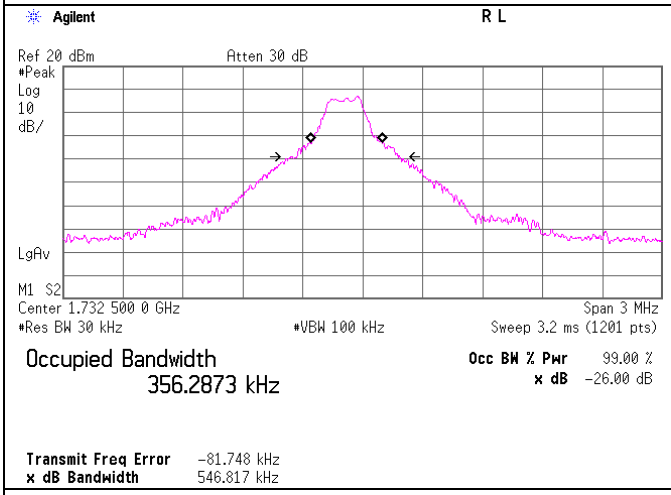
Bandwidth(Conducted)

Band 4

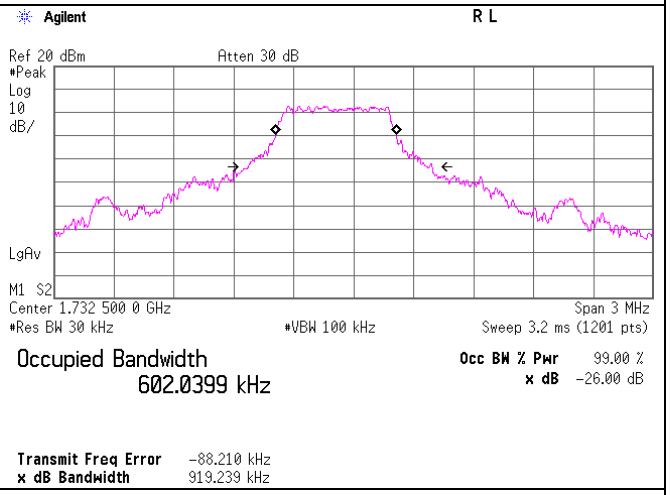
Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	10004954H
Date	03/15/2013
Temperature/ Humidity	21deg. C / 47% RH
Engineer	Yutaka Yoshida
Mode	Transmitting (Tx) LTE(QPSK), BW 1.4MHz, 1732.5MHz

BW	Mode	UL RB Allocation	UL RB Start	Frequency [MHz]	26dB Bandwidth [MHz]	99% OBW [MHz]
1.4MHz	QPSK	1	2	1732.5	0.547	0.3563
		3	1		0.919	0.6020
		6	0		1.333	1.1112

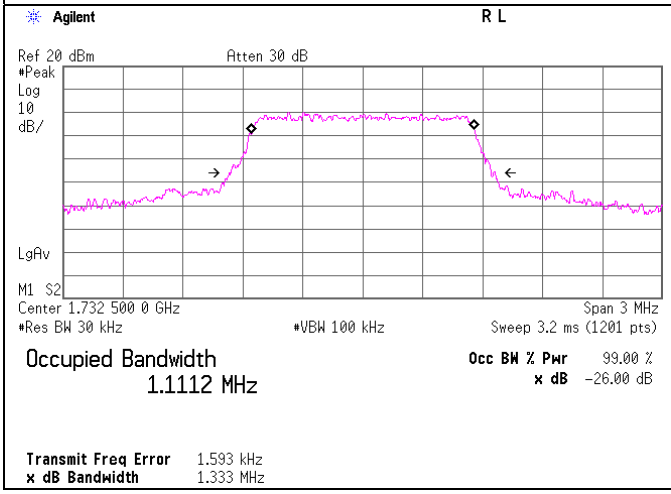
RB 1-2



RB 3-1



RB 6-0



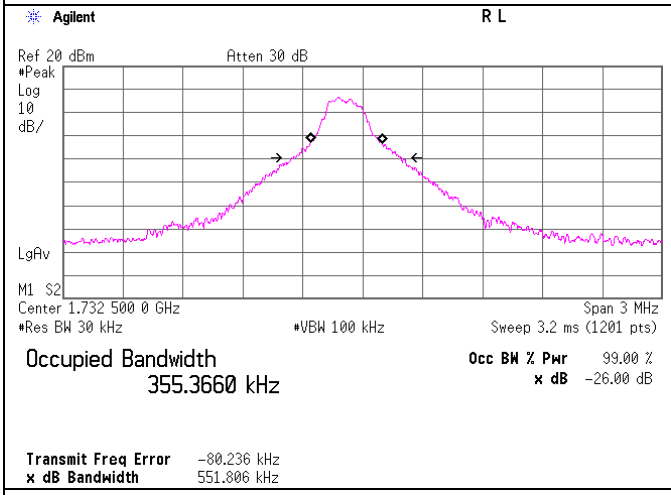
Bandwidth(Conducted)

Band 4

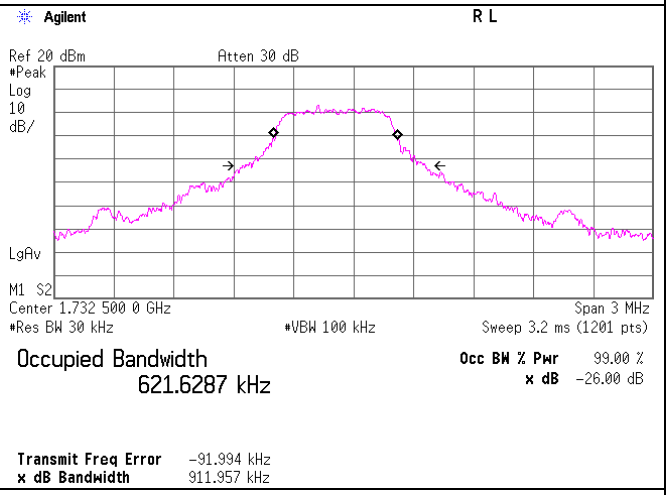
Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	10004954H
Date	03/15/2013
Temperature/ Humidity	21deg. C / 47% RH
Engineer	Yutaka Yoshida
Mode	Transmitting (Tx) LTE(16QAM), BW 1.4MHz, 1732.5MHz

BW	Mode	UL RB Allocation	UL RB Start	Frequency [MHz]	26dB Bandwidth [MHz]	99% OBW [MHz]
1.4MHz	16QAM	1	2	1732.5	0.552	0.3554
		3	1		0.912	0.6216
		6	0		1.303	1.0909

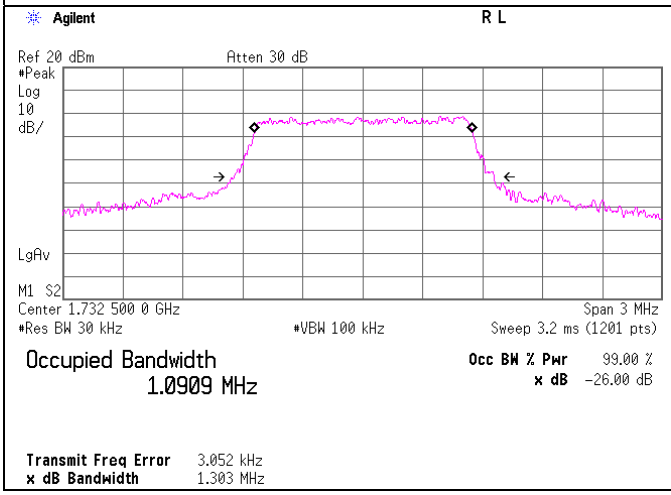
RB 1-2



RB 3-1



RB 6-0



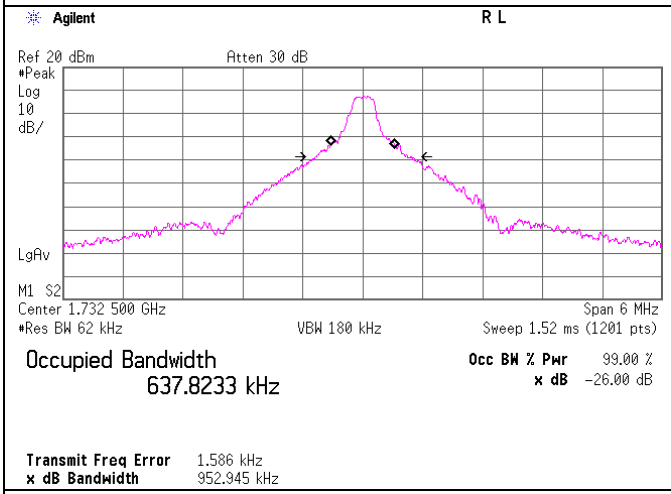
Bandwidth(Conducted)

Band 4

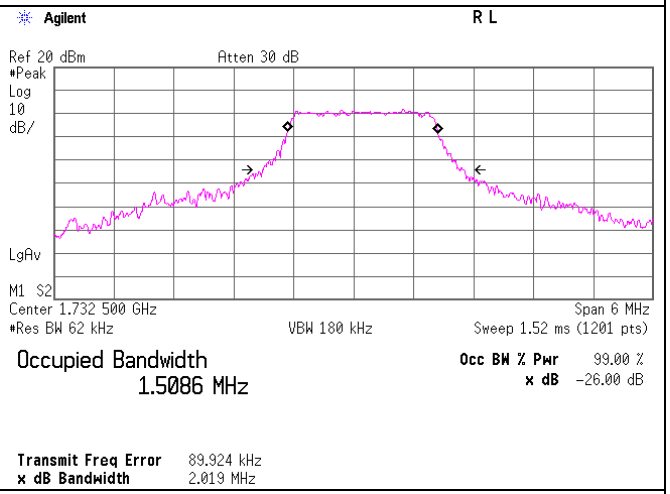
Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	10004954H
Date	03/15/2013
Temperature/ Humidity	21deg. C / 47% RH
Engineer	Yutaka Yoshida
Mode	Transmitting (Tx) LTE(QPSK), BW 3MHz, 1732.5MHz

BW	Mode	UL RB Allocation	UL RB Start	Frequency [MHz]	26dB Bandwidth [MHz]	99% OBW [MHz]
3MHz	QPSK	1	7	1732.5	0.953	0.6378
		8	4		2.019	1.5086
		15	0		3.026	2.7147

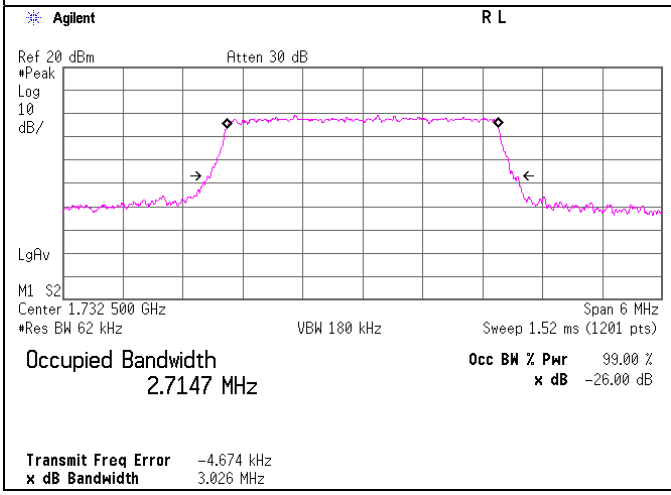
RB 1-7



RB 8-4



RB 15-0



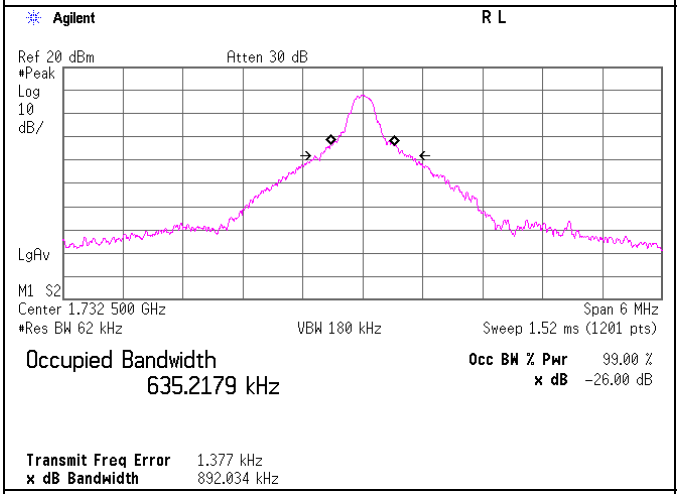
Bandwidth(Conducted)

Band 4

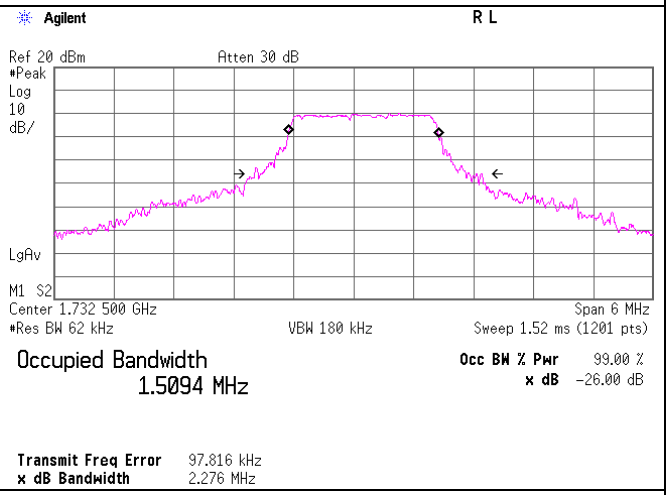
Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	10004954H
Date	03/15/2013
Temperature/ Humidity	21deg. C / 47% RH
Engineer	Yutaka Yoshida
Mode	Transmitting (Tx) LTE(16QAM), BW 3MHz, 1732.5MHz

BW	Mode	UL RB Allocation	UL RB Start	Frequency [MHz]	26dB Bandwidth [MHz]	99% OBW [MHz]
3MHz	16QAM	1	7	1732.5	0. 892	0.6352
		8	4		2.276	1.5094
		15	0		3.019	2.7009

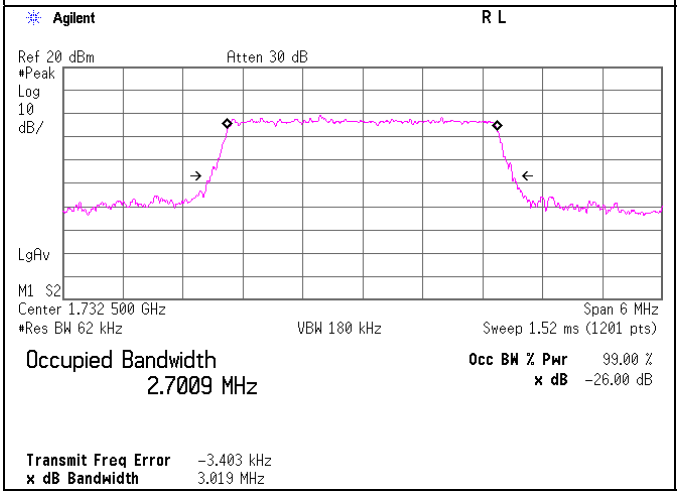
RB 1-7



RB 8-4



RB 15-0



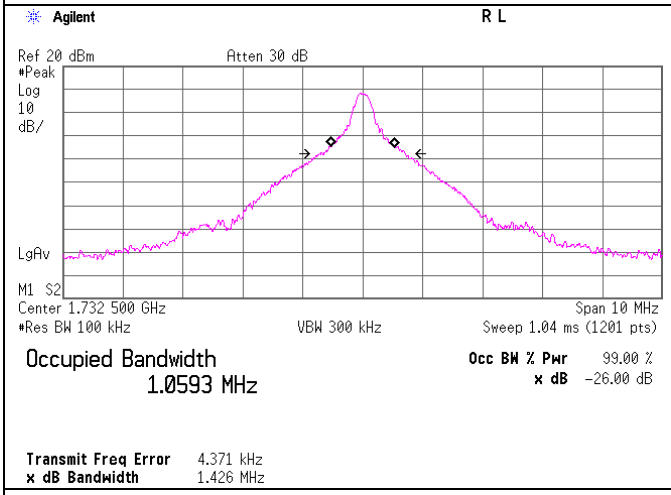
Bandwidth(Conducted)

Band 4

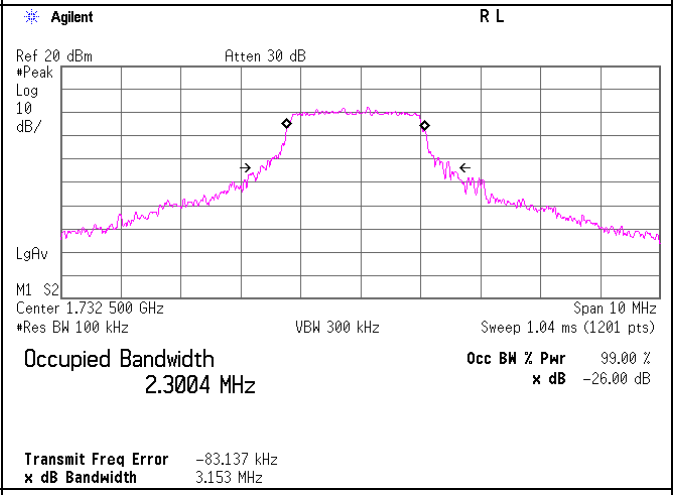
Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	10004954H
Date	03/15/2013
Temperature/ Humidity	21deg. C / 47% RH
Engineer	Yutaka Yoshida
Mode	Transmitting (Tx) LTE(QPSK), BW 5MHz, 1732.5MHz

BW	Mode	UL RB Allocation	UL RB Start	Frequency [MHz]	26dB Bandwidth [MHz]	99% OBW [MHz]
5MHz	QPSK	1	12	1732.5	1.426	1.0593
		12	6		3.153	2.3004
		25	0		5.023	4.5046

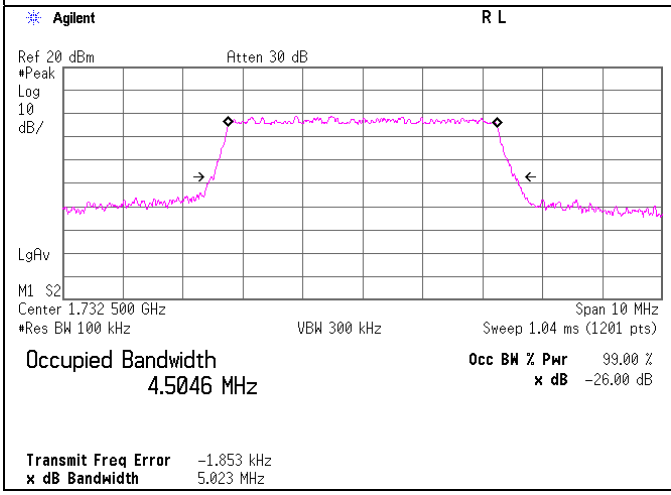
RB 1-12



RB 12-6



RB 25-0



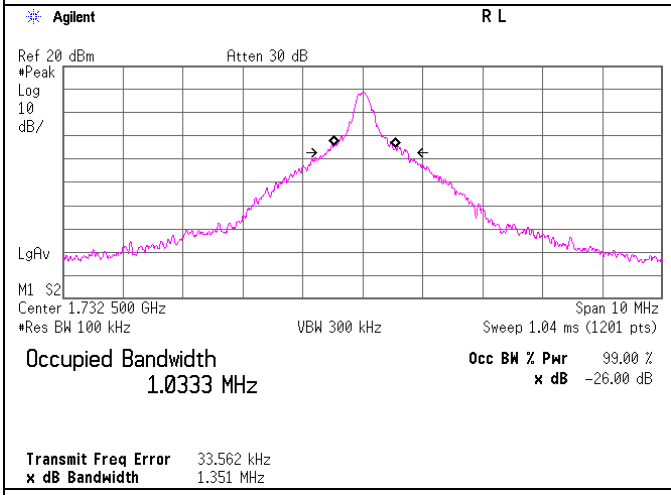
Bandwidth(Conducted)

Band 4

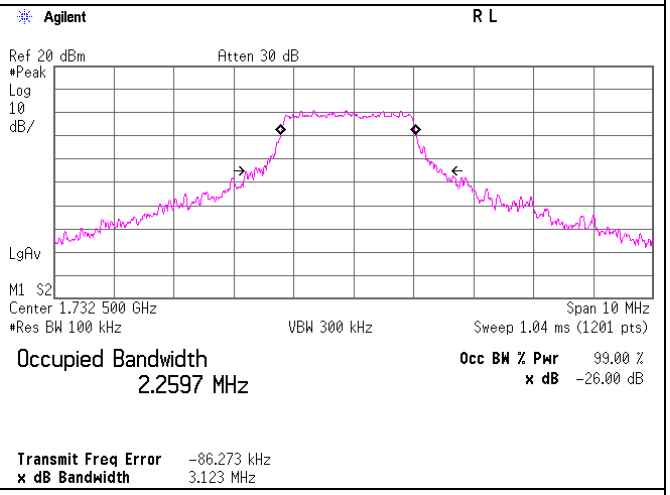
Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	10004954H
Date	03/15/2013
Temperature/ Humidity	21deg. C / 47% RH
Engineer	Yutaka Yoshida
Mode	Transmitting (Tx) LTE(16QAM), BW 5MHz, 1732.5MHz

BW	Mode	UL RB Allocation	UL RB Start	Frequency [MHz]	26dB Bandwidth [MHz]	99% OBW [MHz]
5MHz	16QAM	1	12	1732.5	1.351	1.0333
		12	6		3.123	2.2597
		25	0		5.023	4.4975

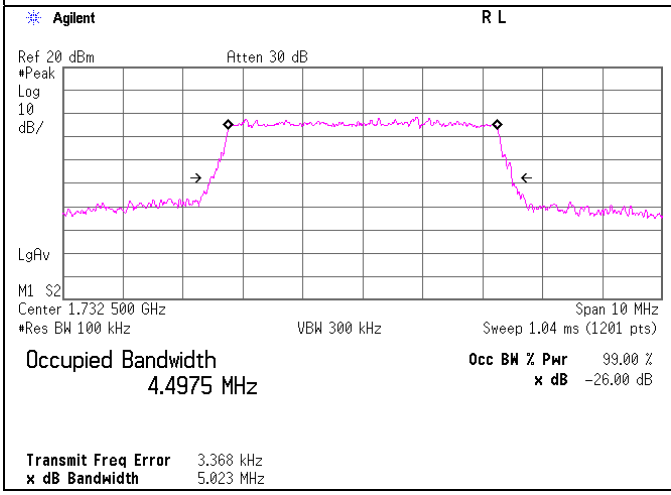
RB 1-12



RB 12-6



RB 25-0



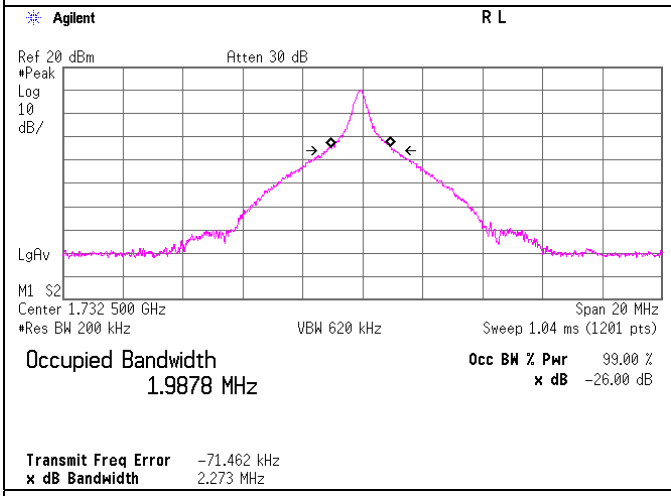
Bandwidth(Conducted)

Band 4

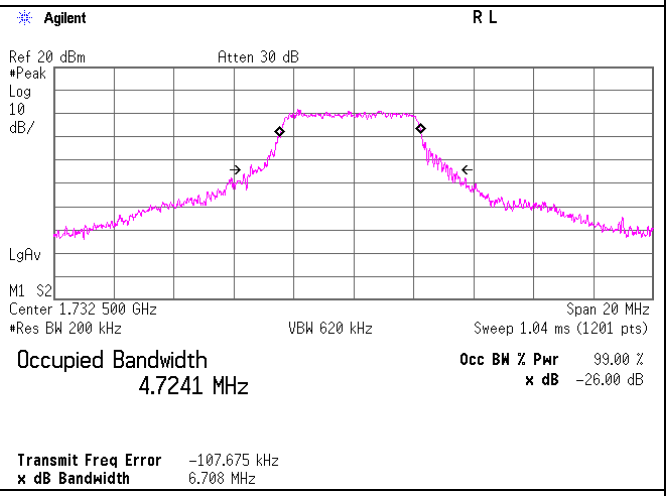
Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	10004954H
Date	03/15/2013
Temperature/ Humidity	21deg. C / 47% RH
Engineer	Yutaka Yoshida
Mode	Transmitting (Tx) LTE(QPSK), BW 10MHz, 1732.5MHz

BW	Mode	UL RB Allocation	UL RB Start	Frequency [MHz]	26dB Bandwidth [MHz]	99% OBW [MHz]
10MHz	QPSK	1	24	1732.5	2.273	1.9878
		25	12		6.708	4.7241
		50	0		9.911	8.9678

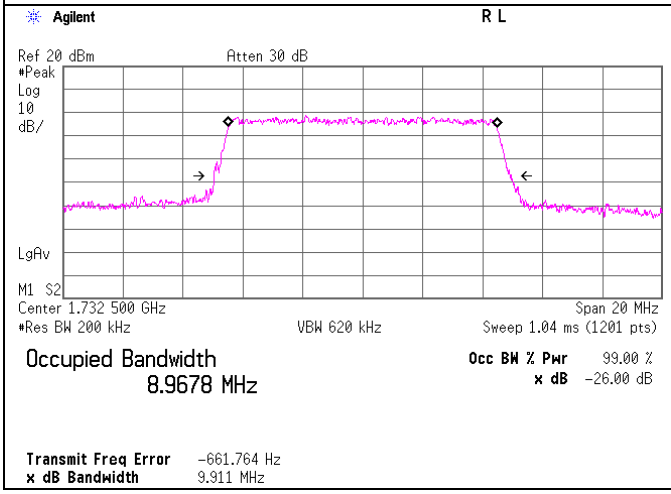
RB 1-24



RB 25-12



RB 50-0



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Telephone : +81 596 24 8999
Facsimile : +81 596 24 8124

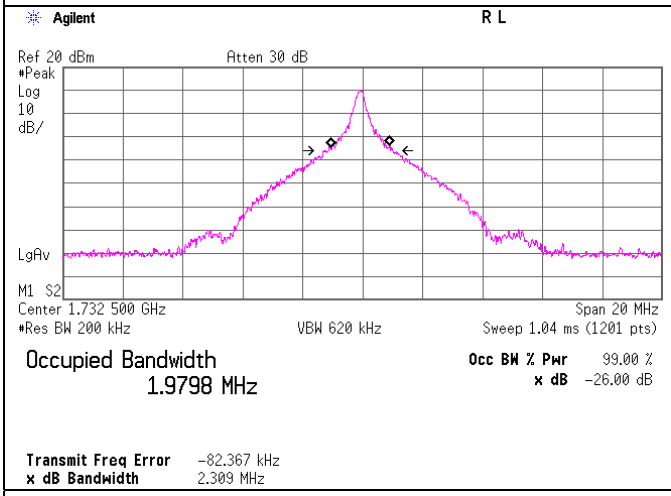
Bandwidth(Conducted)

