

	Test Report				
47 CFR FCC Part 15 subpart C					
	Intentional Radiators				
Report reference no	28110757 001				
FCC Designation Number	IT0008				
FCC Test Firm Registration #	804595				
Tested by (name + signature)					
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Approved by (name + signature):	fras prise				
	Giovanni Molteni \ TM				
Date of issue	July, 24 th 2017				
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Testing Laboratory	TÜV Rheinland Italia S.r.l.				
Address	Via Mattei 3 - 20010 - Pogliano Milanese (MI) – Italy				
Applicant's name	Tecniplast S.p.A.				
Address	Via I Maggio, 6 - 21020 Buguggiate (VA) - Italy				
Test item description	Gateway				
Trade Mark	7				
Manufacturer:	Tecniplast S.p.A.				
Model/Type reference	GA62				
Ratings:	100-240V~ 50/60Hz				
Sample					
Samples received on	03/01/2017				
TUV reference samples	170003 (sampled by the customer)				
Samples tested n	1				
Testing					
Start Date:	07/06/2017				
End Date:	26/06/2017				



SUMMARY

1.	Reference Standards	3
2.	Summary of testing:	4
З.	General product information	6
4.	General Chipset information	7
5.	General Antennas information	8
6.	Photographic documentation	9
7.	Equipment Used During Test	11
8.	Input/Output Ports:	11
9.	Power Interface	12
10.	EUT Operation Modes	12
11.	EUT Configuration Modes:	12
12.	EUT Configuration Modes:	12
1.	Test Conditions and Results – AC POWER CONDUCTED EMISSION	13
2.	Test Conditions and Results – RADIATED EMISSION	16
3.	Test Conditions and Results – 6dB BANDWIDTH	26
4.	Test Conditions and Results – OUTPUT POWER_1 (external antenna)	39
5. (exte	Test Conditions and Results – CONDUCTED ANTENNA PORT SPURIOUS EMISSI ernal antenna)	ONS 50
6.	Test Conditions and Results – RADIATED ANTENNA PORT SPURIOUS EMISSION (external ante 69	enna)
7.	Test Conditions and Results – POWER SPECTRAL DENSITY	76
1.	Test Conditions and Results – RF EXPOSURE REQUIREMENTS	86



1. Reference Standards				
Standard	Description			
FCC Part 15 (Subpart C)	§15.247 Operation within the bands 902-928 MHz, 2400-2483,5 MHz, and 5725-5850 MHz.			
FCC Part 15 (Subpart C)	§15.207 Conducted Limits			
FCC Part 15 (Subpart C)	§15.209 Radiated emission limits; general requirements			
FCC Part 15 (Subpart C)	§15.203 Antenna Requirement			
ANSI C63.4:2009	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz			
ANSI C63.10:2014	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices			
FCC GUIDE 15.247 (DTS): April 8,2016	Guidance for performing compliance measurements on digital transmission systems (dts) operating under §15.247			



2. Summary of testing:					
FCC Rule Part	Test Item	Result	Remarks		
15.207	AC POWER CONDUCTED EMISSION	PASS	Meet the requirement of limit		
15.205 15.209 15.247(d)	RADIATED EMISSIONS	PASS	Meet the requirement of limit		
15.247(a)(2)	6dB BANDWIDTH	PASS	Meet the requirement of limit		
15.247(b)(3)(4)	OUTPUT POWER_1 (external antenna)	PASS	EIRP calculated is based on an antenna gain of 5dBi		
15.247(d)	CONDUCTED ANTENNA PORT SPURIOUS EMISSIONS (external antenna)	PASS	Meet the requirement of limit		
15.247(d)	RADIATED SPURIOUS EMISSIONS (external antenna)	PASS	Meet the requirement of limit		
15.247(e)	POWER SPECTRAL DENSITY	PASS	Meet the requirement of limit		
15.203	ANTENNA REQUIREMENT	PASS	Professional equipment (RP SMA)		
15.247(b)	RF EXPOSURE REQUIREMENTS	PASS	Meet the requirement of limit		



Possible test case verdicts:	
- test case does not apply to the test object:	N/A
- test object does meet the requirement	PASS
- test object does not meet the requirement:	FAIL

General remarks:

The test results presented in this report relate only to the object tested.

The results contained in this report reflect the results for this particular model and serial number. It is the responsibility of the manufacturer to ensure that all production models meet the intent of the requirements detailed within this report.

This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory. "(see Enclosure #)" refers to additional information appended to the report. "(see appended table)" refers to a table appended to the report.

Throughout this report a comma (point) is used as the decimal separator.



3. General product information

Gateway for remote control and alarm monitoring



Hodel EUT Type	
Adaptive Techniques : Load Based Equipment Hardware Version : 1.3 Software Version : 2.0 Modulation technology : DSSS, OFDM Modulation Type : Please see section 1.3 Frequency Range : 802.11b/g/n-20:2.412GHz - 802.11n-40: 2.422GHz - 2.4 Antenna Gain : 2dBi	
Model:M08-	E in one
537050808 ROHS MADE IN C	



Manufacture	er				Pulse	2	
Model					W103	80	
				For WLAN and ZigBei Omni-direct broad 360 One-quarts Connection OEM design Connector Reverse SI SMA (Main * Default Con Engineering Weight Carton Dimensions	ctional radiation ° coverage er wavelength d n options easily gns Options MA (Male)* e) ntiguration – Pie for assistance in	NiFi (802.11b/g pattern provide ipole configura integrate with ase contact Put ordering connec 6.3 gr 	es tion lse Applications ctors ams inton
	pecifications art number is le Frequency		nd RoHS compli	ant. No additi VSWR	ional suffix or ide Polarization	entifier is require Electrical	ed. Radiation
Part No.	[GHz]	[dBi]	[Nom]			Length	











7. Equipment Used During Test								
Use*	Product Type	Manufacturer	Model	Comments				
EUT	Gateway	Tecniplast S.r.l.	GA62					
AE	AE PC Lenovo T430 Used to set the WiFi Module							
Note:								
* Use :								
EUT - Equipment Under Test, AE - Auxiliary/Associated Equipment, or SIM - Simulator (Not Subjected to Test)								
No other	r Auxiliary/Associated	I Equipment was conne	ected/installed on the El	JT				

8. Input/Output Ports:

CONNECTIONS

CONNECTIONS						
Port I		Description	Connection	Cable lenght		
1	Enclosure	Plastic				
2	AC Power Port	AC	AC 115Vac ~ 60 Hz			
3	DC Power Port	DC	12Vdc (powered by dedicated AC/DC adaptor, supplied by the customer)			
4	LAN	TP	RJ45 connector	>3m		
5	USB	I/O	Local use (x2)	<3mt		
6	HDMI	I/O	Not used	<3mt		
7	MICRO USB	I/O	Not used	<3mt		
8	Audio IN	I/O	Not used	<3mt		
9	Audio OUT	I/O	Not used	<3mt		
10	Data Line	I/O	RJ45	>3mt		
	*Note: AC = AC Power Port DC = DC Power Port N/E = Non-Electrical I/O = Signal Input or Output Port (Not Involved in Process Control) TP = Telecommunication Ports					



9. Power Interface							
Mode #	Voltage (V)	Current (A)	Power (W)	Frequency (DC/AC-Hz)	Phases (#)	Comments	
Rated	115	1.8		60Hz	1		

10. EUT Operation Modes					
Operation mode	Description				
#1	EUT turn on with Wi-Fi Module in transmission mode				

11. EU	11. EUT Configuration Modes:				
Mode #	Description				

12. EUT C	onfiguration Modes:
	is calculated by subtracting the Amplifier Gain and adding the Cable Loss and n Factor to the measured reading. The basic equation is as follows:
	Field Strength $(dB\mu V/m) = RAW - AMP + CBL + ACF$
	Where: $RAW = Measured$ level before correction ($dB\mu V$)
	AMP = Amplifier Gain (dB)
	CBL = Cable Loss (dB)
	ACF = Antenna Correction Factor (dB/m)
	$\mu V/m = 10^{\frac{dB\mu V/m}{20}}$
S	ample radiated emissions calculation @ 30 MHz
	leasurement +Antenna Factor–Amplifier Gain+Cable loss=Radiated missions (dBuV/m)
	25 dBuV/m + 17.5 dB - 20 dB + 1.0 dB = 23.5 dBuV/m

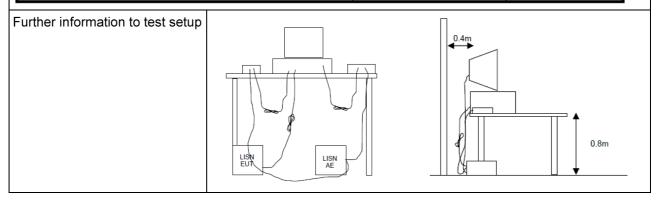


1. Test Conditions and Results – AC POWER CONDUCTED EMISSION

12	TEST: AC Power Co	nducted Emission			PASS
	equired prior to the	Laboratory Ambient Temperature (°C) 15 to			2
test		Relative Humidity (%)		30 to 60 %	, 0
Parameters recorded during the		Laboratory Ambient Temperature	e (°C)	21°C	
test		Relative Humidity (%)		56%	
		Air pressure (hPa)		1020	
		Frequency		Application Point	
Fully configur	red sample tested at e frequency	115V ~ 60Hz		AC Mains	
Equipment m	iode:	Operation mode		#1	
FCC Standar	ď	§.	15.207		
Fred	quency (MHz)	Quasi-peak (dBuV)	Average (dBuV)		Result
	0.15-0.5	66 to 56	56 to 46		PASS
	0.5-5	56	46		PASS
	5-30	60	50		PASS

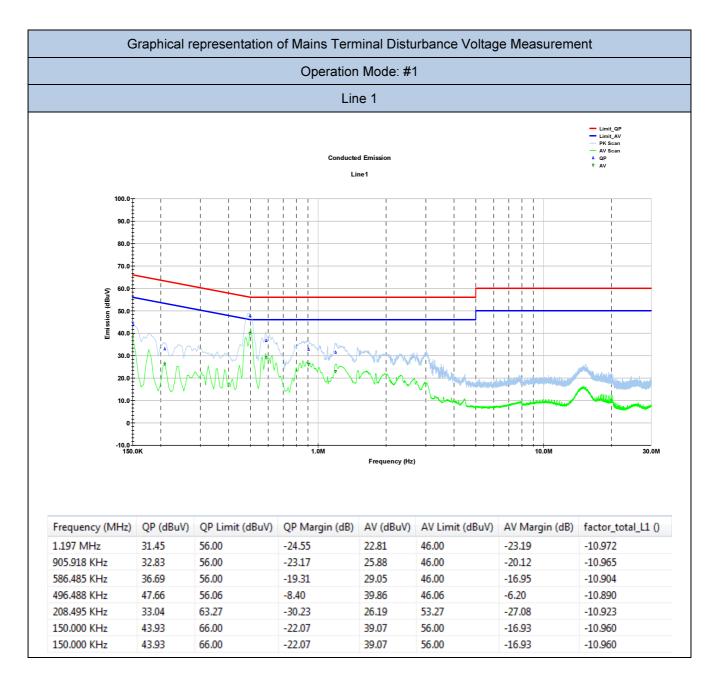
Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

	Conducted limit (dBµV)		
Frequency of emission (MHz)	Quasi-peak	Average	
0.15-0.5	66 to 56*	56 to 46*	
0.5-5	56	46	
5-30	60	50	



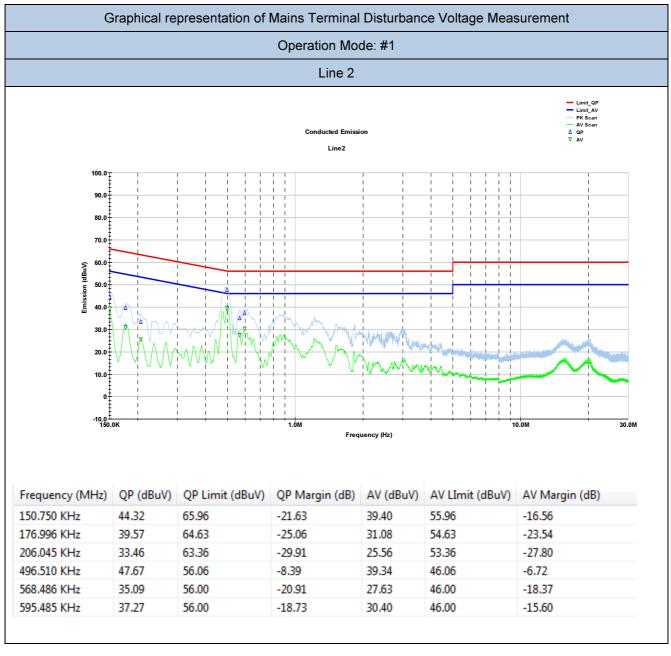


Test Equipment Used								
Description	Manufacturer	Model	Identifier	Calibration date	Calibration due			
EMI Test Receiver	R&S	ESU40	87020455	04/2017	04/2018			
LISN	PMM	PMM L3-64	87020466	09/2016	09/2017			
Stabilized Power Supply	Elettrotest	TPS T 30K60S	87020490	09/2015	09/2018			





Report No. 28110757 001





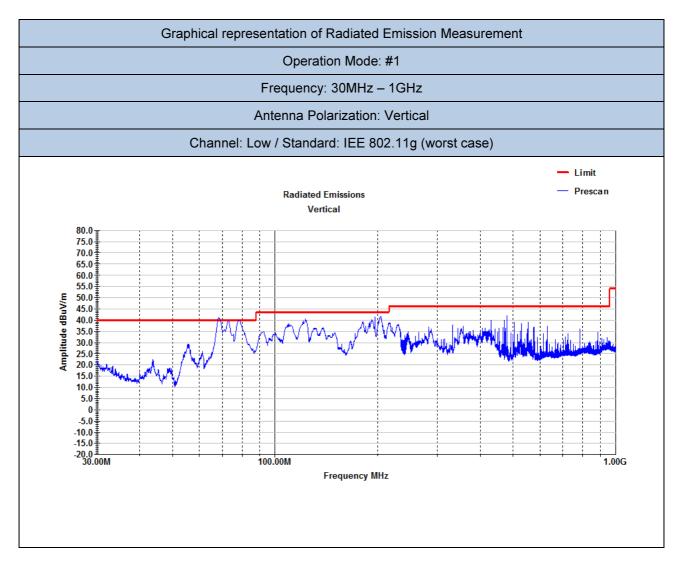
2. Test Conditions and Results – RADIATED EMISSION

