

# Wireless Gateway

**Model No.: FWSG**

**Date: 22-Dec-2013**

**Report Prepared By:**

Sasikala Subramani

**EMC Test Report**

<b>Report Number</b>	EMC-1259-1
<b>EUT Nomenclature</b>	Wireless Gateway
<b>Sample Identification</b>	Model No. : FWSG Sl. No. : 05303 Software Version : 5.82 Hardware Version : Rev 3
<b>Number of Samples</b>	01
<b>Date of receipt of Sample</b>	26-08-2013
<b>Condition of Sample on receipt</b>	Good
<b>Client name</b>	Honeywell International Inc.
<b>Client Address</b>	Honeywell Life Safety, 12, Clintonville Road, Northford, Connecticut, USA - 06472
<b>Testing Laboratory</b>	Honeywell Technology Solutions Lab Pvt. Ltd.
<b>Address</b>	RMZ ECOWORLD INFRASTRUCTURE PVT. LTD., (Formerly Adarsh Prime Projects Pvt. Ltd., SEZ). Survey # 19/2, Devarabisanahalli Village, Varthur Hobli, Bangalore East Taluk, Bangalore – 560103
<b>Test Dates</b>	26-Aug-2013 to 16-Dec-2013
<b>Applicable Standard</b>	FCC Part 15 Subpart C
<b>Test Results</b>	PASS

Prepared By: Technical Lead Name : Sasikala Subramani  Signature:  Date : 23-Dec-2013	Reviewed By: Project Lead Name : Loganathan Joghjee  Signature:  Date : 23-Dec-2013
Authorized By: Quality Manager Name : Prasanna Kumar BT  Signature:  Date : 23-Dec-2013	Authorized By: Lab Manager Name : Ananth Krishna  Signature:  Date : 23-Dec-2013
<i>This Report relates to the above mentioned test sample only. Without the approval of Lab manager, this report shall not be reproduced except in full.</i>	

TEST SUMMARY						
#	Name	Specification	Test Method	Pass	Fail	NA
<b>FHSS</b>						
1	20dB Bandwidth	FCC Part 15.247	DA 00-705	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Maximum Peak Output Power	FCC Part 15.247	DA 00-705	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Carrier Frequency Separation	FCC Part 15.247	DA 00-705	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Number of Hopping Frequencies	FCC Part 15.247	DA 00-705	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Band-edge Compliance	FCC Part 15.247	DA 00-705	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Time of Occupancy (Dwell Time)	FCC Part 15.247	DA 00-705	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Spurious RF Conducted Emissions	FCC Part 15.247	DA 00-705	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	Spurious Radiated Emissions	FCC Part 15.247 and 15.209	DA 00-705	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>DTS</b>						
1	DTS 6dB Bandwidth	FCC Part 15.247	KDB 558074	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Maximum Peak Output Power	FCC Part 15.247	KDB 558074	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Maximum Power Spectral Density	FCC Part 15.247	KDB 558074	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Band-edge Conducted Emissions	FCC Part 15.247	KDB 558074	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Radiated Spurious Emissions	FCC Part 15.247 and 15.209	KDB 558074	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels has been estimated for tests performed on the EUT as specified in CISPR 16-4

The Expanded measurement uncertainty (K=2) is provided below

#	Name	Value
1	20dB and 6dB bandwidth	1.4dB
2	Maximum Peak Output Power	1.4dB
3	Maximum Power Spectral Density	1.4dB
4	Band-edge Emissions	1.4dB
5	Spurious RF Conducted Emissions	1.4dB
6	Radiated Spurious Emissions	4.9dB
7	Radiated Spurious Emissions	6.3dB

## 1 PRODUCT DETAILS

### PRODUCT OPERATION AND INTENDED USE

In Wireless fire system, this device acts as a bridge between fire alarm control panels and wireless fire devices. All wireless fire devices communicate with the Gateway over the wireless network formed by the devices and the Gateway. Gateway is powered by either SLC loop or from external 24Vdc UL listed power supply. It uses Flash Scan protocol on the SLC to communicate with the panel and a proprietary wireless protocol to communicate with wireless fire sensor network.

### RATINGS AND SYSTEM DETAILS

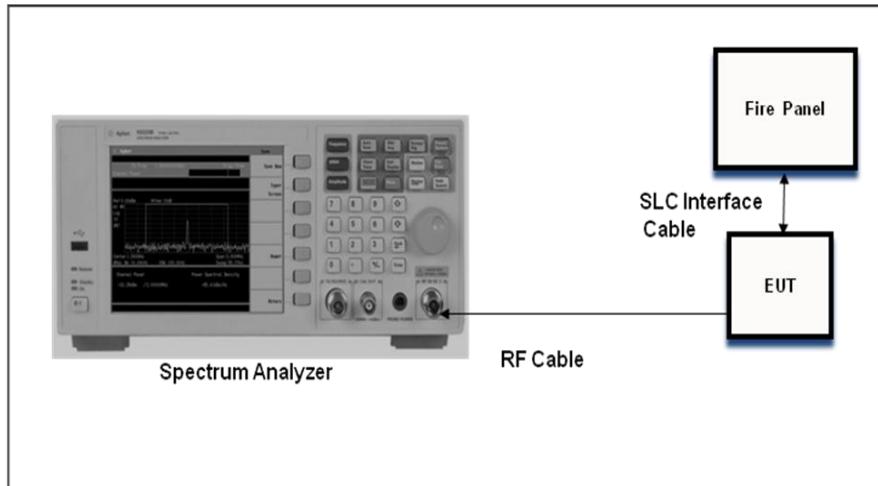
<b>Operating Frequency</b>	902MHz to 928MHz
<b>Number of Channels</b>	DTS :6 FHSS :52
<b>Channel Bandwidth (20dB)</b>	DTS :1MHz FHSS :320 KHz
<b>Transmitted Power</b>	DTS :12dBm & 2dBm FHSS :17dBm
<b>Modulation Type</b>	FSK
<b>Data Rate</b>	DTS : 300Kbps FHSS :150Kbps
<b>Antenna Type</b>	Inverted F Patch Antenna
<b>No. of Antenna</b>	4
<b>Antenna Gain</b>	3dBi
<b>Supply Voltage and Current</b>	24V, 24mA
<b>Dimensions (Diameter x Height)</b>	193 mm x 46mm
<b>Environmental Conditions</b>	Operating Temperature :0°C to 49°C Storage Temperature : -10°C to 60°C Humidity :10% to 93% RH

<b>TEST CONFIGURATION</b>	
<b>Config #</b>	<b>Description</b>
DTS	EUT is Powered by SLC interface line from Fire Panel. EUT Debug port (UART) is connected to Laptop through USB to UART converter cable. EUT is configured to the respective operating mode through HyperTerminal. Antenna 1 is selected for the test as this is the only transmitting antenna in the field.
FHSS	EUT is Powered by SLC interface line from Fire Panel. EUT Debug port (UART) is connected to Laptop through USB to UART converter cable. EUT is configured to the respective operating mode through HyperTerminal. Antenna 1 is selected for the test as this is the only transmitting antenna in the field.

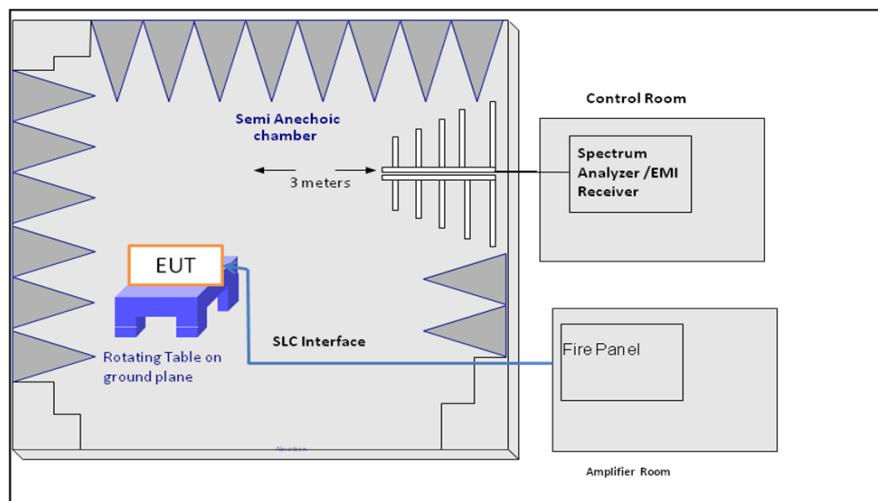
<b>OPERATING MODES</b>	
<b>Mode #</b>	<b>Description</b>
DTS	Pulsed Transmission at DTS channels at the following frequencies Channel 1 : 902.875MHz Channel 2 : 908.425MHz Channel 3 : 914.325MHz Channel 4 : 915.325MHz Channel 5 : 921.575MHz Channel 6 : 927.125MHz
FHSS	Continuous Transmission at FHSS channels at the following frequencies Channel 1 : 903.55MHz Channel 27 : 916.35MHz Channel 52 : 926.45MHz