Band 4

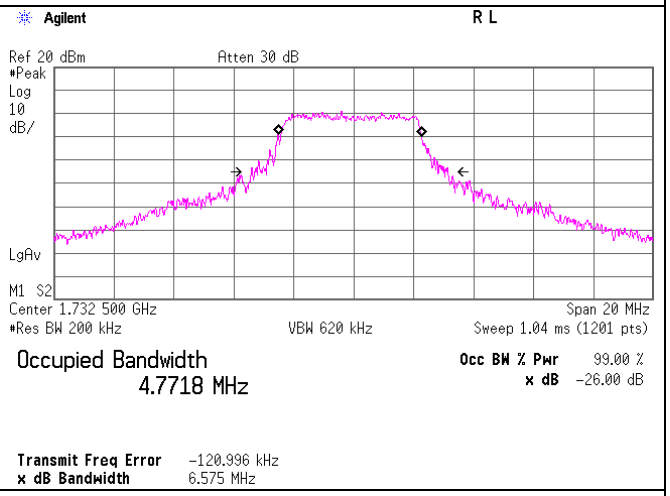
Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	10004954H
Date	03/15/2013
Temperature/ Humidity	21deg. C / 47% RH
Engineer	Yutaka Yoshida
Mode	Transmitting (Tx) LTE(16QAM), BW 10MHz, 1732.5MHz

BW	Mode	UL RB Allocation	UL RB Start	Frequency [MHz]	26dB Bandwidth [MHz]	99% OBW [MHz]
10MHz	16QAM	1	24	1732.5	2.309	1.9798
		25	12		6.575	4.7718
		50	0		9.926	8.9776

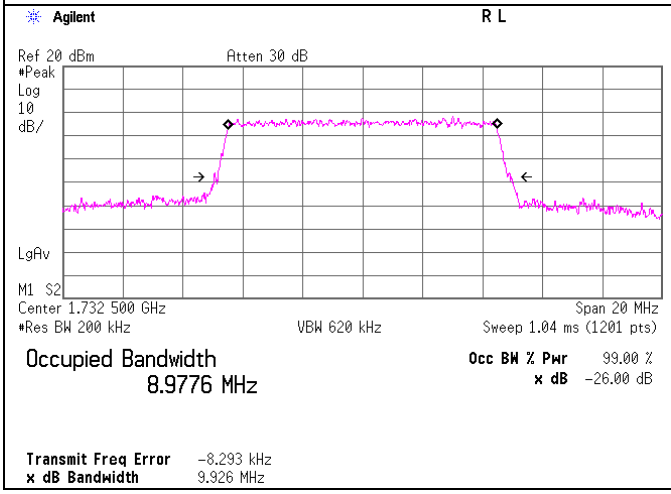
RB 1-24



RB 25-12



RB 50-0



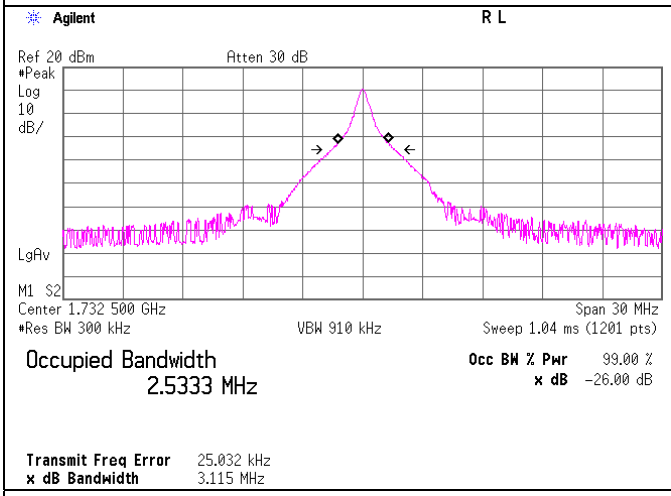
Bandwidth(Conducted)

Band 4

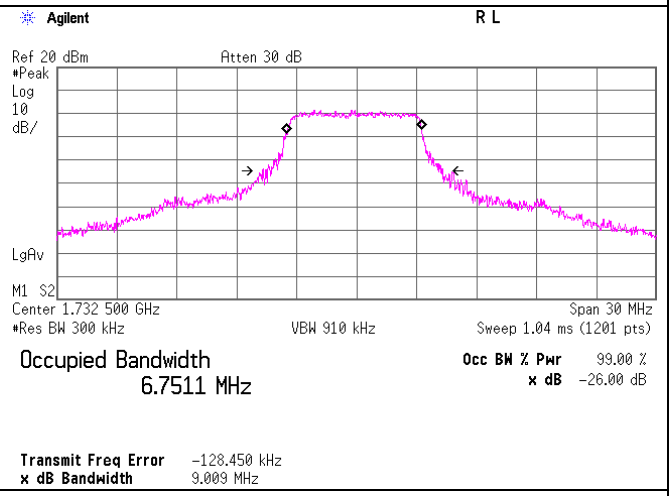
Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	10004954H
Date	03/15/2013
Temperature/ Humidity	21deg. C / 47% RH
Engineer	Yutaka Yoshida
Mode	Transmitting (Tx) LTE(QPSK), BW 15MHz, 1732.5MHz

BW	Mode	UL RB Allocation	UL RB Start	Frequency [MHz]	26dB Bandwidth [MHz]	99% OBW [MHz]
15MHz	QPSK	1	37	1732.5	3.115	2.5333
		36	19		9.009	6.7511
		75	0		14.629	13.425

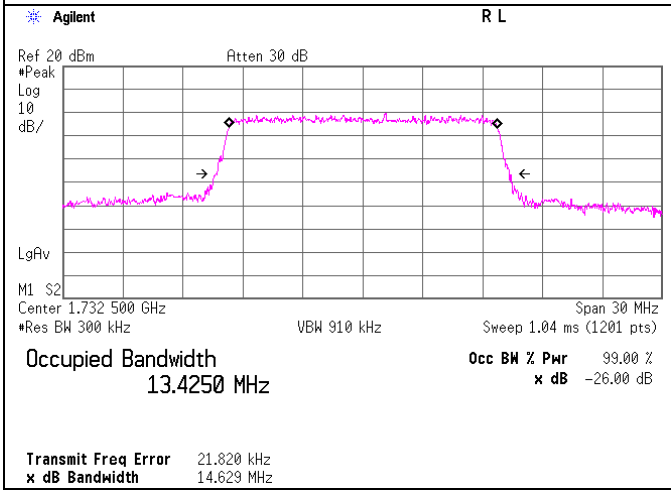
RB 1-37



RB 36-19



RB 75-0



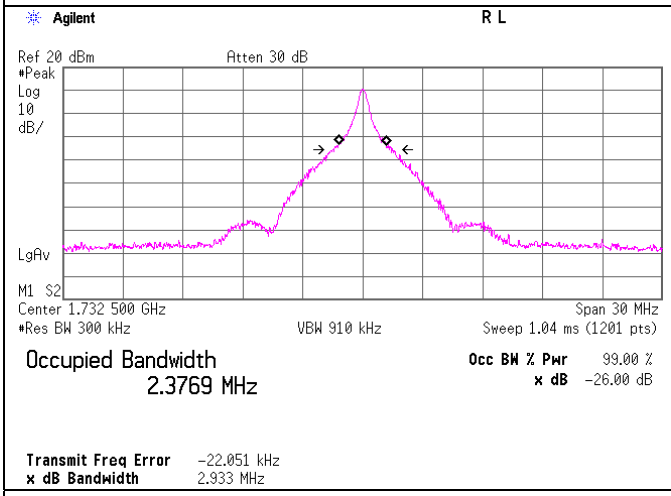
Bandwidth(Conducted)

Band 4

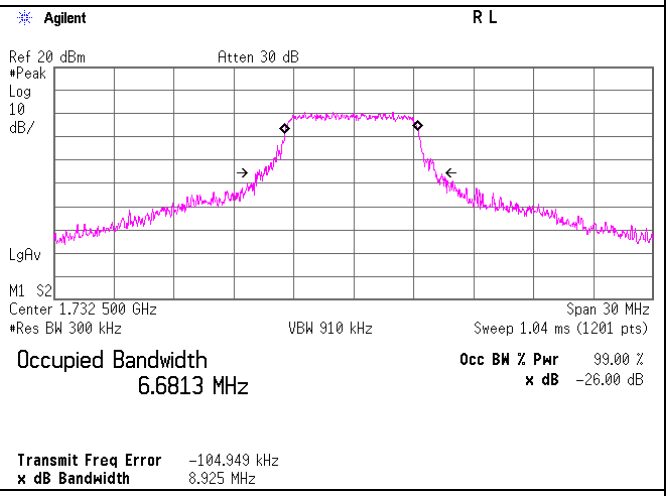
Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	10004954H
Date	03/15/2013
Temperature/ Humidity	21deg. C / 47% RH
Engineer	Yutaka Yoshida
Mode	Transmitting (Tx) LTE(16QAM), BW 15MHz, 1732.5MHz

BW	Mode	UL RB Allocation	UL RB Start	Frequency [MHz]	26dB Bandwidth [MHz]	99% OBW [MHz]
15MHz	16QAM	1	37	1732.5	2.933	2.3769
		36	19		8.925	6.6813
		75	0		14.936	13.4494

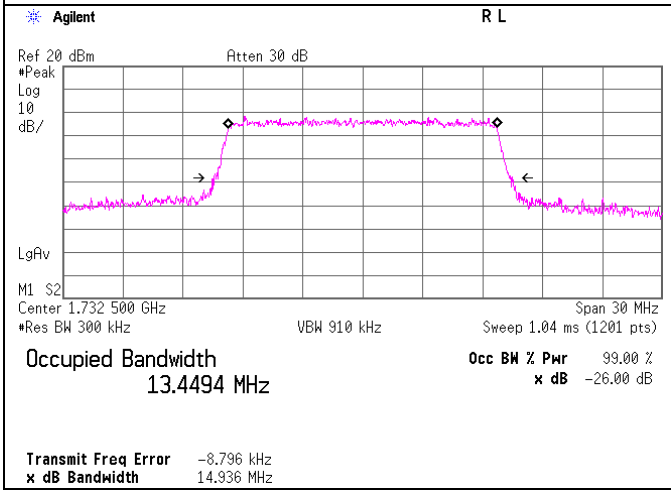
RB 1-37



RB 36-19



RB 75-0



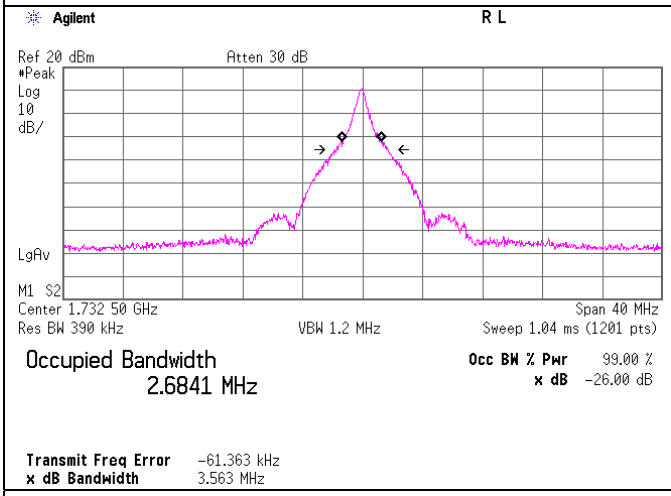
Bandwidth(Conducted)

Band 4

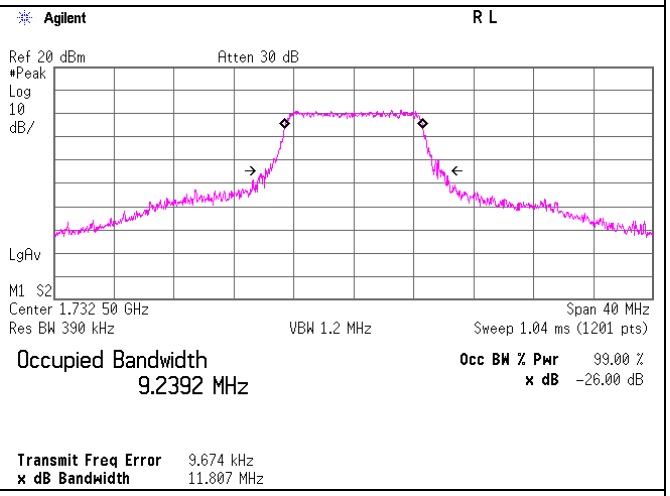
Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	10004954H
Date	03/15/2013
Temperature/ Humidity	21deg. C / 47% RH
Engineer	Yutaka Yoshida
Mode	Transmitting (Tx) LTE(QPSK), BW 20MHz, 1732.5MHz

BW	Mode	UL RB Allocation	UL RB Start	Frequency [MHz]	26dB Bandwidth [MHz]	99% OBW [MHz]
20MHz	QPSK	1	49	1732.5	3.563	2.6841
		50	25		11.807	9.2392
		100	0		19.626	17.949

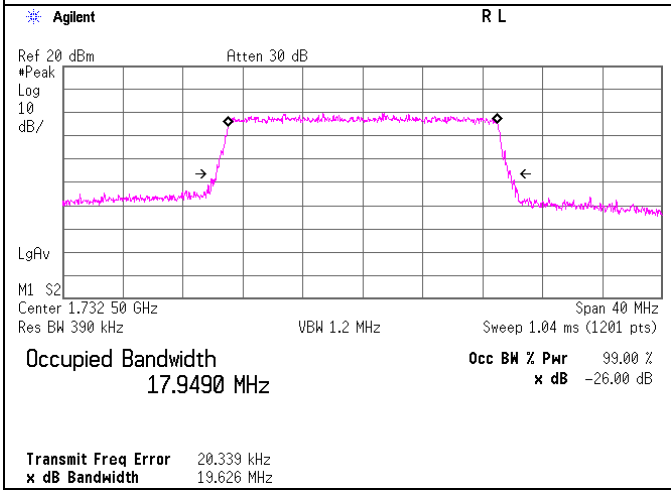
RB 1-49



RB 50-25



RB 100-0



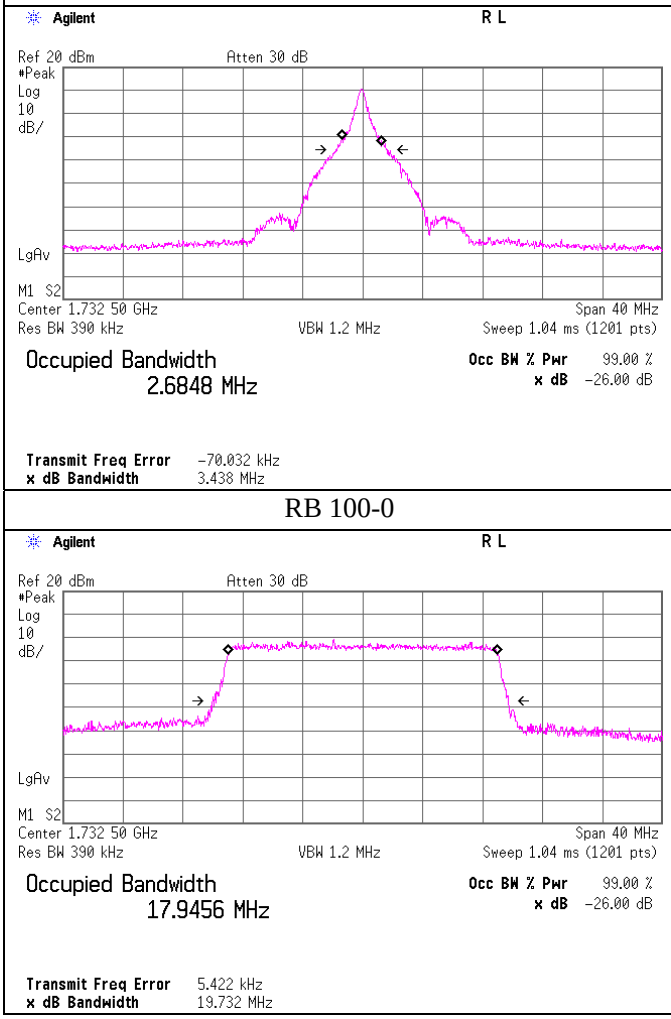
Bandwidth(Conducted)

Band 4 : Normal Power Mode

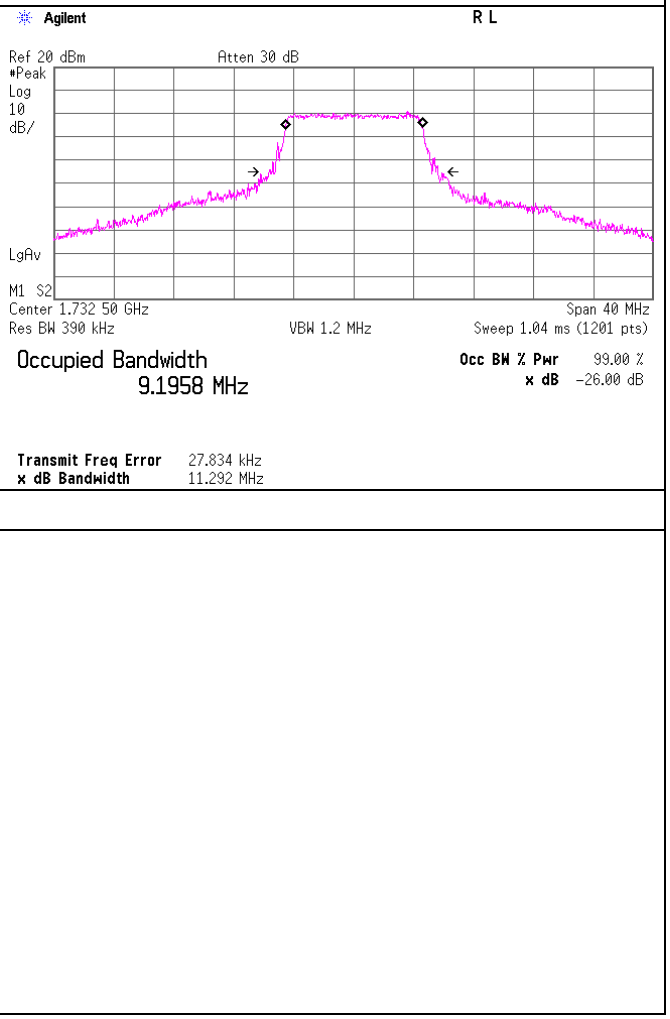
Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	10004954H
Date	03/15/2013
Temperature/ Humidity	21deg. C / 47% RH
Engineer	Yutaka Yoshida
Mode	Transmitting (Tx) LTE(16QAM), BW 20MHz, 1732.5MHz

BW	Mode	UL RB Allocation	UL RB Start	Frequency [MHz]	26dB Bandwidth [MHz]	99% OBW [MHz]
20MHz	16QAM	1	49	1732.5	3.438	2.6848
		50	25		11.292	9.1958
		100	0		19.732	17.9456

RB 1-49



RB 50-25



RB 100-0

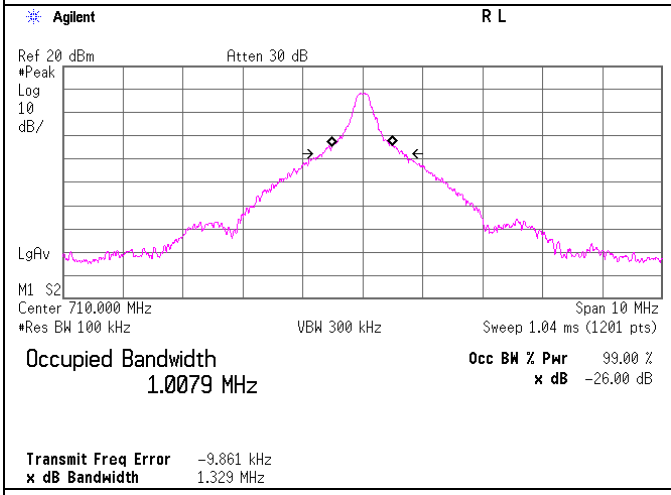
Bandwidth(Conducted)

Band 17

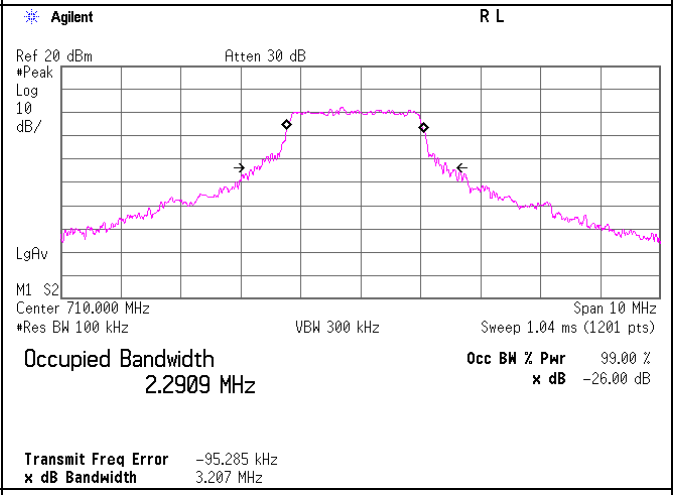
Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	10004954H
Date	03/15/2013
Temperature/ Humidity	21deg. C / 47% RH
Engineer	Yutaka Yoshida
Mode	Transmitting (Tx) LTE(QPSK), BW 5MHz, 710MHz

BW	Mode	UL RB Allocation	UL RB Start	Frequency [MHz]	26dB Bandwidth [MHz]	99% OBW [MHz]
5MHz	QPSK	1	12	710.0	1.329	1.0079
		12	6		3.207	2.2909
		25	0		5.093	4.5126

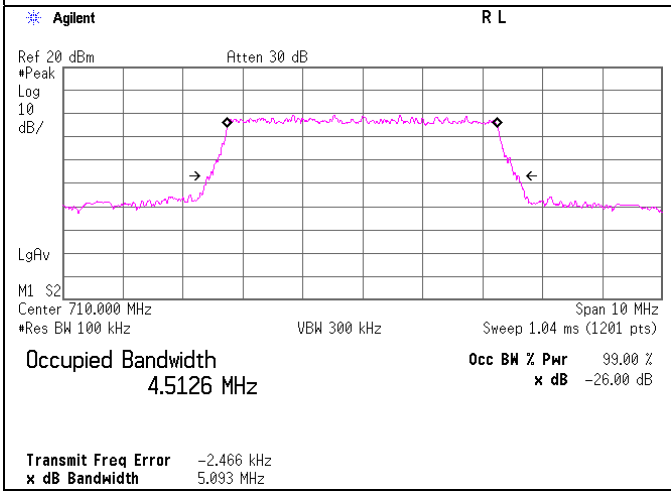
RB 1-12



RB 12-6



RB 25-0



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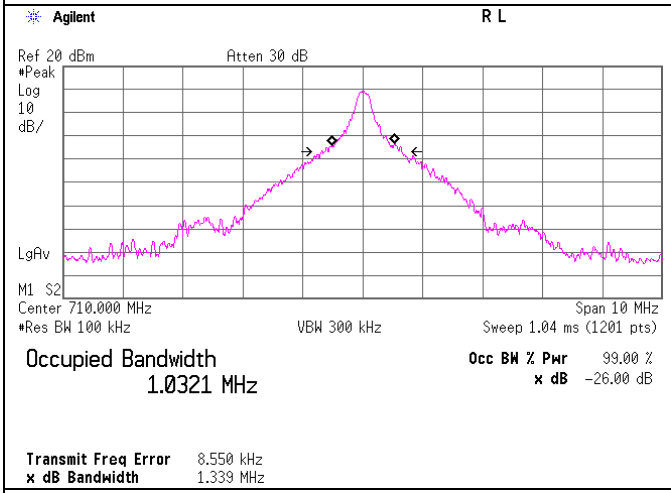
Bandwidth(Conducted)

Band 17

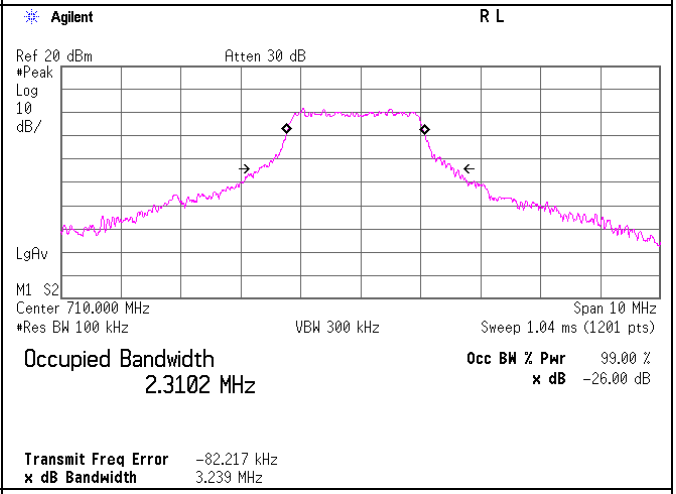
Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	10004954H
Date	03/15/2013
Temperature/ Humidity	21deg. C / 47% RH
Engineer	Yutaka Yoshida
Mode	Transmitting (Tx) LTE(16QAM), BW 5MHz, 710MHz

BW	Mode	UL RB Allocation	UL RB Start	Frequency [MHz]	26dB Bandwidth [MHz]	99% OBW [MHz]
5MHz	16QAM	1	12	710.0	1.339	1.0321
		12	6		3.239	2.3102
		25	0		5.027	4.5163

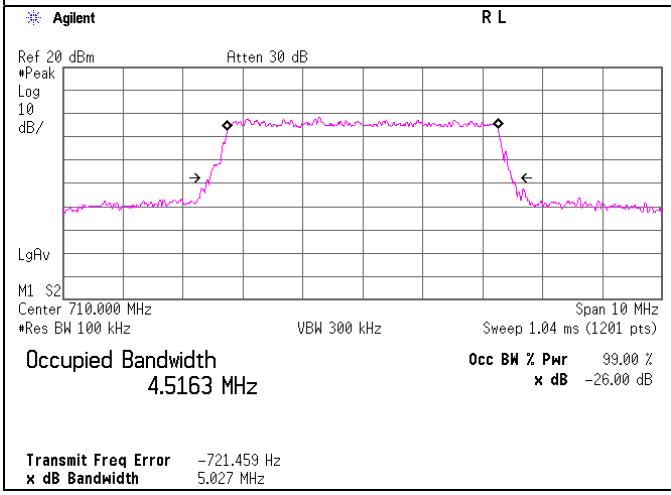
RB 1-12



RB 12-6



RB 25-0



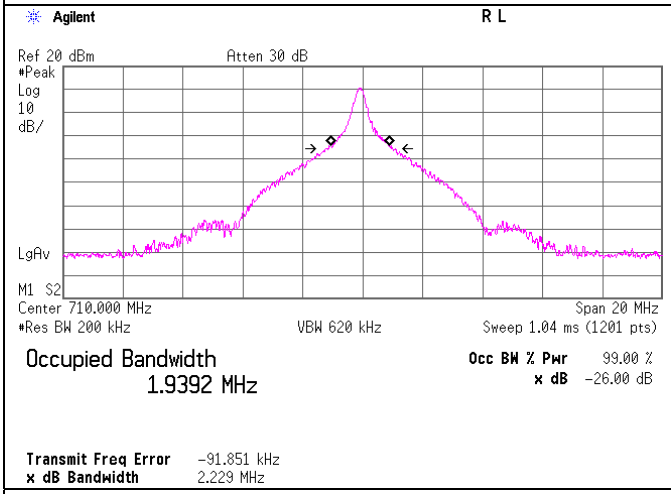
Bandwidth(Conducted)

