

FCC Test Report

Equipment : 802.11n, 2.4G 1T1R Wireless LAN USB Module
Trade Name : Amtran
Model No. : WN4608L
FCC ID : MDZ-WN4608L
Standard : 47 CFR FCC Part 15.247
Operating Band : 2400 MHz – 2483.5 MHz
Equipment Class : DTS
Applicant Manufacturer : Amtran Technology Co. Ltd
17F., No.268, Liancheng Rd., Jhonghe,
New Taipei City, Taiwan, R.O.C

The product sample received on Jun. 07, 2013 and completely tested on Jul. 23, 2013. We, SPORTON, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2009 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Reviewed by:


Wayne Hsu / Assistant Manager





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Summary of Test Result

Conformance Test Specifications					
Report Clause	Ref. Std. Clause	Description	Measured	Limit	Result
1.1.2	15.203	Antenna Requirement	Antenna connector mechanism complied	FCC 15.203	Complied
3.1	15.207	AC Power-line Conducted Emissions	[dBuV]: 0.156MHz 45.09 (Margin 10.60dB) - AV 49.59 (Margin 16.10dB) - QP	FCC 15.207	Complied
3.2	15.247(a)	6dB Bandwidth	6dB Bandwidth Unit [MHz] 20M: 17.86 / 40M: 36.41	≥500kHz	Complied
3.3	15.247(b)	RF Output Power (Maximum Peak Conducted Output Power)	Power [dBm]: 24.58	Power [dBm]: 30	Complied
3.4	15.247(e)	Power Spectral Density	PSD [dBm/30kHz]: 3.63	PSD [dBm/3kHz]: 8	Complied
3.5	15.247(d)	Emissions in non-restricted frequency bands	Out-of -band emissions are 20dB below the highest power	Non-Restricted Bands: > 20 dBc Restricted Bands: FCC 15.209	Complied
3.6	15.247(d)	Transmitter Radiated Unwanted Emissions	Restricted Bands [dBuV/m at 3m]: 193.93MHz 40.49 (Margin 3.01dB) - PK	Non-Restricted Bands: > 20 dBc Restricted Bands: FCC 15.209	Complied

1 General Description

1.1 Information

1.1.1 RF General Information

RF General Information						
Frequency Range (MHz)	IEEE Std. 802.11	Ch. Freq. (MHz)	Channel Number	Transmit Chains (N _{TX})	RF Output Power (dBm)	Co-location
2400-2483.5	b	2412-2462	1-11 [11]	1	20.82	N/A
2400-2483.5	g	2412-2462	1-11 [11]	1	24.58	N/A
2400-2483.5	n (HT-20)	2412-2462	1-11 [11]	1	24.16	N/A
2400-2483.5	n (HT-40)	2422-2452	3-9 [7]	1	22.55	N/A

Note 1: RF output power specifies that Maximum Peak Conducted Output Power.
 Note 2: 802.11b uses a combination of DSSS-DBPSK, DQPSK, CCK modulation.
 Note 3: 802.11g/n uses a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.

1.1.2 Antenna Information

Antenna Category	
<input type="checkbox"/>	Equipment placed on the market without antennas
<input checked="" type="checkbox"/>	Integral antenna (antenna permanently attached)
<input checked="" type="checkbox"/>	Temporary RF connector provided
<input type="checkbox"/>	No temporary RF connector provided Transmit chains bypass antenna and soldered temporary RF connector provided for connected measurement. In case of conducted measurements the transmitter shall be connected to the measuring equipment via a suitable attenuator and correct for all losses in the RF path.
<input type="checkbox"/>	External antenna (dedicated antennas)
<input type="checkbox"/>	Single power level with corresponding antenna(s).
<input type="checkbox"/>	Multiple power level and corresponding antenna(s).
<input type="checkbox"/>	RF connector provided
<input type="checkbox"/>	Unique antenna connector. (e.g., MMCX, U.FL, IPX, and RP-SMA, RP-N type...)
<input type="checkbox"/>	Standard antenna connector. (e.g., SMA, N, BNC, and TNC type...)

Antenna General Information			
No.	Ant. Cat.	Ant. Type	Gain (dBi)
1	Integral	PIFA	1.36
2	Integral	PIFA	1.34
3	Integral	PIFA	-1.53

Note: The above antennas, antenna 1 was selected as a representative one for the final test and only its data was recorded in this report.

1.1.3 Type of EUT

Identify EUT	
EUT Serial Number	N/A
Presentation of Equipment	<input type="checkbox"/> Production ; <input checked="" type="checkbox"/> Pre-Production ; <input type="checkbox"/> Prototype
Type of EUT	
<input checked="" type="checkbox"/>	Stand-alone
<input type="checkbox"/>	Combined (EUT where the radio part is fully integrated within another device) Combined Equipment - Brand Name / Model No.: ...
<input type="checkbox"/>	Plug-in radio (EUT intended for a variety of host systems) Host System - Brand Name / Model No.: ...
<input type="checkbox"/>	Other:

1.1.4 Test Signal Duty Cycle

Operated Mode for Worst Duty Cycle	
<input type="checkbox"/>	Operated normally mode for worst duty cycle
<input checked="" type="checkbox"/>	Operated test mode for worst duty cycle
Test Signal Duty Cycle (x)	Power Duty Factor [dB] – (10 log 1/x)
<input checked="" type="checkbox"/> 100% - IEEE 802.11b	0
<input checked="" type="checkbox"/> 100% - IEEE 802.11g	0
<input checked="" type="checkbox"/> 100% - IEEE 802.11n (HT-20)	0
<input checked="" type="checkbox"/> 100% - IEEE 802.11n (HT-40)	0

1.1.5 EUT Operational Condition

Supply Voltage	<input type="checkbox"/> AC mains	<input checked="" type="checkbox"/> DC	
Type of DC Source	<input type="checkbox"/> Internal DC supply	<input type="checkbox"/> External DC adapter	<input checked="" type="checkbox"/> From Host

1.2 Accessories and Support Equipment

Accessories				
No.	Equipment	Brand Name	Model Name	Serial No.
1	-	-	-	-

Support Equipment				
No.	Equipment	Brand Name	Model Name	Serial No.
1	Notebook	DELL	E6430	DoC

1.3 Testing Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ◆ 47 CFR FCC Part 15
- ◆ ANSI C63.10-2009
- ◆ FCC KDB 558074
- ◆ FCC KDB 662911
- ◆ FCC KDB 412172

1.4 Testing Location Information

Testing Location				
<input checked="" type="checkbox"/>	Sporton Lab	ADD : No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL : 886-3-327-3456 FAX : 886-3-318-0055		
<input checked="" type="checkbox"/>	ICC Lab	ADD : No.3-1, Lane 6, Wen San 3rd St., Kwei Shan Hsiang, Tao Yuan Hsein 333, Taiwan (R.O.C.) TEL : 886-3-271-8666 FAX : 886-3-318-0155		
Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
RF Conducted	TH01-HY	Ian Du	23.8°C / 63%	23-Jul-13
*AC Conduction	CO01-WS	Skys Huang	23°C / 56%	23-Jul-13
*Radiated Emission	03CH01-WS	Mark Liao	25°C / 65%	22-Jul-13
Test site registered number [657002] with FCC. Test site registered number [10807A-1] with IC.				

Note: * Sporton Lab subcontracts this test item to ICC lab (TAF:2732).

ICC lab is a TAF accreditation test firm and also is an approved provider of Sporton lab.



1.5 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))

Measurement Uncertainty			
Test Item		Uncertainty	Limit
AC power-line conducted emissions		±2.80 dB	N/A
Emission bandwidth, 6dB bandwidth		±1.42 %	N/A
RF output power, conducted		±0.63 dB	N/A
Power density, conducted		±0.81 dB	N/A
All emissions, radiated	30 – 1000 MHz	±3.9 dB	N/A
	Above 1GHz	±4.2 dB	N/A
Temperature		±0.8 °C	N/A
Humidity		±3 %	N/A
DC and low frequency voltages		±3 %	N/A
Time		±1.42 %	N/A
Duty Cycle		±1.42 %	N/A

2 Test Configuration of EUT

2.1 The Worst Case Modulation Configuration

Worst Modulation Used for Conformance Testing				
Modulation Mode	Transmit Chains (N _{TX})	Data Rate / MCS	Worst Data Rate / MCS	RF Output Power (dBm)
11b,1-11Mbps	1	1-11 Mbps	1 Mbps	20.82
11g,6-54Mbps	1	6-54 Mbps	6 Mbps	24.58
HT-20	1	M0-7	MCS 0	24.16
HT-40	1	M0-7	MCS 0	22.55

Note 1: IEEE Std. 802.11n modulation consists of HT-20 and HT-40 (HT: High Throughput). Then EUT support HT-20 and HT-40.
 Note 2: Modulation modes consist below configuration:
 11b: IEEE 802.11b, 11g: IEEE 802.11g, HT-20/HT-40: IEEE 802.11n
 Note 3: RF output power specifies that Maximum Peak Conducted Output Power.

2.2 Test Channel Frequencies Configuration

Test Channel Frequencies Configuration	
IEEE Std. 802.11	Test Channel Frequencies (MHz)
b, g, n (HT-20)	2412-(F1), 2437-(F2), 2462-(F3)
n (HT-40)	2422-(F4), 2437-(F5), 2452-(F6)




2.3 The Worst Case Power Setting Parameter

The Worst Case Power Setting Parameter (2400-2483.5MHz band)							
Test Software Version	Realtek 8188EUS MP 0.0030.20121220						
Modulation Mode	N _{TX}	Test Frequency (MHz)					
		NCB: 20MHz			NCB: 40MHz		
		2412	2437	2462	2422	2437	2452
11b	1	40	39	38	-	-	-
11g	1	47	46	43	-	-	-
HT-20,M0-7	1	47	46	43	-	-	-
HT-40,M0-7	1	-	-	-	43	42	43

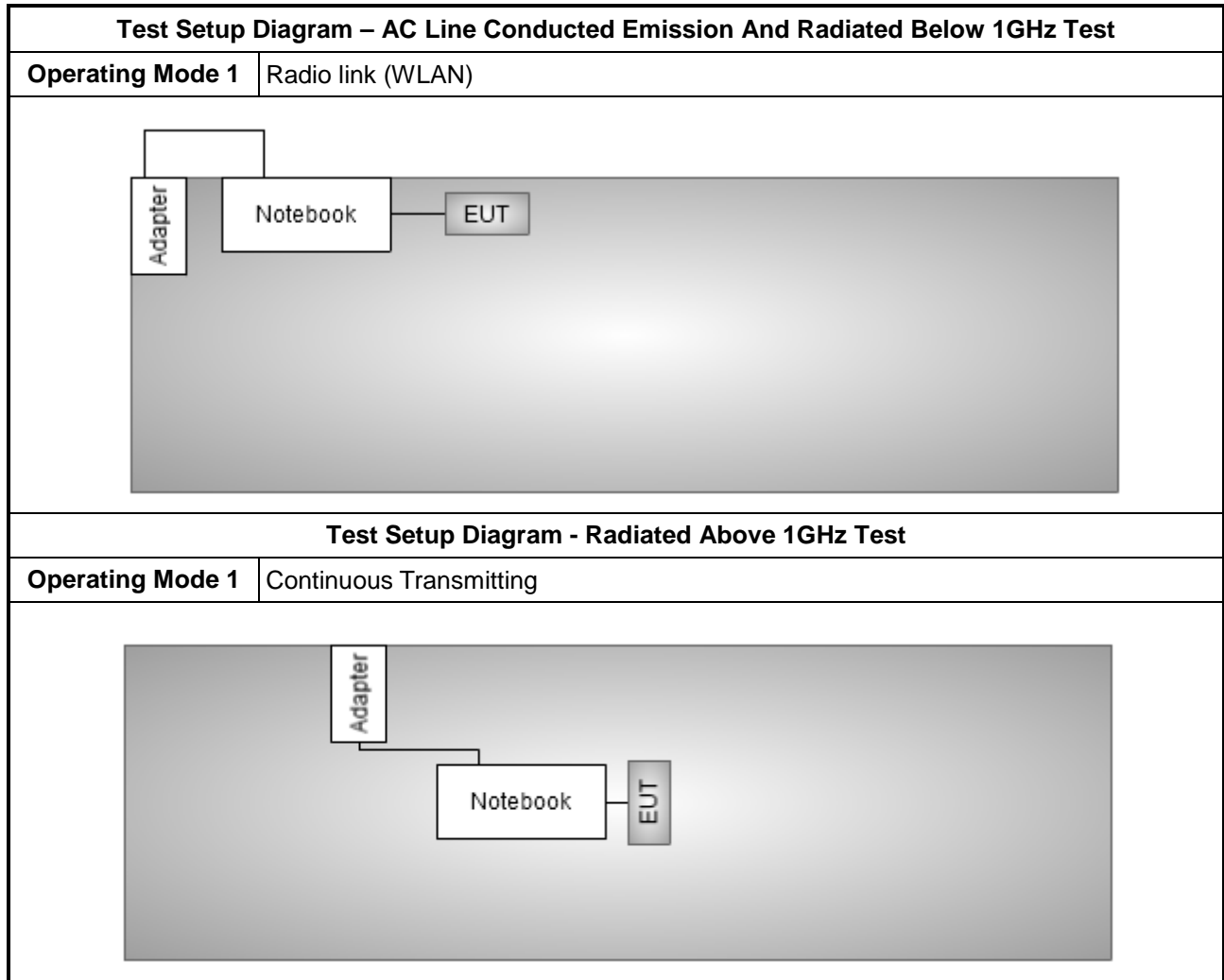
2.4 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	AC power-line conducted emissions
Condition	AC power-line conducted measurement for line and neutral Test Voltage: 120Vac / 60Hz
Operating Mode	Operating Mode Description
1	Radio link (WLAN)

The Worst Case Mode for Following Conformance Tests	
Tests Item	RF Output Power, Power Spectral Density, 6 dB Bandwidth
Test Condition	Conducted measurement at transmit chains
Modulation Mode	11b, 11g, HT-20, HT-40

The Worst Case Mode for Following Conformance Tests			
Tests Item	Transmitter Radiated Unwanted Emissions Transmitter Radiated Bandedge Emissions		
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.		
User Position	<input type="checkbox"/> EUT will be placed in fixed position.		
	<input checked="" type="checkbox"/> EUT will be placed in mobile position and operating multiple positions. EUT shall be performed three orthogonal planes. The worst planes is Y.		
	<input type="checkbox"/> EUT will be a hand-held or body-worn battery-powered devices and operating multiple positions. EUT shall be performed two or three orthogonal planes.		
Operating Mode < 1GHz	<input checked="" type="checkbox"/> 1. Radio link (WLAN)		
Modulation Mode	11b, 11g, HT-20, HT-40		
Orthogonal Planes of EUT	X Plane	Y Plane	Z Plane
			

2.5 Test Setup Diagram



3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

AC Power-line Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50

Note 1: * Decreases with the logarithm of the frequency.