<b>INPUT AND OUTPUT CABLES</b>					
<b>Port #</b>	<b>Name</b>	<b>Port Type</b>	<b>Cable Length</b>	<b>Cable type Shielded/ Unshielded</b>	<b>Comments</b>
1	SLC Interface Cable	Input	5m	Unshielded	
*Note: AC = AC Power Port TP = Telecommunication Ports (eg. Ethernet) N/E = Non-Electrical			DC = DC Power Port DI/ DO = Digital Input/ Output AI/ AO = Analog Input/ Output		

<b>SUPPORT EQUIPMENTS AND ACCESSORIES USED</b>					
<b>#</b>	<b>Item Description</b>	<b>Make</b>	<b>Model</b>	<b>Part No. / Sl. No</b>	<b>Cal Due Date</b>
1	Laptop	DELL	E6400	3351399400	NA
2	USB to UART Cable	FTDI	NA	TTL-232R-3V3	NA
3	Fire Panel	Notifier	NFS-3030	NA	NA

**CONNECTION DIAGRAM AND SETUP DIAGRAM**

Conducted RF Test Setup



Radiated Emission Test Setup

## 2 FHSS CHANNELS

### 2.1 20dB BANDWIDTH

EUT Nomenclature	Wireless Gatewy	Test Report No.	EMC-1259-1
Model No.	FWSG	Serial No.	05303
Test Start Date	20-Oct-2013	Temperature (°C)	23.2
Test End Date	20-Oct-2013	Humidity RH (%)	55.1
Tested By	Loganathan Joghee	Pressure (mbar)	NR
Input Voltage / Freq	24 Vdc		
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		
Test Method	DA 00-705		
Comment			

#### TEST DETAILS

Method	<input checked="" type="checkbox"/> Conducted	<input type="checkbox"/> Radiated
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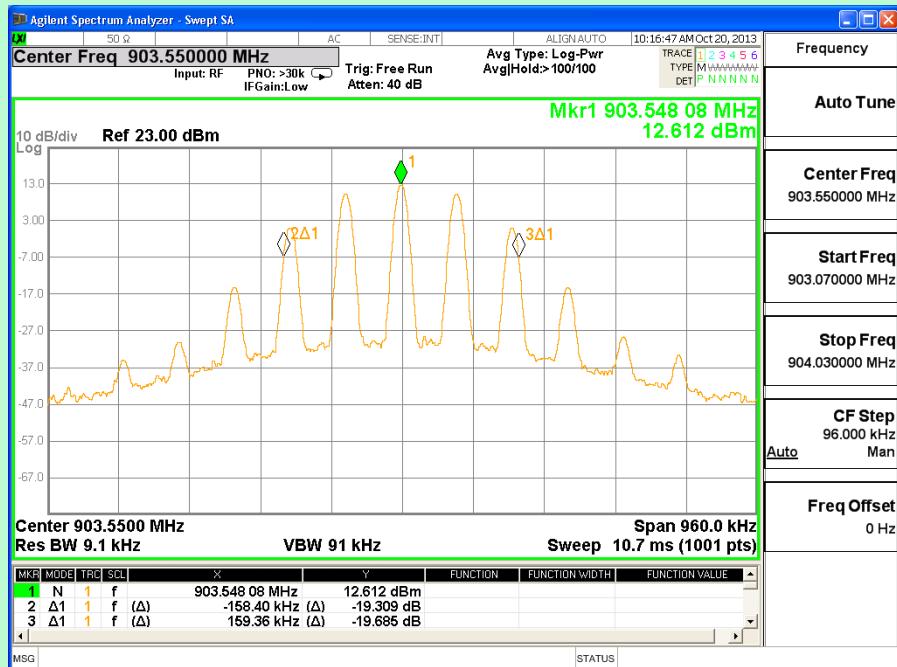
#### TEST PARAMETERS

Antenna Height	NA	Turntable Rotation	NA
Equipment Class	NA	Measurement Distance	NA

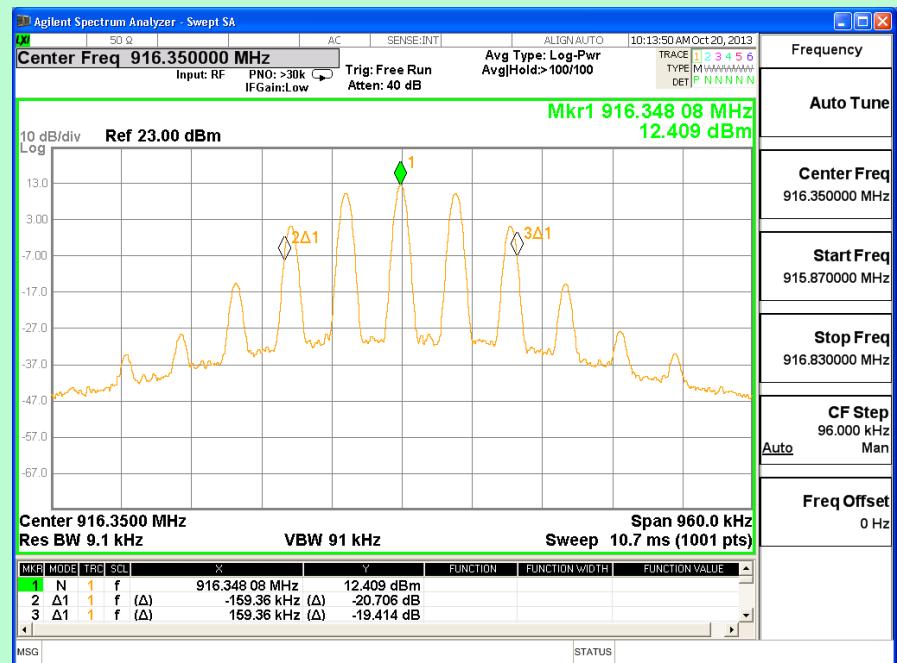
#### TEST EQUIPMENT

Y/N	Equipment	Make	Model	Serial Number	Cal Due Date
Y	Spectrum Analyzer	Agilent	N9010A	MY48031005	28-Nov-2014
Y	RF Cable	Huber- Suhner	SF104/2X11PC3542/500	NA	NA

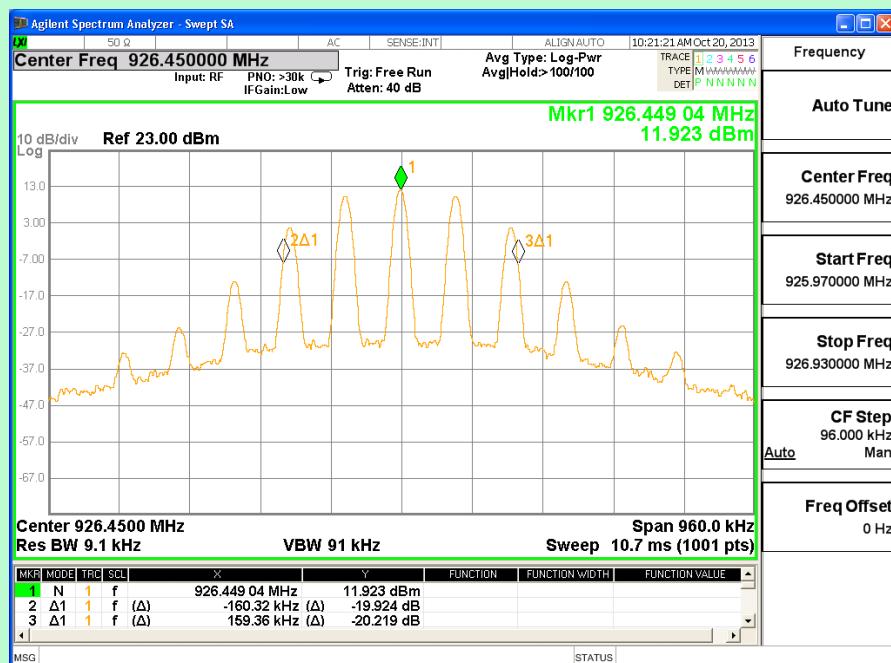
## TEST GRAPHS



Channel 1 (903.55 MHz)



