

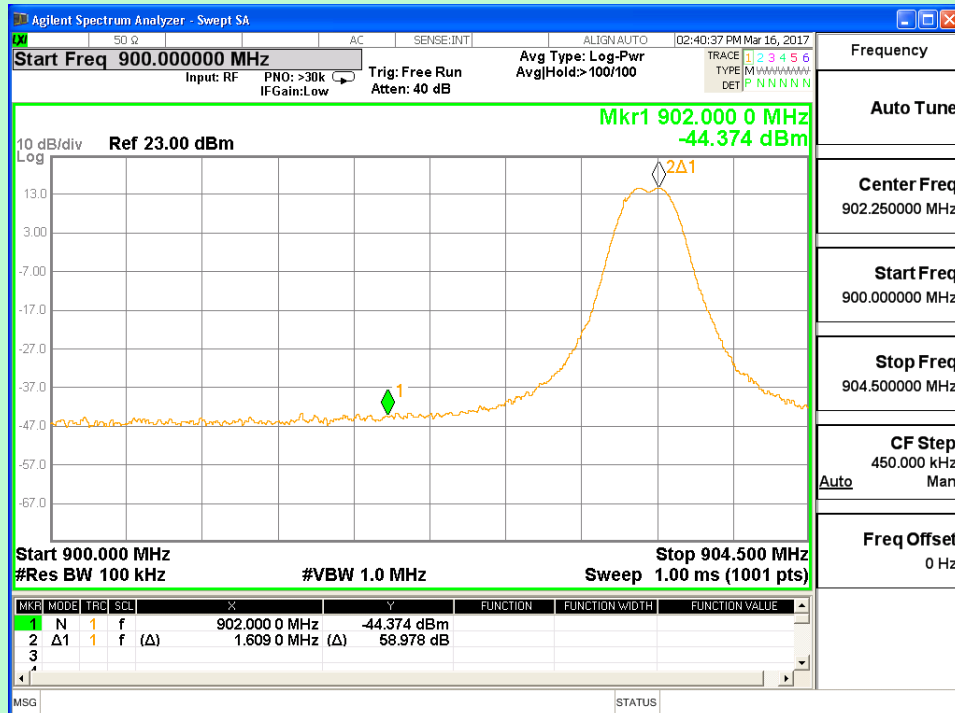
2.5 BAND EDGE COMPLIANCE

EUT Nomenclature	Wireless Pull Station	Test Request No.	EMC0208-1
Model No.	NBG-12WL	Serial No.	PS2-06
Test Start Date	16-Mar-2017	Temperature (°C)	23.6°C
Test End Date	16-Mar-2017	Humidity RH (%)	51.9%RH
Tested By	Sasikala	Pressure (mbar)	NR
Input Voltage / Freq	3.3Vdc		
Operating Mode	Refer Page 5 for Operating Mode Table		
Test configuration	Refer Page 5 for Test Configuration Table		
Deviation from Std	NA		
Applicable standard	FCC Part 15.247:2010		
Test Method	DA 00-705		
Comment	NA		
TEST DETAILS			
Method	☐ Radiated ☒ Conducted		
TEST PARAMETERS			
Antenna Height	NA	Turntable Rotation	NA
Equipment Class	NA	Measurement Distance	NA

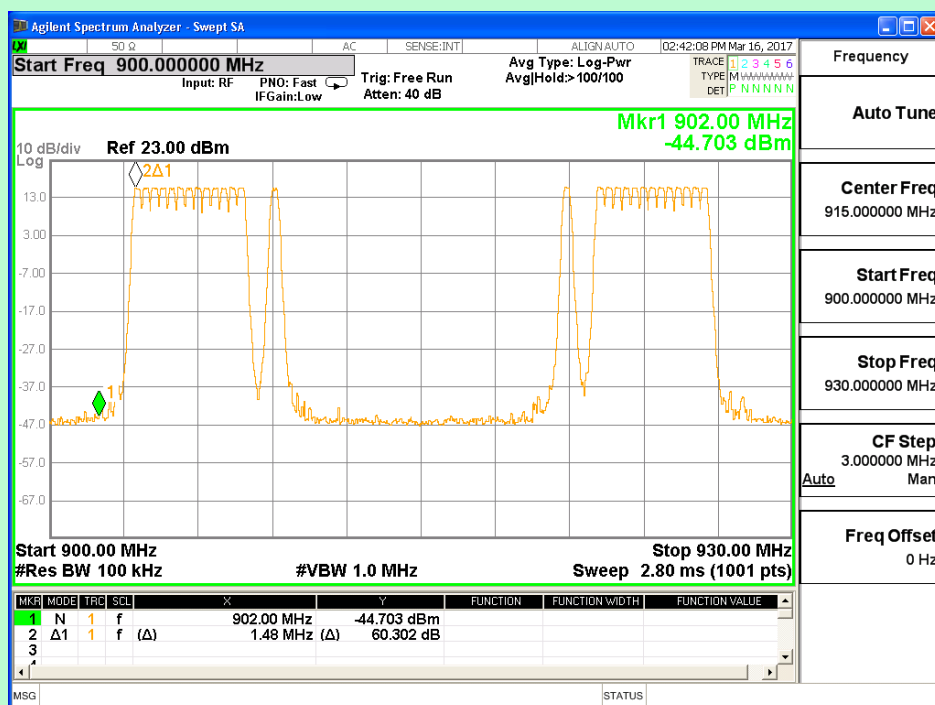
TEST EQUIPMENT

Y/N	Equipment	Make	Model	Sl. No.	Cal Due Date
Y	Spectrum Analyzer	Agilent	N9010A	MY48031005	22-Feb-2018
Y	RF Cable	Huber- Suhner	SF104/2X11PC3542/500	NA	NA

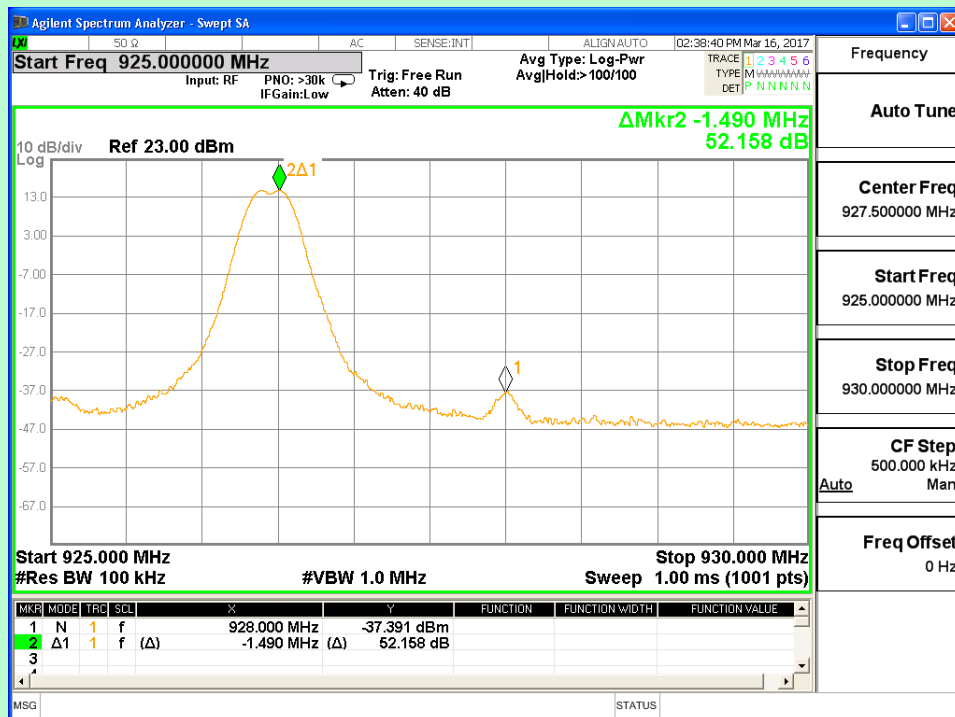
TEST GRAPHS



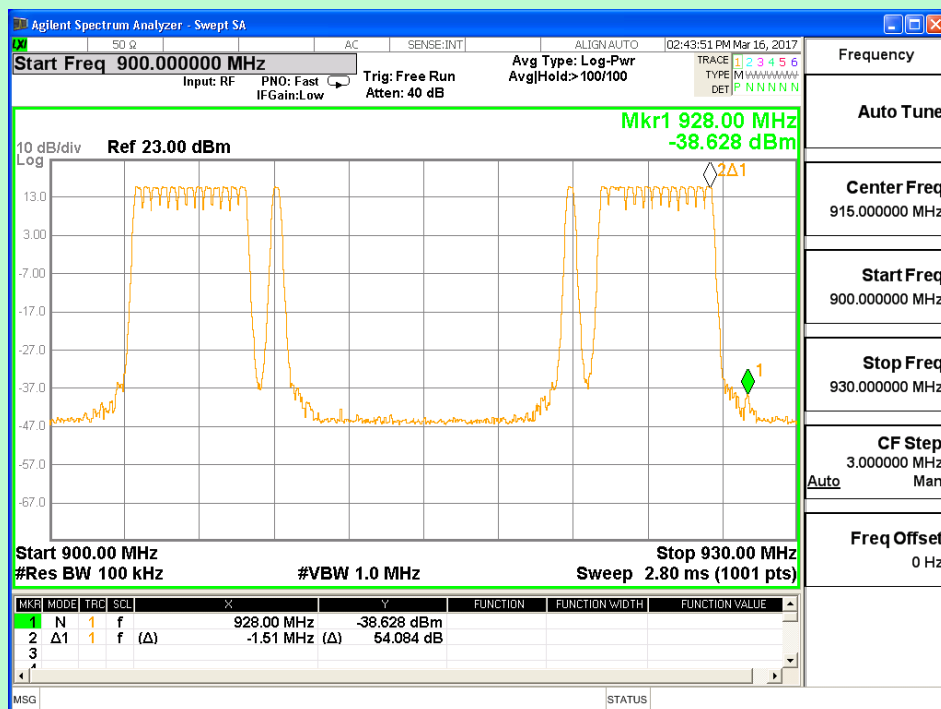
Band-edge at 902 MHz - Channel 1 (903.55 MHz)



Band-edge at 902 MHz – Hopping Enabled



Band-edge at 928 MHz - Channel 55 (926.45 MHz)



Band-edge at 928 MHz – Hopping Enabled

TEST RESULTS

Channel	Frequency	Measured Level- Single Channel	Measured Level – FHSS Enabled	Limit	Test Results
#	MHz	dBc	dBc	dBc	
1	903.55	58.97	60.32	≥20	PASS
55	926.45	52.15	54.08	≥20	PASS

TEST SETUP PHOTOGRAPH

Refer Annexure -1

Conducted RF Test setup

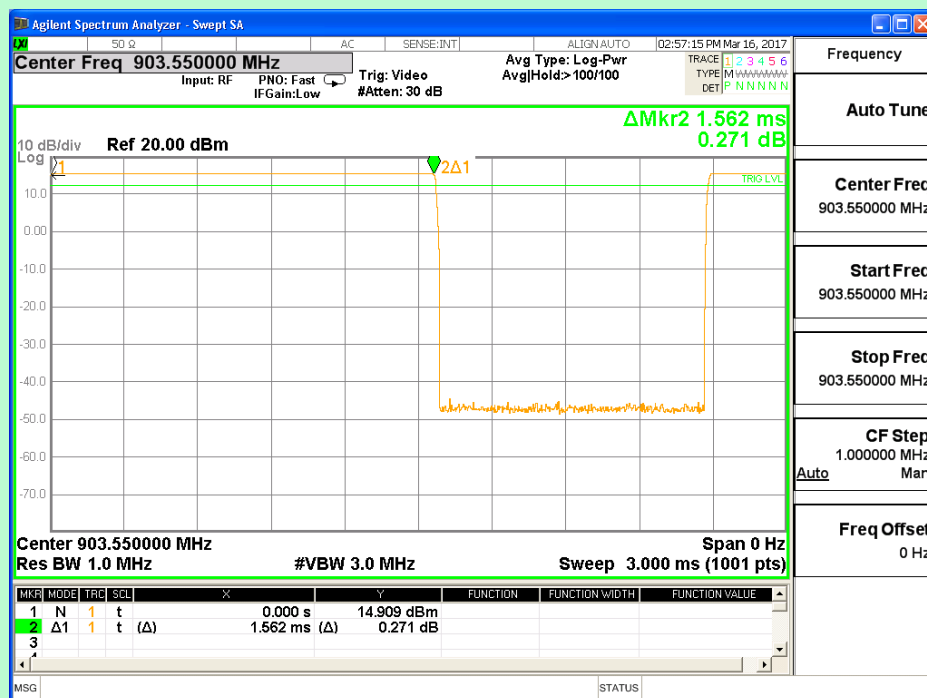
2.6 TIME OF OCCUPANCY (DWELL TIME)

EUT Nomenclature	Wireless Pull Station	Test Request No.	EMC0208-1
Model No.	NBG-12WL	Serial No.	PS2-06
Test Start Date	16-Mar-2017	Temperature (°C)	23.6°C
Test End Date	16-Mar-2017	Humidity RH (%)	51.9%RH
Tested By	Sasikala	Pressure (mbar)	NR
Input Voltage / Freq	3.3Vdc		
Operating Mode	Refer Page 5 for Operating Mode Table		
Test configuration	Refer Page 5 for Test Configuration Table		
Deviation from Std	NA		
Applicable standard	FCC Part 15.247:2010		
Test Method	DA 00-705		
Comment	NA		
TEST DETAILS			
Method	☐ Radiated ☒ Conducted		
TEST PARAMETERS			
Antenna Height	NA	Turntable Rotation	NA
Equipment Class	NA	Measurement Distance	NA

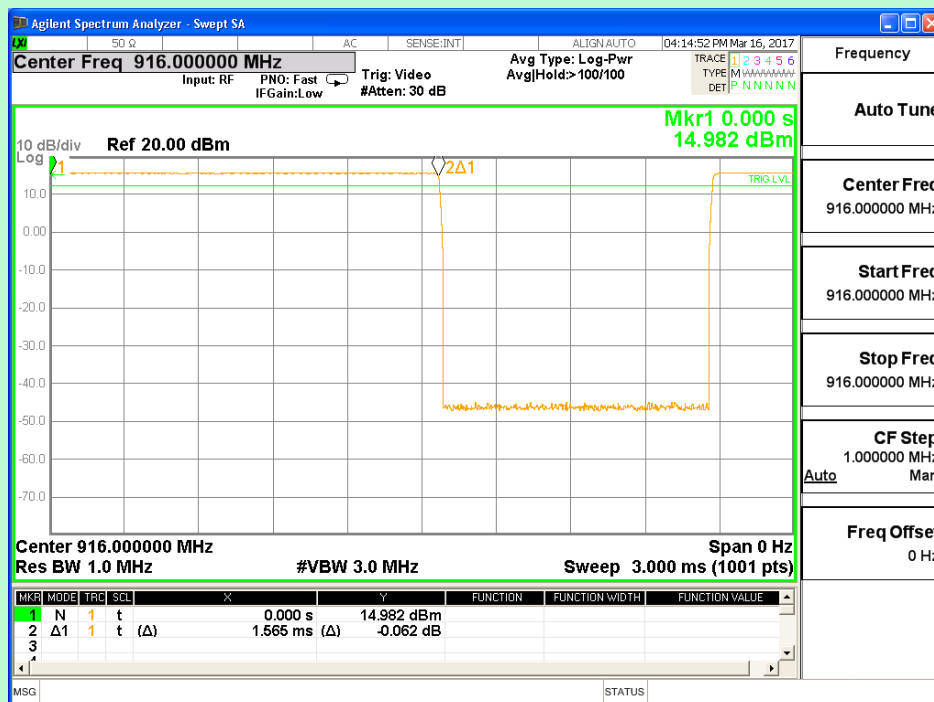
TEST EQUIPMENT

Y/N	Equipment	Make	Model	Sl. No.	Cal Due Date
Y	Spectrum Analyzer	Agilent	N9010A	MY48031005	22-Feb-2018
Y	RF Cable	Huber- Suhner	SF104/2X11PC3542/500	NA	NA

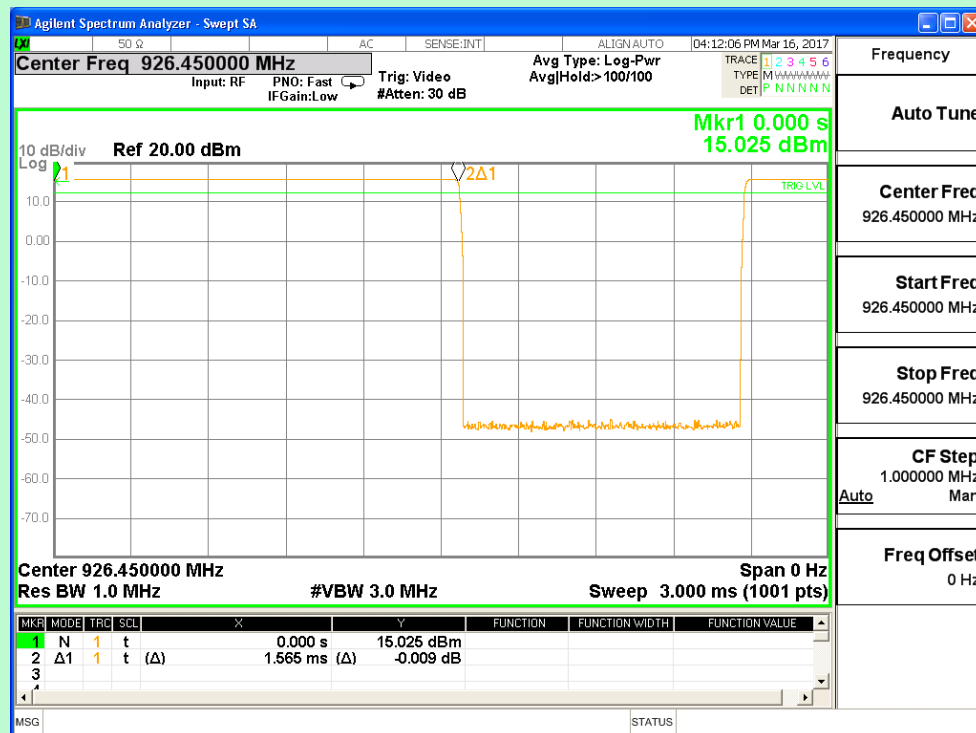
TEST GRAPHS



Channel 1 (903.55 MHz)



Channel 28 (916MHz)



Channel 55 (926.45 MHz)

TEST RESULTS

Channel	Frequency	Measured Dwell Time	No. of Bursts	Total Dwell Time in 10Sec	Limit	Test Results
#	MHz	msec	#	msec	msec	
1	903.55	1.562	15	23.43	≤400	PASS
28	916	1.565	15	23.47	≤400	PASS
55	926.45	1.565	15	23.47	≤400	PASS

TEST SETUP PHOTOGRAPH

Refer Annexure -1

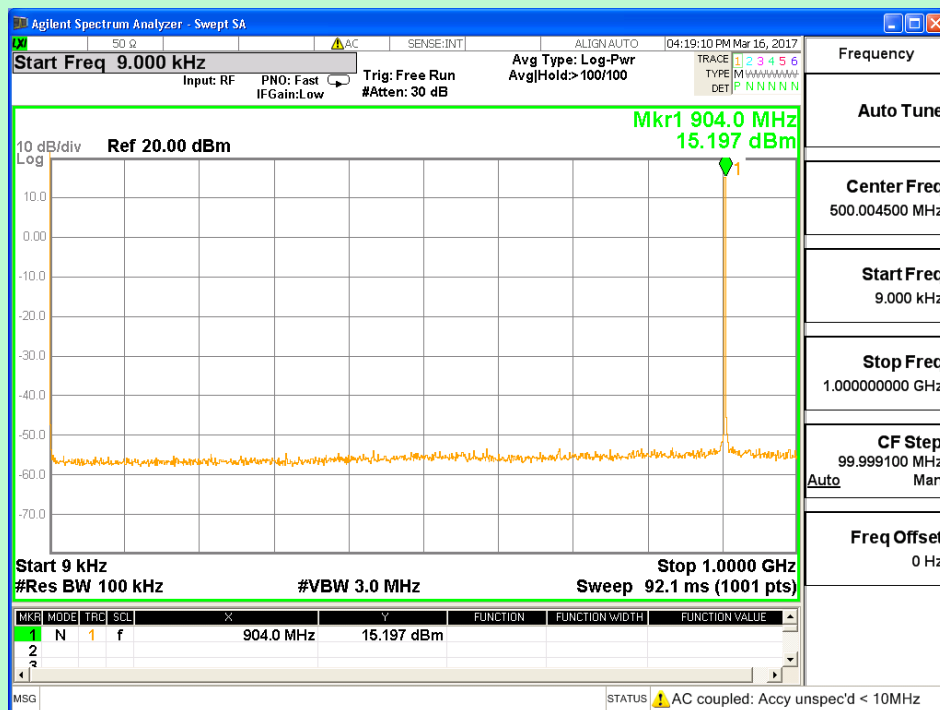
Conducted RF Test setup

2.7 SPURIOUS RF CONDUCTED EMISSIONS

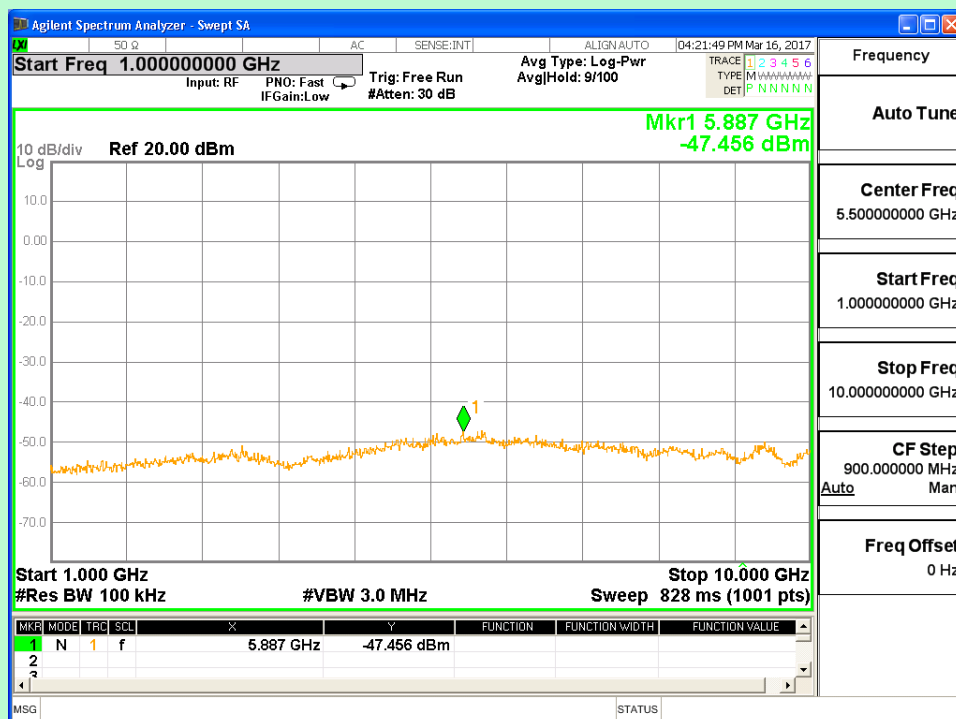
EUT Nomenclature	Wireless Pull Station	Test Request No.	EMC0208-1
Model No.	NBG-12WL	Serial No.	PS2-06
Test Start Date	16-Mar-2017	Temperature (°C)	23.6°C
Test End Date	16-Mar-2017	Humidity RH (%)	51.9%RH
Tested By	Sasikala	Pressure (mbar)	NR
Input Voltage / Freq	3.3Vdc		
Operating Mode	Refer Page 5 for Operating Mode Table		
Test configuration	Refer Page 5 for Test Configuration Table		
Deviation from Std	NA		
Applicable standard	FCC Part 15.247:2010		
Test Method	DA 00-705		
Comment	NA		
TEST DETAILS			
Method	☐ Radiated ☒ Conducted		
TEST PARAMETERS			
Antenna Height	NA	Turntable Rotation	NA
Equipment Class	NA	Measurement Distance	NA