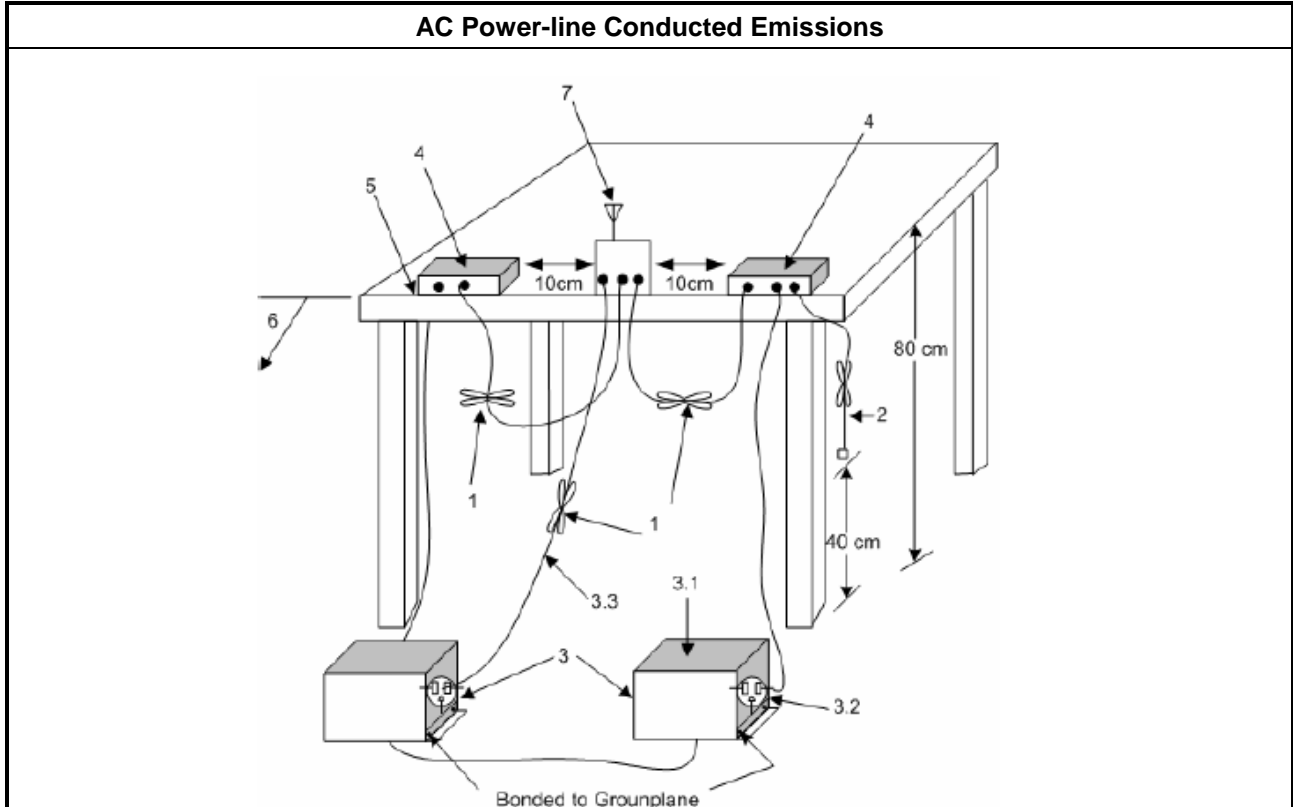
3.1.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

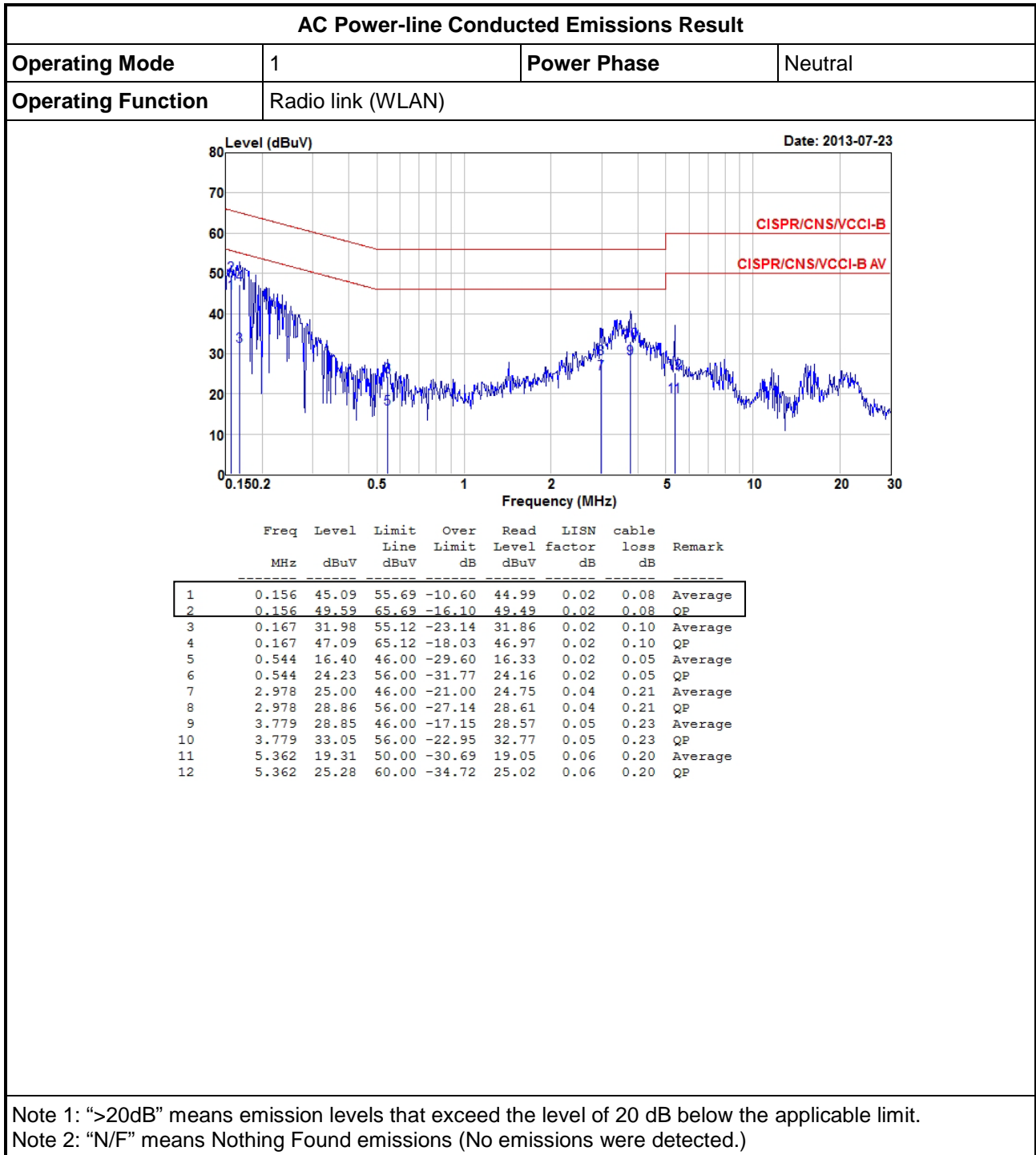
3.1.3 Test Procedures

Test Method
<input checked="" type="checkbox"/> Refer as ANSI C63.10-2009, clause 6.2 for AC power-line conducted emissions.

3.1.4 Test Setup



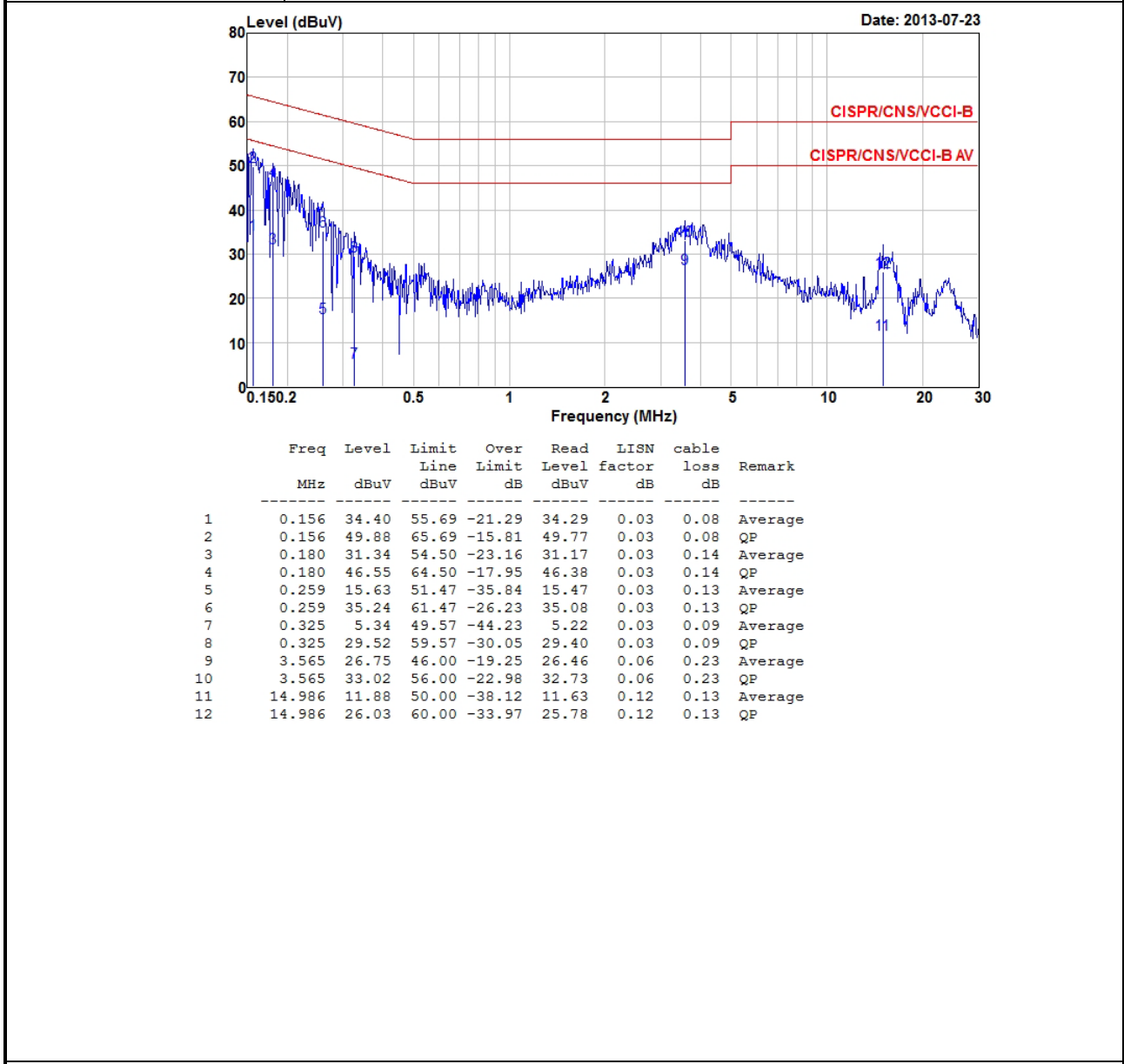
3.1.5 Test Result of AC Power-line Conducted Emissions





AC Power-line Conducted Emissions Result

Operating Mode	1	Power Phase	Line
Operating Function	Radio link (WLAN)		



Note 1: ">20dB" means emission levels that exceed the level of 20 dB below the applicable limit.
 Note 2: "N/F" means Nothing Found emissions (No emissions were detected.)

3.2 6dB Bandwidth

3.2.1 6dB Bandwidth Limit

6dB Bandwidth Limit	
Systems using digital modulation techniques:	
<input checked="" type="checkbox"/>	6 dB bandwidth \geq 500 kHz.

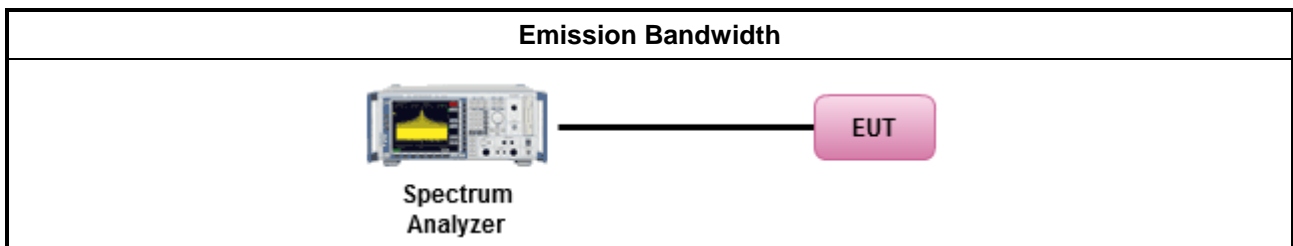
3.2.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.2.3 Test Procedures

Test Method	
<input checked="" type="checkbox"/>	For the emission bandwidth shall be measured using one of the options below:
<input checked="" type="checkbox"/>	Refer as FCC KDB 558074, clause 8.1 Option 1 for 6 dB bandwidth measurement.
<input type="checkbox"/>	Refer as FCC KDB 558074, clause 8.2 Option 2 for 6 dB bandwidth measurement.
<input type="checkbox"/>	Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.
<input checked="" type="checkbox"/>	For conducted measurement.
<input checked="" type="checkbox"/>	The EUT supports single transmit chain and measurements performed on this transmit chain.
<input type="checkbox"/>	The EUT supports diversity transmitting and the results on transmit chain port 1 is the worst case.
<input type="checkbox"/>	The EUT supports multiple transmit chains using options given below:
<input type="checkbox"/>	Option 1: Multiple transmit chains measurements need to be performed on one of the active transmit chains (antenna outputs). All measurement had be performed on transmit chains 1.
<input type="checkbox"/>	Option 2: Multiple transmit chains measurements need to be performed on each transmit chains individually (antenna outputs). All measurement had be performed on all transmit chains.

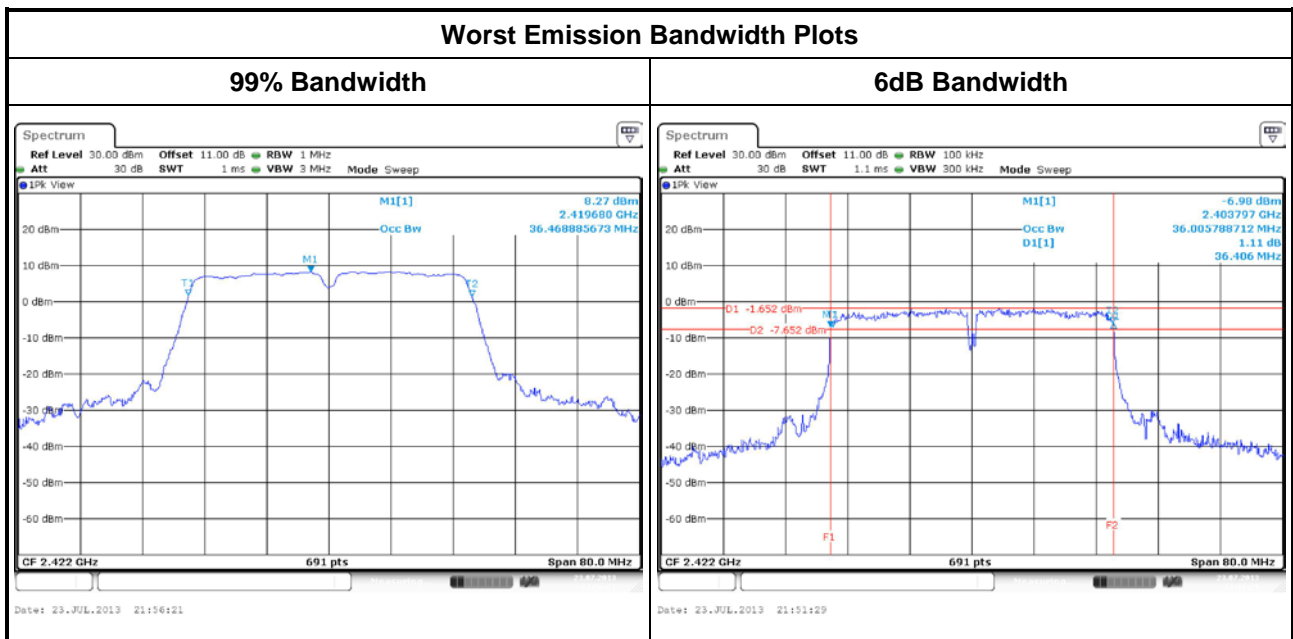
3.2.4 Test Setup



3.2.5 Test Result of Emission Bandwidth

Emission Bandwidth Result										
Condition			Emission Bandwidth (MHz)							
Modulation Mode	N _{TX}	Freq. (MHz)	99% Bandwidth				6dB Bandwidth			
			Chain-Port 1	Chain-Port 2	Chain-Port 3	-	Chain-Port 1	Chain-Port 2	Chain-Port 3	-
11b	1	2412	15.05	-	-		10.09	-	-	
11b	1	2437	15.05	-	-		10.09	-	-	
11b	1	2462	15.05	-	-		10.09	-	-	
11g	1	2412	17.08	-	-		16.58	-	-	
11g	1	2437	17.02	-	-		16.58	-	-	
11g	1	2462	17.02	-	-		16.58	-	-	
HT-20	1	2412	18.12	-	-		17.86	-	-	
HT-20	1	2437	18.18	-	-		17.86	-	-	
HT-20	1	2462	18.06	-	-		17.86	-	-	
HT-40	1	2422	36.47	-	-		36.41	-	-	
HT-40	1	2437	36.47	-	-		36.41	-	-	
HT-40	1	2452	36.47	-	-		36.41	-	-	
Limit			N/A				≥500 kHz			
Result			Complied							

Note 1: N_{TX} = Number of Transmit Chains



3.3 RF Output Power

3.3.1 RF Output Power Limit

RF Output Power Limit	
Maximum Peak Conducted Output Power or Maximum Conducted Output Power Limit	
<input checked="" type="checkbox"/> 2400-2483.5 MHz Band:	
<input checked="" type="checkbox"/>	If $G_{TX} \leq 6$ dBi, then $P_{Out} \leq 30$ dBm (1 W)
<input checked="" type="checkbox"/>	Point-to-multipoint systems (P2M): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$ dBm
<input type="checkbox"/>	Point-to-point systems (P2P): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
<input type="checkbox"/>	Smart antenna system (SAS):
<input type="checkbox"/>	Single beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
<input type="checkbox"/>	Overlap beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
<input type="checkbox"/>	Aggregate power on all beams: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3 + 8$ dB dBm
e.i.r.p. Power Limit:	
<input checked="" type="checkbox"/> 2400-2483.5 MHz Band	
<input checked="" type="checkbox"/>	Point-to-multipoint systems (P2M): $P_{eirp} \leq 36$ dBm (4 W)
<input type="checkbox"/>	Point-to-point systems (P2P): $P_{eirp} \leq \text{MAX}(36, [P_{Out} + G_{TX}])$ dBm
<input type="checkbox"/>	Smart antenna system (SAS)
<input type="checkbox"/>	Single beam: $P_{eirp} \leq \text{MAX}(36, P_{Out} + G_{TX})$ dBm
<input type="checkbox"/>	Overlap beam: $P_{eirp} \leq \text{MAX}(36, P_{Out} + G_{TX})$ dBm
<input type="checkbox"/>	Aggregate power on all beams: $P_{eirp} \leq \text{MAX}(36, [P_{Out} + G_{TX} + 8])$ dBm
P_{Out} = maximum peak conducted output power or maximum conducted output power in dBm, G_{TX} = the maximum transmitting antenna directional gain in dBi. P_{eirp} = e.i.r.p. Power in dBm.	