13 TEST: Radiated E	mission			PASS
Parameters required prior to the	Laboratory Ambient Temper	ature (°C)	15 to 35	°C
test	Relative Humidity (%)	Relative Humidity (%)		%
Parameters recorded during the	Laboratory Ambient Temper	Laboratory Ambient Temperature (°C)		
test	Relative Humidity (%)		54%	
	Air pressure (hPa)		1020	
	Frequency		Application	Point
Fully configured sample tested a the power line frequency	t 115V ~ 60Hz		Enclosu	ire
Equipment mode:	Operation mode		#1	
FCC Standard	§15.2	05; §15.209	; §15.247	
Frequency (MHz)	Quasi-peak (dBuV)	A	verage (dBuV)	Result
0.15-0.5	66 to 56		56 to 46	PASS
0.5-5	56		46	PASS
			50	
5-30 Except as provided elsewhere in the field strength levels specified	60 this subpart, the emissions from in the following table :	an intentic		PASS ot exceed
Except as provided elsewhere in the field strength levels specified Frequency (MHz) 0.009-0.490 240	this subpart, the emissions from in the following table : Field strength (microvolts/meter) D/F(kHz) 00/F(kHz)			ot exceed

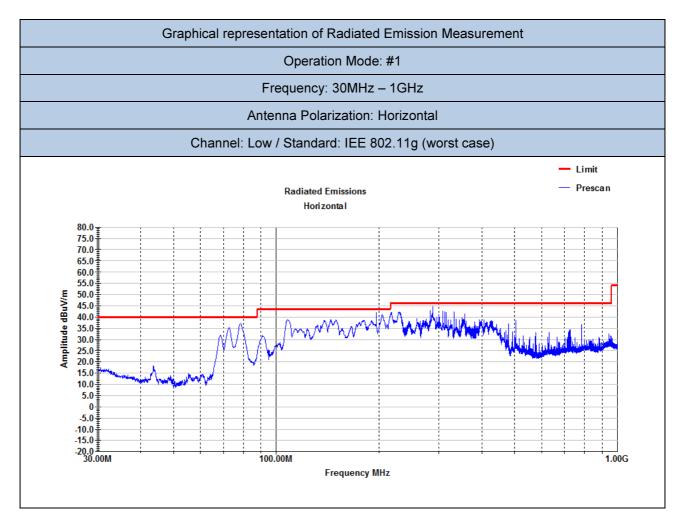


Test Equipment Used								
Description	Manufacturer	Model	Identifier	Calibration date	Calibration due			
CSSA	ETS Lindgren	FACT3	87020484	10/2016	10/2017			
EMI Test Receiver	R&S	ESU40	87020455	04/2017	04/2018			
Antenna BiConiLog	ETS Lindgren	3124E-PA	87020457	04/2017	04/2020			
Antenna Horn with Preamplifier	ETS Lindgren	3117-PA	87020458	04/2017	04/2020			
Antenna Horn with Preamplifier	ETS Lindgren	114514	87020459	04/2017	04/2020			
Antenna Horn with Preamplifier	ETS Lindgren	120722	87020460	04/2017	04/2020			









Tabulated results of Radiated Emission Measurement								
Operation Mode: #1								
	Frequency: 30MHz – 1GHz							
Frequency (MHz)	QP (dBuV/m)	Margin (dB)	TT (deg)	Tower (cm)	Polarization (H or V)	Correction (dB)		
68.470 MHz	36.057	-3.943	90.000	108.000	V	6.897		
72.910 MHz	38.756	-1.244	21.000	116.000	V	6.983		
78.370 MHz	38.718	-1.282	164.000	104.000	V	7.027		
287.980 MHz	33.105	-12.915	360.000	120.000	Н	13.132		



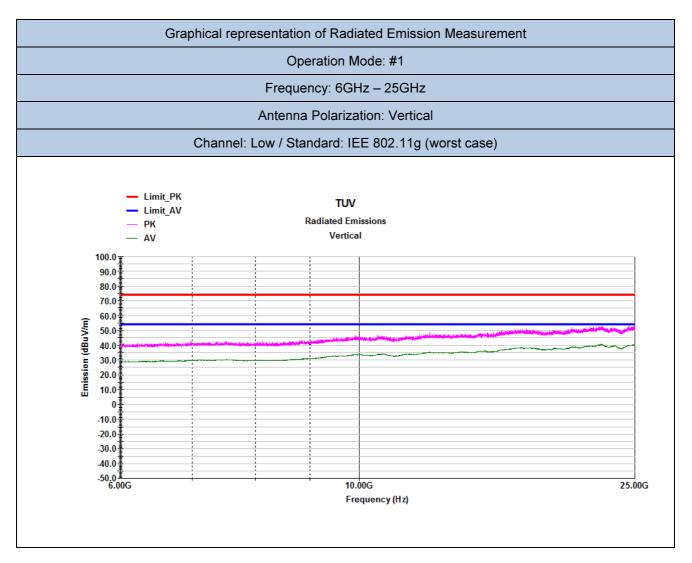
Operation Mode: #1									
	Frequency: 1GHz – 6GHz								
		Antenna Polarizatio	on: Vertical						
	Ch	annel: Low / Standard: IEE	802.11g (worst ca	ase)					
	 Limit_PK Limit_AV PK Scan AV Scan 	TUV Radiated Emissi Vertical	ions						
95 90 85	0.0 5.0 5.0 5.0								
75	5.0 1.0 5.0								
ی s Si Si Si Si Si Si Si Si Si Si Si Si Si S	5.0 9.0 5.0 9.0	والمراجع المرجع والمتحال والمستحر والمحالية المحمل المحمل							
25 20	0.0 5.0 9.0								
10 5	5.0 5.0 0								
	0 ^里 1.00G	Frequ	ency (Hz)	•	6.00				



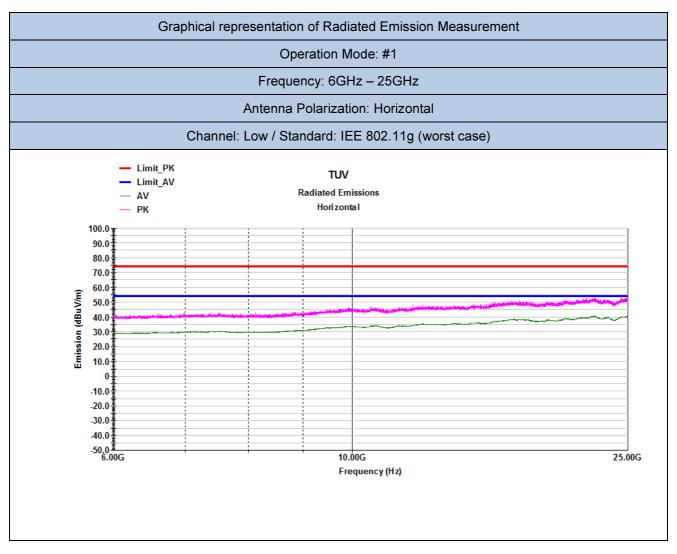
		Frequency: 1GHz – 6GHz		
		Antenna Polarization: Horizontal		
	Channel	: Low / Standard: IEE 802.11g (wo	orst case)	
	 Limit_PK Limit_AV PK Scan AV Scan 	TUV Radiated Emissions Horizontal		
100.0 95.0 90.0 85.0 85.0 775.0 (ш//лар) 10.0 65.0 55.0 55.0 40.0 40.0 40.0				
35.0 30.0 25.0 20.0 15.0 10.0 5.0				
0 [₫] 1.0	- 0G	i Frequency (Hz)	i	;

Tabulated results of Radiated Emission Measurement
Operation Mode: #1
Frequency: 1GHz - 6GHz









Tabulated results of Radiated Emission Measurement
Operation Mode: #1
Frequency: 6GHz - 25GHz



Graphical representation of Antenna Port Spurious Emission - Radiated								
Operation Mode: #1								
Standard: IEE 802.11g (worst case)								
	С	hannel: Low						
BAND EDGE								
MultiView 🗄 Spectrum 🚦								
Ref Level 111.70 dBµV Offset 0.20 dB F Att 14 dB SWT 10 ms W 1 Frequency Sweep 10 ms W 1 1 1 0 0 W 1 1 1 0 0 W 1 1 0 Ms W 1 0 Ms W 1 0 Ms W 1 0	BW 1 MHz BW 3 MHz Mode Auto	Sweep		NCAN 01Pk Max	○ 2Av MaxPwr			
I Frequency Sweep				D2[1]	-26.98 dB -8.7360 MHz			
100 dBµV				M1[1]	78.03 dBµV 2.4078560 GHz 			
90 dBµV								
80 dBµV				MA Al-ran	Aman			
H1 74.000 dBµV				NW				
60 dBµV				U 4U*				
H2 54.000 dBµV								
to deux	monorman	when when the						
30 dBuV		mannahara	mmMy (
20 dBµV								
10 dBµV								
0 dBµV		V2	V1					
CF 2.39 GHz	625 pts	6	.0 MHz/		Span 60.0 MHz			



Graphical representa	Graphical representation of Antenna Port Spurious Emission - Radiated								
	Operation Mode: #1								
Sta	andard: IEE 802.11g (w	orst case)							
	Channel: High								
BAND EDGE									
MultiView Spectrum Ref Level 111.70 dBµV Offset 0.20 dB • RBW 1 MH Att 14 dB • SWT 10 ms • VBW 3 MH									
1 Frequency Sweep		NCAN	D2[1] -24.62 dB						
100 dBµV			8.6400 MHz M1[1] 75.81 dBμV 2.4751360 GHz						
90 dBµV									
80 dBµV									
60 dBUV									
H2 54.000 dBuV_2									
40 dBµV	MM Mutuhan manager and	Mu M	may many many more						
30 dBµV	Milliummun	man man man man and the second s	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~						
20 dBµV									
10 dBµV									
0 d8µV	V2								
	25 pts	6.0 MHz/	Span 60.0 MHz						



3. Test Conditions and Results – 6dB BANDWIDTH

14	TEST: Radiated Emis	ssion	PASS				
	equired prior to the	Laboratory Ambient Temperature (°C)	15 to 35 °C				
test		Relative Humidity (%)	30 to 60 %				
	ecorded during the	Laboratory Ambient Temperature (°C)	24°C				
test		Relative Humidity (%)	48%				
		Air pressure (hPa)	1020				
		Frequency	Application Point				
Fully configut the power lin	red sample tested at e frequency	115V ~ 60Hz	SMA Connector				
Equipment m	node:	Operation mode	#1				
FCC Standar	rd	§15.247					
		chniques may operate in the 902-928 Mł m 6 dB bandwidth shall be at least 500 ł					
Further inforr	nation to test setup	EUT Attenuator (optional)	Spectrum Analyzer (or Power Meter)				



Test Equipment Used										
DescriptionManufacturerModelIdentifierCalibration dateCalibration due										
EMI Test Receiver	R&S	ESU40	87020455	04/2017	04/2018					
20dB Attenuator	20dB Attenuator RS Components Huber & Suhner 87020534 10/2016 10/2017									

	Graphica	I representation	of 6dB Bandw	ridth	
		Operation Mo	ode: #1		
		Standard: IEE	802.11b		
		Channel:	#1		
Receiver Spe	ctrum 🗵				
Ref Level 10.16 dBm Att 20 dB PS	Offset 7.00 dB ● F SWT 56.9 µs ● V		Mode Auto FFT	Input 1 AC	X
😑 1Pk Max					
0 dBm			M1[1]		-4.02 dBm 2.4126924 GHz 6.00 dB
-10 dBm	T AM	1 when when	Q factor	u. Wali	10.477401499 MHz 230.3
-20 dBm				- Muy - L	
-30 dBm					
-40 dBm	March			- Vu	M. M.L.
-50 dBm					- Man Marine
-70 dBm					
-80 dBm					
CF 2.411303401 GHz		691 pts			Span 40.0 MHz
Marker					
TypeRefTrcM11	2.4126924 GHz	Y-value -4.02 dBm	Function ndB down	Fund	tion Result 10.477401499 MHz
T1 1	2.4126924 GHz	-4.02 uBm -9.04 dBm	nub uown ndB		10.477401499 MH2 6.00 dB
T2 1	2.4172654 GHz	-10.15 dBm	Q factor		230.3
) Measuring		26.06.2017 11:33:18
Date: 26.JUN.2017 11:33:18	8				