Channel 27 (916.35 MHz)



Channel 54 (926.45M Hz)

### TEST RESULT

Channel	Frequency		Measured Bandwidth	Limit	Result
	#	MHz	KHz	KHz	
1		903.55	317.76	≥250 & ≤500	PASS
27		916.35	318.72	≥250 & ≤500	PASS
52		926.45	319.68	≥250 & ≤500	PASS

### TEST SETUP PHOTOGRAPHS

Refer Annexure-1

Conducted RF Test Setup

**2.2 PEAK OUTPUT POWER**

<b>EUT Nomenclature</b>	Wireless Gatewy	<b>Test Request No.</b>	EMC-1259-1
<b>Model No.</b>	FWSG	<b>Serial No.</b>	05303
<b>Test Start Date</b>	20-Oct-2013	<b>Temperature (°C)</b>	23.2
<b>Test End Date</b>	20-Oct-2013	<b>Humidity RH (%)</b>	55.1
<b>Tested By</b>	Loganathan Joghee	<b>Pressure (mbar)</b>	NR
<b>Input Voltage / Freq</b>	24 Vdc		
<b>Operating Mode</b>	Refer Page 5 for Operating Mode Table		
<b>Test configuration</b>	Refer Page 5 for Test Configuration Table		
<b>Deviation from Std</b>	NA		
<b>Applicable standard</b>	FCC Part 15.247		
<b>Test Method</b>	DA 00-705		
<b>Comment</b>			
<b>TEST DETAILS</b>			
<b>Method</b>	<input checked="" type="checkbox"/> Conducted	<input type="checkbox"/> Radiated	
<b>TEST PARAMETERS</b>			
<b>Antenna Height</b>	NA	<b>Turntable Rotation</b>	NA
<b>Equipment Class</b>	NA	<b>Measurement Distance</b>	NA

**TEST EQUIPMENT**

Y/N	Equipment	Make	Model	Serial Number	Cal Due Date
Y	Spectrum Analyzer	Agilent	N9010A	MY48031005	28-Nov-2014
Y	RF Cable	Huber- Suhner	SF104/2X11PC3542/500	NA	NA

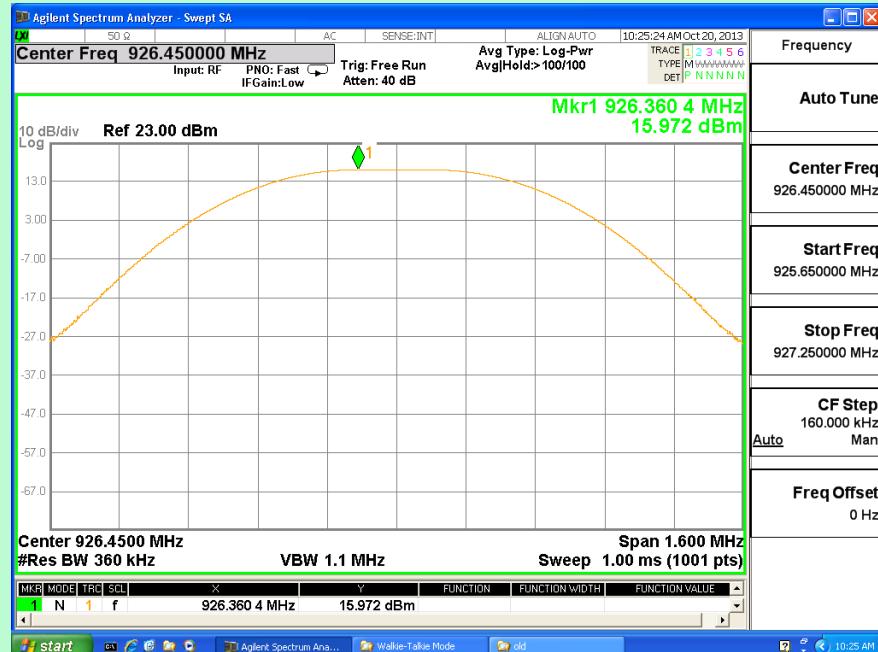
## TEST GRAPHS



### Channel 1 (903.55 MHz)



## Channel (916.35 MHz)



Channel 52 (926.45 MHz)

**TEST RESULT**

Channel	Frequency	Measured Power Level	Cable Loss	Transmitter Power Level	Limit	Result
#	MHz	dBm	dB	dBm	dBm	
1	903.55	16.153	0.5	16.653	≤23.979	PASS
27	916.35	16.068	0.5	16.568	≤23.979	PASS
52	926.45	15.972	0.5	16.472	≤23.979	PASS

Note: Transmitter Output Power = Measured Level (dBm) + Cable Loss (dB)