TEST EQUIPMENT					
Y/N	Equipment	Make	Model	Sl. No.	Cal Due Date
Y	Spectrum Analyzer	Agilent	N9010A	MY48031005	22-Feb-2018
Y	RF Cable	Huber- Suhner	SF104/2X11PC3542/500	NA	NA

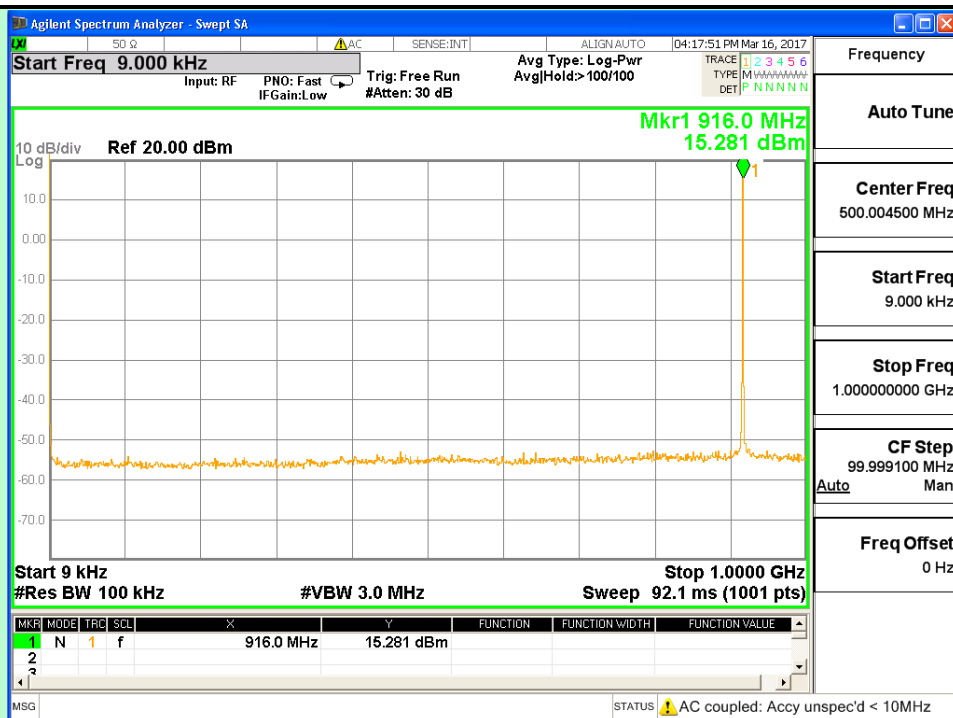
TEST GRAPHS



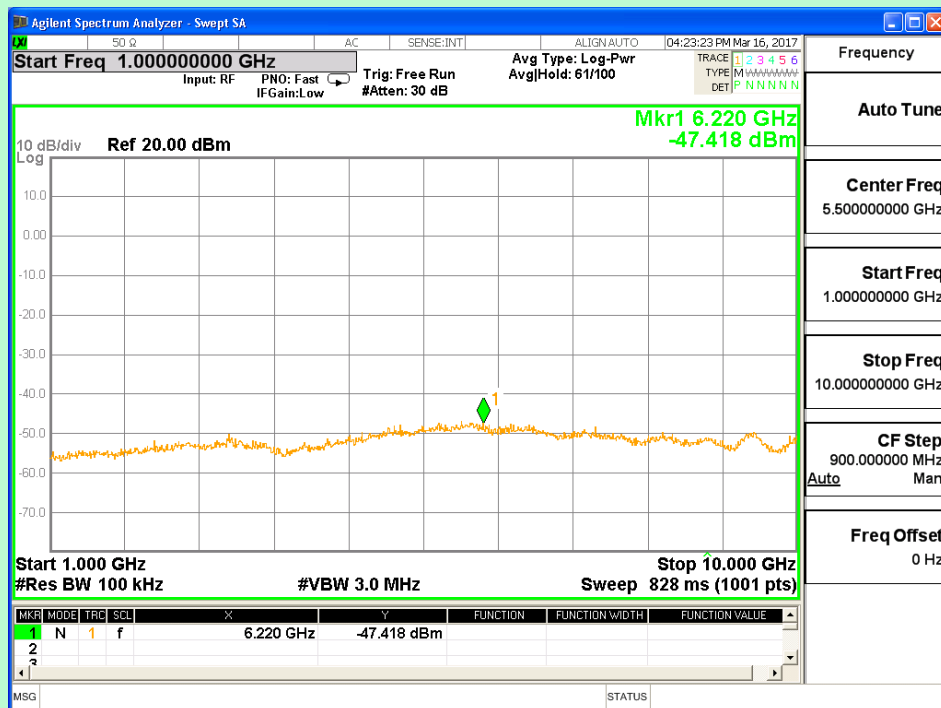
Channel 1 (903.55 MHz) 9KHz to 1GHz



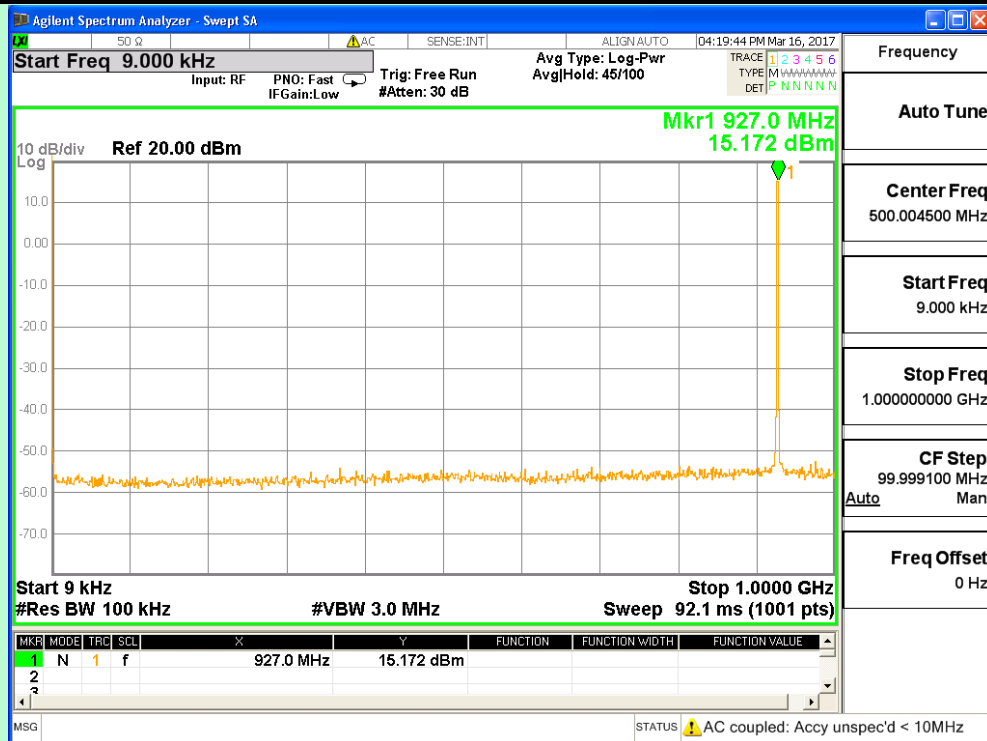
Channel 1 (903.55 MHz) 1GHz to 10GHz



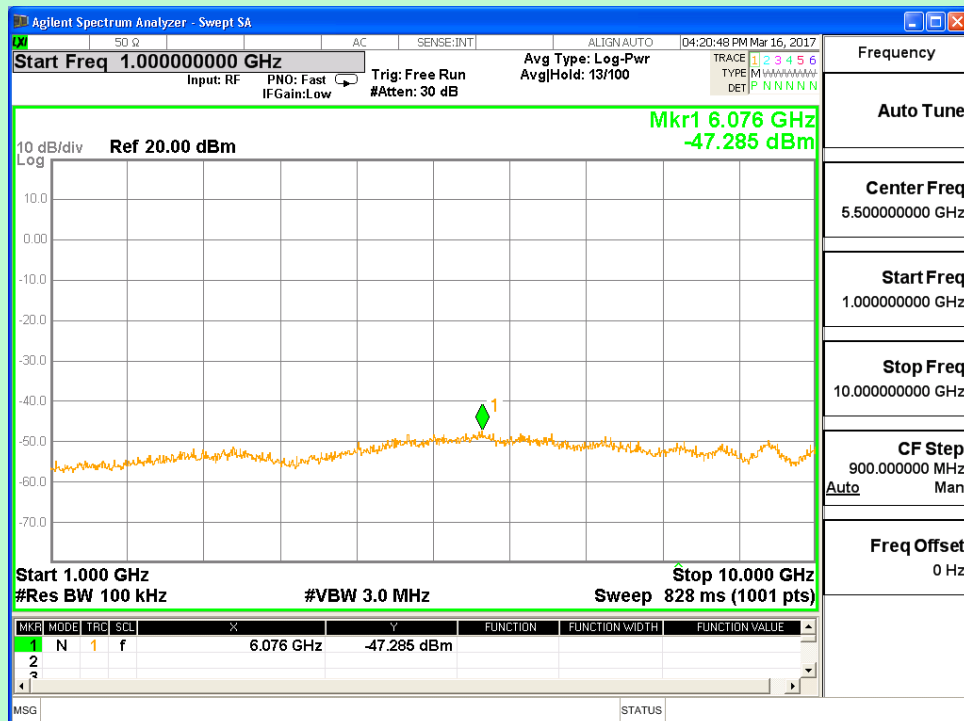
Channel 28 (916MHz) 9KHz to 1GHz



Channel 28 (916MHz) 1GHz to 10GHz



Channel 55 (926.45 MHz) 9KHz to 1GHz



Channel 55 (926.45 MHz) 1GHz to 10GHz

TEST RESULTS

Channel	Frequency	Measured Parameters			Difference (B-A)	Limit	Test Results
#	MHz	Spurious Frequency (GHz)	Spurious Level (dBm)- (A)	Fundamental Level(dBm) – (B)	dBc	dBc	
1	903.55	5.88	-47.45	15.19	62.64	>20	PASS
28	916	6.22	-47.41	15.28	62.69	>20	PASS
55	926.45	6.07	-47.28	15.17	62.45	>20	PASS

TEST SETUP PHOTOGRAPH

Refer Annexure -1

Conducted RF Test setup

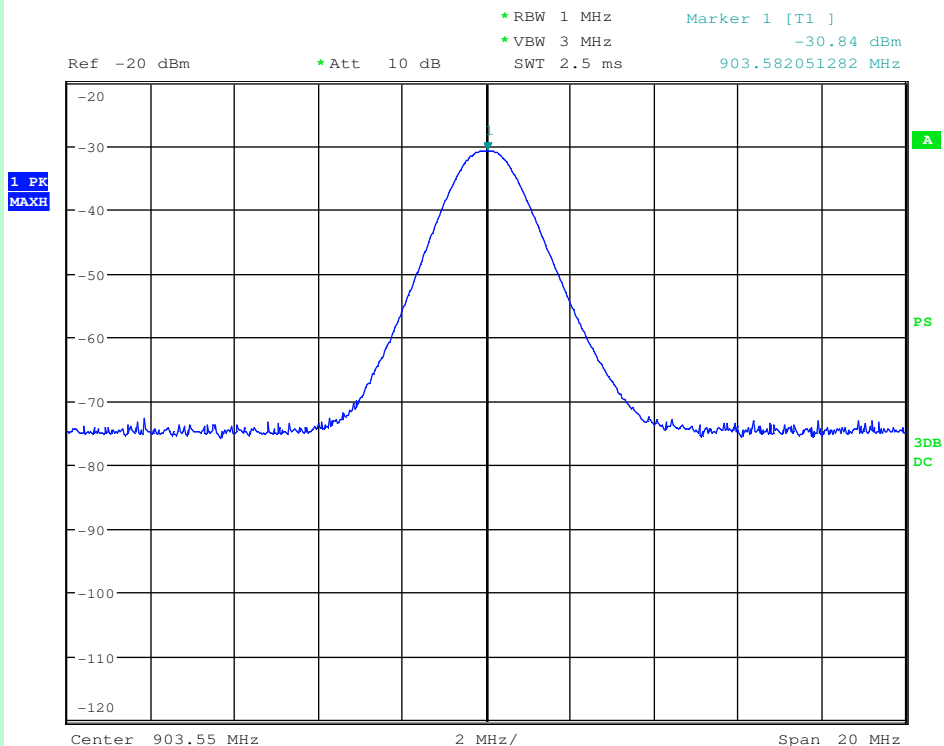
2.8 EFFECTIVE ISOTROPIC RADIATED POWER

EUT Nomenclature	Wireless Pull Station	Test Request No.	EMC0208-1
Model No.	NBG-12WL	Serial No.	PS2-06
Test Start Date	09-May-2017	Temperature (°C)	23.6°C
Test End Date	09-May-2017	Humidity RH (%)	51.9%RH
Tested By	Sasikala	Pressure (mbar)	NR
Input Voltage / Freq	3.3Vdc		
Operating Mode	Refer Page 5 for Operating Mode Table		
Test configuration	Refer Page 5 for Test Configuration Table		
Deviation from Std	NA		
Applicable standard	FCC Part 15.247 : 2010 & 15.209 :2010		
Test Method	KDB 412172		
Comment	NA		
TEST DETAILS			
Method	☒ Radiated ☐ Conducted		
TEST PARAMETERS			
Antenna Height	NA	Turntable Rotation	NA
Equipment Class	NA	Measurement Distance	NA

TEST EQUIPMENT					
Y/N	Equipment	Make	Model	Sl. No.	Cal Due Date
Y	EMI Test Receiver	R&S	ESU26	100525	06-July-2017
Y	3m Semi Anechoic Chamber	ETS Lindgren	DKE 6X7 DBL.DR	1625	26-Jul-2018
Y	Bilog Antenna	ETS Lindgren	HLP3003C	130525	14-Nov-2017
Y	RF cable (9KHz to 1GHz)	ENS Microwave	MNS-MNS	11202012	22-Feb-2018
Y	RF cable (9KHz to 1GHz)	AH System	SAC-18G-06	RE-03	22-Feb-2018

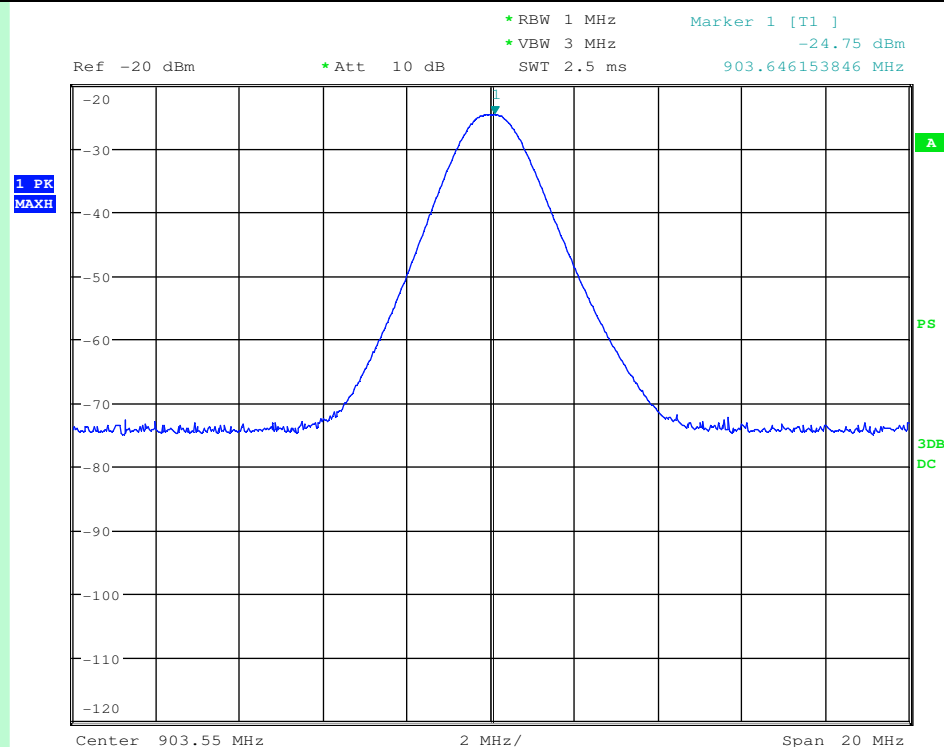
Note: Switch ON /OFF the Internal Preamplifier based on carrier level and or noise floor without overloading the receiver

TEST GRAPHS –EIRP



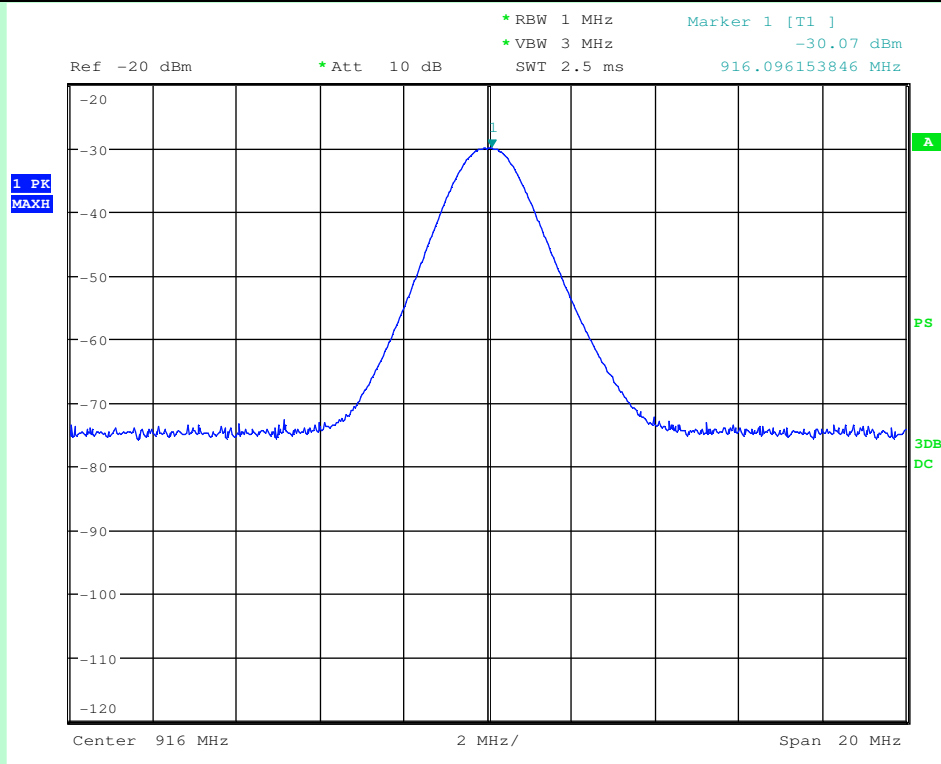
Antenna-1, Channel 1 (903.55 MHz)

Note : Peak Graph - Horizontal polarization

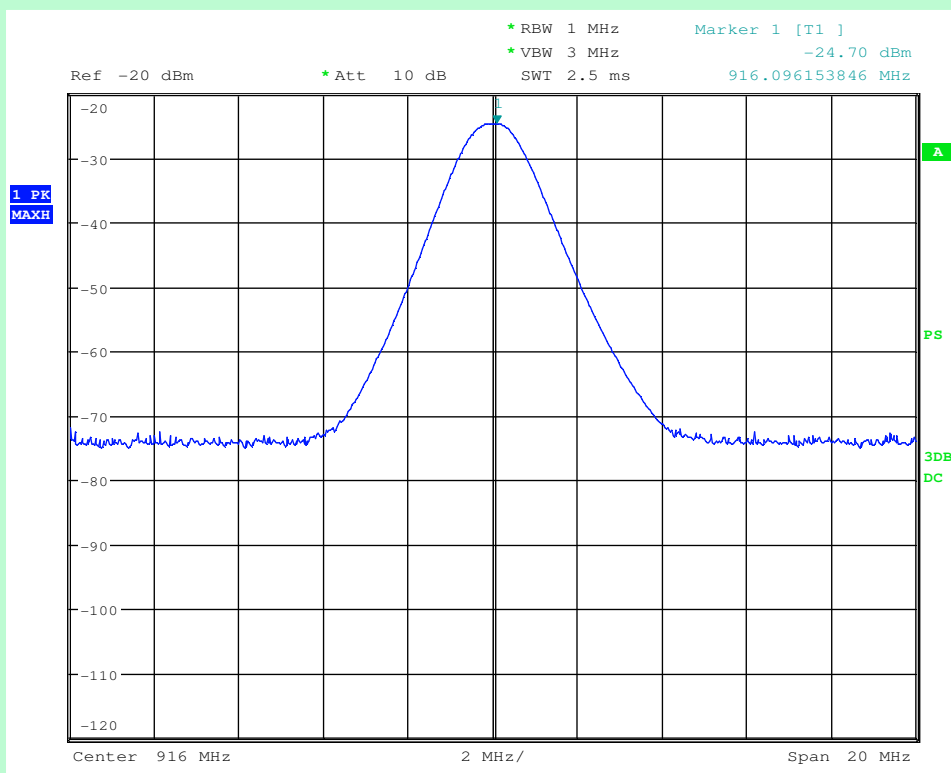


Antenna-1, Channel 1 (903.55 MHz)

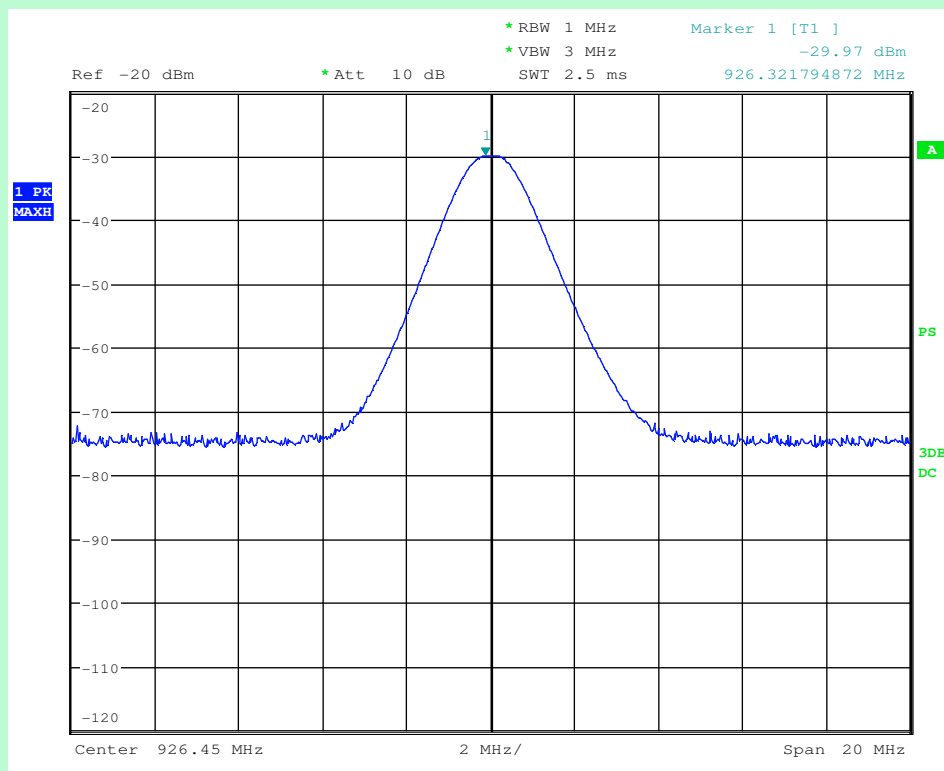
Note : Peak Graph - Vertical polarization

