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JQA File No. : 400-140056 Issue Date : July 4, 2014

# TEST REPORT

**Applicant** : DATECS Ltd.

Address : 1592 Sofia, Bulgaria, 4 Datecs

Products : Bluetooth Module

Model No. : BT301DT

Serial No.

**Test Standard** : CFR 47 FCC Rules and Regulations Part 15

Test Results : Passed

**Date of Test** : June 30, 2014 – July 11, 2014



Hideki Kajiwara

Manager

Japan Quality Assurance Organization SAFETY & EMC CENTER

Testing Dept.

EMC Testing Div.

1-21-25, Kinuta, Setagaya-ku, Tokyo 157-8573, Japan

- The measurement values stated in Test Report was made with traceable to National Institute of Advanced Industrial Science and Technology (AIST) of Japan and National Institute of Information and Communications Technology (NICT) of Japan.
- The applicable standard, testing condition and testing method which were used for the tests are based on the request of the applicant.
- The test results presented in this report relate only to the offered test sample.
- The contents of this test report cannot be used for the purposes, such as advertisement for consumers.
- This test report shall not be reproduced except in full without the written approval of JQA.
- VLAC does not approve, certify or warrant the product by this test report.



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# <u>Definitions for Abbreviation and Symbols Used In This Test Report</u>

"EUT" means Equipment Under the Test.

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<sup>&</sup>quot;AE" means Associated Equipment.

<sup>&</sup>quot;N/A" means that Not Applicable.

<sup>&</sup>quot;N/T" means that Not Tested.

 $<sup>\</sup>square$  - indicates that the listed condition, standard or equipment is not applicable for this report.



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#### 1 Description of the Equipment Under Test

1 Manufacturer : DATECS Ltd.

1592 Sofia, Bulgaria, 4 Datecs

2 Products : Bluetooth Module

3 Model No. : BT301DT

4 Host Equipment : Linea Pro 5.0 / Model No. : Linea 5 1D/BT iPod

Infinea TAB 4.0 / Model No. : Infinea TAB 4 1D/BT iPad Infinea TAB mini / Model No. : Infinea TAB mini 2D/BT iPad

5 Serial No. : Linea Pro 5.0

MAR001281UN14 MAR001280UN14 Infinea TAB 4.0 MAR001284UN14 Infinea TAB mini MAR001283UN14

6 Product Type : Mass Production

7 Date of Manufacture : -

8 Power Rating : 3.3 VDC (from the Host Equipment)

9 Grounding : None

10 Transmitting Frequency : 2402.0 MHz(00CH) – 2480.0MHz(78CH)

11 Receiving Frequency : 2402.0 MHz(00CH) – 2480.0MHz(78CH)

12 Max. RF Output Power : 2.10 dBm(Measure Value)

13 Antenna Type : Chip Antenna (Integral)

(This antenna to meet the requirement §15.203)

14 Antenna Gain : -2.0 dBi

15 Category : Spread Spectrum Transmitter(FHSS)

16 EUT Authorization : Certification

17 Received Date of EUT : June 30, 2014

18 Channel Plan : The carrier spacing is 1 MHz.

The carrier frequency is designated by the absolute frequency

channel number (ARFCN).

The carrier frequency is expressed in the equation shown

as follows:

Normal Mode:

Transmitting Frequency (in MHz) = 2402.0 + nReceiving Frequency (in MHz) = 2402.0 + n

where, n: channel number  $(0 \le n \le 78)$ 



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### 2 Summary of Test Results

Applied Standard : CFR 47 FCC Rules and Regulations Part 15

Subpart C – Intentional Radiators

The EUT described in clause 1 was tested according to the applied standard shown above.

Details of the test configuration is shown in clause 6.

The conclusion for the test items of which are required by the applied standard is indicated under the test result.

The test result was passed for the test requirements of the applied standard.
 The test result was failed for the test requirements of the applied standard.
 The test result was not judged the test requirements of the applied standard.

In the approval of test results,

- Determining compliance with the limits in this report was based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
- No deviations were employed from the applied standard.

- No modifications were conducted by JQA to achieve compliance to the limitations.

Reviewed by:

Yuichi Fukumoto

Advisor

SAFETY & EMC CENTER

Testing Dept.

EMC Testing Div.

Tested by:

Naohiko Ueno

Engineer

SAFETY & EMC CENTER

Testing Dept.

EMC Testing Div.



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#### 3 Test Procedure

Test Requirements : §15.247, §15.203, §15.207 and §15.209

Test Procedure : ANSI C63.10–2009

The tests were performed with reference to the FCC Public Notice DA 00-705, released March 30, 2000.

#### 4 Test Location

Japan Quality Assurance Organization SAFETY & EMC CENTER Testing Dept. EMC Testing Div. 1-21-25, Kinuta, Setagaya-ku, Tokyo 157-8573, Japan

#### 5 Recognition of Test Laboratory

Japan Quality Assurance Organization, Safety & EMC Center Testing Dept. EMC Testing Div. is accredited under ISO/IEC 17025 by following accreditation bodies and the test facility of Testing Division is registered by the following bodies .

VLAC Code : VLAC-001-1 (Effective through: March 30, 2016)

VCCI Registration Number : A-0001 (Effective through: March 30, 2016) FCC Registration Number : 349652 (Effective through: March 30, 2016)

IC Registration Number : 2079A-1, 2079A-2 (Effective through: October 23, 2015)
Accredited as conformity assessment body for Japan electrical appliances and material law

by METI. (Effective through: February 22, 2016)



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# 6 The Details of the Equipment Under Test

# 6.1 Test Configuration

### The EUT consists of:

Sign	Item	Manufacturer	Model No.	Serial No.	FCC ID
A	Bluetooth Module	DATECS Ltd.	BT301DT	-	YRWDATECSBT301

#### The AE used for testing:

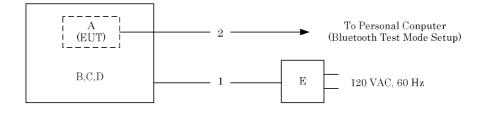
Sign	Item	Manufacturer	Model No.	Serial No.	FCC ID				
В	Linea Pro 5.0	DATECS Ltd.	Linea 5 1D/BT iPod	MAR001281UN14 *1	DoC				
				MAR001280UN14 *2					
C	Infinea TAB 4.0	DATECS Ltd.	Infinea TAB 4	MAR001284UN14 *2	DoC				
			1D/BT iPad						
D	Infinea TAB mini	DATECS Ltd.	Infinea TAB	MAR001283UN14 *2	DoC				
			mini 2D/BT iPad						
Е	AC Adapter	Apple	A1265	-	N/A				

<sup>\*1)</sup> Used for Antenna Conducted Emission

#### Type of Cable used for testing:

No.	Description	Identification	Connector	Cable	Ferrite	Length		
		(Manu. etc.)	Shielded	Shielded	Core	(m)		
1	USB Cable	-	Yes	Yes	No	1.5		
2	Bluetooth Control Cable	-	No	No	No	1.5		

# 6.2 Test Arrangement (Drawings)



<sup>\*2)</sup> Used for Field Strength of Spurious Emission



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### 6.3 Operating Condition

Transmitting/Receiving Bluetooth 2.0 + EDR

Transmitting frequency  $\begin{array}{l} : 2402.0 \text{ MHz} (0\text{CH}) - 2480.0 \text{ MHz} (78\text{CH}) \\ : 2402.0 \text{ MHz} (0\text{CH}) - 2480.0 \text{ MHz} (78\text{CH}) \\ \end{array}$ 

The test were carried under 2 mode shown as follows:

1) BDR

2) EDR

In Spurious Emissions(Conducted) and Radiated Emissions, the worst case is BDR mode.

#### Modulation Type

1. DH1/ DH3/ DH5 Packet (Modulation Type: GFSK)

2. 2DH1/2DH3/2DH5 Packet (Modulation Type: pi/4-DQPSK)

3. 3DH1/3DH3/3DH5 Packet (Modulation Type: 8DPSK)

The EUT not have inquiry mode because it was Slave device.

The EUT was rotated through three orthogonal axis (X, Y and Z axis) in radiated measurement.

The EUT with temporary antenna port was used in conducted measurement.



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# 7 The Details of the Test Items

Test Item	FCC Specification	Reference of the Test Report	Results	Remarks
Antenna requirement	Section 15.203	Section 1. 13	Passed	-
Channel Separation	Section 15.247(a)(1)	Section 7.1	Passed	-
Minimum Hopping Channel	Section 15.247(a)(1)(iii)	Section 7.2	Passed	-
Occupied Bandwidth	Section 15.247(a)(1)	Section 7.3	Passed	-
Dwell Time	Section 15.247(a)(1)(iii)	Section 7.4	Passed	-
Peak Output Power (Conduction)	Section 15.247(b)(1)	Section 7.5	Passed	-
Peak Power Density (Conduction)	Section 15.247(e)	-	-	-
Spurious Emissions (Conduction)	Section 15.247(d)	Section 7.7	Passed	-
AC Powerline Conducted Emission	Section 15.207	Section 7.8	Passed	-
Radiated Emission	Section 15.247(d)	Section 7.9	Passed	-
RF Exposure	Section 2.1093	Section 7.10	Passed	-



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7.1 Channel Separation						
For the requirements, $\boxtimes$ - Applicable $[\boxtimes$ - Tested. $\square$ - Not tested by app $\square$ - Not Applicable	licant request.]					
For the limits, $\square$ - Passed $\square$ - Failed $\square$ - Not judged						
7.1.1 Worst Point and Measurement Uncertainty						
Channel Separation is 1.004 MHz Channel Separation(Inquiry) is N/A MHz						
Uncertainty of Measurement Results	<u>+/-0.9</u> %(2o)					

#### 7.1.2 **Test Site and Instruments**

Remarks:

Type	Model	Manufacturer	ID No.	Last Cal.	Interval				
Receiver	ESI26	Rohde & Schwarz	13	2014/6	1 Year				
RF Cable	S 04272B	SUHNER	45	2014/5	1 Year				
Attenuator	43KC-10	Anritsu	80	2013/10	1 Year				

#### 7.1.3 Test Method and Test Setup (Diagrammatic illustration)

The test system is shown as follows:

EUT Antenna Terminal	10dB Attenuator	Spectrum Analyzer
-------------------------	-----------------	----------------------

The setting of the spectrum analyzer are shown as follows:

Res. Bandwidth	100 kHz
Video Bandwidth	300 kHz
Span	3 MHz / 5 MHz
Sweep Time	AUTO
Trace	Maxhold



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#### 7.1.4 Test Data

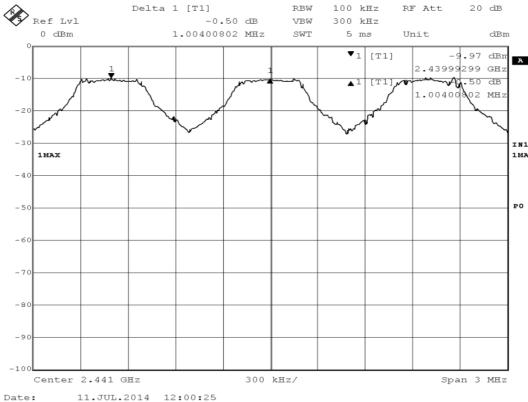
Test Date: June 30, 2014 Temp.:24°C, Humi:58%

Mode of EUT	Channel Separation (MHz)	Limit* (MHz)
Hopping	1.004	0.850
Inquiry	-	-

Note: Two-thirds of the maximum 20 dB bandwidth of the hopping channel or 25 kHz (whichever is greater)

The EUT not have inquiry mode because it was Slave device.

# Mode of EUT: Hopping



Date:



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7.2	Minimum	Hopping	Channel
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For the requirements,	- Applicable	$\boxtimes$ - Tested.	Not tested	by applicant request.
	- Not Applica	ble		

# 7.2.1 Worst Point and Measurement Uncertainty

Number of Channel is	79
Number of Channel (Inquiry) is	N/A
Number of Channel (AFH) is	20

Uncertainty of Measurement Results +/-0.9 %(20)

Remarks:

# 7.2.2 Test Site and Instruments

Туре	Model	Manufacturer	ID No.	Last Cal.	Interval
Receiver	ESI26	Rohde & Schwarz	13	2014/6	1 Year
RF Cable	S 04272B	SUHNER	45	2014/5	1 Year
Attenuator	43KC-10	Anritsu	80	2013/10	1 Year

### 7.2.3 Test Method and Test Setup (Diagrammatic illustration)

The test system is shown as follows:

EUT	Antenna Terminal	10dB Attenuator		Spectrum Analyzer
-----	---------------------	-----------------	--	----------------------

The setting of the spectrum analyzer are shown as follows:

Res. Bandwidth	300 kHz
Video Bandwidth	300 kHz
Span	30 MHz
Sweep Time	AUTO
Trace	Maxhold



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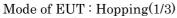
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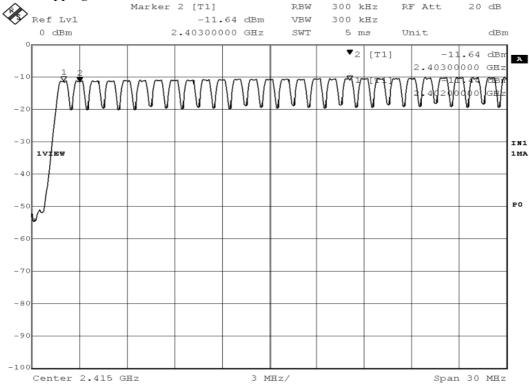
### 7.2.4 Test Data

Test Date: June 30, 2014 Temp.:24°C, Humi:58%

Mode of EUT	Minimum Hopping Channel	Limit
Hopping	79	15
Inquiry	-	-
AFH(minimum)	20	15

Note: The EUT not have inquiry mode because it was Slave device.