Band 17

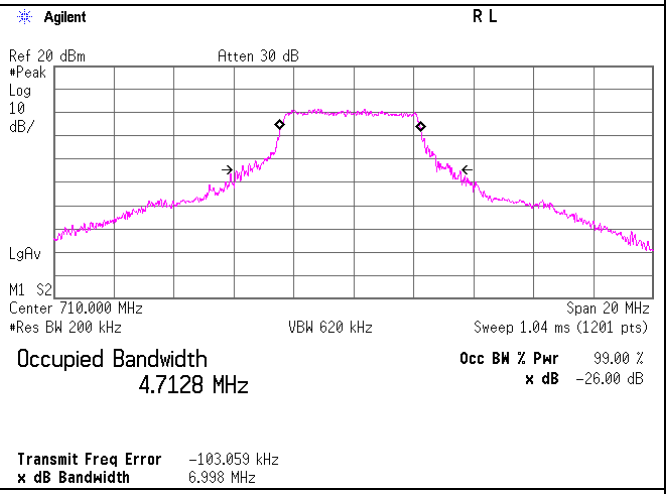
Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	10004954H
Date	03/15/2013
Temperature/ Humidity	21deg. C / 47% RH
Engineer	Yutaka Yoshida
Mode	Transmitting (Tx) LTE(QPSK), BW 10MHz, 710MHz

BW	Mode	UL RB Allocation	UL RB Start	Frequency [MHz]	26dB Bandwidth [MHz]	99% OBW [MHz]
10MHz	QPSK	1	24	710.0	2.229	1.9392
		25	12		6.998	4.7128
		50	0		9.925	8.9647

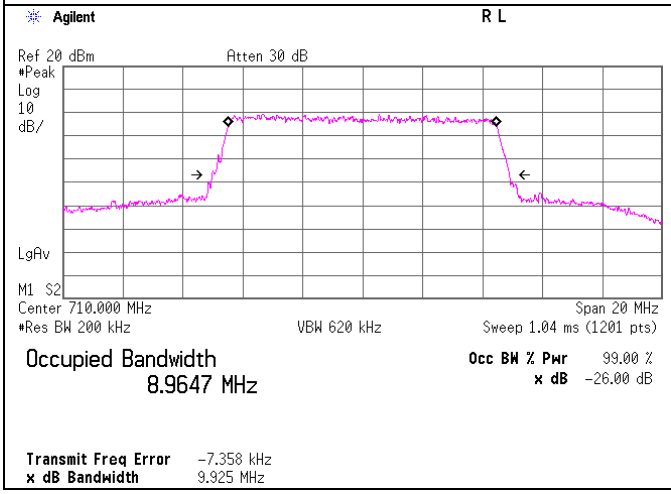
RB 1-24



RB 25-12



RB 50-0



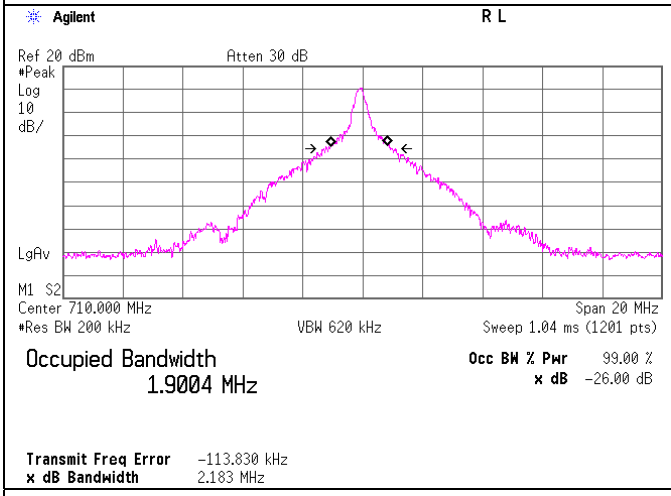
Bandwidth(Conducted)

Band 17

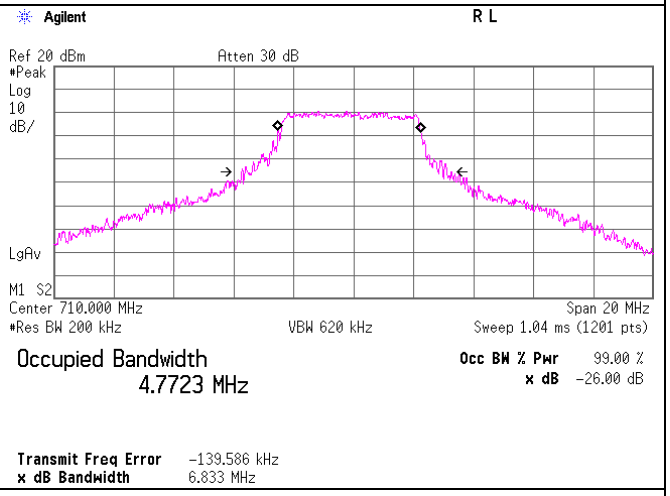
Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	10004954H
Date	03/15/2013
Temperature/ Humidity	21deg. C / 47% RH
Engineer	Yutaka Yoshida
Mode	Transmitting (Tx) LTE(16QAM), BW 10MHz, 710MHz

BW	Mode	UL RB Allocation	UL RB Start	Frequency [MHz]	26dB Bandwidth [MHz]	99% OBW [MHz]
10MHz	16QAM	1	24	710.0	2.183	1.9004
		25	12		6.833	4.7723
		50	0		9.937	8.9669

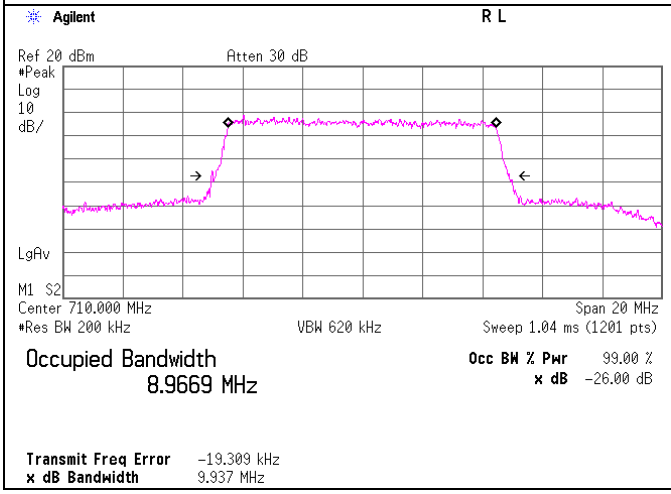
RB 1-24



RB 25-12



RB 50-0



Band-Edge(Conducted)

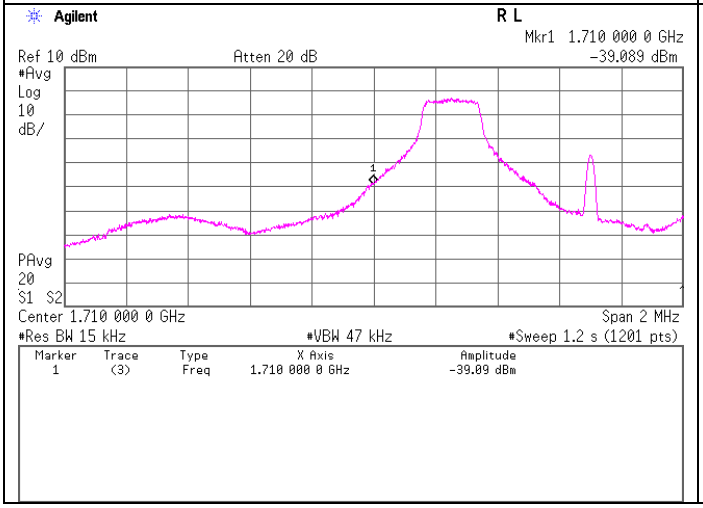
Band 4

Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	10004954H
Date	03/15/2013
Temperature/ Humidity	21deg. C / 47% RH
Engineer	Yutaka Yoshida
Mode	Transmitting (Tx) LTE(QPSK), BW 1.4MHz, 1 RB

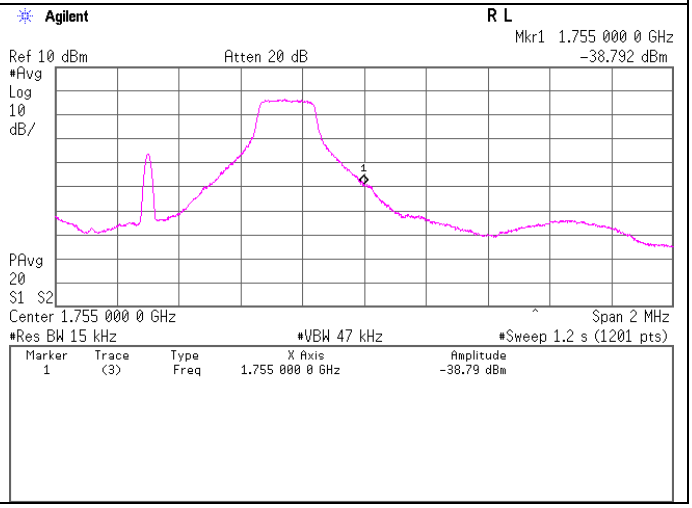
Frequency [MHz]	Reading [dBm]	Atten. [dB]	Cable Loss [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
1710.0000	-39.09	9.96	7.62	-21.51	-13.0	8.51
1755.0000	-38.79	9.96	7.65	-21.18	-13.0	8.18

Sample Calculation : Result = Reading + Atten. + Cable Loss

Low ch (Tx:1710.7MHz) RB 1-0



High ch (Tx:1754.3MHz) RB 1-5



Band-Edge(Conducted)

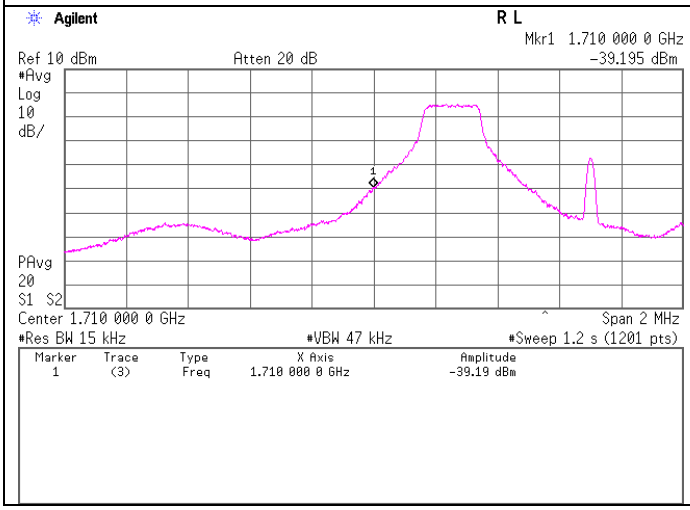
Band 4

Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	10004954H
Date	03/15/2013
Temperature/ Humidity	21deg. C / 47% RH
Engineer	Yutaka Yoshida
Mode	Transmitting (Tx) LTE(16QAM), BW 1.4MHz, 1 RB

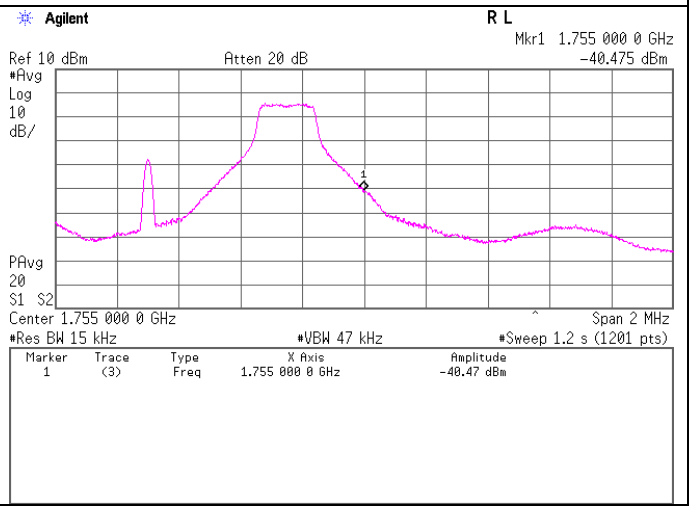
Frequency [MHz]	Reading [dBm]	Atten. [dB]	Cable Loss [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
1710.0000	-39.19	9.96	7.62	-21.61	-13.0	8.61
1755.0000	-40.47	9.96	7.65	-22.86	-13.0	9.86

Sample Calculation : Result = Reading + Atten. + Cable Loss

Low ch (Tx:1710.7MHz)
RB 1-0



High ch (Tx:1754.3MHz)
RB 1-5



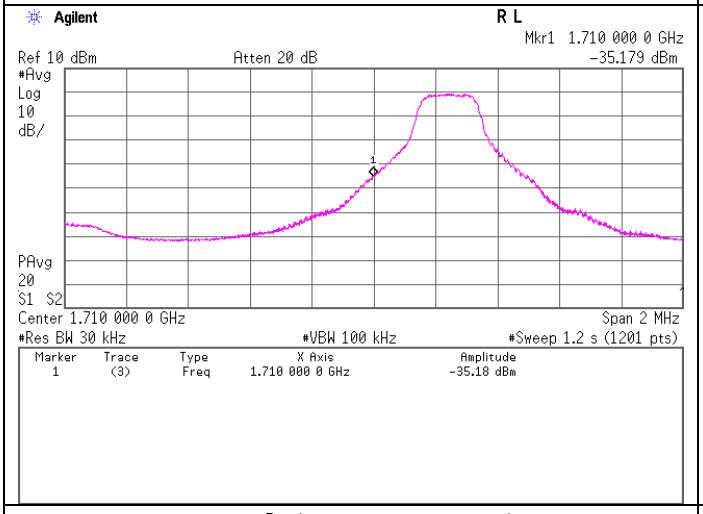
Band-Edge(Conducted)

Band 4

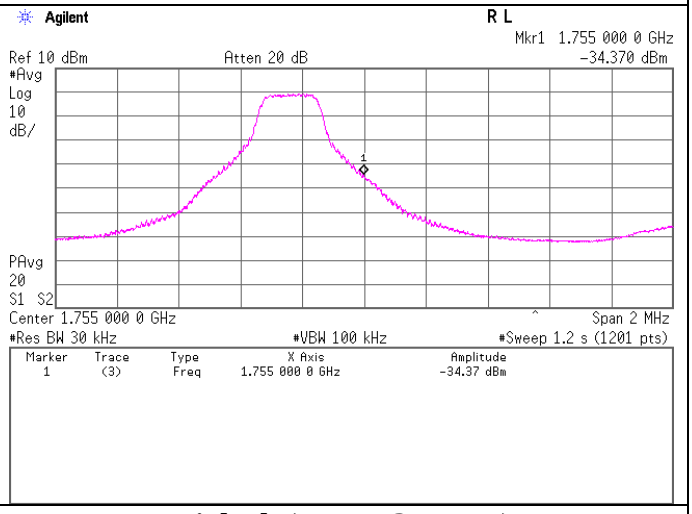
Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	10004954H
Date	03/15/2013
Temperature/ Humidity	21deg. C / 47% RH
Engineer	Yutaka Yoshida
Mode	Transmitting (Tx) LTE(QPSK), BW 3MHz, 1 RB / 15 RB

RB	Frequency [MHz]	Reading [dBm]	Atten. [dB]	Cable Loss [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
1 RB	1710.0000	-35.18	9.96	7.62	-17.60	-13.0	4.60
	1755.0000	-34.37	9.96	7.65	-16.76	-13.0	3.76
15 RB	1710.0000	-40.76	9.96	7.62	-23.18	-13.0	10.18
	1755.0000	-43.19	9.96	7.65	-25.58	-13.0	12.58

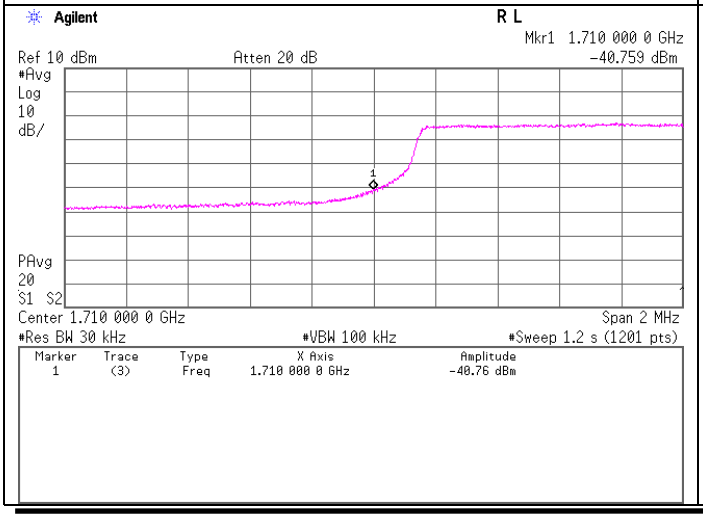
Low ch (Tx:1711.5MHz)
RB 1-0



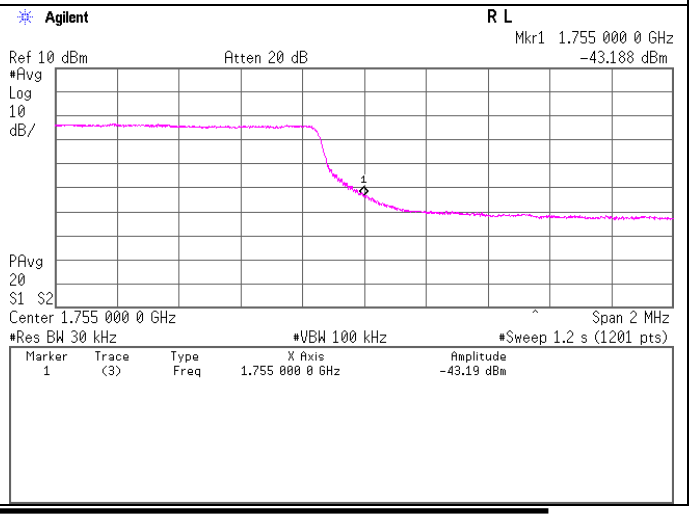
High ch (Tx:1753.5MHz)
RB 1-14



Low ch (Tx:1711.5MHz)
RB 15-0



High ch (Tx:1753.5MHz)
RB 15-0



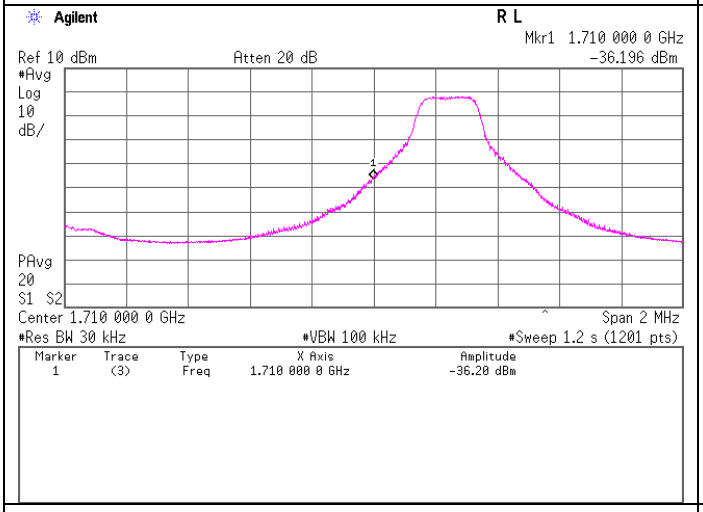
Band-Edge(Conducted)

Band 4

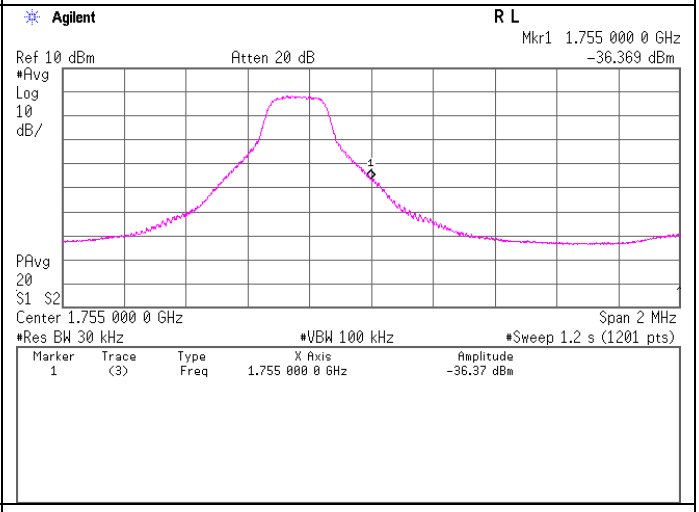
Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	10004954H
Date	03/15/2013
Temperature/ Humidity	21deg. C / 47% RH
Engineer	Yutaka Yoshida
Mode	Transmitting (Tx) LTE(16QAM), BW 3MHz, 1 RB / 15 RB

RB	Frequency [MHz]	Reading [dBm]	Atten. [dB]	Cable Loss [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
1 RB	1710.0000	-36.20	9.96	7.62	-18.62	-13.0	5.62
	1755.0000	-36.37	9.96	7.65	-18.76	-13.0	5.76
15 RB	1710.0000	-41.63	9.96	7.62	-24.05	-13.0	11.05
	1755.0000	-43.90	9.96	7.65	-26.29	-13.0	13.29

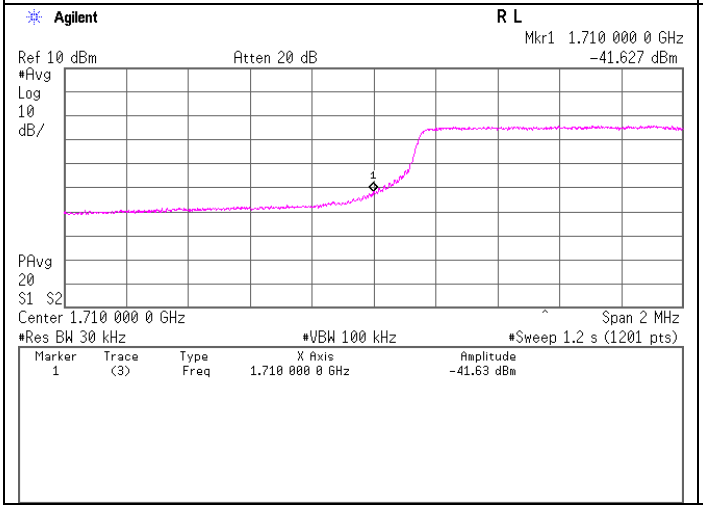
Low ch (Tx:1711.5MHz)
RB 1-0



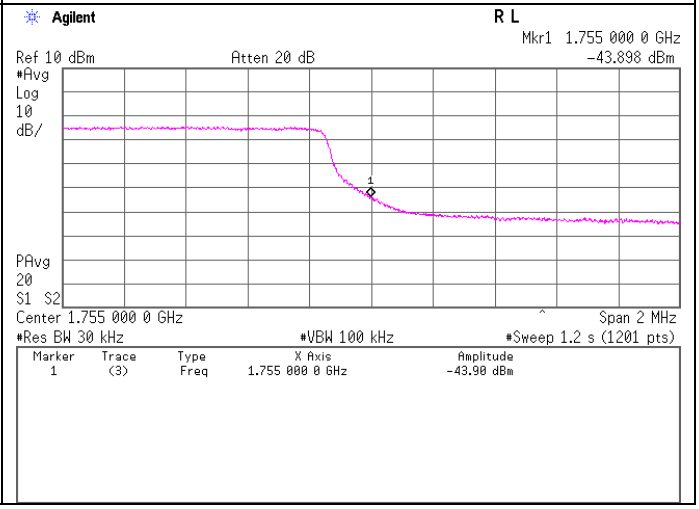
High ch (Tx:1753.5MHz)
RB 1-14



Low ch (Tx:1711.5MHz)
RB 15-0



High ch (Tx:1753.5MHz)
RB 15-0



Band-Edge(Conducted)

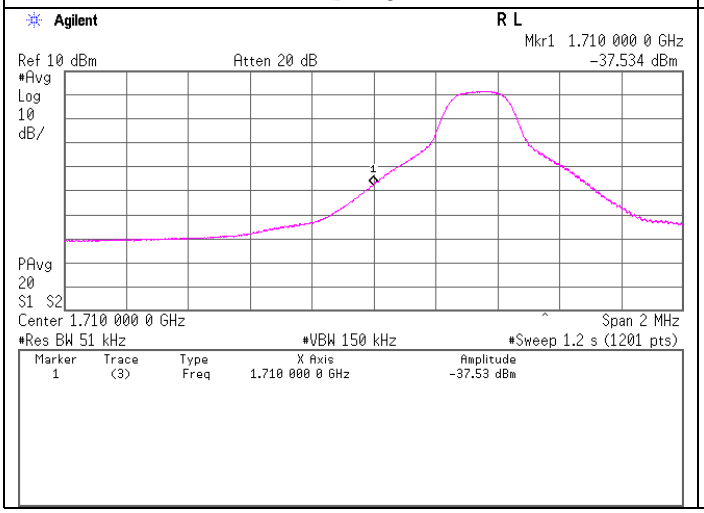
Band 4

Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	10004954H
Date	03/15/2013
Temperature/ Humidity	21deg. C / 47% RH
Engineer	Yutaka Yoshida
Mode	Transmitting (Tx) LTE(QPSK), BW 5MHz, 1 RB

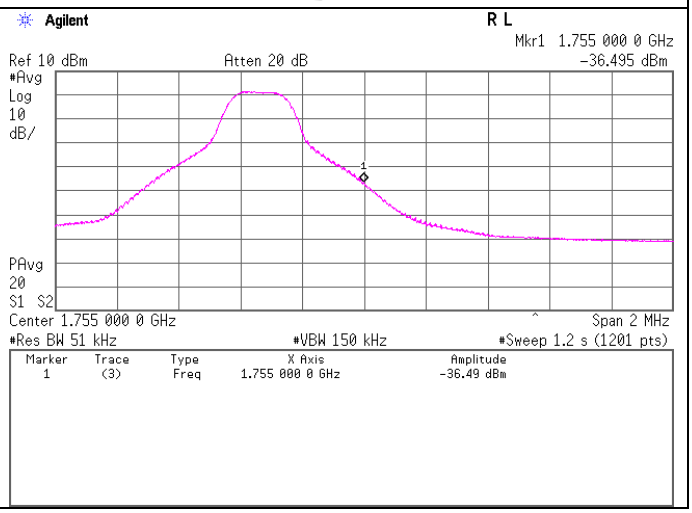
Frequency [MHz]	Reading [dBm]	Atten. [dB]	Cable Loss [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
1710.0000	-37.53	9.96	7.62	-19.95	-13.0	6.95
1755.0000	-36.49	9.96	7.65	-18.88	-13.0	5.88