**TEST SETUP PHOTOGRAPHS**

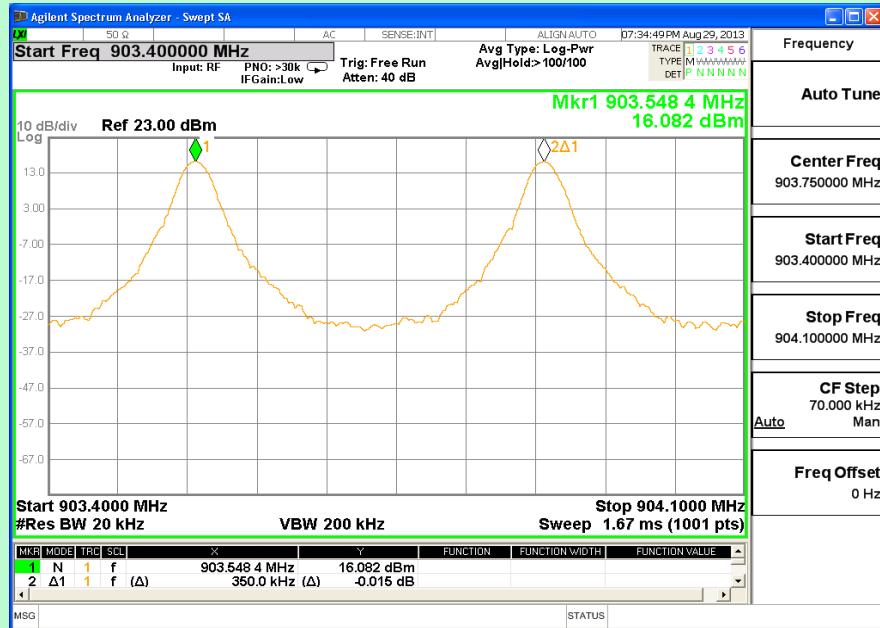
Refer Annexure-1

Conducted RF Test Setup

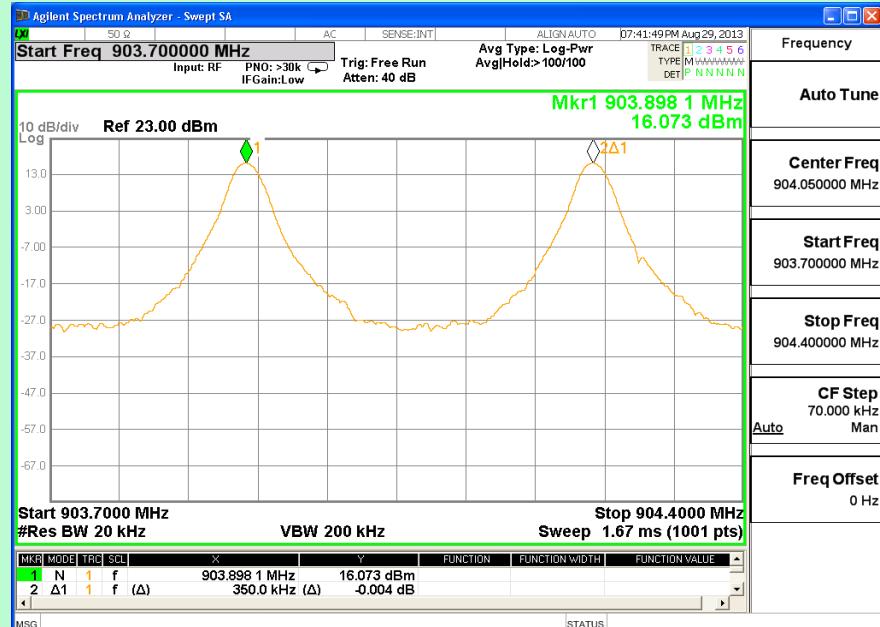
<b>2.3 CARRIER FREQUENCY SEPARATION</b>			
<b>EUT Nomenclature</b>	Wireless Gatewy	<b>Test Request No.</b>	EMC-1259-1
<b>Model No.</b>	FWSG	<b>Serial No.</b>	05303
<b>Test Start Date</b>	29-Aug-2013	<b>Temperature (°C)</b>	23.1
<b>Test End Date</b>	29-Aug-2013	<b>Humidity RH (%)</b>	55.2
<b>Tested By</b>	Loganathan Joghee	<b>Pressure (mbar)</b>	NR
<b>Input Voltage / Freq</b>	24 Vdc		
<b>Operating Mode</b>	Refer Page 5 for Operating Mode Table		
<b>Test configuration</b>	Refer Page 5 for Test Configuration Table		
<b>Deviation from Std</b>	NA		
<b>Applicable standard</b>	FCC Part 15.247		
<b>Test Method</b>	DA 00-705		
<b>Comment</b>			
<b>TEST DETAILS</b>			
<b>Method</b>	<input checked="" type="checkbox"/> Conducted	<input type="checkbox"/> Radiated	
<b>TEST PARAMETERS</b>			
<b>Antenna Height</b>	NA	<b>Turntable Rotation</b>	NA
<b>Equipment Class</b>	NA	<b>Measurement Distance</b>	NA

<b>TEST EQUIPMENT</b>					
<b>Y/N</b>	<b>Equipment</b>	<b>Make</b>	<b>Model</b>	<b>Serial Number</b>	<b>Cal Due Date</b>
Y	Spectrum Analyzer	Agilent	N9010A	MY48031005	28-Nov-2014
Y	RF Cable	Huber- Suhner	SF104/2X11PC3542/500	NA	NA