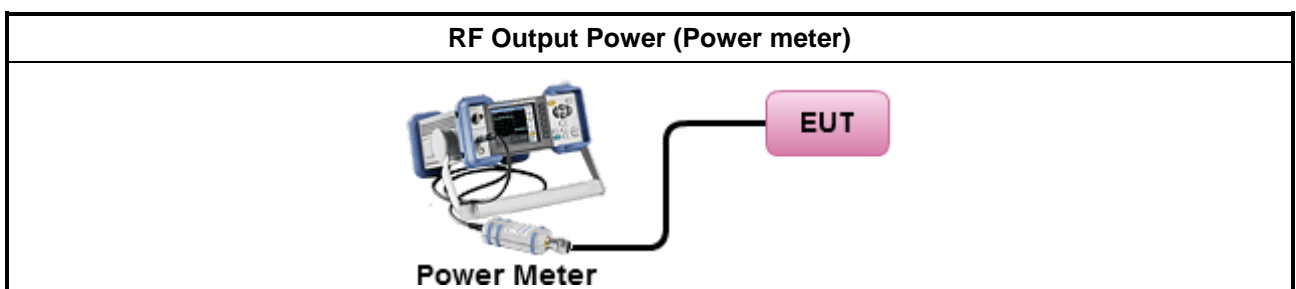
3.3.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.3.3 Test Procedures

Test Method	
<input checked="" type="checkbox"/>	Maximum Peak Conducted Output Power
<input type="checkbox"/>	Refer as FCC KDB 558074, clause 9.1.1 Option 1 (RBW ≥ EBW method).
<input type="checkbox"/>	Refer as FCC KDB 558074, clause 9.1.2 Option 2 (integrated band power method).
<input checked="" type="checkbox"/>	Refer as FCC KDB 558074, clause 9.1.3 Option 2 (peak power meter for VBW ≥ DTS BW)
<input checked="" type="checkbox"/>	Maximum Conducted (Average) Output Power (For reference only)
<input type="checkbox"/>	Refer as FCC KDB 558074, clause 9.2.1.2 Method AVGSA-1 (spectral trace averaging).
<input type="checkbox"/>	Refer as FCC KDB 558074, clause 9.2.1.3 Method AVGSA-1 Alt. (slow sweep speed)
<input type="checkbox"/>	Refer as FCC KDB 558074, clause 9.2.1.4 Method AVGSA-2 (spectral trace averaging).
<input type="checkbox"/>	Refer as FCC KDB 558074, clause 9.2.1.5 Method AVGSA-2 Alt. (slow sweep speed)
	RF power meter and average over on/off periods with duty factor or gated trigger
<input checked="" type="checkbox"/>	Refer as FCC KDB 558074, clause 9.2.2 Method AVGPM-G (using a gated RF average power meter)
<input checked="" type="checkbox"/>	For conducted measurement.
<input checked="" type="checkbox"/>	The EUT supports single transmit chain and measurements performed on this transmit chain.
<input type="checkbox"/>	The EUT supports diversity transmitting and the results on transmit chain port 1 is the worst case.
<input type="checkbox"/>	The EUT supports multiple transmit chains using options given below: Refer as FCC KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.
<input type="checkbox"/>	If multiple transmit chains, EIRP calculation could be following as methods: $P_{total} = P_1 + P_2 + \dots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$

3.3.4 Test Setup



3.3.5 Directional Gain for Power Measurement

Directional Gain (DG) Result					
Transmit Chains No.		1	-	-	-
Maximum G _{ANT} (dBi)		1.36	-	-	-
Modulation Mode	DG (dBi)	N _{TX}	N _{SS}	STBC	Array Gain (dB)
11b,1-11Mbps	1.36	1	-	-	-
11g,6-54Mbps	1.36	1	-	-	-
HT-20,M0-M7	1.36	1	-	-	-
HT-40,M0-M7	1.36	1	-	-	-

Note 1: For all transmitter outputs with equal antenna gains, directional gain is to be computed as follows:
 Any transmit signals are correlated, Directional Gain = $G_{ANT} + 10 \log(N_{TX})$
 All transmit signals are completely uncorrelated, Directional Gain = G_{ANT}

Note 2: For all transmitter outputs with unequal antenna gains, directional gain is to be computed as follows:
 Any transmit signals are correlated, Directional Gain = $10 \log[(10^{G_{1/20}} + \dots + 10^{G_{N/20}})^2 / N_{TX}]$
 All transmit signals are completely uncorrelated, Directional Gain = $10 \log[(10^{G_{1/10}} + \dots + 10^{G_{N/10}}) / N_{TX}]$

Note 3: For Spatial Multiplexing, Directional Gain (DG) = $G_{ANT} + 10 \log(N_{TX}/N_{SS})$,
 where N_{ss} = the number of independent spatial streams data.

Note 4: For CDD transmissions, directional gain is calculated as power measurements:
 Directional Gain (DG) = $G_{ANT} + \text{Array Gain}$, where Array Gain is as follows:
 Array Gain = 0 dB (i.e., no array gain) for $N_{TX} \leq 4$;
 Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{TX} ;

3.3.6 Test Result of Maximum Peak Conducted Output Power

Maximum Peak Conducted Output Power Result											
Condition			RF Output Power (dBm)								
Modulation Mode	N _{TX}	Freq. (MHz)	Chain Port 1	Chain Port 2	Chain Port 3	-	Sum Chain	Power Limit	DG (dBi)	EIRP Power	EIRP Limit
11b	1	2412	20.67	-	-		20.67	30.00	1.36	22.03	36.00
11b	1	2437	20.64	-	-		20.64	30.00	1.36	22.00	36.00
11b	1	2462	20.82	-	-		20.82	30.00	1.36	22.18	36.00
11g	1	2412	24.58	-	-		24.58	30.00	1.36	25.94	36.00
11g	1	2437	24.23	-	-		24.23	30.00	1.36	25.59	36.00
11g	1	2462	24.11	-	-		24.11	30.00	1.36	25.47	36.00
HT-20	1	2412	24.16	-	-		24.16	30.00	1.36	25.52	36.00
HT-20	1	2437	23.92	-	-		23.92	30.00	1.36	25.28	36.00
HT-20	1	2462	23.51	-	-		23.51	30.00	1.36	24.87	36.00
HT-40	1	2422	22.55	-	-		22.55	30.00	1.36	23.91	36.00
HT-40	1	2437	22.47	-	-		22.47	30.00	1.36	23.83	36.00
HT-40	1	2452	22.13	-	-		22.13	30.00	1.36	23.49	36.00
Result			Complied								

3.3.7 Test Result of Maximum Conducted Output Power

Maximum Conducted Output Power											
Condition			RF Output Power (dBm)								
Modulation Mode	N _{TX}	Freq. (MHz)	Chain Port 1	Chain Port 2	Chain Port 3	-	Sum Chain	Power Limit	DG (dBi)	EIRP Power	EIRP Limit
11b	1	2412	18.32	-	-		18.32	30.00	1.36	19.68	36.00
11b	1	2437	18.35	-	-		18.35	30.00	1.36	19.71	36.00
11b	1	2462	18.27	-	-		18.27	30.00	1.36	19.63	36.00
11g	1	2412	16.34	-	-		16.34	30.00	1.36	17.70	36.00
11g	1	2437	16.28	-	-		16.28	30.00	1.36	17.64	36.00
11g	1	2462	15.52	-	-		15.52	30.00	1.36	16.88	36.00
HT-20	1	2412	16.31	-	-		16.31	30.00	1.36	17.67	36.00
HT-20	1	2437	16.27	-	-		16.27	30.00	1.36	17.63	36.00
HT-20	1	2462	15.41	-	-		15.41	30.00	1.36	16.77	36.00
HT-40	1	2422	14.51	-	-		14.51	30.00	1.36	15.87	36.00
HT-40	1	2437	14.47	-	-		14.47	30.00	1.36	15.83	36.00
HT-40	1	2452	14.37	-	-		14.37	30.00	1.36	15.73	36.00
Result			Complied								

Note: Average conducted power is for reference only.

3.4 Power Spectral Density

3.4.1 Power Spectral Density Limit

Power Spectral Density Limit
<input checked="" type="checkbox"/> Power Spectral Density (PSD) \leq 8 dBm/3kHz

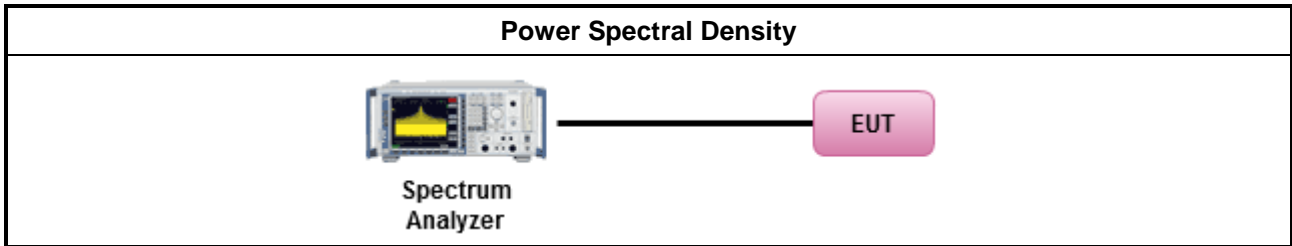
3.4.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.4.3 Test Procedures

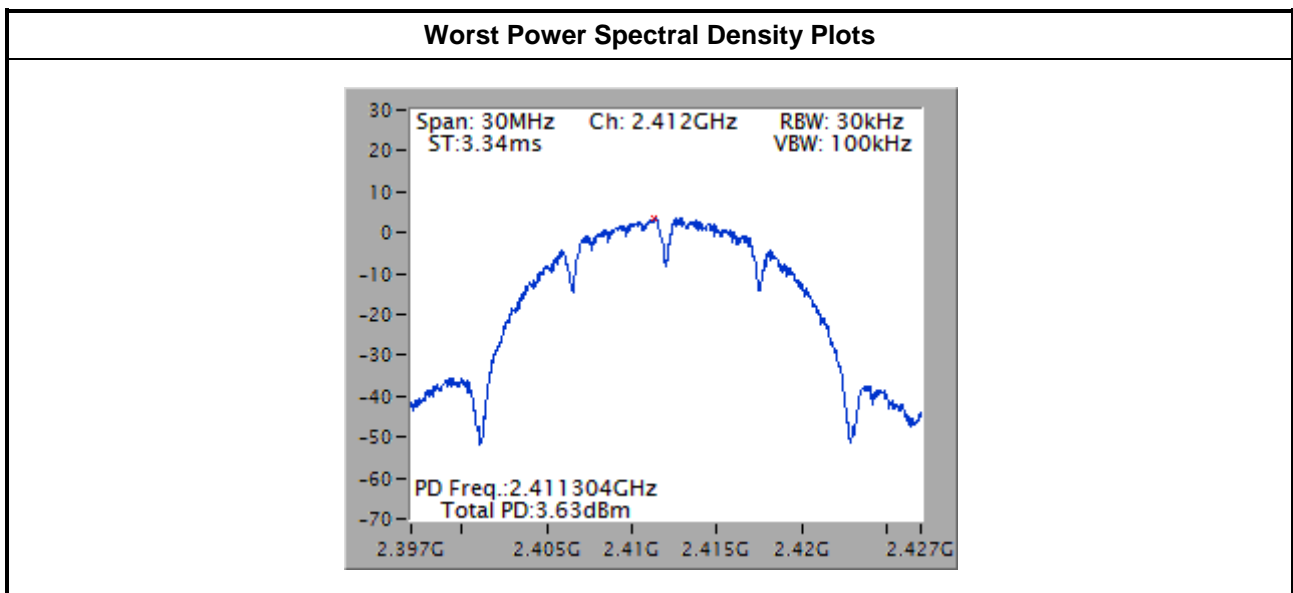
Test Method
<input checked="" type="checkbox"/> Power spectral density procedures that the same method as used to determine the conducted output power shall be used to determine the power spectral density. In addition, the use of a peak PSD procedure will always result in a "worst-case" measured level for comparison to the limit. Therefore, whenever the DTS bandwidth exceeds 500 kHz, it is acceptable to utilize the peak PSD procedure to demonstrate compliance to the PSD limit, regardless of how the fundamental output power was measured. For the power spectral density shall be measured using below options:
<input checked="" type="checkbox"/> Refer as FCC KDB 558074, clause 10.2 Method PKPSD (RBW=30kHz; detector=peak)..
<input type="checkbox"/> Refer as FCC KDB 558074, clause 10.3 Method AVGPSD-1 (spectral trace averaging).
<input type="checkbox"/> Refer as FCC KDB 558074, clause 10.4 Method AVGPSD-1 Alt. (slow sweep speed)
<input type="checkbox"/> Refer as FCC KDB 558074, clause 10.5 Method AVGPSD-2 (spectral trace averaging).
<input type="checkbox"/> Refer as FCC KDB 558074, clause 10.6 Method AVGPSD-2 Alt. (slow sweep speed)
<input checked="" type="checkbox"/> For conducted measurement.
<input checked="" type="checkbox"/> The EUT supports single transmit chain and measurements performed on this transmit chain.
<input type="checkbox"/> The EUT supports diversity transmitting and the results on transmit chain port 1 is the worst case.
<input type="checkbox"/> The EUT supports multiple transmit chains using options given below:
<input type="checkbox"/> Option 1: Measure and sum the spectra across the outputs. Refer as FCC KDB 662911, In-band power spectral density (PSD). Sample all transmit ports simultaneously using a spectrum analyzer for each transmit port. Where the trace bin-by-bin of each transmit port summing can be performed. (i.e., in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3, and so on up to the N _{TX} output to obtain the value for the first frequency bin of the summed spectrum.). Add up the amplitude (power) values for the different transmit chains and use this as the new data trace.
<input type="checkbox"/> Option 2: Measure and add 10 log(N) dB, where N is the number of transmit chains. Refer as FCC KDB 662911, In-band power spectral density (PSD). Performed at each transmit chains and each transmit chains shall be compared with the limit have been reduced with 10 log(N). Or each transmit chains shall be add 10 log(N) to compared with the limit.