**Antenna-1, Channel 28 (916 MHz)**

Note : Peak Graph - Horizontal polarization

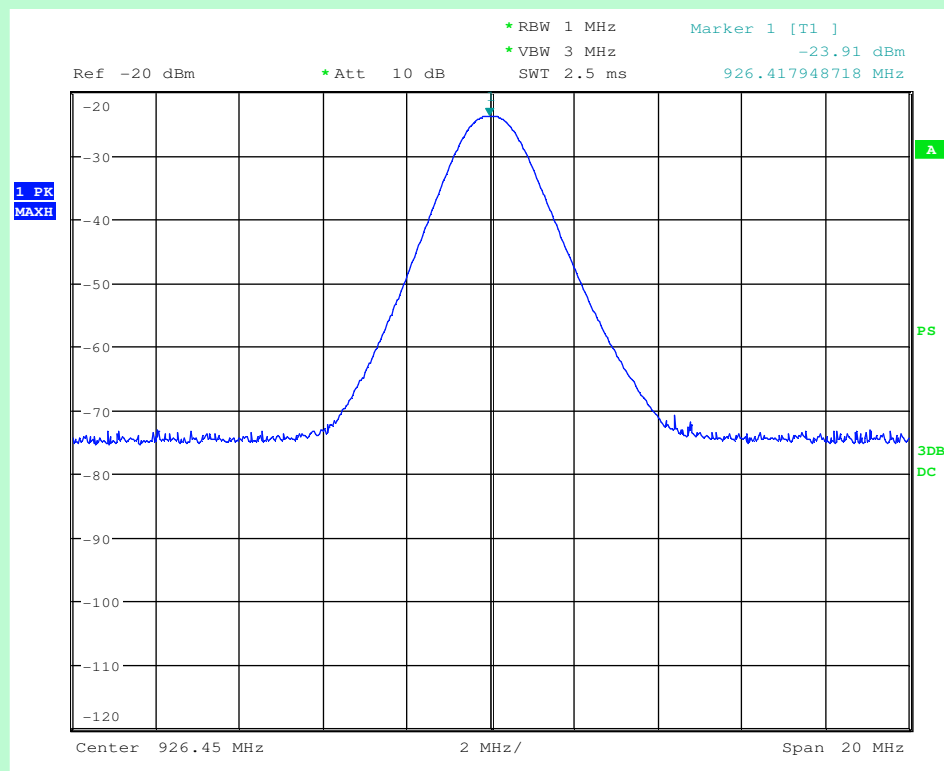
**Antenna-1, Channel 28 (916 MHz)**

Note : Peak Graph - Vertical polarization



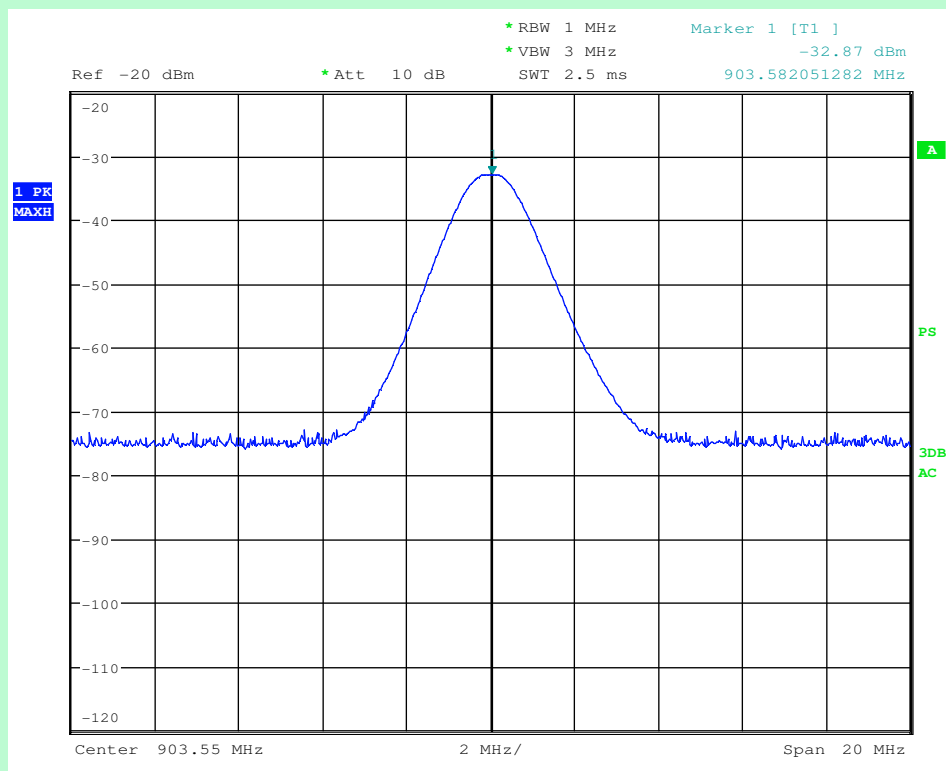
Antenna-1, Channel 55 (926.45 MHz)

Note : Peak Graph - Horizontal polarization

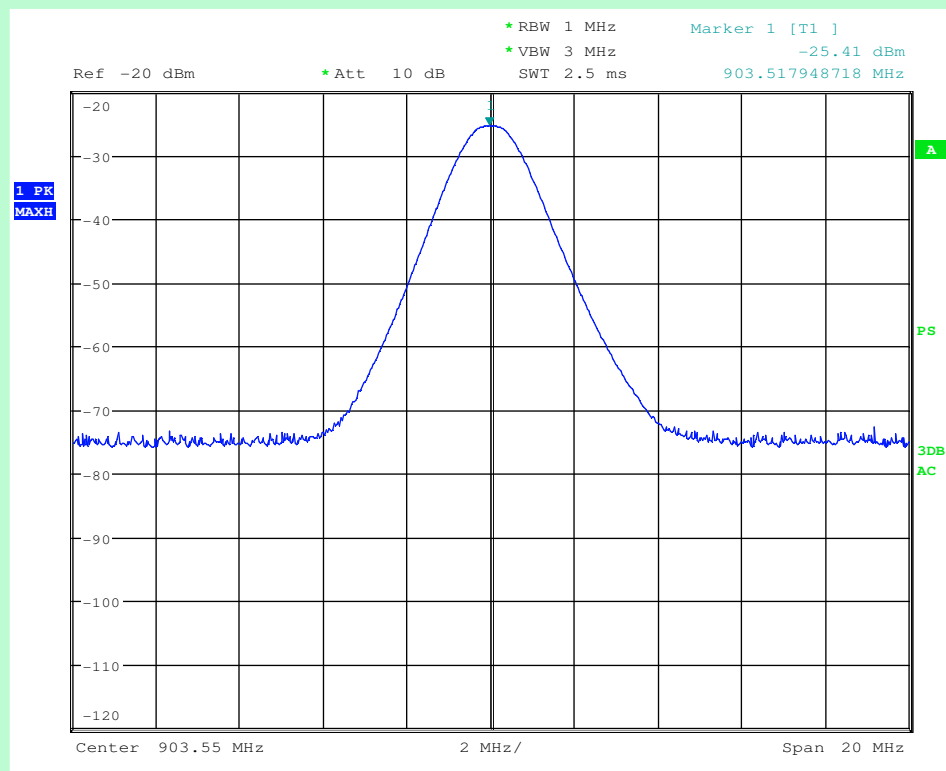


Antenna-1, Channel 55 (926.45 MHz)

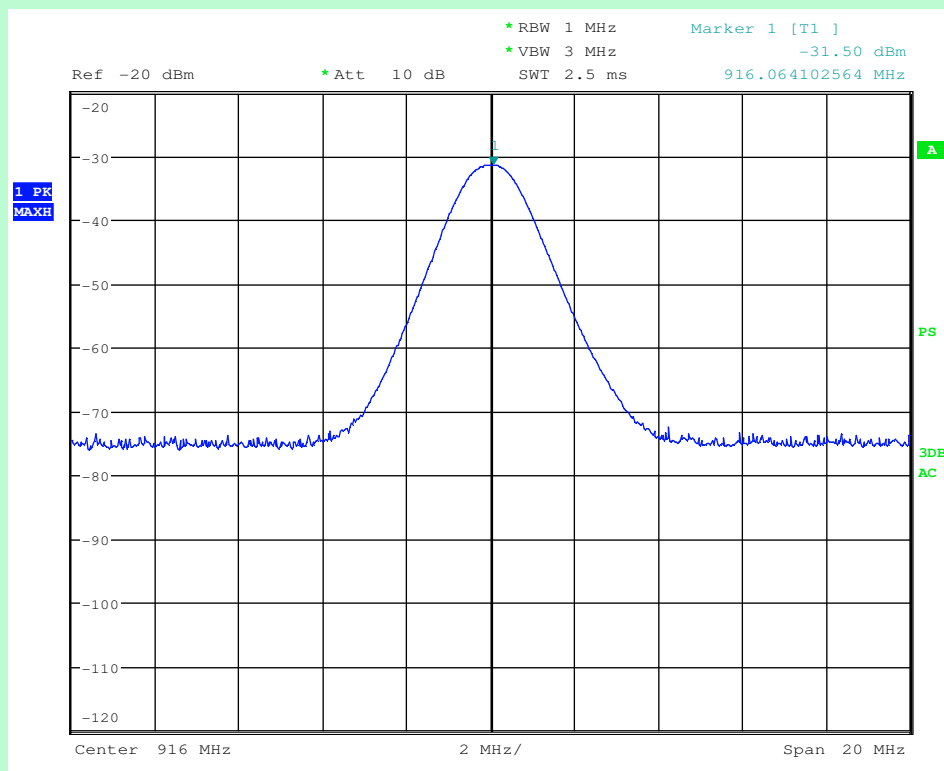
Note : Peak Graph - Vertical polarization

**Antenna-2, Channel 1 (903.55 MHz)**

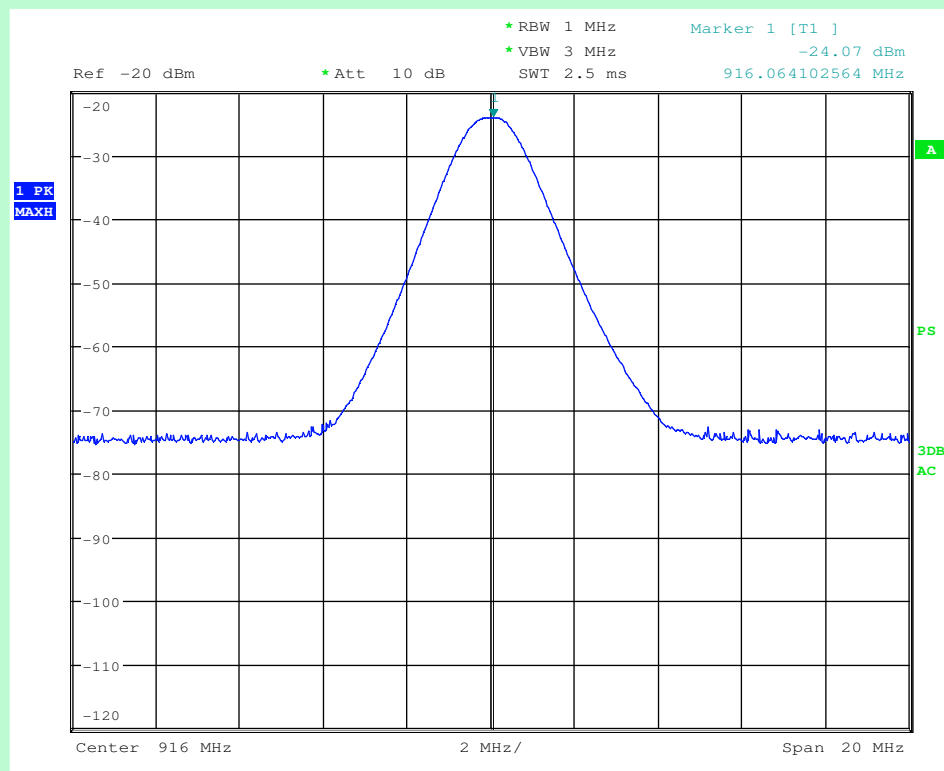
Note : Peak Graph - Horizontal polarization

**Antenna-2, Channel 1 (903.55 MHz)**

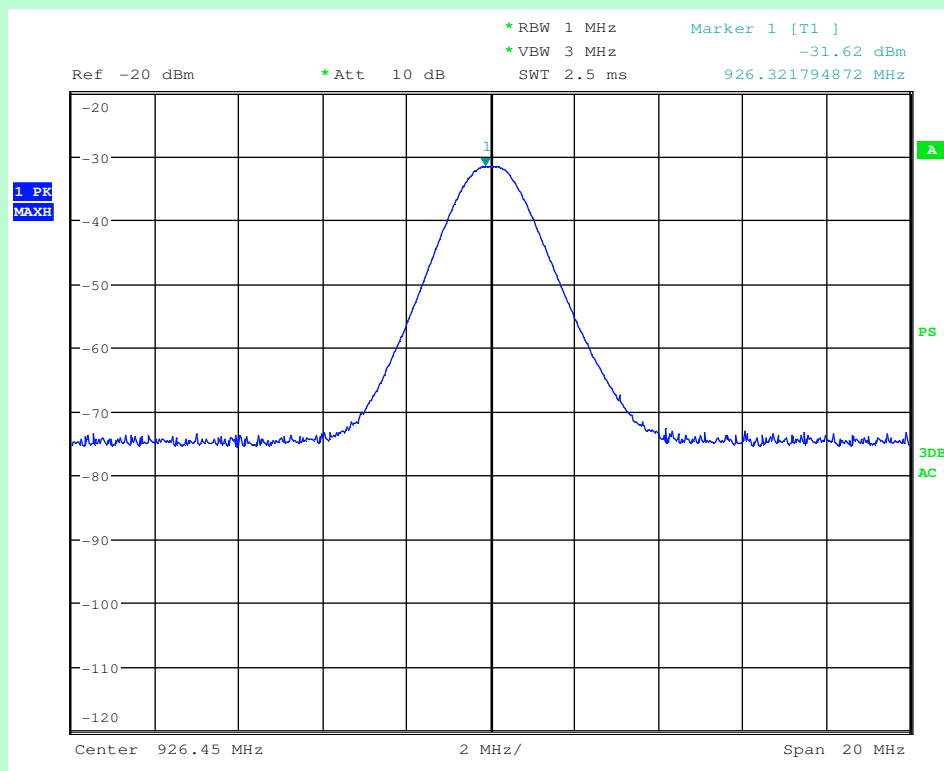
Note : Peak Graph - Vertical polarization

**Antenna-2, Channel 28 (916 MHz)**

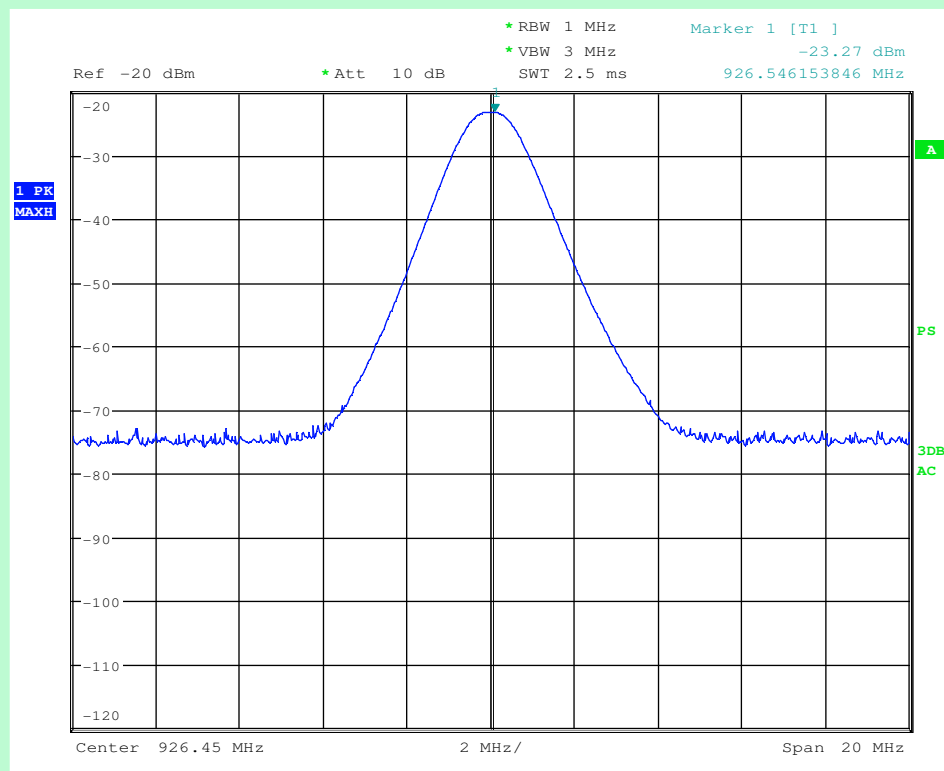
Note : Peak Graph - Horizontal polarization

**Antenna-2, Channel 28 (916 MHz)**

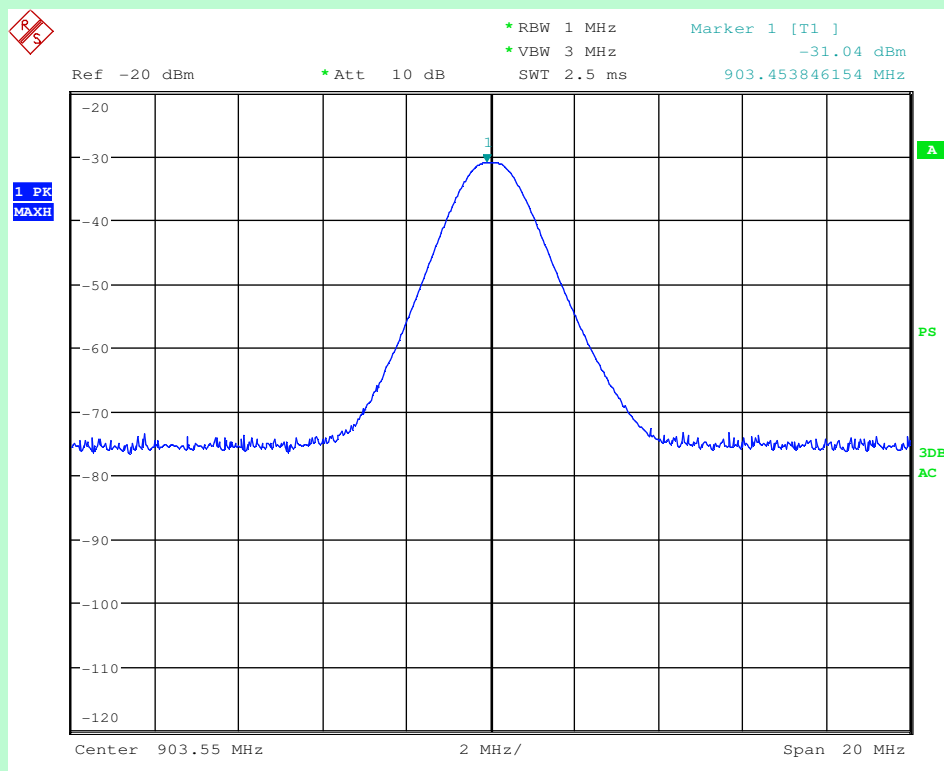
Note : Peak Graph - Vertical polarization

**Antenna-2, Channel 55 (926.45 MHz)**

Note : Peak Graph - Horizontal polarization

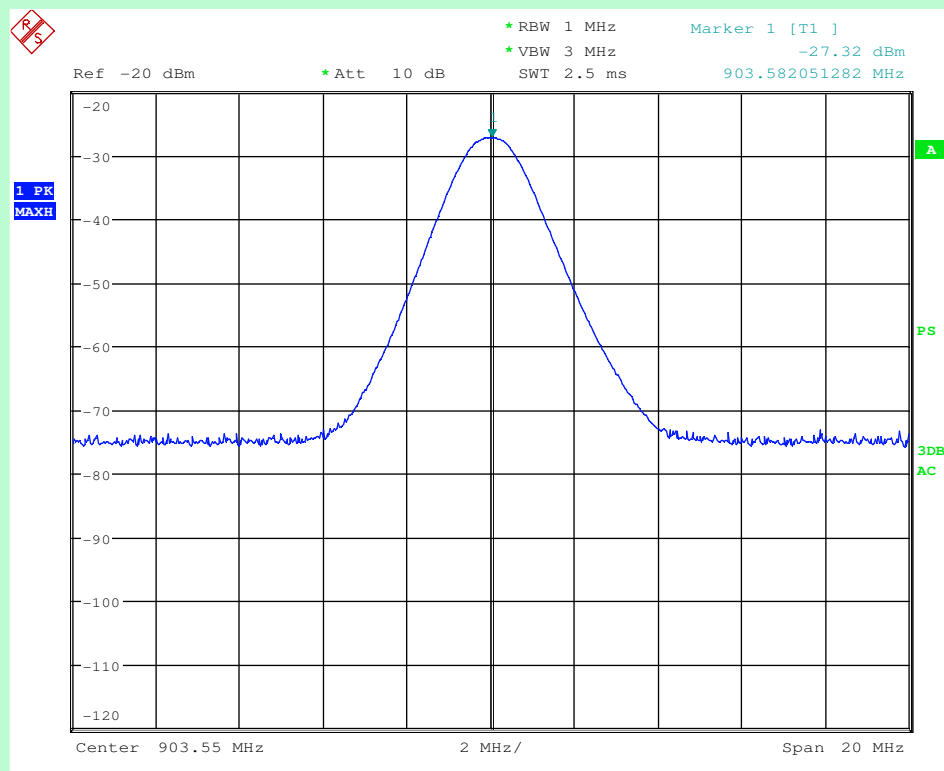
**Antenna-2, Channel 55 (926.45 MHz)**

Note : Peak Graph - Vertical polarization



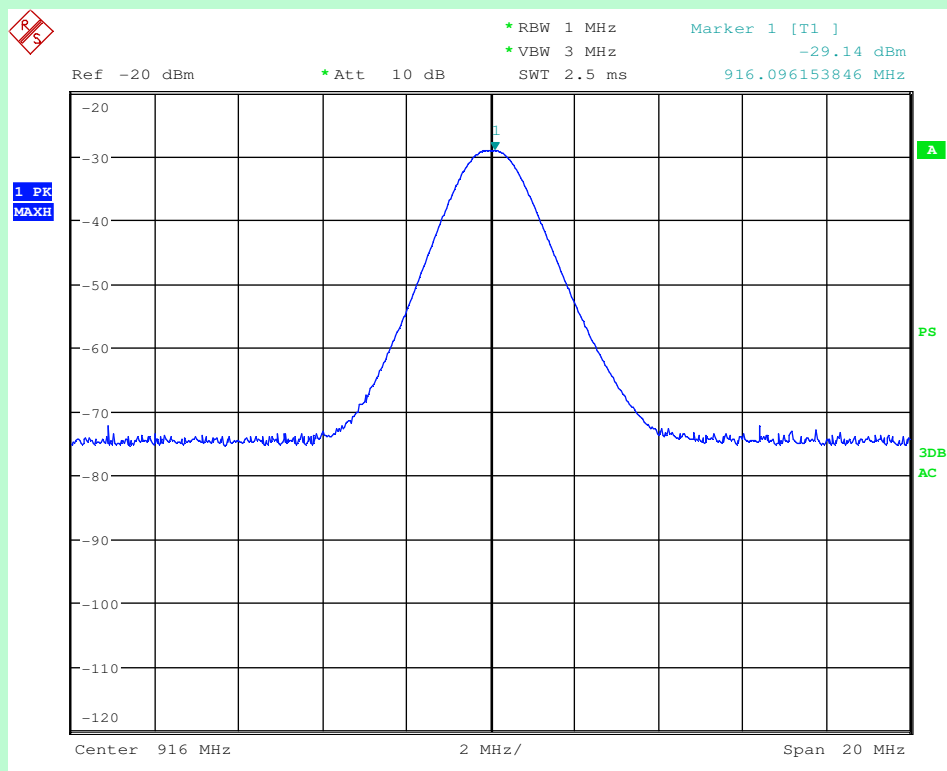
Antenna-3, Channel 1 (903.55 MHz)