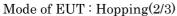
Date: 11.JUL.2014 12:11:44

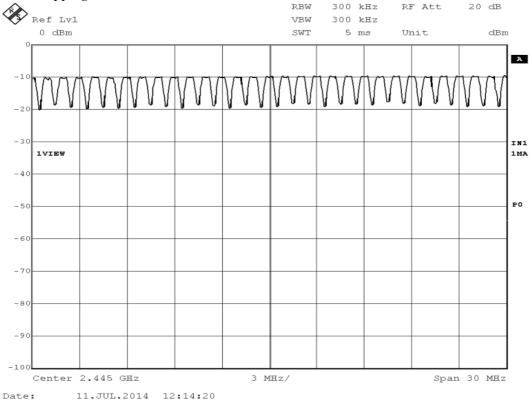


Model No. : BT301DT FCC ID : YRWDATECSBT301

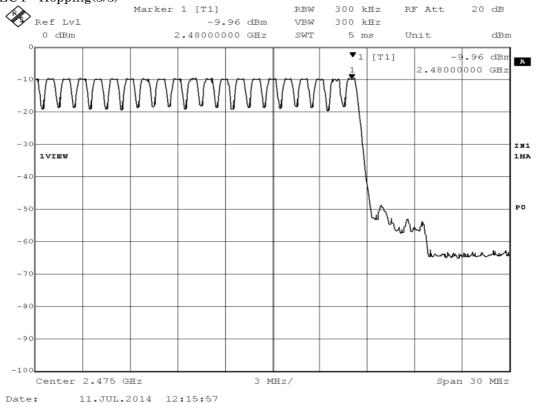
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# Mode of EUT: Hopping(3/3)



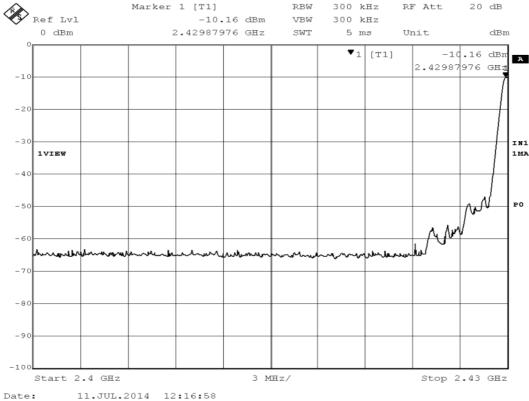


Model No. : BT301DT FCC ID : YRWDATECSBT301

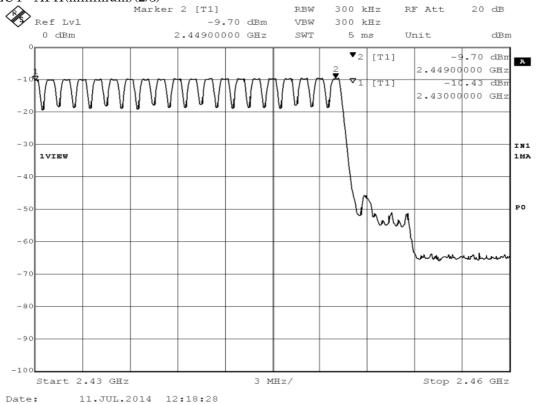
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### Mode of EUT: AFH(minimum)(1/3)



# Mode of EUT: AFH(minimum)(2/3)



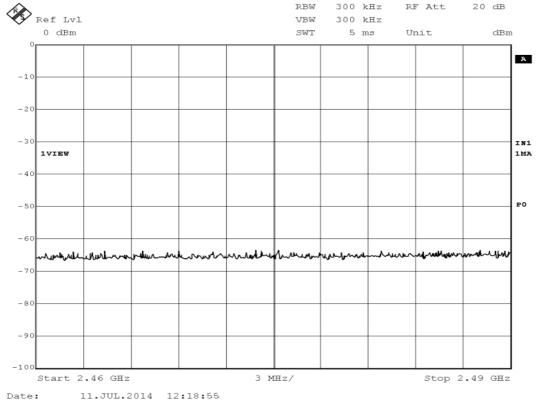


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# Mode of EUT: AFH(minimum)(3/3)





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# 7.3 Occupied Bandwidth

For the requirements,  $\boxtimes$  - Applicable  $[\boxtimes$  - Tested.  $\square$  - Not tested by applicant request.]

#### 7.3.1 Worst Point and Measurement Uncertainty

#### 7.3.2 Test Site and Instruments

Remarks:

Type	Model	Manufacturer	ID No.	Last Cal.	Interval
Receiver	ESI26	Rohde & Schwarz	13	2014/6	1 Year
RF Cable	S 04272B	SUHNER	45	2014/5	1 Year
Attenuator	43KC-10	Anritsu	80	2013/10	1 Year

#### 7.3.3 Test Method and Test Setup (Diagrammatic illustration)

The test system is shown as follows:

EUT Antenna 10dB Attenuator Spectrum Analyzer

The setting of the spectrum analyzer are shown as follows:

Res. Bandwidth	30 kHz
Video Bandwidth	100 kHz
Span	3 MHz
Sweep Time	AUTO
Trace	Maxhold



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#### 7.3.4 Test Data

Mode of EUT: BDR+EDR

The resolution bandwidth was set to about 1% of emission bandwidth, -20dBc display line was placed on the screen (or 99% bandwidth), the occupied bandwidth is the delta frequency between the two points where the display line intersects the signal trace.

1)Packet Setting: DH5(Modulation type: GFSK)

Cannel	Freqency (MHz)	99% Bandwidth (kHz)	-20dBc Bandwidth	Two-thirds of the 20 dB bandwidth (kHz)
00	2402.0	877.8	877.8	585.2
39	2441.0	895.8	949.9	633.3
78	2480.0	901.8	889.8	593.2

2)Packet Setting: 2DH5(Modulation type: pi/4-DQPSK)

Cannel	Freqency (MHz)	99% Bandwidth (kHz)	-20dBc Bandwidth	Two-thirds of the 20 dB bandwidth (kHz)
00	2402.0	1190.4	1250.5	833.7
39	2441.0	1190.4	1274.5	849.7
78	2480.0	1196.4	1226.5	817.7

3)Packet Setting: 3DH5(Modulation type: 8DPSK)

Cannel	Frequency (MHz)	99% Bandwidth (kHz)	-20dBc Bandwidth	Two-thirds of the 20 dB bandwidth
00	2402.0	1196.4	1268.5	(kHz) 845.7
39	2441.0	1202.4	1274.5	849.7
78	2480.0	1208.4	1274.5	849.7

Mode of EUT: Inquiry

The EUT not have inquiry mode because it was Slave device.

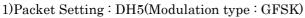


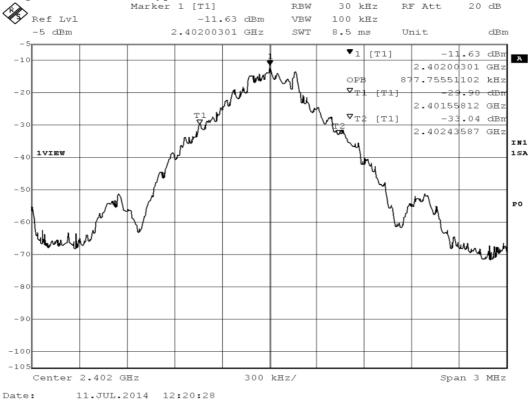
Model No. : BT301DT FCC ID : YRWDATECSBT301

Standard : CFR 47 FCC Rules and Regulations Part 15

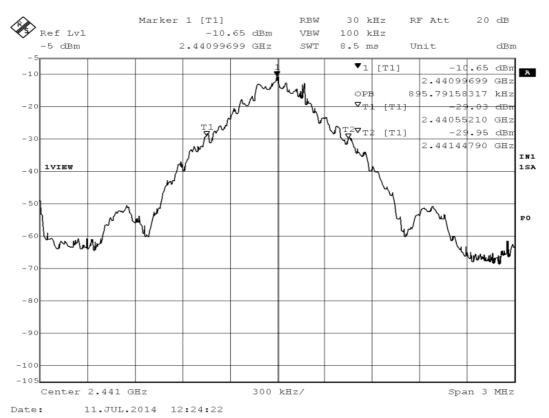
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#### 7.3.4.1 99% Bandwidth





Low Channel



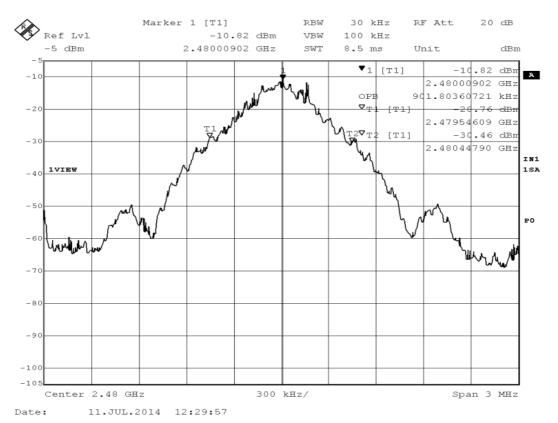
Middle Channel



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High Channel

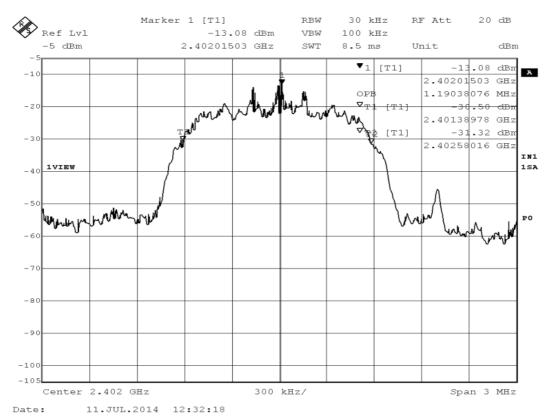


Model No. : BT301DT FCC ID : YRWDATECSBT301

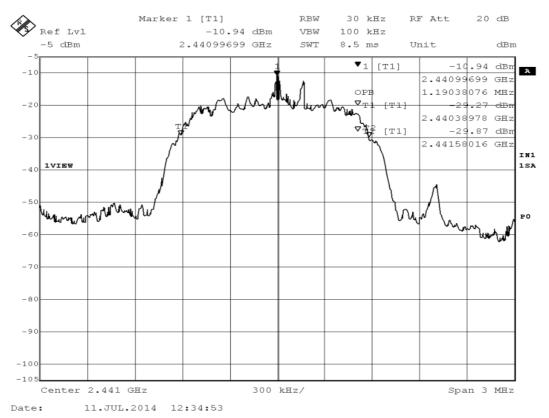
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### 2)Packet Setting: 2DH5(Modulation type: pi/4-DQPSK)



#### Low Channel



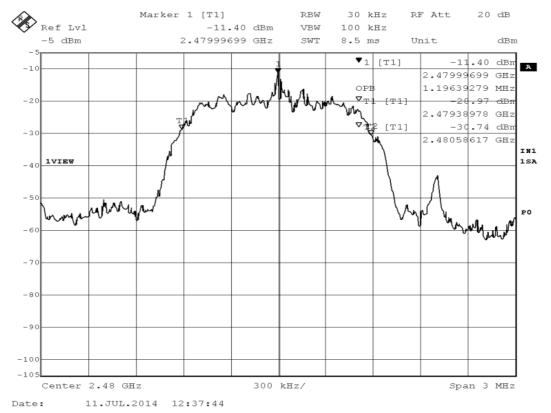
Middle Channel



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High Channel

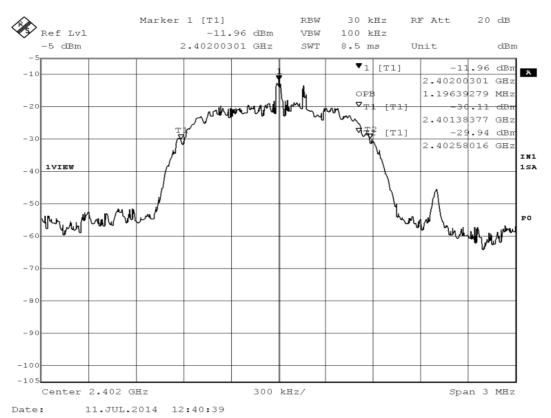


Model No. : BT301DT FCC ID : YRWDATECSBT301

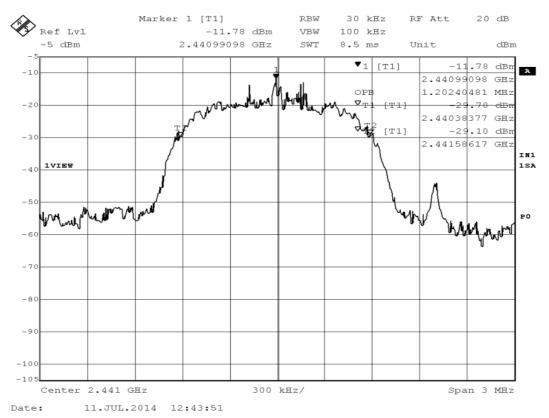
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# 3)Packet Setting: 3 DH5(Modulation type: 8DPSK)



#### Low Channel



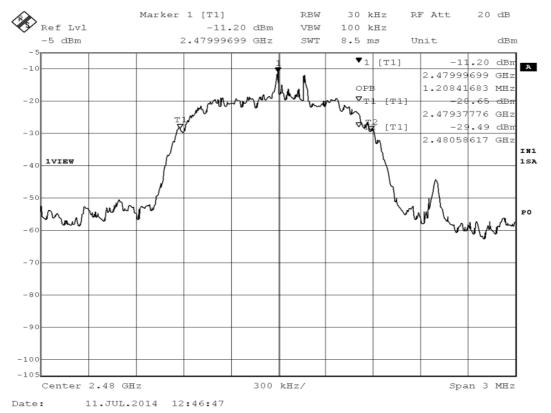
Middle Channel



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High Channel



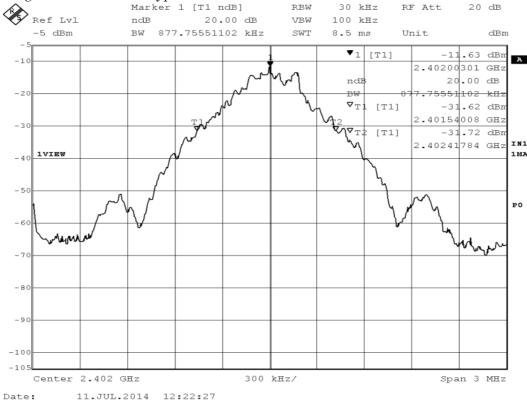
Model No. : BT301DT FCC ID : YRWDATECSBT301

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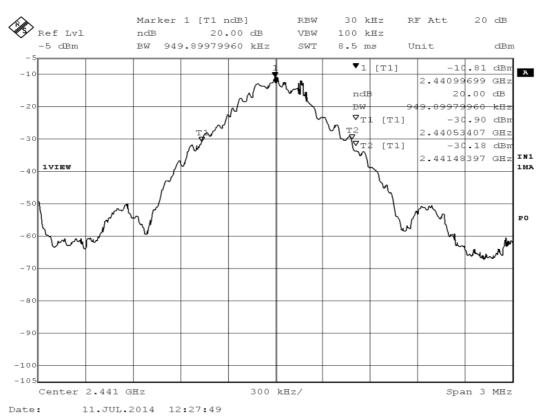
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#### 7.3.4.2 -20dBc Bandwidth