3.4.4 Test Setup



3.4.5 Test Result of Power Spectral Density

Power Spectral Density Result				
Condition			Power Spectral Density	
Modulation Mode	N _{TX}	Freq. (MHz)	Sum Chain (dBm/30kHz)	Power Limit (dBm/3kHz)
11b	1	2412	3.63	8
11b	1	2437	3.58	8
11b	1	2462	3.63	8
11g	1	2412	-0.21	8
11g	1	2437	-0.33	8
11g	1	2462	-1.06	8
HT-20	1	2412	-0.08	8
HT-20	1	2437	-0.26	8
HT-20	1	2462	-1.14	8
HT-40	1	2422	-5.53	8
HT-40	1	2437	-5.73	8
HT-40	1	2452	-5.98	8
Result			Complied	



3.5 Emissions in non-restricted frequency bands

3.5.1 Emissions in non-restricted frequency bands limit

Peak power in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz

3.5.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.5.3 Test Procedures

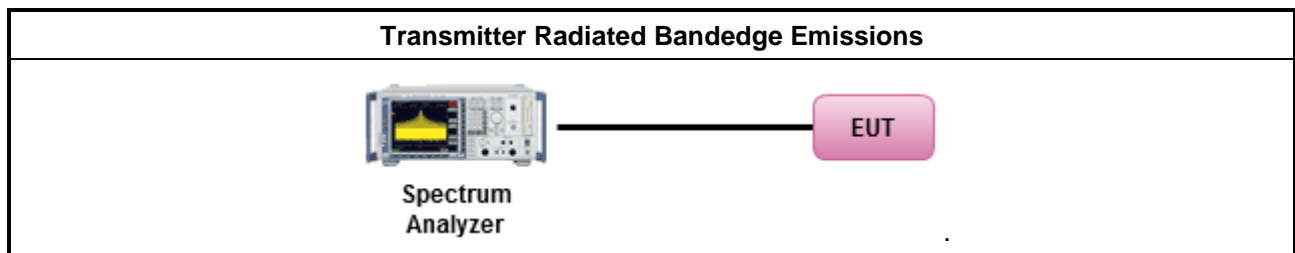
Reference level measurement

1. Set RBW=100kHz, VBW = 300kHz , Detector = Peak, Sweep time = Auto
2. Trace = max hold , Allow Trace to fully stabilize
3. Use the peak marker function to determine the maximum PSD level

Emission level measurement

1. Set RBW=100kHz, VBW = 300kHz , Detector = Peak, Sweep time = Auto
2. Trace = max hold , Allow Trace to fully stabilize
3. Scan Frequency range is up to 25GHz
4. Use the peak marker function to determine the maximum amplitude level

3.5.4 Test Setup

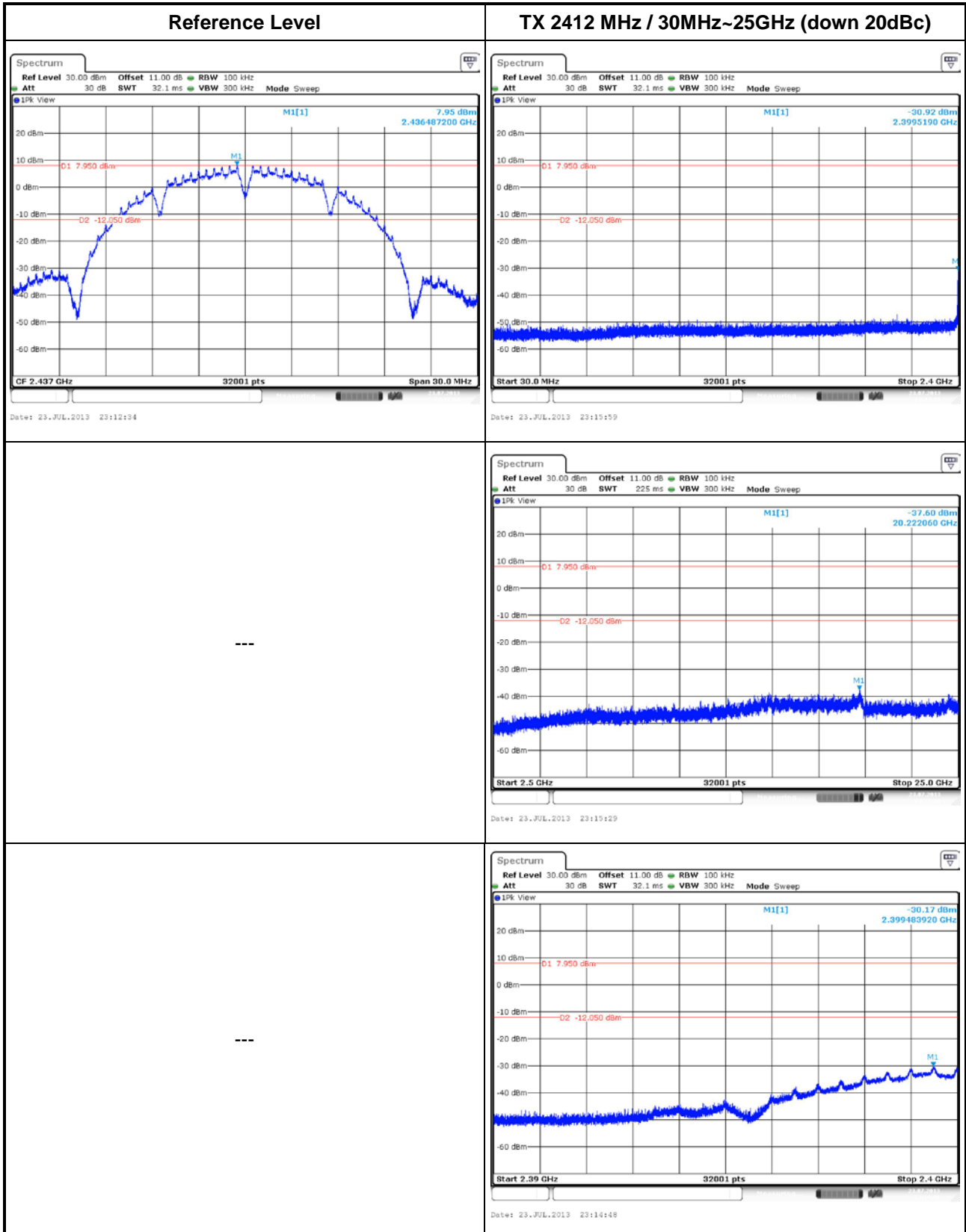


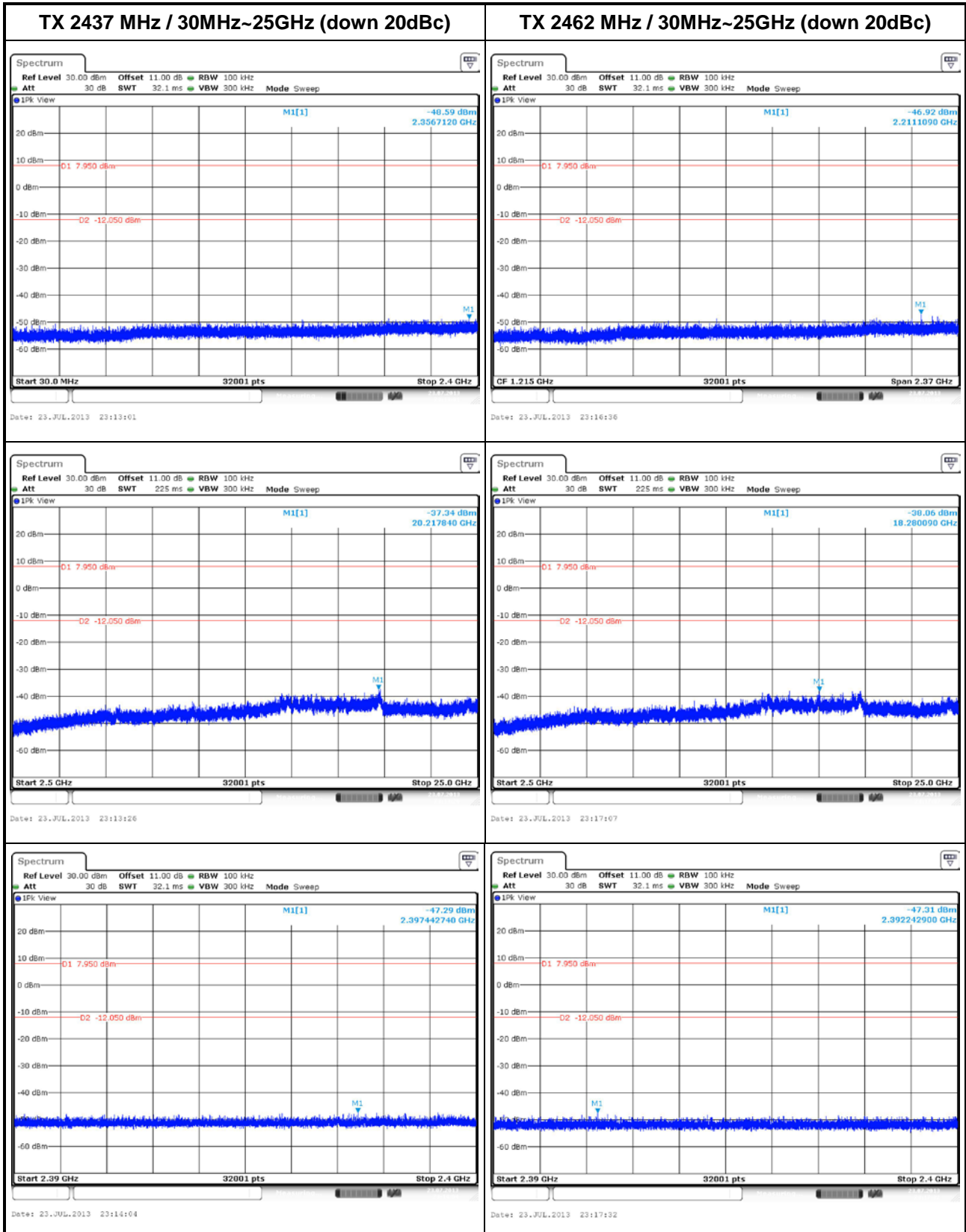
3.5.5 Test Result of Emissions in non-restricted frequency bands

This test item is performed on each TX output individually without summing or adding $10 \log(N_{ANT})$ since measurements are made relative to the in-band emissions on the individual outputs. Only worst test result of each operating mode is presented.