Note : Peak Graph - Horizontal polarization

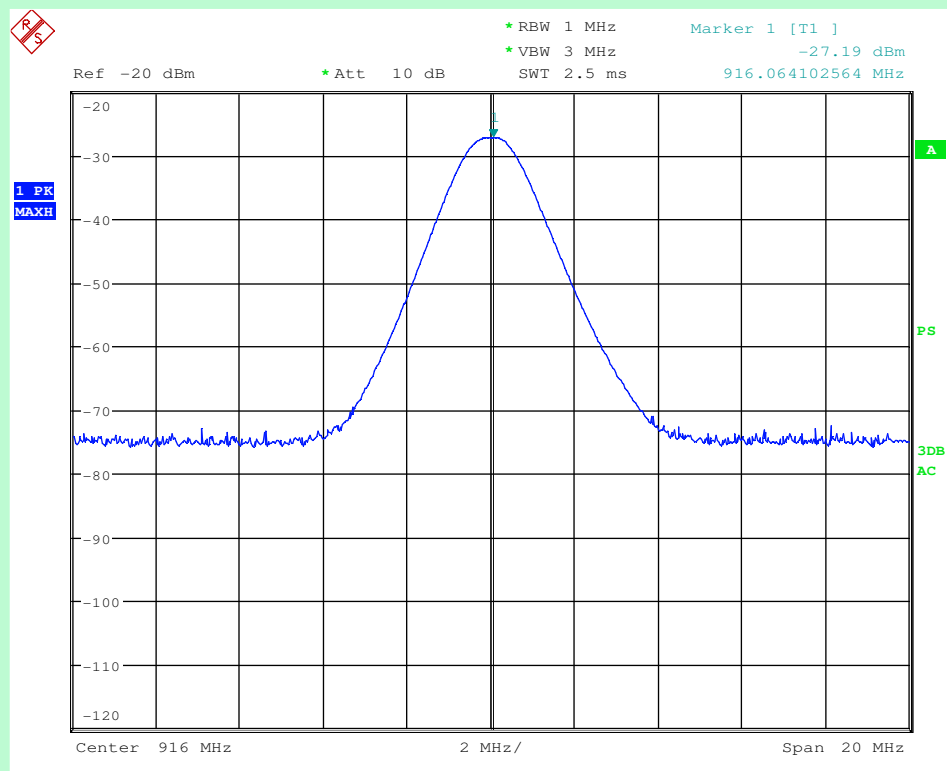


Antenna-3, Channel 1 (903.55 MHz)

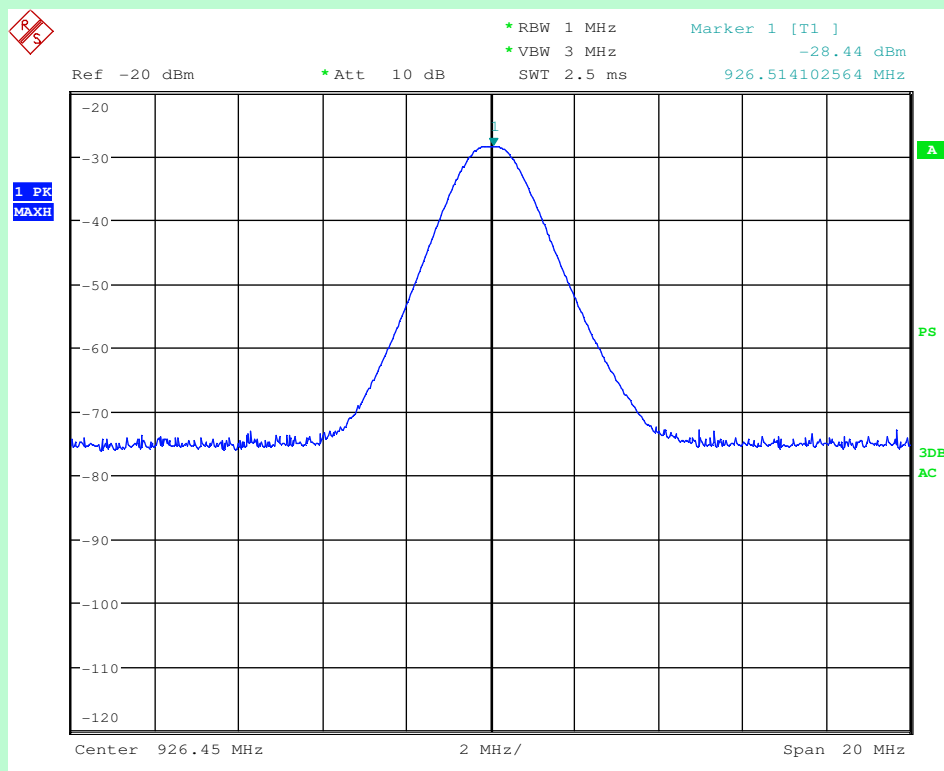
Note : Peak Graph - Vertical polarization

**Antenna-3, Channel 28 (916 MHz)**

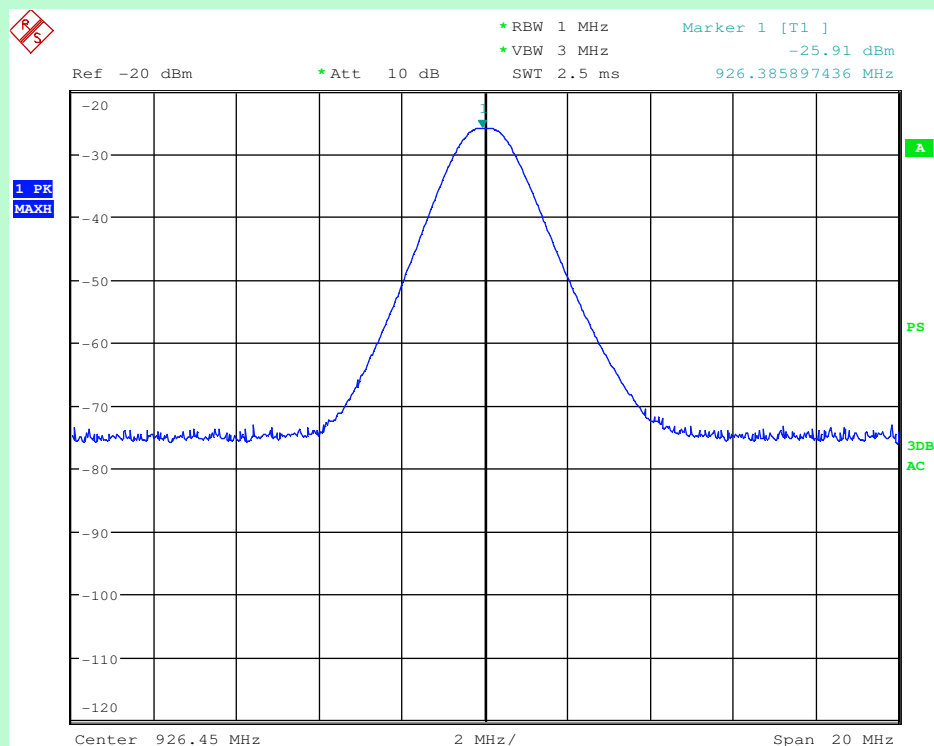
Note : Peak Graph - Horizontal polarization

**Antenna-3, Channel 28 (916 MHz)**

Note : Peak Graph - Vertical polarization

**Antenna-3, Channel 55(926.45 MHz)**

Note : Peak Graph - Horizontal polarization

**Antenna-3, Channel 55 (926.45 MHz)**

Note : Peak Graph - Vertical polarization

TEST RESULT – EIRP											
Channel	Channel Freq	Rx Antenna Height	Rx Ant Pol	Azimuth	Measured Level	Cable Loss	External Att	Path loss @ 3m	Rx Antenna Gain	Calculated Rx Power	Calculated EIRP
#	MHz	cm	H/V	deg	dBm	dB	dB	dB	dB	dBm	dBm
Antenna – 1											
CH-1	903.55	100	H	336	-30.84	2.4	6	41.21	6.3	-28.74	12.47
CH-1	903.55	100	V	277	-24.75	2.4	6	41.21	6.3	-22.65	18.56
CH-28	916.00	100	H	210	-30.07	2.4	6	41.21	6.3	-27.97	13.24
CH-28	916.00	100	V	270	-24.7	2.4	6	41.21	6.3	-22.60	18.61
CH-55	926.45	100	H	344	-29.97	2.4	6	41.21	6.3	-27.87	13.34
CH-55	926.45	100	V	260	-23.91	2.4	6	41.21	6.3	-21.81	19.40
Antenna – 2											
CH-1	903.55	100	H	214	-32.87	2.4	6	41.21	6.3	-30.77	10.44
CH-1	903.55	100	V	315	-25.41	2.4	6	41.21	6.3	-23.31	17.90
CH-28	916.00	100	H	210	-31.5	2.4	6	41.21	6.3	-29.40	11.81
CH-28	916.00	100	V	310	-24.07	2.4	6	41.21	6.3	-21.97	19.24
CH-55	926.45	100	H	215	-31.62	2.4	6	41.21	6.3	-29.52	11.69
CH-55	926.45	100	V	280	-23.27	2.4	6	41.21	6.3	-21.17	20.04
Antenna – 3											
CH-1	903.55	100	H	210	-31.04	2.4	6	41.21	6.3	-28.94	12.27
CH-1	903.55	100	V	290	-27.32	2.4	6	41.21	6.3	-25.22	15.99
CH-28	916.00	100	H	210	-29.14	2.4	6	41.21	6.3	-27.04	14.17
CH-28	916.00	100	V	280	-27.19	2.4	6	41.21	6.3	-25.09	16.12
CH-55	926.45	100	H	210	-28.44	2.4	6	41.21	6.3	-26.34	14.87
CH-55	926.45	100	V	280	-25.91	2.4	6	41.21	6.3	-23.81	17.40
Note : Effective Isotropic Radiated Power (dBm)= Pr(dBm) +Lp(dB) Pr = Pmeas(dBm)-Gr(dBi)+Lc(dB)+Latt(dB) Lp =20Log F+20LogD-27.5 Where: Pr =Calculated Received Power Level(dBm) Lp= Free Space Path Loss(dB) Pmeas= Measured Power Level(dBm) Gr = Receiver Antenna Gain(dBi) Lc = Cable Loss (dB) Latt= External Attenuator(dB) F = Frequency (MHz) D= Distance (m)											

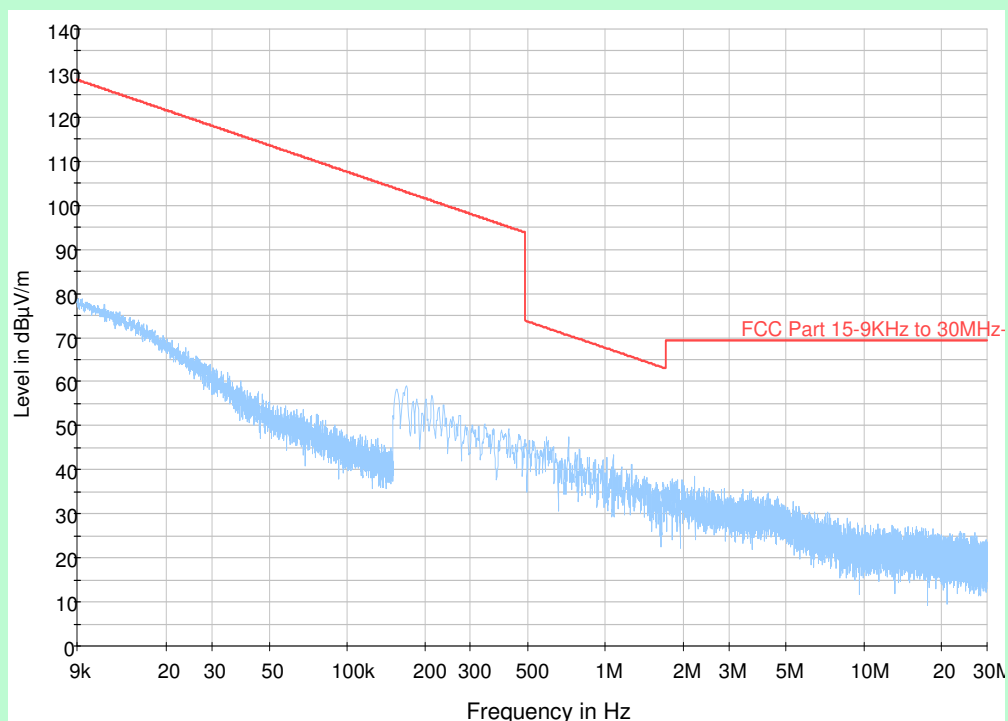
2.9 SPURIOUS RADIATED EMISSIONS

EUT Nomenclature	Wireless Pull Station	Test Report No.	EMC0208-1
Model No.	NBG-12WL	Serial No.	PS2-06
Test Start Date	05-May-2017	Temperature (°C)	23 ± 2
Test End Date	23-May-2017	Humidity RH (%)	55± 2
Tested By	Magesh .S	Pressure (mbar)	NR
Input Voltage / Freq	3.3Vdc		
Operating Mode	Refer Page 5 Operating Modes Table		
Test configuration	Refer Page 5 Test Configuration Table		
Deviation from Std	NA		
Comment	Nil		
TEST FREQUENCY RANGE			
Start Frequency	9 KHz	Stop Frequency	10 GHz
MAXIMUM OPERATING FREQUENCY			
902MHz to 928MHz			
TEST PARAMETERS			
Antenna Height	1m to 4m	Turntable Rotation	0° to 360°
Applicable standard	FCC Part 15.247 & 15.209 :2010	Test Method	ANSI C63.10 – 2013
Equipment Class	NA	Measurement Distance	3m

TEST EQUIPMENT

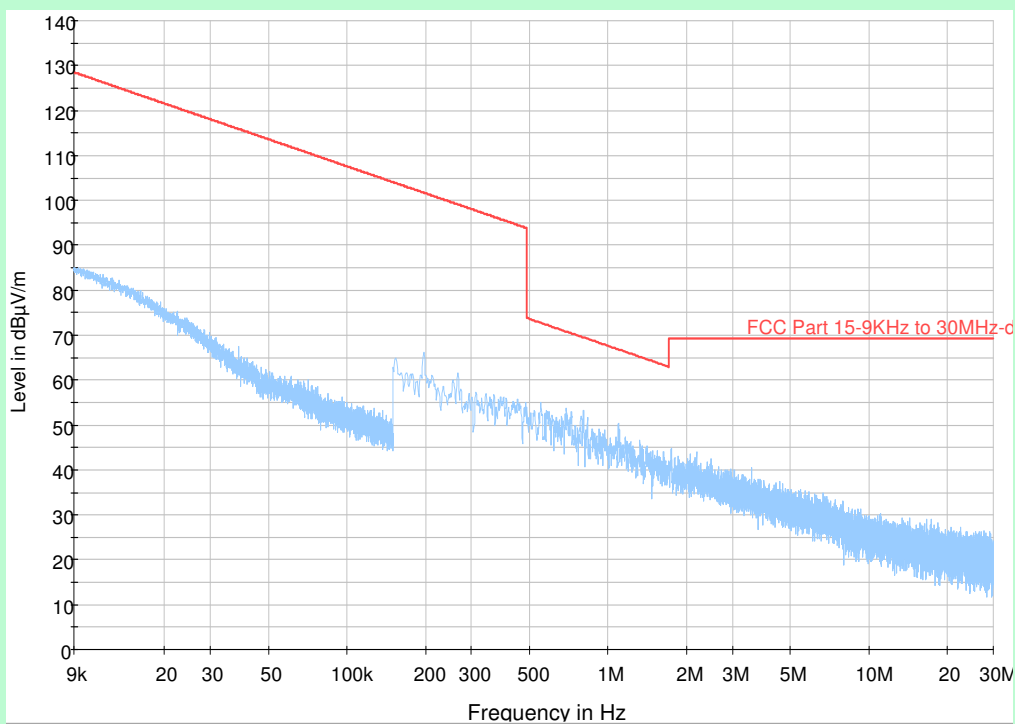
Y/N	Equipment	Make	Model	Sl. No.	Cal Due Date
Y	EMI Test Receiver	R&S	ESU26	100525	06-July-2017
Y	3m Semi Anechoic Chamber	ETS Lindgren	DKE 6X7 DBL.DR	1625	26-July-2018
Y	Active Loop Antenna	ETS Lindgren	6507	000103694	02-Jun-2017*
Y	Bilog Antenna	ETS Lindgren	HLP3003C	130525	14-Nov-2017
Y	Double Ridge Guide Horn Antenna	ETS Lindgren	3117	00119022	08-Jun-2017*
Y	RF cable (9KHz to 1GHz)	ENS Microwave	MNS-MNS	11202012	22-Feb-2018
Y	RF cable (9KHz to 1GHz)	AH System	SAC-18G-06	RE-03	22-Feb-2018
Y	RF cable (1GHz to 18GHz)	Huber + Suhner	Sucoflex 104	MY13472/4	24-Feb-2018
Y	Signal Conditioning unit	R&S	SCU-18	10178	02-May-2018
Y	EMC32 Software	R&S	8.30.0	820-OT101248	NA
Note: Switch ON /OFF the Internal Preamplifier based on carrier level and or noise floor without overloading the receiver					
* Tests were completed before the due date.					

TEST GRAPHS – 9 KHz to 30 MHz



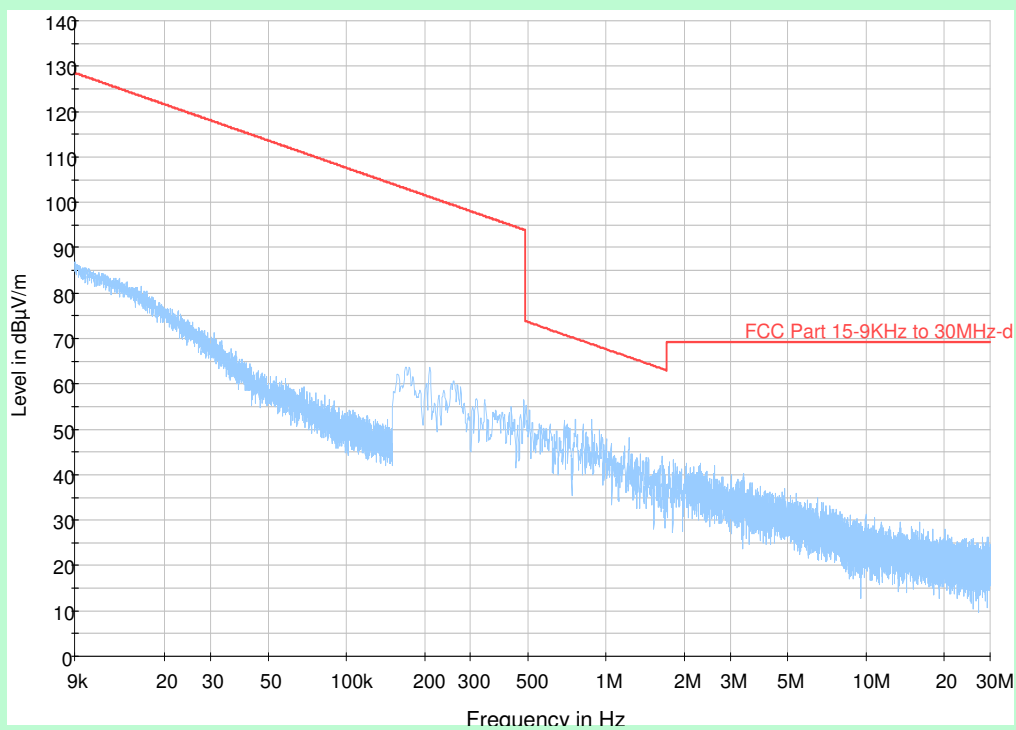
Antenna-1, Channel 1 (903.55 MHz)

Note : Peak Graph - Parallel

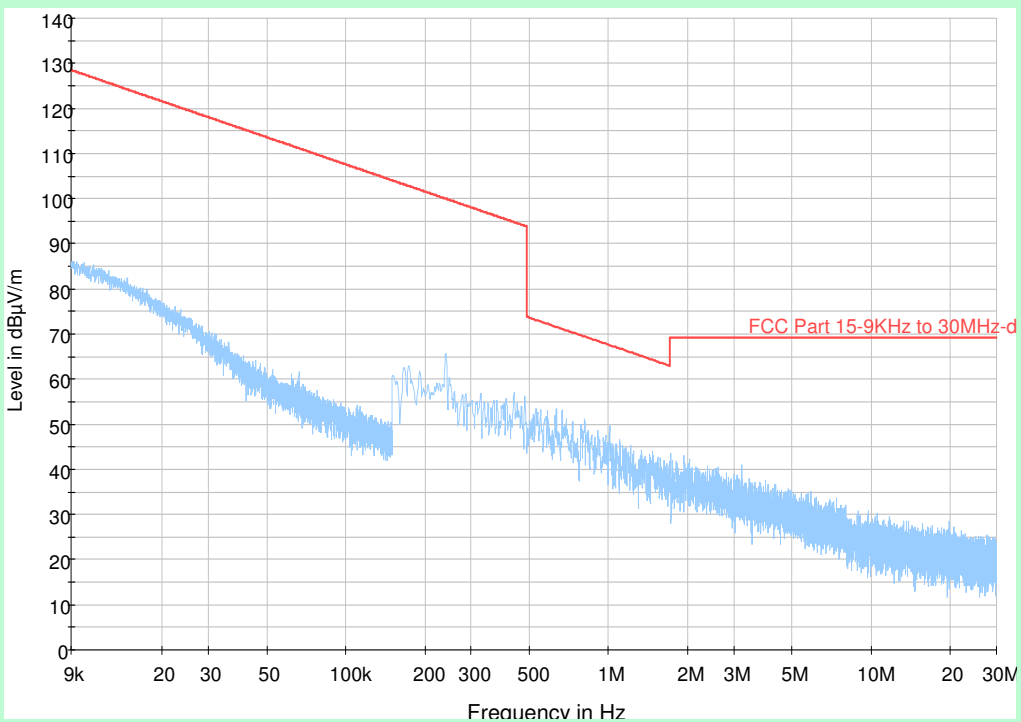


Antenna-1, Channel 1 (903.55 MHz)