 $1) Packet\ Setting : DH5 (Modulation\ type: GFSK)$ 



Low Channel



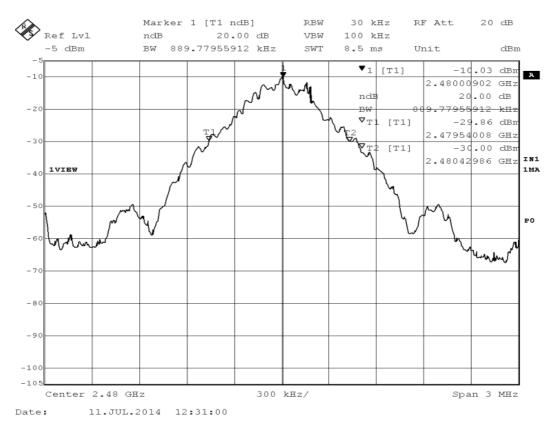
Middle Channel



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High Channel

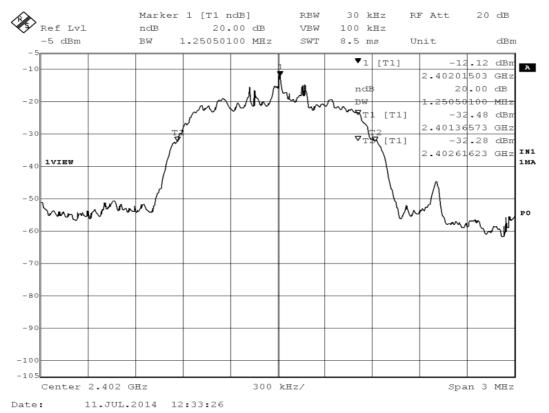


Model No. : BT301DT FCC ID : YRWDATECSBT301

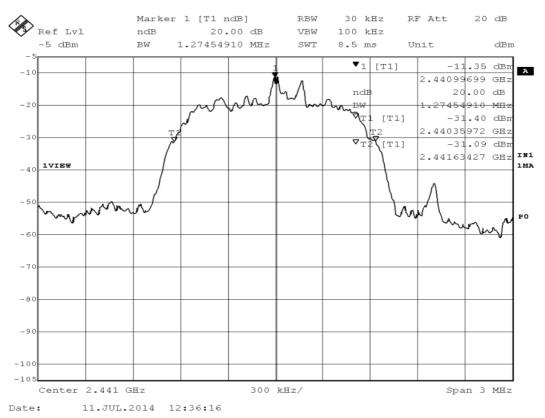
Standard : CFR 47 FCC Rules and Regulations Part 15

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### 2)Packet Setting: 2DH5(Modulation type: pi/4-DQPSK)



#### Low Channel



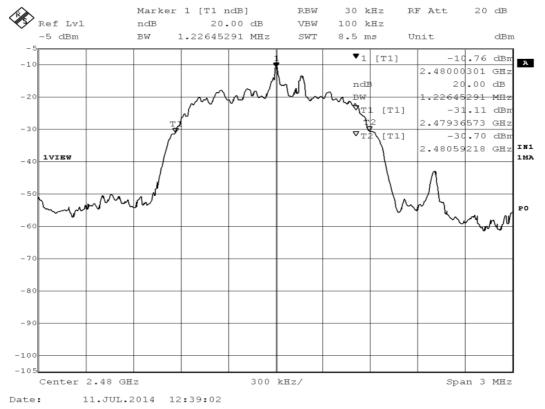
Middle Channel



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High Channel

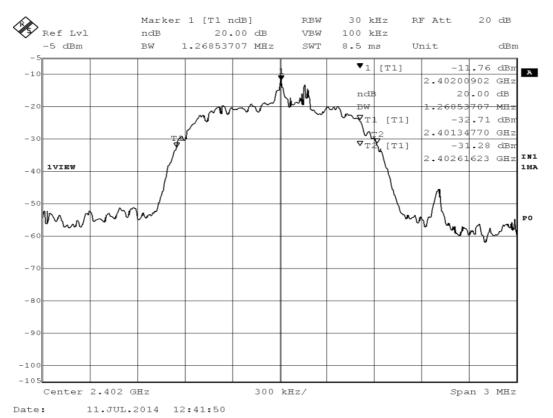


Model No. : BT301DT FCC ID : YRWDATECSBT301

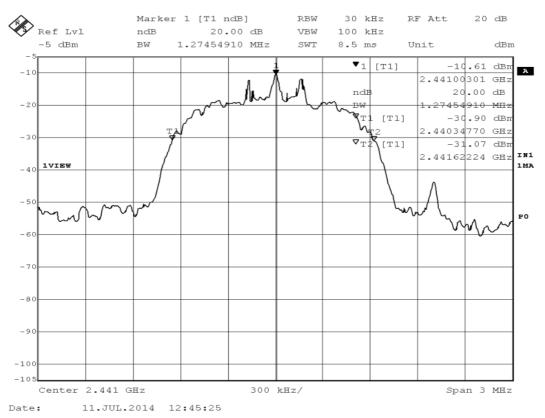
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# 3)Packet Setting: 3 DH5(Modulation type: 8DPSK)



#### Low Channel



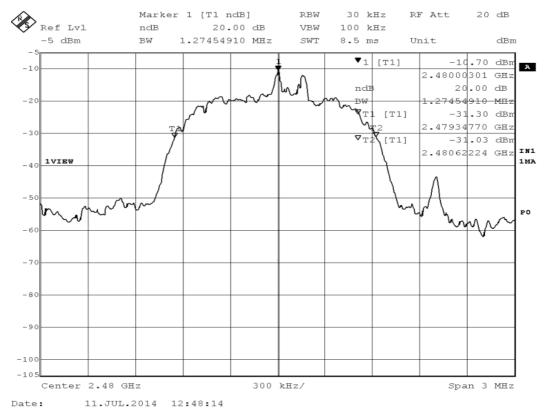
Middle Channel



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High Channel



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7.4	DΔ	11مر	Time	_
1.4	υv	A CTT	1 11111	=

For the requirements,	⊠ - Applicable [⊠ - Tested. □ - Not tested by ε □ - Not Applicable	applicant request.]
For the limits,	oxtimes - Passed $oxtimes$ - Failed $oxtimes$ - Not judged	
7.4.1 Worst Point and M	leasurement Uncertainty	
Dwell Time is	309.0 msec	
Dwell Time (Inquiry)	is <u>N/A</u> msec	
Dwell Time (AFH) is	310.0 msec	
Uncertainty of Measu	rement Results	<u>+/-0.6</u> %(2 <sub>0</sub> )

# 7.4.2 Test Site and Instruments

Remarks:

Type	Model	Manufacturer	ID No.	Last Cal.	Interval
Receiver	ESI26	Rohde & Schwarz	13	2014/6	1 Year
RF Cable	S 04272B	SUHNER	45	2014/5	1 Year
Attenuator	43KC-10	Anritsu	80	2013/10	1 Year

# 7.4.3 Test Method and Test Setup (Diagrammatic illustration)

The test system is shown as follows:

EUT Antenna Terminal	10dB Attenuator	Spectrum Analyzer
-------------------------	-----------------	----------------------

The setting of the spectrum analyzer are shown as follows:

Res. Bandwidth	1 MHz
Video Bandwidth	1 MHz
Span	Zero Span



Model No. : BT301DT FCC ID : YRWDATECSBT301

Standard : CFR 47 FCC Rules and Regulations Part 15

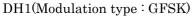
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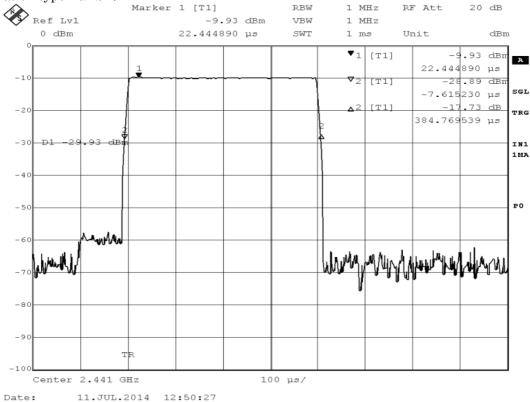
#### 7.4.4 Test Data

<u>Test Date</u>: <u>July 11, 2014</u> Temp.:25°C, Humi:58%

Mode of EUT	Dwell Time (msec)	Limit (msec)
DH1	123.2	400
DH3	265.4	400
DH5	309.0	400
Inquiry	-	400

The EUT not have inquiry mode because it was Slave device.





Note: The system makes worst case 1600 hops per second or 1 time slot has a length of 625  $\mu$ s with 79 channels. A DH1 Packet need 1 time slot for transmitting and 1 time slot for receiving. Then the system makes worst case 800 hops per second with 79 channels. So the system has each channel 10.1266 times per second and so for 31.6 seconds the system have 320.0 times of appearance.

Each tx-time per appearance is 0.385ms.

Dwell time = 320.0 \* 0.385 = 123.2 ms

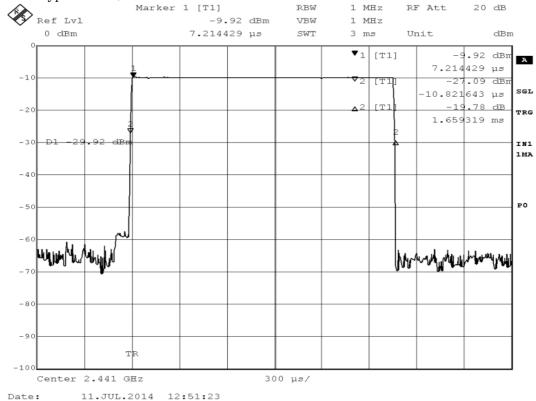


Model No. : BT301DT FCC ID : YRWDATECSBT301

Standard : CFR 47 FCC Rules and Regulations Part 15

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Note: A DH3 Packet need 3 time slot for transmitting and 1 time slot for receiving. Then the system makes worst case 400 hops per second with 79 channels. So the system have each channel 5.063 times per second and so for 31.6 seconds the system have 160.0 times of appearance. Each tx-time per appearance is 1.659 ms.

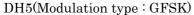
Dwell time = 160.0 \* 1.659 = 265.4ms

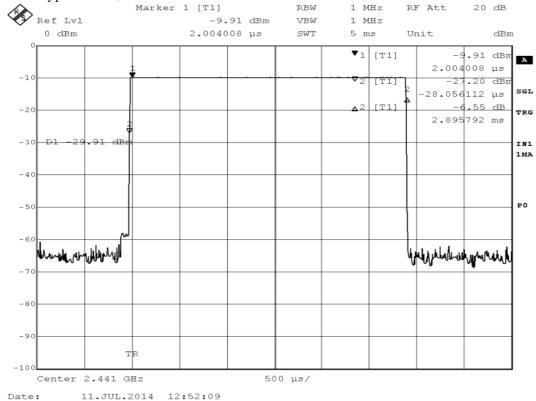


Model No. : BT301DT FCC ID : YRWDATECSBT301

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Note: A DH5 Packet need 5 time slot for transmitting and 1 time slot for receiving. Then the system makes worst case 266.667 hops per second with 79 channels. So the system have each channel 3.3755 times per second and so for 31.6 seconds the system have 106.7 times of appearance. Each tx-time per appearance is 2.896 ms.

Dwell time = 106.7 \* 2.896 = 309.0 ms

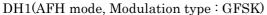


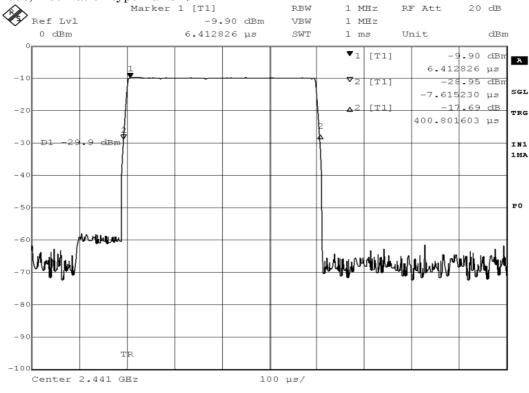
Model No. : BT301DT FCC ID : YRWDATECSBT301

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Mode of EUT	Dwell Time (msec)	Limit (msec)
DH1(AFH)	128.3	400
DH3(AFH)	264.5	400
DH5(AFH)	310.0	400





Date: 11.JUL.2014 12:52:57

Note: The system makes worst case 1600 hops per second or 1 time slot has a length of 625  $\mu s$  with 79 channels. A DH1 Packet need 1 time slot for transmitting and 1 time slot for receiving. Then the system makes worst case 800 hops per second with 20 channels. So the system has each channel 40 times per second and so for 8 seconds the system have 320.0 times of appearance.

Each tx-time per appearance is 0.401 ms.

Dwell time = 320.0 \* 0.401 = 128.3 ms

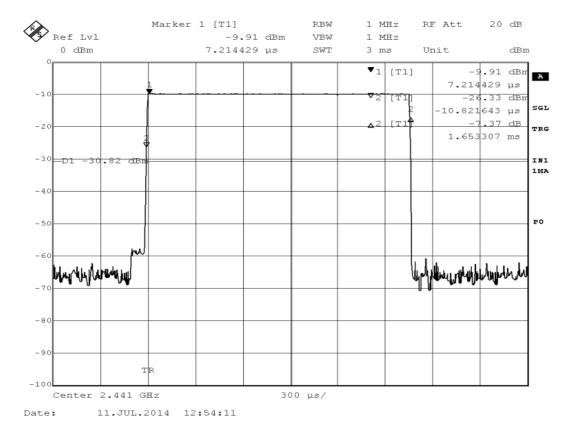


Model No. : BT301DT FCC ID : YRWDATECSBT301

Standard : CFR 47 FCC Rules and Regulations Part 15

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### DH3(AFH mode, Modulation type: GFSK)



Note: A DH3 Packet need 3 time slot for transmitting and 1 time slot for receiving. Then the system makes worst case 400 hops per second with 20 channels. So the system have each channel 20 times per second and so for 8 seconds the system have 160.0 times of appearance.

Each tx-time per appearance is 1.653 ms.

Dwell time = 160.0 \* 1.653 = 264.5 ms

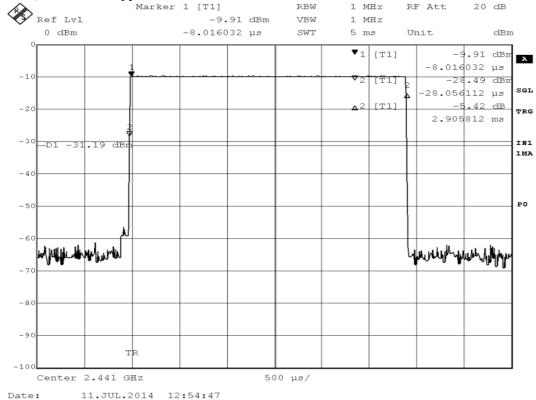


Model No. : BT301DT FCC ID : YRWDATECSBT301

Standard : CFR 47 FCC Rules and Regulations Part 15

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### DH5(AFH mode, Modulation type: GFSK)



Note: A DH5 Packet need 5 time slot for transmitting and 1 time slot for receiving. Then the system makes worst case 266.667 hops per second with 20 channels. So the system have each channel 13.33335 times per second and so for 8 seconds the system have 106.7 times of appearance. Each tx-time per appearance is 2.905 ms.

Dwell time = 106.7 \* 2.905 = 310.0 ms



Model No. : BT301DT FCC ID : YRWDATECSBT301

Standard : CFR 47 FCC Rules and Regulations Part 15

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.5 Peak Output Power(Conduction)							
For the requirements, $\boxtimes$ - Applicable $[\boxtimes$ - Tested. $\square$ - Not tested by applicant request.] $\square$ - Not Applicable							
For the limits,							
7.5.1 Worst Point and Measurement Uncertainty							
Peak Output Power is dBm at 441.0 MHz							
Uncertainty of Measurement Results at Amplitude dB(2\sigma)							
Remarks:							

# 7.5.2 Test Site and Instruments

Type	Model	Manufacturer	ID No.	Last Cal.	Interval
Power Meter	ML2495A	Anritsu	210	2013/12	1 Year
Power Sensor	MA2491A	Anritsu	211	2013/12	1 Year
RF Cable	S 04272B	SUHNER	45	2014/5	1 Year
Attenuator	43KC-10	Anritsu	80	2013/10	1 Year

# 7.5.3 Test Method and Test Setup (Diagrammatic illustration)

The Conducted RF Power Output was measured with a power meter, one 10dB attenuator and a short, low loss cable.