Sample Calculation : Result = Reading + Atten. + Cable Loss

Low ch (Tx:1712.5MHz) RB 1-0



High ch (Tx:1752.5MHz) RB 1-24



Band-Edge(Conducted)

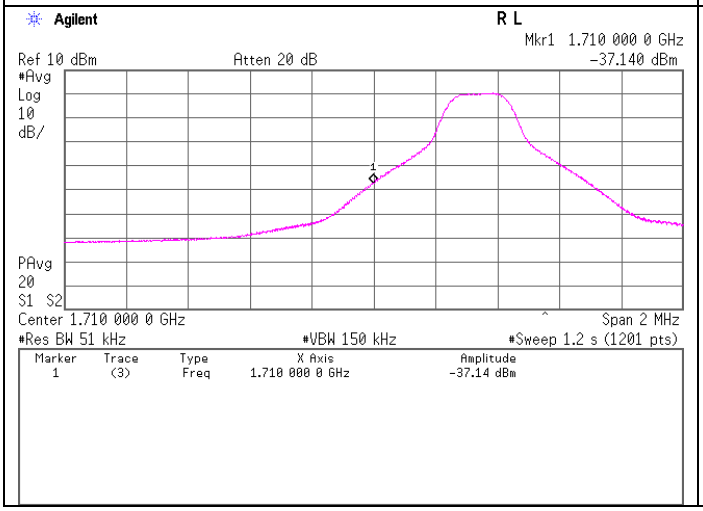
Band 4

Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	10004954H
Date	03/15/2013
Temperature/ Humidity	21deg. C / 47% RH
Engineer	Yutaka Yoshida
Mode	Transmitting (Tx) LTE(16QAM), BW 5MHz, 1 RB

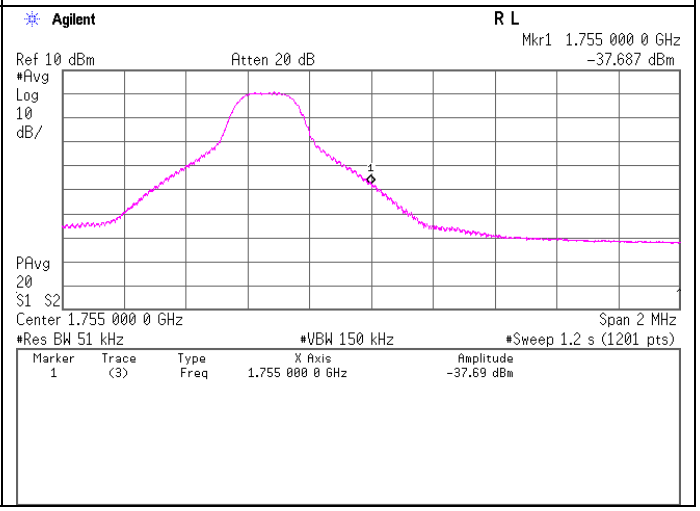
Frequency [MHz]	Reading [dBm]	Atten. [dB]	Cable Loss [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
1710.0000	-37.14	9.96	7.62	-19.56	-13.0	6.56
1755.0000	-37.69	9.96	7.65	-20.08	-13.0	7.08

Sample Calculation : Result = Reading + Atten. + Cable Loss

Low ch (Tx:1712.5MHz)
RB 1-0



High ch (Tx:1752.5MHz)
RB 1-24



Band-Edge(Conducted)

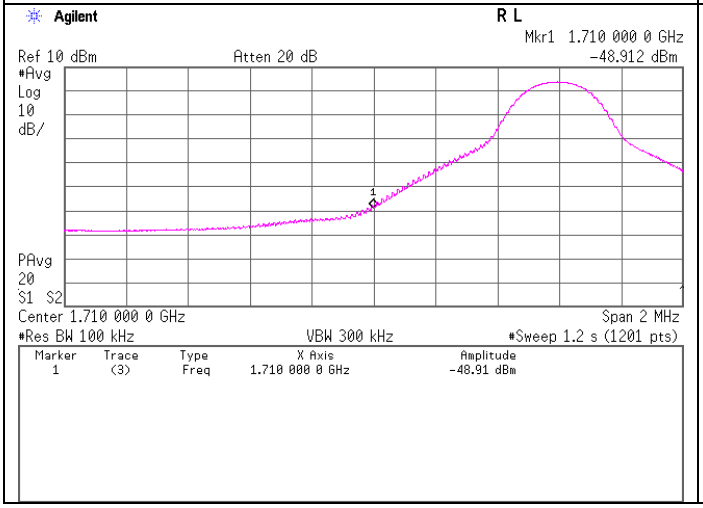
Band 4

Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	10004954H
Date	03/15/2013
Temperature/ Humidity	21deg. C / 47% RH
Engineer	Yutaka Yoshida
Mode	Transmitting (Tx) LTE(QPSK), BW 10MHz, 1 RB

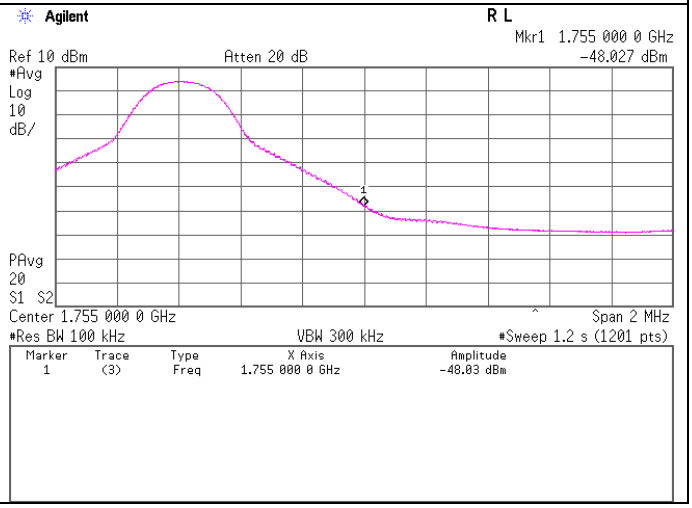
Frequency [MHz]	Reading [dBm]	Atten. [dB]	Cable Loss [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
1710.0000	-48.91	9.96	7.62	-31.33	-13.0	18.33
1755.0000	-48.03	9.96	7.65	-30.42	-13.0	17.42

Sample Calculation : Result = Reading + Atten. + Cable Loss

Low ch (Tx:1715.0MHz) RB 1-0



High ch (Tx:1750.0MHz) RB 1-49



Band-Edge(Conducted)

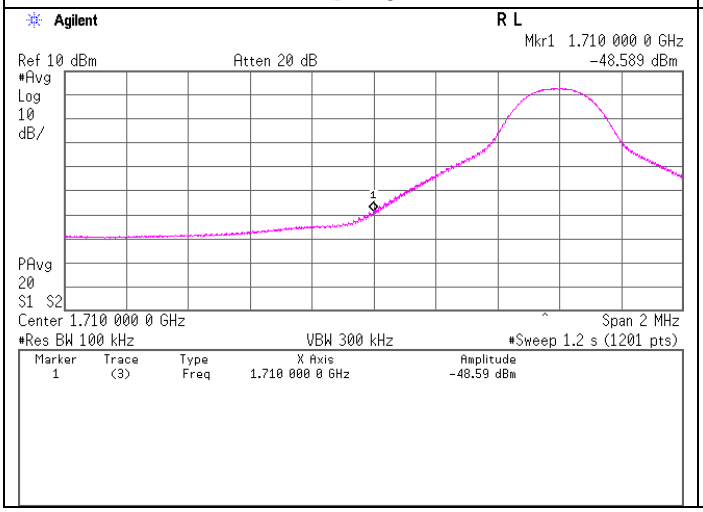
Band 4

Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	10004954H
Date	03/15/2013
Temperature/ Humidity	21deg. C / 47% RH
Engineer	Yutaka Yoshida
Mode	Transmitting (Tx) LTE(16QAM), BW 10MHz, 1 RB

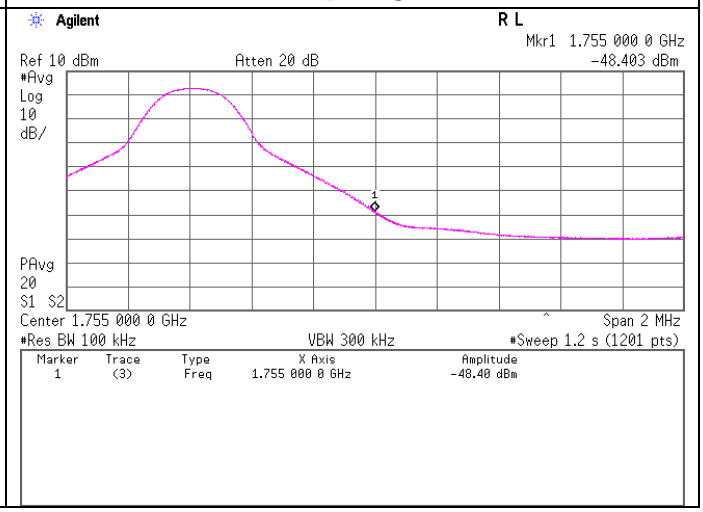
Frequency [MHz]	Reading [dBm]	Atten. [dB]	Cable Loss [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
1710.0000	-48.59	9.96	7.62	-31.01	-13.0	18.01
1755.0000	-48.40	9.96	7.65	-30.79	-13.0	17.79

Sample Calculation : Result = Reading + Atten. + Cable Loss

Low ch (Tx:1715.0MHz) RB 1-0



High ch (Tx:1750.0MHz) RB 1-49



Band-Edge(Conducted)

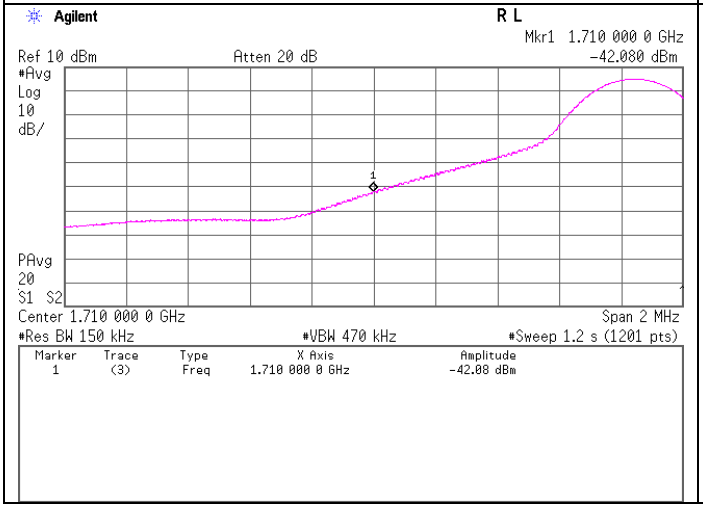
Band 4

Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	10004954H
Date	03/15/2013
Temperature/ Humidity	21deg. C / 47% RH
Engineer	Yutaka Yoshida
Mode	Transmitting (Tx) LTE(QPSK), BW 15MHz, 1 RB

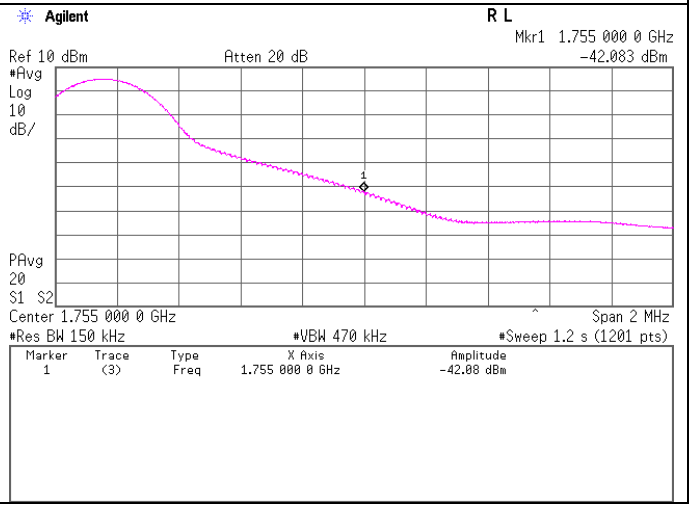
Frequency [MHz]	Reading [dBm]	Atten. [dB]	Cable Loss [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
1710.0000	-42.08	9.96	7.62	-24.50	-13.0	11.50
1755.0000	-42.08	9.96	7.65	-24.47	-13.0	11.47

Sample Calculation : Result = Reading + Atten. + Cable Loss

Low ch (Tx:1717.5MHz) RB 1-0



High ch (Tx:1747.5MHz) RB 1-74



Band-Edge(Conducted)

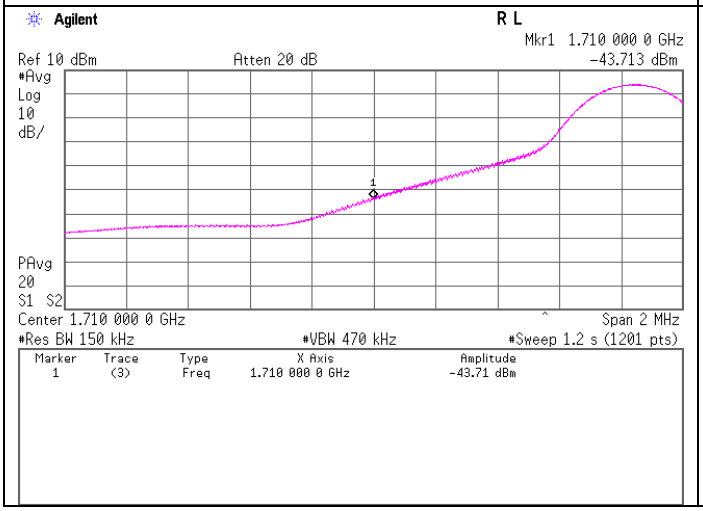
Band 4

Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	10004954H
Date	03/15/2013
Temperature/ Humidity	21deg. C / 47% RH
Engineer	Yutaka Yoshida
Mode	Transmitting (Tx) LTE(16QAM), BW 15MHz, 1 RB

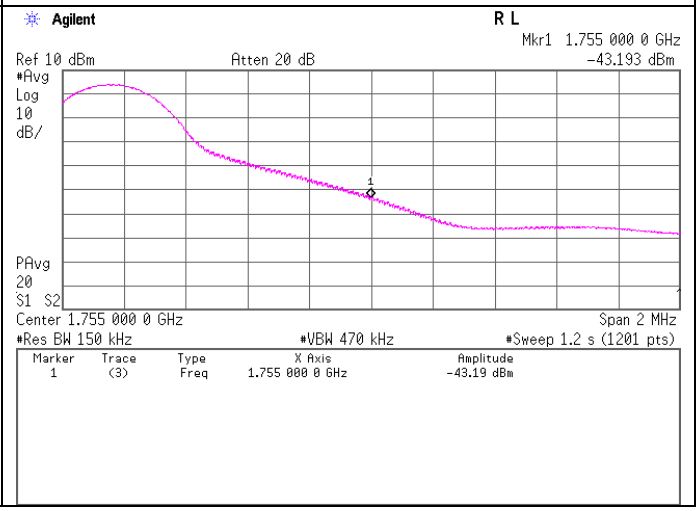
Frequency [MHz]	Reading [dBm]	Atten. [dB]	Cable Loss [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
1710.0000	-43.71	9.96	7.62	-26.13	-13.0	13.13
1755.0000	-43.19	9.96	7.65	-25.58	-13.0	12.58

Sample Calculation : Result = Reading + Atten. + Cable Loss

Low ch (Tx:1717.5MHz)
RB 1-0



High ch (Tx:1747.5MHz)
RB 1-74



Band-Edge(Conducted)

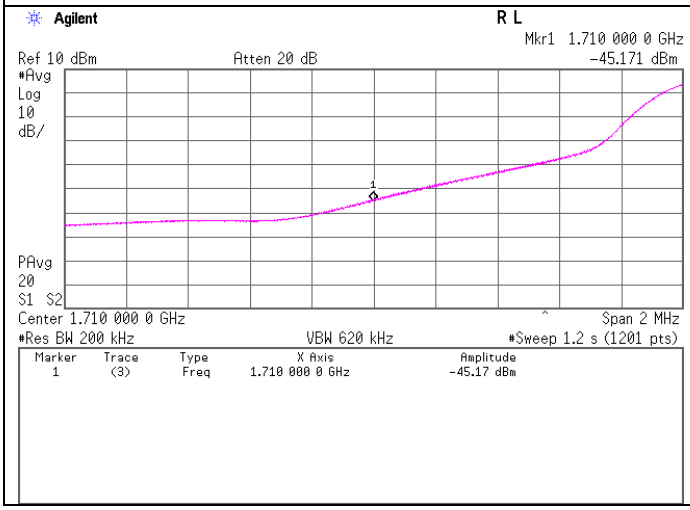
Band 4

Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	10004954H
Date	03/15/2013
Temperature/ Humidity	21deg. C / 47% RH
Engineer	Yutaka Yoshida
Mode	Transmitting (Tx) LTE(QPSK), BW 20MHz, 1 RB

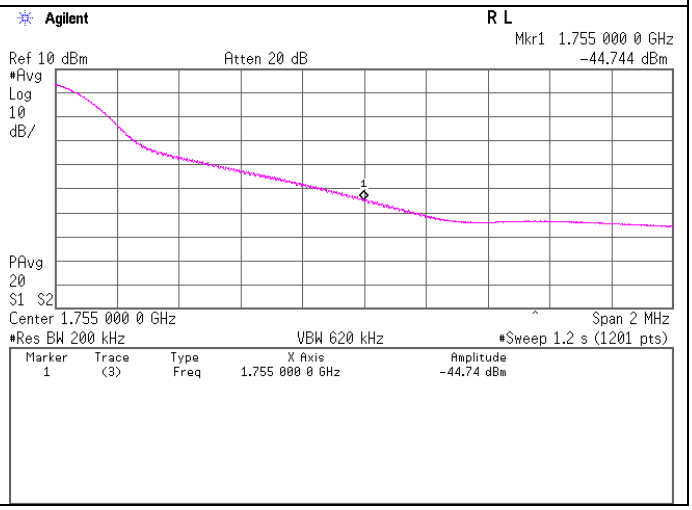
Frequency [MHz]	Reading [dBm]	Atten. [dB]	Cable Loss [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
1710.0000	-45.17	9.96	7.62	-27.59	-13.0	14.59
1755.0000	-44.74	9.96	7.65	-27.13	-13.0	14.13

Sample Calculation : Result = Reading + Atten. + Cable Loss

Low ch (Tx:1720.0MHz) RB 1-0



High ch (Tx:1745.0MHz) RB 1-99



Band-Edge(Conducted)

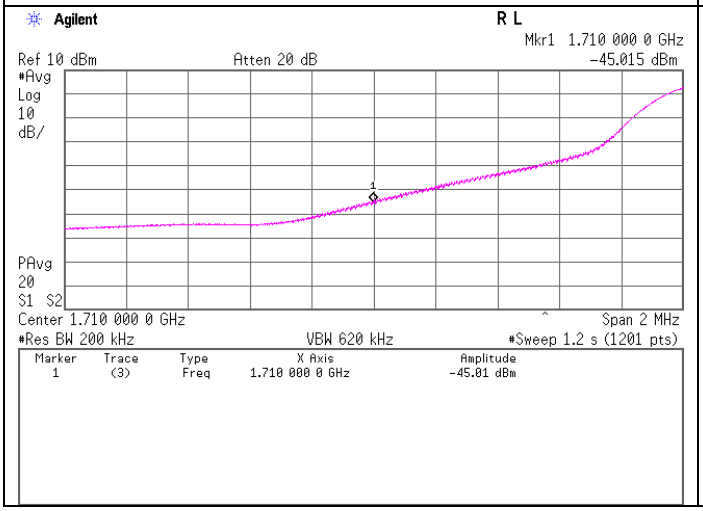
Band 4

Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	10004954H
Date	03/15/2013
Temperature/ Humidity	21deg. C / 47% RH
Engineer	Yutaka Yoshida
Mode	Transmitting (Tx) LTE(16QAM), BW 20MHz, 1 RB

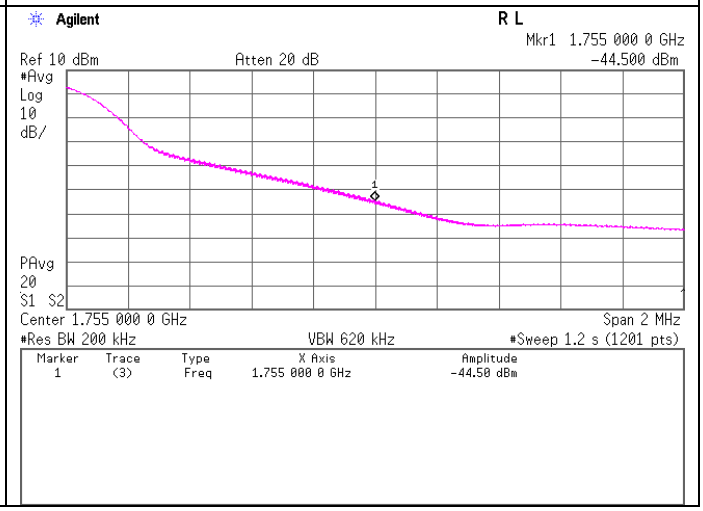
Frequency [MHz]	Reading [dBm]	Atten. [dB]	Cable Loss [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
1710.0000	-45.02	9.96	7.62	-27.44	-13.0	14.44
1755.0000	-44.50	9.96	7.65	-26.89	-13.0	13.89

Sample Calculation : Result = Reading + Atten. + Cable Loss

Low ch (Tx:1720.0MHz)
RB 1-0



High ch (Tx:1745.0MHz)
RB 1-99



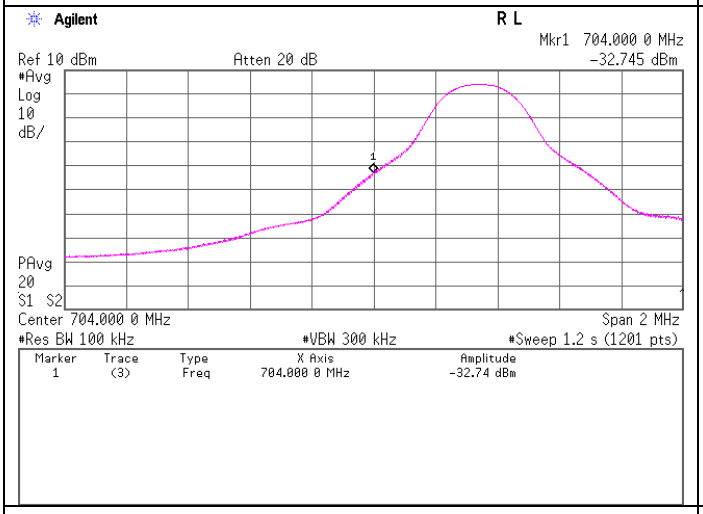
Band-Edge(Conducted)

Band 17

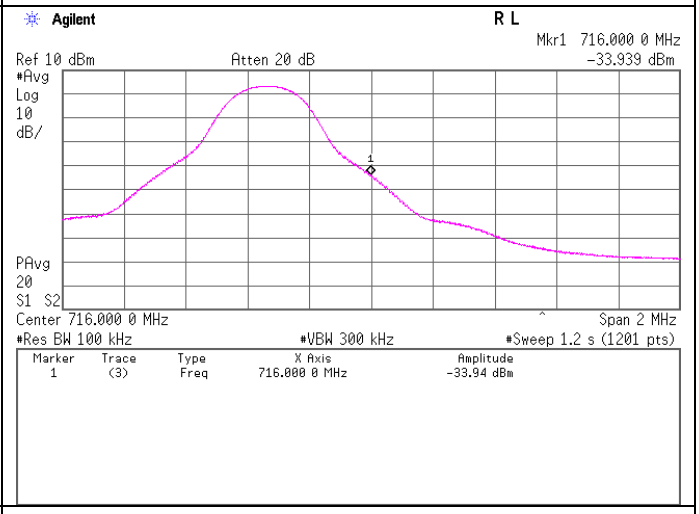
Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	10004954H
Date	03/15/2013
Temperature/ Humidity	21deg. C / 47% RH
Engineer	Yutaka Yoshida
Mode	Transmitting (Tx) LTE(QPSK), BW 5MHz, 1 RB / 25 RB

RB	Frequency [MHz]	Reading [dBm]	Atten. [dB]	Cable Loss [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
1 RB	704.0000	-32.75	9.94	7.05	-15.76	-13.0	2.76
	716.0000	-33.94	9.94	7.05	-16.95	-13.0	3.95
25 RB	704.0000	-40.02	9.94	7.05	-23.03	-13.0	10.03
	716.0000	-40.97	9.94	7.05	-23.98	-13.0	10.98

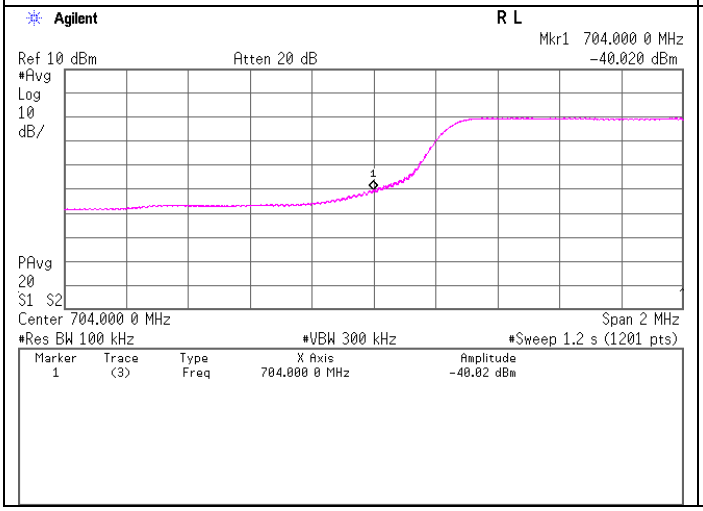
Low ch (Tx:706.5MHz)
RB 1-0



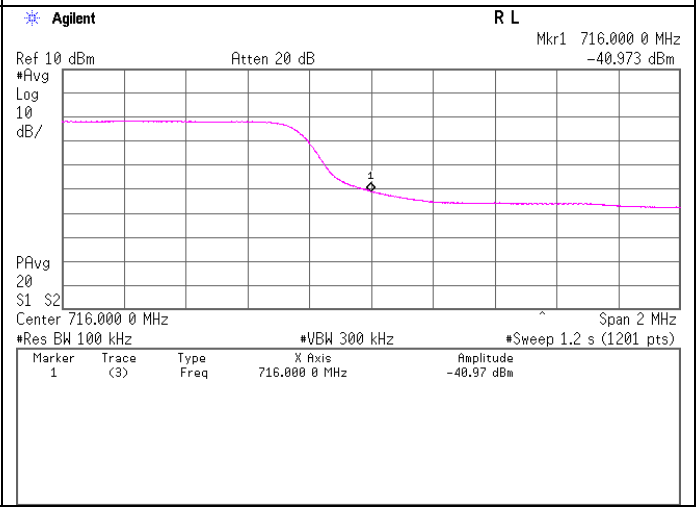
High ch (Tx:713.5MHz)
RB 1-24



Low ch (Tx:706.5MHz)
RB 25-0



High ch (Tx:713.5MHz)
RB 25-0



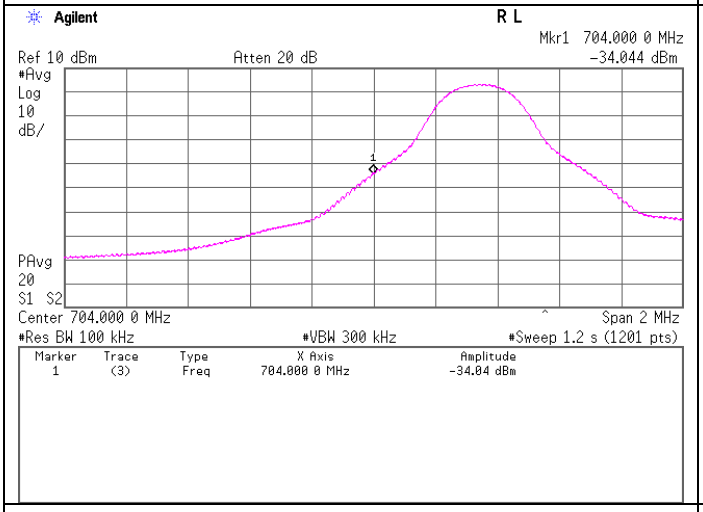
Band-Edge(Conducted)