0 dBm T1		Graphical	representation	of 6dB Bandwidth	I	
Channel: #5 Receiver Spectrum X Y Ref Level 10.16 dbm Offset 7.00 db RBW 100 kHz Att 20 db SWT 56.9 µs VBW 300 kHz Mode Auto FFT Input 1 AC PS D1Pk Max 10.478000000 MHz M1[1] -4.27 dbn 6.00 dt -10 dbm 10.478000000 MHz 232 : 10.478000000 MHz 232 : -20 dbm -0 -0 -0 -0 -0 -30 dbm -0 -0 -0 -0 -0 -30 dbm -0 -0 -0 -0 -0 -50 dbm -0 -0 -0 -0 -0 -60 dbm -0 -0 -0 -0 -0 -70 dbm -0 -0 -0 -0 -0 -0 -80 dbm -10 -0 -0 -0 -0 -0 -70 dbm -10 -0 -0 -0 -0 -0 -80 dbm -10 </td <td></td> <td></td> <td>Operation Mc</td> <td>ode: #1</td> <td></td> <td></td>			Operation Mc	ode: #1		
Receiver Spectrum (3) (1) Ref Level 10.16 dbm Offset 7.00 db e RBW 100 kHz Mode Auto FFT Input 1 AC Att 20 db SWT 56.9 µs VBW 300 kHz Mode Auto FFT Input 1 AC PS IPk Max -4.27 dbm -4.27 dbm 6.00 db 10 dbm T1			Standard: IEE	802.11b		
Ref Level 10.16 dBm Offset 7.00 dB RBW 100 kHz Att 20 dB SWT 56.9 µs VBW 300 kHz Mode Auto FFT Input 1 AC PS IPk Max 0 dBm T1 .4.27 dBn -10 dBm T1			Channel:	#5		
Ref Level 10.16 dBm Offset 7.00 dB RBW 100 kHz Att 20 dB SWT 56.9 µs VBW 300 kHz Mode Auto FFT Input 1 AC PS IPk Max 0 dBm T1 .4.27 dBn -10 dBm T1	Peceiver Spe	ctrum				Ē
Att PS 20 dB SWT 56.9 µs VBW 300 kHz Mode Auto FFT Input 1 AC PIPk Max 0 dBm -4.27 dBn 2.4326890 GHz -4.27 dBn 2.4326890 GHz 6.00 dBm 6.00 dBm 2.4326890 GHz 6.00 dBm 6.00 dBm 2.4326890 GHz 6.00 dBm 2.4328000000 MHz 2.4328000000 MHz 2.4328000000 MHz 2.232.5 <td>-</td> <td>_</td> <td>BW 100 kHz</td> <td></td> <td></td> <td>(~</td>	-	_	BW 100 kHz			(~
PS PFk Max 0 dBm 0 dBm 10				Mode Auto FFT I	nput 1 AC	
0 dBm T1						
0 dBm T1 ndB 2.4326890 GH: -10 dBm T1 0 dBm 0 factor 10.47800000 MH: -20 dBm Q factor 232.5 -30 dBm -40 dBm -40 dBm -40 dBm -40 dBm -50 dBm -40 dBm -40 dBm -40 dBm -40 dBm -40 dBm -50 dBm -50 dBm -50 dBm -50 dBm -50 dBm -50 dBm -70 dBm -50 dBm -50 dBm -50 dBm -50 dBm -50 dBm -70 dBm -50 dBm -50 dBm -50 dBm -50 dBm -50 dBm -70 dBm -50 dBm -50 dBm -50 dBm -50 dBm -50 dBm -70 dBm -50 dBm -50 dBm -50 dBm -50 dBm -50 dBm -70 dBm -50 dBm -50 dBm -50 dBm -50 dBm -50 dBm -50 dBm -70 dBm -50 dBm -50 dBm -4.27 dBm ndB down 10.478 MHz T1 1 2.432689 GHz -4.27 dBm ndB down 10.478 MHz T1 1 2.437263 GHz -10.46 dBm Q factor <	⊖1Pk Max					
0 dBm 11 ndB 6.00 dE -10 dBm 0 0 0 0 -20 dBm 0 0 0 0 -30 dBm 0 0 0 0 -30 dBm 0 0 0 0 -40 dBm 0 0 0 0 -50 dBm 0 0 0 0 -70 dBm 0 0 0 0 -80 dBm 0 0 0 0 -70 dBm 0 0 0 0 -80 dBm 0 0 0 0 -70 dBm 0 0 0 0 -80 dBm 0 0 0 0 -10 0 0 0 0 -10 0 0 0 0 -10 0 0 0 0 -10 0 0 0 0 -10 0 0 0 0 -10 0 0 0 0 -10 0 0 0 0 -10 0 0 0 0 -11 0 0 0				M1[1]		-4.27 dBm
-10 dBm	0 dBm		41			
-20 dBm Q factor 232.3 -20 dBm -30 dBm -40 dBm -40 dBm -40 dBm -40 dBm -40 dBm -40 dBm -50 dBm -50 dBm -50 dBm -50 dBm -60 dBm -60 dBm -60 dBm -70 dBm -70 dBm -70 dBm -70 dBm -70 dBm -80 dBm -70 dBm -70 dBm -70 dBm -10 dBm -10 dBm -10 dBm -10 dBm -80 dBm -10 dBm -10 dBm -10 dBm -11 1 2.432699 GHz -4.27 dBm ndB down 11 1 2.4326785 GHz -9.50 dBm ndB 12 1 1 2.437263 GHz -10.46 dBm Q factor 223.2 232.2 232.2		T1	here mar the	TO TO		
-20 dBm -30 dBm -40 dBm -50 dBm -50 dBm -50 dBm -60 dBm -70 dBm -70 dBm -70 dBm -70 dBm -80 dBm -70 dBm -70 dBm -80	-10 dBm			× V.V.		
-30 dBm -40 dBm -50 dBm -50 dBm -50 dBm -70 dBm -70 dBm -70 dBm -80 dBm -70		J. A. C.				
-40 dBm	-20 dBm	<u>۲</u>		<u> </u>		
-40 dBm	-30 dBm				N	
-50 dBm -60 dBm -70 dBm -70 dBm -80 dBm -80 dBm -80 dBm -70					N .	
-60 dBm -60 dBm -60 dBm -60 dBm -70 dBm	-40 dBm	5				
-60 dBm -60 dBm -60 dBm -60 dBm -70 dBm		word .			I man	.
-70 dBm70 dB	-50 dBm				ľ	mun and and and and and and and and and an
-70 dBm70 dB	-60 dBm					- when
-80 dBm Image: Sector of the sector of t						
CF 2.4324 GHz 691 pts Span 40.0 MHz Marker Marker Marker Marker Type Ref Trc X-value Function Function Result M1 1 2.432689 GHz -4.27 dBm ndB down 10.478 MHz T1 1 2.426785 GHz -9.50 dBm ndB 6.00 dB T2 1 2.437263 GHz -10.46 dBm Q factor 232.2 Measuring	-70 dBm					
CF 2.4324 GHz 691 pts Span 40.0 MHz Marker Marker Marker Marker Type Ref Trc X-value Function Function Result M1 1 2.432689 GHz -4.27 dBm ndB down 10.478 MHz T1 1 2.426785 GHz -9.50 dBm ndB 6.00 dB T2 1 2.437263 GHz -10.46 dBm Q factor 232.2 Measuring						
Marker Trc X-value Y-value Function Function Result M1 1 2.432689 GHz -4.27 dBm ndB down 10.478 MHz T1 1 2.426785 GHz -9.50 dBm ndB 6.00 dB T2 1 2.437263 GHz -10.46 dBm Q factor 232.2	-80 dBm					
Marker Trc X-value Y-value Function Function Result M1 1 2.432689 GHz -4.27 dBm ndB down 10.478 MHz T1 1 2.426785 GHz -9.50 dBm ndB 6.00 dB T2 1 2.437263 GHz -10.46 dBm Q factor 232.2						
Type Ref Trc X-value Function Function Result M1 1 2.432689 GHz -4.27 dBm ndB down 10.478 MHz T1 1 2.426785 GHz -9.50 dBm ndB 6.00 dB T2 1 2.437263 GHz -10.46 dBm Q factor 232.2			691 pts			Span 40.0 MHz
M1 1 2.432689 GHz -4.27 dBm ndB down 10.478 MHz T1 1 2.426785 GHz -9.50 dBm ndB 6.00 dB T2 1 2.437263 GHz -10.46 dBm Q factor 232.2						
T1 1 2.426785 GHz -9.50 dBm ndB 6.00 dB T2 1 2.437263 GHz -10.46 dBm Q factor 232.2 Measuring					Funct	
T2 1 2.437263 GHz -10.46 dBm Q factor 232.2 Measuring Measuring 26.06.2017 11:39:21 26.06.2017						
Preasuring 11:39:21						
	T T)		
				, .		11:39:21
ate. 20. JUN. 2017 11. 39. 20	Date: 26.JUN.2017 11:39:2	0				



	Graphical representation of 6dB Bandwidth							
	Operation Mode: #1							
		Standard: IEE	802.11b					
		Channel:	#11					
Receiver	ectrum 🗵							
Ref Level 10.16 dBm Att 20 dB PS	Offset 7.00 dB SWT 56.9 µs ●		Mode Auto FFT	Input 1 AC				
⊖1Pk Max	I I							
0 dBm			M1[1]		-5.29 dBm 2.4632050 GHz 6.00 dB			
-10 dBm			<u>مامينية Arm</u> Bw 12 Q factor	NA 1	10.535000000 MHz 233.8			
-20 dBm				- Martin Contraction of the second se				
-30 dBm								
-40 dBm	ward			- Yun				
-50 dBm					When the pass			
-70 dBm								
-80 dBm								
CF 2.4628 GHz		691 pts			Span 40.0 MHz			
Marker		051 pt3	•		opan roto ninz			
Type Ref Trc X-value Y-value Function Function Result								
M1 1								
T1 1 2.457243 GHz -11.82 dBm ndB 6.00 dB								
T2 1	2.467778 GHz	-11.51 dBm	Q factor		233.8			
			Measuring		26.06.2017 11:36:15			
Date: 26.JUN.2017 11:36:1	5							

Test Results								
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)					
1	2412	10.47	0,5					
5	2432	10.47	0,5					
11	2463	10.53	0,5					



	Graphical representation of 6dB Bandwidth									
				Operation	Мо	ode: #1				
				Standard: II	EE 8	802.11g	1			
				Chanr	nel:	#1				
Receiver	Spe	ctrum	Ø							
Ref Level 1 Att PS	0.16 dBm 20 dB			RBW 100 kHz VBW 300 kHz		Mode At	uto FFT	Input 1 AC		
⊖1Pk Max										11.00.10
0 dBm						nc			2.4	-11.29 dBm 133840 GHz 6.00 dB
-10 dBm		τį	Award	www.www.	M1		v fa ^l ctof/*	why2	16.671	000000 MHz 144.8
-20 dBm					-					
-30 dBm										
-40 dBm		n /								
-50 dBm	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	\bigvee						- \ \	1 mm	myan
-70 dBm										· ·
-80 dBm										
CF 2.4124 G	iHz			691	pts				Spa	n 40.0 MHz
Marker Type Ref	Trc	X-value	. 1	Y-value	1	Funct	ion 1	Eur	ction Resu	IF 1
M1	1			-11.29 dB			down	Fun		16.671 MHz
T1										
T2	1	2.4208		-17.69 dB		Q1	actor			144.8
)[) Mea	suring		-	26.06.2017 11:40:53
Date: 26.JUN.20	17 11:40:53	3								



			Graphica	al representati	on	of 6dB	Bandw	idth		
	Operation Mode: #1									
				Standard: IE	E 8	802.11g				
				Chann	el: :	#5				
Receiver	Spe	ctrum	×							
Ref Level 1 Att PS	0.16 dBm 20 dB			RBW 100 kHz VBW 300 kHz	N	Mode Au	ito FFT	Input 1 AC		
⊖1Pk Max						M 1	[1]			-10.79 dBm
0 dBm					M1	nd	в			4328680 GHz 6.00 dB
-10 dBm		TĮ	werner		70	- DY	ractor	መ በም	10.071	.000000 MHz 145.9
-20 dBm		*		r						
-30 dBm		- <i>1</i>						- <u>\</u>		
-40 dBm										
-50 dBm	Mr. M								$Ar \sim$	
1260°dBm	/ · • •							~ ~	~ V (Mull actor
-70 dBm										
-80 dBm										
CF 2.432 GH	lz			691 j	pts				Spa	an 40.0 MHz
Marker	[.					F	· 1	F		
Type Ref	Trc 1	2.4328		<u>Y-value</u> -10.79 dBr	_	Funct	ion down	Fun	ction Resu	16.671 MHz
	1			-10.79 dBr -18.87 dBr		nuB	ndB			6.00 dB
T2										
	Measuring Measuring Measuring Measuring									
Date: 26.JUN.20	17 11:51:4	8								



	Graphic	cal representation	of 6dB Bandw	ridth				
	Operation Mode: #1							
		Standard: IEE	802.11g					
		Channel:	#11					
Receiver	ectrum 🗵							
Ref Level 10.16 dBm Att 20 dB PS 1000000000000000000000000000000000000	Offset 7.00 dB ∈ SWT 56.9 µs €		Mode Auto FFT	Input 1 AC				
			M1[1]	-12.25 dBm				
0 dBm		L. M.	ndB	2.4328680 GHz 6.00 dB 16.671000000 MHz				
-10 dBm	TANK		WWWQ.falator					
-20 dBm		<u> </u>						
-30 dBm								
-40 dBm								
1-50 dBm				V Maroner V V				
-70 dBm								
-80 dBm								
CF 2.432 GHz		691 pts		Span 40.0 MHz				
Marker		071 pt3	•					
Type Ref Trc	X-value	Y-value	Function	Function Result				
M1 1	M1 1 2.432868 GHz -12.25 dBm ndB down 16.671 MHz							
	T2 1 2.440336 GHz -18.30 dBm Q factor 145.9 Measuring Measuring ## 26.06.2017 11:50:52							
Date: 26.JUN.2017 11:50:5	2							

Test Results								
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)					
1	2413	16.67	0,5					
6	2432	16.67	0,5					
11	2463	16.68	0,5					



			Graphic	al representat	ion	of 6dB I	Bandwi	idth		
				Operation	Мо	de: #1				
			S	tandard: IEE 8	02.	11n 20 N	ИНz			
				Chann	el: :	#1				
Receiver	Spe	ctrum	Ø							
Ref Level 1 Att PS 1Pk Max	0.16 dBm 20 dB			RBW 100 kHz VBW 300 kHz		1ode Au	to FFT	Input 1 AC		
						M1	[1]			-11.86 dBm
0 dBm				M1		nd Bw	B	40 a		105480 GHz 6.00 dB 000000 MHz
		⊤1 ∀	www.oov	100000000000000000000000000000000000000	pro	ንምር እሳት 	actor	-^VivVrq2 ↓ ▼	1	135.2
-20 dBm										
-30 dBm		_لر								
-40 dBm		m /							1.	
-50 dBm	\sim	- \/'							Vm.	my.
-70 dBm										
-80 dBm										
-80 übiii										
CF 2.4124 G	Hz			691	pts				Spa	n 40.0 MHz
Marker										
Type Ref		X-value		Y-value	\perp	Funct		Fun	ction Resu	
	M1 1 2.410548 GHz -11.86 dBm ndB down 17.829 MHz T1 1 2.403601 GHz -16.34 dBm ndB 6.00 dB									
T1 T2	1			-16.34 dB -17 74 dB		O f	ndB actor			6.00 dB 135.2
	T2 1 2.42143 GHz -17.74 dBm Q factor 135.2 Measuring Measuring 11:53:36									
Date: 26.JUN.20	17 11:53:36	3								



Graphical representation of 6dB Bandwidth										
Operation Mode: #1										
Standard: IEE 802.11n 20MHz										
	Channel: #5									
Receiver	Receiver Spectrum 🛞									
Ref Level 10 Att PS 01Pk Max).16 dBm 20 dB			RBW 100 kHz VBW 300 kHz		1ode Au	to FFT	Input 1 AC		
						M1	[1]			-11.73 dBm
0 dBm				M1		ndi Bw	I			303210 GHz 6.00 dB 000000 MHz
		T1 ▼	n n n n n n n n n n n n n n n n n n n	Jugaran aller	m	ოდილო 	actor -	^/h/∿π2 Ι♥	I	136.3
-20 dBm										
-30 dBm		لىمى			<u> </u>			- <u>\</u>		+
-40 dBm		n/								
-50 dBm	MV V	Υ.							VV	man
-70 dBm										
-80 dBm										
CF 2.432 GH				601	pts					n 40.0 MHz
Marker	2			091	pts				spa	n 40.0 MHZ
Type Ref	Trc	X-value		Y-value		Functi	on	Fun	ction Resu	
M1	1	2.430321 GHz			-11.73 dBm		down			17.829 MHz
T1	1	2.423085 GHz -17.03 dBr				ndB	6.00 dB			
T2 1 2.440915 GHz -17.30 dBm Q factor 136.3 Measuring ####################################										
Date: 26.JUN.201	11:54:32	2								