EUT	Antenna	10dB Attenuator		Power
EUI	Terminal			Meter



Model No. : BT301DT FCC ID : YRWDATECSBT301

Standard : CFR 47 FCC Rules and Regulations Part 15

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# 7.5.4 Test Data

 Date
 : July 11,2014

 Temp.
 : 25 ℃

 Humi.
 : 58 %

1)DH5(N	Iodulation t	ype : GFSK)					
Trasr	nmitting	Correction	Meter Conducted		Linits	Margin	
Fre	qency	Factor	Reading	Peak Output Power			
CH	(MHz)	(dB)	(dBm)	(dBm)	(mW)	(dBm)	(dB)
00	2402.0	11.42	-11.19	0.23	1.05	20.97	20.74
39	2441.0	11.42	-9.85	1.57	1.44	20.97	19.40
78	2480.0	11.42	-9.58	1.84	1.53	20.97	19.13

# 2)2DH5(Modulation type: pi/4-DQPSK)

Trası	nmitting	Correction	Meter	Cond	ucted	Linits	Margin
$\operatorname{Fr}\epsilon$	eqency	Factor	Reading	Peak Outp	out Power		
CH	(MHz)	(dB)	(dBm)	(dBm)	(mW)	(dBm)	(dB)
00	2402.0	11.42	-10.81	0.61	1.15	20.97	20.36
39	2441.0	11.42	-9.58	1.84	1.53	20.97	19.13
78	2480.0	11.42	-9.72	1.70	1.48	20.97	19.27

#### 3)3DH5(Modulation type: 8DPSK)

Trasi	nmitting	Correction	Meter	Cond	Conducted		Margin
$\operatorname{Fr}\epsilon$	eqency	Factor	Reading	Peak Outp	Peak Output Power		
CH	(MHz)	(dB)	(dBm)	(dBm)	(mW)	(dBm)	(dB)
00	2402.0	11.42	-10.50	0.92	1.24	20.97	20.05
39	2441.0	11.42	-9.32	2.10	1.62	20.97	18.87
78	2480.0	11.42	-9.46	1.96	1.57	20.97	19.01

Calculated result at 3DH5 2441 MHz, as the worst point shown on underline:

Minimum Margin: 20.97 - 2.10 = 18.87 (dB)

#### NOTES

- 1. The correction factor shows the attenuation pad loss including the short, low loss cable or adapter.
- 2. Was varied in the range of 85-115% of the input voltage, but there was no change in measured value.

3. Setting of measuring instrument(s):

Detector Function	Video B.W.
Peak	Off



7.6

7.7

JQA File No. Issue Date : July 11, 2014 : 400-140056

Model No. : BT301DT FCC ID YRWDATECSBT301

Standard : CFR 47 FCC Rules and Regulations Part 15

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Peak Power Density(	Conduction)
For the requirements,	$\square$ - Applicable $[\square$ - Tested. $\square$ - Not tested by applicant request.] $\boxtimes$ - Not Applicable
Spurious Emissions(C	Conduction)
For the requirements,	$\boxtimes$ - Applicable $\ [\boxtimes$ - Tested. $\ \Box$ - Not tested by applicant request.] $\ \Box$ - Not Applicable
For the limits,	□ - Passed □ - Failed □ - Not judged
1 Worst Point and M	easurement Uncertainty

# 7.7.

Uncertainty of Measurement Results	$9 \mathrm{~kHz} - 1 \mathrm{GHz}$	+/-1.0	_ dB(2σ)
	$1\mathrm{GHz} - 18\mathrm{GHz}$	+/-1.2	$dB(2\sigma)$
	$18\mathrm{GHz}-40\mathrm{GHz}$	+/-1.6	_ dB(2σ)

Remarks:

#### 7.7.2 Test Site and Instruments

Туре	ype Model Manut		ID No.	Last Cal.	Interval
Receiver	ESI26	Rohde & Schwarz	13	2014/6	1 Year
RF Cable	S 04272B	SUHNER	45	2014/5	1 Year
Attenuator	43KC-10	Anritsu	80	2013/10	1 Year

#### ${\bf Test\ Method\ and\ Test\ Setup\ (Diagrammatic\ illustration)}$ 7.7.3

The test system is shown as follows:



The setting of the spectrum analyzer are shown as follows:

Frequency Range	30 MHz - 25 GHz	Band-Edge
Res. Bandwidth	100 kHz	100 kHz
Video Bandwidth	300 kHz	300 kHz
Sweep Time	AUTO	AUTO
Trace	Maxhold	Maxhold



Model No. : BT301DT FCC ID : YRWDATECSBT301

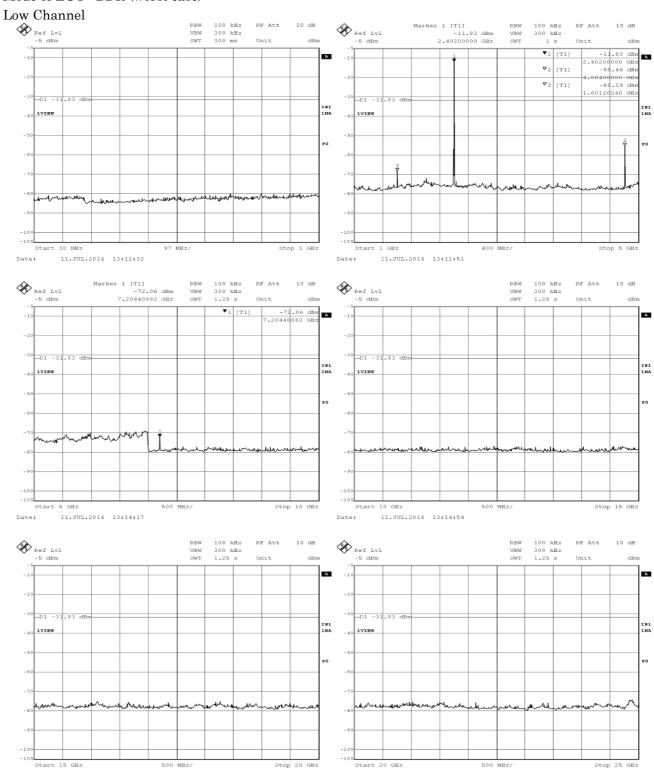
Standard : CFR 47 FCC Rules and Regulations Part 15

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# 7.7.4 Test Data

<u>Test Date</u>: <u>July 11, 2014</u> <u>Temp.:25°C, Humi:58%</u>

 $Mode\ of\ EUT: BDR\ (worst\ case)$ 



Date:

11.JUL.2014 13:16:58

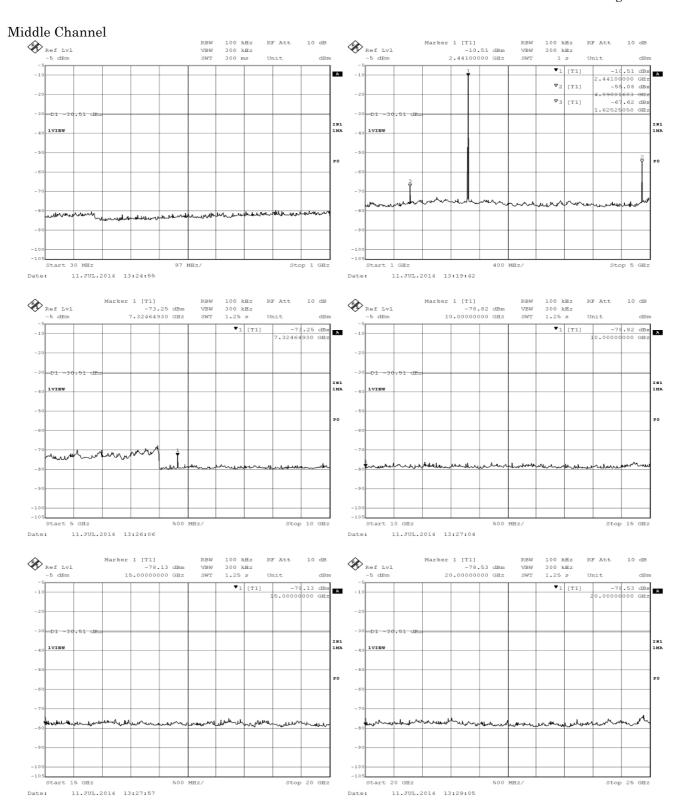
11.JUL.2014 13:15:53



Model No. : BT301DT FCC ID : YRWDATECSBT301

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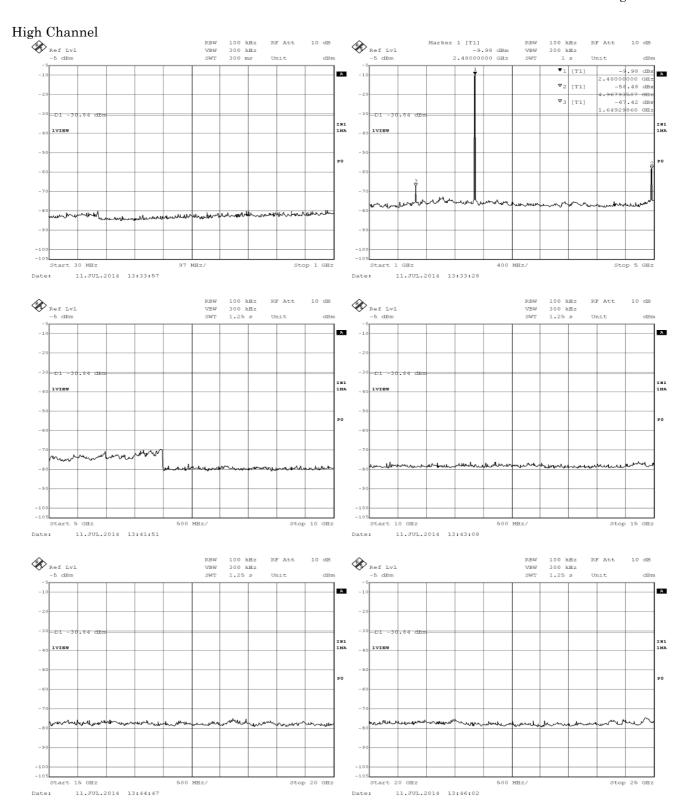


JQA File No.  $\div$  400-140056 Issue Date  $\div$  July 11, 2014

Model No. : BT301DT FCC ID : YRWDATECSBT301

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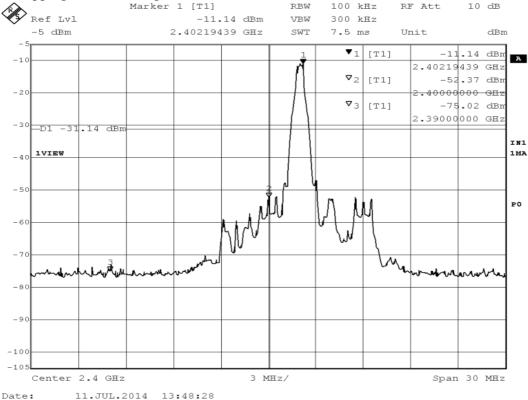
Model No. : BT301DT FCC ID : YRWDATECSBT301

Standard : CFR 47 FCC Rules and Regulations Part 15

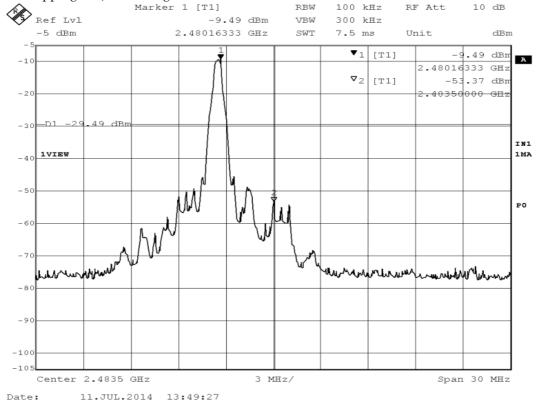
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# **Band-Edge Emission**

Low Channel (Hopping off), Band-Edge Emission



High Channel (Hopping off), Band-Edge Emission

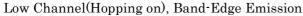


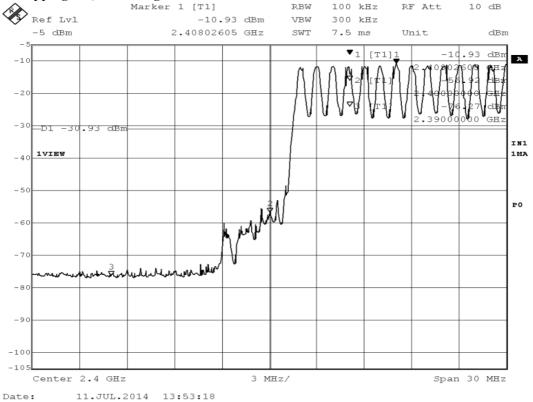


Model No. : BT301DT FCC ID : YRWDATECSBT301

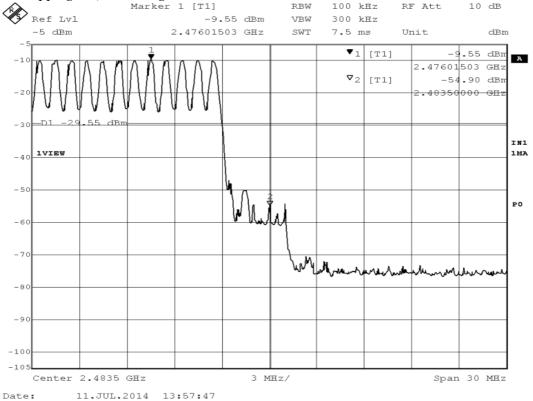
Standard : CFR 47 FCC Rules and Regulations Part 15

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# High Channel (Hopping on), Band-Edge Emission



JAPAN QUALITY ASSURANCE ORGANIZATION



Model No. : BT301DT FCC ID : YRWDATECSBT301

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7.8	8 AC Powerline Conducted Emission							
	For the requirements, $\boxtimes$ - Applicable $[\boxtimes$ - Tested. $\square$ - Not tested by applicant request.] $\square$ - Not Applicable							
	For the limits, $\square$ - Passed $\square$ - Failed $\square$ - Not judged							
7.8.	7.8.1 Worst Point and Measurement Uncertainty							
	Min. Limit Margin (Q	uasi-Peak)		1.6	dB	at _	0.62	_ MHz
	Uncertainty of Measur	rement Results				-	+/-2.9	_ dB(2σ)
	Remarks: Min. Limit	t Margin : Host	is Linea Pro 5	.0				

# 7.8.2 Test Site and Instruments

Type	Model	Manufacturer	ID No.	Last Cal.	Interval
Shield Room A	-	TDK	3	-	-
Receiver	ESCI	Rohde & Schwarz	172	2013/11	1 Year
RF Cable	RG223/U	SUHNER	42	2014/04	1 Year
LISN	KNW-407	Kyoritsu	34	2013/09	1 Year
HiPass Filter	KFL-009	Kyoritsu	246	2014/04	1 Year



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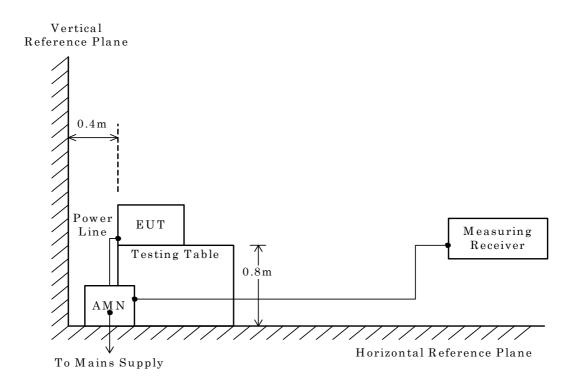
# 7.8.3 Test Method and Test Setup (Diagrammatic illustration)

The preliminary tests were performed using the scan mode of test receiver or spectrum analyzer to observe the emissions characteristics of the EUT.