Band 17

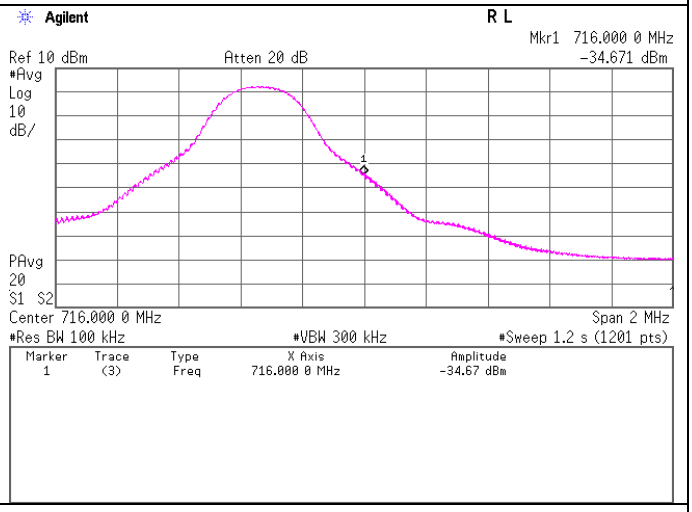
Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	10004954H
Date	03/15/2013
Temperature/ Humidity	21deg. C / 47% RH
Engineer	Yutaka Yoshida
Mode	Transmitting (Tx) LTE(16QAM), BW 5MHz, 1 RB / 25 RB

RB	Frequency [MHz]	Reading [dBm]	Atten. [dB]	Cable Loss [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
1 RB	704.0000	-34.04	9.94	7.05	-17.05	-13.0	4.05
	716.0000	-34.67	9.94	7.05	-17.68	-13.0	4.68
25 RB	704.0000	-41.43	9.94	7.05	-24.44	-13.0	11.44
	716.0000	-41.76	9.94	7.05	-24.77	-13.0	11.77

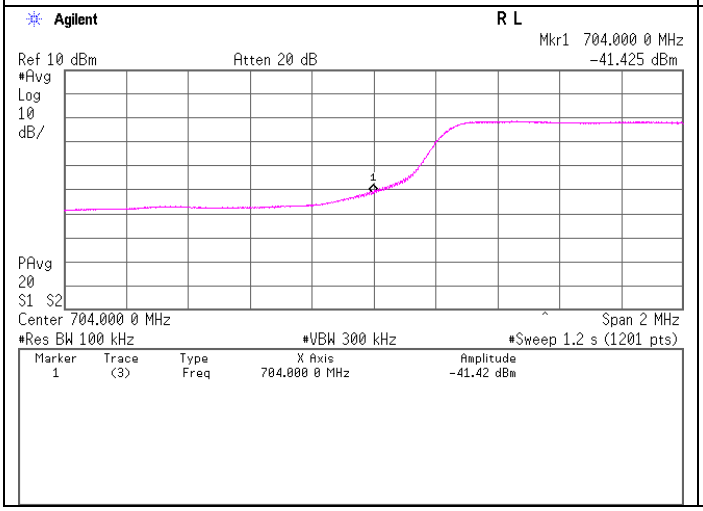
Low ch (Tx:706.5MHz) RB 1-0



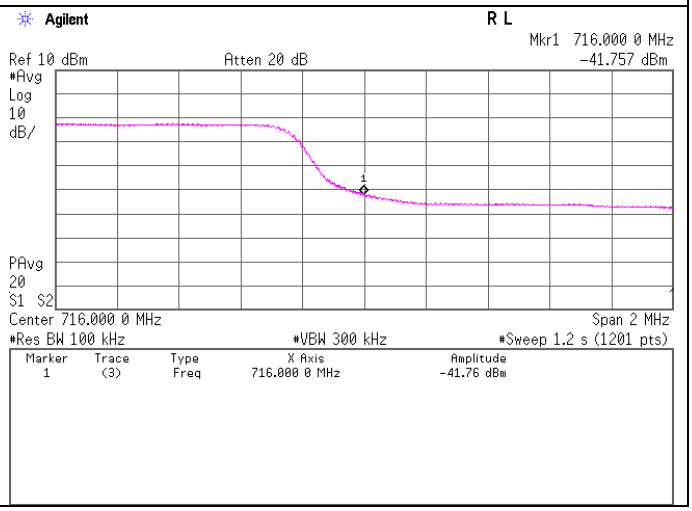
High ch (Tx:713.5MHz) RB 1-24



Low ch (Tx:706.5MHz) RB 25-0



High ch (Tx:713.5MHz) RB 25-0



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Band-Edge(Conducted)

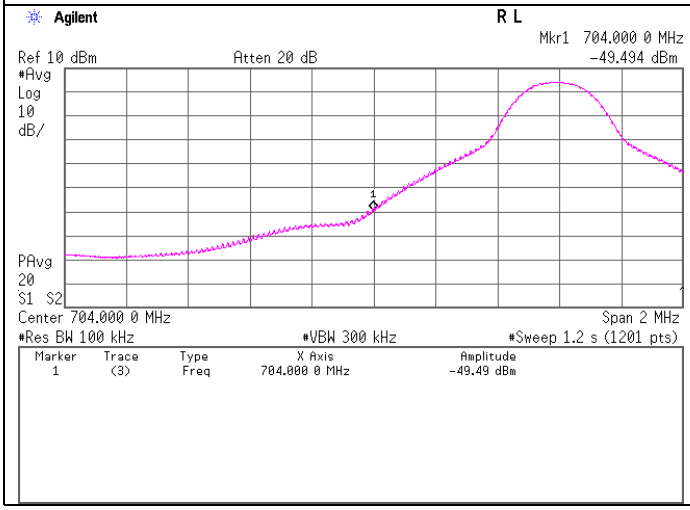
Band 17

Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	10004954H
Date	03/15/2013
Temperature/ Humidity	21deg. C / 47% RH
Engineer	Yutaka Yoshida
Mode	Transmitting (Tx) LTE(QPSK), BW 10MHz, 1 RB

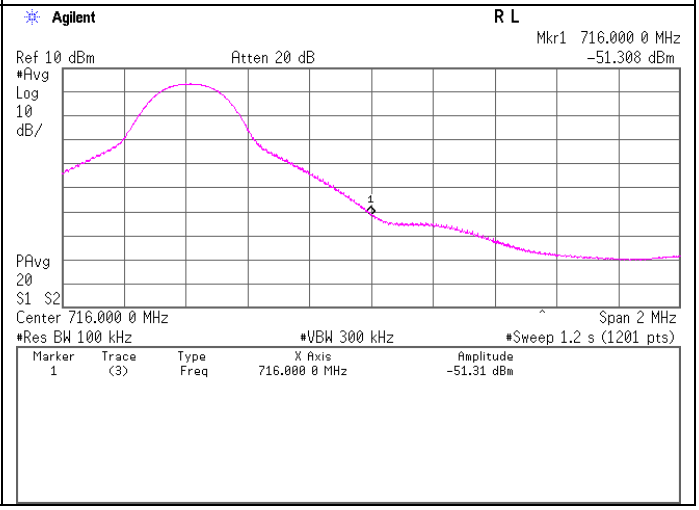
Frequency [MHz]	Reading [dBm]	Atten. [dB]	Cable Loss [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
704.0000	-49.49	9.94	7.05	-32.50	-13.0	19.50
716.0000	-51.31	9.94	7.05	-34.32	-13.0	21.32

Sample Calculation : Result = Reading + Atten. + Cable Loss

Low ch (Tx:709.0MHz)
RB 1-0



High ch (Tx:711MHz)
RB 1-49



Band-Edge(Conducted)

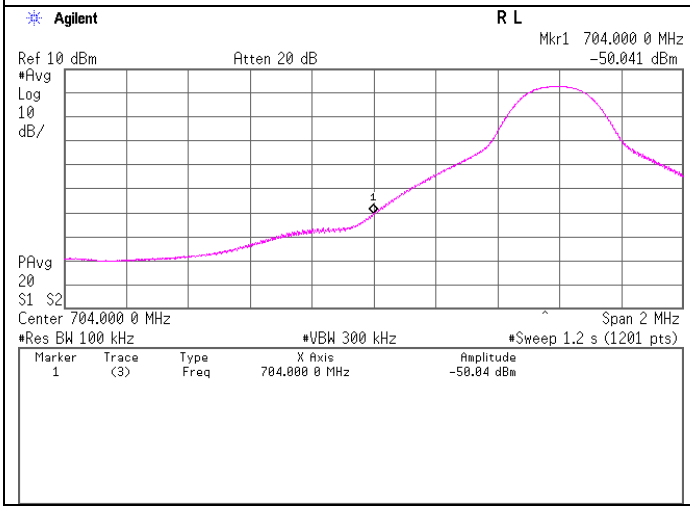
Band 17

Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	10004954H
Date	03/15/2013
Temperature/ Humidity	21deg. C / 47% RH
Engineer	Yutaka Yoshida
Mode	Transmitting (Tx) LTE(16QAM), BW 10MHz, 1 RB

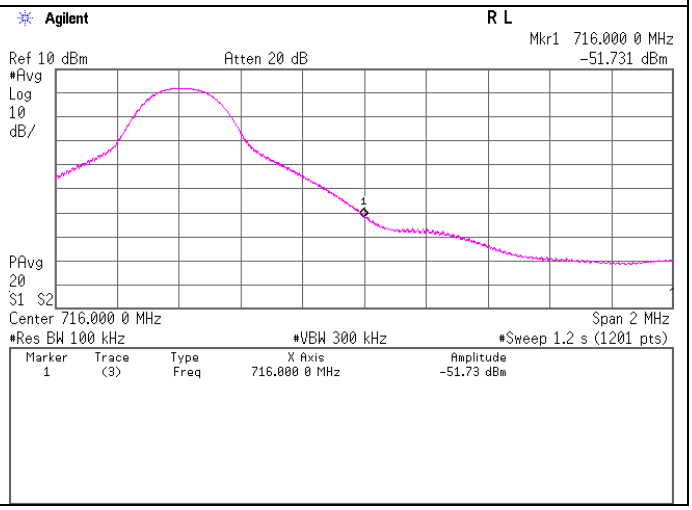
Frequency [MHz]	Reading [dBm]	Atten. [dB]	Cable Loss [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
704.0000	-50.04	9.94	7.05	-33.05	-13.0	20.05
716.0000	-51.73	9.94	7.05	-34.74	-13.0	21.74

Sample Calculation : Result = Reading + Atten. + Cable Loss

Low ch (Tx:709.0MHz)
RB 1-0



High ch (Tx:711MHz)
RB 1-49



Band Edge (Radiated)

Band 4

Report No.	10004954H
Test place	Head Office EMC Lab.
Semi Anechoic Chamber	No.2
Date	03/22/2013
Temperature / Humidity	22 deg. C / 35 % RH
Engineer	Katsunori Okai
Mode	Transmitting (Tx) LTE(QPSK), BW 3MHz

[1 RB]

Frequency	Rx SA/TR Reading [dBuV]		Tx SG Reading [dBm]		Tx Cable Loss	Tx Ant. Gain	Tx Ant. Atten. Loss	Result (EIRP) [dBm]		Limit (EIRP) [dBm]	Margin [dB]		Horizontal		Vertical		Remarks
													Rx Ant. Height	Turn Table	Rx Ant. Height	Turn Table	
[MHz]	HOR	VER	HOR	VER	[dB]	[dBi]	[dB]	HOR	VER		HOR	VER	[cm]	[deg.]	[cm]	[deg.]	
1710.00	54.0	54.2	-21.9	-23.4	3.2	9.4	0.0	-15.7	-17.2	-13.0	2.7	4.2	103	246	100	26	RB 1-0
1755.00	53.4	51.4	-22.3	-26.1	3.2	9.6	0.0	-15.9	-19.7	-13.0	2.9	6.7	103	246	100	26	RB 1-14

Calculation Result = SG Reading - Tx Cable Loss + Tx Antenna Gain - Tx Antenna Attenuator Loss
Rx-ANTENNA : Biconical Antenna(30M-300MHz), Logperiodic Antenna(300M-1000MHz), Horn Antenna(1G-40GHz)
Tx-ANTENNA : 120MHz tuned Dipole Antenna(30M-120MHz), Dipole Antenna(120M-1000MHz), Horn Antenna(1G-40GHz)
Other frequency noises omitted in this report were not seen or had enough margin (more than 20dB).
Detector : S/A RMS Average (RBW: 30kHz , VBW: 100kHz)

[100% RB allocation]

Frequency	Rx SA/TR Reading [dBuV]		Tx SG Reading [dBm]		Tx Cable Loss	Tx Ant. Gain	Tx Ant. Atten. Loss	Result (EIRP) [dBm]		Limit (EIRP) [dBm]	Margin [dB]		Horizontal		Vertical		Remarks
													Rx Ant. Height	Turn Table	Rx Ant. Height	Turn Table	
[MHz]	HOR	VER	HOR	VER	[dB]	[dBi]	[dB]	HOR	VER		HOR	VER	[cm]	[deg.]	[cm]	[deg.]	
1710.00	47.9	46.6	-28.0	-31.0	3.2	9.4	0.0	-21.8	-24.8	-13.0	8.8	11.8	103	246	100	26	RB 15-0
1755.00	45.0	42.7	-30.7	-34.8	3.2	9.6	0.0	-24.3	-28.4	-13.0	11.3	15.4	103	246	100	26	RB 15-0

Calculation Result = SG Reading - Tx Cable Loss + Tx Antenna Gain - Tx Antenna Attenuator Loss
Rx-ANTENNA : Biconical Antenna(30M-300MHz), Logperiodic Antenna(300M-1000MHz), Horn Antenna(1G-40GHz)
Tx-ANTENNA : 120MHz tuned Dipole Antenna(30M-120MHz), Dipole Antenna(120M-1000MHz), Horn Antenna(1G-40GHz)
Other frequency noises omitted in this report were not seen or had enough margin (more than 20dB).
Detector : S/A RMS Average (RBW: 30kHz , VBW: 100kHz)

Band Edge (Radiated)

Band 4

Report No.	10004954H
Test place	Head Office EMC Lab.
Semi Anechoic Chamber	No.2
Date	03/22/2013
Temperature / Humidity	22 deg. C / 35 % RH
Engineer	Katsunori Okai
Mode	Transmitting (Tx) LTE(16QAM), BW 3MHz

[1 RB]

Frequency	Rx SA/TR Reading [dBuV]		Tx SG Reading [dBm]		Tx Cable Loss	Tx Ant. Gain	Tx Ant. Atten. Loss	Result (EIRP) [dBm]		Limit (EIRP) [dBm]	Margin [dB]		Horizontal		Vertical		Remarks
													Rx Ant. Height	Turn Table	Rx Ant. Height	Turn Table	
[MHz]	HOR	VER	HOR	VER	[dB]	[dBi]	[dB]	HOR	VER		HOR	VER	[cm]	[deg.]	[cm]	[deg.]	
1710.00	51.4	50.9	-24.5	-26.7	3.2	9.4	0.0	-18.3	-20.5	-13.0	5.3	7.5	103	246	100	26	RB 1-0
1755.00	51.2	49.7	-24.5	-27.8	3.2	9.6	0.0	-18.1	-21.4	-13.0	5.1	8.4	103	246	100	26	RB 1-14

Calculation Result = SG Reading - Tx Cable Loss + Tx Antenna Gain - Tx Antenna Attenuator Loss
Rx-ANTENNA : Biconical Antenna(30M-300MHz), Logperiodic Antenna(300M-1000MHz), Horn Antenna(1G-40GHz)
Tx-ANTENNA : 120MHz tuned Dipole Antenna(30M-120MHz), Dipole Antenna(120M-1000MHz), Horn Antenna(1G-40GHz)
Other frequency noises omitted in this report were not seen or had enough margin (more than 20dB).
Detector : S/A RMS Average (RBW: 30kHz , VBW: 100kHz)

[100% RB allocation]

Frequency	Rx SA/TR Reading [dBuV]		Tx SG Reading [dBm]		Tx Cable Loss	Tx Ant. Gain	Tx Ant. Atten. Loss	Result (EIRP) [dBm]		Limit (EIRP) [dBm]	Margin [dB]		Horizontal		Vertical		Remarks
													Rx Ant. Height	Turn Table	Rx Ant. Height	Turn Table	
[MHz]	HOR	VER	HOR	VER	[dB]	[dBi]	[dB]	HOR	VER		HOR	VER	[cm]	[deg.]	[cm]	[deg.]	
1710.00	47.3	45.4	-28.6	-32.2	3.2	9.4	0.0	-22.4	-26.0	-13.0	9.4	13.0	103	246	100	26	RB 15-0
1755.00	44.8	42.5	-30.9	-35.0	3.2	9.6	0.0	-24.5	-28.6	-13.0	11.5	15.6	103	246	100	26	RB 15-0

Calculation Result = SG Reading - Tx Cable Loss + Tx Antenna Gain - Tx Antenna Attenuator Loss
Rx-ANTENNA : Biconical Antenna(30M-300MHz), Logperiodic Antenna(300M-1000MHz), Horn Antenna(1G-40GHz)
Tx-ANTENNA : 120MHz tuned Dipole Antenna(30M-120MHz), Dipole Antenna(120M-1000MHz), Horn Antenna(1G-40GHz)
Other frequency noises omitted in this report were not seen or had enough margin (more than 20dB).
Detector : S/A RMS Average (RBW: 30kHz , VBW: 100kHz)

Band Edge (Radiated)

Band 17

Report No.	10004954H
Test place	Head Office EMC Lab.
Semi Anechoic Chamber	No.2
Date	03/20/2013
Temperature / Humidity	21 deg. C / 38 % RH
Engineer	Katsunori Okai
Mode	Transmitting (Tx) LTE(QPSK), BW 5MHz

[1RB]

Frequency	Rx SA/TR Reading [dBuV]		Tx SG Reading [dBm]		Tx Cable Loss	Tx Ant. Gain	Tx Ant. Atten. Loss	Result (ERP) [dBm]		Limit (ERP) [dBm]	Margin [dB]		Horizontal		Vertical		Remarks
													Rx Ant. Height	Turn Table	Rx Ant. Height	Turn Table	
[MHz]	HOR	VER	HOR	VER	[dB]	[dBi]	[dB]	HOR	VER		HOR	VER	[cm]	[deg.]	[cm]	[deg.]	
704.00	44.1	42.5	-10.9	-10.2	5.2	2.15	9.9	-26.0	-25.3	-13.0	13.0	12.3	124	51	100	107	RB 1-0
716.00	43.7	39.7	-10.5	-10.7	5.3	2.15	9.9	-25.7	-25.9	-13.0	12.7	12.9	124	52	100	108	RB 1-24

Calculation Result = SG Reading - Tx Cable Loss + Tx Antenna Gain - Tx Antenna Attenuator Loss -2.15
Rx-ANTENNA : Biconical Antenna(30M-300MHz), Logperiodic Antenna(300M-1000MHz), Horn Antenna(1G-12.75GHz)
Tx-ANTENNA : 120MHz tuned Dipole Antenna(30M-120MHz), Dipole Antenna(120M-1000MHz), Horn Antenna(1G-12.75GHz)
Other frequency noises omitted in this report were not seen or had enough margin (more than 20dB).
Detector : S/A RMS Average (RBW: 30kHz , VBW: 100kHz)

[100% RB allocation]

Frequency	Rx SA/TR Reading [dBuV]		Tx SG Reading [dBm]		Tx Cable Loss	Tx Ant. Gain	Tx Ant. Atten. Loss	Result (ERP) [dBm]		Limit (ERP) [dBm]	Margin [dB]		Horizontal		Vertical		Remarks
													Rx Ant. Height	Turn Table	Rx Ant. Height	Turn Table	
[MHz]	HOR	VER	HOR	VER	[dB]	[dBi]	[dB]	HOR	VER		HOR	VER	[cm]	[deg.]	[cm]	[deg.]	
704.00	40.2	38.1	-14.8	-14.6	5.2	2.15	9.9	-29.9	-29.7	-13.0	16.9	16.7	124	51	100	107	RB 25-0
716.00	35.6	34.6	-18.6	-15.8	5.3	2.15	9.9	-33.8	-31.0	-13.0	20.8	18.0	124	52	100	108	RB 25-0

Calculation Result = SG Reading - Tx Cable Loss + Tx Antenna Gain - Tx Antenna Attenuator Loss -2.15
Rx-ANTENNA : Biconical Antenna(30M-300MHz), Logperiodic Antenna(300M-1000MHz), Horn Antenna(1G-12.75GHz)
Tx-ANTENNA : 120MHz tuned Dipole Antenna(30M-120MHz), Dipole Antenna(120M-1000MHz), Horn Antenna(1G-12.75GHz)
Other frequency noises omitted in this report were not seen or had enough margin (more than 20dB).
Detector : S/A RMS Average (RBW: 30kHz , VBW: 100kHz)

Band Edge (Radiated)

Band 17

Report No.	10004954H
Test place	Head Office EMC Lab.
Semi Anechoic Chamber	No.2
Date	03/20/2013
Temperature / Humidity	21 deg. C / 38 % RH
Engineer	Katsunori Okai
Mode	Transmitting (Tx) LTE(16QAM), BW 5MHz

[1RB]

Frequency	Rx SA/TR Reading [dBuV]		Tx SG Reading [dBm]		Tx Cable Loss	Tx Ant. Gain	Tx Ant. Atten. Loss	Result (ERP) [dBm]		Limit (ERP) [dBm]	Margin [dB]		Horizontal		Vertical		Remarks
													Rx Ant. Height	Turn Table	Rx Ant. Height	Turn Table	
[MHz]	HOR	VER	HOR	VER	[dB]	[dBi]	[dB]	HOR	VER		HOR	VER	[cm]	[deg.]	[cm]	[deg.]	
704.00	43.2	41.4	-11.8	-11.3	5.2	2.15	9.9	-26.9	-26.4	-13.0	13.9	13.4	124	51	100	107	RB 1-0
716.00	43.0	39.3	-11.2	-11.1	5.3	2.15	9.9	-26.4	-26.3	-13.0	13.4	13.3	124	52	100	108	RB 1-24

Calculation Result = SG Reading - Tx Cable Loss + Tx Antenna Gain - Tx Antenna Attenuator Loss -2.15
Rx-ANTENNA : Biconical Antenna(30M-300MHz), Logperiodic Antenna(300M-1000MHz), Horn Antenna(1G-12.75GHz)
Tx-ANTENNA : 120MHz tuned Dipole Antenna(30M-120MHz), Dipole Antenna(120M-1000MHz), Horn Antenna(1G-12.75GHz)
Other frequency noises omitted in this report were not seen or had enough margin (more than 20dB).
Detector : S/A RMS Average (RBW: 30kHz , VBW: 100kHz)

[100% RB allocation]

Frequency	Rx SA/TR Reading [dBuV]		Tx SG Reading [dBm]		Tx Cable Loss	Tx Ant. Gain	Tx Ant. Atten. Loss	Result (ERP) [dBm]		Limit (ERP) [dBm]	Margin [dB]		Horizontal		Vertical		Remarks
													Rx Ant. Height	Turn Table	Rx Ant. Height	Turn Table	
[MHz]	HOR	VER	HOR	VER	[dB]	[dBi]	[dB]	HOR	VER		HOR	VER	[cm]	[deg.]	[cm]	[deg.]	
704.00	38.5	36.5	-16.5	-16.2	5.2	2.15	9.9	-31.6	-31.3	-13.0	18.6	18.3	124	51	100	107	RB 25-0
716.00	34.5	33.5	-19.7	-16.9	5.3	2.15	9.9	-34.9	-32.1	-13.0	21.9	19.1	124	52	100	108	RB 25-0

Calculation Result = SG Reading - Tx Cable Loss + Tx Antenna Gain - Tx Antenna Attenuator Loss -2.15
Rx-ANTENNA : Biconical Antenna(30M-300MHz), Logperiodic Antenna(300M-1000MHz), Horn Antenna(1G-12.75GHz)
Tx-ANTENNA : 120MHz tuned Dipole Antenna(30M-120MHz), Dipole Antenna(120M-1000MHz), Horn Antenna(1G-12.75GHz)
Other frequency noises omitted in this report were not seen or had enough margin (more than 20dB).
Detector : S/A RMS Average (RBW: 30kHz , VBW: 100kHz)

Spurious Emission (Conducted)

Band 4

Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	10004954H
Date	03/21/2013
Temperature/ Humidity	22deg. C / 49% RH
Engineer	Yutaka Yoshida
Mode	Transmitting (Tx) LTE(QPSK), BW 1.4MHz, RB 1-0(1710.7MHz and 1754.3MHz) RB 1-5(1732.5MHz)

Limit Line

Tx Frequency [MHz]	Limit [dBm]	Atten. [dB]	Cable Loss [dB]	Limit Line [dBm]
1710.7	-13.0	9.96	7.61	-30.6
1732.5	-13.0	9.96	7.63	-30.6
1754.3	-13.0	9.96	7.65	-30.6

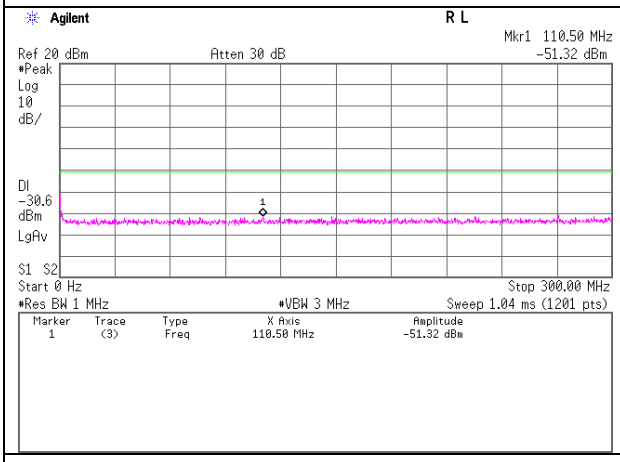
Sample Calculation : Limit Line = Limit - Atten. - Cable Loss