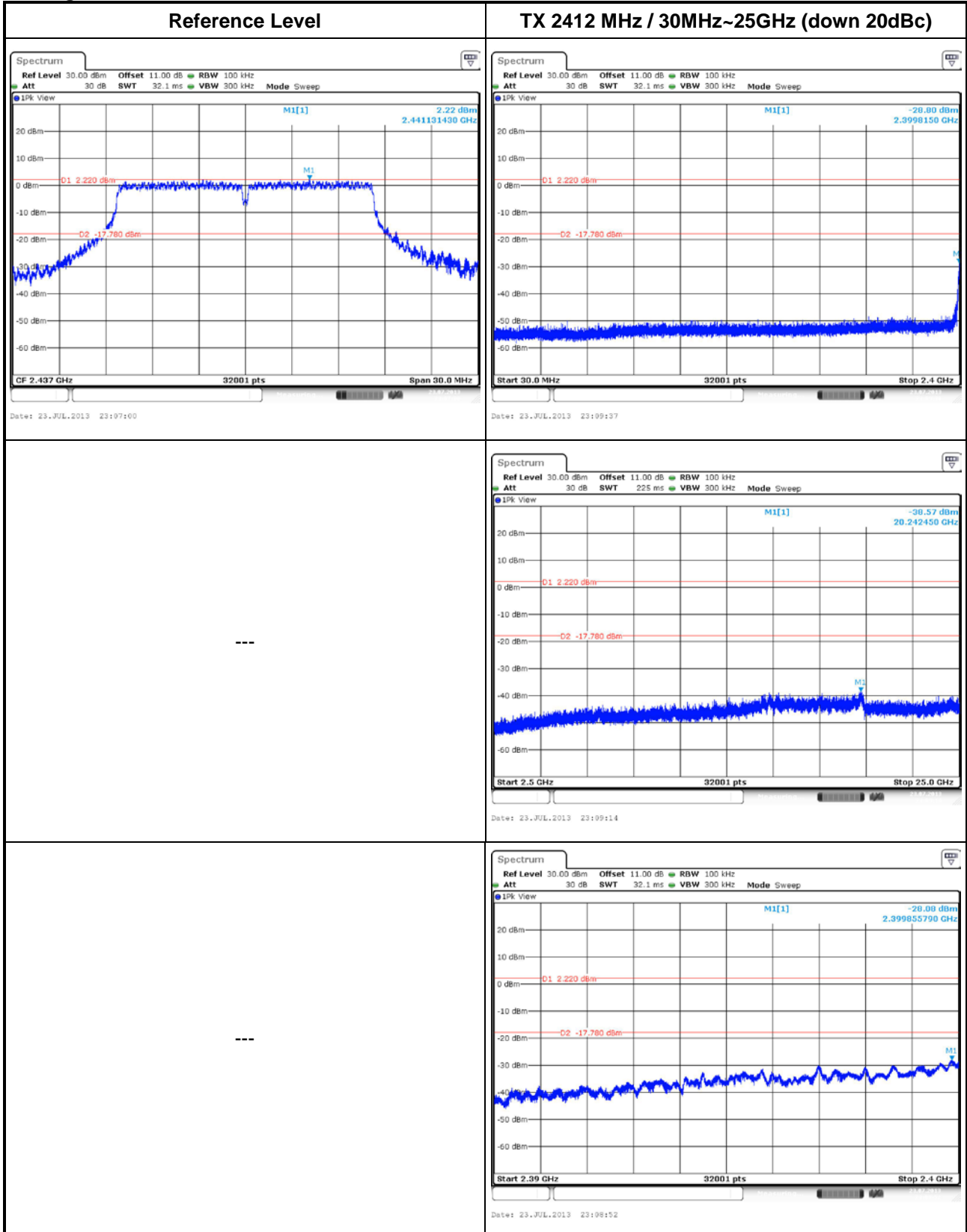
802.11b

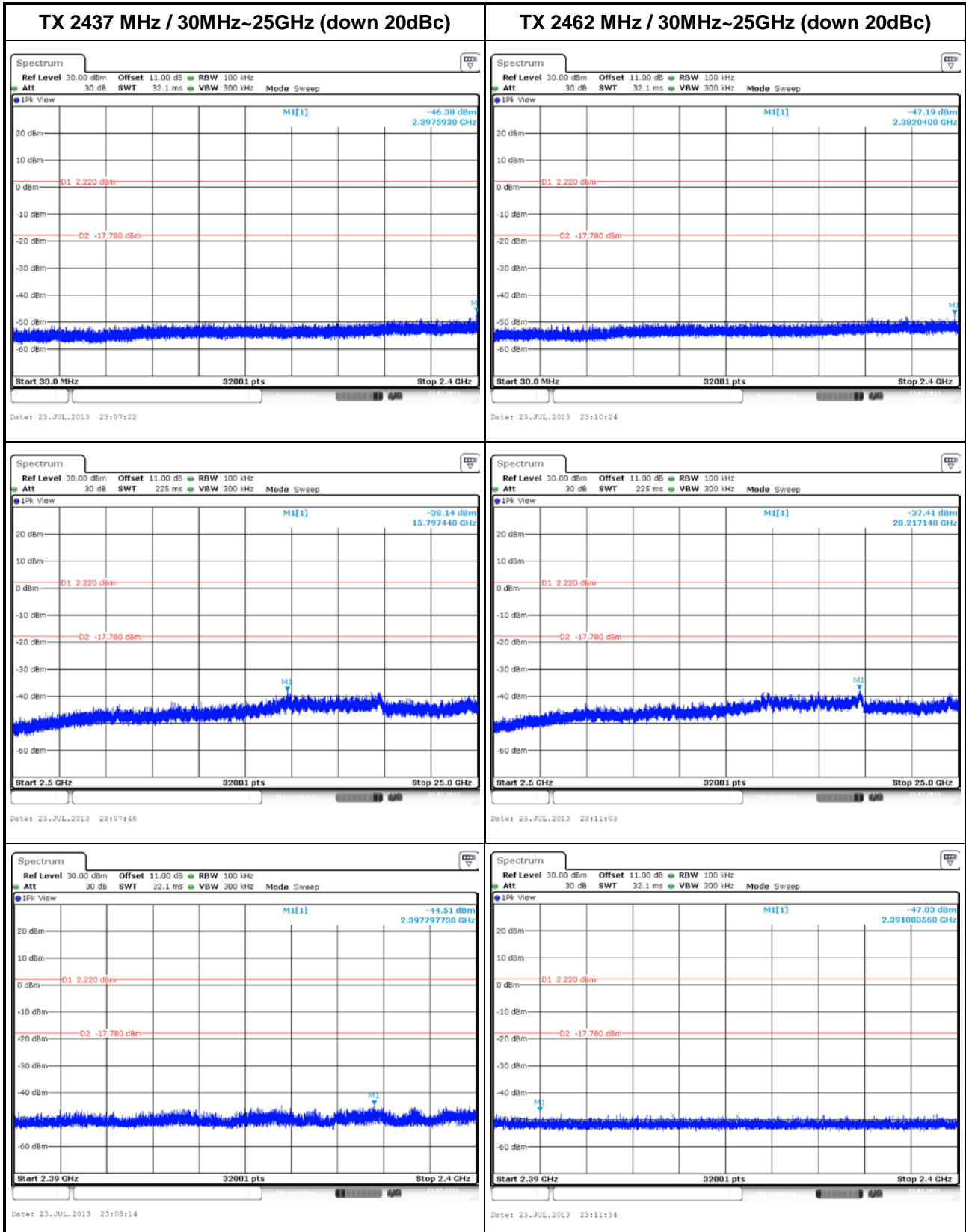






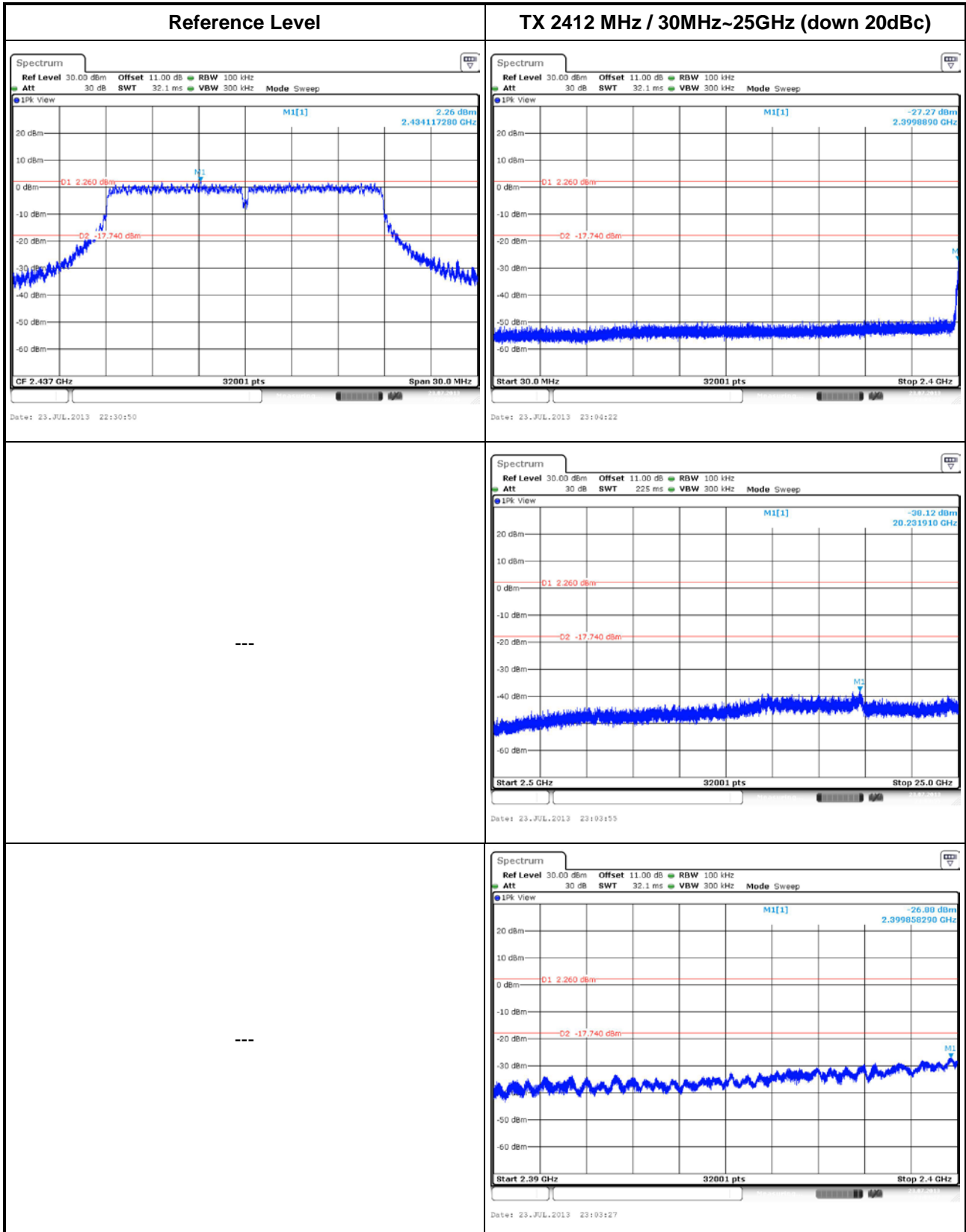
802.11g

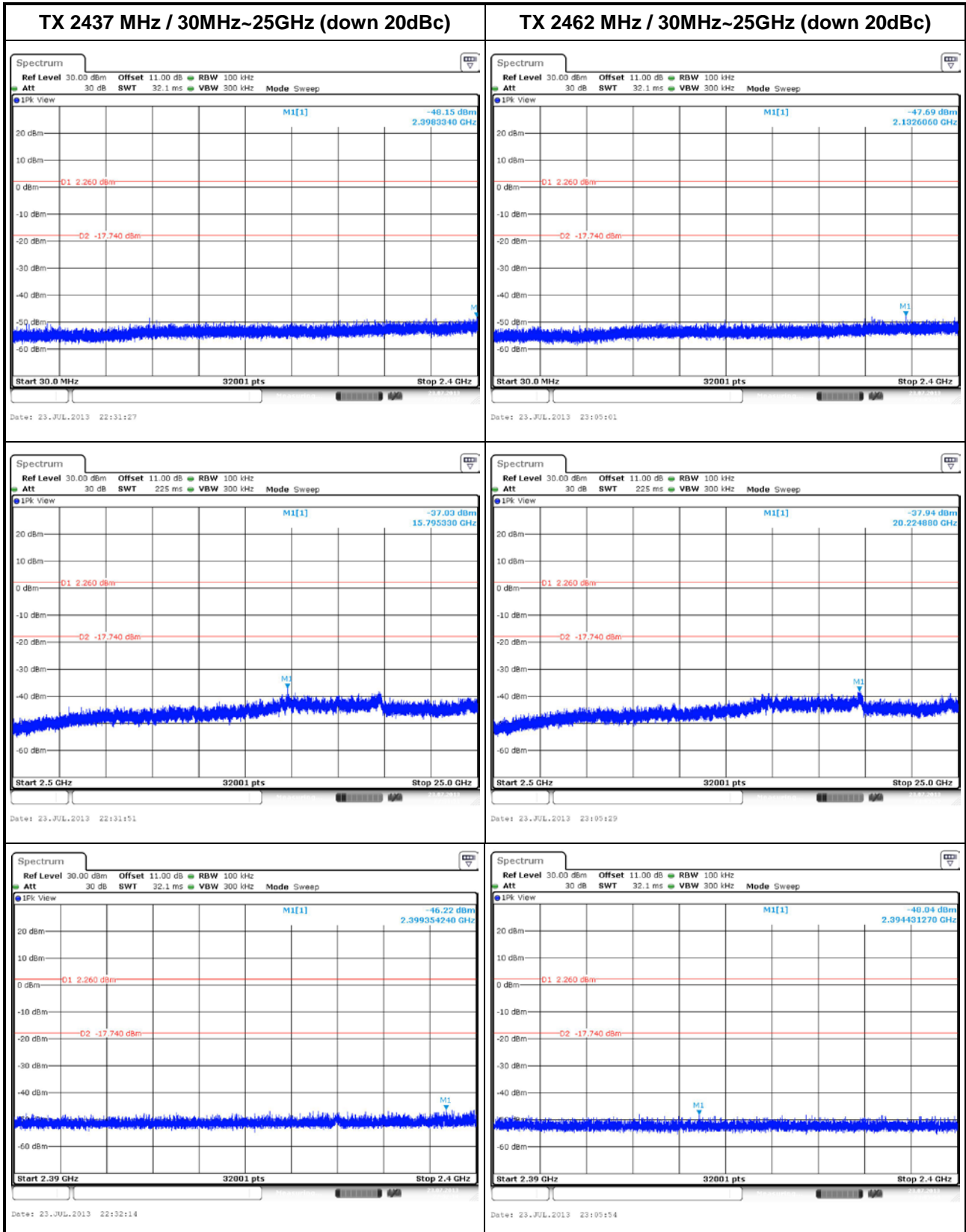






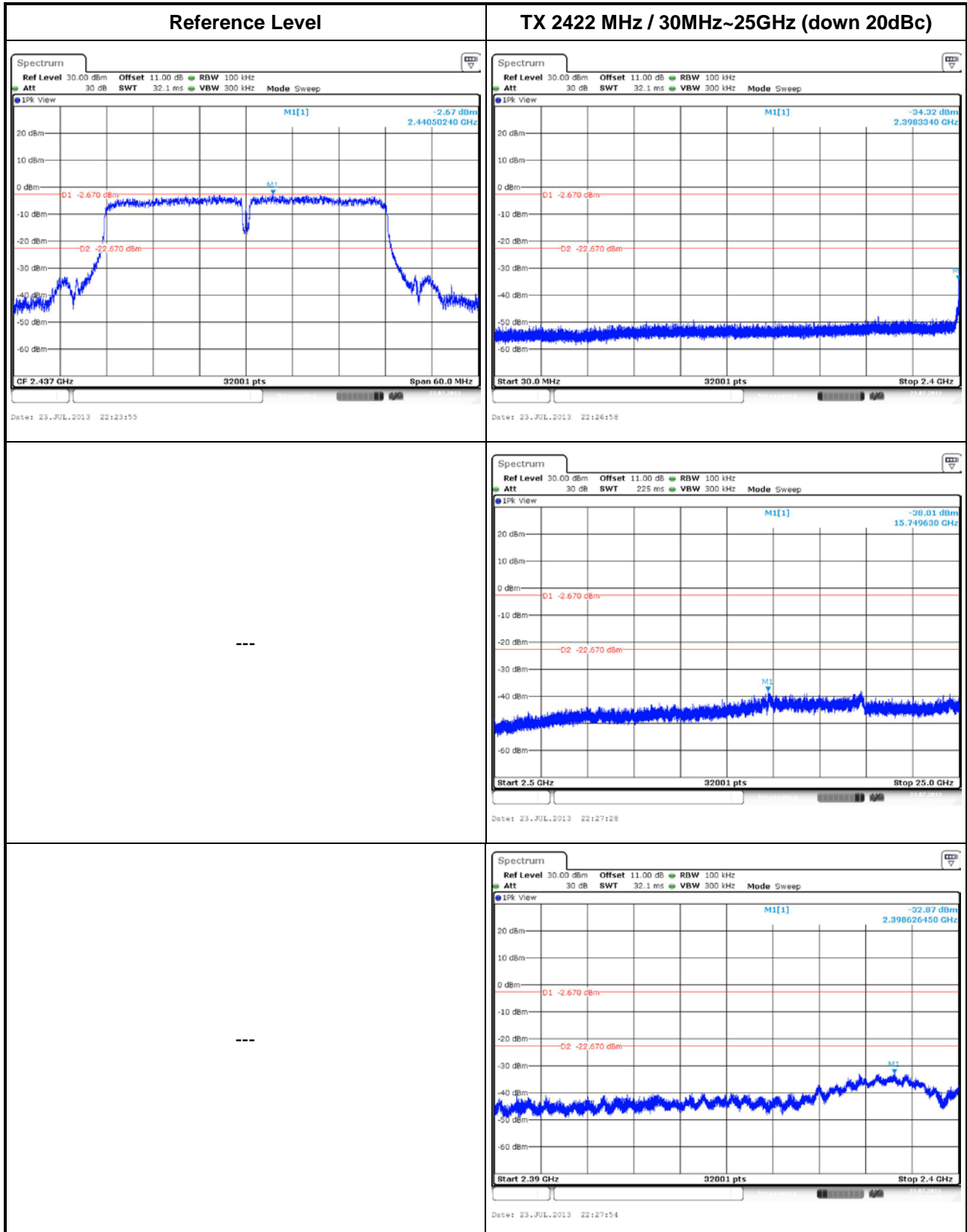
802.11n HT20

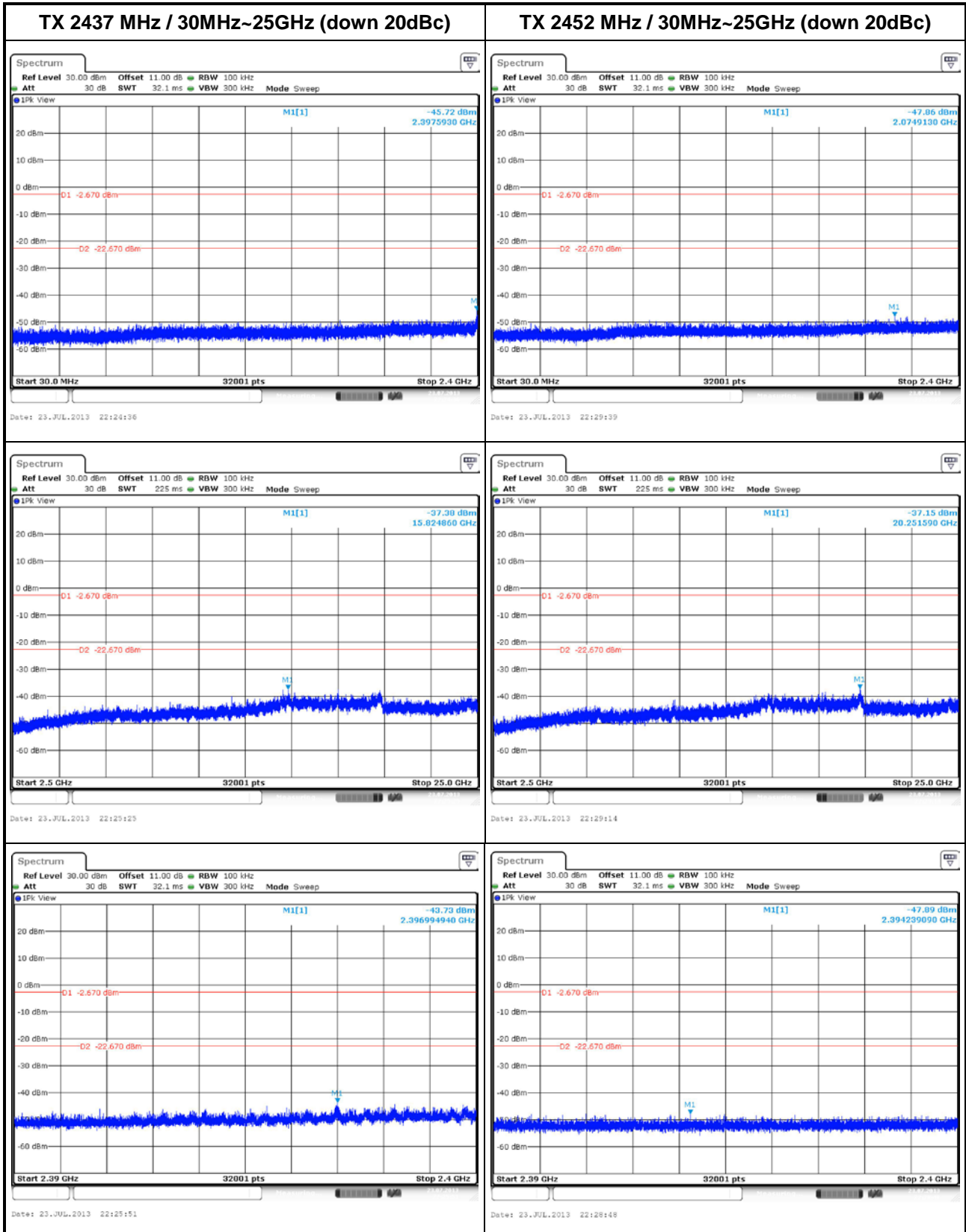






802.11n HT40





3.6 Transmitter Radiated Unwanted Emissions

3.6.1 Transmitter Radiated Unwanted Emissions Limit

Restricted Band Emissions Limit			
Frequency Range (MHz)	Field Strength (uV/m)	Field Strength (dBuV/m)	Measure Distance (m)
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300
0.490~1.705	24000/F(kHz)	33.8 - 23	30
1.705~30.0	30	29	30
30~88	100	40	3
88~216	150	43.5	3
216~960	200	46	3
Above 960	500	54	3

Note 1: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below 30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.

Un-restricted Band Emissions Limit	
RF output power procedure	Limit (dB)
Peak output power procedure	20
Average output power procedure	30

Note 1: If the peak output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum measured in-band peak PSD level.

Note 2: If the average output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the power in any 100 kHz outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum measured in-band average PSD level.

3.6.2 Measuring Instruments

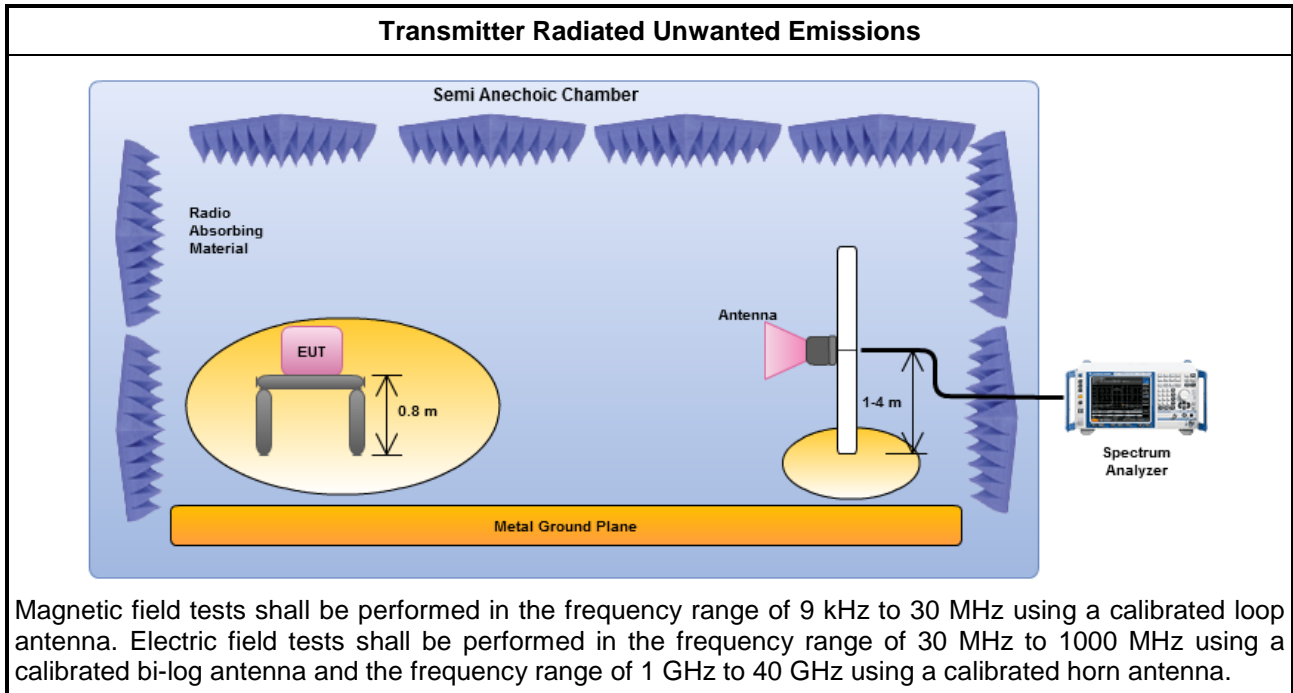
Refer a test equipment and calibration data table in this test report.