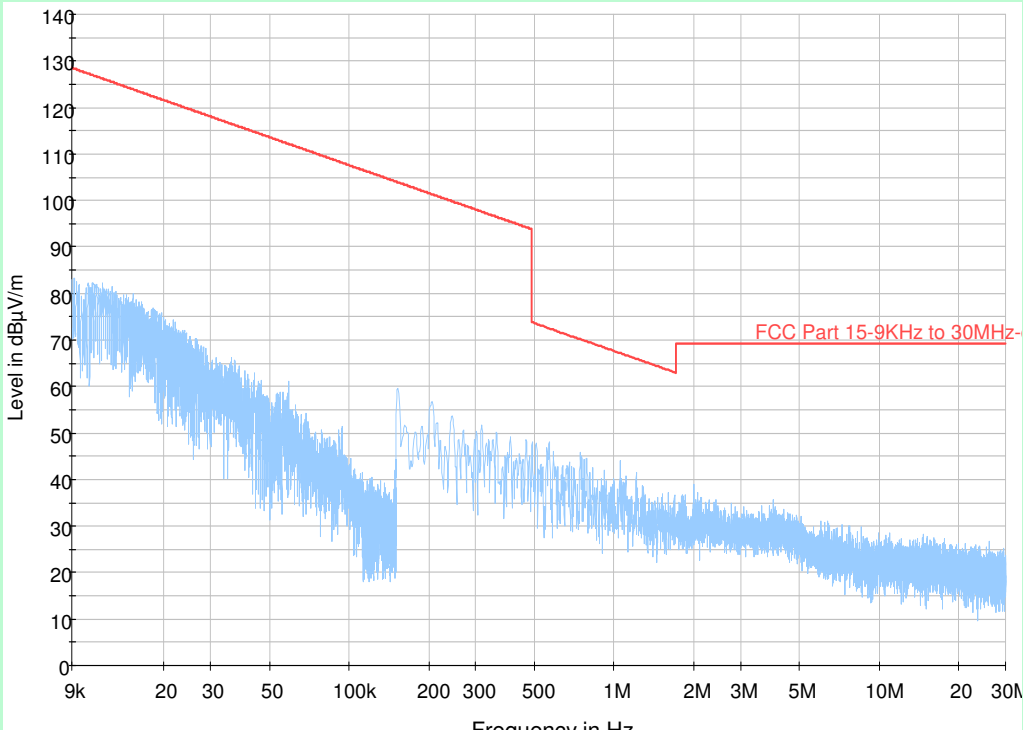
Note : Peak Graph - Perpendicular

**Antenna-1, Channel 28 (916 MHz)**

Note : Peak Graph - Parallel

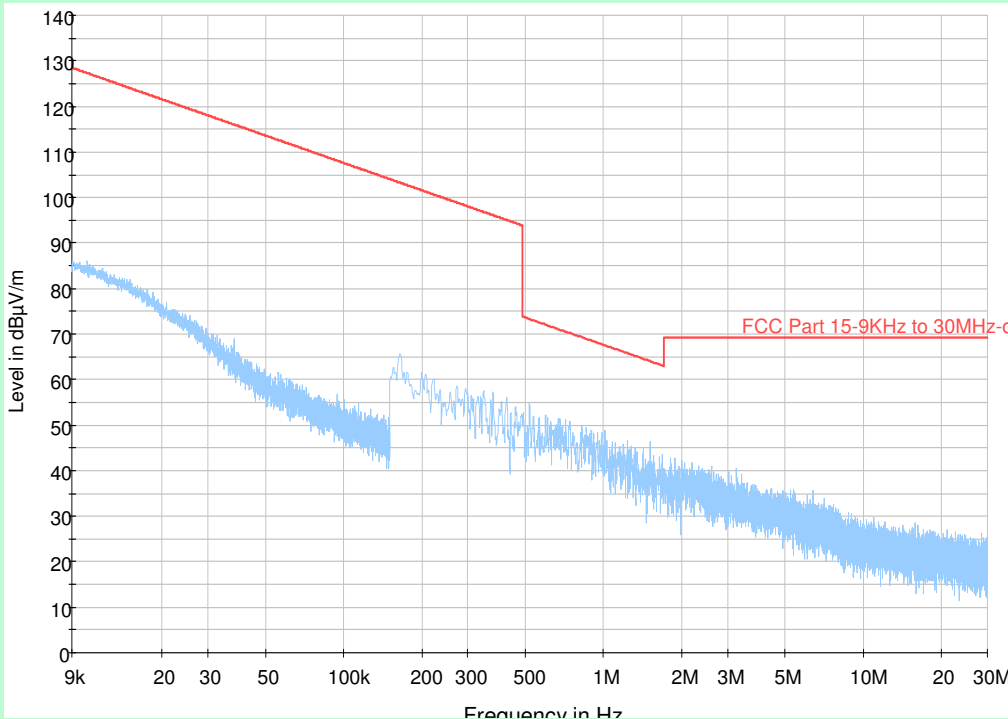
**Antenna-1, Channel 28 (916 MHz)**

Note : Peak Graph - Perpendicular



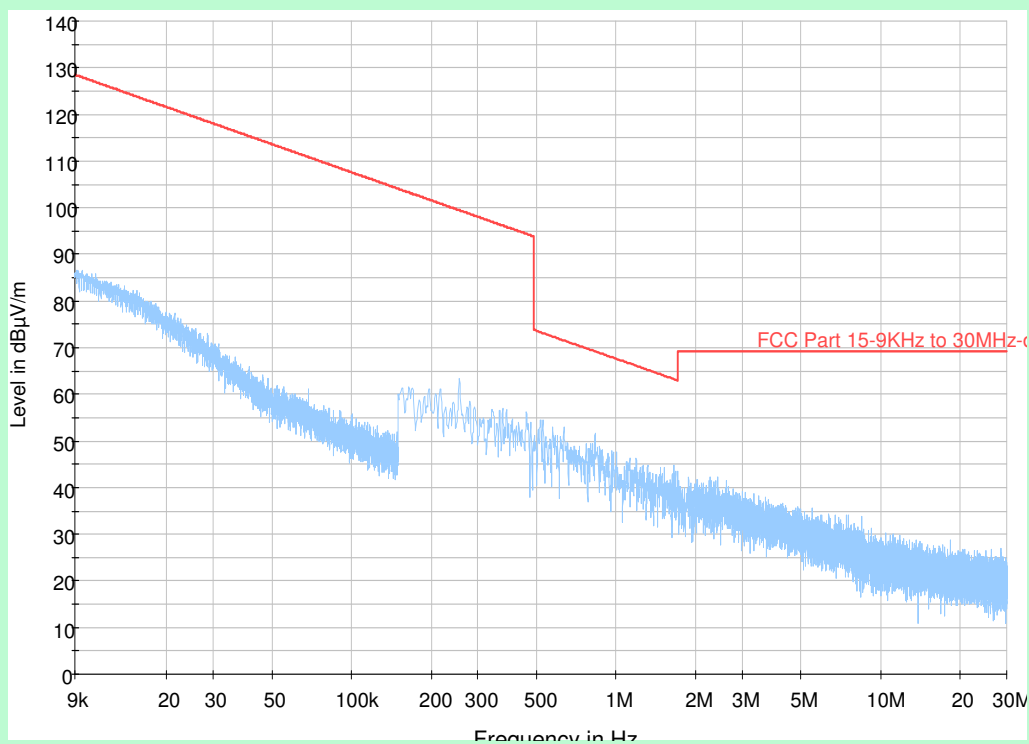
Antenna-1, Channel 55 (926.45 MHz)

Note : Peak Graph - Parallel



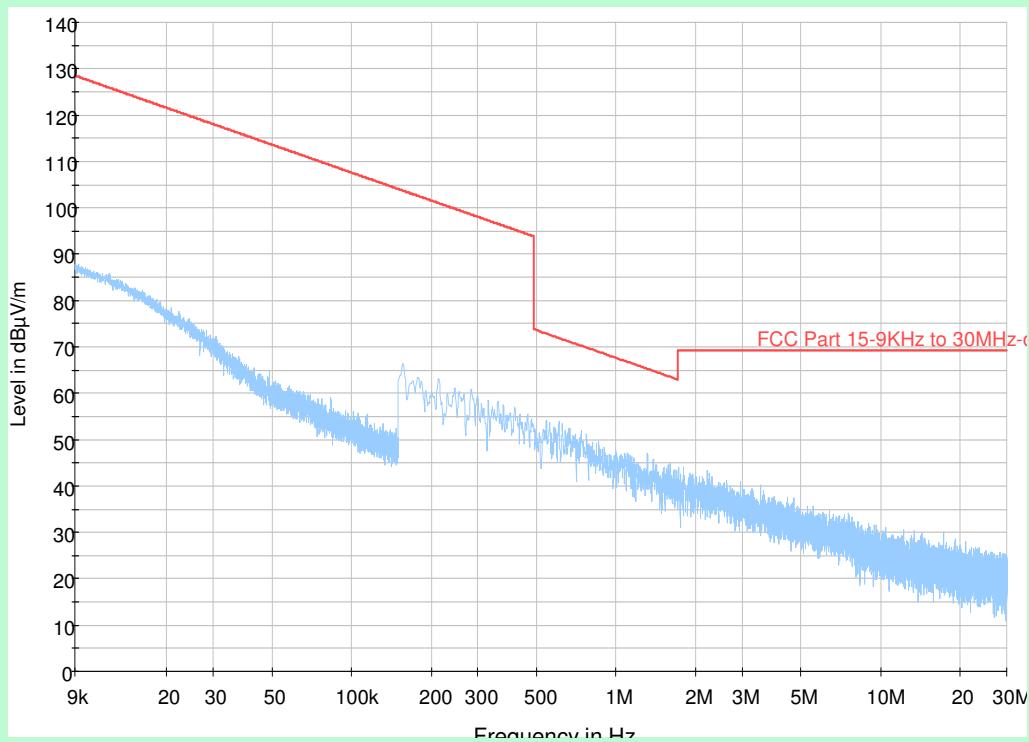
Antenna-1, Channel 55 (926.45 MHz)

Note : Peak Graph - Perpendicular



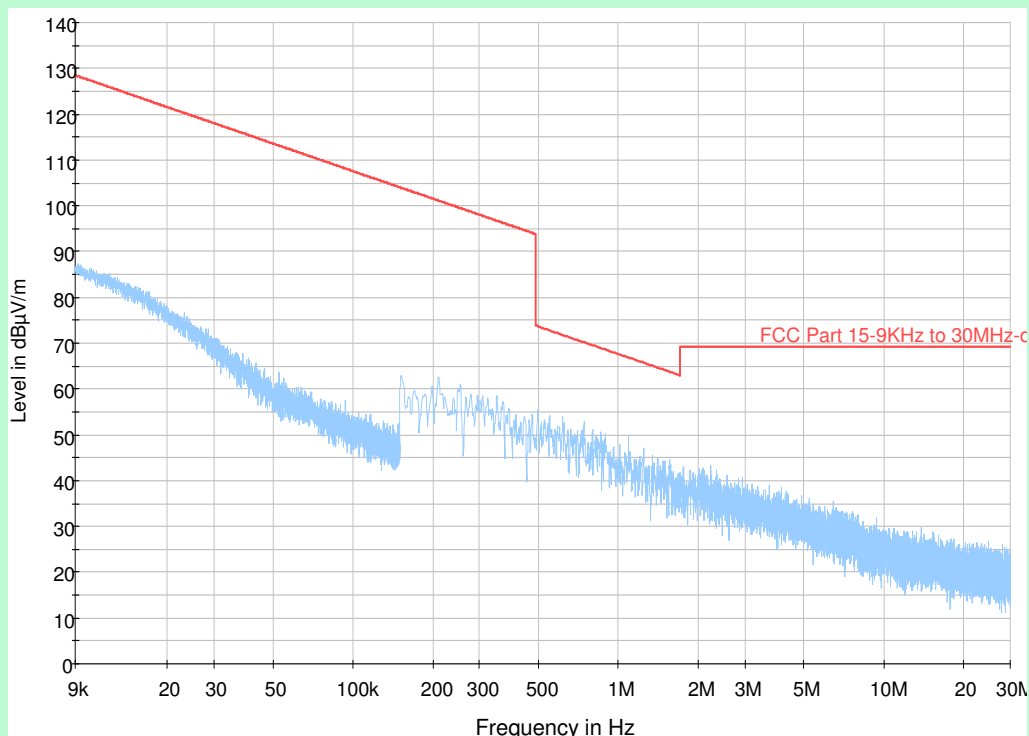
Antenna-2, Channel 1 (903.55 MHz)

Note : Peak Graph - Parallel

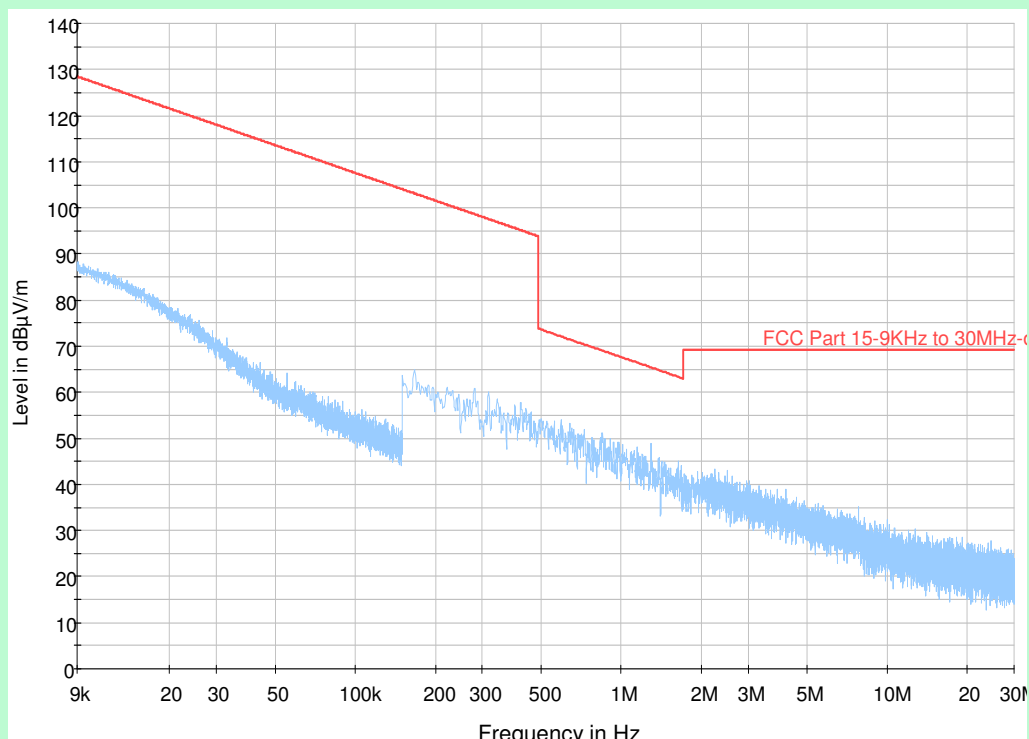


Antenna-2, Channel 1 (903.55 MHz)