The EUT configuration, cable configuration and mode of operation were determined for producing the maximum level of emissions.

This configurations was used for final tests.

- Side View -



NOTE

AMN : Artificial Mains Network



Model No. : BT301DT FCC ID : YRWDATECSBT301

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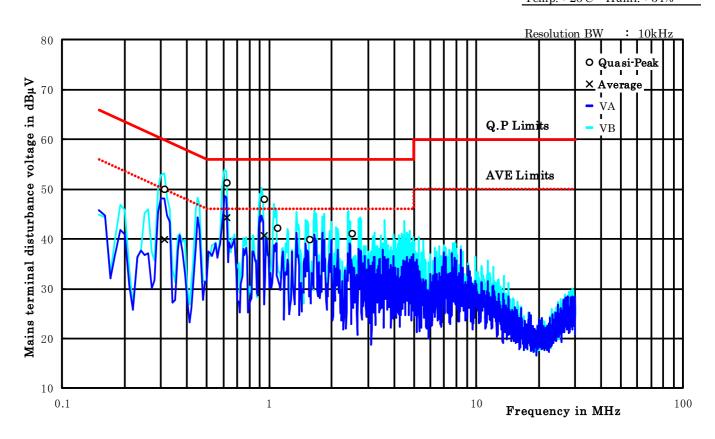
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# 7.8.4 Test Data

Mode of EUT: All modes have been investigated and the worst case mode for channel (39ch: 2441MHz) has been listed.

7.8.4.1 Host: Linea Pro 5.0

Date: July 2, 2014
Temp.: 26°C Humi.: 54%



Freq.	Factor.	Meter Reading[dB $\mu$ V]				Limit		Result.		Margin	
		G	P		AV		$[\mathrm{dB}\mu\mathrm{V}]$		V]	[dB]	
[MHz]	[dB]	VA	VB	VA	VB	QP	AV	QP	AV	QP	AV
0.31	20.5	23.2	29.6	-	19.5	60.0	50.0	50.1	40.0	9.9	10.0
0.62	20.2	25.6	31.2	-	24.2	56.0	46.0	51.4	44.4	4.6	1.6
0.94	20.1	23.3	28.0	-	20.7	56.0	46.0	48.1	40.8	7.9	5.2
1.09	20.1	16.5	22.2	-	-	56.0	46.0	42.3	-	13.7	-
1.56	20.1	13.5	19.9	-	-	56.0	46.0	40.0	-	16.0	-
2.50	20.0	14.4	21.2	-	=	56.0	46.0	41.2	-	14.8	-

Note: 1) QP: CISPR Quasi-Peak.; AV: Average.

- 2) VA : One end & grounded ; VB : The other end & grounded
- 3) The symbol of '<' means 'or less'.
- 4) The symbol of '>' means 'or greater' .
- 5) The symbol of '-' means 'Not applicable'.
- 6) Factor includes an A. M. N. factor, Hi-Pass Filter loss, Pulse Limiter loss and a cable loss.
- 7) A sample calculation was made at 0.31 MHzFactor + Meter Reading = 20.5 + 29.6 = 50.1

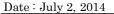


Model No. : BT301DT FCC ID : YRWDATECSBT301

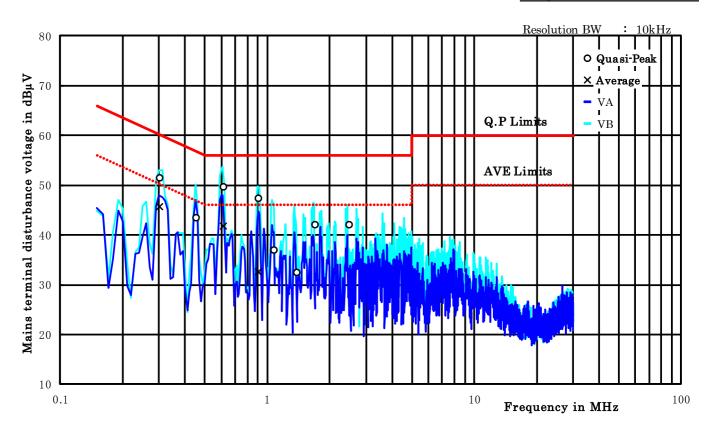
Standard : CFR 47 FCC Rules and Regulations Part 15

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7.8.4.2 Host: Infinea TAB 4.0



Temp.: 26°C Humi.: 54%



Freq.	Factor.	Meter Reading[dBμV]				Limit		Result.		Margin	
		6	<b>Q</b> P		AV	$[dB\mu V]$		$[dB\mu V]$		[dB]	
[MHz]	[dB]	VA	VB	VA	VB	QP	AV	QP	AV	$\operatorname{QP}$	AV
0.30	20.6	25.7	31.0	-	25.2	60.2	50.2	51.6	45.8	8.6	4.4
0.45	20.3	19.4	23.3	-	-	56.9	46.9	43.6	-	13.3	-
0.61	20.2	22.6	29.6	-	21.7	56.0	46.0	49.8	41.9	6.2	4.1
0.90	20.1	19.5	27.4	-	12.6	56.0	46.0	47.5	32.7	8.5	13.3
1.07	20.1	< 10.0	17.0	-	-	56.0	46.0	37.1	-	18.9	-
1.38	20.1	< 10.0	12.5	-	-	56.0	46.0	32.6	-	23.4	-
1.69	20.1	13.6	22.1	-	-	56.0	46.0	42.2	-	13.8	-
2.47	20.0	14.3	22.2	-	-	56.0	46.0	42.2	-	13.8	

Note: 1) QP : CISPR Quasi-Peak.; AV : Average.

- 2) VA: One end & grounded; VB: The other end & grounded
- 3) The symbol of '<' means 'or less'.
- 4) The symbol of '>' means 'or greater' .
- 5) The symbol of '-' means 'Not applicable'.
- 6) Factor includes an A. M. N. factor, Hi-Pass Filter loss, Pulse Limiter loss and a cable loss.
- 7) A sample calculation was made at 0.3 MHzFactor + Meter Reading = 20.6 + 31.0 = 51.6



Model No. : BT301DT FCC ID : YRWDATECSBT301

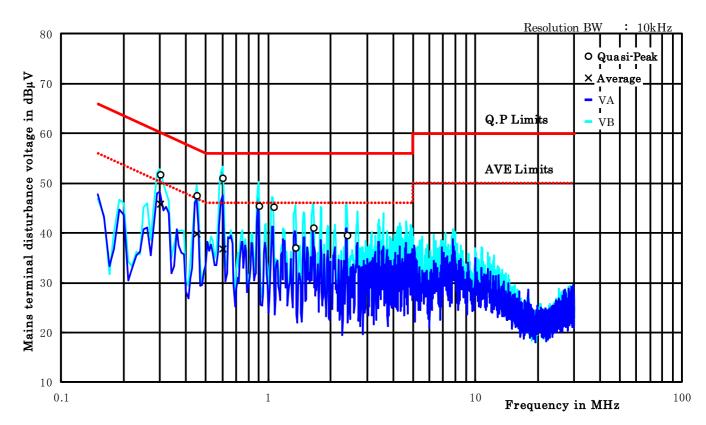
Standard : CFR 47 FCC Rules and Regulations Part 15

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# 7.8.4.3 Host: Infinea TAB mini

Date: July 2, 2014

Temp. : 26℃ Humi. : 54%



Freq.	Factor.	$Meter\ Reading[dB\mu V]$				Lim	it	Resu	lt.	Margin	
		G	P		AV	$[dB\mu V]$		$[\mathrm{dB}\mu\mathrm{V}]$		[dB]	
[MHz]	[dB]	VA	VB	VA	VB	QP	AV	QP	AV	QP	AV
0.30	20.6	26.1	31.2	-	25.3	60.2	50.2	51.8	45.9	8.4	4.3
0.45	20.3	22.8	27.3	-	19.6	56.9	46.9	47.6	39.9	9.3	7.0
0.60	20.2	21.9	30.9	-	16.7	56.0	46.0	51.1	36.9	4.9	9.1
0.90	20.1	20.5	25.4	-	-	56.0	46.0	45.5	-	10.5	-
1.06	20.1	16.3	25.2	-	-	56.0	46.0	45.3	-	10.7	-
1.35	20.1	13.2	17.0	-	-	56.0	46.0	37.1	-	18.9	-
1.65	20.1	16.6	21.0	-	-	56.0	46.0	41.1	-	14.9	-
2.40	20.0	16.2	19.6	-	=	56.0	46.0	39.6	=	16.4	-

Note: 1) QP : CISPR Quasi-Peak.; AV : Average.

- 2) VA : One end & grounded ; VB : The other end & grounded
- 3) The symbol of '<' means 'or less'.
- 4) The symbol of '>' means 'or greater' .
- 5) The symbol of '-' means 'Not applicable'.
- 6) Factor includes an A. M. N. factor, Hi-Pass Filter loss, Pulse Limiter loss and a cable loss.
- 7) A sample calculation was made at 0.3 MHzFactor + Meter Reading = 20.6 + 31.2 = 51.8



Model No. : BT301DT FCC ID : YRWDATECSBT301

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# 7.9 Radiated Emission

The requirements are  $\square$  - Applicable  $[\square]$  - Tested.  $\square$  - Not tested by applicant request.] ☐ - Not Applicable ☐ - Failed ☐ - Not judged  $\boxtimes$  - Passed 7.9.1 Worst Point and Measurement Uncertainty 1.4 dB Min. Limit Margin (Average) 4882.0 MHz Uncertainty of Measurement Results 9 kHz - 30 MHz+/-2.5 \_ dB(2σ)  $30~\mathrm{MHz} - 300~\mathrm{MHz}$ +/-4.6  $dB(2\sigma)$ 300 MHz - 1000 MHz+/-4.5  $dB(2\sigma)$  $1~\mathrm{GHz} - 6~\mathrm{GHz}$ +/-4.2  $dB(2\sigma)$ 

 $6~\mathrm{GHz} - 18~\mathrm{GHz}$ 

 $18 \mathrm{GHz} - 26.5 \mathrm{GHz}$ 

 $26.5 \, \mathrm{GHz} - 40 \, \mathrm{GHz}$ 

+/-4.6

+/-4.8

\_ dB(2σ)

+/-4.8 dB(2σ)

 $dB(2\sigma)$ 

Remarks: Min. Limit Margin: Host was Linea Pro 5.0, Tx Mid Ch

#### 7.9.2 Test Site and Instruments

Type	Model	Manufacturer	ID No.	Last Cal.	Interval
Anechoic Chamber A		TDK	1	2013/9	1 Year
Test Receiver	ESI26	Rohde & Schwarz	13	2014/6	1 Year
Loop Antenna	HFH2-Z2	Rohde & Schwarz	21	2013/11	1 Year
Biconical Antenna	BBA9106	Schwarzbeck	C-43	2014/5	1 Year
Log-periodic Antenna	UHALP9108-A1	Schwarzbeck	C-28	2014/5	1 Year
Log-periodic Antenna	HL050	Rohde & Schwarz	198	2013/12	1 Year
Horn Antenna	3160-08	EMCO	237	2014/5	1 Year
Horn Antenna	3160-09	EMCO	238	2013/12	1 Year
RF Cable	5D-2W	Fujikura	38	2014/2	1 Year
RF Cable	F130-S1S1-394	MEGA PHASE	195	2014/4	1 Year
RF Cable	SUCOFLEC 102E	HUBER+SHUNER	241	2013/10	1 Year
RF Amplifier	JS4-00102600-28-5A	MITEQ	57	2013/8	1 Year
Band Rejection Filter	BRM12294	MICRO-TRONICS	78	2013/10	1 Year



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# 7.9.3 Test Method and Test Setup (Diagrammatic illustration)

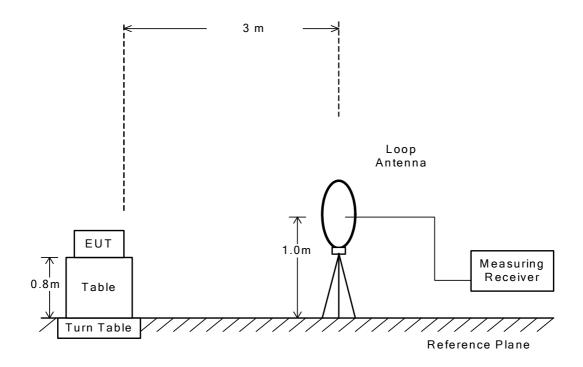
# 7.9.3.1 Radiated Emission 9 kHz - 30 MHz

The preliminary tests were performed at the measurement distance that specified for compliance to determine the emission characteristics of the EUT.

The EUT configuration(in X, Y and Z axis), cable configuration and mode of operation were determined for producing the maximum level of emissions.

This configurations was used for the final tests.

- Side View -





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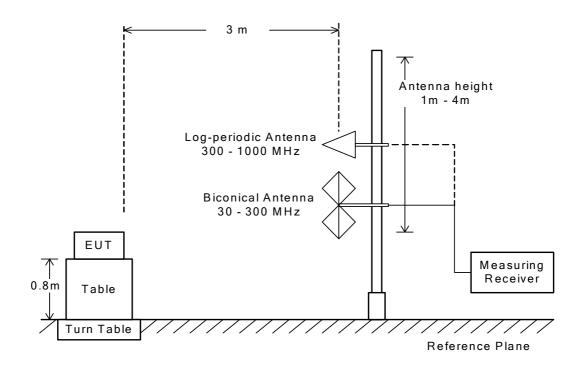
# 7.9.3.2 Radiated Emission 30 MHz - 1000 MHz

The preliminary tests were performed at the measurement distance that specified for compliance to determine the emission characteristics of the EUT.

The EUT configuration(in X, Y and Z axis), cable configuration and mode of operation were determined for producing the maximum level of emissions.

This configurations was used for the final tests.

- Side View -





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# 7.9.3.3 Radiated Emission above 1 GHz

The preliminary tests were performed at the measurement distance that specified for compliance to determine the emission characteristics of the EUT.

The EUT configuration(in X, Y and Z axis), cable configuration and mode of operation were determined for producing the maximum level of emissions.