Graphical representation of 6dB Bandwidth							
Operation Mode: #1							
Standard: IEE 802.11n 20MHz							
		Channel:	#11				
Receiver Spectrum (X)							
Ref Level 10.16 dBm Offset 7.00 dB RBW 100 kHz Att 20 dB SWT 56.9 μs VBW 300 kHz Mode Auto FFT Input 1 AC PS </td							
⊖1Pk Max	,						
0 dBm			M1[1]		-12.85 dBm 2.4665730 GHz 6.00 dB		
-10 dBm		manuna	Byy1 Www.Qufactory		329000000 MHz 138.3		
-20 dBm	▼						
-30 dBm							
-40 dBm	n/			1 V.C.			
-50 dBm	Υ.				MAnan		
-70 dBm							
-80 dBm							
CF 2.462 GHz 691 pts Span 40.0 MHz							
Marker			4				
Type Ref Trc	X-value	Y-value	Function	Function R			
M1 1	2.466573 GHz	-12.85 dBm	ndB down	17.829 MHz			
T1 1 T2 1	2.453085 GHz 2.470915 GHz	-17.78 dBm -18.06 dBm	ndB Q factor	6.00 dB 138.3			
Measuring					26.06.2017		
Date: 26.JUN.2017 11:55:5	51						

Test Results							
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)				
1	2410	17.83	0,5				
6	2430	17.83	0,5				
11	2466	17.83	0,5				



Operation Mode: #1								
Standard: IEE 802.11n 40MHz								
Channel: #1								
Receiver Spectrum (X)								
Ref Level 10.16 dBm Att 20 dB PS	Offset 7.00 dB ● SWT 56.9 µs ●		Mode Auto FFT	Input 1 AC				
O1Pk Max								
			M1[1]		-12.14 dBm 2.4103790 GHz			
0 dBm			ndB		6.00 dB			
-10 dBm	- 43 6565	M1	Bw Bw		17.82900000 MHz			
	Tin the time the tim	and a second	₩ <mark>₩₩₩₽₩₽</mark> ₩₩	~~µ∿vitt2 ▼	135.2			
-20 dBm								
-30 dBm	/			\				
	J			- L				
-40 dBm	01							
-50 dBm	V I							
~Bo-dBM~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~					V When when			
-70 dBm								
-80 dBm								
CF 2.412 GHz		691 pts			Span 40.0 MHz			
Marker		091 pts						
Type Ref Trc	pe Ref Trc X-value		Function	Fund	ction Result			
M1 1	2.410379 GHz	-12.14 dBm	ndB down		17.829 MHz 6.00 dB			
T1 1 T2 1	1 2.403085 GHz -17.66 d 1 2.420915 GHz -17.23 d		ndB6.0 Q factor13					
[] Measuring ■ ↓↓↓ 26.06.2017 12:11:51								
Date: 26.JUN.2017 12:11:5	2							



	Graphical representation of 6dB Bandwidth									
	Operation Mode: #1									
			S	tandard: IEE 8	302.	11n 40 N	ИНz			
				Chanr	nel: :	#5				
Receiver	Spe	ctrum	×							
Ref Level 10 Att PS	0.16 dBm 20 dB			RBW 100 kHz VBW 300 kHz		Mode Au	ito FFT	Input 1 AC		
⊖1Pk Max					<u> </u>	M1	.[1]			-11.58 dBm
0 dBm				M1		nd	в		2.4	308420 GHz 6.00 dB 000000 MHz
-10 dBm		Til≁	mon	manuting	m	ᠬ᠁ᢆᡇᢆᡟ		Mrmg2	17.029	136.3
-20 dBm		Ĵ			Í—					
-30 dBm										
-40 dBm		n l								
-50 dBm	Myny	¥							V	
_▲6°@^2ſBmੇ⊶	<u> </u>									C www.ally
-70 dBm										
-80 dBm										
CF 2.432 GH	z			691	pts				Spa	n 40.0 MHz
Marker Type Ref	Trc	X-value	<u> </u>	Y-value	1	Funct	ion	Eun	iction Resul	+ 1
M1	1	2,4308		-11.58 dB	_m		down	1 411		17.829 MHz
T1	1	2,4230		-17.62 dB			ndB			6.00 dB
Т2	1	2,4409:		-17.34 dB		Qf	actor			136.3
						Meas	uring		••••	26.06.2017 12:12:38
Date: 26.JUN.201	12:12:38	3								



Graphical representation of 6dB Bandwidth							
	Operation Mode: #1						
		Standard: IEE	802.11n 40	OMHz			
		Chan	nel: #11				
Receiver	pectrum 🗴)					
Ref Level 10.16 di Att 20 PS		dB 🖷 RBW 100 kH µs 🖷 VBW 300 kH		Auto FFT	Input 1 AC		
⊖1Pk Max							
			N	11[1]		-12.65 dBm	
0 dBm			n	dB		2.4630420 GHz 6.00 dB	
				w		17.829000000 MHz	
-10 dBm	TIMM	www.www.www.	Inno	Mactor	Marcare 2	138.1	
-20 dBm		· · · · · · · · · · · · · · · · · · ·	Ψ		Ť		
-20 uBill							
-30 dBm	/						
	کر ا						
-40 dBm					<u> </u>		
	n I						
-50 dBm							
-60-dBm	V					V VM and and	
-70 dBm							
-80 dBm							
CF 2.462 GHz			1				
CF 2.462 GHz Marker		69.	1 pts			Span 40.0 MHz	
	X-value	Y-value		tion	Cune	tion Result	
TypeRefTrcM11	2.463042 G			3 down	Func	17.829 MHz	
T1 1	2.453085 0			ndB		6.00 dB	
T2 1	2.470915 0			factor		138.1	
			Me	asuring		26.06.2017 12:13:16	
Date: 26.JUN.2017 12:1	3:16						

Test Results						
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)			
1	2410	17.83	0,5			
6	2430	17.83	0,5			
11	2463	17.83	0,5			



4. Test Conditions and Results – OUTPUT POWER_1 (external antenna)

15	TEST: Output Powe	r 1 (external antenna)		PASS
Parameters required prior to the		Laboratory Ambient Temperature (°C) 15 to 3		:
test		Relative Humidity (%)	30 to 60 %	
Parameters recorded during the test		Laboratory Ambient Temperature (°C)	22,5°C	
		Relative Humidity (%)	51%	
		Air pressure (hPa)	1020	
_		Frequency	Application Po	oint
Fully configur the power line	ed sample tested at frequency	115V ~ 60Hz	SMA Connector	
Equipment m	ode:	Operation mode	#1	
FCC Standar	d	§15.247		

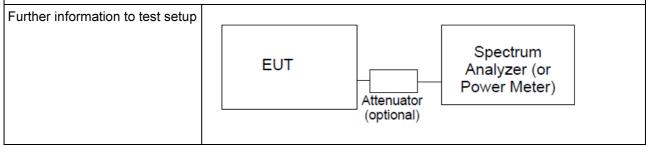
(b) The maximum peak conducted output power of the intentional radiator shall not exceed the following:

(1) For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 nonoverlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.

(2) For frequency hopping systems operating in the 902-928 MHz band: 1 watt for systems employing at least 50 hopping channels; and, 0.25 watts for systems employing less than 50 hopping channels, but at least 25 hopping channels, as permitted under paragraph (a)(1)(i) of this section.

(3) For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

(4) The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.





Test Equipment Used							
Description	Manufacturer	Model	Identifier	Calibration date	Calibration due		
Fast Power Sensor	R&S	NRP-Z81	87020796	08/2015	08/2017		
20dB Attenuator	RS Components	Huber & Suhner	87020534	10/2016	10/2017		

Test result of Peak Output Power (802.11b)

Channel	Channel Frequency	Output	Limit	
	(MHz)	(dBm)	(VV)	(W)
Low Channel	2412	12,20	0,017	1
Middle Channel	2437	12,44	0,017	1
High Channel	2462	12,44	0,017	1

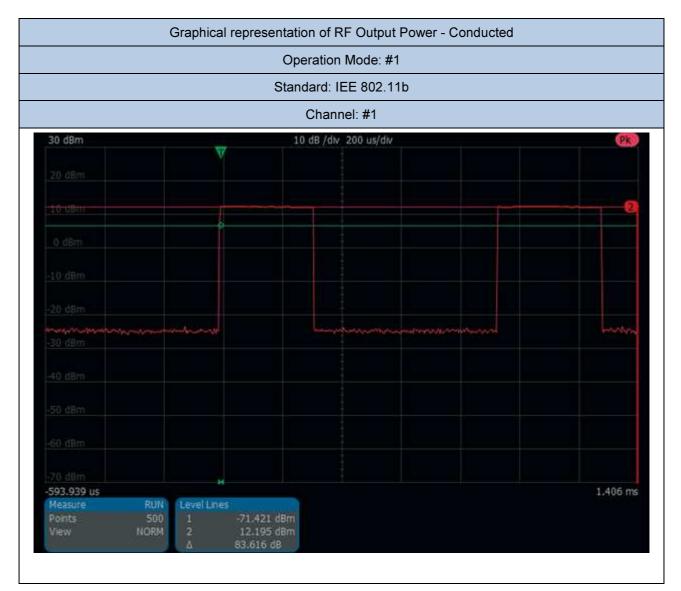
Test result of Peak Output Power (802.11g)

Channel	Channel Frequency	Output	Limit	
	(MHz)	(dBm)	(VV)	(W)
Low Channel	2412	17,31	0,054	1
Middle Channel	2437	17,56	0,057	1
High Channel	2462	17,81	0,060	1

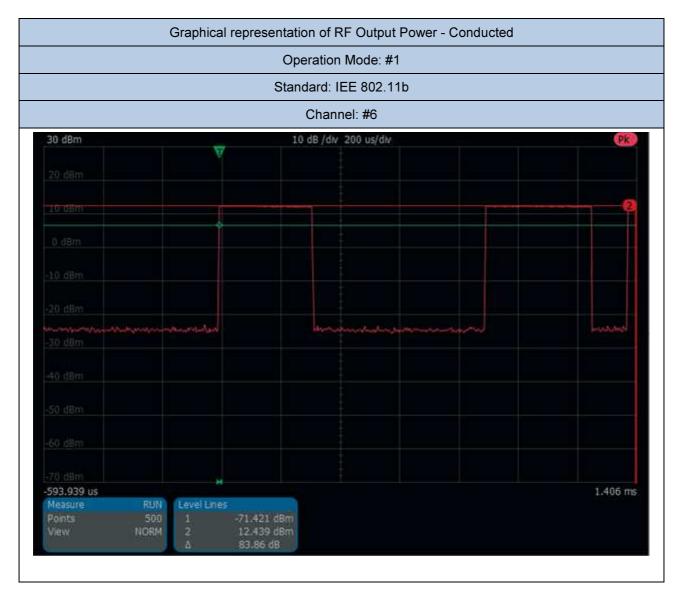
Test result of Peak Output Power (802.11n)

Channel	Channel Frequency	Output	Limit	
	(MHz)	(dBm)	(VV)	(W)
Low Channel	2412	14,63	0,029	1
Middle Channel	2437	14,63	0,029	1
High Channel	2462	14,39	0,027	1