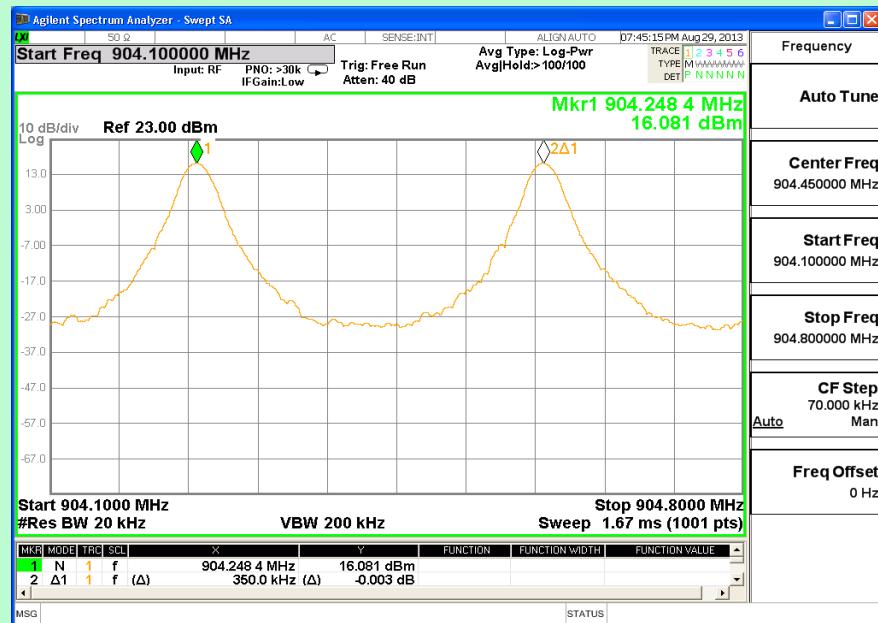
## TEST GRAPHS



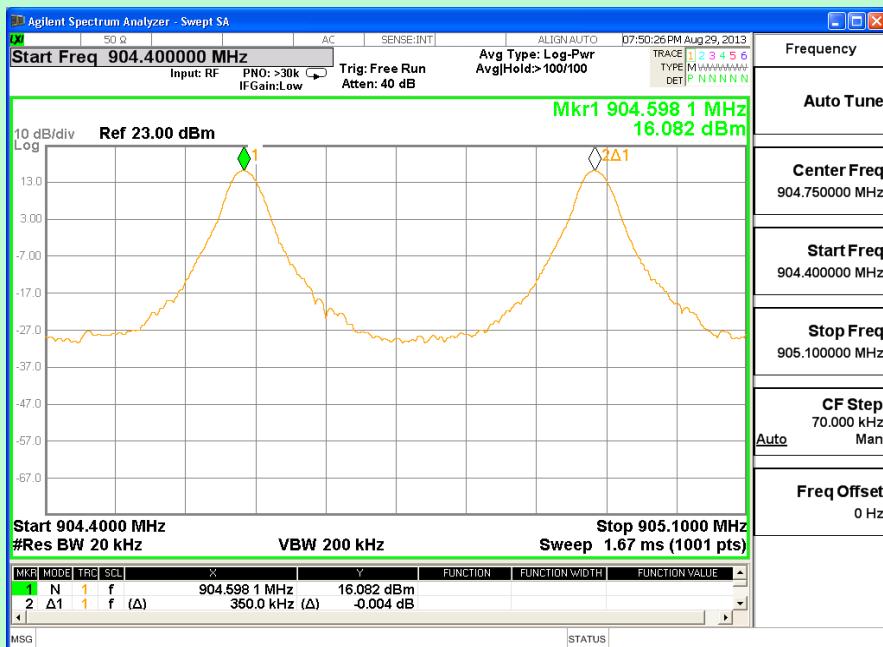
Channel 1 and 2



Channel 2 and 3



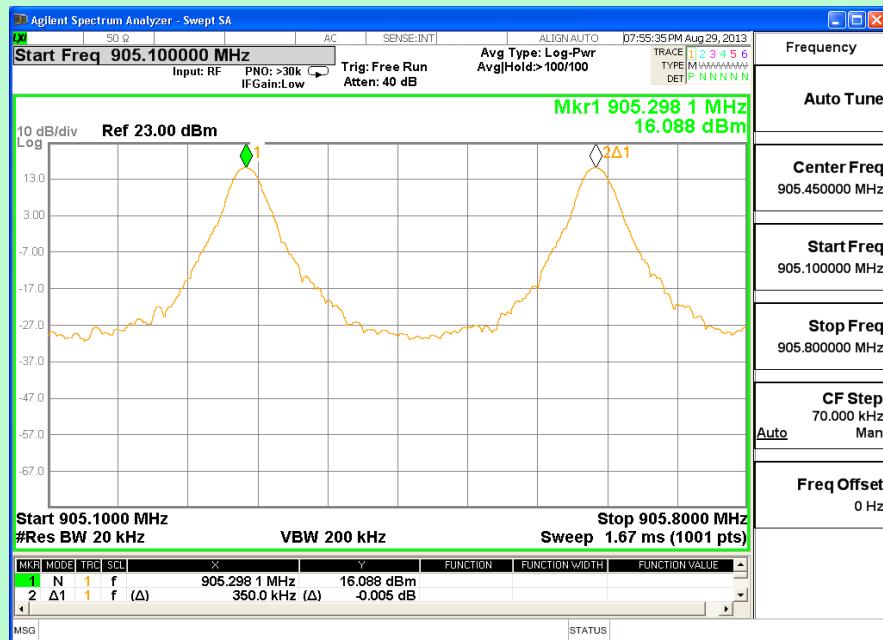
Channel 3 and 4



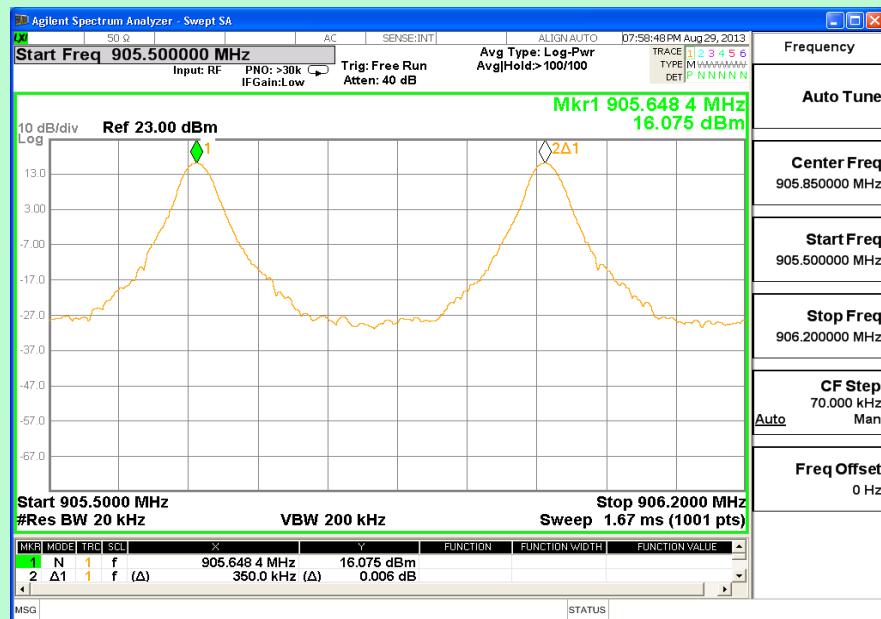
Channel 4 and 5



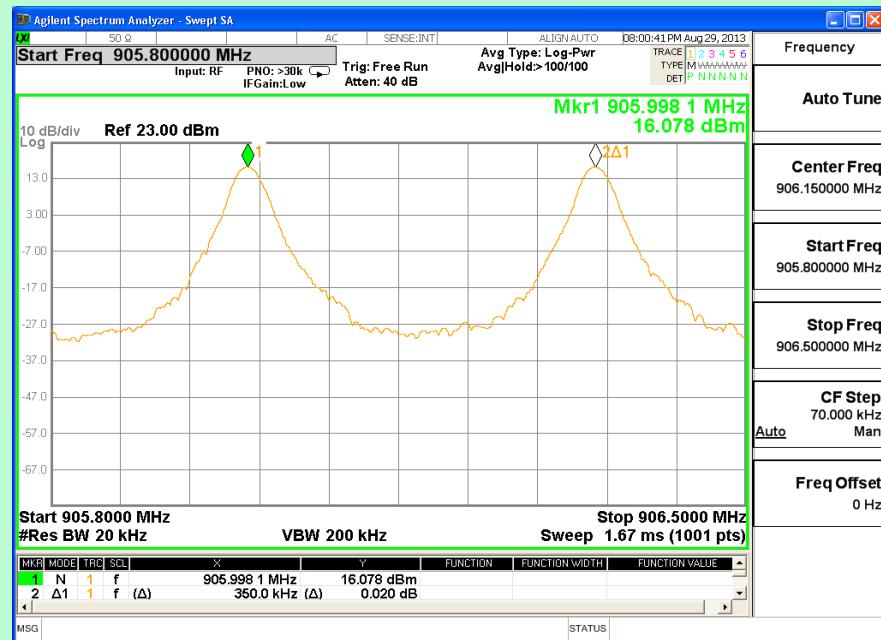
Channel 5 and 6