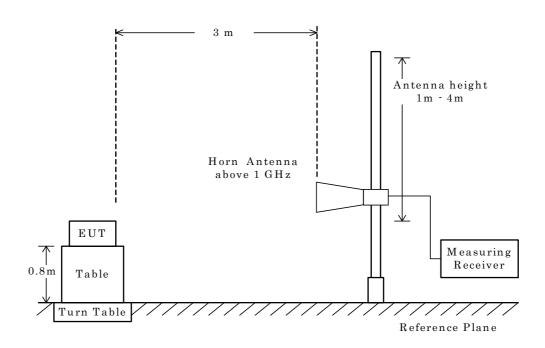
This configurations was used for the final tests.

The setting of the measuring instruments are shown as follows:

Type	Peak	Average
Detector Function	Peak	RMS
Res. Bandwidth	1 MHz	1 MHz
Video Bandwidth	$3\mathrm{MHz}$	≥ 1/T *1)
Sweep Time	AUTO	AUTO
Trace	Max Hold	Max Hold

Note: 1. T: Minimum transmission duration

- Side View -



# NOTE

The antenna height is scanned depending on the EUT's size and mounting height.



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7.9.4 Test Data

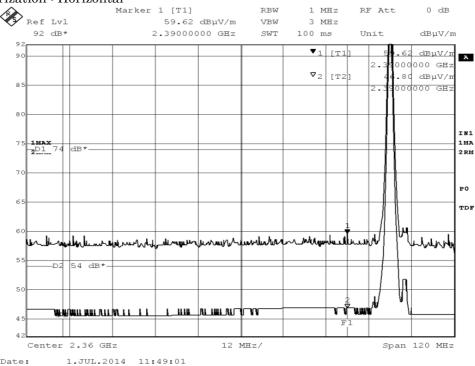
7.9.4.1 Band-edge Compliance

7.9.4.1.1 Host: Linea Pro 5.0

Test Date: July 1, 2014 Temp.:26°C, Humi:54%

Mode of EUT: BDR, Hopping off (0ch: 2402 MHz) (worst case)

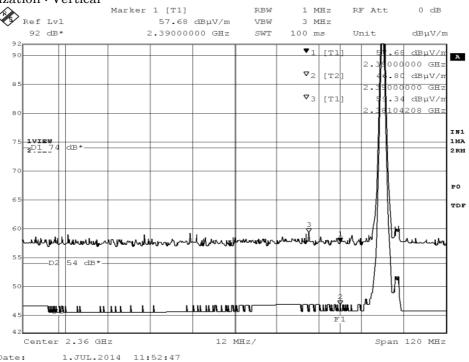
Antenna Polarization: Horizontal



Note: The trace 1 is Peak detection. The trace 2 is RMS detection.

# Mode of EUT: BDR, Hopping off (0ch: 2402 MHz) (worst case)

Antenna Polarization: Vertical





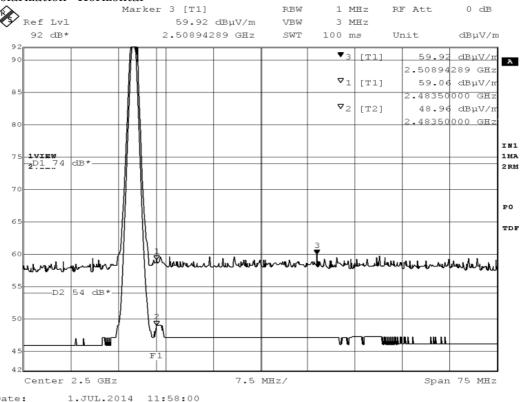
Model No. : BT301DT FCC ID : YRWDATECSBT301

Standard : CFR 47 FCC Rules and Regulations Part 15

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# Mode of EUT: BDR, Hopping off (78ch: 2480 MHz) (worst case)

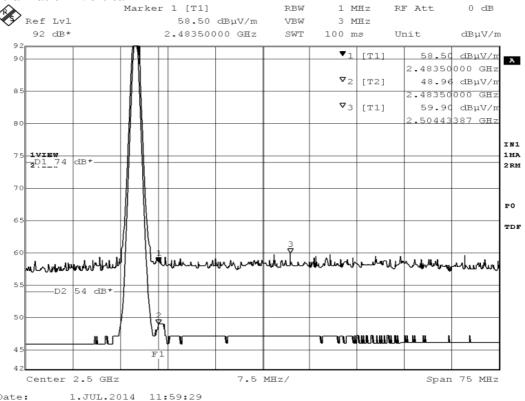
Antenna Polarization: Horizontal



Note: The trace 1 is Peak detection. The trace 2 is RMS detection.

# Mode of EUT: BDR, Hopping off (78ch: 2480 MHz) (worst case)

Antenna Polarization: Vertical





Model No. : BT301DT FCC ID : YRWDATECSBT301

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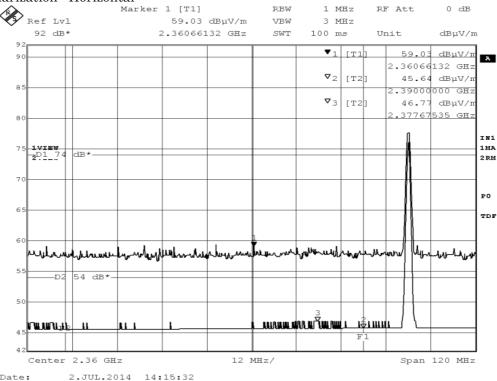
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7.9.4.1.2 Host: Infinea TAB 4.0

<u>Test Date</u>: <u>July 2, 2014</u> <u>Temp.:25°C, Humi:54%</u>

Mode of EUT: BDR, Hopping off (0ch: 2402 MHz) (worst case)

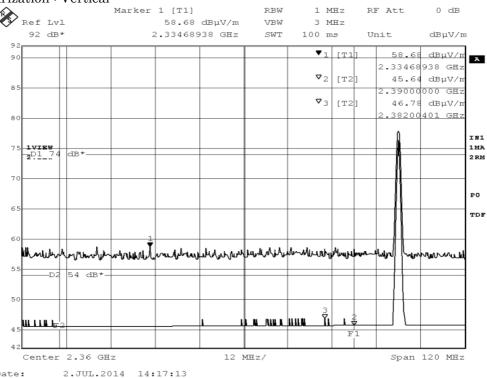
Antenna Polarization: Horizontal



Note: The trace 1 is Peak detection. The trace 2 is RMS detection.

Mode of EUT: BDR, Hopping off (0ch: 2402 MHz) (worst case)

Antenna Polarization: Vertical





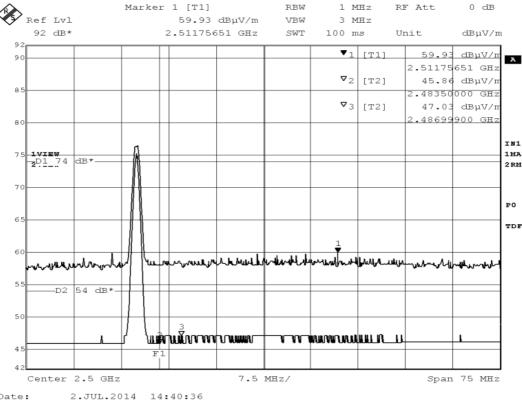
Model No. : BT301DT FCC ID : YRWDATECSBT301

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# Mode of EUT: BDR, Hopping off (78ch: 2480 MHz) (worst case)

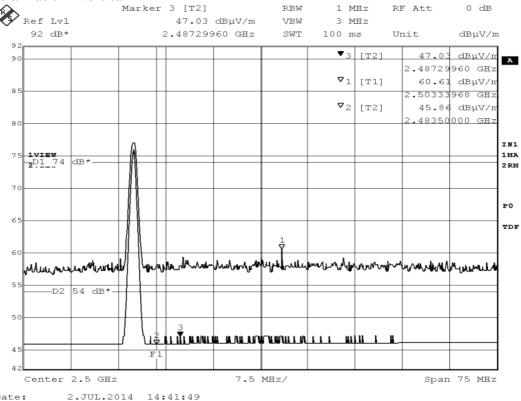
Antenna Polarization : Horizontal



Note: The trace 1 is Peak detection. The trace 2 is RMS detection.

# Mode of EUT: BDR, Hopping off (78ch: 2480 MHz) (worst case)

Antenna Polarization: Vertical





Model No. : BT301DT FCC ID : YRWDATECSBT301

Standard : CFR 47 FCC Rules and Regulations Part 15

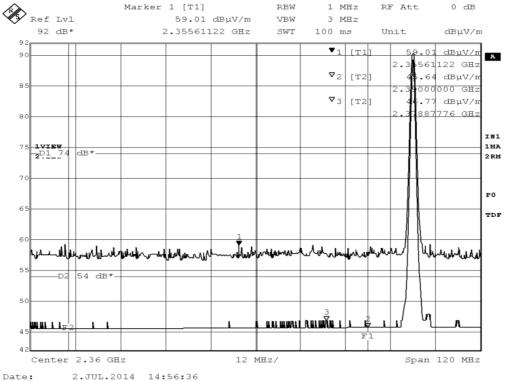
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#### 7.9.4.1.3 Host: Infinea TAB mini

<u>Test Date</u>: <u>July 2, 2014</u> <u>Temp.:25°C, Humi:54%</u>

Mode of EUT: BDR, Hopping off (0ch: 2402 MHz) (worst case)

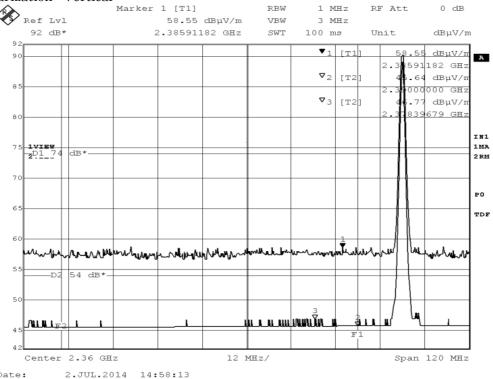
Antenna Polarization: Horizontal



Note: The trace 1 is Peak detection. The trace 2 is RMS detection.

Mode of EUT: BDR, Hopping off (0ch: 2402 MHz) (worst case)

Antenna Polarization: Vertical





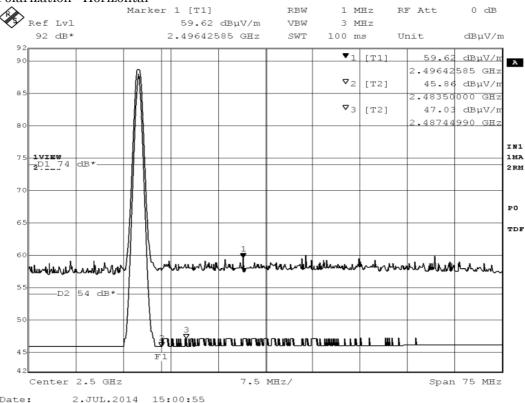
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# Mode of EUT: BDR, Hopping off (78ch: 2480 MHz) (worst case)

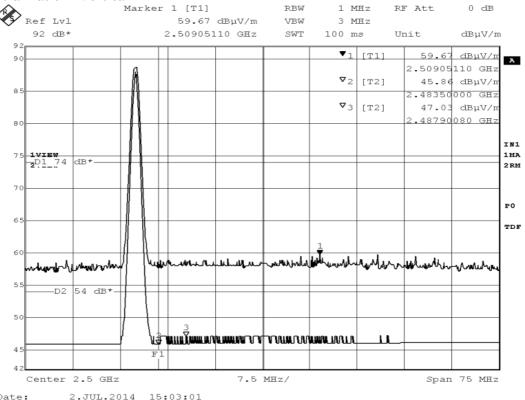
Antenna Polarization : Horizontal



Note: The trace 1 is Peak detection. The trace 2 is RMS detection.

# Mode of EUT: BDR, Hopping off (78ch: 2480 MHz) (worst case)

Antenna Polarization: Vertical





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# 7.4.9.2 Other Spurious Emission (9kHz - 30MHz)

<u>Test Date</u>: <u>July 1∼2, 2014</u>

Temp.:26°C, Humi:54%

Mode of EUT: All modes have been investigated and the worst case mode has been listed.

Results: No spurious emissions in the range 20dB below the limit.



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# 7.4.9.3 Other Spurious Emission (30MHz – 1000MHz)

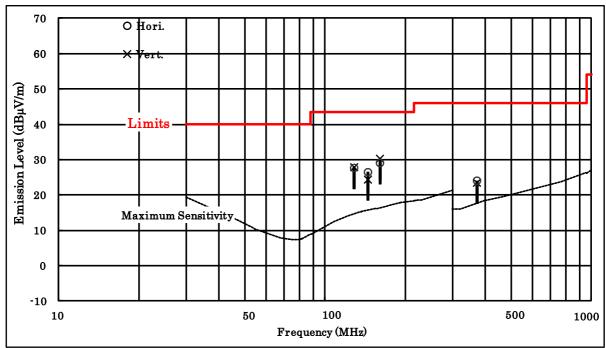
# 7.4.9.3.1 Host Linea Pro 5.0

Mode of EUT: All modes have been investigated and the worst case mode has been listed.

Worst point Axis: X

Date : July 1, 2014 Temp : 24°C Humi : 58%

Frequency Antenna Factor			Meter Reading (dBμV)		Emission Level (dBµV/m)		Margin (dB)	
(MHz)	(dB/m)	Hori.	Vert.	Q.P	Hori.	Vert.	Hori.	Vert.
128.0	14.8	13.0	13.2	43.5	27.8	28.0	15.7	15.5
144.2	15.8	10.8	8.7	43.5	26.6	24.5	16.9	19.0
160.0	16.4	12.8	14.0	43.5	29.2	30.4	14.3	13.1
370.1	17.4	6.8	6.2	46.0	24.2	23.6	21.8	22.4



- Notes: 1) The testing location: Anechoic Chamber B Distance: 3 m
  - 2) The spectrum was checked from 30 MHz to 1000 MHz.
  - 3) Antenna factor includes the cable loss.
  - 4) Hori. : Horizontal polarization  $\quad \mbox{Vert.}$  : Vertical polarization
  - 5) Q.P: Quasi-Peak Detector
  - 6) The symbol of "<" means "or less", ">" means "more than".
  - 7) A sample calculation was made at 128.0 MHz

(Antenna Factor) + (Meter Reading) =  $14.8 + 13.2 = 28.0 \text{ dB}\mu\text{V}$ 



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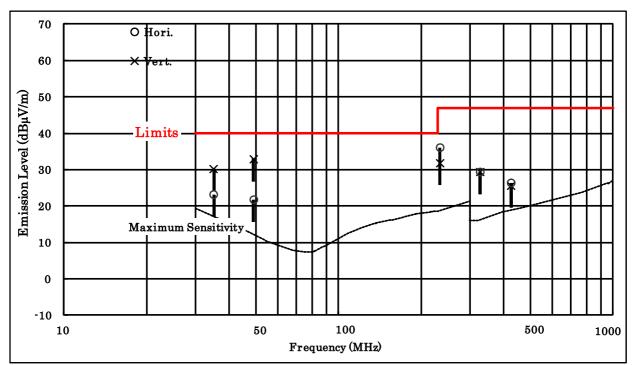
# 7.4.9.3.2 Host Infinea TAB 4.0

Mode of EUT: All modes have been investigated and the worst case mode has been listed.