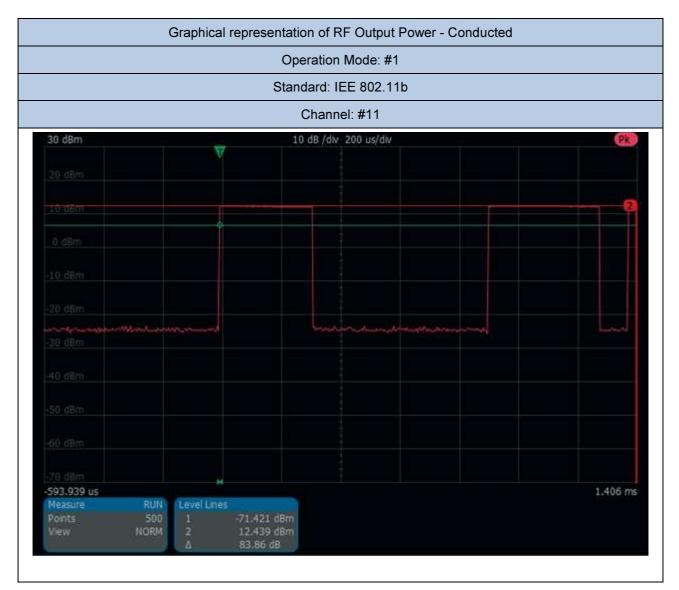








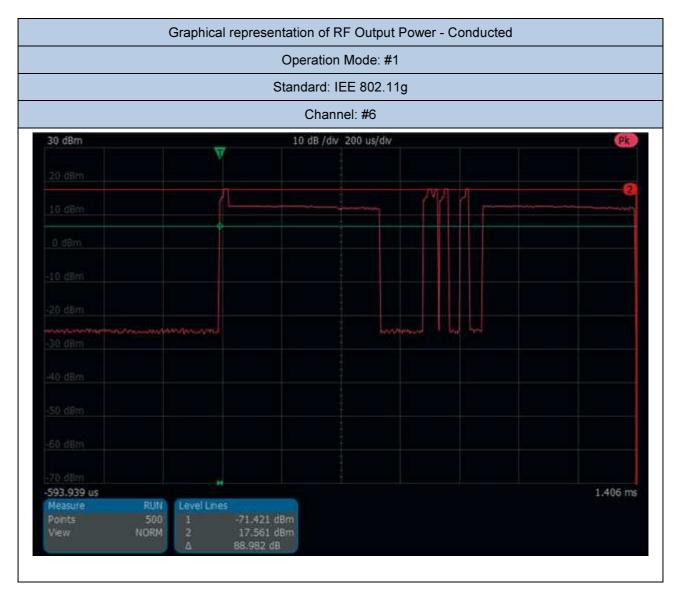




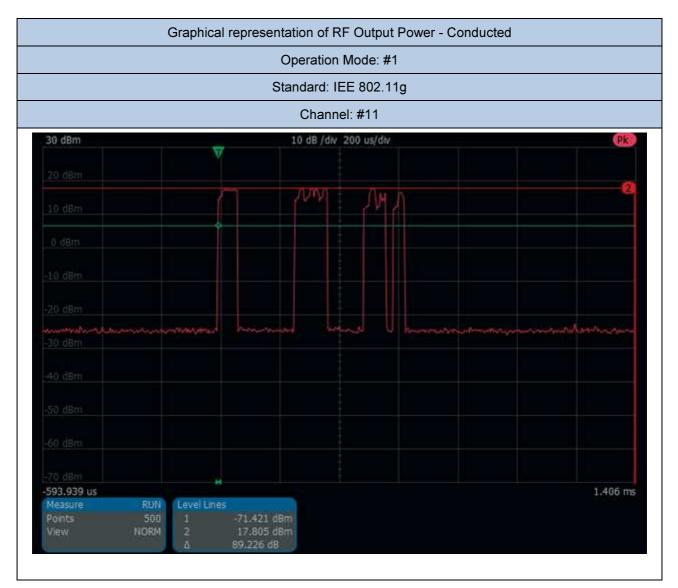




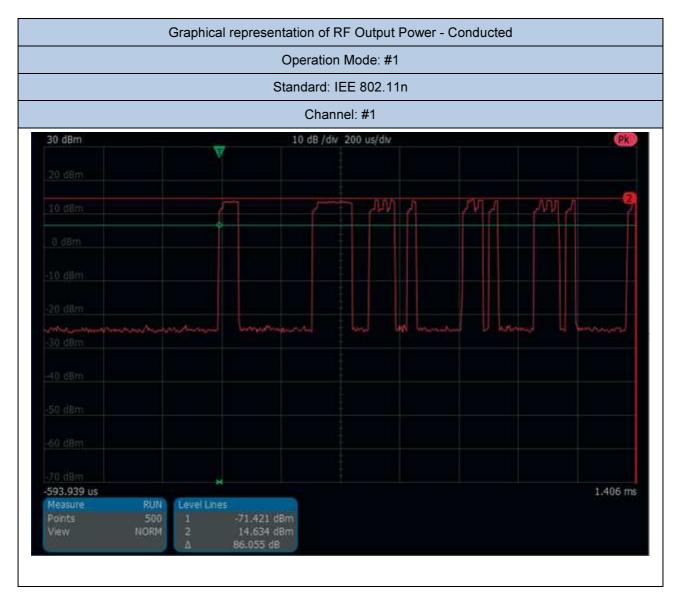




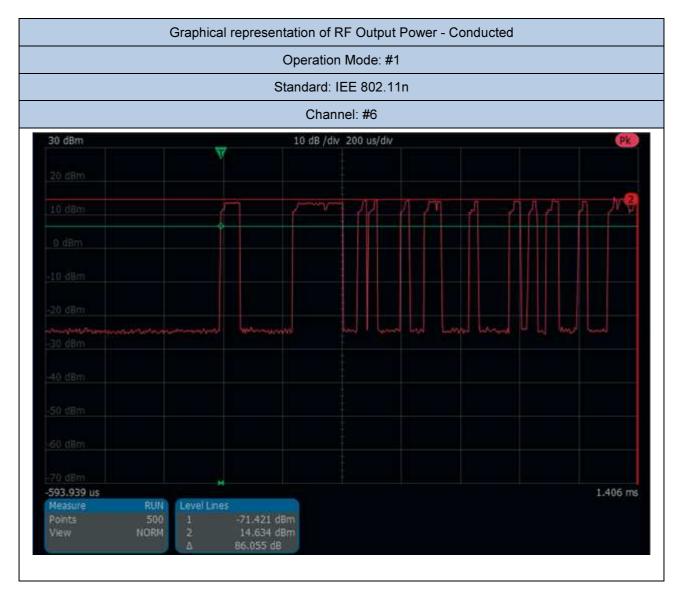




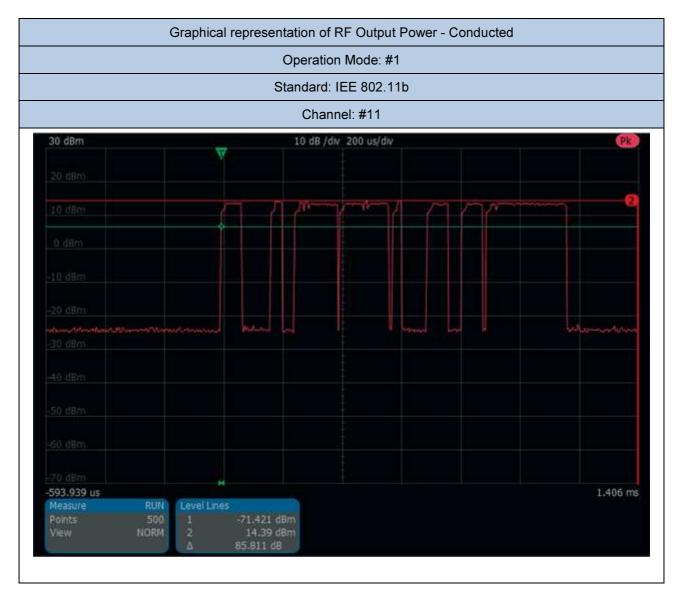














Report No. 28110757 001 5. Test Conditions and Results – CONDUCTED ANTENNA PORT SPURIOUS EMISSIONS (external antenna)

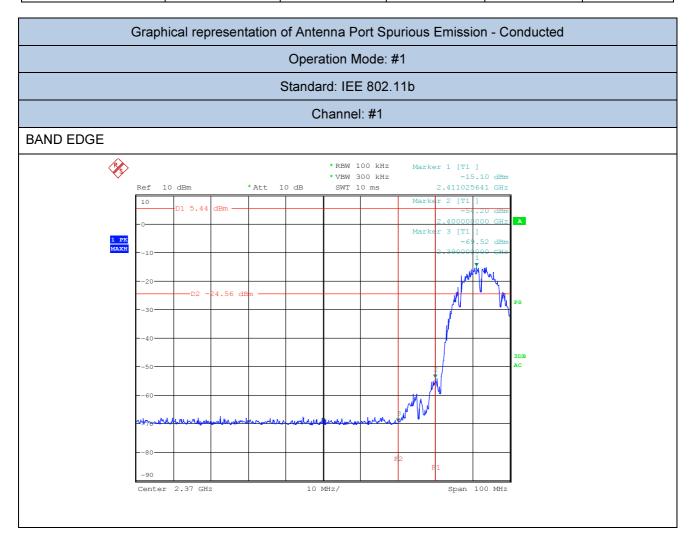
17 TEST: Conducted	Antenna Port Spurious Emission (exterr	nal antenna)	PASS
Parameters required prior to the	Laboratory Ambient Temperature (°C)	15 to 35 °C	
test	Relative Humidity (%)	30 to 60 %	
Parameters recorded during the	Laboratory Ambient Temperature (°C)	22°C	
test	Relative Humidity (%)	50%	
	Air pressure (hPa)	1020	
_	Frequency	Application Po	pint
Fully configured sample tested at the power line frequency	115V ~ 60Hz	SMA Connec	tor
Equipment mode:	nt mode: Operation mode		
FCC Standard	§15.247		

(d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

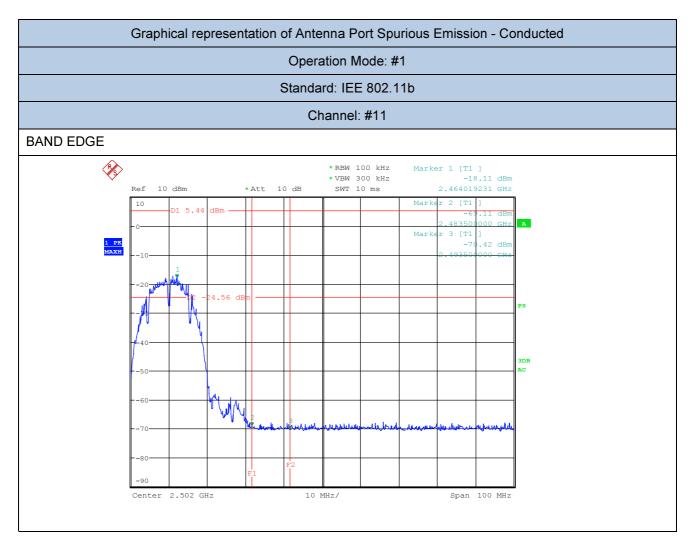
Further information to test setup		1		
	EUT	Attenuator (optional)	Spectrum Analyzer (or Power Meter)	
		(optional)		



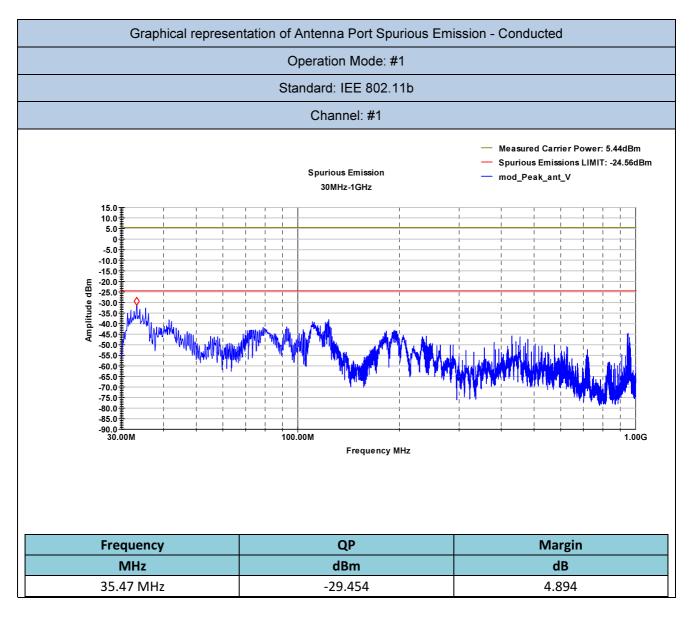
Test Equipment Used							
Description	Manufacturer	Model	Identifier	Calibration date	Calibration due		
EMI Test Receiver	R&S	ESU40	87020455	04/2017	04/2018		
20dB Attenuator	RS Components	Huber & Suhner	87020534	10/2016	10/2017		