3.6.3 Test Procedures

Test Method	
<input checked="" type="checkbox"/>	Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).
<input type="checkbox"/>	Measurements in the frequency range 10 GHz - 18GHz are typically made at a closer distance 1m, because the instrumentation noise floor is typically close to the radiated emission limit.
<input type="checkbox"/>	Measurements in the frequency range above 18 GHz - 25GHz are typically made at a closer distance 0.5m, because the instrumentation noise floor is typically close to the radiated emission limit.
<input checked="" type="checkbox"/>	The average emission levels shall be measured in [duty cycle \geq 98 or duty factor].
<input checked="" type="checkbox"/>	For the transmitter unwanted emissions shall be measured using following options below:
<input checked="" type="checkbox"/>	Refer as FCC KDB 558074, clause 11 for unwanted emissions into non-restricted bands.
<input checked="" type="checkbox"/>	Refer as FCC KDB 558074, clause 12 for unwanted emissions into restricted bands.
<input type="checkbox"/>	Refer as FCC KDB 558074, clause 12.2.4.1 Option 1 (trace averaging for duty cycle \geq 98%)
<input type="checkbox"/>	Refer as FCC KDB 558074, clause 12.2.4.2 Option 2 (trace averaging + duty factor).
<input checked="" type="checkbox"/>	Refer as FCC KDB 558074, clause 12.2.4.3 Option 3 (Reduced VBW \geq 1/T).
<input type="checkbox"/>	Refer as ANSI C63.10, clause 4.2.3.2.3 (Reduced VBW). VBW \geq 1/T, where T is pulse time
<input type="checkbox"/>	Refer as ANSI C63.10, clause 4.2.3.2.4 average value of pulsed emissions.
<input checked="" type="checkbox"/>	Refer as FCC KDB 558074, 12.2.3 measurement procedure peak limit.
<input checked="" type="checkbox"/>	Refer as FCC KDB 558074, clause 12.2.2 measurement procedure Quasi-Peak limit.
<input checked="" type="checkbox"/>	For radiated measurement, refer as FCC KDB 558074, clause 10.2.1.
<input checked="" type="checkbox"/>	Refer as ANSI C63.10, clause 6.4 for radiated emissions from below 30 MHz.
<input checked="" type="checkbox"/>	Refer as ANSI C63.10, clause 6.5 for radiated emissions from 30 MHz to 1000 MHz.
<input checked="" type="checkbox"/>	Refer as ANSI C63.10, clause 6.6 for radiated emissions from above 1 GHz.
<input type="checkbox"/>	For conducted and cabinet radiation measurement, refer as FCC KDB 558074, clause 10.2.2.
<input type="checkbox"/>	For conducted unwanted emissions into non-restricted bands (relative emission limits). Devices with multiple transmit chains: Refer as FCC KDB 662911, when testing out-of-band and spurious emissions against relative emission limits, tests may be performed on each output individually without summing or adding 10 log(N) if the measurements are made relative to the in-band emissions on the individual outputs.
<input type="checkbox"/>	For conducted unwanted emissions into restricted bands (absolute emission limits). Devices with multiple transmit chains using options given below: (1) Measure and sum the spectra across the outputs or (2) Measure and add 10 log(N) dB

3.6.4 Test Setup

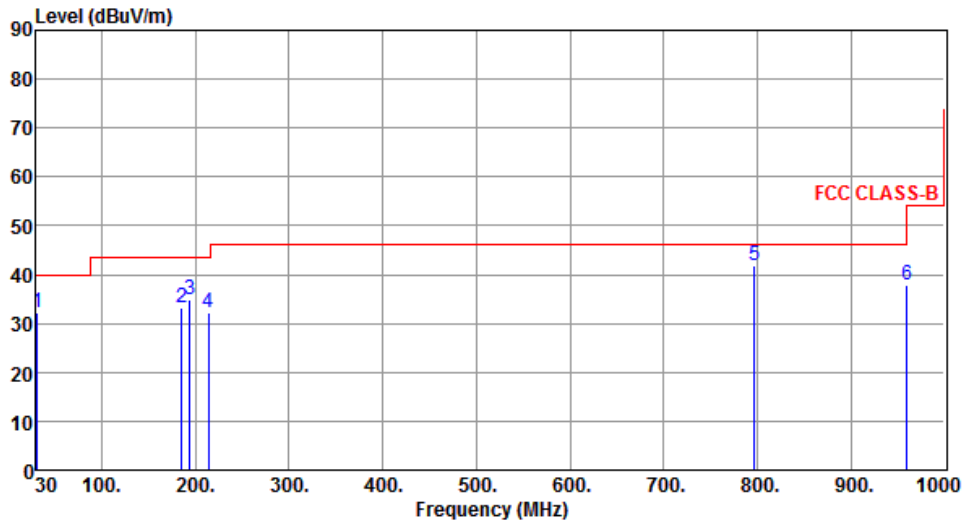


3.6.5 Transmitter Radiated Unwanted Emissions (Below 30MHz)

All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

3.6.6 Radiated Emissions (Below 1GHz)

Radiated Emissions (Below 1GHz)			
Operating Mode	1	Polarization	V
Operating Function	Radio link (WLAN)		

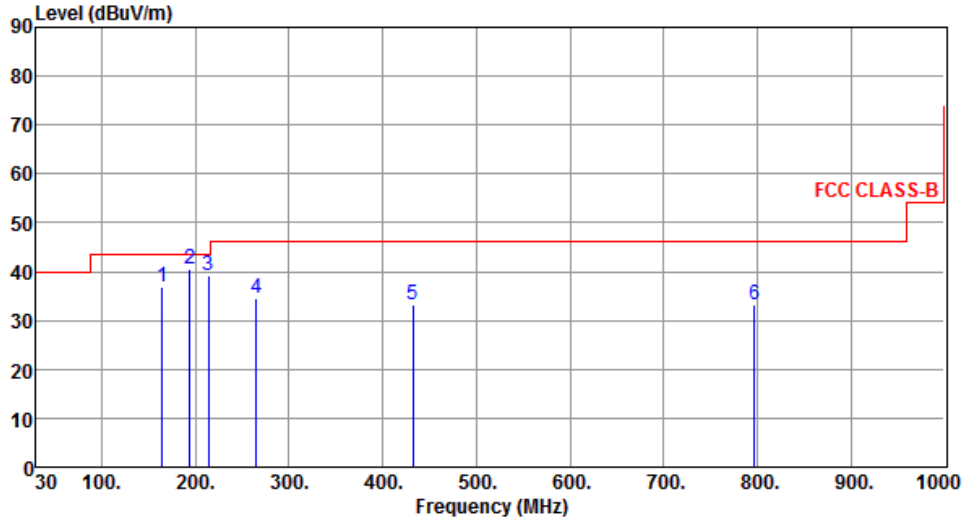


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	30.97	32.25	40.00	-7.75	49.92	-17.67	Peak	---	---
2	185.20	33.15	43.50	-10.35	51.89	-18.74	Peak	---	---
3	193.93	34.94	43.50	-8.56	54.10	-19.16	Peak	---	---
4	214.30	32.06	43.50	-11.44	51.46	-19.40	Peak	---	---
5	797.27	41.85	46.00	-4.15	48.64	-6.79	Peak	---	---
6	960.23	38.02	54.00	-15.98	42.78	-4.76	Peak	---	---

Note 1: ">20dB" means emission levels that exceed the level of 20 dB below the applicable limit.
 Note 2: "N/F" means Nothing Found emissions (No emissions were detected.)
 Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)



Radiated Emissions (Below 1GHz)			
Operating Mode	1	Polarization	H
Operating Function	Radio link (WLAN)		



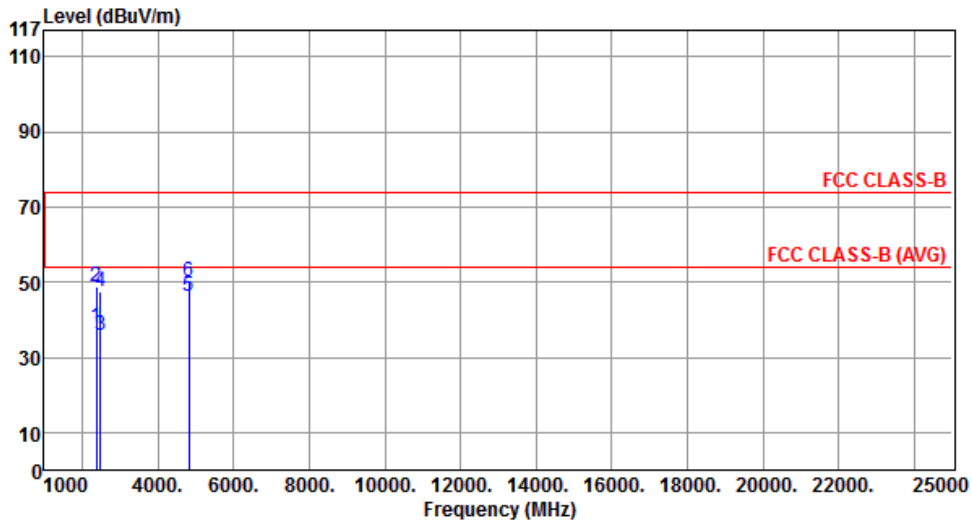
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	164.83	36.99	43.50	-6.51	53.97	-16.98	Peak	---	---
2	193.93	40.49	43.50	-3.01	59.65	-19.16	Peak	---	---
3	214.30	39.25	43.50	-4.25	58.65	-19.40	Peak	---	---
4	264.74	34.49	46.00	-11.51	51.82	-17.33	Peak	---	---
5	432.55	33.28	46.00	-12.72	46.14	-12.86	Peak	---	---
6	797.27	33.08	46.00	-12.92	39.87	-6.79	Peak	---	---

Note 1: ">20dB" means emission levels that exceed the level of 20 dB below the applicable limit.
 Note 2: "N/F" means Nothing Found emissions (No emissions were detected.)
 Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)



3.6.7 Transmitter Radiated Unwanted Emissions (Above 1GHz) for 11b

Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	11b	Test Freq. (FX)	F1
N _{TX}	1	Polarization	V



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2388.00	37.96	54.00	-16.04	41.19	-3.23	Average	---	---
2	2388.00	48.98	74.00	-25.02	52.21	-3.23	Peak	---	---
3	2492.00	35.64	54.00	-18.36	38.43	-2.79	Average	---	---
4	2492.00	47.44	74.00	-26.56	50.23	-2.79	Peak	---	---
5	4824.00	46.26	54.00	-7.74	41.95	4.31	Average	---	---
6	4824.00	50.03	74.00	-23.97	45.72	4.31	Peak	---	---

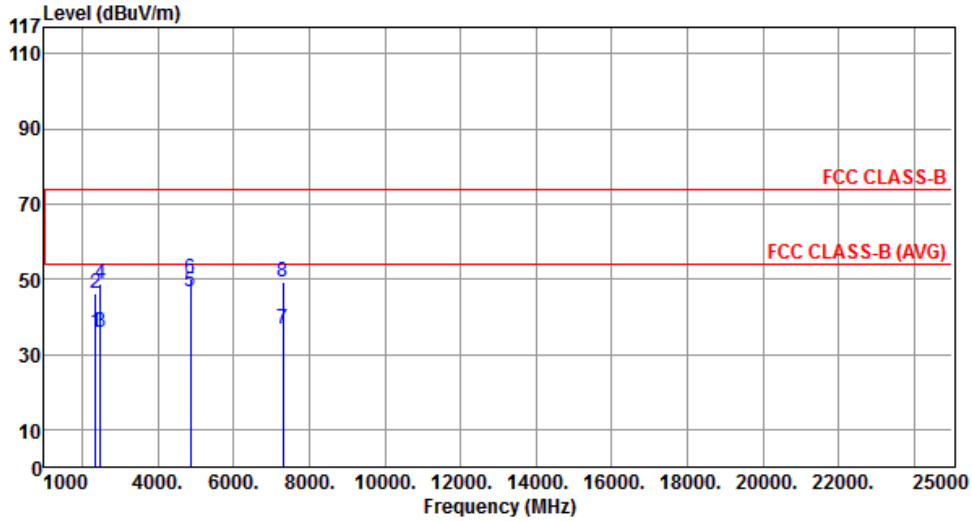
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
 Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
 Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
 Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
 Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.



Transmitter Radiated Unwanted Emissions (Above 1GHz)									
Modulation Mode	11b	Test Freq. (FX)	F1						
N _{TX}	1	Polarization	H						
	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High cm	Turn Table deg
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB			
1	2388.00	40.30	54.00	-13.70	43.53	-3.23	Average	---	---
2	2388.00	51.09	74.00	-22.91	54.32	-3.23	Peak	---	---
3	2492.00	39.75	54.00	-14.25	42.54	-2.79	Average	---	---
4	2492.00	50.26	74.00	-23.74	53.05	-2.79	Peak	---	---
5	4824.00	42.22	54.00	-11.78	37.91	4.31	Average	---	---
6	4824.00	47.53	74.00	-26.47	43.22	4.31	Peak	---	---
<p>Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.</p> <p>Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)</p> <p>Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)</p> <p>Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.</p> <p>Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.</p>									



Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	11b	Test Freq. (FX)	F2
N _{TX}	1	Polarization	V



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2356.00	35.67	54.00	-18.33	39.03	-3.36	Average	---	---
2	2356.00	46.30	74.00	-27.70	49.66	-3.36	Peak	---	---
3	2486.00	35.87	54.00	-18.13	38.69	-2.82	Average	---	---
4	2486.00	48.83	74.00	-25.17	51.65	-2.82	Peak	---	---
5	4874.00	46.43	54.00	-7.57	42.04	4.39	Average	---	---
6	4874.00	50.05	74.00	-23.95	45.66	4.39	Peak	---	---
7	7311.00	36.60	54.00	-17.40	27.68	8.92	Average	---	---
8	7311.00	49.22	74.00	-24.78	40.30	8.92	Peak	---	---

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
 Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
 Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
 Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
 Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.