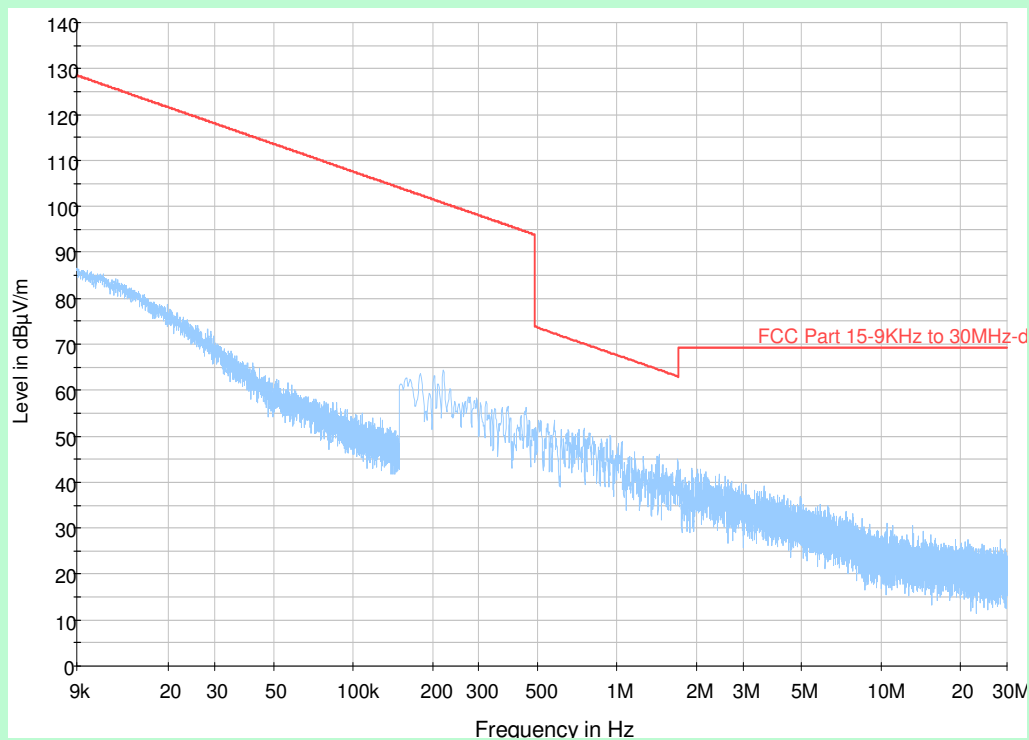
Note : Peak Graph - Perpendicular

**Antenna-2, Channel 28 (916 MHz)**

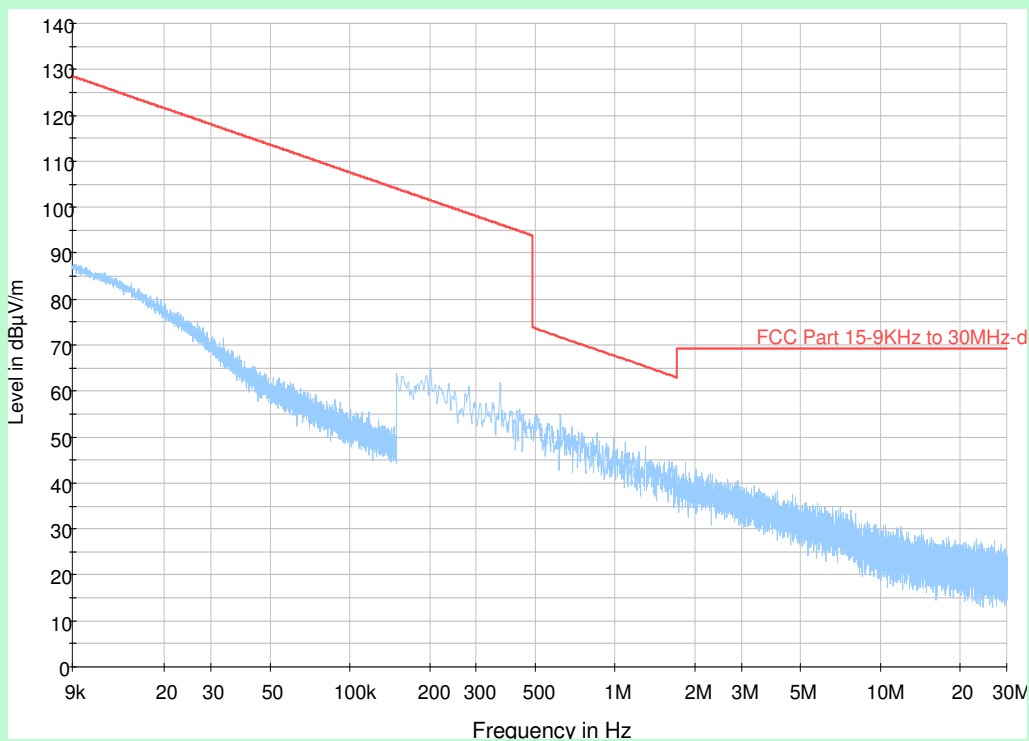
Note : Peak Graph - Parallel

**Antenna-2, Channel 28 (916 MHz)**

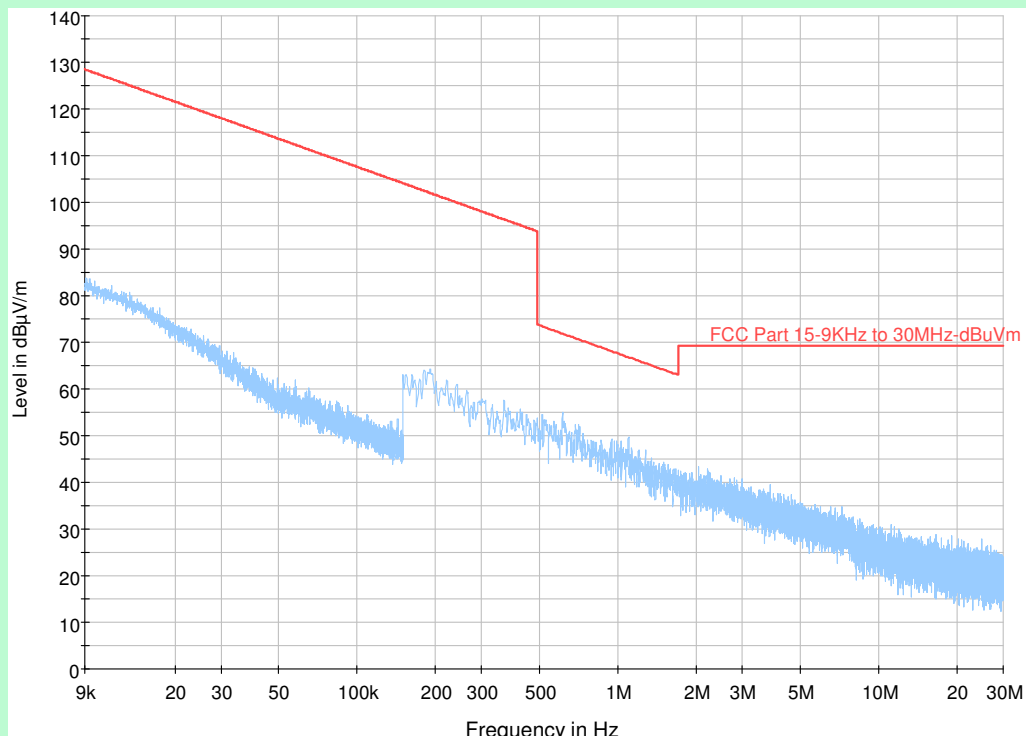
Note : Peak Graph - Perpendicular

**Antenna-2, Channel 55 (926.45 MHz)**

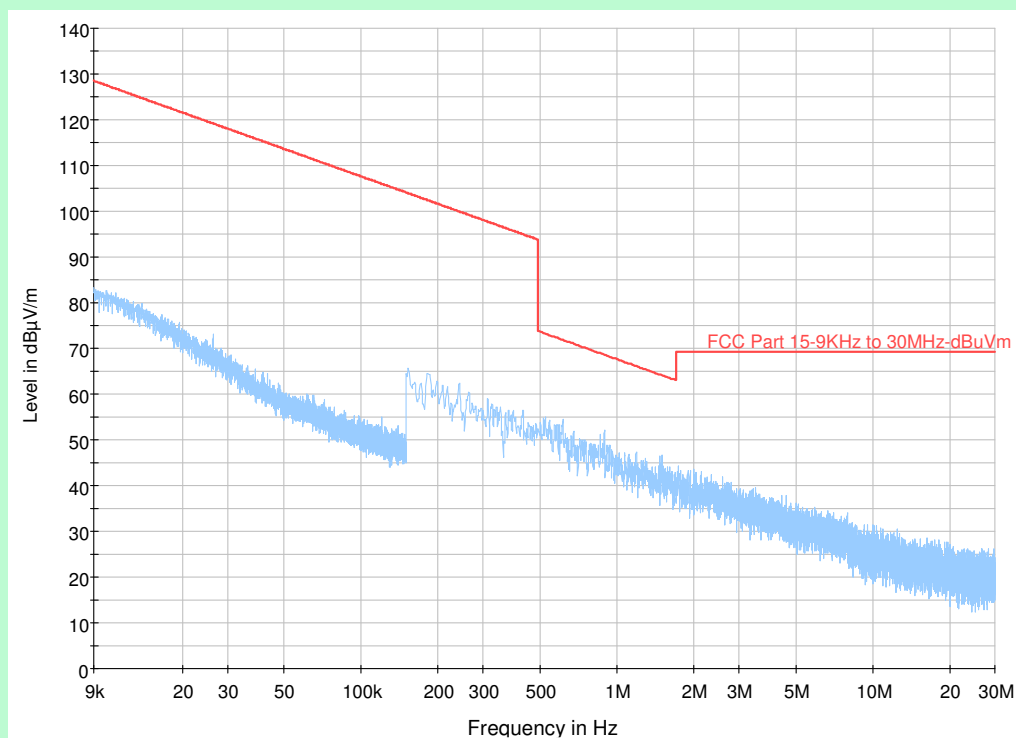
Note : Peak Graph - Parallel

**Antenna-2, Channel 55 (926.45 MHz)**

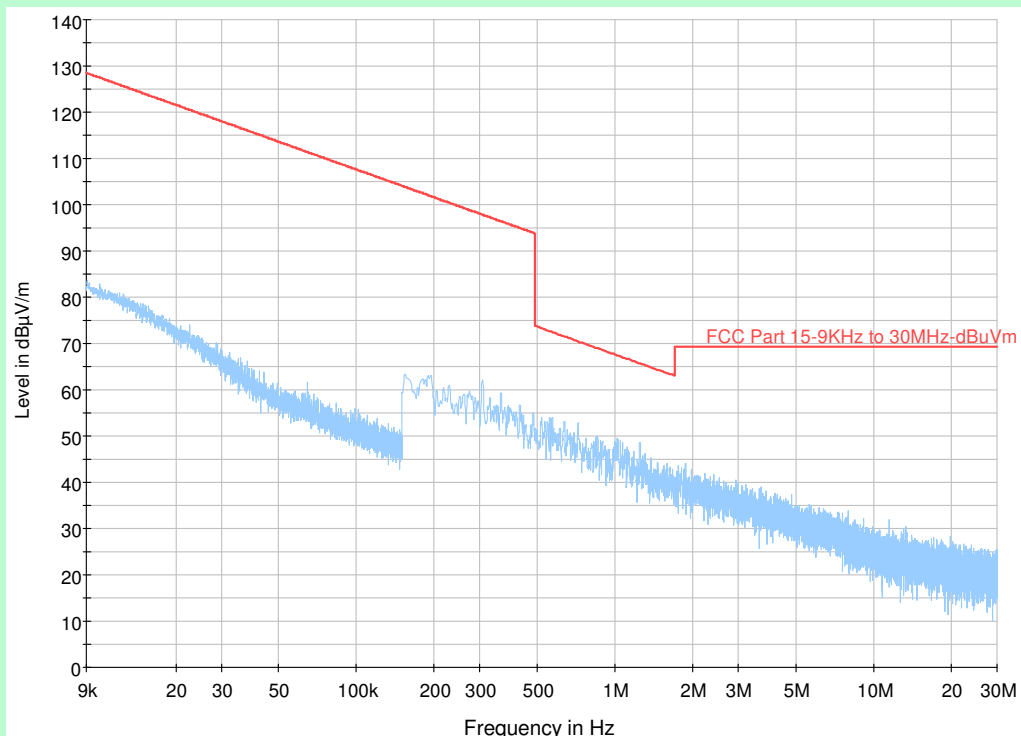
Note : Peak Graph - Perpendicular

**Antenna-3, Channel 1 (903.55 MHz)**

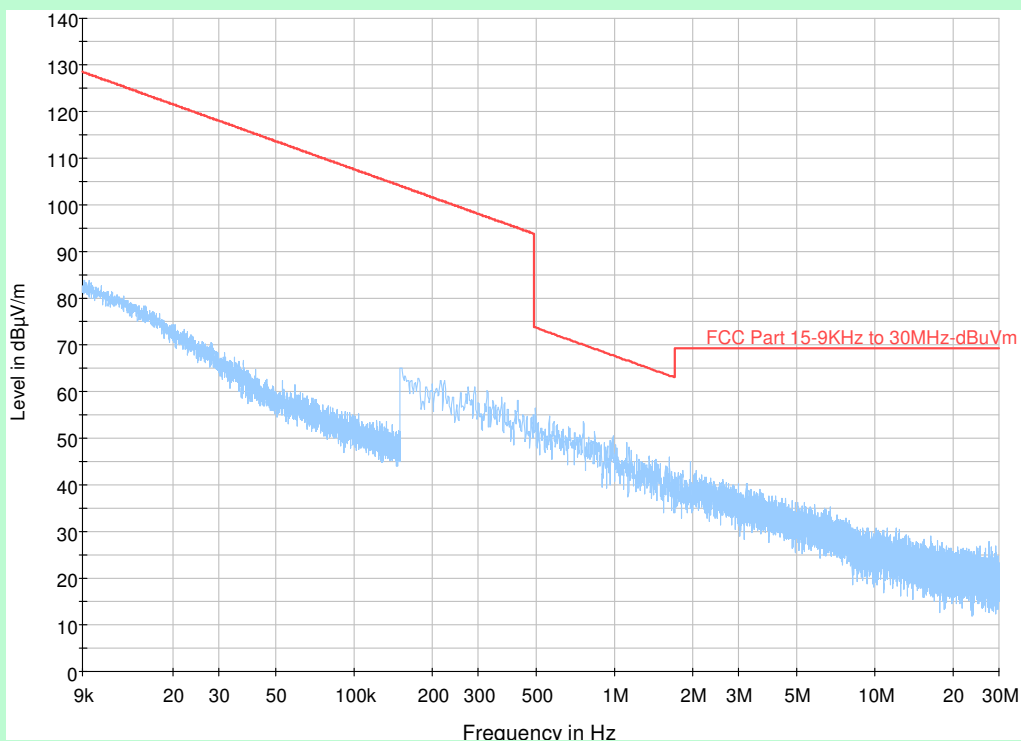
Note : Peak Graph - Parallel

**Antenna-3, Channel 1 (903.55 MHz)**

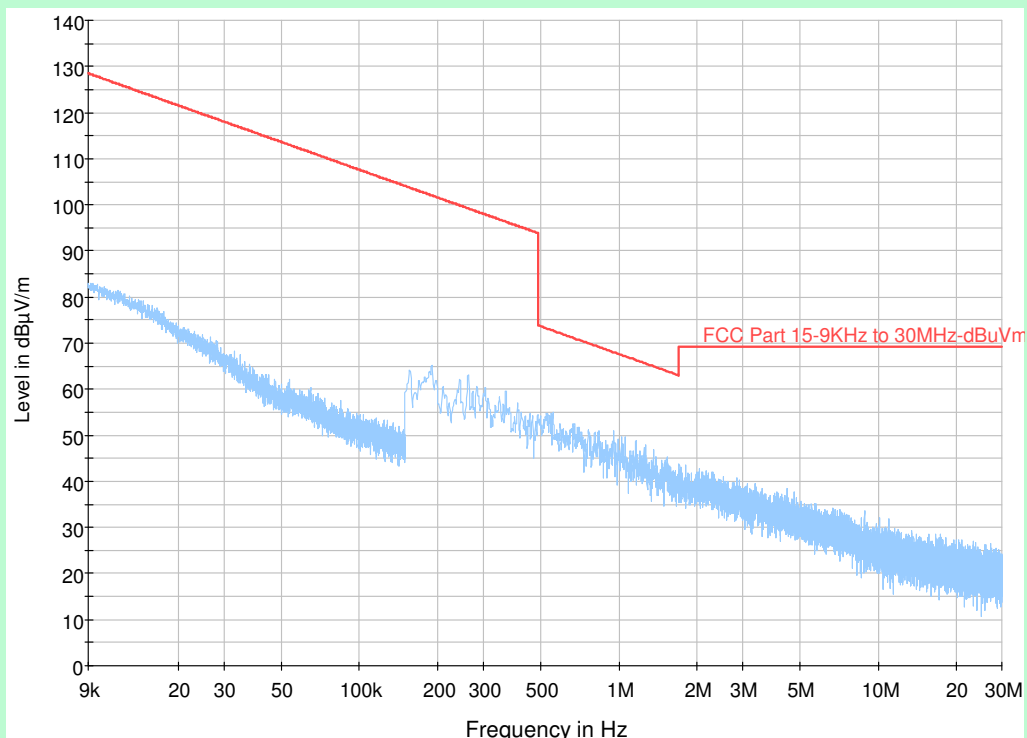
Note : Peak Graph - Perpendicular

**Antenna-3, Channel 28 (916 MHz)**

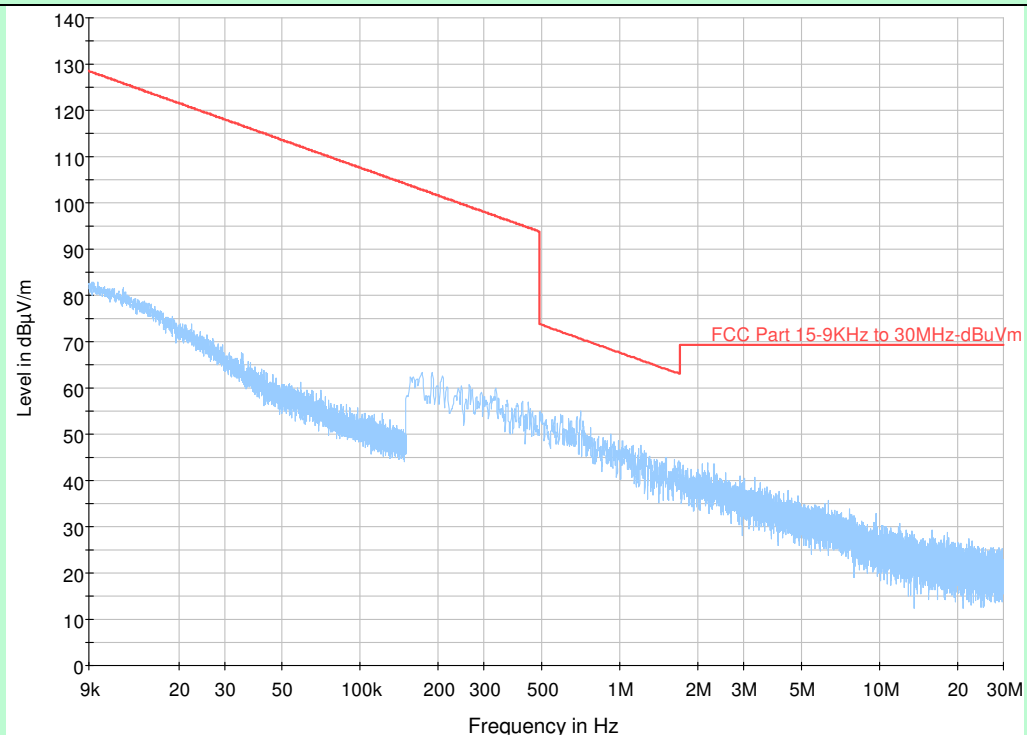
Note : Peak Graph - Parallel

**Antenna-3, Channel 28 (916 MHz)**

Note : Peak Graph - Perpendicular



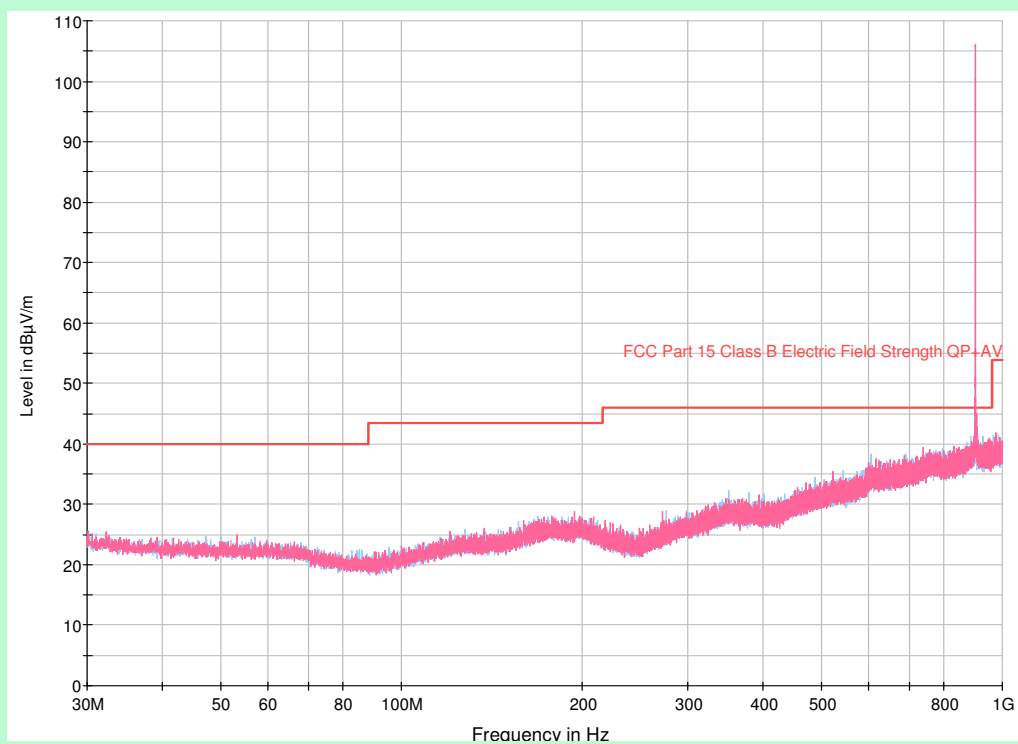
Note : Peak Graph - Parallel



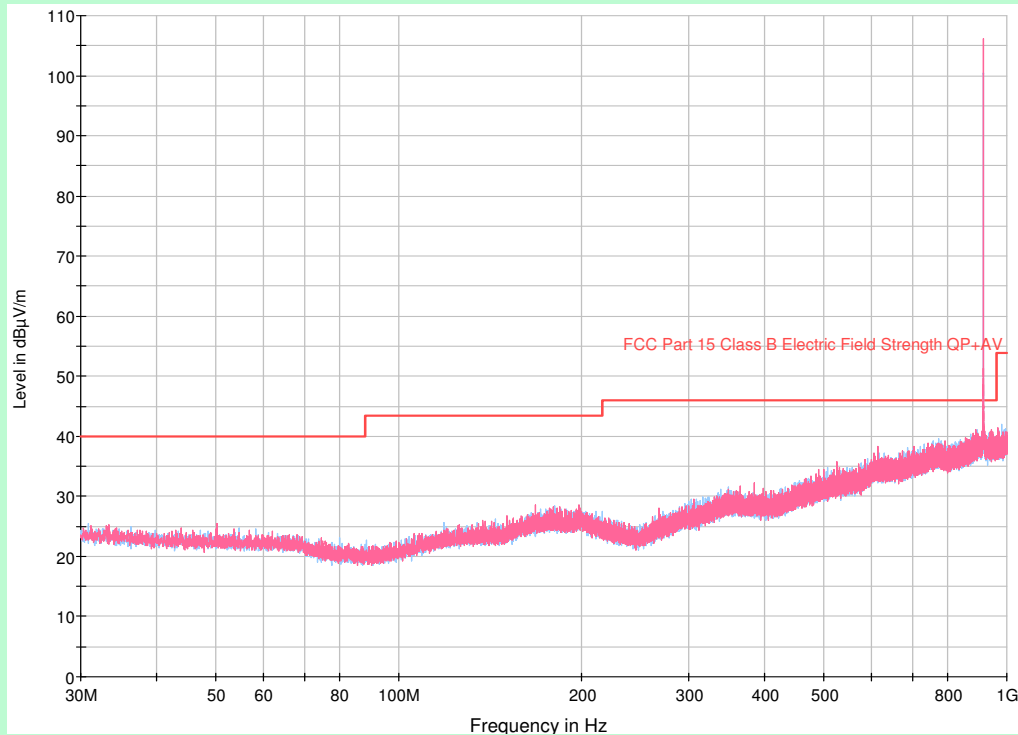
Note : Peak Graph - Perpendicular

TEST RESULT – 9 KHz to 30 MHz									
Chann el	Channel Frequency	Measured Spurious	Quasi Peak	Height	Ant Pol	Azimuth	Margin	Limit @ 3m Distance	Resul ts
#	MHz	MHz	dBµV/m	cm	Parallel / Perpendicul ar	deg	dB	dBµV/m	
No emissions found									
Note : Measured Field Strength –dBuV/m = Receiver Readings (dBuV) + Antenna Factor (dB/m) + Cable loss (dB)									

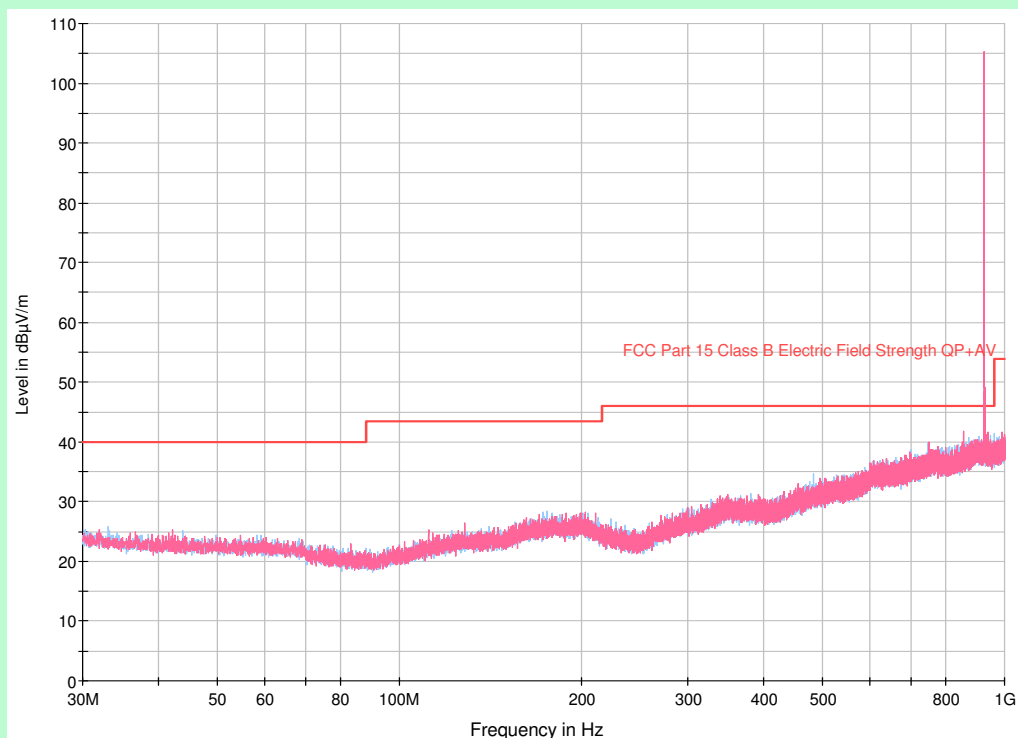
TEST GRAPHS – 30 MHz to 1 GHz

**Antenna-1, Channel 1 (903.55 MHz)**

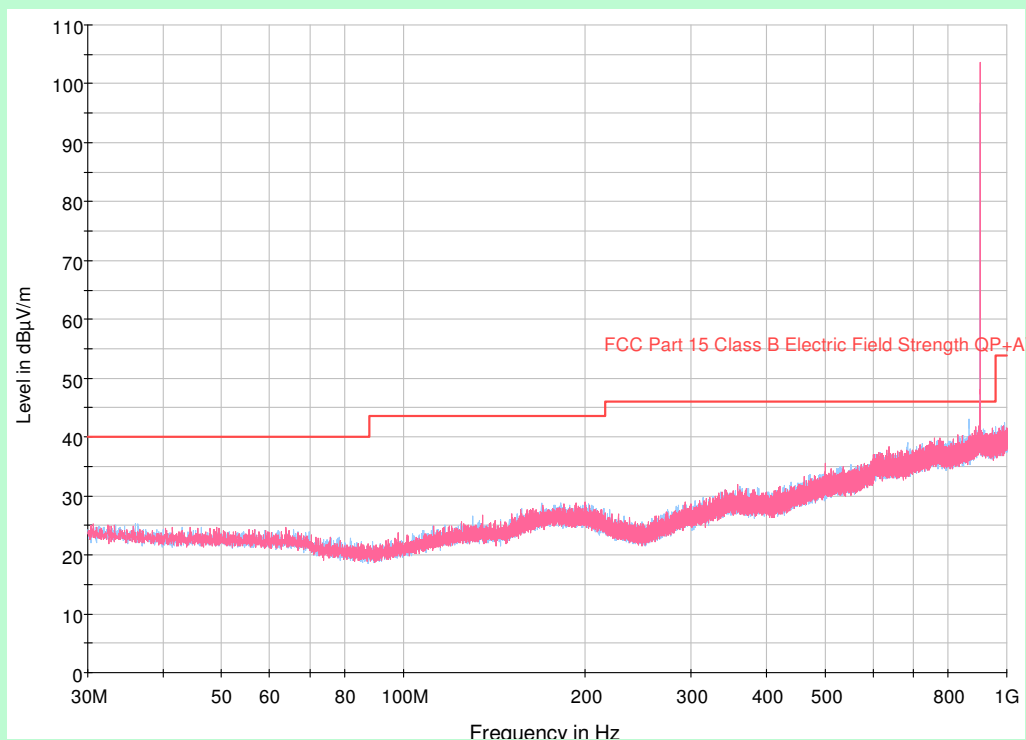
Note : Peak Graph Vertical polarization (Red), Peak Graph Horizontal polarization (Blue)

**Antenna-1, Channel 28 (916 MHz)**

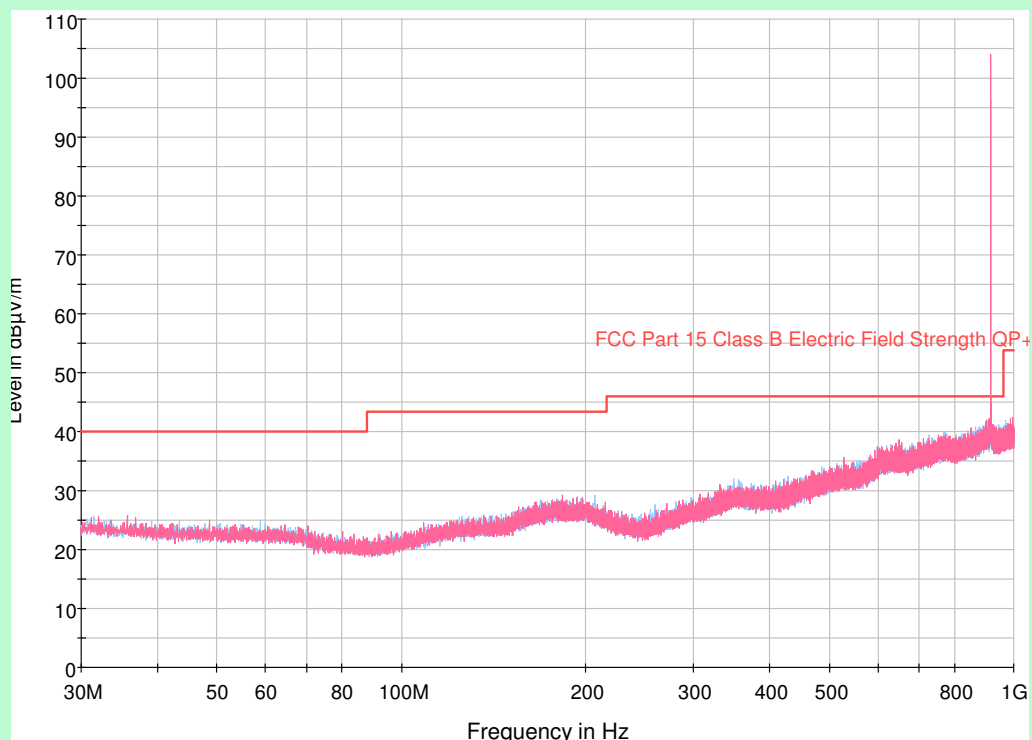
Note : Peak Graph Vertical polarization (Red), Peak Graph Horizontal polarization (Blue)