Worst point Axis: Z

Date : July 2, 2014 Temp : 26°C Humi : 54%

Frequency	uency Antenna Meter Readin Factor $(dB\mu V)$		O	Limits (dBµV/m)	Emission Level (dBµV/m)		Margin (dB)	
(MHz)	(dB/m)	Hori.	Vert.	Q.P	Hori.	Vert.	Hori.	Vert.
34.9	17.4	5.9	12.9	40.0	23.3	30.3	16.7	9.7
48.9	12.3	9.6	20.7	40.0	21.9	33.0	18.1	7.0
233.4	18.7	17.5	13.2	47.0	36.2	31.9	10.8	15.1
326.7	16.2	13.3	13.3	47.0	29.5	29.5	17.5	17.5
423.4	18.9	7.6	6.8	47.0	26.5	25.7	20.5	21.3



- Notes: 1) The testing location : Anechoic Chamber B  $\;\;$  Distance : 3 m
  - 2) The spectrum was checked from 30 MHz to 1000 MHz.
  - 3) Antenna factor includes the cable loss.
  - 4) Hori.: Horizontal polarization Vert.: Vertical polarization
  - 5) Q.P: Quasi-Peak Detector
  - 6) The symbol of "<" means "or less", ">" means "more than".
  - 7) A sample calculation was made at 34.9 MHz

(Antenna Factor) + (Meter Reading) =  $17.4 + 12.9 = 30.3 \text{ dB}\mu\text{V}$ 



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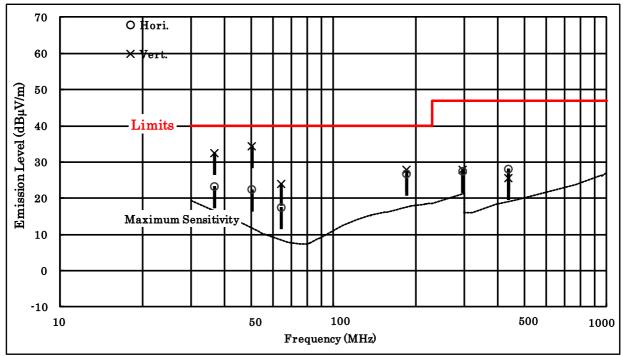
# 7.4.9.3.3 Host Infinea TAB mini

Mode of EUT: All modes have been investigated and the worst case mode has been listed.

Worst point Axis: X

Date: July 2, 2014 Temp: 26°C Humi: 54%

Frequency	y Antenna Meter Reading Factor (dBµV)		U	Limits (dBµV/m)			Margin (dB)		
(MHz)	(dB/m)	Hori.	Vert.	Q.P	Hori.	Vert.	Hori.	Vert.	
36.5	16.9	6.5	15.7	40.0	23.4	32.6	16.6	7.4	
50.0	11.9	10.7	22.6	40.0	22.6	34.5	17.4	5.5	
64.1	8.3	9.3	15.8	40.0	17.6	24.1	22.4	15.9	
184.2	17.5	9.4	10.5	40.0	26.9	28.0	13.1	12.0	
295.7	21.1	6.5	6.9	47.0	27.6	28.0	19.4	19.0	
434.7	18.9	9.3	6.8	47.0	28.2	25.7	18.8	21.3	



- Notes: 1) The testing location: Anechoic Chamber B Distance: 3 m
  - 2) The spectrum was checked from 30 MHz to 1000 MHz.
  - 3) Antenna factor includes the cable loss.
  - 4) Hori.: Horizontal polarization Vert.: Vertical polarization
  - 5) Q.P: Quasi-Peak Detector
  - 6) The symbol of  $\,\,^{"}<"$  means  $\,^{"}$ or less",  $\,^{"}>"$  means  $\,^{"}$ more than".
  - 7) A sample calculation was made at 36.5 MHz

(Antenna Factor) + (Meter Reading) =  $16.9 + 15.7 = 32.6 \text{ dB}\mu\text{V}$ 



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# 7.4.9.4 Other Spurious Emission (Above 1000MHz)

7.4.9.4.1 Host: Linea Pro 5.0

Mode of EUT: BDR (worst case)

Worst point Axis: X

Date : July 1,2014 Temp. : 24 ℃ Humi. : 58 %

Frequency	Antenna Factor	Corr. Factor	M Horiz		ngs [dΒ(μV Vert	_	Lim: [dB(µV		Resu [dB(µV		Mar [dI	_	Remarks
[MHz]	[dB(1/m)]	[dB]	PK	AVE	PK	AVE	PK	AVE	PK	AVE	PK	AVE	
[WITIZ]	[(111/1)]	[tiD]	1 11	AVE	1 11	AVE	1 11	AVE	111	AVE	1 11	AVE	
Test condit	ion : Tx Lo	ow Ch											
1602.0	25.9	-26.9	52.8	51.4	52.0	51.0	74.0	54.0	51.8	50.4	22.2	3.6	A/B
4804.0	35.7	-25.7	56.6	42.1	56.2	42.0	74.0	54.0	66.6	52.1	7.4	1.9	A/B
7206.0	38.7	-34.4	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 44.3	< 31.3	> 29.7	> 22.7	A/B
9608.0	41.2	-32.6	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 48.6	< 35.6	> 25.4	> 18.4	A/B
12010.0	43.4	-32.3	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 51.0	< 38.0	> 23.0	> 16.0	A/B
19216.0	40.3	-29.2	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 51.0	< 38.0	> 23.0	> 16.0	A/B
Test condit	ion : Tx M	id Ch											
1628.1	26.4	-26.9	52.4	51.2	52.0	41.0	74.0	54.0	51.9	50.7	22.1	3.3	A/B
4882.0	36.2	-25.7	56.4	42.1	56.3	42.1	74.0	54.0	66.9	52.6	7.1	1.4	A/B
7323.0	38.8	-34.3	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 44.5	< 31.5	> 29.5	> 22.5	A/B
9764.0	41.2	-32.5	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 48.7	< 35.7	> 25.3	> 18.3	A/B
12205.0	44.0	-32.3	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 51.7	< 38.7	> 22.3	> 15.3	A/B
21969.0	40.2	-26.6	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 53.6	< 40.6	> 20.4	> 13.4	A/B
Test condit	ion : Tx H	igh Ch											
1654.1	26.8	-26.8	52.6	51.5	52.2	51.2	74.0	54.0	52.6	51.5	21.4	2.5	A/B
4960.1	35.8	-25.7	56.6	42.2	56.4	42.1	74.0	54.0	66.7	52.3	7.3	1.7	A/B
7440.0	39.2	-34.2	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 44.9	< 31.9	> 29.1	> 22.1	A/B
9920.0	42.2	-32.4	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 49.8	< 36.8	> 24.2	> 17.2	A/B
12400.0	44.0	-32.3	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 51.7	< 38.7	> 22.3	> 15.3	A/B
22320.0	40.2	-26.5	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 53.7	< 40.7	> 20.3	> 13.3	A/B

Calculated result at 4882.0 MHz, as the worst point shown on underline:

 $\begin{array}{ccccc} Antenna \ Factor & = & 36.2 & dB(1/m) \\ Corr. \ Factor & = & -25.7 & dB \\ +) \ \underline{Meter \ Reading} & = & 42.1 & dB(\mu V) \\ \hline Result & = & 52.6 & dB(\mu V/m) \end{array}$ 

Minimum Margin: 54.0 - 52.6 = 1.4 (dB)

#### NOTES

- 1. Test Distance : 3 m (1 GHz to 6 GHz) and 1 m (6 GHz to 25 GHz)
- $2. \ The \ spectrum \ was \ checked \ from \ 1 \ GHz \ to \ 25 \ GHz \ (10th \ harmonic \ of \ the \ highest \ fundamental \ frequency).$
- 3. The correction factor is shown as follows:

Corr. Factor [dB] = Cable Loss[dB] - Pre-Amp. Gain [dB] (1 GHz - 6 GHz)

 $\label{loss-measurement} \begin{tabular}{l} Corr. Factor [dB] = Cable Loss - Measurement distance conversion[dB] - Pre-Amp. Gain [dB] (6 GHz - 25 GHz) \\ Measurement distance conversion[dB] = 20 * Log ( 1m / 3m ) \\ \end{tabular}$ 

- 4. The symbol of "<" means "or less".
- 5. The symbol of ">" means "more than".
- 6. PK : Peak Detector / AVE : RMS Detector

7. Setting of measuring instrument(s):

	Detector Function	Resolution B.W.	Video B.W.	Sweep Time
A	Peak	1 MHz	$3\mathrm{MHz}$	AUTO
В	RMS	$1\mathrm{MHz}$	$3\mathrm{MHz}$	AUTO



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Mode of EUT: BDR (worst case)

Worst point Axis: X

 $\begin{array}{lll} \text{Date} & : & \text{July 1,2014} \\ \text{Temp.} & : & 24 & \circlearrowright \\ \text{Humi.} & : & 58 & \% \end{array}$ 

Frequency	Antenna	Corr.			ngs [dB(μV	-	Lim		Resi		Mar	_	Remarks
	Factor	Factor	Horiz	ontal	Vert	ical	[dB(μV	7/m)]	[dB(μ'	V/m)]	[dI	3]	
[MHz]	[dB(1/m)]	[dB]	PK	AVE	PK	AVE	PK	AVE	PK	AVE	PK	AVE	
Test condit	ion : Rx L	ow Ch											
1600.3	25.9	-26.9	45.7	42.2	45.5	42.2	74.0	54.0	44.7	41.2	29.3	12.8	A/B
4804.0	35.7	-25.7	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 50.0	< 37.0	> 24.0	> 17.0	A/B
7206.0	38.7	-34.4	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 44.3	< 31.3	> 29.7	> 22.7	A/B
9608.0	41.2	-32.6	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 48.6	< 35.6	> 25.4	> 18.4	A/B
12010.0	43.4	-32.3	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 51.0	< 38.0	> 23.0	> 16.0	A/B
19216.0	40.3	-29.2	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 51.0	< 38.0	> 23.0	> 16.0	A/B
Test condit	ion : Rx M	lid Ch											
1626.3	3 26.4	-26.9	45.5	42.0	45.4	42.1	74.0	54.0	45.0	41.6	29.0	12.4	A/B
4882.0	36.2	-25.7	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 50.5	< 37.5	> 23.5	> 16.5	A/B
7323.0	38.8	-34.3	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 44.5	< 31.5	> 29.5	> 22.5	A/B
9764.0	41.2	-32.5	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 48.7	< 35.7	> 25.3	> 18.3	A/B
12205.0	44.0	-32.3	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 51.7	< 38.7	> 22.3	> 15.3	A/B
21969.0	40.2	-26.6	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 53.6	< 40.6	> 20.4	> 13.4	A/B
Test condit	ion : Rx H	igh Ch											
1652.3		-26.8	45.6	42.2	45.6	42.0	74.0	54.0	45.6	42.2	28.4	11.8	A/B
4960.0	35.8	-25.7	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 50.1	< 37.1	> 23.9	> 16.9	A/B
7440.0	39.2	-34.2	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 44.9	< 31.9	> 29.1	> 22.1	A/B
9920.0	42.2	-32.4	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 49.8	< 36.8	> 24.2	> 17.2	A/B
12400.0	44.0	-32.3	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 51.7	< 38.7	> 22.3	> 15.3	A/B
22320.0	40.2	-26.5	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 53.7	< 40.7	> 20.3	> 13.3	A/B

Calculated result at 1652.3 MHz, as the worst point shown on underline:

 $\begin{array}{ccccc} Antenna \ Factor & = & 26.8 & dB(1/m) \\ Corr. \ Factor & = & -26.8 & dB \\ +) \ \underline{Meter \ Reading} & = & 42.2 & dB(\mu V) \\ \hline Result & = & 42.2 & dB(\mu V/m) \end{array}$ 

Minimum Margin: 54.0 - 42.2 = 11.8 (dB)

#### NOTES

- 1. Test Distance : 3 m (1 GHz to 6 GHz) and 1 m (6 GHz to 25 GHz)
- 2. The spectrum was checked from 1 GHz to 25 GHz (10th harmonic of the highest fundamental frequency).
- 3. The correction factor is shown as follows:

Corr. Factor [dB] = Cable Loss[dB] - Pre-Amp. Gain [dB] (1 GHz - 6 GHz)

Corr. Factor [dB] = Cable Loss - Measrement distance conversion[dB] - Pre-Amp. Gain [dB] (6 GHz - 25 GHz) Measrement distance conversion[dB] = 20 \* Log (1 m / 3 m)

- 4. The symbol of "<" means "or less".
- 5. The symbol of ">" means "more than".
- 6. PK : Peak Detector / AVE : RMS Detector
- 7. Setting of measuring instrument(s):

	Detector Function	Resolution B.W.	Video B.W.	Sweep Time
A	Peak	1 MHz	$3\mathrm{MHz}$	AUTO
В	RMS	1 MHz	$3\mathrm{MHz}$	AUTO



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#### 7.4.9.4.2 Host: Infinea TAB 4.0

Mode of EUT: BDR (worst case)

Worst point Axis : Z

Date : July 2 ,2014 Temp. : 26 ℃ Humi. : 54 %

Freqency	Antenna	Corr.			ngs [dB(μV		Lim		Resi		Mar	0	Remarks
F 1	Factor	Factor	Horiz		Vert		[dΒ(μV		[dΒ(μ'		[dI	•	
[MHz]	[dB(1/m)]	[dB]	PK	AVE	PK	AVE	PK	AVE	PK	AVE	PK	AVE	
Test condit	ion · Tv L	ovy Ch											
1602.0		-26.9	47.3	44.5	47.0	44.2	74.0	54.0	46.3	43.5	27.7	10.5	A/B
4804.0		-25.7	49.6	34.2	49.4	33.8	74.0	54.0 $54.0$	59.6	44.2	14.4	9.8	A/B
7206.0		-34.4	< 40.0	< 27.0	< 40.0				< 44.3	< 31.3	> 29.7		A/B
						< 27.0	74.0	54.0				> 22.7	
9608.0		-32.6	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 48.6	< 35.6	> 25.4	> 18.4	A/B
12010.0		-32.3	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 51.0	< 38.0	> 23.0	> 16.0	A/B
19216.0	40.3	-29.2	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 51.0	< 38.0	> 23.0	> 16.0	A/B
m , 1:,		. 1 (1											
Test condit			40.0	44.0	40.0	440	<b>-</b> 40	<b>~</b> 4 0	40.4	40.0	0= 0	100	A (TD)
1628.2		-26.9	46.9	44.3	46.8	44.0	74.0	54.0	46.4	43.8	27.6	10.2	A/B
4882.0		-25.7	49.4	34.0	49.2	33.6	74.0	54.0	59.9	44.5	14.1	9.5	A/B
7323.0		-34.3	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 44.5	< 31.5	> 29.5	> 22.5	A/B
9764.0	41.2	-32.5	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 48.7	< 35.7	> 25.3	> 18.3	A/B
12205.0	44.0	-32.3	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 51.7	< 38.7	> 22.3	> 15.3	A/B
21969.0	40.2	-26.6	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 53.6	< 40.6	> 20.4	> 13.4	A/B
Test condit	ion : Tx H	igh Ch											
1654.1	26.8	-26.8	47.2	44.5	47.0	44.3	74.0	54.0	47.2	44.5	26.8	9.5	A/B
4960.0	35.8	-25.7	49.6	34.0	49.3	33.8	74.0	54.0	59.7	44.1	14.3	9.9	A/B
7440.0	39.2	-34.2	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 44.9	< 31.9	> 29.1	> 22.1	A/B
9920.0	42.2	-32.4	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 49.8	< 36.8	> 24.2	> 17.2	A/B
12400.0	44.0	-32.3	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 51.7	< 38.7	> 22.3	> 15.3	A/B
22320.0	40.2	-26.5	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 53.7	< 40.7	> 20.3	> 13.3	A/B