Spurious Emission (Conducted)

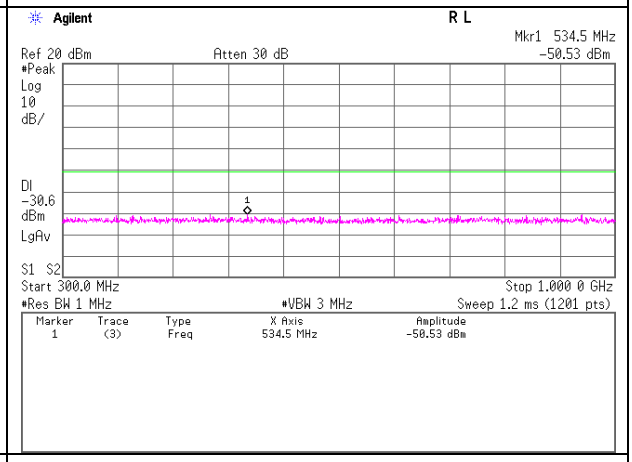
Band 4

Tx:1710.7MHz

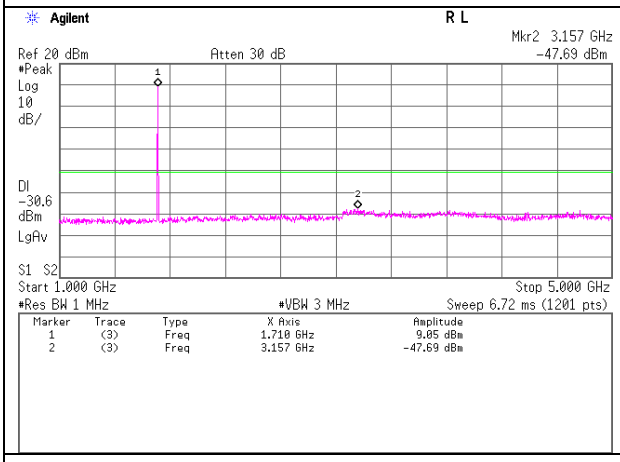
0Hz-300MHz



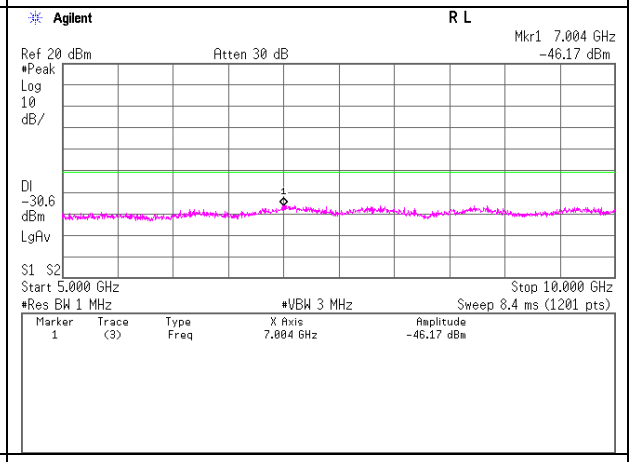
300MHz-1GHz



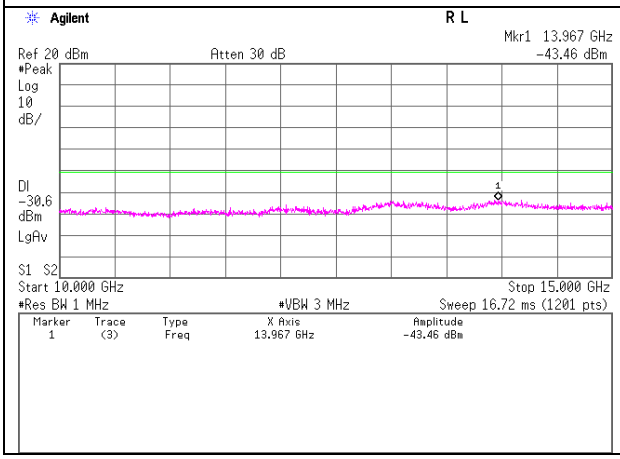
1GHz-5GHz



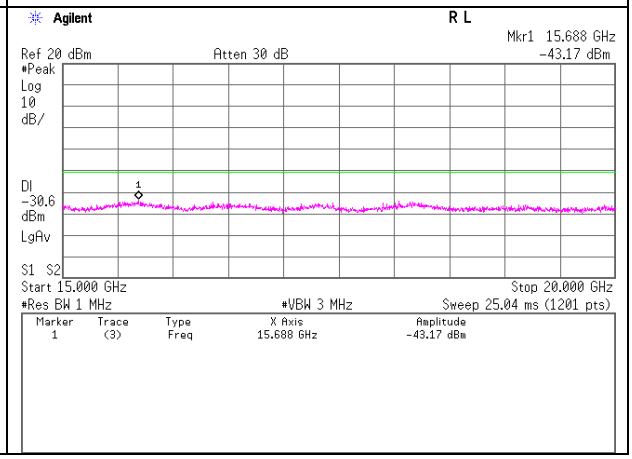
5GHz-10GHz



10GHz-15GHz



15GHz-20GHz

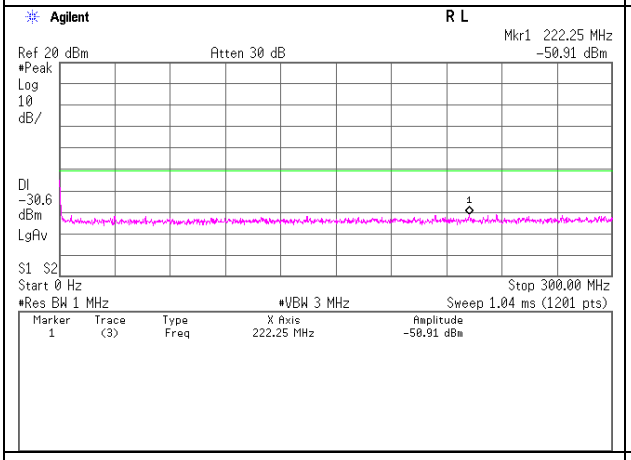


Spurious Emission (Conducted)

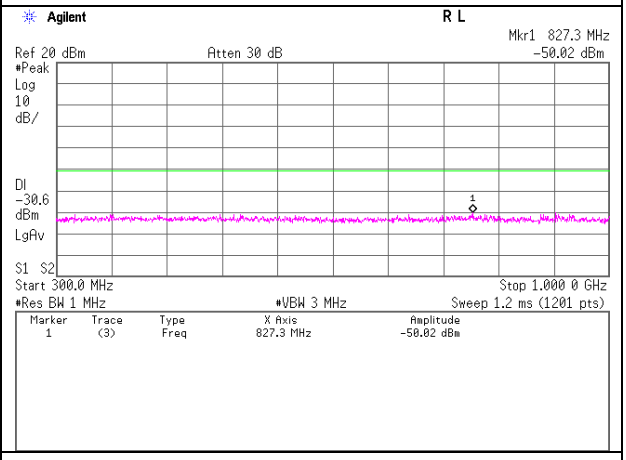
Band 4

Tx:1732.5MHz

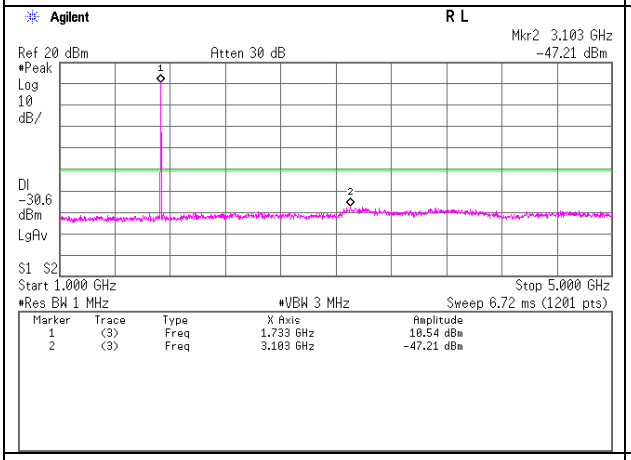
0Hz-300MHz



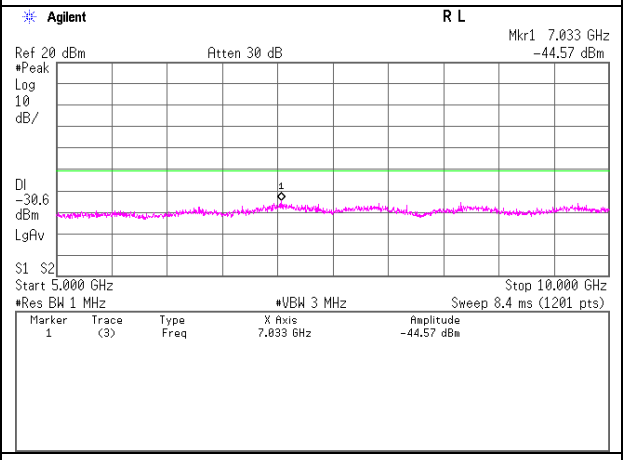
300MHz-1GHz



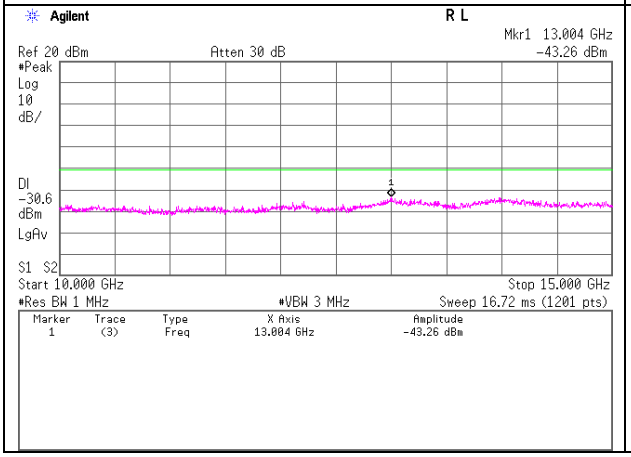
1GHz-5GHz



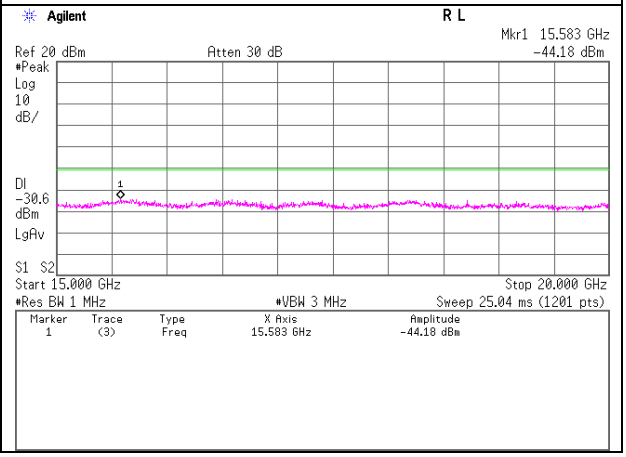
5GHz-10GHz



10GHz-15GHz



15GHz-20GHz

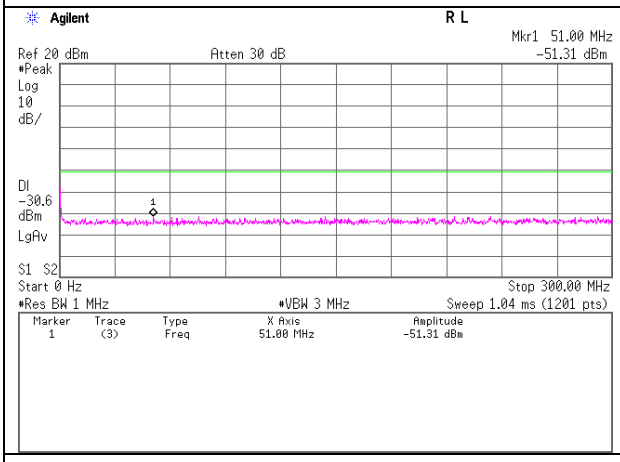


Spurious Emission (Conducted)

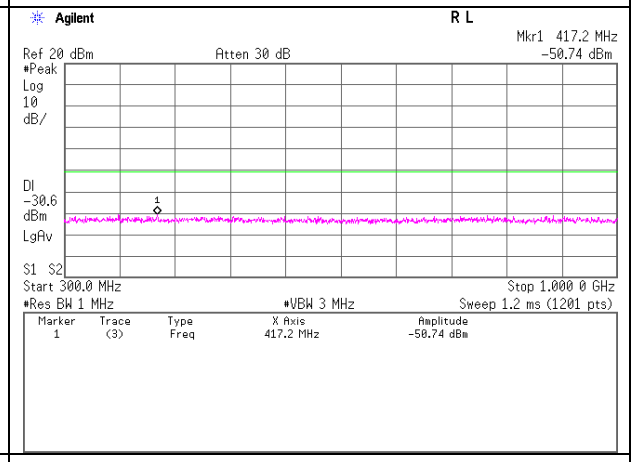
Band 4

Tx:1754.3MHz

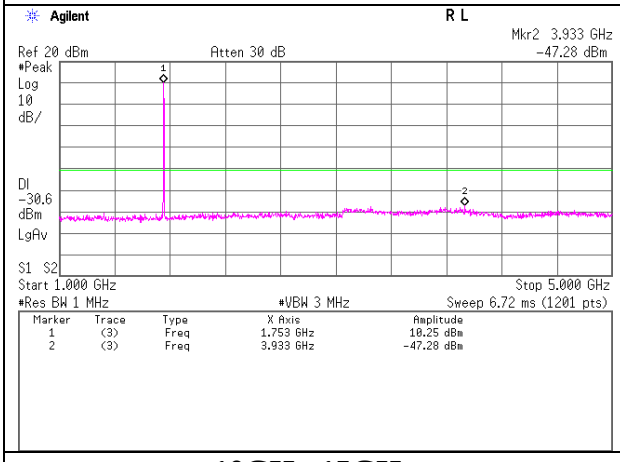
0Hz-300MHz



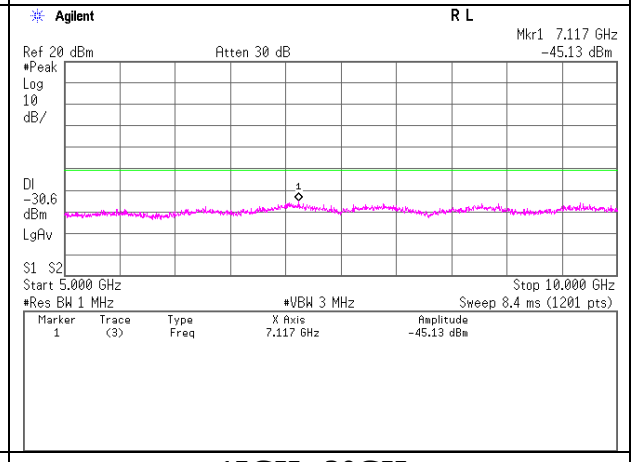
300MHz-1GHz



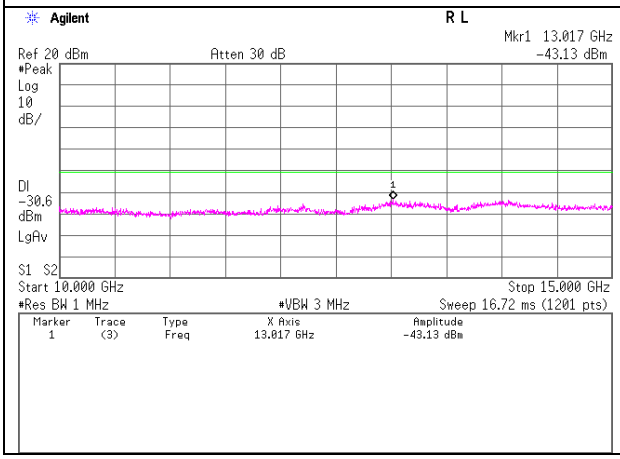
1GHz-5GHz



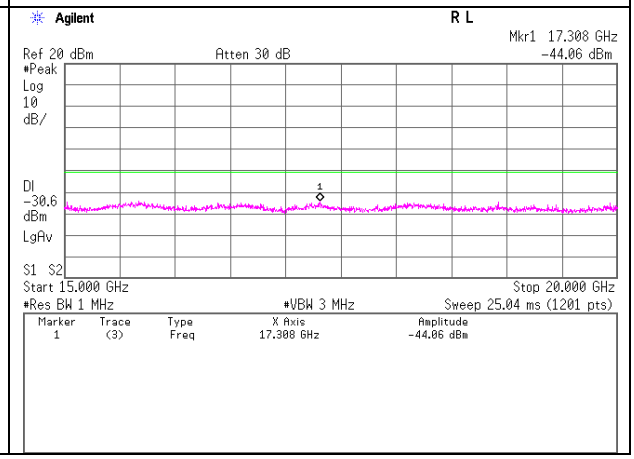
5GHz-10GHz



10GHz-15GHz



15GHz-20GHz



Spurious Emission (Conducted)

Band 4

Test place	Head Office EMC Lab. No.7 Measurement Room
Report No.	10004954H
Date	03/22/2013
Temperature/ Humidity	22deg. C / 49% RH
Engineer	Yutaka Yoshida
Mode	Transmitting (Tx) LTE(16QAM), BW 5MHz, RB 1-12(1712.5MH and 1732.5MHz), RB 1-24(1752.5MHz)

Limit Line

Tx Frequency [MHz]	Limit [dBm]	Atten. [dB]	Cable Loss [dB]	Limit Line [dBm]
1712.5	-13.0	9.96	7.62	-30.6
1732.5	-13.0	9.96	7.63	-30.6
1752.5	-13.0	9.96	7.65	-30.6

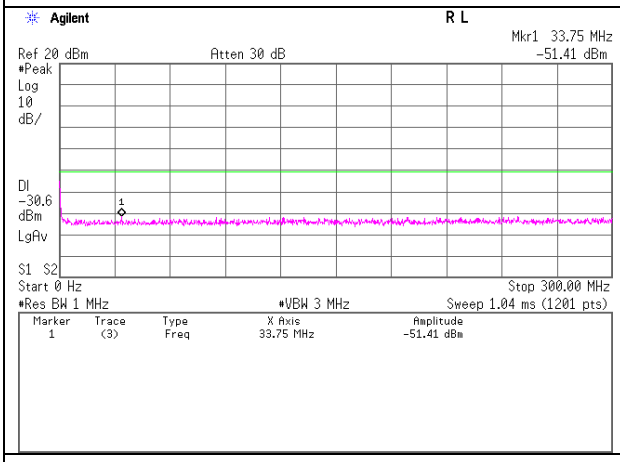
Sample Calculation : Limit Line = Limit - Atten. - Cable Loss

Spurious Emission (Conducted)

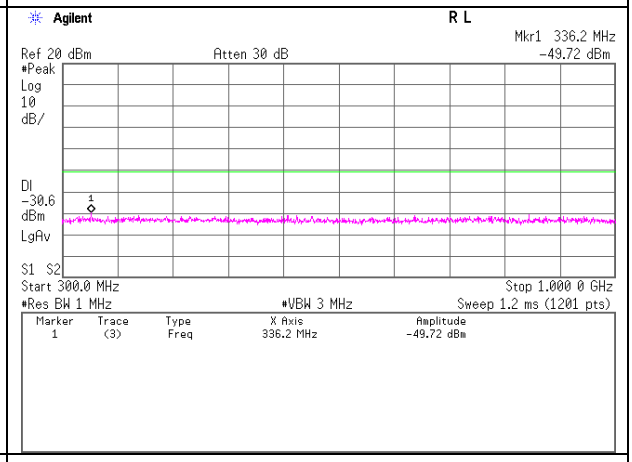
Band 4

Tx:1712.5MHz

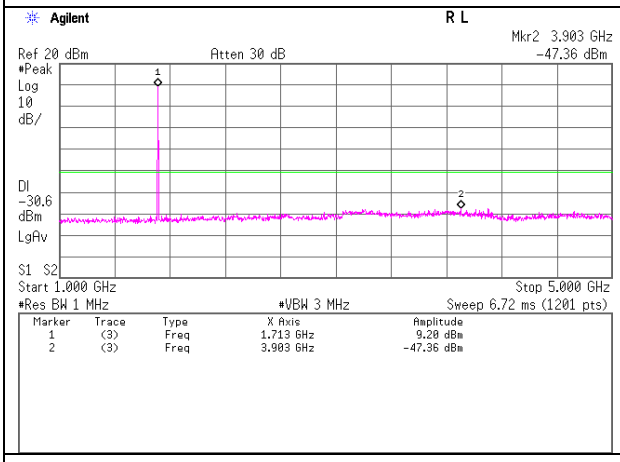
0Hz-300MHz



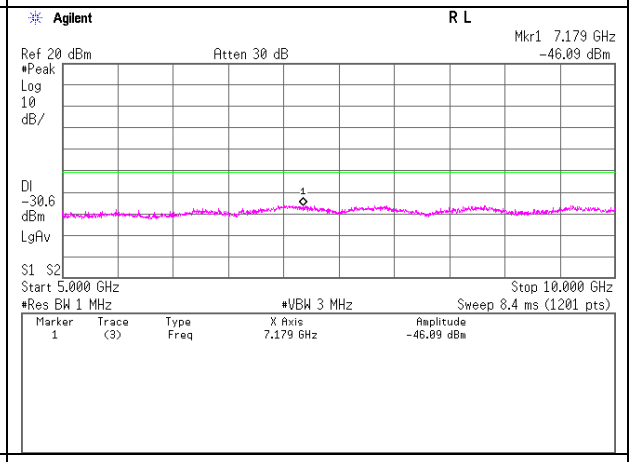
300MHz-1GHz



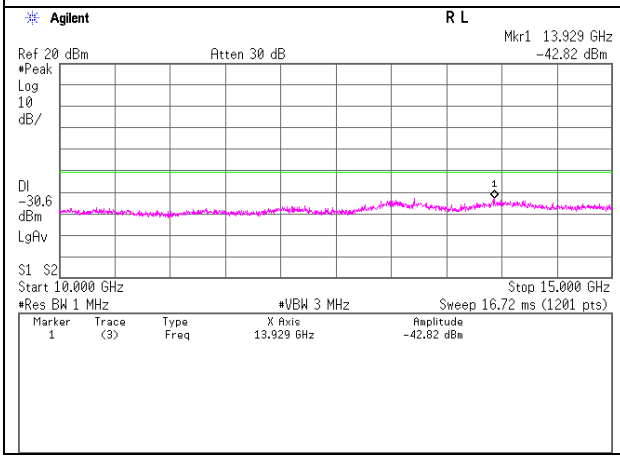
1GHz-5GHz



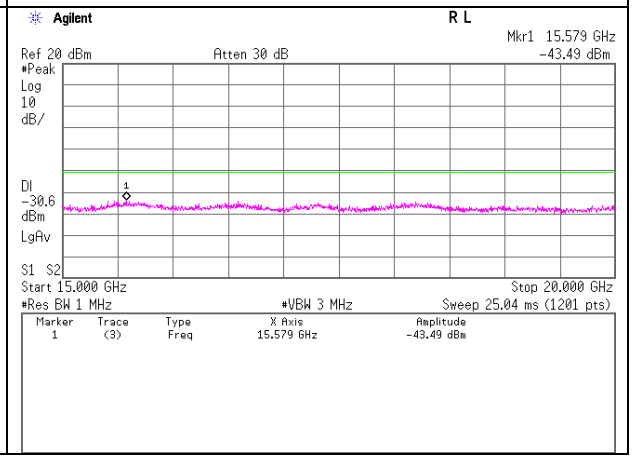
5GHz-10GHz



10GHz-15GHz



15GHz-20GHz

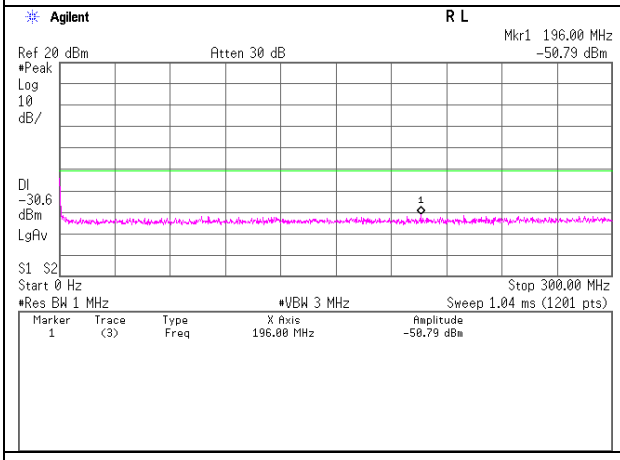


Spurious Emission (Conducted)