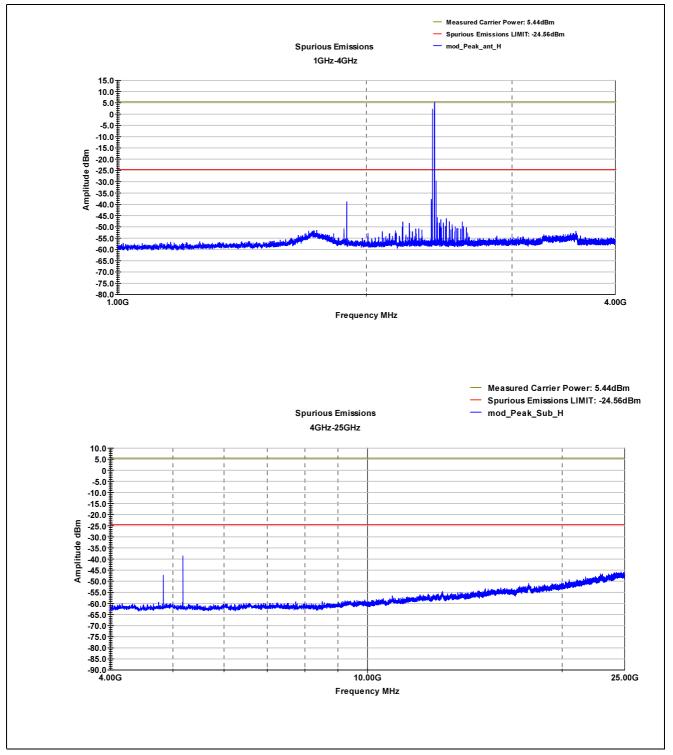




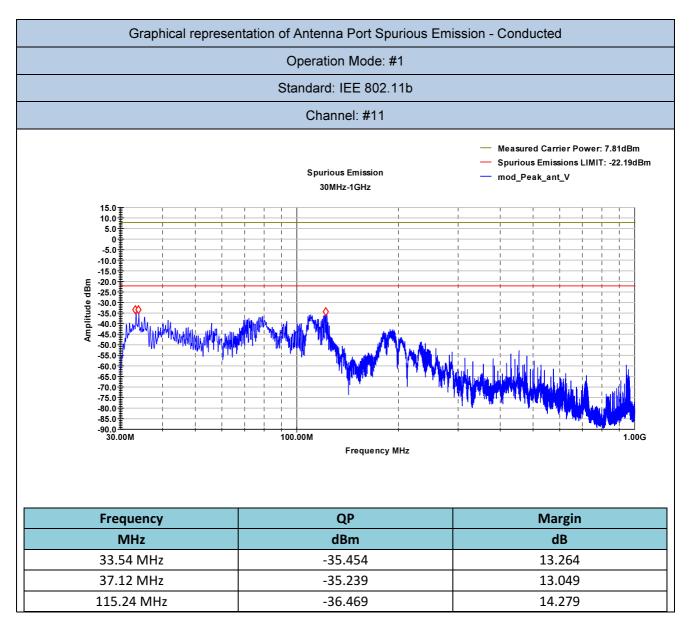




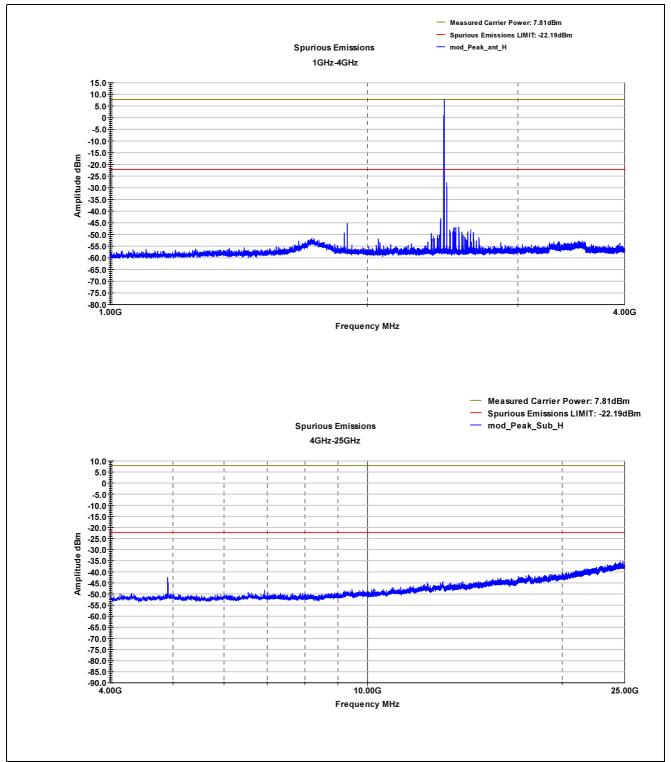






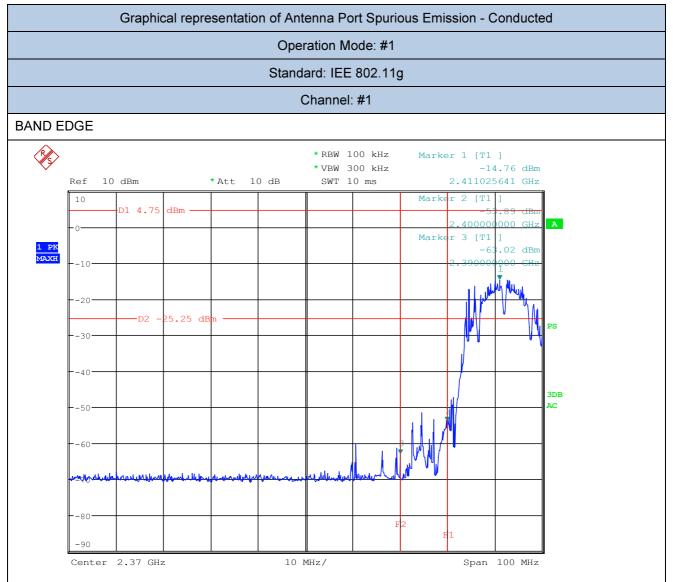




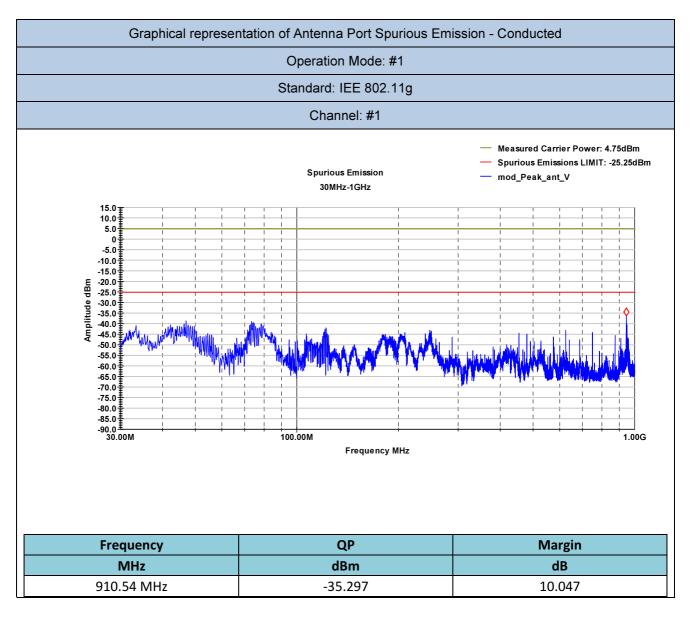




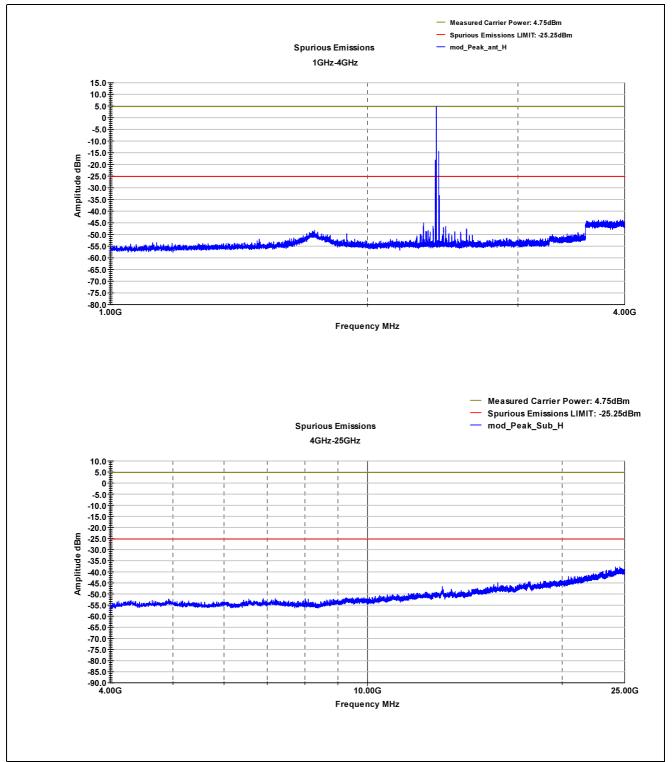
Report No. 28110757 001



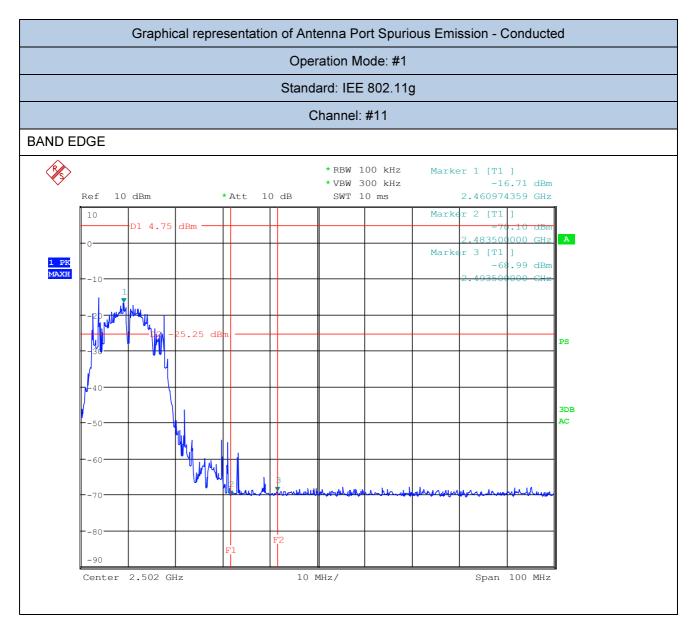




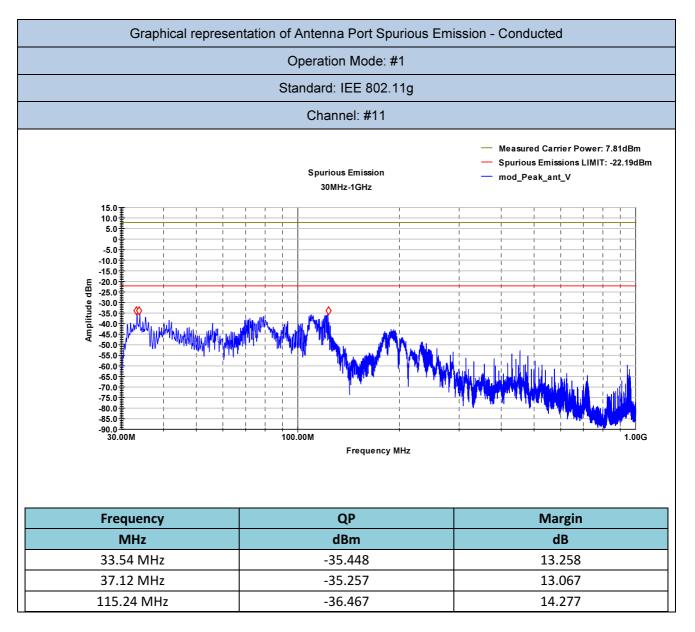




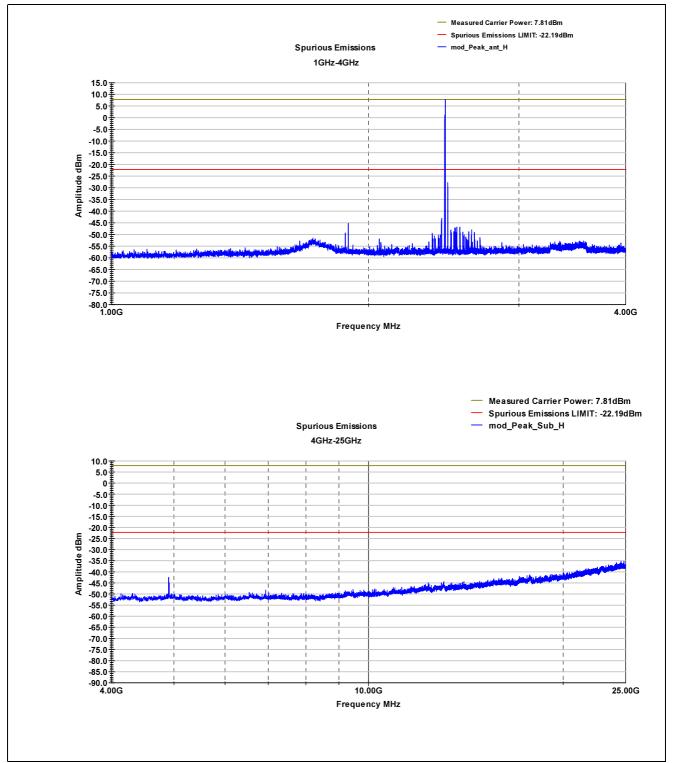






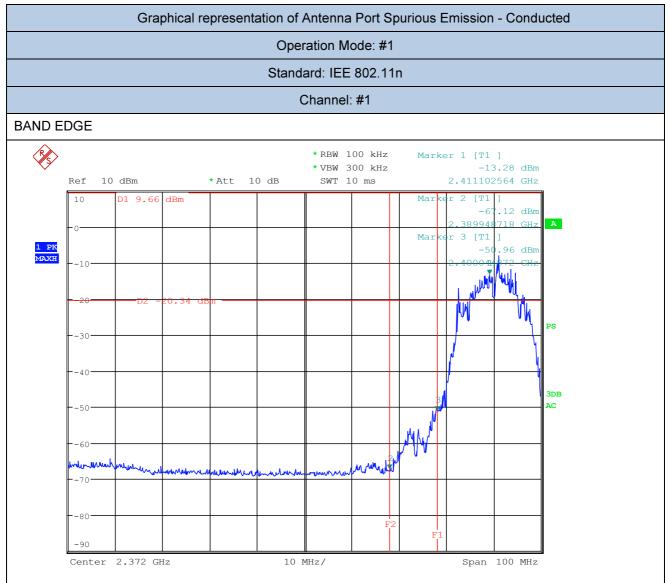




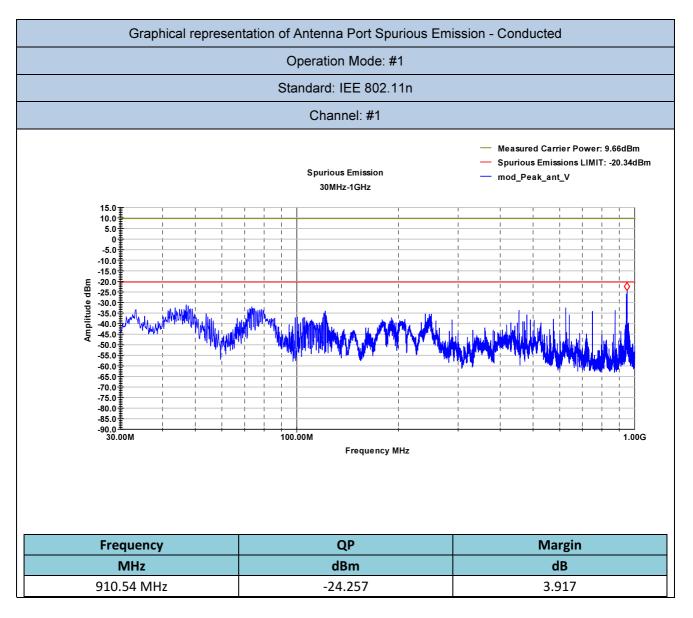




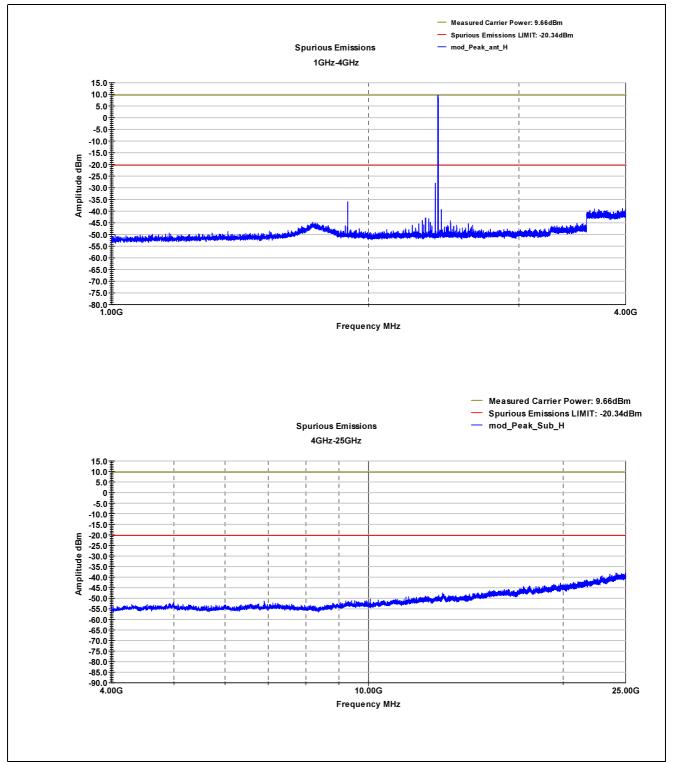
Report No. 28110757 001



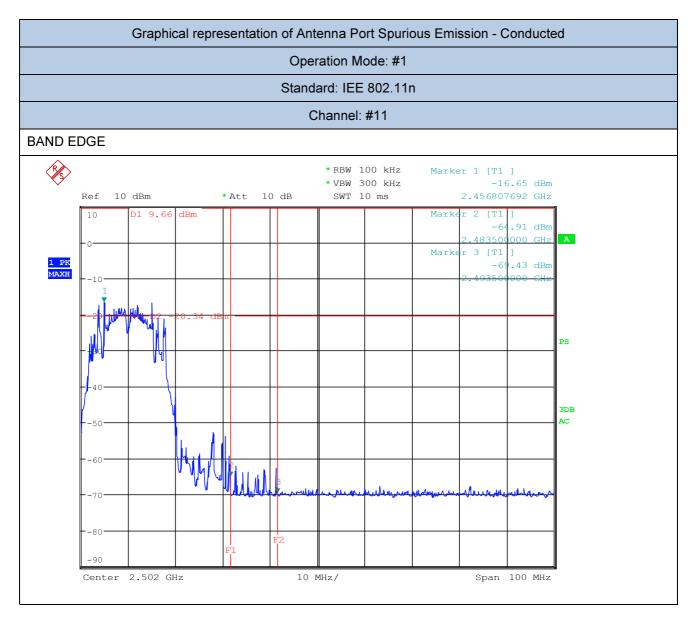




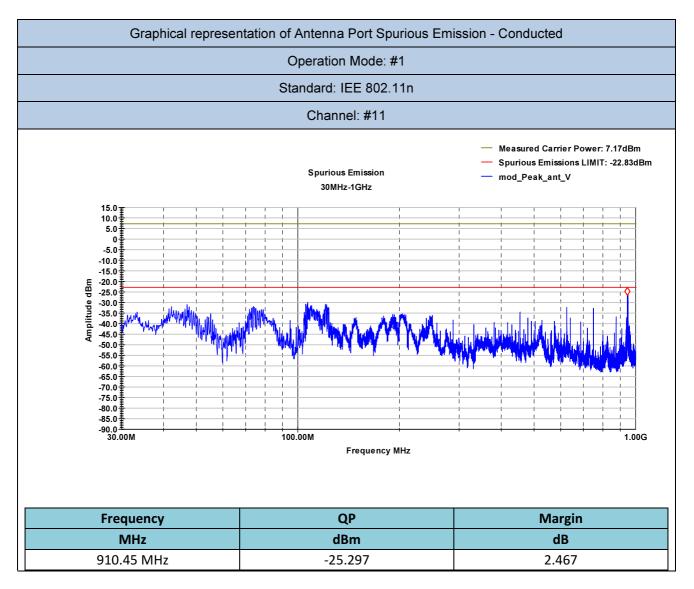




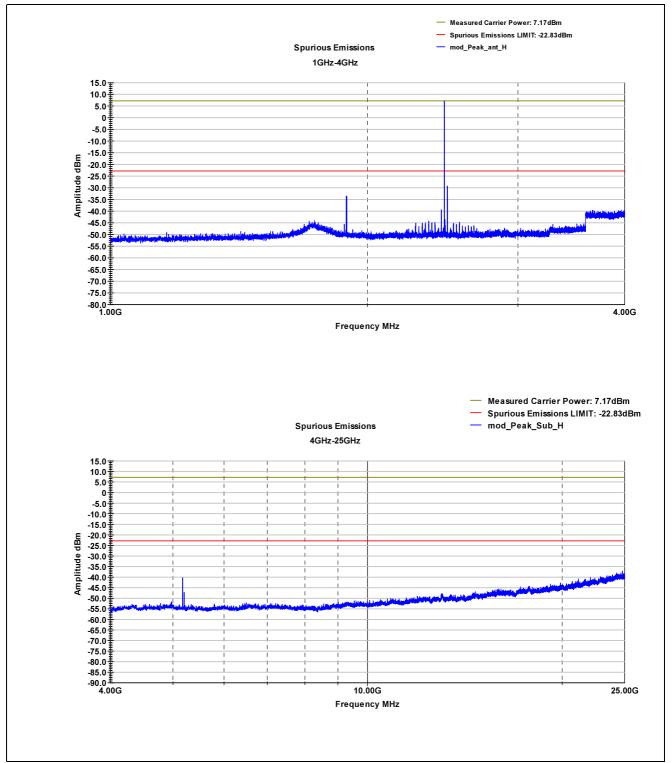










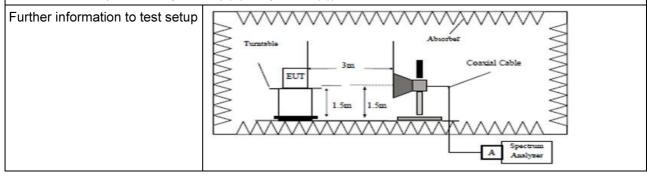




6. Test Conditions and Results – RADIATED ANTENNA PORT SPURIOUS EMISSION (external antenna)

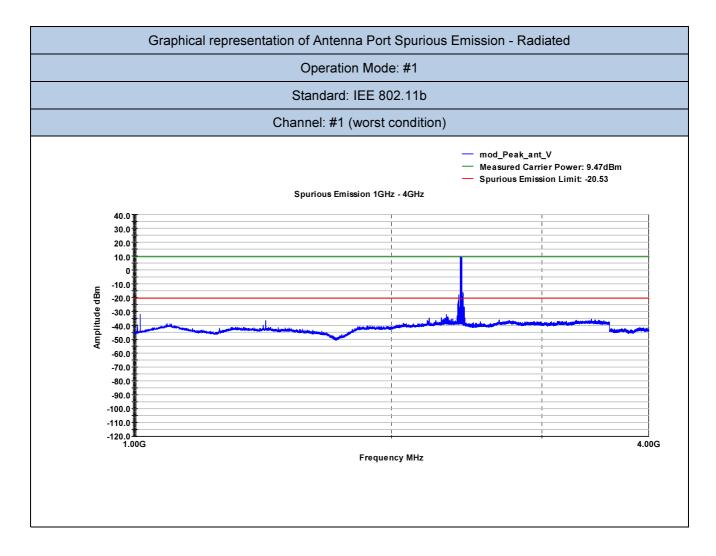
18	TEST: Radiated Ante	enna Port Spurious Emission (external antenna) PA				