Calculated result at 1654.1 MHz, as the worst point shown on underline:

 $\begin{array}{ccccc} Antenna \ Factor & = & 26.8 & dB(1/m) \\ Corr. \ Factor & = & -26.8 & dB \\ +) \ \underline{Meter \ Reading} & = & 44.5 & dB(\mu V) \\ \hline Result & = & 44.5 & dB(\mu V/m) \\ \end{array}$ 

Minimum Margin: 54.0 - 44.5 = 9.5 (dB)

#### NOTES

- 1. Test Distance : 3 m (1 GHz to 6 GHz) and 1 m (6 GHz to 25 GHz)
- $2. \ The \ spectrum \ was \ checked \ from \ 1 \ GHz \ to \ 25 \ GHz \ (10th \ harmonic \ of \ the \ highest \ fundamental \ frequency).$
- 3. The correction factor is shown as follows:

Corr. Factor [dB] = Cable Loss[dB] - Pre-Amp. Gain [dB] (1 GHz - 6 GHz)

Corr. Factor [dB] = Cable Loss - Measrement distance conversion[dB] - Pre-Amp. Gain [dB] (6 GHz - 25 GHz) Measrement distance conversion[dB] = 20 \* Log (1 m / 3 m)

- 4. The symbol of "<" means "or less".
- 5. The symbol of ">" means "more than".
- 6. PK : Peak Detector / AVE : RMS Detector

7. Setting of measuring instrument(s):

	Detector Function	Resolution B.W.	Video B.W.	Sweep Time
A	Peak	1 MHz	$3\mathrm{MHz}$	AUTO
В	RMS	$1\mathrm{MHz}$	$3\mathrm{MHz}$	AUTO



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Mode of EUT: BDR (worst case)

Worst point Axis: Z

Frequency	Antenna	Corr.	M	eter Readi	ngs [dB(μV	)]	Lim	its	Res	ults	Mar	gin	Remarks
	Factor	Factor	Horiz	ontal	Vert	ical	[dB(μV	//m)]	[dB(μ'	V/m)]	[d]	B]	
[MHz]	[dB(1/m)]	[dB]	PK	AVE	PK	AVE	PK	AVE	PK	AVE	PK	AVE	
Test condit	ion : Rx L	ow Ch											
1600.3	25.9	-26.9	45.8	42.4	45.6	42.3	74.0	54.0	44.8	41.4	29.2	12.6	A/B
4804.0	35.7	-25.7	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 50.0	< 37.0	> 24.0	> 17.0	A/B
7206.0	38.7	-34.4	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 44.3	< 31.3	> 29.7	> 22.7	A/B
9608.0	41.2	-32.6	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 48.6	< 35.6	> 25.4	> 18.4	A/B
12010.0	43.4	-32.3	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 51.0	< 38.0	> 23.0	> 16.0	A/B
19216.0	40.3	-29.2	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 51.0	< 38.0	> 23.0	> 16.0	A/B
Test condit	ion : Rx M	id Ch											
1626.3	26.4	-26.9	46.0	42.8	45.8	42.6	74.0	54.0	45.5	42.3	28.5	11.7	A/B
4882.0	36.2	-25.7	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 50.5	< 37.5	> 23.5	> 16.5	A/B
7323.0	38.8	-34.3	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 44.5	< 31.5	> 29.5	> 22.5	A/B
9764.0	41.2	-32.5	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 48.7	< 35.7	> 25.3	> 18.3	A/B
12205.0	44.0	-32.3	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 51.7	< 38.7	> 22.3	> 15.3	A/B
21969.0	40.2	-26.6	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 53.6	< 40.6	> 20.4	> 13.4	A/B
Test condit	ion : Rx H	igh Ch											
1652.3		-26.8	45.9	42.6	45.8	42.5	74.0	54.0	45.9	42.6	28.1	11.4	A/B
4960.0	35.8	-25.7	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 50.1	< 37.1	> 23.9	> 16.9	A/B
7440.0	39.2	-34.2	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 44.9	< 31.9	> 29.1	> 22.1	A/B
9920.0	42.2	-32.4	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 49.8	< 36.8	> 24.2	> 17.2	A/B
12400.0	44.0	-32.3	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 51.7	< 38.7	> 22.3	> 15.3	A/B
22320.0		-26.5	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 53.7	< 40.7	> 20.3	> 13.3	A/B
	<b>-</b>	_ 3.0	10.0		10.0		. 1.0	2 1.0	30	10	_0.0	_0.0	

Calculated result at 1652.3 MHz, as the worst point shown on underline:

 $\begin{array}{ccccc} Antenna \ Factor & = & 26.8 & dB(1/m) \\ Corr. \ Factor & = & 26.8 & dB \\ +) \ \underline{Meter \ Reading} & = & 42.6 & dB(\mu V) \\ \hline Result & = & 42.6 & dB(\mu V/m) \\ \end{array}$ 

Minimum Margin: 54.0 - 42.6 = 11.4 (dB)

#### NOTES

- 1. Test Distance : 3 m (1 GHz to 6 GHz) and 1 m (6 GHz to 25 GHz)
- 2. The spectrum was checked from 1 GHz to 25 GHz (10th harmonic of the highest fundamental frequency).
- 3. The correction factor is shown as follows:

Corr. Factor [dB] = Cable Loss[dB] - Pre-Amp. Gain [dB] (1 GHz - 6 GHz)

Corr. Factor [dB] = Cable Loss - Measrement distance conversion[dB] - Pre-Amp. Gain [dB] (6 GHz - 25 GHz) Measrement distance conversion[dB] = 20 \* Log (1 m / 3 m)

- 4. The symbol of "<" means "or less".
- 5. The symbol of ">" means "more than".
- 6. PK : Peak Detector / AVE : RMS Detector
- 7. Setting of measuring instrument(s):

	Detector Function	Resolution B.W.	Video B.W.	Sweep Time
A	Peak	1 MHz	$3\mathrm{MHz}$	AUTO
В	RMS	1 MHz	$3\mathrm{MHz}$	AUTO



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#### 7.4.9.4.3 Host: Infinea TAB mini

Mode of EUT: BDR (worst case)

Worst point Axis: X

Frequency	Antenna Factor	Corr. Factor	M Horiz		ngs [dB(µV Vert	-	Lim [dB(µV		Rest [dB(µ'		Mar [d]	0	Remarks
[MHz]	[dB(1/m)]	[dB]	PK	AVE	PK	AVE	PK	AVE	PK	AVE	PK	AVE	
[]	[0.15 (11 117)]	[aD]		11,12		11112		1112		1111		1112	
Test condit	ion : Tx Lo	ow Ch											
1602.0	25.9	-26.9	47.2	44.6	45.0	41.6	74.0	54.0	46.2	43.6	27.8	10.4	A/B
4804.0	35.7	-25.7	43.8	39.6	54.6	40.5	74.0	54.0	64.6	50.5	9.4	3.5	A/B
7206.0	38.7	-34.4	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 44.3	< 31.3	> 29.7	> 22.7	A/B
9608.0	41.2	-32.6	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 48.6	< 35.6	> 25.4	> 18.4	A/B
12010.0	43.4	-32.3	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 51.0	< 38.0	> 23.0	> 16.0	A/B
19216.0	40.3	-29.2	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 51.0	< 38.0	> 23.0	> 16.0	A/B
Test condit	ion : Tx M	id Ch											
1628.2	26.4	-26.9	47.2	44.6	45.4	42.0	74.0	54.0	46.7	44.1	27.3	9.9	A/B
4882.0	36.2	-25.7	53.6	40.1	54.6	40.4	74.0	54.0	65.1	50.9	8.9	3.1	A/B
7323.0	38.8	-34.3	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 44.5	< 31.5	> 29.5	> 22.5	A/B
9764.0	41.2	-32.5	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 48.7	< 35.7	> 25.3	> 18.3	A/B
12205.0	44.0	-32.3	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 51.7	< 38.7	> 22.3	> 15.3	A/B
21969.0	40.2	-26.6	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 53.6	< 40.6	> 20.4	> 13.4	A/B
Test condit	ion : Tx H	igh Ch											
1654.2	26.8	-26.8	47.0	44.2	45.2	41.8	74.0	54.0	47.0	44.2	27.0	9.8	A/B
4960.0	35.8	-25.7	53.7	40.0	54.6	40.4	74.0	54.0	64.7	50.5	9.3	3.5	A/B
7440.0	39.2	-34.2	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 44.9	< 31.9	> 29.1	> 22.1	A/B
9920.0	42.2	-32.4	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 49.8	< 36.8	> 24.2	> 17.2	A/B
12400.0	44.0	-32.3	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 51.7	< 38.7	> 22.3	> 15.3	A/B
22320.0	40.2	-26.5	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 53.7	< 40.7	> 20.3	> 13.3	A/B

Calculated result at 4882.0 MHz, as the worst point shown on underline:

 $\begin{array}{cccccc} Antenna \ Factor & = & 36.2 & dB(1/m) \\ Corr. \ Factor & = & -25.7 & dB \\ +) \ \underline{Meter \ Reading} & = & 40.4 & dB(\mu V) \\ \hline Result & = & 50.9 & dB(\mu V/m) \end{array}$ 

Minimum Margin: 54.0 - 50.9 = 3.1 (dB)

#### NOTES

- 1. Test Distance : 3 m (1 GHz to 6 GHz) and 1 m (6 GHz to 25 GHz)
- 2. The spectrum was checked from 1 GHz to 25 GHz (10th harmonic of the highest fundamental frequency).
- 3. The correction factor is shown as follows:

Corr. Factor [dB] = Cable Loss[dB] - Pre-Amp. Gain [dB] (1 GHz - 6 GHz)

Corr. Factor [dB] = Cable Loss - Measrement distance conversion[dB] - Pre-Amp. Gain [dB] (6 GHz - 25 GHz) Measrement distance conversion[dB] = 20 \* Log (1 m / 3 m)

- 4. The symbol of "<" means "or less".
- 5. The symbol of ">" means "more than".
- 6. PK: Peak Detector / AVE: RMS Detector

7. Setting of measuring instrument(s):

	Detector Function	Resolution B.W.	Video B.W.	Sweep Time		
A	Peak	1 MHz	$3\mathrm{MHz}$	AUTO		
В	RMS	1 MHz	$3\mathrm{MHz}$	AUTO		



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Mode of EUT: BDR (worst case)

Worst point Axis: X

Frequecy	Antenna	Corr.	M	eter Readi	ngs [dB(μV	)]	Limi	its	Res	ults	Mar	gin	Remarks
	Factor	Factor	Horiz	ontal	Vert	ical	[dB(μV	/m)]	[dB(μ	V/m)]	[d]	B]	
[MHz]	[dB(1/m)]	[dB]	PK	AVE	PK	AVE	PK	AVE	PK	AVE	PK	AVE	
Test condit	ion : Rx L	ow Ch											
1600.3	25.9	-26.9	45.8	42.4	45.6	42.4	74.0	54.0	44.8	41.4	29.2	12.6	A/B
4804.0	35.7	-25.7	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 50.0	< 37.0	> 24.0	> 17.0	A/B
7206.0	38.7	-34.4	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 44.3	< 31.3	> 29.7	> 22.7	A/B
9608.0	41.2	-32.6	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 48.6	< 35.6	> 25.4	> 18.4	A/B
12010.0	43.4	-32.3	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 51.0	< 38.0	> 23.0	> 16.0	A/B
19216.0	40.3	-29.2	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 51.0	< 38.0	> 23.0	> 16.0	A/B
Test condit	ion : Rx M	lid Ch											
1626.3	26.4	-26.9	45.6	42.6	45.5	42.5	74.0	54.0	45.1	42.1	28.9	11.9	A/B
4882.0	36.2	-25.7	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 50.5	< 37.5	> 23.5	> 16.5	A/B
7323.0	38.8	-34.3	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 44.5	< 31.5	> 29.5	> 22.5	A/B
9764.0	41.2	-32.5	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 48.7	< 35.7	> 25.3	> 18.3	A/B
12205.0	44.0	-32.3	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 51.7	< 38.7	> 22.3	> 15.3	A/B
21969.0	40.2	-26.6	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 53.6	< 40.6	> 20.4	> 13.4	A/B
Test condit	ion : Rx H	igh Ch											
1652.3	26.8	-26.8	45.9	42.5	45.8	42.3	74.0	54.0	45.9	42.5	28.1	11.5	A/B
4960.0	35.8	-25.7	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 50.1	< 37.1	> 23.9	> 16.9	A/B
7440.0	39.2	-34.2	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 44.9	< 31.9	> 29.1	> 22.1	A/B
9920.0	42.2	-32.4	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 49.8	< 36.8	> 24.2	> 17.2	A/B
12400.0	44.0	-32.3	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 51.7	< 38.7	> 22.3	> 15.3	A/B
22320.0	40.2	-26.5	< 40.0	< 27.0	< 40.0	< 27.0	74.0	54.0	< 53.7	< 40.7	> 20.3	> 13.3	A/B

Calculated result at 1652.3 MHz, as the worst point shown on underline:

 $\begin{array}{ccccc} Antenna \ Factor & = & 26.8 & dB(1/m) \\ Corr. \ Factor & = & -26.8 & dB \\ +) \ \underline{Meter \ Reading} & = & 42.5 & dB(\mu V) \\ \hline Result & = & 42.5 & dB(\mu V/m) \end{array}$ 

Minimum Margin: 54.0 - 42.5 = 11.5 (dB)

#### NOTES

- 1. Test Distance : 3 m (1 GHz to 6 GHz) and 1 m (6 GHz to 25 GHz)
- 2. The spectrum was checked from 1 GHz to 25 GHz (10th harmonic of the highest fundamental frequency).
- 3. The correction factor is shown as follows:

Corr. Factor [dB] = Cable Loss[dB] - Pre-Amp. Gain [dB] (1 GHz - 6 GHz)

Corr. Factor [dB] = Cable Loss - Measrement distance conversion[dB] - Pre-Amp. Gain [dB] (6 GHz - 25 GHz) Measrement distance conversion[dB] = 20 \* Log (1 m / 3 m)

- 4. The symbol of "<" means "or less".
- 5. The symbol of ">" means "more than".
- 6. PK : Peak Detector / AVE : RMS Detector
- 7. Setting of measuring instrument(s):

	Detector Function	Resolution B.W.	Video B.W.	Sweep Time
A	Peak	1 MHz	$3\mathrm{MHz}$	AUTO
В	RMS	1 MHz	$3\mathrm{MHz}$	AUTO