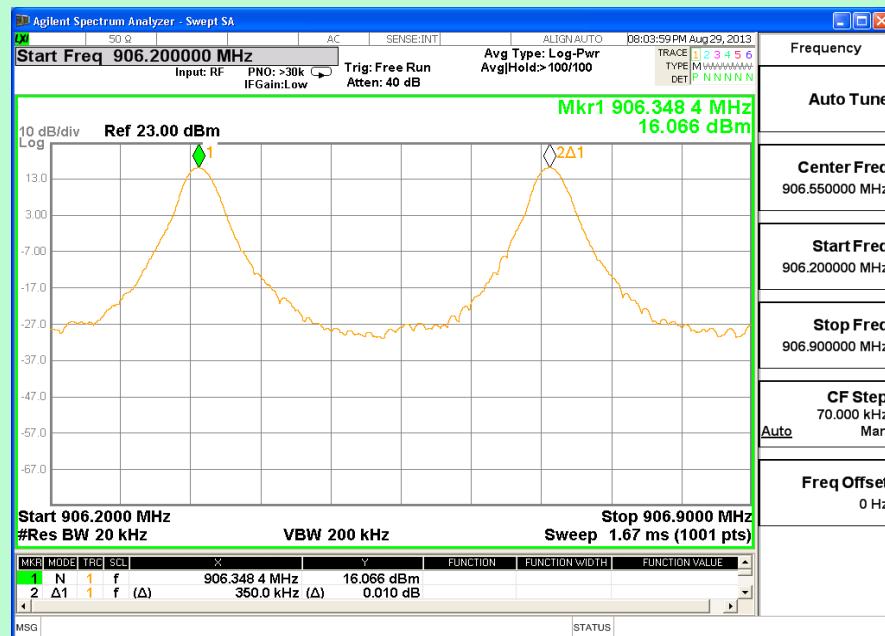
Channel 6 and 7



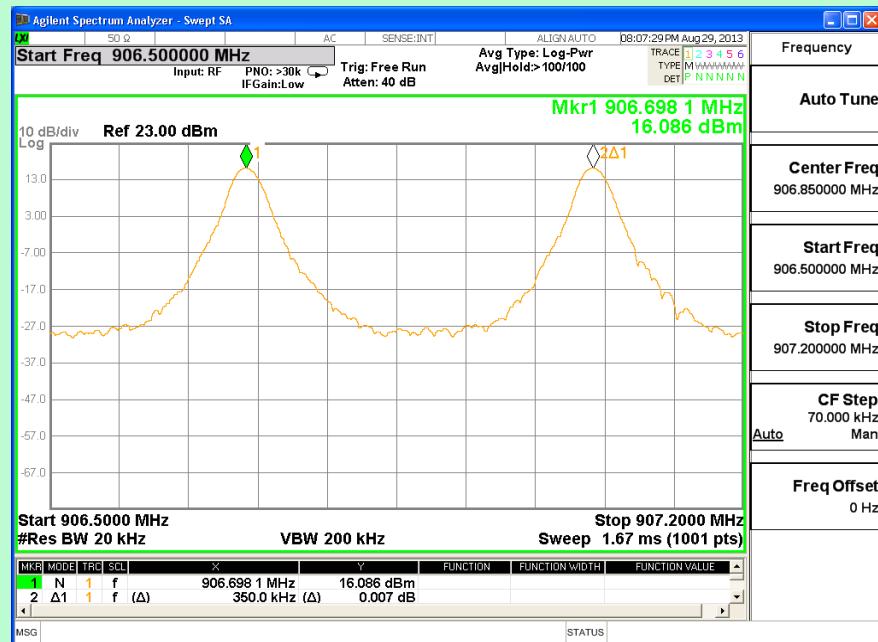
Channel 7 and 8



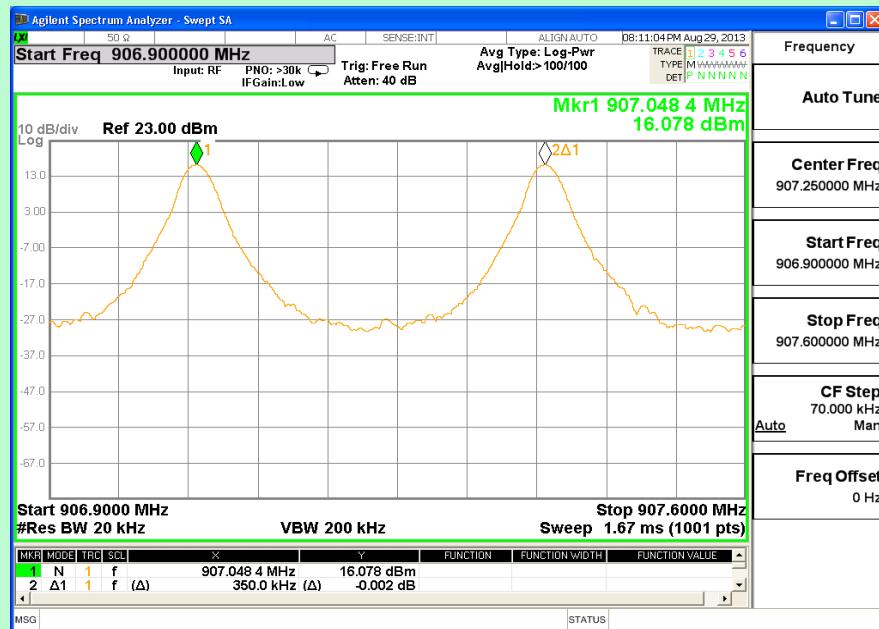
Channel 8 and 9



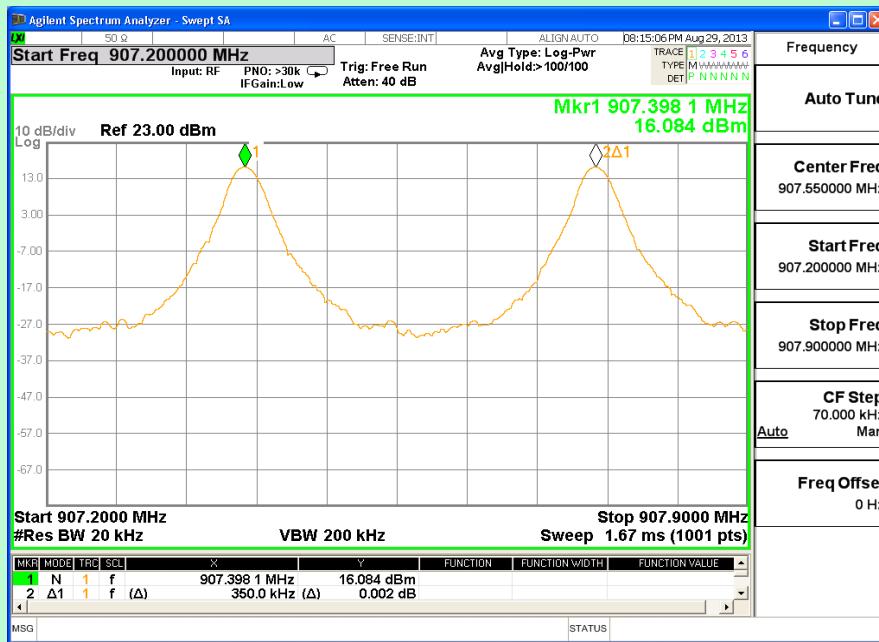
Channel 9 and 10



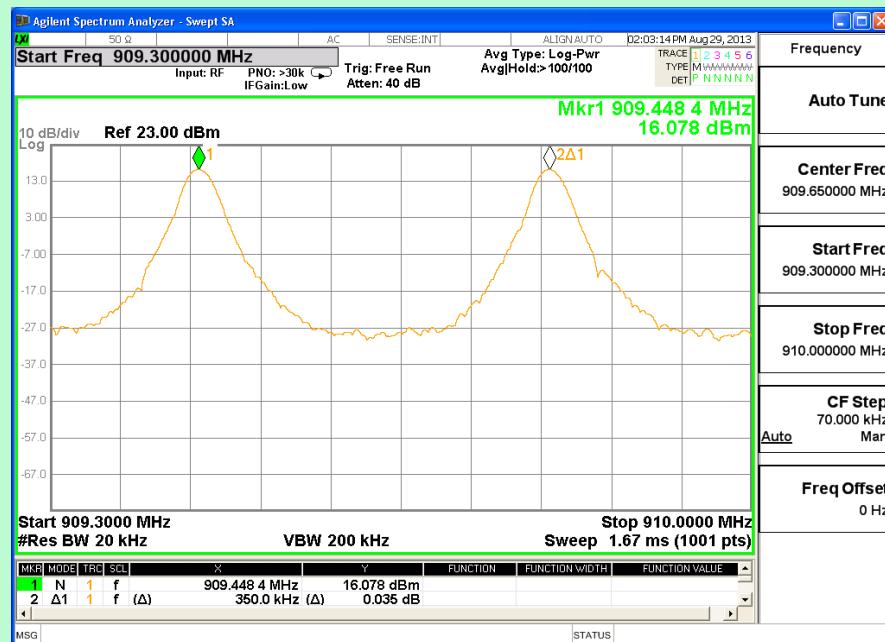
Channel 10 and 11



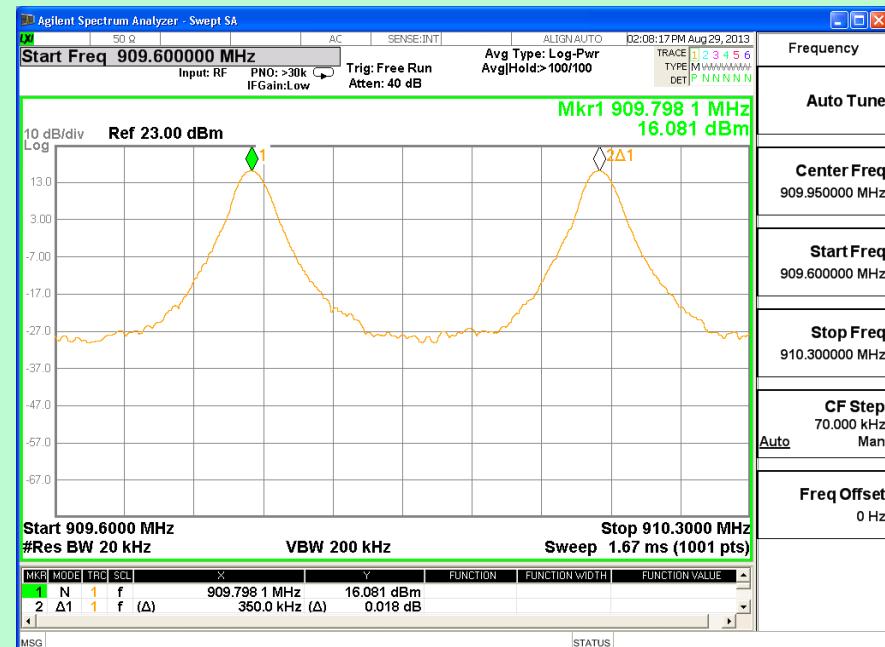