Parameters required prior to the		Laboratory Ambient Temperature (°C)	15 to 35 °C			
test		Relative Humidity (%)	30 to 60 %			
Parameters recorded during the test		Laboratory Ambient Temperature (°C) 2				
		Relative Humidity (%)	52%			
		Air pressure (hPa)	1020			
		Frequency	Application Po	pint		
Fully configur the power line	ed sample tested at e frequency	115V ~ 60Hz	SMA Connec	tor		
Equipment m	ode:	Operation mode	#1			
FCC Standar	d	§15.247				

(d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

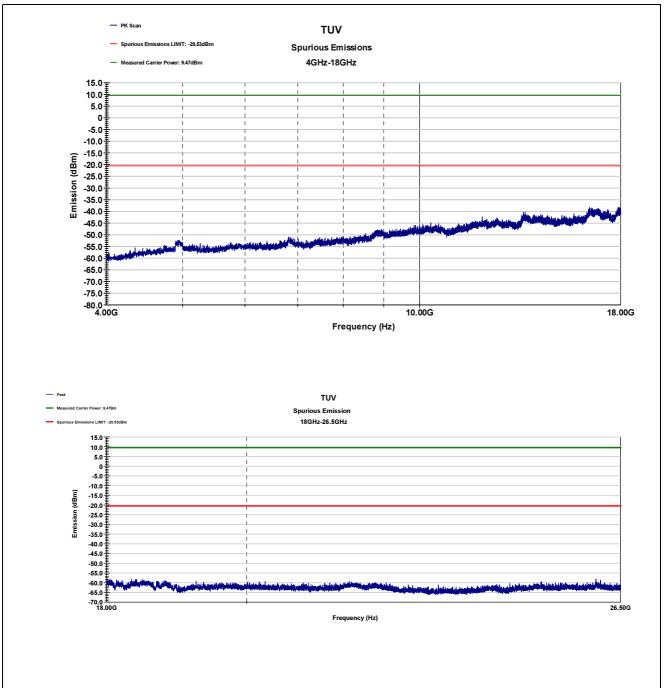




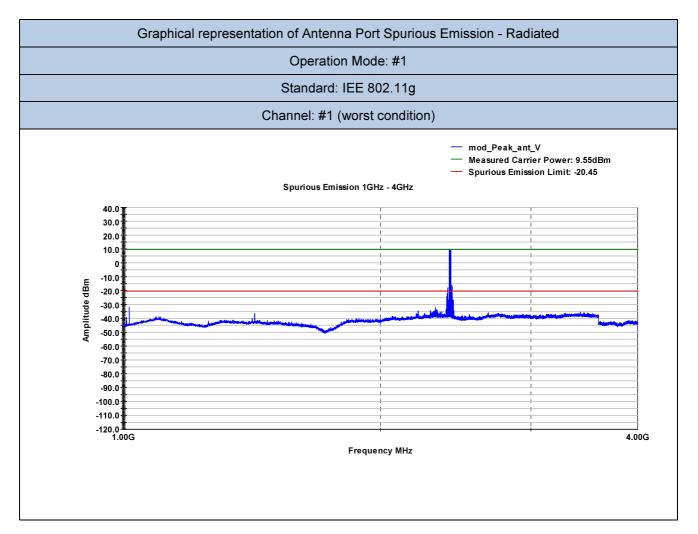
Test Equipment Used					
Description	Manufacturer	Model	Identifier	Calibration date	Calibration due
CSSA	ETS Lindgren	FACT3	87020484	10/2016	10/2017
EMI Test Receiver	R&S	ESU40	87020455	04/2017	04/2018
Antenna BiConiLog	ETS Lindgren	3124E-PA	87020457	04/2017	04/2020
Antenna Horn with Preamplifier	ETS Lindgren	3117-PA	87020458	04/2017	04/2020
2xAntenna Horn with Preamplifier	ETS Lindgren	114514	87020459	04/2017	04/2020
		120722	87020460		