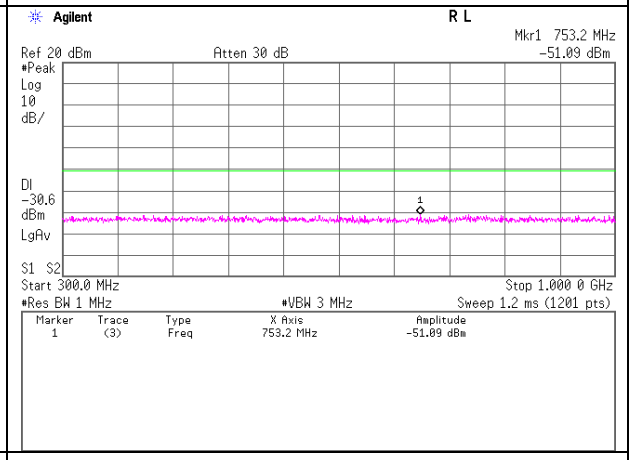
Band 4

Tx:1732.5MHz

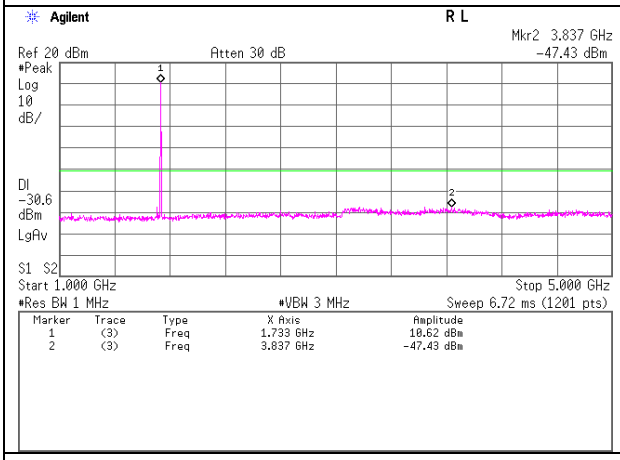
0Hz-300MHz



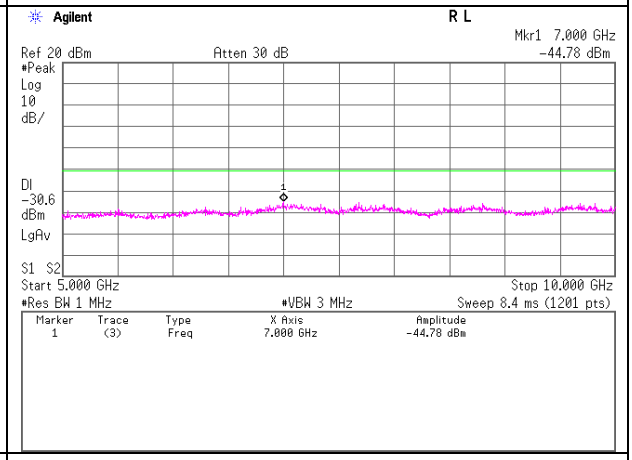
300MHz-1GHz



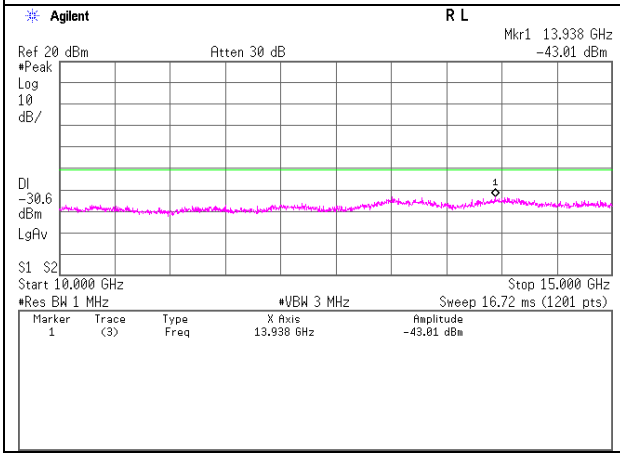
1GHz-5GHz



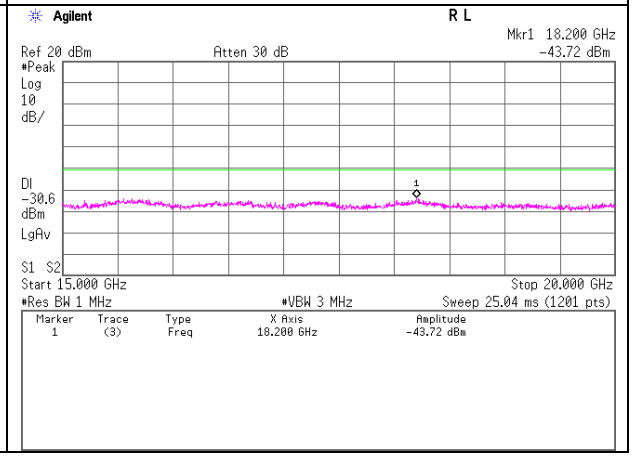
5GHz-10GHz



10GHz-15GHz



15GHz-20GHz

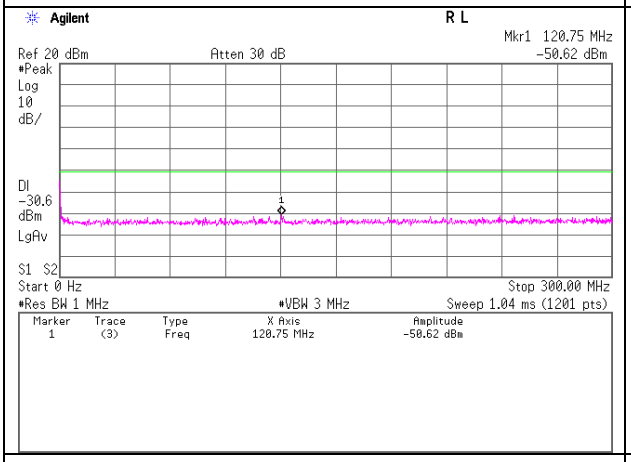


Spurious Emission (Conducted)

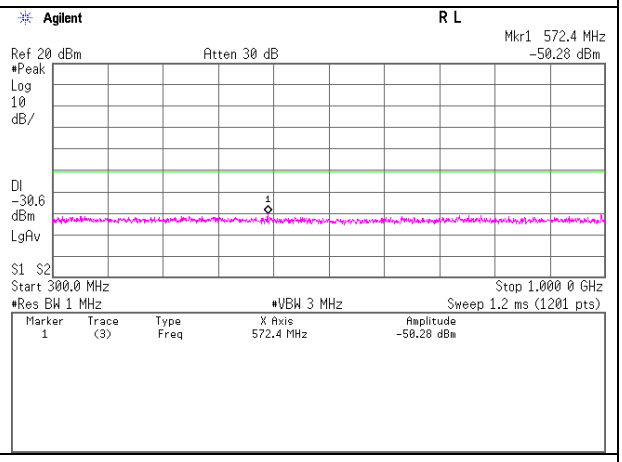
Band 4

Tx:1752.5MHz

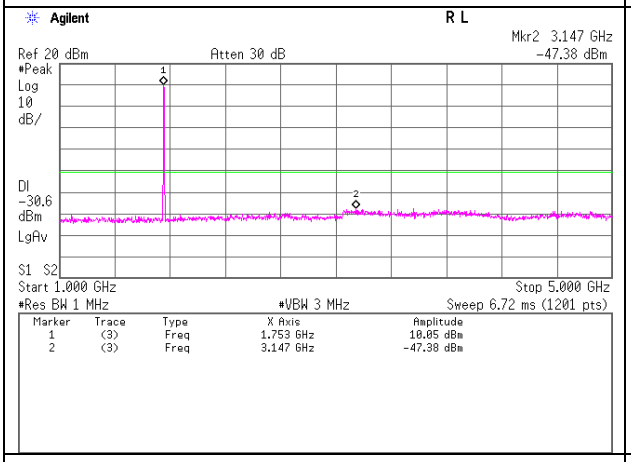
0Hz-300MHz



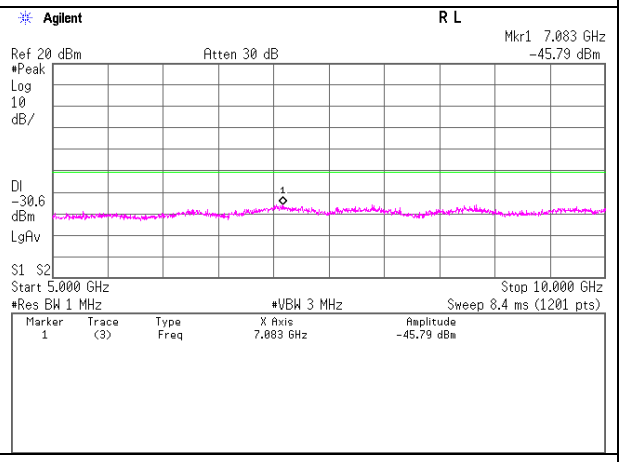
300MHz-1GHz



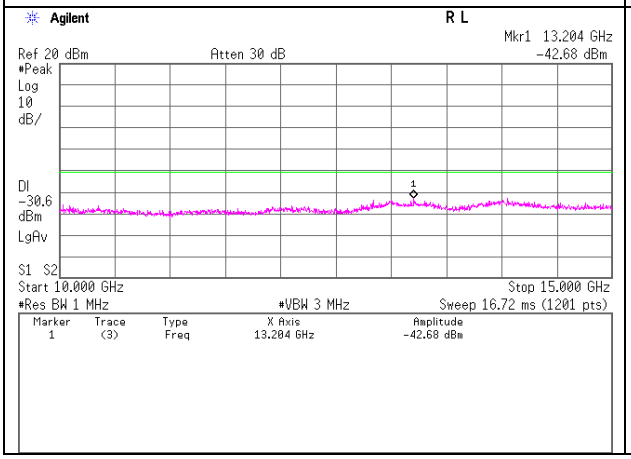
1GHz-5GHz



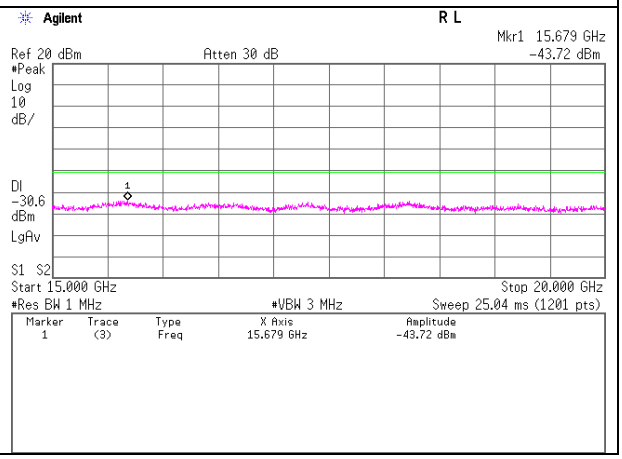
5GHz-10GHz



10GHz-15GHz



15GHz-20GHz



Spurious Emission (Conducted)

Band 17

Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	10004954H
Date	03/22/2013
Temperature/ Humidity	22deg. C / 49% RH
Engineer	Yutaka Yoshida
Mode	Transmitting (Tx) LTE(QPSK), BW 5MHz RB 1-0 (706.5MHz and 710.0MHz) RB 1-12 (713.5MHz)

Limit Line

Tx Frequency [MHz]	Limit [dBm]	Atten. [dB]	Cable Loss [dB]	Limit Line [dBm]
706.5	-13.0	9.94	7.05	-30.0
710.0	-13.0	9.94	7.05	-30.0
713.5	-13.0	9.94	7.05	-30.0

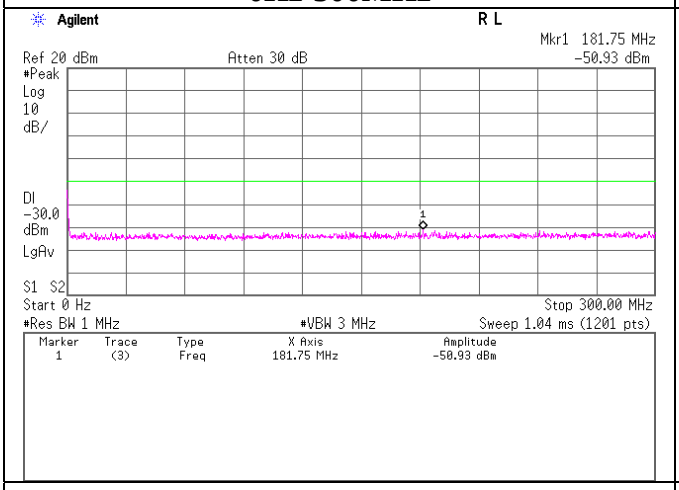
Sample Calculation : Limit Line = Limit - Atten. - Cable Loss

Spurious Emission (Conducted)

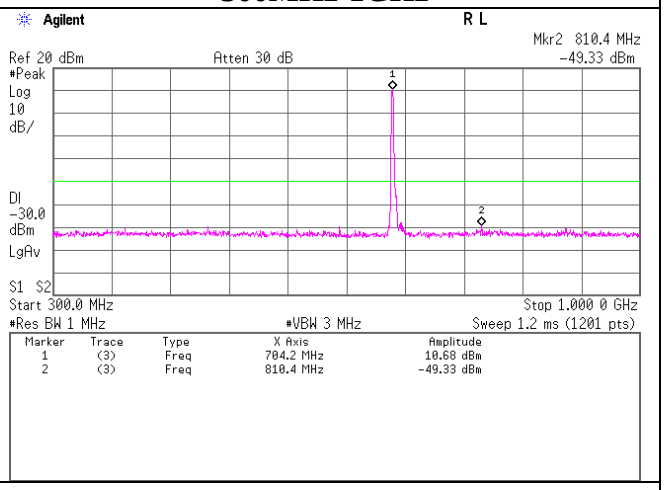
Band 17

Tx:706.5MHz

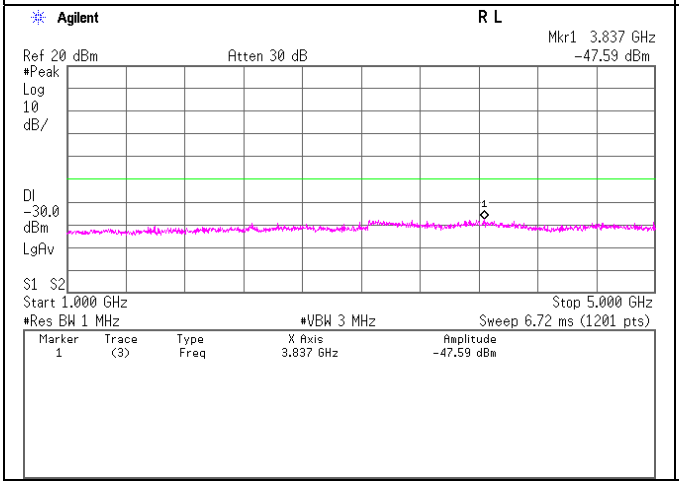
0Hz-300MHz



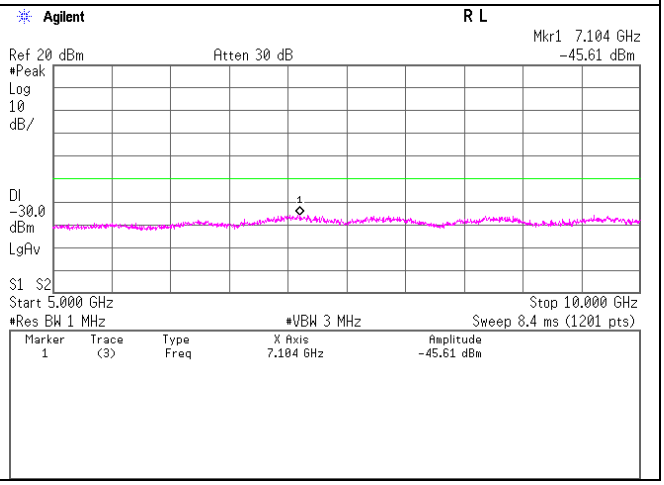
300MHz-1GHz



1GHz-5GHz



5GHz-10GHz

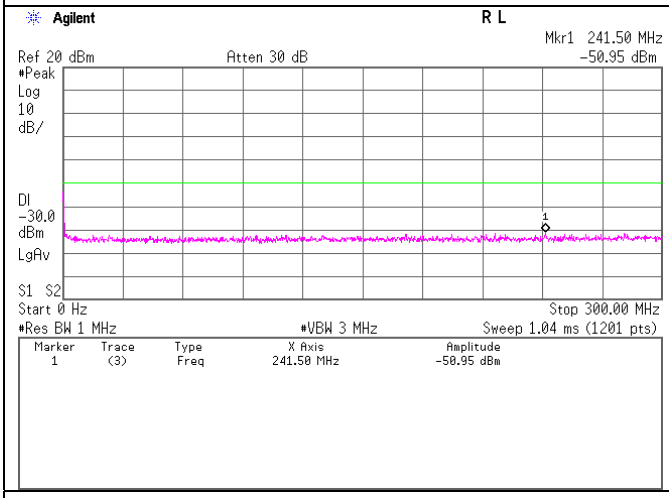


Spurious Emission (Conducted)

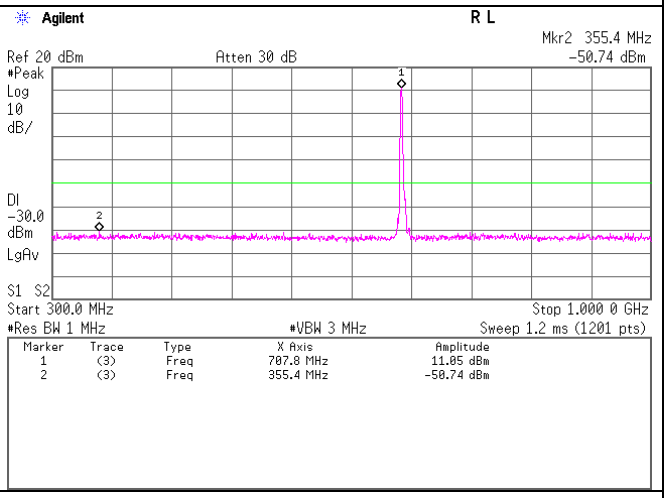
Band 17

Tx:710.0MHz

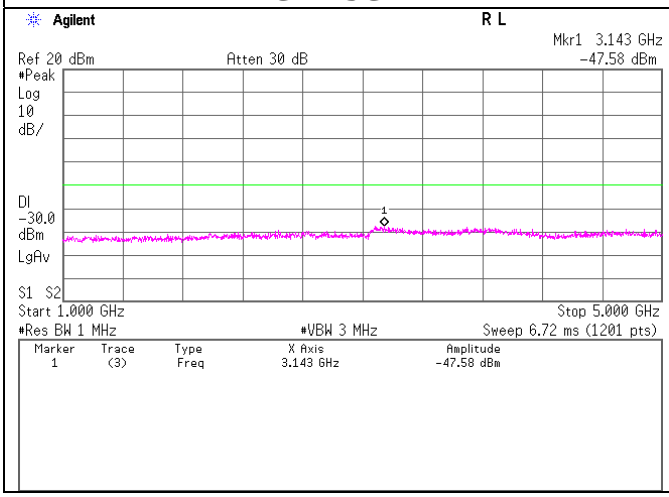
0Hz-300MHz



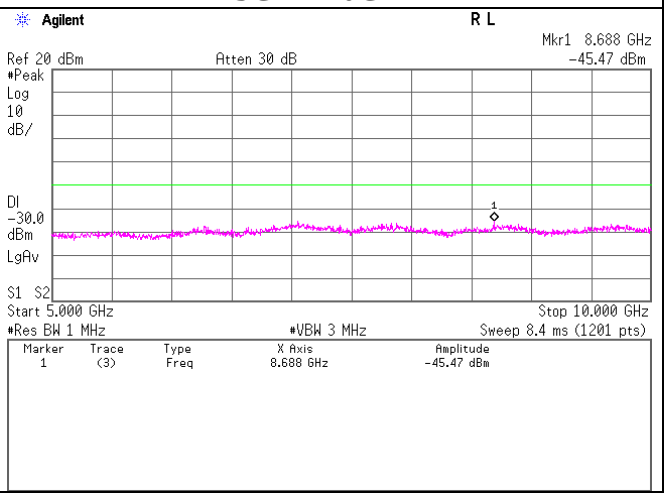
300MHz-1GHz



1GHz-5GHz



5GHz-10GHz

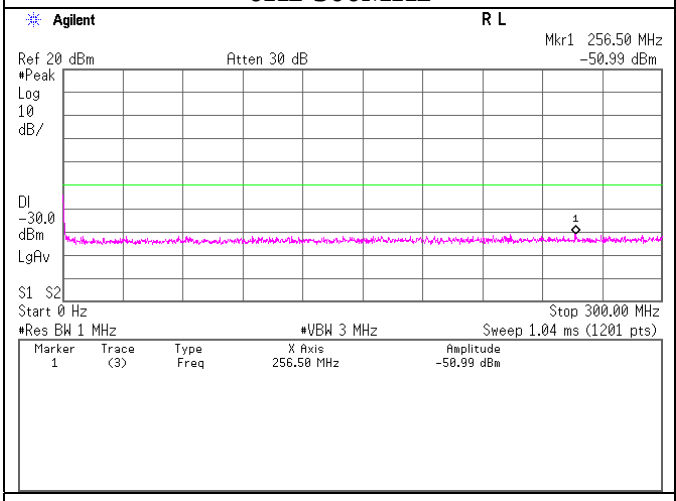


Spurious Emission (Conducted)

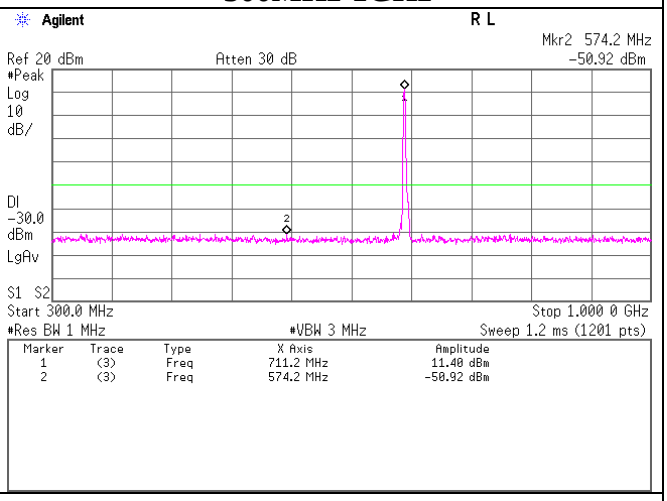
Band 17

Tx:713.5MHz

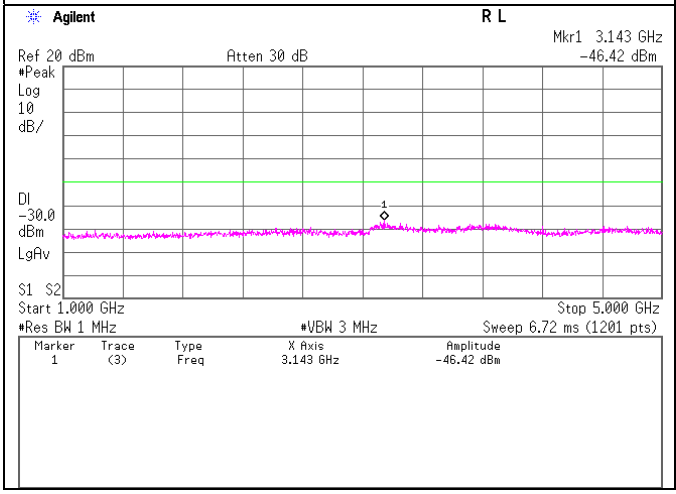
0Hz-300MHz



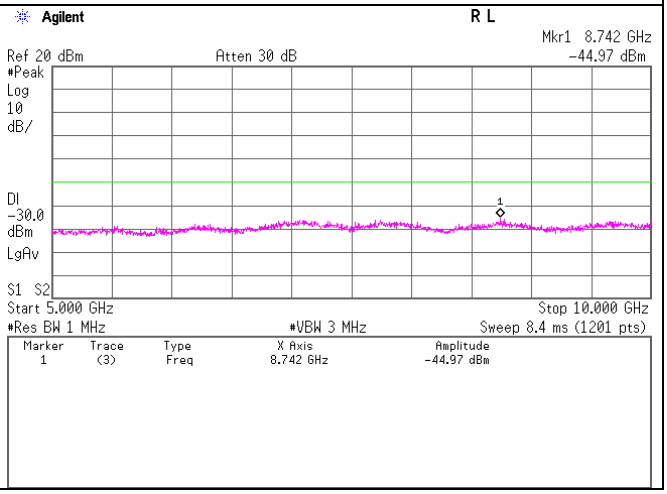
300MHz-1GHz



1GHz-5GHz



5GHz-10GHz



Spurious Emission (Conducted)

Band 17

Test place	Head Office EMC Lab. No.7 Measurement Room
Report No.	10004954H
Date	03/22/2013
Temperature/ Humidity	22deg. C / 49% RH
Engineer	Yutaka Yoshida
Mode	Transmitting (Tx) LTE(16QAM), BW 10MHz, RB 1-0 (709MHz) RB 1-49 (710MHz and 711MHz)

Limit Line

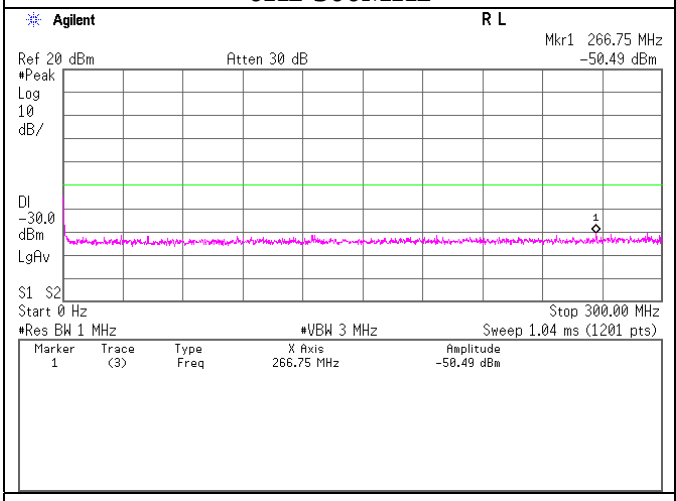
Tx Frequency [MHz]	Limit [dBm]	Atten. [dB]	Cable Loss [dB]	Limit Line [dBm]
709.0	-13.0	9.94	7.05	-30.0
710.0	-13.0	9.94	7.05	-30.0
711.0	-13.0	9.94	7.05	-30.0

Sample Calculation : Limit Line = Limit - Atten. - Cable Loss

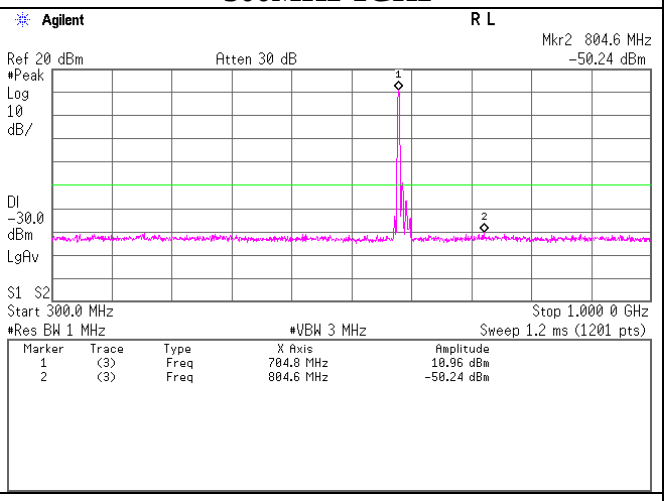
Spurious Emission (Conducted)