Channel 11 and 12



Channel 12 and 13



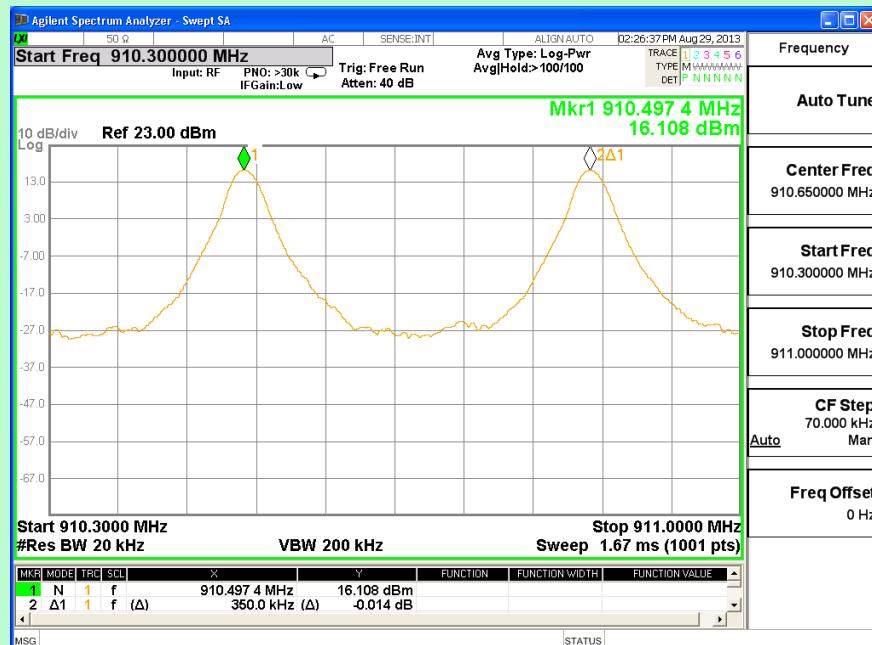
Channel 14 and 15



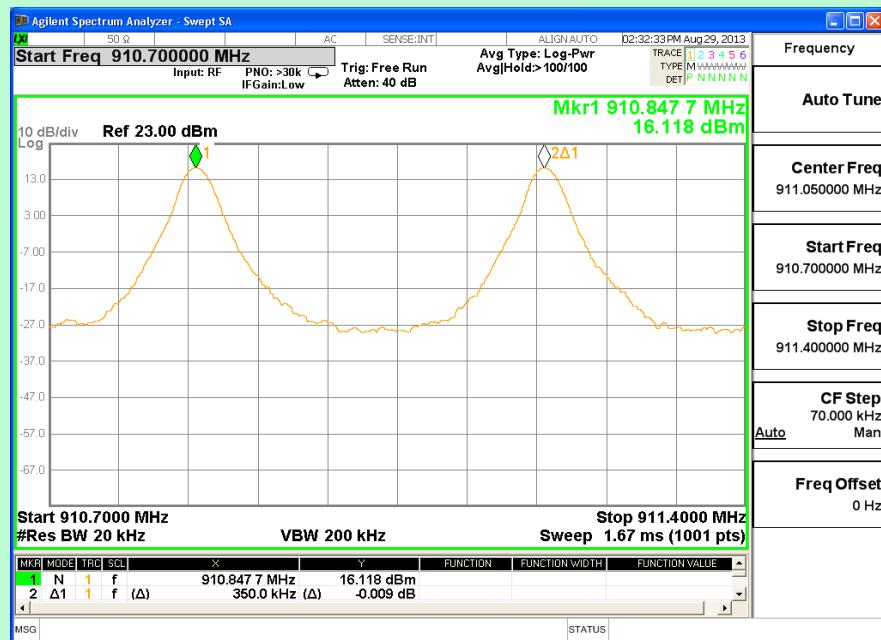
Channel 15 and 16



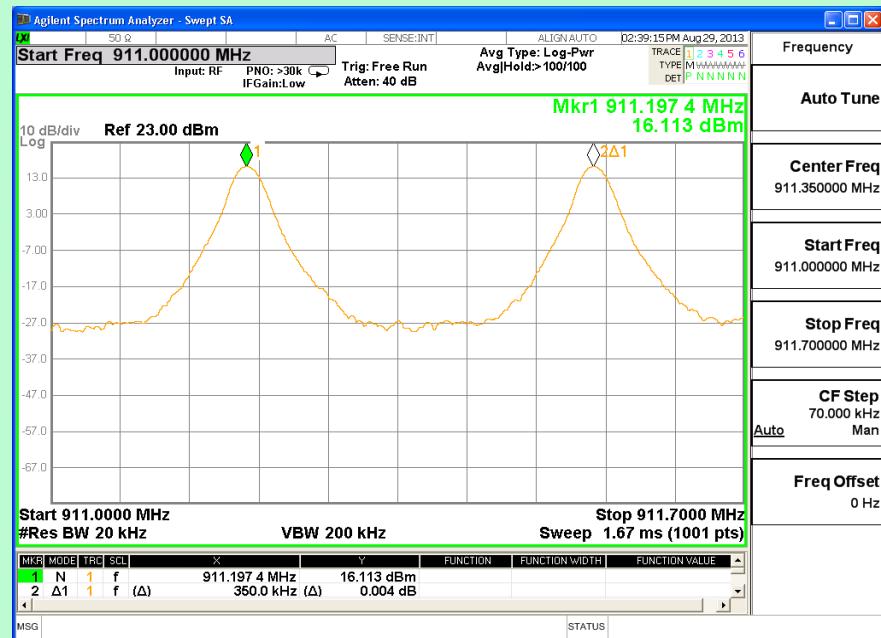
Channel 16 and 17



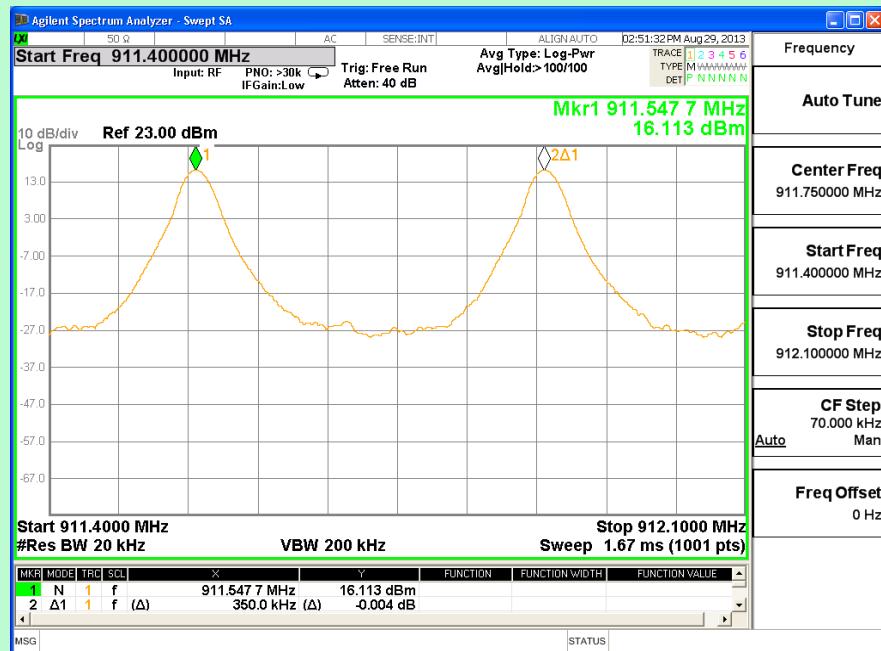
Channel 17 and 18



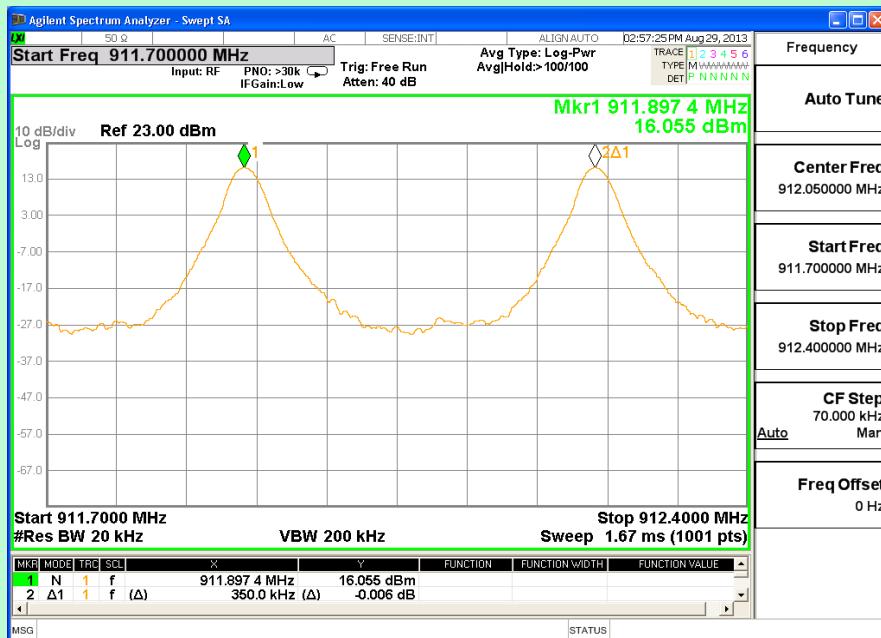