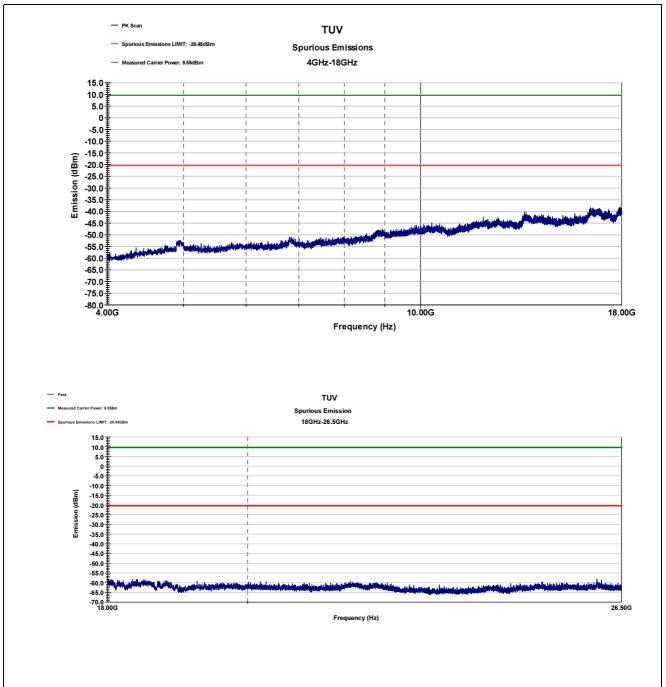




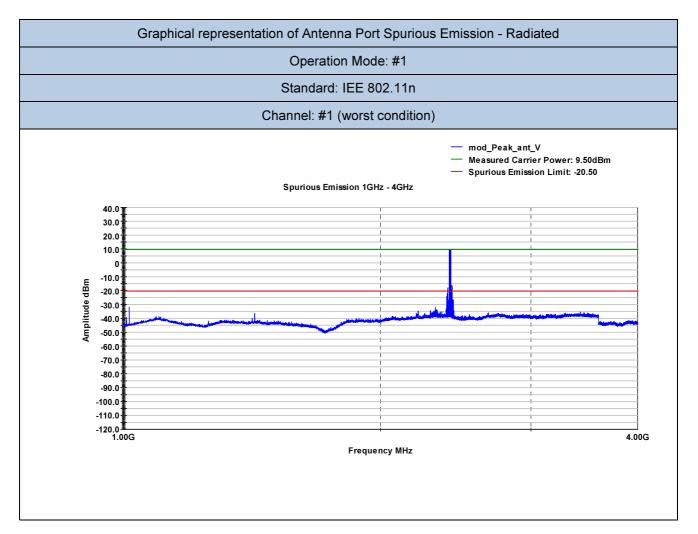




Report No. 28110757 001

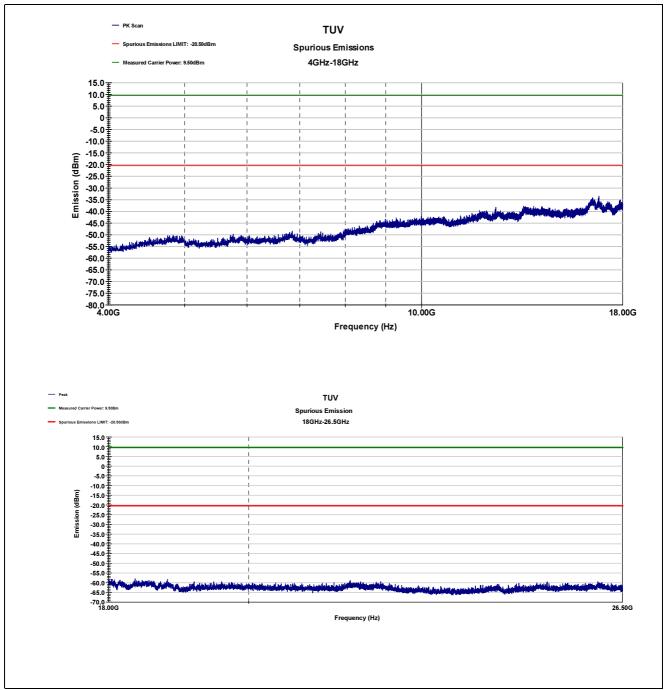








Report No. 28110757 001



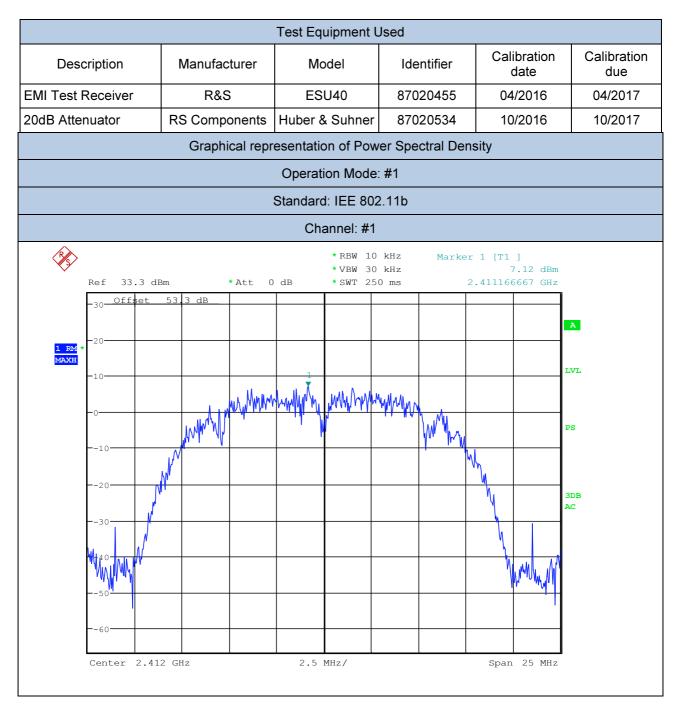


7. Test Conditions and Results – POWER SPECTRAL DENSITY

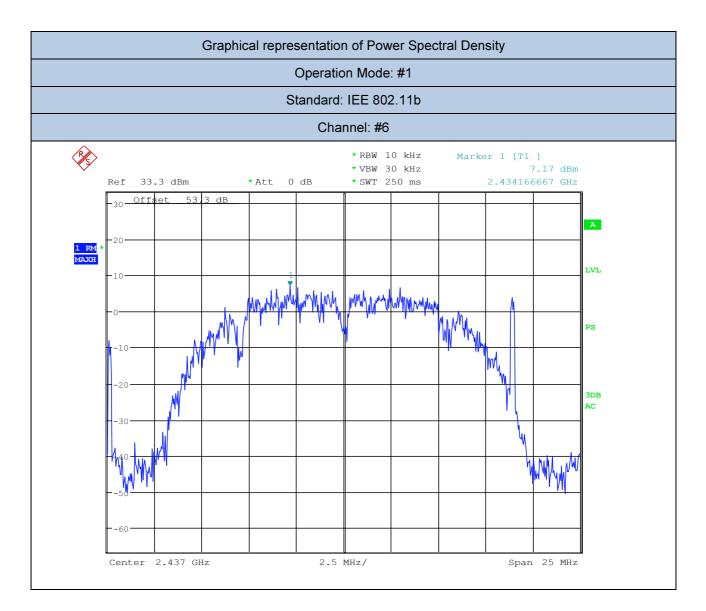
20 TEST: Power Spect	ral Density	PASS	
Parameters required prior to the	Laboratory Ambient Temperature (°C)	15 to 35 °C	
test	Relative Humidity (%)	30 to 60 %	
Parameters recorded during the test	Laboratory Ambient Temperature (°C)	24°C	
	Relative Humidity (%)	37%	
	Air pressure (hPa)	1020	
	Frequency	Application Point	
Fully configured sample tested at the power line frequency	115V ~ 60Hz	SMA Connector	
Equipment mode:	Operation mode	#1	
FCC Standard	§15.247		
the antenna shall not be greater the transmission. This power spectral of	s, the power spectral density conducted fr an 8 dBm in any 3 kHz band during any ti density shall be determined in accordance same method of determining the conducte nsity.	me interval of continuous with the provisions of	
Further information to test setup			
	EUT Attenuator (optional)	Spectrum Analyzer (or Power Meter)	



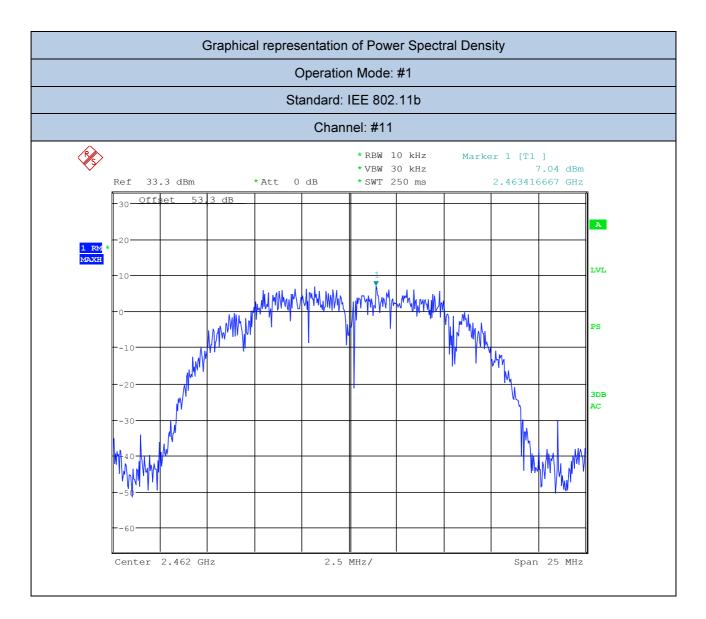
Report No. 28110757 001



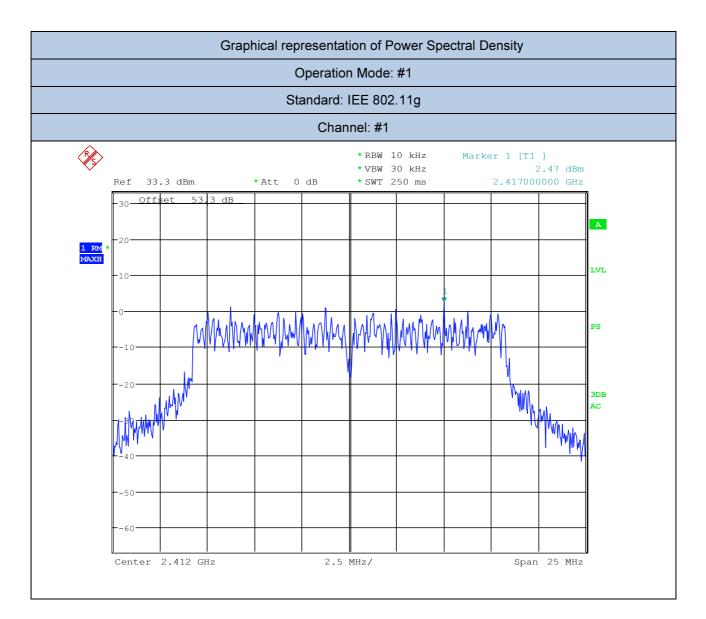




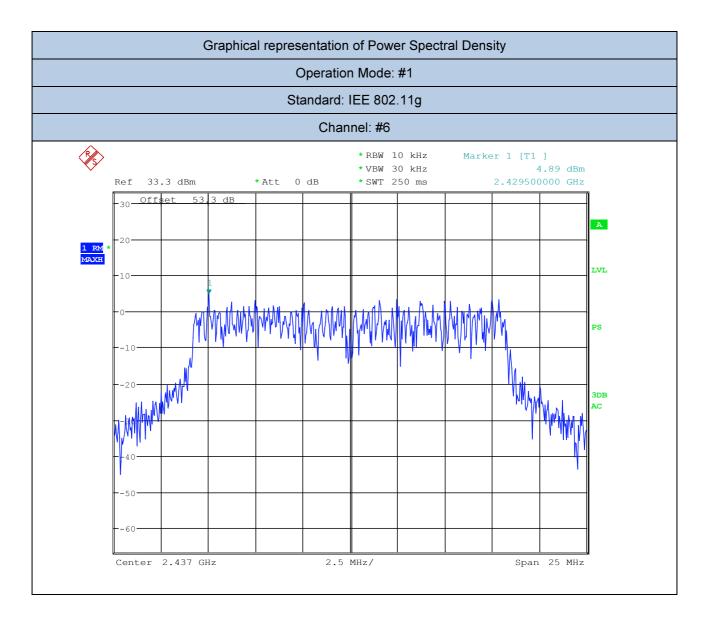




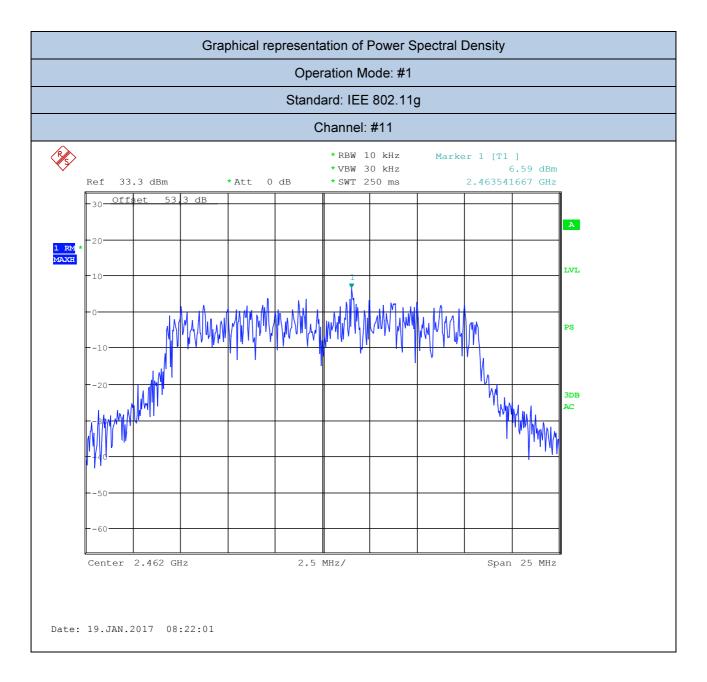




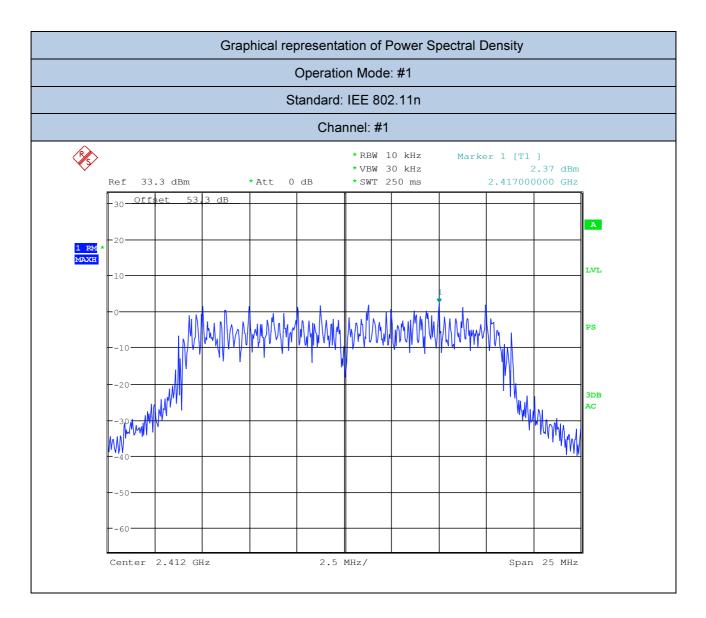




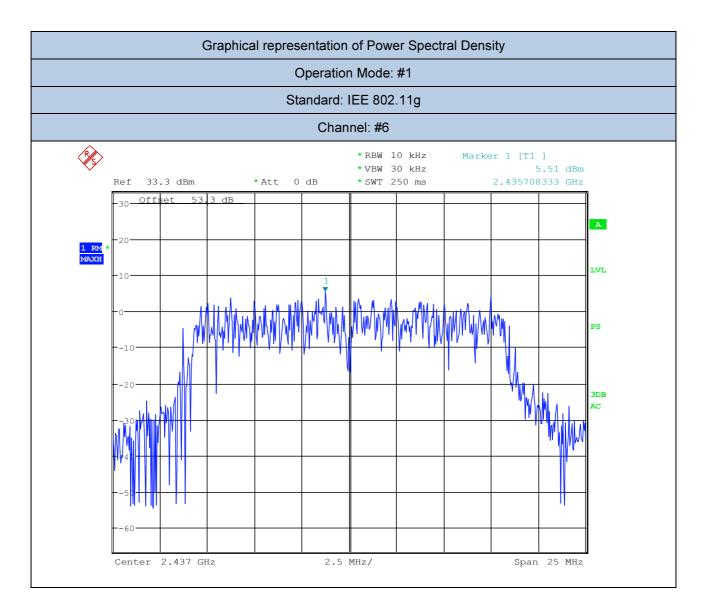




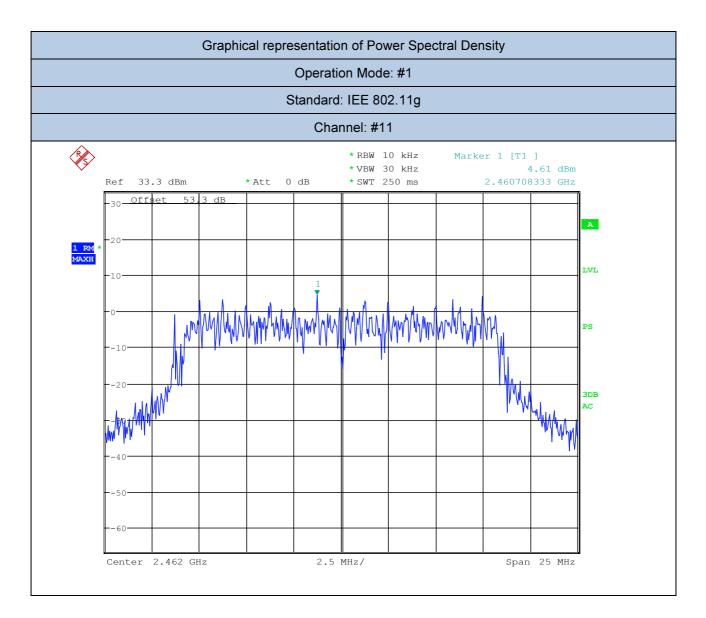














1. Test Conditions and Results – RF EXPOSURE REQUIREMENTS

21	TEST: RF Exposure	Requirements		PASS
Parameters required prior to the	Laboratory Ambient Temperature (°C)	15 to 35 °C		
test		Relative Humidity (%)	30 to 60 %	
Parameters recorded during the test	Laboratory Ambient Temperature (°C)			
	Relative Humidity (%)			
		Air pressure (hPa)	1020	
		Frequency	Application Po	pint
Fully configu the power lin	red sample tested at e frequency	115V ~ 60Hz	SMA Connector	
Equipment m	node:	Operation mode	#1	
FCC Standa	rd §15.247			

General Test Configuration

Calculation uses the free space transmission formula:

$$S = \frac{PG}{4\pi r^2}$$
 or equivalent $S = \frac{EIRP}{4\pi r^2}$

where

P = input power of the antenna

G = antenna gain relative to an isotropic antenna

r = distance from the antenna to the point of investigation.

EIRP = Effective Isotropic Radiated Power

Summary of Results

Device COMPLIES with Power Density requirements at 20cm separation

Calculation

Antenna: 5dBi (see pag.11)



RESULTS						
СН	TX Frequency (MHz)	Measured Power at Antenna Connector (dBm)		Antenna Gain (dBi)		
11	2462	17,805		5		
MAXIMUM PERMISSIBLE EXPOSURE (MPE)						
Evaluation Distance (m) 0,2 ⁽¹⁾						
Power density at evaluation distance (W/m²)						
Power density Limit (W/m²) 10						
VERDICT						
The EUT Radiated Power density at evaluation distance is WHITIN THE LIMIT						
MIN Safety Distance						
3,8cm						



Report No. 28110757 001

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