**Antenna-1, Channel 55 (926.45 MHz)**

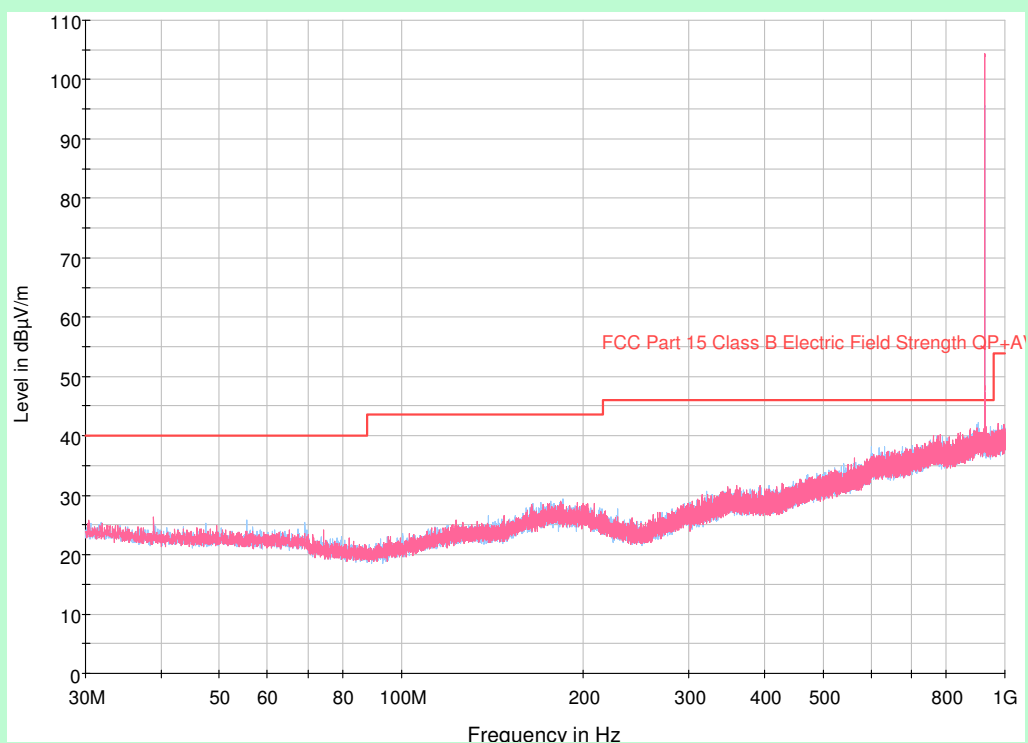
Note : Peak Graph Vertical polarization (Red), Peak Graph Horizontal polarization (Blue)

**Antenna-2, Channel 1 (903.55 MHz)**

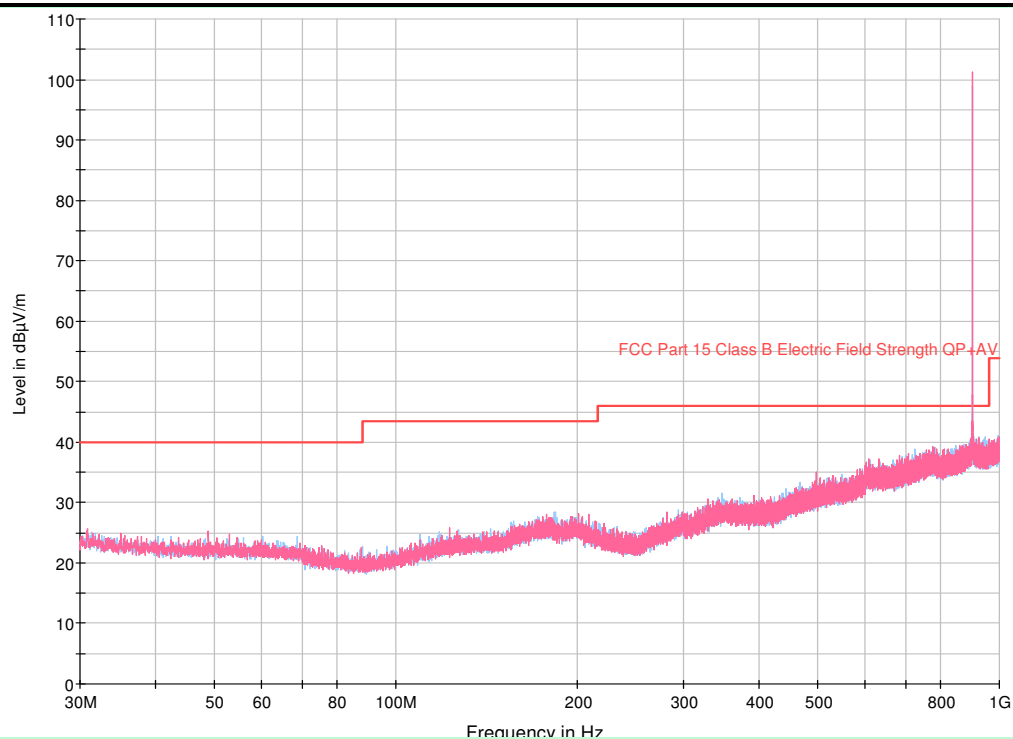
Note : Peak Graph Vertical polarization (Red), Peak Graph Horizontal polarization (Blue)

**Antenna-2, Channel 28 (916 MHz)**

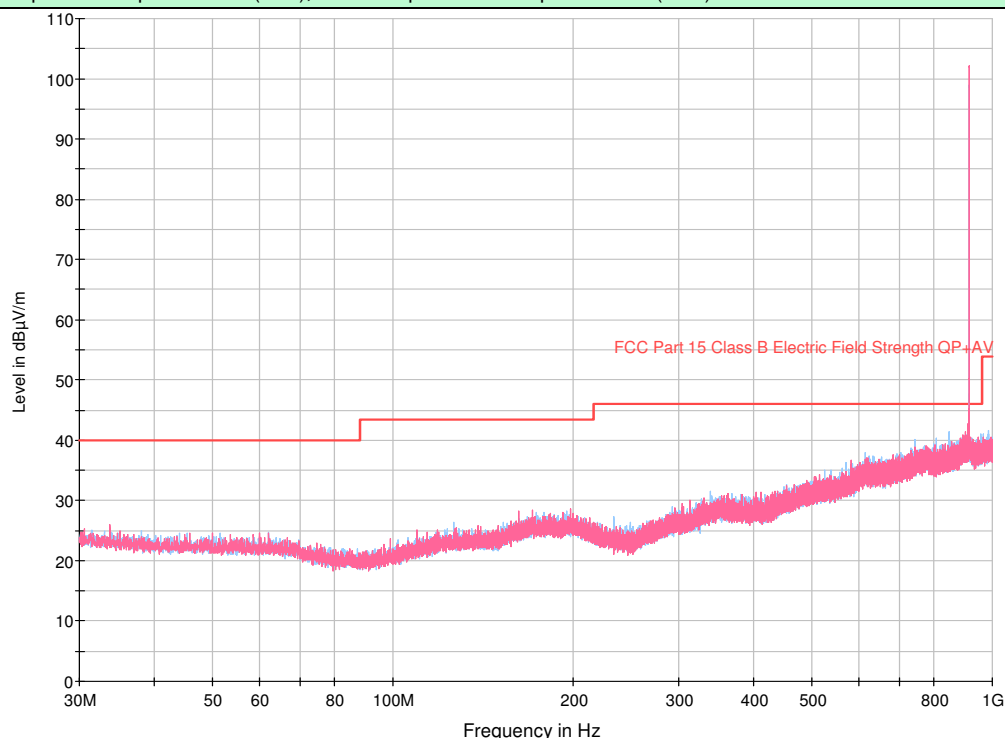
Note : Peak Graph Vertical polarization (Red), Peak Graph Horizontal polarization (Blue)

**Antenna-2, Channel 55 (926.45 MHz)**

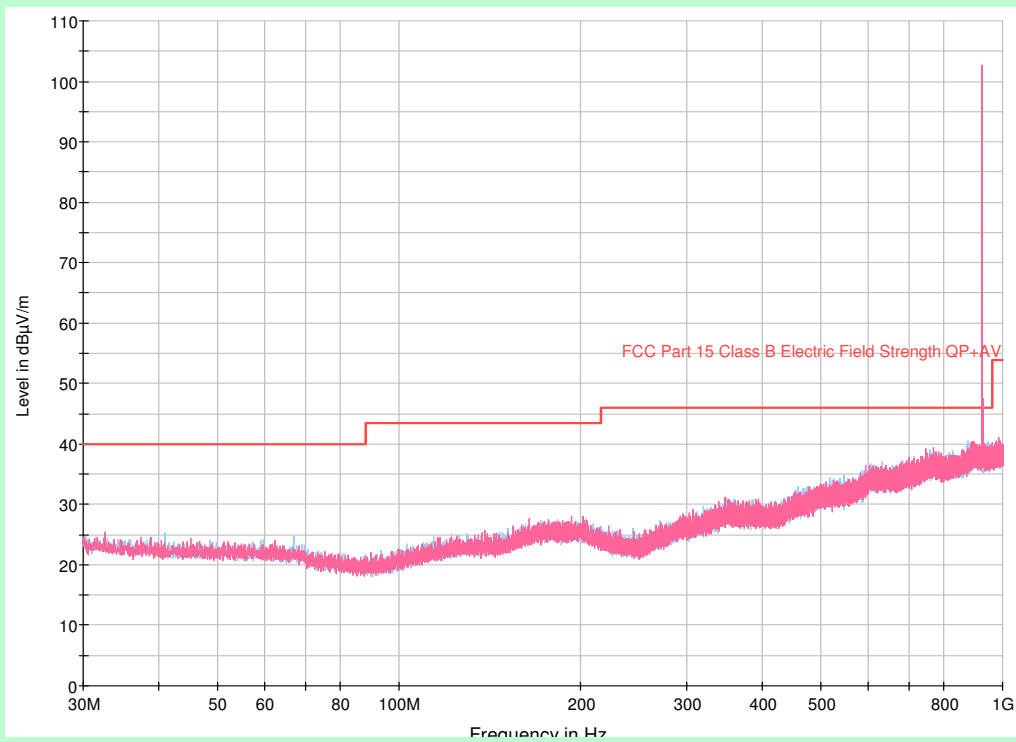
Note : Peak Graph Vertical polarization (Red), Peak Graph Horizontal polarization (Blue)

**Antenna-3, Channel 1 (903.55 MHz)**

Note : Peak Graph Vertical polarization (Red), Peak Graph Horizontal polarization (Blue)

**Antenna-3, Channel 28 (916 MHz)**

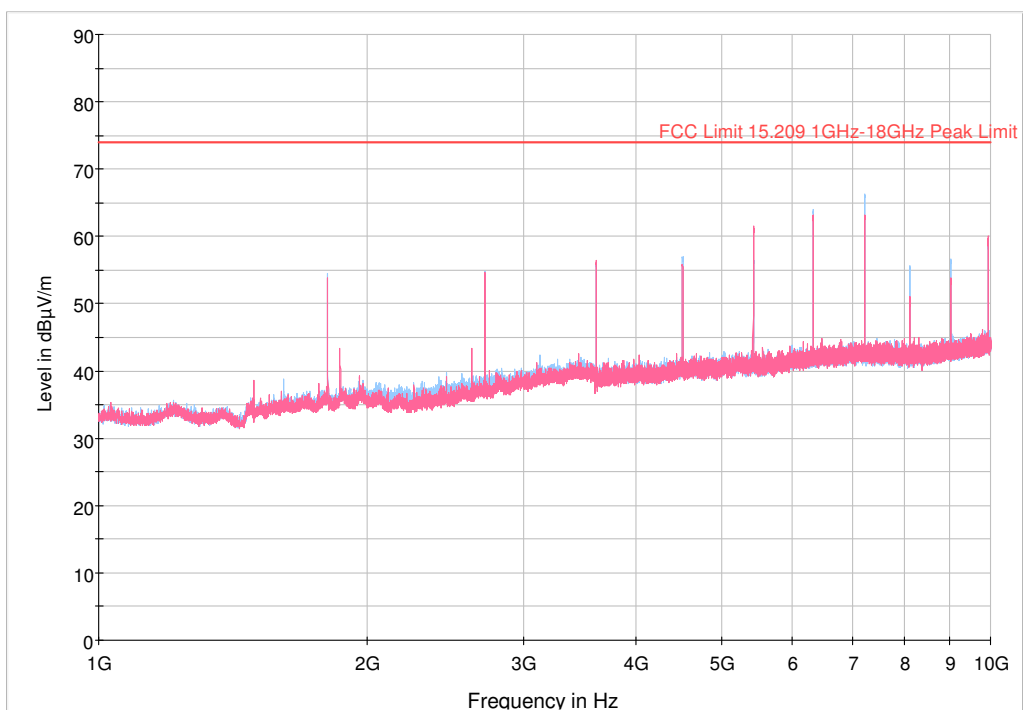
Note : Peak Graph Vertical polarization (Red), Peak Graph Horizontal polarization (Blue)

**Antenna-3, Channel 55 (926.45 MHz)**

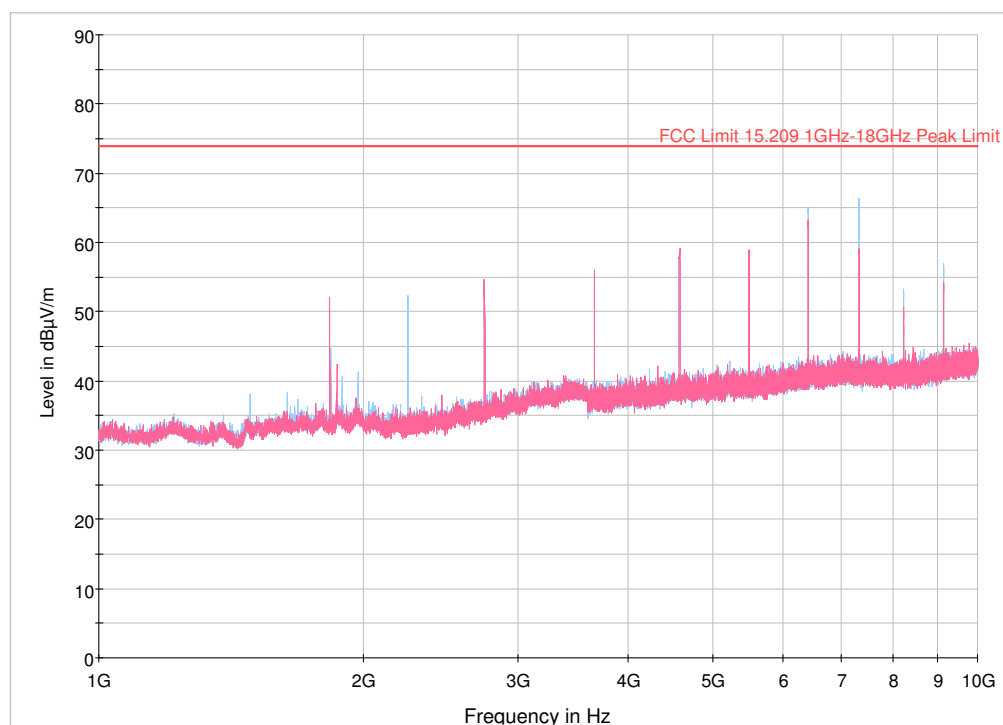
Note : Peak Graph Vertical (Red), Peak Graph Horizontal polarization (Blue)

TEST RESULT – 30 MHz to 1 GHz								
Channel	Measured Spurious	Quasi Peak	Height	Ant Pol	Azimuth	Margin	Limit @ 3m Distance	Results
#	MHz	dBµV/m	Cm	H / V	deg	dB	dBµV/m	
Antenna – 1								
CH-1	738.33	32.29	100.00	V	55.00	13.71	46.00	Pass
CH-1	758.37	32.74	300.00	V	270.00	13.26	46.00	Pass
CH-1	885.38	34.10	300.00	H	330.00	11.90	46.00	Pass
CH-1	888.71	34.13	300.00	V	191.00	11.87	46.00	Pass
CH-1	903.52	110.69	100.00	V	262.00	-	-	Intentional Frequency
CH-28	772.79	33.08	100.00	H	161.00	12.92	46.00	Pass
CH-28	780.72	32.89	100.00	H	69.00	13.11	46.00	Pass
CH-28	879.24	33.95	100.00	V	184.00	12.05	46.00	Pass
CH-28	888.74	34.26	200.00	V	270.00	11.74	46.00	Pass
CH-28	915.97	111.19	100.00	V	270.00	-	-	Intentional Frequency
CH-55	746.25	32.49	200.00	H	108.00	13.51	46.00	Pass
CH-55	750.26	32.64	100.00	V	248.00	13.36	46.00	Pass
CH-55	856.02	33.22	300.00	V	259.00	12.78	46.00	Pass
CH-55	870.86	33.53	300.00	H	148.00	12.47	46.00	Pass
CH-55	926.51	110.08	100.00	V	303.00	-	-	Intentional Frequency
Antenna-2								
CH-1	758.18	33.25	300.00	V	87.00	12.75	46.00	Pass
CH-1	774.25	33.56	200.00	V	332.00	12.44	46.00	Pass
CH-1	866.50	34.17	100.00	H	50.00	11.84	46.00	Pass
CH-1	889.42	35.10	100.00	V	242.00	10.90	46.00	Pass
CH-1	903.58	108.56	100.00	V	238.00	-	-	Intentional Frequency
CH-28	768.62	33.34	200.00	H	133.00	12.66	46.00	Pass
CH-28	769.53	33.38	300.00	H	195.00	12.62	46.00	Pass
CH-28	875.90	34.47	100.00	H	58.00	11.53	46.00	Pass
CH-28	889.42	34.97	100.00	H	298.00	11.03	46.00	Pass
CH-28	916.06	108.69	100.00	V	251.00	-	-	Intentional Frequency
CH-55	776.38	33.47	300.00	V	56.00	12.53	46.00	Pass
CH-55	782.91	33.36	300.00	V	137.00	12.64	46.00	Pass
CH-55	876.16	34.47	300.00	V	0.00	11.53	46.00	Pass
CH-55	888.77	34.92	100.00	H	350.00	11.08	46.00	Pass
CH-55	926.51	109.39	100.00	V	240.00	-	-	Intentional Frequency
Antenna – 3								
CH-1	774.77	32.72	300.00	V	226.00	13.28	46.00	Pass
CH-1	777.16	32.69	100.00	H	296.00	13.31	46.00	Pass
CH-1	871.83	33.31	100.00	H	201.00	12.69	46.00	Pass
CH-1	889.32	33.94	100.00	H	278.00	12.06	46.00	Pass
CH-1	903.52	105.82	200.00	V	262.00	-	-	Intentional Frequency
CH-28	744.21	32.23	100.00	H	234.00	13.77	46.00	Pass

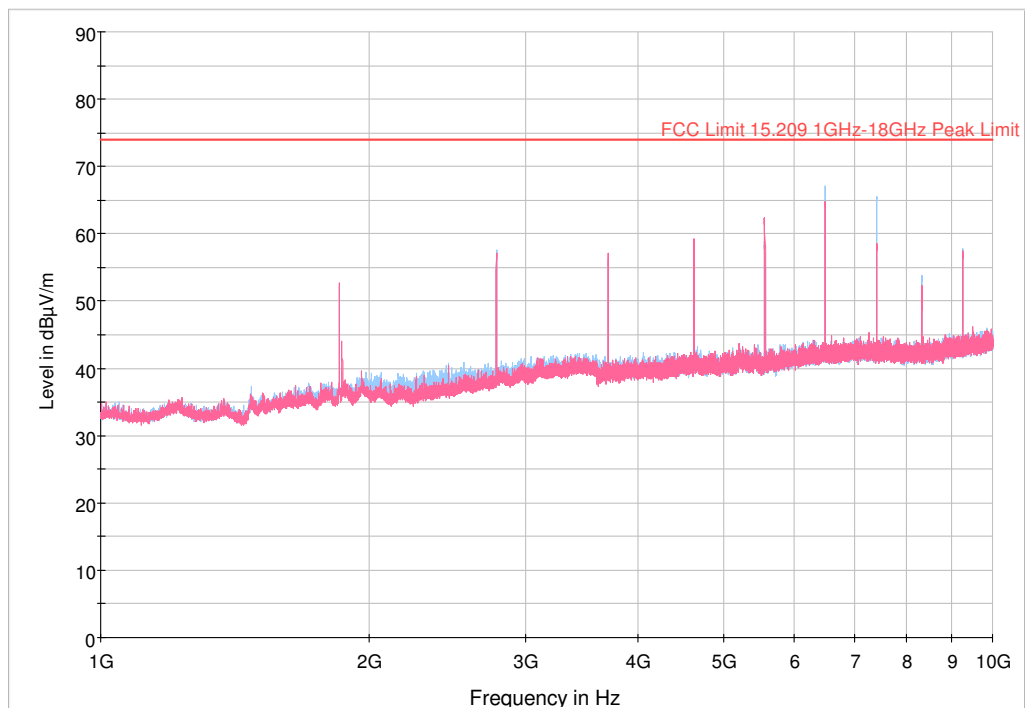
CH-28	774.83	32.79	300.00	V	249.00	13.21	46.00	Pass
CH-28	805.97	32.25	200.00	H	293.00	13.75	46.00	Pass
CH-28	848.55	32.89	100.00	H	190.00	13.11	46.00	Pass
CH-28	915.97	106.80	100.00	V	242.00	-	-	Intentional Frequency
CH-55	747.32	32.13	300.00	V	55.00	13.87	46.00	Pass
CH-55	769.08	32.50	300.00	V	2.00	13.50	46.00	Pass
CH-55	875.81	33.32	100.00	H	38.00	12.68	46.00	Pass
CH-55	887.77	33.87	100.00	V	126.00	12.13	46.00	Pass
CH-55	926.44	106.66	100.00	V	265.00	-	-	Intentional Frequency
NOTE: Measured Field Strength –dBuV/m (9 KHz to 1 GHz) = Receiver Readings (dBuV) + Antenna Factor (dB/m) + Cable loss (dB)								

TEST GRAPHS – 1 GHz to 10 GHz**Antenna-1, Channel 1 (903.55 MHz)**

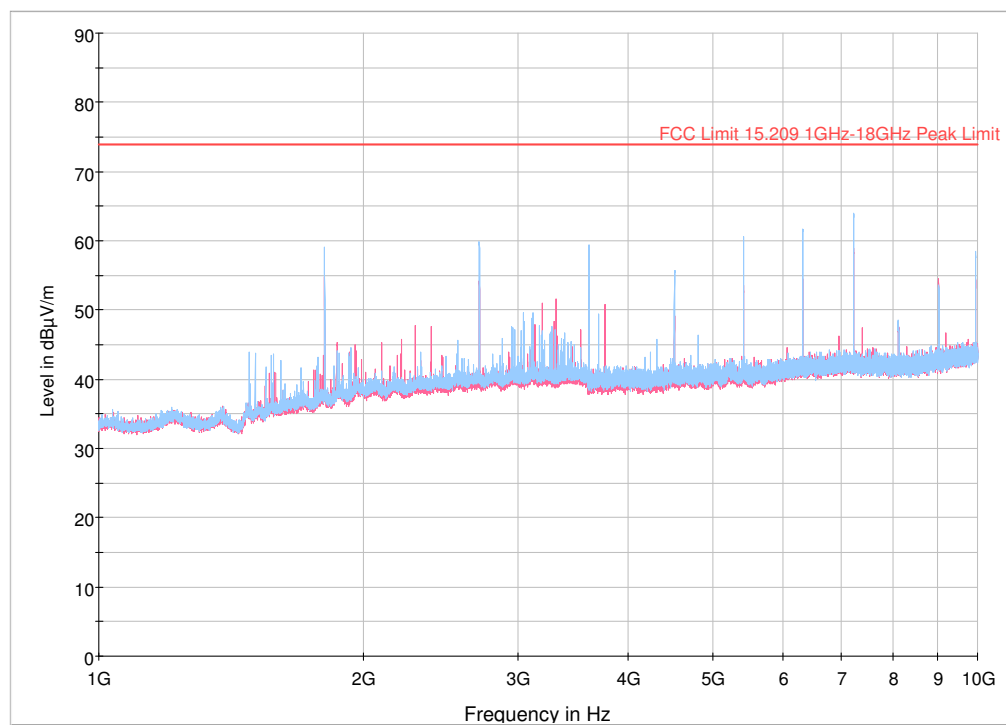
Note : Peak Graph Vertical (Red), Peak Graph Horizontal polarization (Blue)