Band 17
Tx:709.0MHz

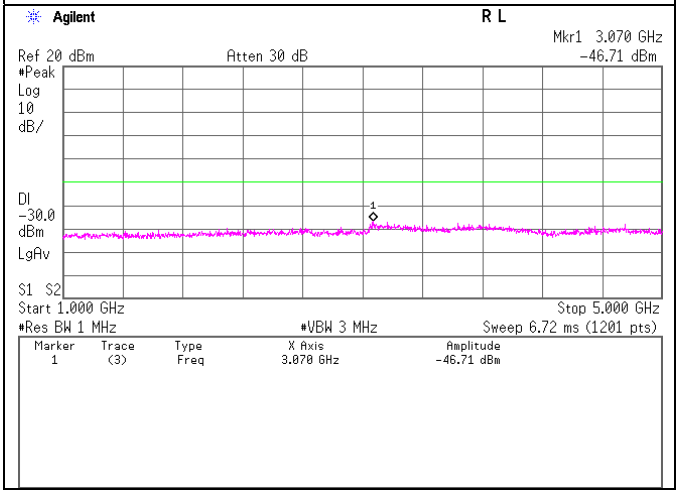
0Hz-300MHz



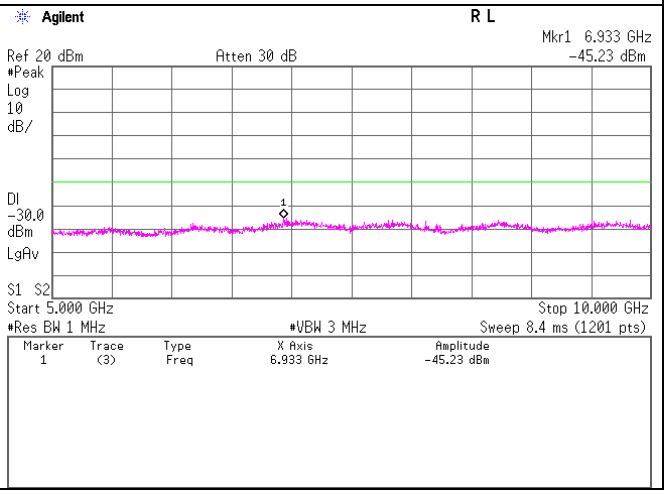
300MHz-1GHz



1GHz-5GHz



5GHz-10GHz

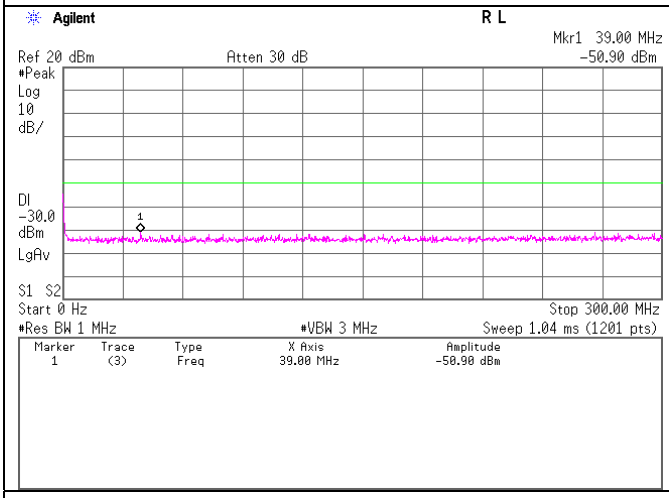


Spurious Emission (Conducted)

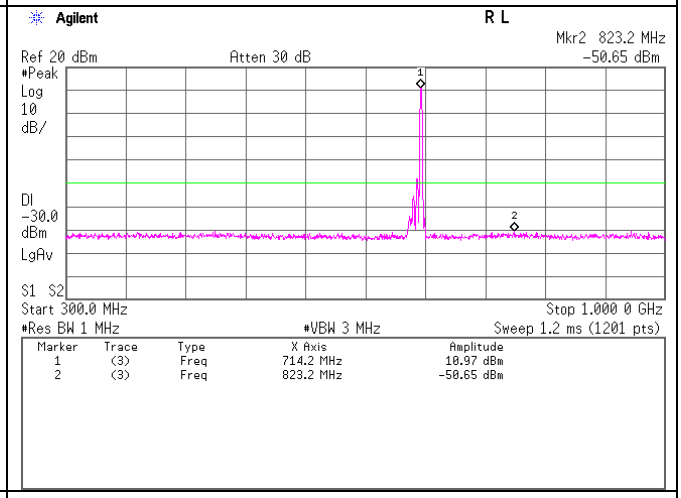
Band 17

Tx:710.0MHz

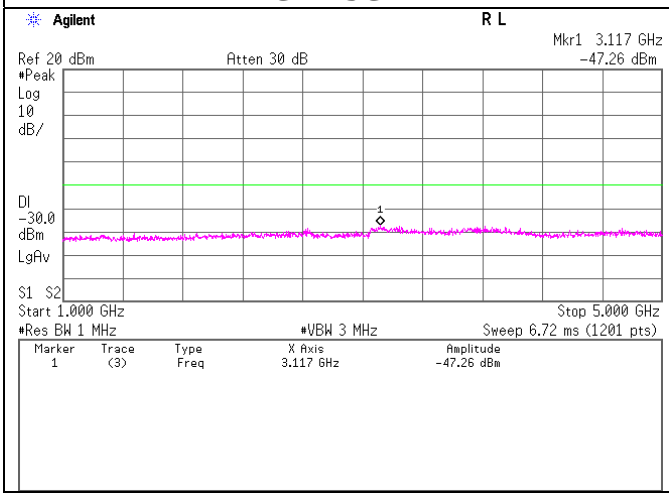
0Hz-300MHz



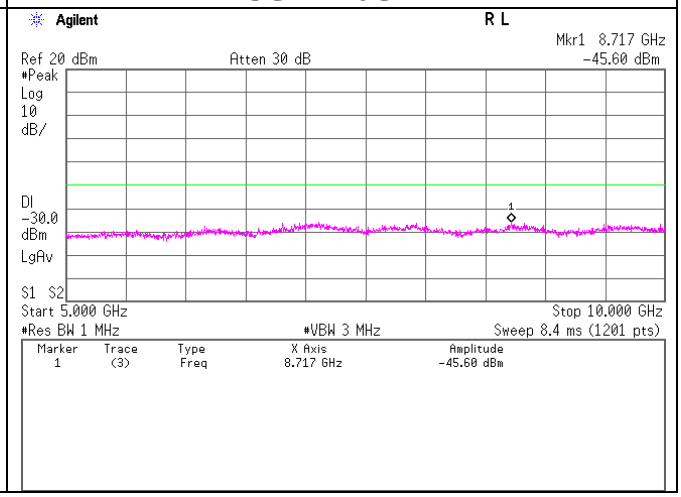
300MHz-1GHz



1GHz-5GHz



5GHz-10GHz

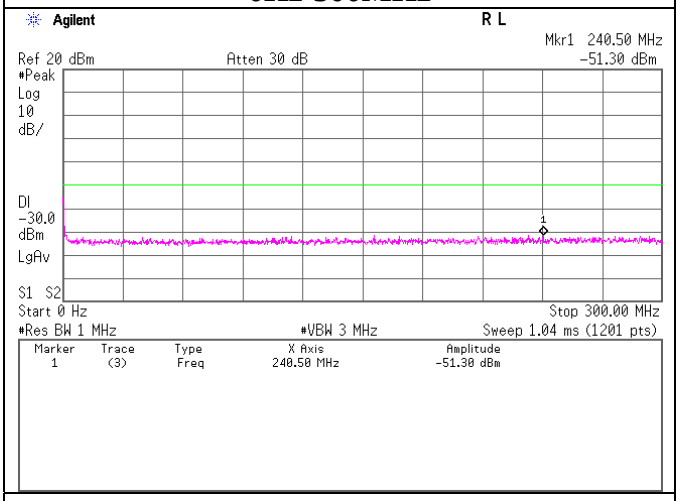


Spurious Emission (Conducted)

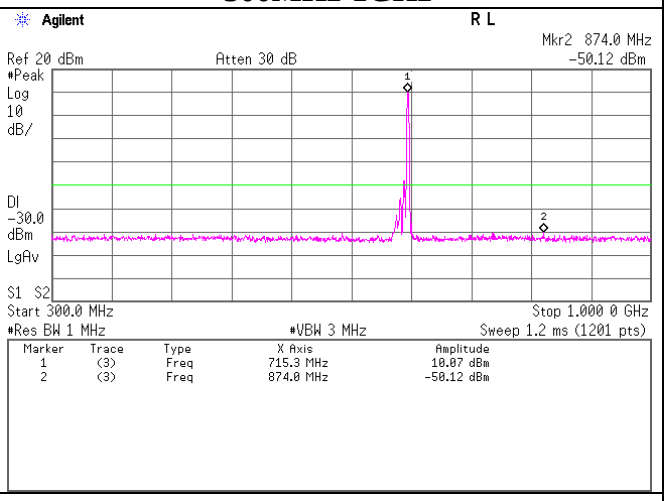
Band 17

Tx:711.0MHz

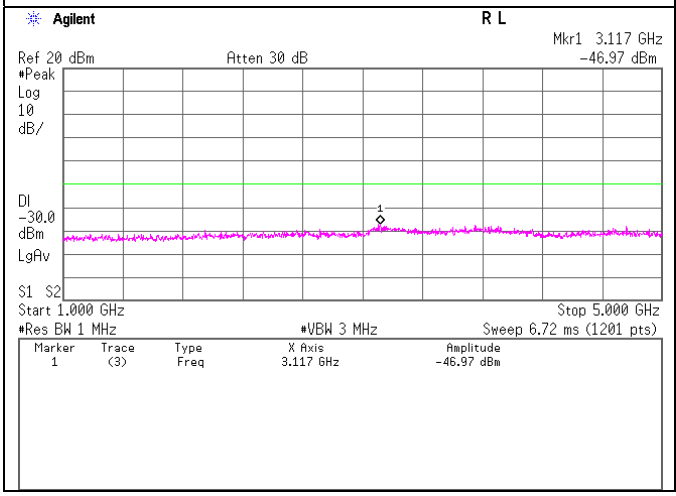
0Hz-300MHz



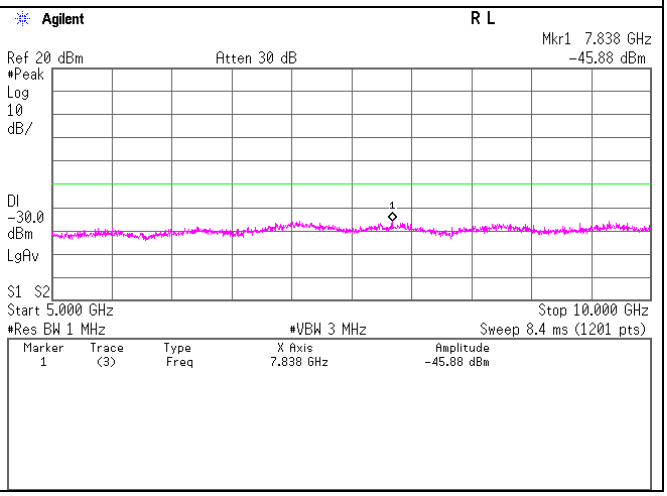
300MHz-1GHz



1GHz-5GHz



5GHz-10GHz



Spurious Emission (Radiated)

Band 4

Report No.	10004954H
Test place	Head Office EMC Lab. No.4 Semi Anechoic Chamber
Date	03/26/2013
Temperature / Humidity	20 deg. C / 30 % RH
Engineer	Katsunori Okai
Mode	Transmitting (Tx) LTE(QPSK), BW 1.4MHz

Tx: 1710.7MHz, RB 1-0

Frequency	Rx SA/TR Reading [dBuV]		Tx SG Reading [dBm]		Tx Cable Loss	Tx Ant. Gain	Tx Ant. Atten. Loss	Result (EIRP) [dBm]		Limit (EIRP) [dBm]	Margin [dB]		Horizontal		Vertical		Remarks
													Rx Ant. Height	Turn Table	Rx Ant. Height	Turn Table	
[MHz]	HOR	VER	HOR	VER	[dB]	[dBi]	[dB]	HOR	VER		HOR	VER	[cm]	[deg.]	[cm]	[deg.]	
3420.50	53.9	50.7	-49.8	-53.0	4.6	12.1	0.0	-42.2	-45.4	-13.0	29.2	32.4	100	259	118	84	
5130.75	57.5	58.8	-40.0	-40.5	5.6	13.1	0.0	-32.5	-33.0	-13.0	19.5	20.0	107	206	113	149	
6841.00	NS	NS	-	-	-	-	-	-	-	-13.0	-	-	-	-	-	-	
8551.25	NS	NS	-	-	-	-	-	-	-	-13.0	-	-	-	-	-	-	

Tx: 1732.5MHz, RB 1-5

Frequency	Rx SA/TR Reading [dBuV]		Tx SG Reading [dBm]		Tx Cable Loss	Tx Ant. Gain	Tx Ant. Atten. Loss	Result (EIRP) [dBm]		Limit (EIRP) [dBm]	Margin [dB]		Horizontal		Vertical		Remarks
													Rx Ant. Height	Turn Table	Rx Ant. Height	Turn Table	
[MHz]	HOR	VER	HOR	VER	[dB]	[dBi]	[dB]	HOR	VER		HOR	VER	[cm]	[deg.]	[cm]	[deg.]	
3465.90	55.3	52.1	-48.5	-50.9	4.6	12.2	0.0	-40.8	-43.3	-13.0	27.8	30.3	100	257	115	84	
5198.85	60.7	60.0	-37.1	-39.3	5.7	13.1	0.0	-29.6	-31.8	-13.0	16.6	18.8	100	211	193	146	
6931.80	NS	NS	-	-	-	-	-	-	-	-13.0	-	-	-	-	-	-	
8664.75	NS	NS	-	-	-	-	-	-	-	-13.0	-	-	-	-	-	-	

Tx: 1754.3MHz, RB 1-0

Frequency	Rx SA/TR Reading [dBuV]		Tx SG Reading [dBm]		Tx Cable Loss	Tx Ant. Gain	Tx Ant. Atten. Loss	Result (EIRP) [dBm]		Limit (EIRP) [dBm]	Margin [dB]		Horizontal		Vertical		Remarks
													Rx Ant. Height	Turn Table	Rx Ant. Height	Turn Table	
[MHz]	HOR	VER	HOR	VER	[dB]	[dBi]	[dB]	HOR	VER		HOR	VER	[cm]	[deg.]	[cm]	[deg.]	
3507.72	55.5	54.1	-47.9	-48.4	4.6	12.3	0.0	-40.3	-40.8	-13.0	27.3	27.8	100	257	139	94	
5261.58	63.7	60.8	-34.7	-38.3	5.7	13.1	0.0	-27.2	-30.9	-13.0	14.2	17.9	104	220	223	140	
7015.44	NS	NS	-	-	-	-	-	-	-	-13.0	-	-	-	-	-	-	
8769.30	NS	NS	-	-	-	-	-	-	-	-13.0	-	-	-	-	-	-	

Calculation Result = SG Reading - Tx Cable Loss + Tx Antenna Gain - Tx Antenna Attenuator Loss
Rx-ANTENNA : Biconical Antenna(30M-300MHz), Logperiodic Antenna(300M-1000MHz), Horn Antenna(1G-20GHz)
Tx-ANTENNA : 120MHz tuned Dipole Antenna(30M-120MHz), Dipole Antenna(120M-1000MHz), Horn Antenna(1G-20GHz)
Other frequency noises omitted in this report were not seen or had enough margin (more than 20dB).
NS : No signal detect.
Detector : S/A PK(RBW:1MHz/VBW:3MHz)

Spurious Emission (Radiated)

Band 17

Report No.	10004954H
Test place	Head Office EMC Lab. No.4 Semi Anechoic Chamber
Date	03/26/2013
Temperature / Humidity	20 deg. C / 30 % RH
Engineer	Katsunori Okai
Mode	Transmitting (Tx) LTE(QPSK), BW 5MHz

Tx: 706.5MHz, RB 1-0

Frequency	Rx SA/TR Reading [dBuV]		Tx SG Reading [dBm]		Tx Cable Loss	Tx Ant. Gain	Tx Ant. Atten. Loss	Result (ERP) [dBm]		Limit (ERP) [dBm]	Margin [dB]		Horizontal		Vertical		Remarks
													Rx Ant. Height	Turn Table	Rx Ant. Height	Turn Table	
[MHz]	HOR	VER	HOR	VER	[dB]	[dBi]	[dB]	HOR	VER		HOR	VER	[cm]	[deg.]	[cm]	[deg.]	
1408.68	52.1	48.5	-54.7	-58.2	2.9	8.7	0.0	-51.1	-54.5	-13.0	38.1	41.5	143	136	100	75	
2113.02	44.2	46.7	-61.4	-58.4	3.5	10.3	0.0	-56.8	-53.8	-13.0	43.8	40.8	100	158	100	82	
2817.36	41.6	42.0	-62.9	-61.0	4.1	11.2	0.0	-58.0	-56.1	-13.0	45.0	43.1	100	0	100	0	
4930.38	42.0	42.1	-57.4	-58.0	5.5	13.0	0.0	-52.1	-52.7	-13.0	39.1	39.7	100	0	100	0	
5634.72	41.4	41.7	-56.2	-57.1	5.9	13.1	0.0	-51.2	-52.0	-13.0	38.2	39.0	100	0	100	0	

Tx: 710MHz, RB 1-0

Frequency	Rx SA/TR Reading [dBuV]		Tx SG Reading [dBm]		Tx Cable Loss	Tx Ant. Gain	Tx Ant. Atten. Loss	Result (ERP) [dBm]		Limit (ERP) [dBm]	Margin [dB]		Horizontal		Vertical		Remarks
													Rx Ant. Height	Turn Table	Rx Ant. Height	Turn Table	
[MHz]	HOR	VER	HOR	VER	[dB]	[dBi]	[dB]	HOR	VER		HOR	VER	[cm]	[deg.]	[cm]	[deg.]	
1415.68	56.9	50.3	-50.1	-56.7	2.9	8.7	0.0	-46.5	-53.0	-13.0	33.5	40.0	141	131	100	135	
2123.52	47.2	50.2	-58.1	-54.6	3.5	10.3	0.0	-53.5	-50.0	-13.0	40.5	37.0	100	60	100	115	
2831.36	43.7	46.2	-60.9	-56.9	4.1	11.2	0.0	-56.0	-52.0	-13.0	43.0	39.0	100	222	100	154	
4954.88	42.7	46.5	-56.6	-53.7	5.5	13.0	0.0	-51.3	-48.3	-13.0	38.3	35.3	100	218	100	234	
5662.72	44.1	47.5	-54.1	-51.6	5.9	13.1	0.0	-49.1	-46.6	-13.0	36.1	33.6	100	236	100	211	

Tx: 713.5MHz, RB 1-12

Frequency	Rx SA/TR Reading [dBuV]		Tx SG Reading [dBm]		Tx Cable Loss	Tx Ant. Gain	Tx Ant. Atten. Loss	Result (ERP) [dBm]		Limit (ERP) [dBm]	Margin [dB]		Horizontal		Vertical		Remarks
													Rx Ant. Height	Turn Table	Rx Ant. Height	Turn Table	
[MHz]	HOR	VER	HOR	VER	[dB]	[dBi]	[dB]	HOR	VER		HOR	VER	[cm]	[deg.]	[cm]	[deg.]	
1427.00	54.3	48.6	-53.1	-58.7	2.9	8.8	0.0	-49.4	-55.0	-13.0	36.4	42.0	140	139	100	137	
2140.50	52.9	51.1	-52.4	-53.1	3.6	10.3	0.0	-47.8	-48.5	-13.0	34.8	35.5	130	4	100	112	
2854.00	43.9	44.2	-60.6	-59.0	4.1	11.3	0.0	-55.6	-54.1	-13.0	42.6	41.1	100	234	100	165	
4994.50	43.0	43.7	-55.7	-55.9	5.6	13.1	0.0	-50.3	-50.5	-13.0	37.3	37.5	100	135	100	235	
5708.00	43.6	45.1	-54.2	-53.8	6.0	13.1	0.0	-49.2	-48.8	-13.0	36.2	35.8	100	156	100	204	

Calculation Result = SG Reading - Tx Cable Loss + Tx Antenna Gain - Tx Antenna Attenuator Loss -2.15
Rx-ANTENNA : Biconical Antenna(30M-300MHz), Logperiodic Antenna(300M-1000MHz), Horn Antenna(1G-12.75GHz)
Tx-ANTENNA : 120MHz tuned Dipole Antenna(30M-120MHz), Dipole Antenna(120M-1000MHz), Horn Antenna(1G-12.75GHz)
Other frequency noises omitted in this report were not seen or had enough margin (more than 20dB).
NS : No signal detect.
Detector : S/A PK (RBW: 1MHz , VBW: 3MHz)

Frequency Stability(Temperature/Voltage Variation)

Band 4
Tx: 1732.5MHz

Test place	Head Office EMC Lab. No.7 shielded room
Report No.	10004954H
Date	04/08/2013
Temperature/ Humidity	20 deg. C / 30% RH
Engineer	Katsunori Okai
Mode	Transmitting (Tx) LTE(QPSK), BW 20MHz

Temp. [deg.C]	Volt. [%]	Frequency Reading [MHz]	Frequency Error [Hz]	Frequency Error [ppm]	Limit [ppm]
-30	100	1732.5000208477	-6.74	-0.0039	2.5
-20	100	1732.5000219498	-5.63	-0.0033	2.5
-10	100	1732.5000269284	-0.65	-0.0004	2.5
0	100	1732.5000256174	-1.97	-0.0011	2.5
10	100	1732.5000226695	-4.91	0.0028	2.5
20	100	1732.5000275833	0.00	0.0000	Reference
30	100	1732.5000204515	-7.13	-0.0041	2.5
40	100	1732.5000169650	-10.62	-0.0061	2.5
50	100	1732.5000266089	-0.97	-0.0006	2.5

Temp. [deg.C]	Volt. [%]	Frequency Reading [MHz]	Frequency Error [Hz]	Frequency Error [ppm]	Limit [ppm]
20	115	1732.5000252628	-2.32	-0.0013	2.5
20	100	1732.5000275833	0.00	0.0000	Reference
20	85	1732.5000219718	-5.61	-0.0032	2.5

Frequency Stability(Temperature/Voltage Variation)

Band 17
Tx: 710.0MHz

Test place	Head Office EMC Lab. No.7 shielded room
Report No.	10004954H
Date	04/08/2013
Temperature/ Humidity	20 deg. C / 30% RH
Engineer	Katsunori Okai
Mode	Transmitting (Tx) LTE(QPSK), BW 10MHz

Temp. [deg.C]	Volt. [%]	Frequency Reading [MHz]	Frequency Error [Hz]	Frequency Error [ppm]	Limit [ppm]
-30	100	709.9999927408	-12.66	-0.0178	2.5
-20	100	709.9999916183	-13.78	-0.0194	2.5
-10	100	709.9999910608	-14.34	-0.0202	2.5
0	100	709.9999918783	-13.52	-0.0190	2.5
10	100	709.9999904057	-14.99	0.0211	2.5
20	100	710.0000053980	0.00	0.0000	Reference
30	100	710.0000107347	5.34	0.0075	2.5
40	100	710.0000082312	2.83	0.0040	2.5
50	100	710.0000075182	2.12	0.0030	2.5

Temp. [deg.C]	Volt. [%]	Frequency Reading [MHz]	Frequency Error [Hz]	Frequency Error [ppm]	Limit [ppm]
20	115	710.0000074755	2.08	0.0029	2.5
20	100	710.0000053980	0.00	0.0000	Reference
20	85	710.0000085481	3.15	0.0044	2.5

APPENDIX 2: Test instruments

EMI test equipment (1/2)

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
MURC-05	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	127576	AT/RE	2012/10/04 * 12
MPD-01	PowerDivider DC to 26.5GHz	Agilent	11636B	52258	AT	2013/03/28 * 12
MAT-24	Attenuator(10dB) (above1GHz)	Agilent	8493C	71389	AT	2012/06/27 * 12
MOS-04	Digital Humidity Indicator	N.T	NT-1800	MOS04	AT	2013/02/26 * 12
MCC-137	Microwave cable	HUBER+SUHNER	SUCOFLEX 102	37954/2	AT	2012/10/19 * 12
MSA-04	Spectrum Analyzer	Agilent	E4448A	US44300523	AT	2013/04/03 * 12
MCH-06	Temperature and Humidity Chamber	Tabai Espec	PL-1KT	14007630	AT	2012/04/20 * 12
MURC-04	Digital Radio Test Set	AEROFLEX	7100	710000/093	AT/RE	2012/05/28 * 12
MAEC-02	Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-06902	RE	2012/06/29 * 12
MOS-22	Thermo-Hygrometer	Custom	CTH-201	0003	RE	2013/02/26 * 12
MJM-14	Measure	KOMELON	KMC-36	-	RE	-
COTS-MEMI	EMI measurement program	TSJ	TEPTO-DV	-	RE	-
MRENT-95	Spectrum Analyzer	Agilent	E4440A	MY46185823	RE	2012/06/19 * 12
MBA-02	Biconical Antenna	Schwarzbeck	BBA9106	VHA91032008	RE	2012/10/08 * 12
MLA-02	Logperiodic Antenna	Schwarzbeck	USLP9143	201	RE	2012/10/08 * 12
MCC-12	Coaxial Cable	Fujikura/Agilent	-	-	RE	2013/02/06 * 12
MAT-07	Attenuator(6dB)	Weinschel Corp	2	BK7970	RE	2012/11/06 * 12
MPA-09	Pre Amplifier	Agilent	8447D	2944A10845	RE	2012/09/11 * 12
MDA-04	Dipole Antenna	Schwarzbeck	UHAP	992	RE	2012/10/21 * 12
YTSSG03	Signal Generator	Rohde & Schwarz	SMT02	51400043	RE	2012/08/01 * 12
MCC-125	Coaxial Cable	UL Japan	-	-	RE	2012/07/23 * 12
MHA-06	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	254	RE	2013/02/15 * 12
MCC-132	Microwave Cable	HUBER+SUHNER	SUCOFLEX104	336161/4(1m) / 340639(5m)	RE	2012/09/05 * 12
MPA-10	Pre Amplifier	Agilent	8449B	3008A02142	RE	2013/01/10 * 12
MBF-08	Band Pass Filter	M-City	BPF1800-01	UL0003	RE	2012/06/01 * 12
MHA-02	Horn Antenna 18-26.5GHz	EMCO	3160-09	1265	RE	2013/02/15 * 12
MHA-20	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	258	RE	2012/05/25 * 12
MCC-130	Microwave Cable (1-33GHz)	HUBER+SUHNER	SF103/ 11PC3.5-31/ 11PC3.5-31/8.0m	54308/3	RE	2013/01/29 * 12

EMI test equipment (2/2)

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
KSG-05	Signal Generator	Rohde & Schwarz	SMR40	100137	RE	2012/07/23 * 12
MAEC-04	Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-10005	RE	2013/02/28 * 12
MOS-15	Thermo-Hygrometer	Custom	CTH-180	-	RE	2013/02/26 * 12
MJM-07	Measure	PROMART	SEN1955	-	RE	-
MSA-03	Spectrum Analyzer	Agilent	E4448A	MY44020357	RE	2012/11/20 * 12
MHA-21	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	9120D-557	RE	2012/08/17 * 12
MCC-141	Microwave Cable	Junkosha	MWX221	1203S212(1m) / 1204S062(5m)	RE	2012/04/23 * 12
MPA-12	MicroWave System Amplifier	Agilent	83017A	MY39500780	RE	2013/03/19 * 12
MHA-05	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	253	RE	2012/06/27 * 12
MHF-06	High Pass Filter 3.5-24GHz	TOKIMEC	TF323DCA	601	RE	2012/05/30 * 12
MHF-04	High Pass Filter 1.22-4.60GHz	Mini-Circuit	VHF-1200	10435	RE	2012/08/28 * 12
MCC-99	Microwave Cable 1G-40GHz	Schner	SUCOFLEX102	30820/2	RE	2012/05/09 * 12
MRF-01	Band Rejection Filter (1710-1785MHz)	TOKYO KEIKI	1710-1785MHz	-	RE	2012/06/05 * 12

The expiration date of the calibration is the end of the expired month.
All equipment is calibrated with valid calibrations. Each measurement data is traceable to the national or international standards.

As for some calibrations performed after the tested dates, those test equipment have been controlled by means of an unbroken chains of calibrations.

Test Item:

RE: Radiated Emission
AT: Antenna terminal conducted test