Transmitter Radiated Unwanted Emissions (Above 1GHz)									
Modulation Mode	11b			Test Freq. (FX)	F2				
N _{TX}	1			Polarization	H				
	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	2356.00	37.86	54.00	-16.14	41.22	-3.36	Average	---	---
2	2356.00	49.49	74.00	-24.51	52.85	-3.36	Peak	---	---
3	2486.00	38.49	54.00	-15.51	41.31	-2.82	Average	---	---
4	2486.00	53.82	74.00	-20.18	56.64	-2.82	Peak	---	---
5	4874.00	41.87	54.00	-12.13	37.48	4.39	Average	---	---
6	4874.00	47.96	74.00	-26.04	43.57	4.39	Peak	---	---
7	7311.00	36.61	54.00	-17.39	27.69	8.92	Average	---	---
8	7311.00	49.51	74.00	-24.49	40.59	8.92	Peak	---	---
<p>Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit. Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.) Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical) Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition. Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.</p>									



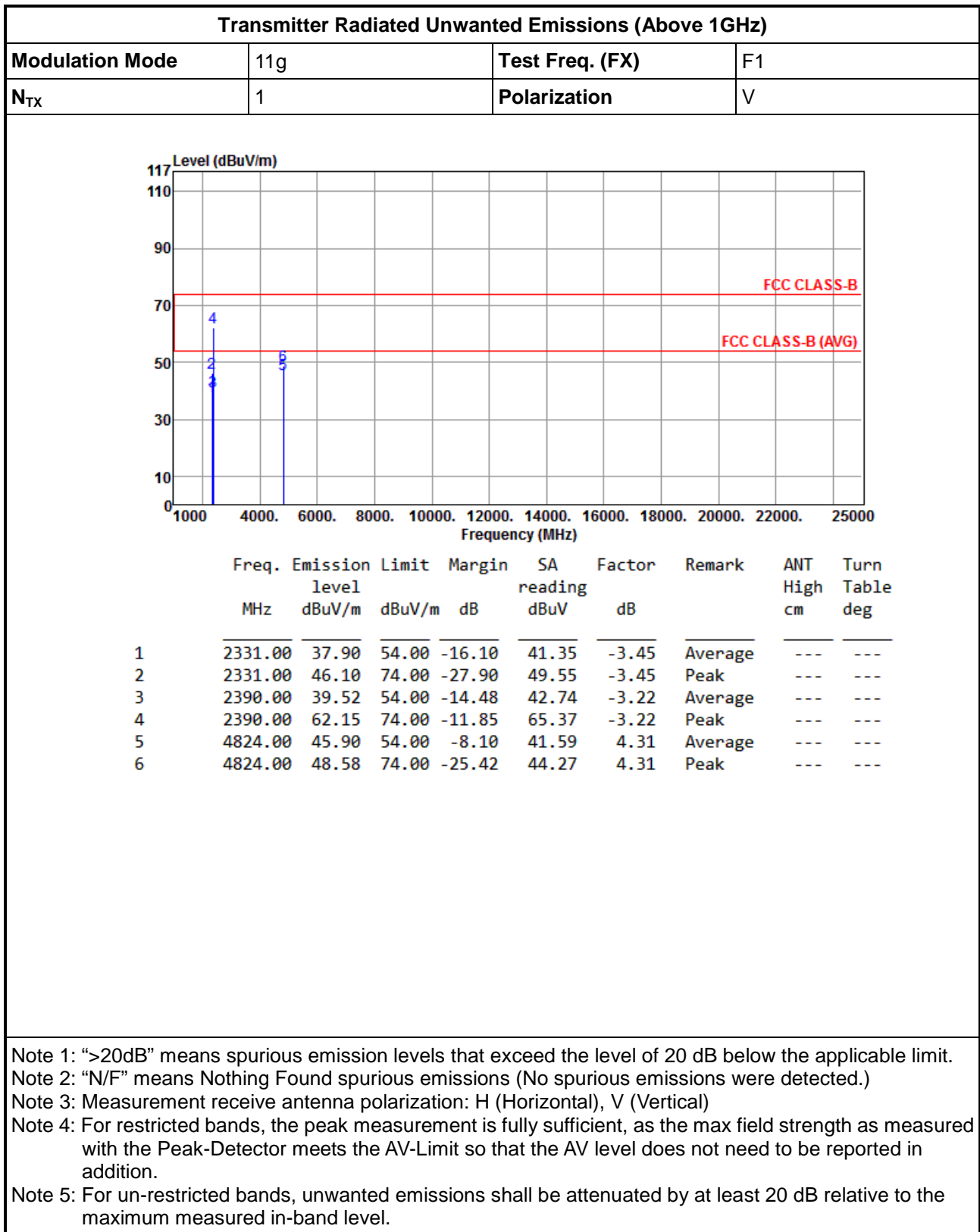
Transmitter Radiated Unwanted Emissions (Above 1GHz)									
Modulation Mode	11b			Test Freq. (FX)	F3				
N _{TX}	1			Polarization	V				
	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	2381.00	35.68	54.00	-18.32	38.94	-3.26	Average	---	---
2	2381.00	45.38	74.00	-28.62	48.64	-3.26	Peak	---	---
3	2483.50	38.05	54.00	-15.95	40.88	-2.83	Average	---	---
4	2483.50	50.32	74.00	-23.68	53.15	-2.83	Peak	---	---
5	4924.00	46.68	54.00	-7.32	42.20	4.48	Average	---	---
6	4924.00	50.39	74.00	-23.61	45.91	4.48	Peak	---	---
7	7386.00	36.40	54.00	-17.60	27.42	8.98	Average	---	---
8	7386.00	49.33	74.00	-24.67	40.35	8.98	Peak	---	---

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
 Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
 Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
 Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
 Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.



Transmitter Radiated Unwanted Emissions (Above 1GHz)									
Modulation Mode	11b			Test Freq. (FX)	F3				
N _{TX}	1			Polarization	H				
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2381.00	38.01	54.00	-15.99	41.27	-3.26	Average	---	---
2	2381.00	47.22	74.00	-26.78	50.48	-3.26	Peak	---	---
3	2483.50	43.87	54.00	-10.13	46.70	-2.83	Average	---	---
4	2483.50	55.08	74.00	-18.92	57.91	-2.83	Peak	---	---
5	4924.00	42.14	54.00	-11.86	37.66	4.48	Average	---	---
6	4924.00	47.76	74.00	-26.24	43.28	4.48	Peak	---	---
7	7386.00	36.59	54.00	-17.41	27.61	8.98	Average	---	---
8	7386.00	49.45	74.00	-24.55	40.47	8.98	Peak	---	---
<p>Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.</p> <p>Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)</p> <p>Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)</p> <p>Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.</p> <p>Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.</p>									

3.6.8 Transmitter Radiated Unwanted Emissions (Above 1GHz) for 11g

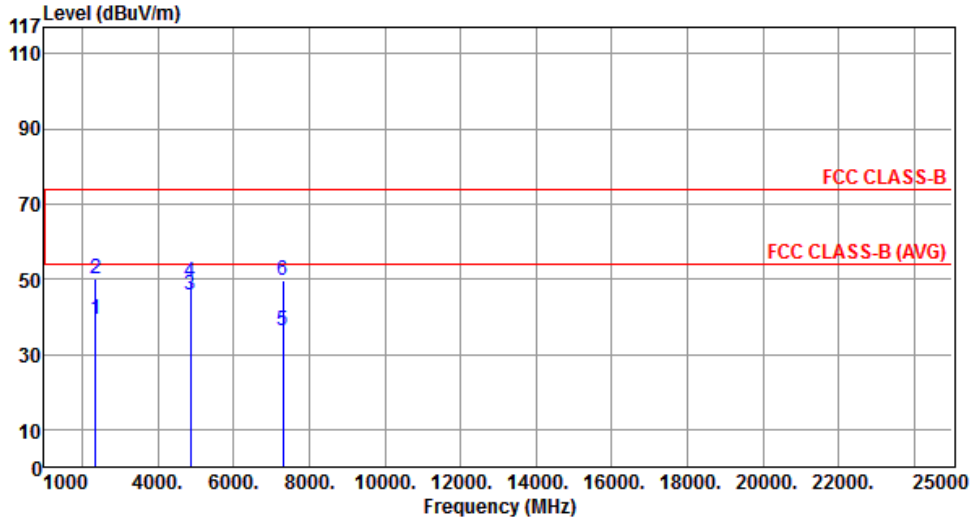




Transmitter Radiated Unwanted Emissions (Above 1GHz)									
Modulation Mode	11g			Test Freq. (FX)	F1				
N _{TX}	1			Polarization	H				
	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	2331.00	43.25	54.00	-10.75	46.70	-3.45	Average	---	---
2	2331.00	51.58	74.00	-22.42	55.03	-3.45	Peak	---	---
3	2390.00	46.76	54.00	-7.24	49.98	-3.22	Average	---	---
4	2390.00	66.62	74.00	-7.38	69.84	-3.22	Peak	---	---
5	4824.00	40.89	54.00	-13.11	36.58	4.31	Average	---	---
6	4824.00	46.86	74.00	-27.14	42.55	4.31	Peak	---	---
<p>Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.</p> <p>Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)</p> <p>Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)</p> <p>Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.</p> <p>Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.</p>									



Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	11g	Test Freq. (FX)	F2
N _{TX}	1	Polarization	V



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2356.00	39.08	54.00	-14.92	42.44	-3.36	Average	---	---
2	2356.00	49.94	74.00	-24.06	53.30	-3.36	Peak	---	---
3	4874.00	45.77	54.00	-8.23	41.38	4.39	Average	---	---
4	4874.00	49.21	74.00	-24.79	44.82	4.39	Peak	---	---
5	7311.00	36.40	54.00	-17.60	27.48	8.92	Average	---	---
6	7311.00	49.51	74.00	-24.49	40.59	8.92	Peak	---	---

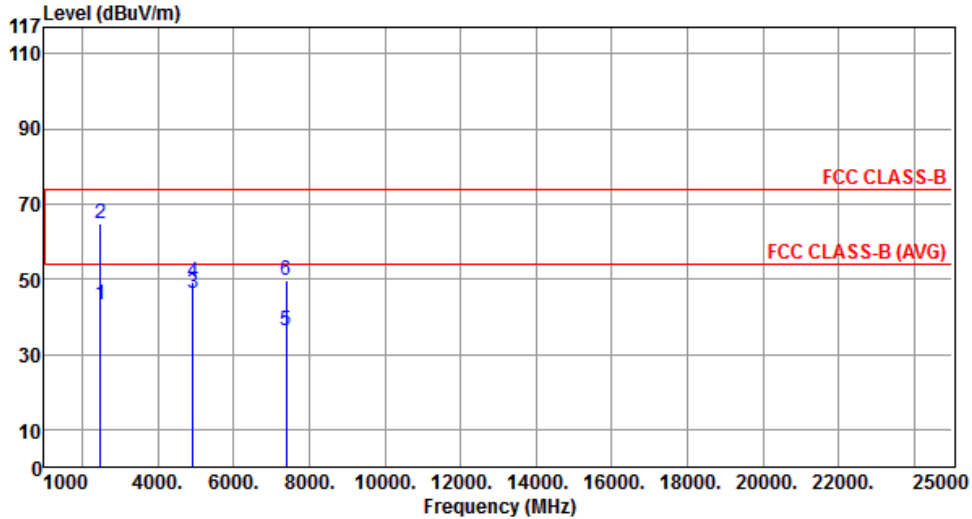
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
 Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
 Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
 Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
 Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.



Transmitter Radiated Unwanted Emissions (Above 1GHz)									
Modulation Mode	11g			Test Freq. (FX)	F2				
N _{TX}	1			Polarization	H				
	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High cm	Turn Table deg
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB			
1	2356.00	40.40	54.00	-13.60	43.76	-3.36	Average	---	---
2	2356.00	53.39	74.00	-20.61	56.75	-3.36	Peak	---	---
3	4874.00	40.97	54.00	-13.03	36.58	4.39	Average	---	---
4	4874.00	47.00	74.00	-27.00	42.61	4.39	Peak	---	---
5	7311.00	36.39	54.00	-17.61	27.47	8.92	Average	---	---
6	7311.00	49.36	74.00	-24.64	40.44	8.92	Peak	---	---
<p>Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit. Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.) Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical) Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition. Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.</p>									



Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	11g	Test Freq. (FX)	F3
N _{TX}	1	Polarization	V



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	43.13	54.00	-10.87	45.96	-2.83	Average	---	---
2	2483.50	64.76	74.00	-9.24	67.59	-2.83	Peak	---	---
3	4924.00	46.05	54.00	-7.95	41.57	4.48	Average	---	---
4	4924.00	49.16	74.00	-24.84	44.68	4.48	Peak	---	---
5	7386.00	36.46	54.00	-17.54	27.48	8.98	Average	---	---
6	7386.00	49.80	74.00	-24.20	40.82	8.98	Peak	---	---

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
 Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
 Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
 Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
 Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

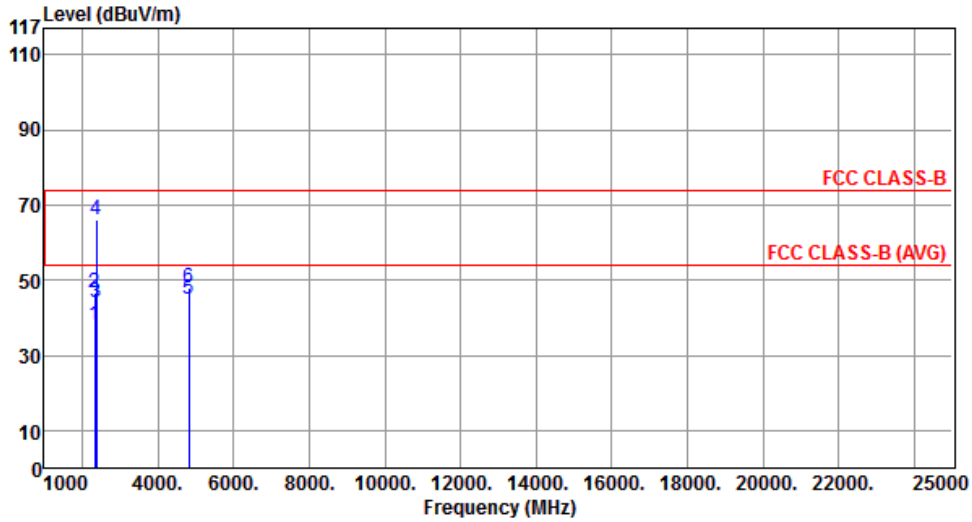


Transmitter Radiated Unwanted Emissions (Above 1GHz)									
Modulation Mode	11g			Test Freq. (FX)	F3				
N _{TX}	1			Polarization	H				
	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	2483.50	47.16	54.00	-6.84	49.99	-2.83	Average	---	---
2	2483.50	70.89	74.00	-3.11	73.72	-2.83	Peak	---	---
3	4924.00	41.74	54.00	-12.26	37.26	4.48	Average	---	---
4	4924.00	46.86	74.00	-27.14	42.38	4.48	Peak	---	---
5	7386.00	36.54	54.00	-17.46	27.56	8.98	Average	---	---
6	7386.00	49.55	74.00	-24.45	40.57	8.98	Peak	---	---
<p>Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.</p> <p>Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)</p> <p>Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)</p> <p>Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.</p> <p>Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.</p>									



3.6.9 Transmitter Radiated Unwanted Emissions (Above 1GHz) for HT-20

Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT-20	Test Freq. (FX)	F1
N _{TX}	1	Polarization	V



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2331.00	37.85	54.00	-16.15	41.30	-3.45	Average	---	---
2	2331.00	46.55	74.00	-27.45	50.00	-3.45	Peak	---	---
3	2390.00	43.83	54.00	-10.17	47.05	-3.22	Average	---	---
4	2390.00	66.01	74.00	-7.99	69.23	-3.22	Peak	---	---
5	4824.00	45.10	54.00	-8.90	40.79	4.31	Average	---	---
6	4824.00	48.12	74.00	-25.88	43.81	4.31	Peak	---	---

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
 Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
 Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
 Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
 Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.



Transmitter Radiated Unwanted Emissions (Above 1GHz)									
Modulation Mode	HT-20		Test Freq. (FX)	F1					
N _{TX}	1		Polarization	H					
	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	2331.00	43.58	54.00	-10.42	47.03	-3.45	Average	---	---
2	2331.00	51.95	74.00	-22.05	55.40	-3.45	Peak	---	---
3	2390.00	47.63	54.00	-6.37	50.85	-3.22	Average	---	---
4	2390.00	70.09	74.00	-3.91	73.31	-3.22	Peak	---	---
5	4824.00	40.90	54.00	-13.10	36.59	4.31	Average	---	---
6	4824.00	46.57	74.00	-27.43	42.26	4.31	Peak	---	---
<p>Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit. Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.) Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical) Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition. Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.</p>									



Transmitter Radiated Unwanted Emissions (Above 1GHz)									
Modulation Mode	HT-20			Test Freq. (FX)	F2				
N _{TX}	1			Polarization	V				
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2356.00	38.66	54.00	-15.34	42.02	-3.36	Average	---	---
2	2356.00	50.20	74.00	-23.80	53.56	-3.36	Peak	---	---
3	4874.00	42.05	54.00	-11.95	37.66	4.39	Average	---	---
4	4874.00	47.06	74.00	-26.94	42.67	4.39	Peak	---	---
5	7311.00	36.44	54.00	-17.56	27.52	8.92	Average	---	---
6	7311.00	49.41	74.00	-24.59	40.49	8.92	Peak	---	---

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
 Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
 Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
 Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
 Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

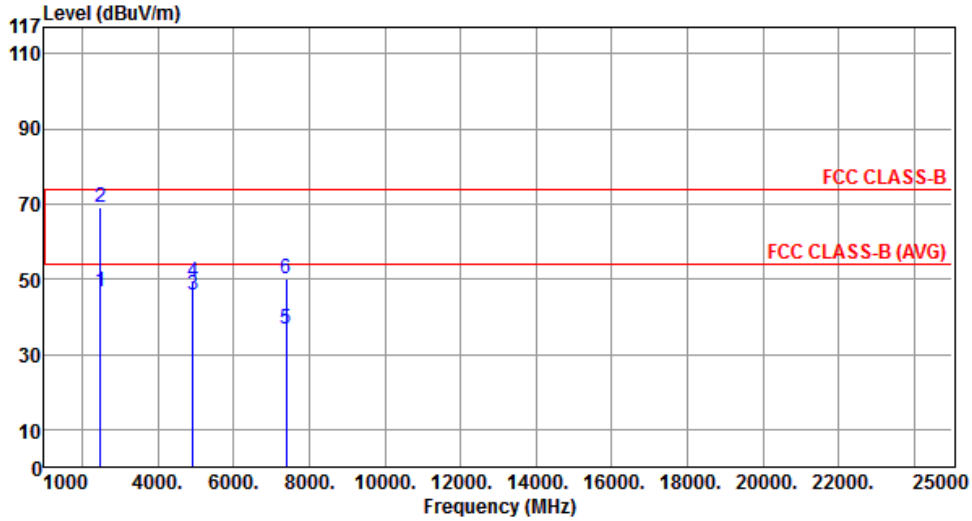


Transmitter Radiated Unwanted Emissions (Above 1GHz)									
Modulation Mode	HT-20			Test Freq. (FX)	F2				
N _{TX}	1			Polarization	H				
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2356.00	42.14	54.00	-11.86	45.50	-3.36	Average	---	---
2	2356.00	55.38	74.00	-18.62	58.74	-3.36	Peak	---	---
3	4874.00	40.81	54.00	-13.19	36.42	4.39	Average	---	---
4	4874.00	47.37	74.00	-26.63	42.98	4.39	Peak	---	---
5	7311.00	36.54	54.00	-17.46	27.62	8.92	Average	---	---
6	7311.00	49.30	74.00	-24.70	40.38	8.92	Peak	---	---
<p>Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.</p> <p>Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)</p> <p>Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)</p> <p>Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.</p> <p>Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.</p>									



Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	HT-20	Test Freq. (FX)	F3
N _{TX}	1	Polarization	V



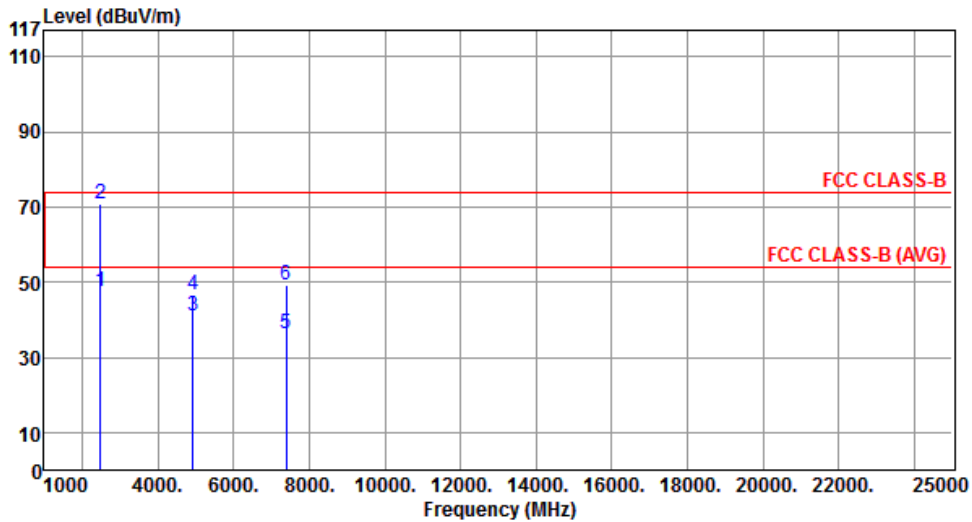
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	46.80	54.00	-7.20	49.63	-2.83	Average	---	---
2	2483.50	69.03	74.00	-4.97	71.86	-2.83	Peak	---	---
3	4924.00	45.66	54.00	-8.34	41.18	4.48	Average	---	---
4	4924.00	49.29	74.00	-24.71	44.81	4.48	Peak	---	---
5	7386.00	36.53	54.00	-17.47	27.55	8.98	Average	---	---
6	7386.00	49.89	74.00	-24.11	40.91	8.98	Peak	---	---

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
 Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
 Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
 Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
 Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.



Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	HT-20	Test Freq. (FX)	F3
N _{TX}	1	Polarization	H



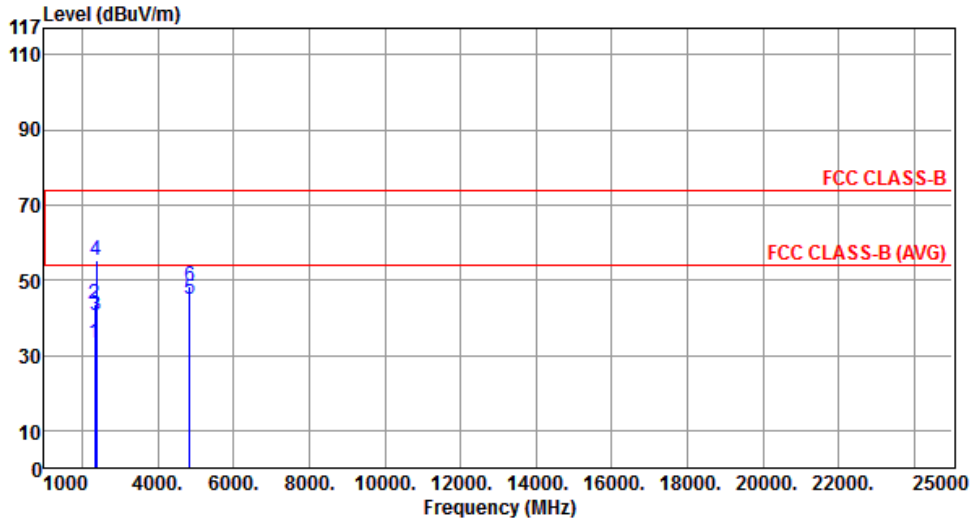
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	47.67	54.00	-6.33	50.50	-2.83	Average	---	---
2	2483.50	70.91	74.00	-3.09	73.74	-2.83	Peak	---	---
3	4924.00	40.92	54.00	-13.08	36.44	4.48	Average	---	---
4	4924.00	46.76	74.00	-27.24	42.28	4.48	Peak	---	---
5	7386.00	36.44	54.00	-17.56	27.46	8.98	Average	---	---
6	7386.00	49.36	74.00	-24.64	40.38	8.98	Peak	---	---

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
 Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
 Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
 Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
 Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.



3.6.10 Transmitter Radiated Unwanted Emissions (Above 1GHz) for HT-40

Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT-40	Test Freq. (FX)	F4
N _{TX}	1	Polarization	V



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2341.00	33.30	54.00	-20.70	36.71	-3.41	Average	---	---
2	2341.00	43.45	74.00	-30.55	46.86	-3.41	Peak	---	---
3	2390.00	40.69	54.00	-13.31	43.91	-3.22	Average	---	---
4	2390.00	55.38	74.00	-18.62	58.60	-3.22	Peak	---	---
5	4844.00	44.93	54.00	-9.07	40.59	4.34	Average	---	---
6	4844.00	48.15	74.00	-25.85	43.81	4.34	Peak	---	---

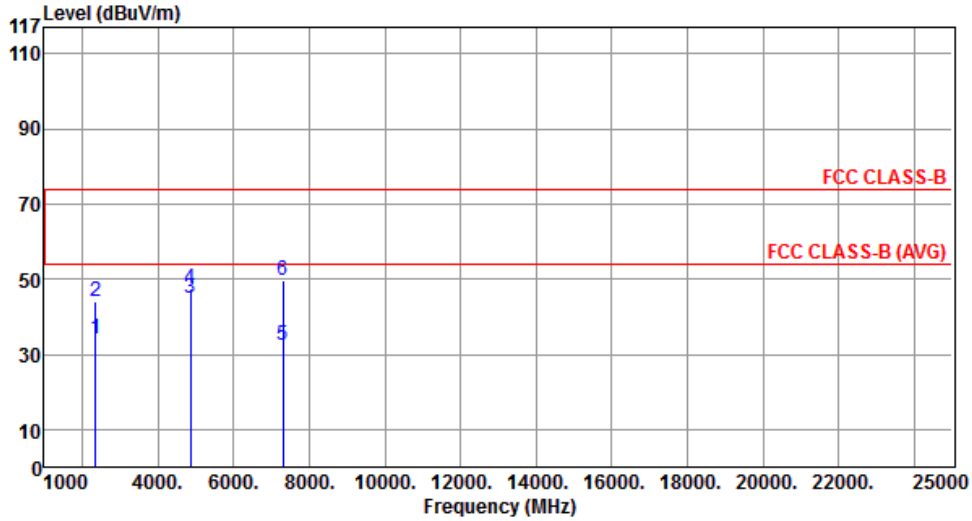
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
 Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
 Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
 Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
 Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.



Transmitter Radiated Unwanted Emissions (Above 1GHz)									
Modulation Mode	HT-40			Test Freq. (FX)	F4				
N _{TX}	1			Polarization	H				
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2341.00	36.25	54.00	-17.75	39.66	-3.41	Average	---	---
2	2341.00	47.14	74.00	-26.86	50.55	-3.41	Peak	---	---
3	2390.00	45.84	54.00	-8.16	49.06	-3.22	Average	---	---
4	2390.00	61.13	74.00	-12.87	64.35	-3.22	Peak	---	---
5	4844.00	40.76	54.00	-13.24	36.42	4.34	Average	---	---
6	4844.00	45.71	74.00	-28.29	41.37	4.34	Peak	---	---
<p>Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.</p> <p>Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)</p> <p>Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)</p> <p>Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.</p> <p>Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.</p>									



Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT-40	Test Freq. (FX)	F5
N _{TX}	1	Polarization	V

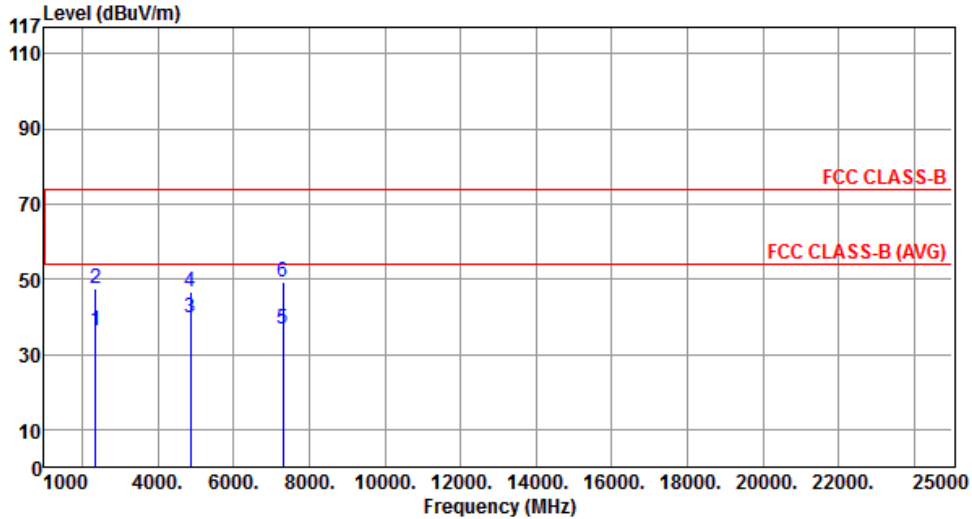


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2356.00	34.09	54.00	-19.91	37.45	-3.36	Average	---	---
2	2356.00	44.23	74.00	-29.77	47.59	-3.36	Peak	---	---
3	4874.00	44.96	54.00	-9.04	40.57	4.39	Average	---	---
4	4874.00	47.50	74.00	-26.50	43.11	4.39	Peak	---	---
5	7311.00	32.30	54.00	-21.70	23.38	8.92	Average	---	---
6	7311.00	49.46	74.00	-24.54	40.54	8.92	Peak	---	---

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
 Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
 Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
 Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
 Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.



Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	HT-40	Test Freq. (FX)	F5
N _{TX}	1	Polarization	H



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2356.00	36.32	54.00	-17.68	39.68	-3.36	Average	---	---
2	2356.00	47.60	74.00	-26.40	50.96	-3.36	Peak	---	---
3	4874.00	39.87	54.00	-14.13	35.48	4.39	Average	---	---
4	4874.00	46.58	74.00	-27.42	42.19	4.39	Peak	---	---
5	7311.00	36.56	54.00	-17.44	27.64	8.92	Average	---	---
6	7311.00	49.30	74.00	-24.70	40.38	8.92	Peak	---	---

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
 Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
 Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
 Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
 Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.



Transmitter Radiated Unwanted Emissions (Above 1GHz)									
Modulation Mode	HT-40	Test Freq. (FX)	F6						
N _{TX}	1	Polarization	V						
	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High cm	Turn Table deg
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB			
1	2483.50	47.70	54.00	-6.30	50.53	-2.83	Average	---	---
2	2483.50	66.45	74.00	-7.55	69.28	-2.83	Peak	---	---
3	4904.00	44.03	54.00	-9.97	39.58	4.45	Average	---	---
4	4904.00	46.82	74.00	-27.18	42.37	4.45	Peak	---	---
5	7356.00	36.33	54.00	-17.67	27.37	8.96	Average	---	---
6	7356.00	49.38	74.00	-24.62	40.42	8.96	Peak	---	---
<p>Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.</p> <p>Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)</p> <p>Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)</p> <p>Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.</p> <p>Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.</p>									



Transmitter Radiated Unwanted Emissions (Above 1GHz)									
Modulation Mode	HT-40			Test Freq. (FX)	F6				
N _{TX}	1			Polarization	H				
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	50.41	54.00	-3.59	53.24	-2.83	Average	---	---
2	2483.50	70.27	74.00	-3.73	73.10	-2.83	Peak	---	---
3	4904.00	40.18	54.00	-13.82	35.73	4.45	Average	---	---
4	4904.00	45.79	74.00	-28.21	41.34	4.45	Peak	---	---
5	7356.00	36.40	54.00	-17.60	27.44	8.96	Average	---	---
6	7356.00	49.53	74.00	-24.47	40.57	8.96	Peak	---	---

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
 Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
 Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
 Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
 Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

4 Test Equipment and Calibration Data

Test Item	Conducted Emission				
Test Site	Conduction room 1 / (CO01-WS)				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
EMC Receiver	R&S	ESCS 30	100169	Oct. 02, 2012	Oct. 01, 2013
LISN	SCHWARZBECK MESS-ELEKTRONIK	Schwarzbeck 8127	8127-667	Dec. 04, 2012	Dec. 03, 2013
LISN (Support Unit)	SCHWARZBECK MESS-ELEKTRONIK	Schwarzbeck 8127	8127-666	Dec. 04, 2012	Dec. 03, 2013
RF Cable-CON	Woken	CFD200-NL	CFD200-NL-001	Dec. 25, 2012	Dec. 24, 2013
50 ohm terminal	NA	50	01	Apr. 22, 2013	Apr. 21, 2014
50 ohm terminal	NA	50	02	Apr. 22, 2013	Apr. 21, 2014
50 ohm terminal	NA	50	03	Apr. 22, 2013	Apr. 21, 2014
50 ohm terminal (Support Unit)	NA	50	04	Apr. 22, 2013	Apr. 21, 2014

Note: Calibration Interval of instruments listed above is one year.

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Spectrum Analyzer	R&S	FSP 40	100305	9KHz~40GHz	Mar. 20, 2013	Conducted (TH01-HY)
AC Power Source	G.W	APS-9102	EL920581	AC 0V ~ 300V	Jul. 16, 2013	Conducted (TH01-HY)
Temp. and Humidity Chamber	Giant Force	GTH-225-20-SP-SD	MAA1112-007	-20 ~ 100°C	Nov. 21, 2012	Conducted (TH01-HY)
Signal Generator	R&S	SMR40	100116	10MHz ~ 40GHz	Jun. 27, 2013	Conducted (TH01-HY)
Power Sensor	Anritsu	MA2411B	0917017	300MHz ~ 40GHz	Feb. 02, 2013	Conducted (TH01-HY)
Power Meter	Anritsu	ML2495A	0949003	300MHz ~ 40GHz	Feb. 02, 2013	Conducted (TH01-HY)
RF Cable-2m	HUBER+SUHNER	SUCOFLEX_104	SN 345675/4	1GHz ~ 26.5GHz	NA	Conducted (TH01-HY)
RF Cable-3m	HUBER+SUHNER	SUCOFLEX_104	SN 345669/4	1GHz ~ 26.5GHz	NA	Conducted (TH01-HY)

Note: Calibration Interval of instruments listed above is one year.



Test Item	Radiated Emission above 1GHz				
Test Site	966 chamber1 / (03CH01-WS)				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
3m semi-anechoic chamber	CHAMPRO	SAC-03	03CH01-WS	Jan. 04, 2013	Jan. 03, 2014
Spectrum Analyzer	R&S	FSV40	101498	Jan. 24, 2013	Jan. 23, 2014
Receiver	ROHDE&SCHWARZ	ESR3	101658	Jan. 28, 2013	Jan. 27, 2014
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-522	Jan. 11, 2013	Jan. 10, 2014
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1096	Feb. 18, 2013	Feb. 17, 2014
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Jan. 14, 2013	Jan. 13, 2014
Amplifier	Burgeon	BPA-530	100219	Nov. 28, 2012	Nov. 27, 2013
Amplifier	Agilent	83017A	MY39501308	Dec. 18, 2012	Dec. 17, 2013
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16014/4	Dec. 25, 2012	Dec. 24, 2013
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16019/4	Dec. 25, 2012	Dec. 24, 2013
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16139/4	Dec. 25, 2012	Dec. 24, 2013
RF Cable-R03m	Woken	CFD400NL-LW	CFD400NL-001	Dec. 25, 2012	Dec. 24, 2013
RF Cable-R10m	Woken	CFD400NL-LW	CFD400NL-002	Dec. 25, 2012	Dec. 24, 2013
control	EM Electronics	EM1000	60612	N/A	N/A
Note: Calibration Interval of instruments listed above is one year.					

Loop Antenna	R&S	HFH2-Z2	100330	Nov. 15, 2012	Nov. 14, 2014
Amplifier	MITEQ	AMF-6F-260400	9121372	Apr. 19, 2013	Apr. 18, 2015
Note: Calibration Interval of instruments listed above is two year.					