**Antenna-1, Channel 28 (916 MHz)**

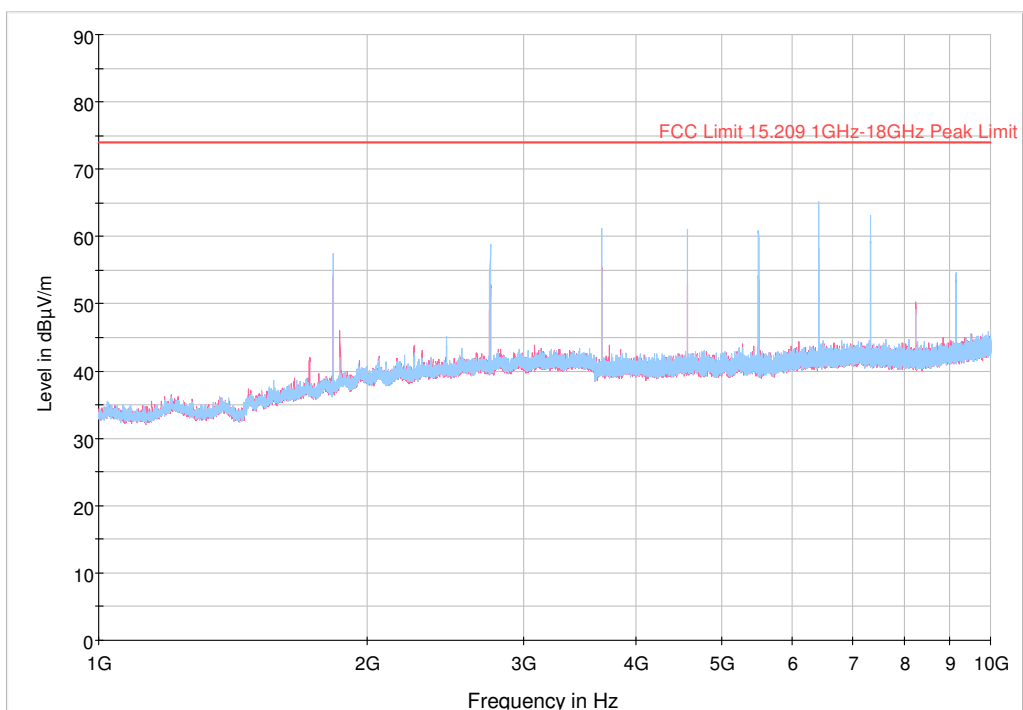
Note : Peak Graph Vertical (Red), Peak Graph Horizontal polarization (Blue)

**Antenna-1, Channel 55 (926.45 MHz)**

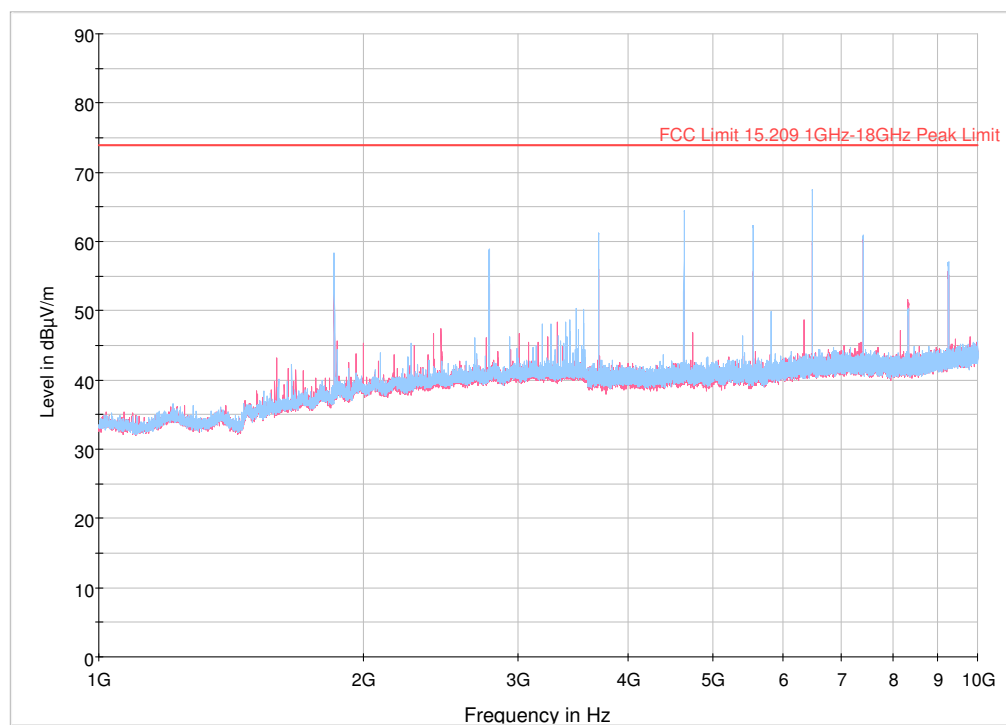
Note : Peak Graph Vertical (Red), Peak Graph Horizontal polarization (Blue)

**Antenna-2, Channel 1 (903.55 MHz)**

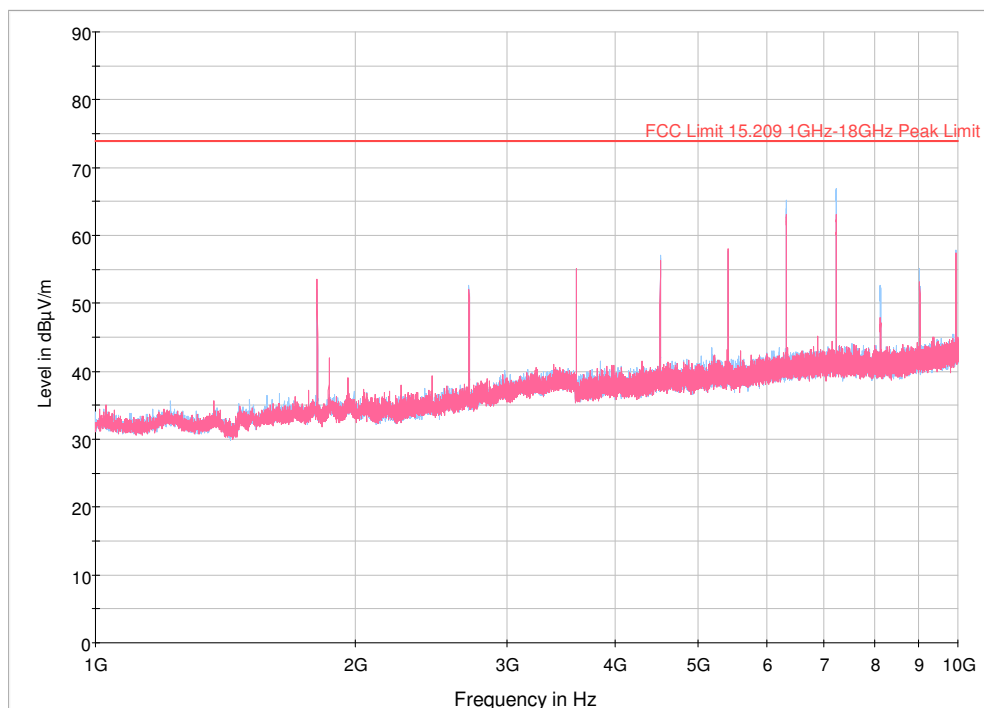
Note : Peak Graph Vertical (Red), Peak Graph Horizontal polarization (Blue)

**Antenna-2, Channel 28 (916 MHz)**

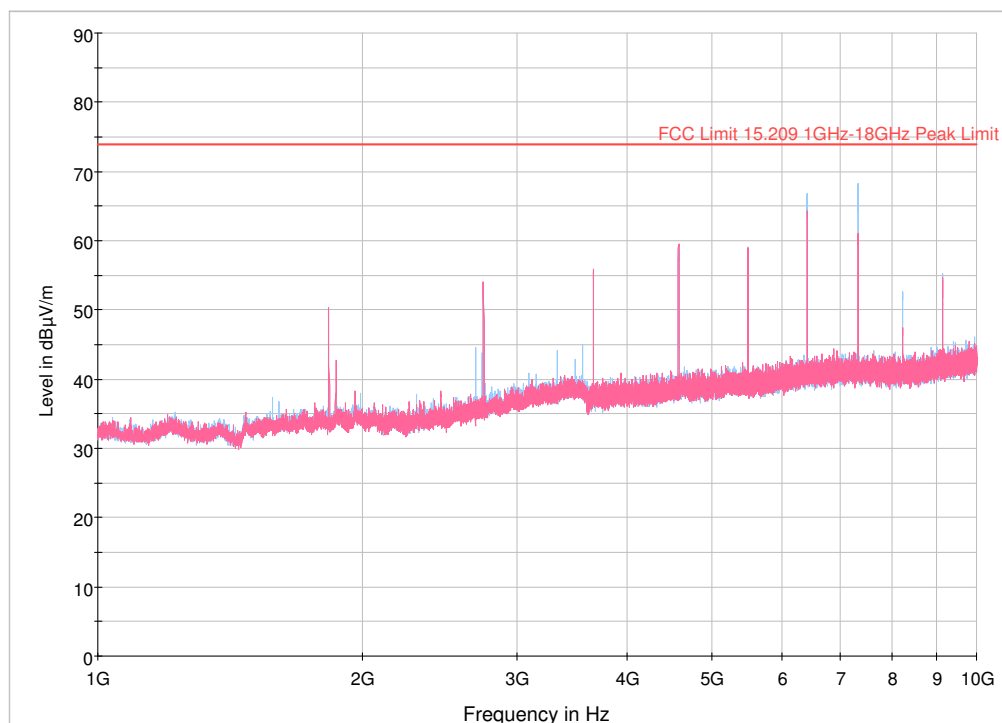
Note : Peak Graph Vertical (Red), Peak Graph Horizontal polarization (Blue)

**Antenna-2, Channel 55 (926.45 MHz)**

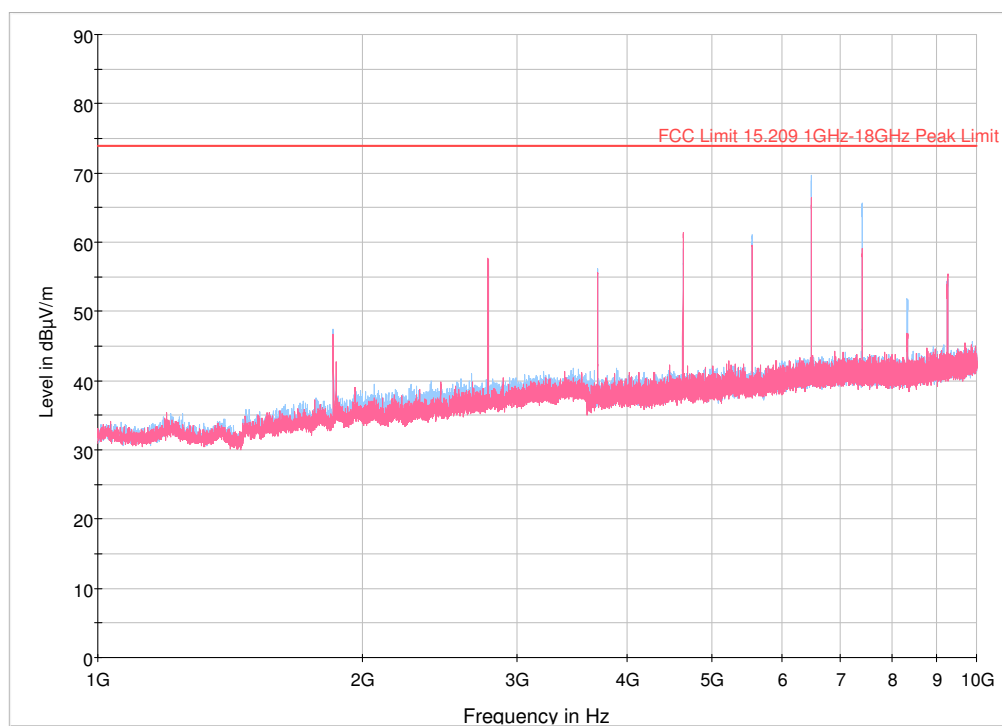
Note : Peak Graph Vertical (Red), Peak Graph Horizontal polarization (Blue)

**Antenna-3, Channel 1 (903.55 MHz)**

Note : Peak Graph Vertical (Red), Peak Graph Horizontal polarization (Blue)

**Antenna-3, Channel 28 (916 MHz)**

Note : Peak Graph Vertical (Red), Peak Graph Horizontal polarization (Blue)

**Antenna-3, Channel 55 (926.45 MHz)**

Note : Peak Graph Vertical (Red), Peak Graph Horizontal polarization (Blue)

TEST RESULT – 1 GHz to 10 GHz								RESTRICTED BAND – PEAK & AVERAGE			
Channel	Frequency	Measured Field Strength Peak	Height	Ant Pol	Azimuth	Peak Margin	Peak Limit	Calculated Average Reading [Peak – Duty cycle]	Average Limit	Average Margin	Result
#	MHz	dBµV/m	cm	H / V	deg	dB	dBµV/m	dBµV/m	dBµV/m	dBµV/m	
Antenna – 1											
CH-1	2710.60	54.81	100	H	158	19.19	74.00	36.74	54.00	17.26	PASS
CH-1	3614.50	56.40	100	V	225	17.60	74.00	38.33	54.00	15.67	PASS
CH-1	4517.80	56.87	100	H	125	17.13	74.00	38.80	54.00	15.20	PASS
CH-1	5421.10	61.45	100	V	227	12.55	74.00	43.38	54.00	10.62	PASS
CH-1	8132.80	55.62	250	H	228	18.38	74.00	37.55	54.00	16.45	PASS
CH-1	9036.70	56.62	200	H	229	17.38	74.00	38.55	54.00	15.45	PASS
CH-28	2250.70	52.40	250	H	264	21.60	74.00	34.33	54.00	19.67	PASS
CH-28	2747.80	54.65	100	V	120	19.35	74.00	36.58	54.00	17.42	PASS
CH-28	3663.70	56.00	100	V	168	18.00	74.00	37.93	54.00	16.07	PASS
CH-28	4580.80	59.09	100	V	120	14.91	74.00	41.02	54.00	12.98	PASS
CH-28	7327.60	66.29	200	H	120	7.71	74.00	48.22	54.00	5.78	PASS
CH-28	8243.50	53.28	200	H	96	20.72	74.00	35.21	54.00	18.79	PASS
CH-28	9161.20	56.95	200	H	144	17.05	74.00	38.88	54.00	15.12	PASS
CH-55	2779.30	57.53	100	H	234	16.47	74.00	39.46	54.00	14.54	PASS
CH-55	3705.70	57.04	250	V	166	16.96	74.00	38.97	54.00	15.03	PASS
CH-55	4631.80	59.28	100	V	123	14.72	74.00	41.21	54.00	12.79	PASS
CH-55	7411.00	65.49	200	H	121	8.51	74.00	47.42	54.00	6.58	PASS
CH-55	8338.30	53.76	200	H	116	20.24	74.00	35.69	54.00	18.31	PASS
Antenna – 2											
CH-1	2710.30	59.79	250	H	190	14.21	74.00	41.72	54.00	12.28	PASS
CH-1	3613.90	59.39	200	H	203	14.61	74.00	41.32	54.00	12.68	PASS
CH-1	4518.40	55.75	200	H	125	18.25	74.00	37.68	54.00	16.32	PASS
CH-1	5422.00	60.56	200	H	245	13.44	74.00	42.49	54.00	11.51	PASS
CH-1	9035.20	54.46	200	V	286	19.54	74.00	36.39	54.00	17.61	PASS
CH-28	2748.10	58.80	250	H	194	15.20	74.00	40.73	54.00	13.27	PASS
CH-28	3663.70	61.27	200	H	207	12.73	74.00	43.20	54.00	10.80	PASS
CH-28	4579.90	61.08	200	H	148	12.92	74.00	43.01	54.00	10.99	PASS
CH-28	7328.20	63.20	150	H	141	10.80	74.00	45.13	54.00	8.87	PASS
CH-28	8245.00	50.17	150	V	197	23.83	74.00	32.10	54.00	21.90	PASS
CH-28	9160.90	54.64	150	H	190	19.36	74.00	36.57	54.00	17.43	PASS
CH-55	2779.60	58.86	250	H	189	15.14	74.00	40.79	54.00	13.21	PASS
CH-55	3705.70	61.25	200	H	209	12.75	74.00	43.18	54.00	10.82	PASS
CH-55	4632.40	64.45	200	H	134	9.55	74.00	46.38	54.00	7.62	PASS
CH-55	7412.20	60.88	250	H	294	13.12	74.00	42.81	54.00	11.19	PASS
CH-55	8337.70	51.64	150	V	191	22.36	74.00	33.57	54.00	20.43	PASS
Antenna – 3											
CH-1	2710.60	52.60	250	H	216	21.40	74.00	34.53	54.00	19.47	PASS
CH-1	3614.20	55.14	250	H	192	18.86	74.00	37.07	54.00	16.93	PASS

CH-1	4517.50	57.10	200	H	216	16.90	74.00	39.03	54.00	14.97	PASS
CH-1	5421.40	57.99	250	V	216	16.01	74.00	39.92	54.00	14.08	PASS
CH-1	8131.30	52.66	200	H	264	21.34	74.00	34.59	54.00	19.41	PASS
CH-1	9034.90	55.06	200	H	216	18.94	74.00	36.99	54.00	17.01	PASS
CH-28	2748.10	54.05	100	V	216	19.95	74.00	35.98	54.00	18.02	PASS
CH-28	2860.30	53.87	100	H	336	20.13	74.00	35.80	54.00	18.20	PASS
CH-28	3664.00	55.83	250	V	168	18.17	74.00	37.76	54.00	16.24	PASS
CH-28	4579.90	59.52	250	V	144	14.48	74.00	41.45	54.00	12.55	PASS
CH-28	7328.80	68.22	200	H	240	5.78	74.00	50.15	54.00	3.85	PASS
CH-28	8243.50	52.60	200	H	216	21.40	74.00	34.53	54.00	19.47	PASS
CH-28	9159.40	55.32	200	H	216	18.68	74.00	37.25	54.00	16.75	PASS
CH-55	2779.00	57.77	100	V	216	16.23	74.00	39.70	54.00	14.30	PASS
CH-55	3706.00	56.14	250	H	192	17.86	74.00	38.07	54.00	15.93	PASS
CH-55	4632.70	61.45	250	V	192	12.55	74.00	43.38	54.00	10.62	PASS
CH-55	7411.00	65.71	200	H	240	8.29	74.00	47.64	54.00	6.36	PASS
CH-55	8338.30	51.89	200	H	240	22.11	74.00	33.82	54.00	20.18	PASS

Note :

Measured Field Strength –Peak dBuV/m = Receiver Readings (dBuV) + Antenna Factor (dB/m) + Cable loss (dB) + Filter Insertion loss – Ext. Pre amplifier Gain (dB)

Cal. Average Readings(dBuV/m) =Measured Peak(dBuV/m)-Duty Cycle Correction Factor(dB)

Duty Cycle Correction Factor is calculated using the guidelines provided in DA 00-705

Duty Cycle Factor = $20 \times \log(\text{Dwell time} / 100\text{msec})$, Number of Transmission for 100msec: 8, Dwell time per Transmission: 1.56msec
Duty Cycle correction Factor = $20 \log(1.56 \times 8 / 100) = -18.07\text{dB}$

TEST RESULT – 1 GHz to 10 GHz							NON RESTRICTED BAND - PEAK		
Channel	Measured Fundamental	Spurious Emission	Measured Harmonic	Height	Ant Pol	Azimuth	Limit [Fundamental – 20 dB]	Margin	Results
#	dBμV/m	MHz	dBμV/m	cm	H / V	deg	dBuV/m	dB	
Antenna – 1									
CH-1	110.69	1806.70	54.49	150	H	222	90.69	36.20	PASS
CH-1	110.69	6324.40	63.90	250	H	260	90.69	26.79	PASS
CH-1	110.69	7228.00	66.20	250	H	221	90.69	24.49	PASS
CH-1	110.69	9940.30	60.00	150	V	284	90.69	30.69	PASS
CH-28	111.19	1831.90	52.09	100	V	168	91.19	39.10	PASS
CH-28	111.19	5495.50	58.90	100	V	120	91.19	32.29	PASS
CH-28	111.19	6412.00	65.00	250	H	264	91.19	26.19	PASS
CH-55	110.08	1852.60	52.75	100	V	184	90.08	37.33	PASS
CH-55	110.08	1864.90	44.04	200	V	9	90.08	46.04	PASS
CH-55	110.08	5559.10	62.39	100	V	230	90.08	27.69	PASS
CH-55	110.08	6484.90	67.07	250	H	267	90.08	23.01	PASS
CH-55	110.08	9264.40	57.70	200	H	306	90.08	32.38	PASS
Antenna – 2									
CH-1	108.56	1806.70	59.14	200	H	191	88.56	29.42	PASS
CH-1	108.56	3318.40	51.54	100	V	244	88.56	37.02	PASS
CH-1	108.56	6325.00	61.68	250	H	127	88.56	26.88	PASS
CH-1	108.56	7228.00	63.98	150	H	145	88.56	24.58	PASS
CH-1	108.56	9938.50	58.44	200	H	216	88.56	30.12	PASS
CH-28	108.69	1831.90	57.47	250	H	214	88.69	31.22	PASS
CH-28	108.69	1865.50	45.98	100	V	155	88.69	42.71	PASS
CH-28	108.69	5495.80	60.83	200	H	244	88.69	27.86	PASS
CH-28	108.69	6412.60	65.19	200	H	136	88.69	23.50	PASS
CH-55	109.39	1852.60	58.27	100	H	190	89.39	31.12	PASS
CH-55	109.39	3496.30	50.37	100	H	323	89.39	39.02	PASS
CH-55	109.39	5558.20	62.31	200	H	249	89.39	27.08	PASS
CH-55	109.39	6484.60	67.55	150	H	121	89.39	21.84	PASS
CH-55	109.39	9265.60	57.09	150	H	187	89.39	32.30	PASS
Antenna – 3									
CH-1	105.82	1806.70	53.58	100	V	192	85.82	32.24	PASS
CH-1	105.82	6325.60	65.19	200	H	96	85.82	20.63	PASS
CH-1	105.82	7228.90	66.83	200	H	240	85.82	18.99	PASS
CH-1	105.82	9939.10	57.81	200	H	48	85.82	28.01	PASS
CH-28	106.80	1831.90	50.36	100	V	192	86.80	36.44	PASS
CH-28	106.80	5495.80	59.12	200	H	96	86.80	27.68	PASS
CH-28	106.80	6411.70	66.81	200	H	96	86.80	19.99	PASS
CH-55	106.66	1852.60	47.48	100	H	120	86.66	39.18	PASS
CH-55	106.66	1864.90	42.65	200	V	48	86.66	44.01	PASS
CH-55	106.66	5558.20	61.04	200	H	96	86.66	25.62	PASS
CH-55	106.66	6484.90	69.60	200	H	96	86.66	17.06	PASS

CH-55	106.66	9265.60	55.34	200	V	48	86.66	31.32	PASS
<u>Note :</u> Measured Harmonic Field Strength (dBuV/m) = Receiver Readings (dBuV) + Antenna Factor (dB/m) + Cable loss (dB) + Filter Insertion loss - Pre amplifier Gain (dB)									

TEST SETUP PHOTOGRAPHS

Refer Annexure -1
Radiated Emission Test Setup