Channel 18 and 19



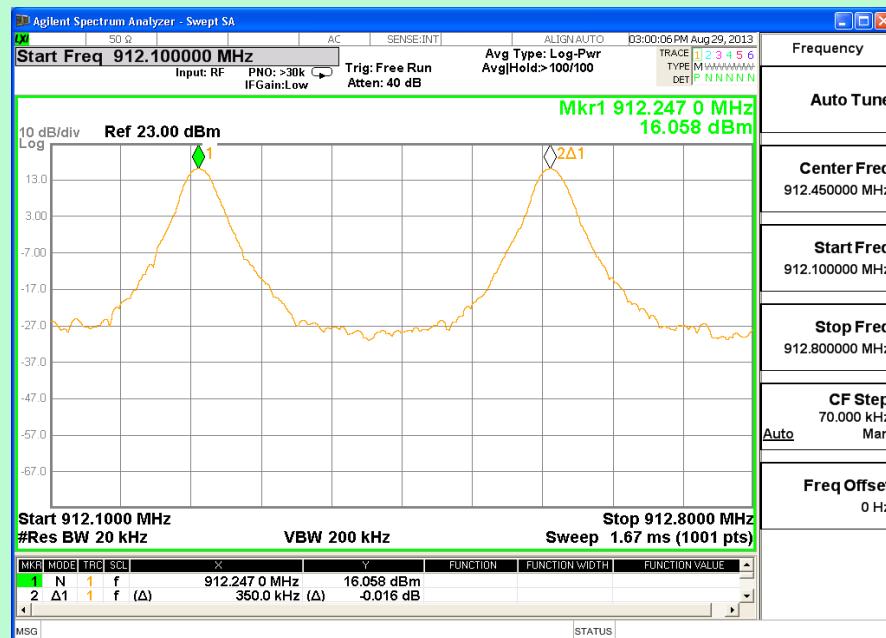
Channel 19 and 20



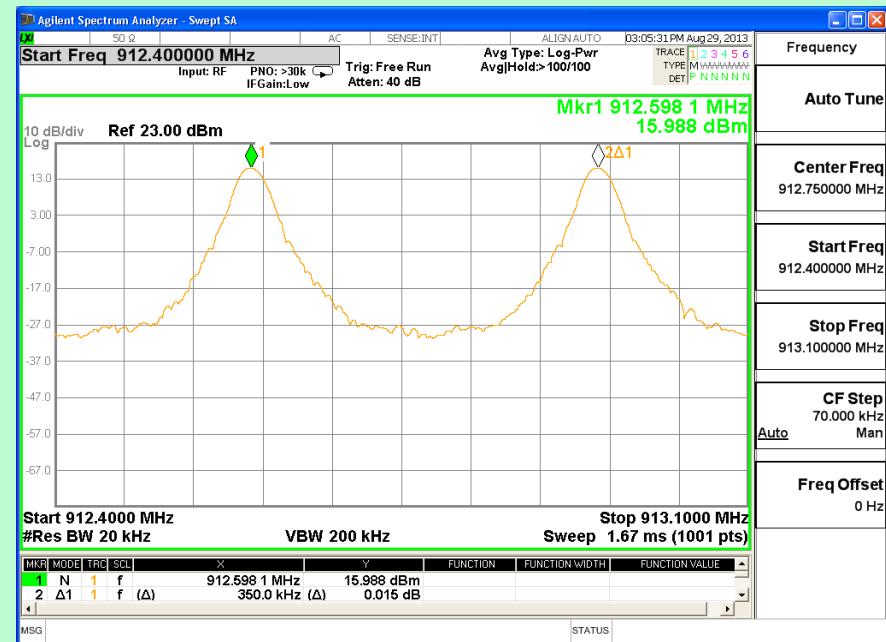
Channel 20 and 21



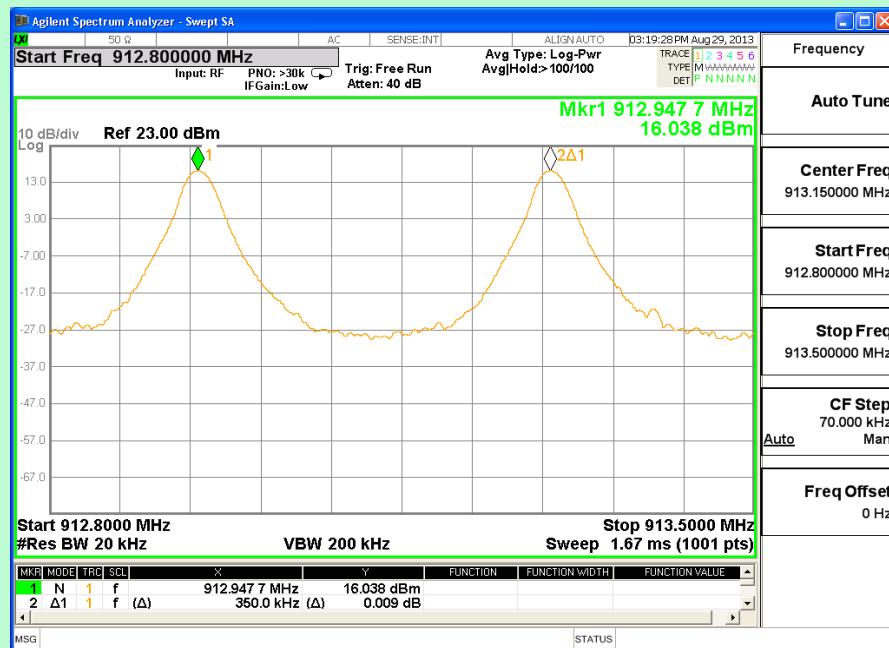
Channel 21 and 22



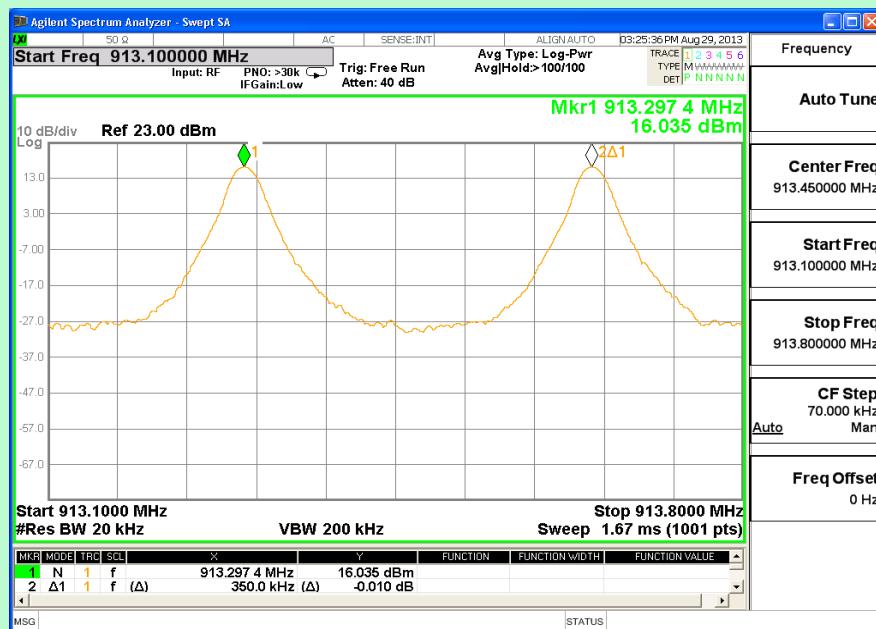
Channel 22 and 23



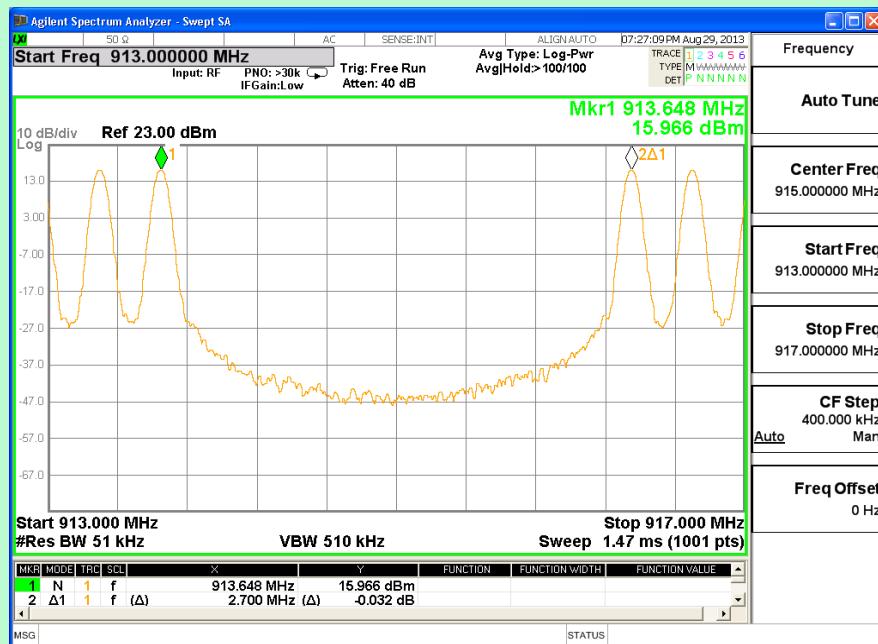
Channel 23 and 24



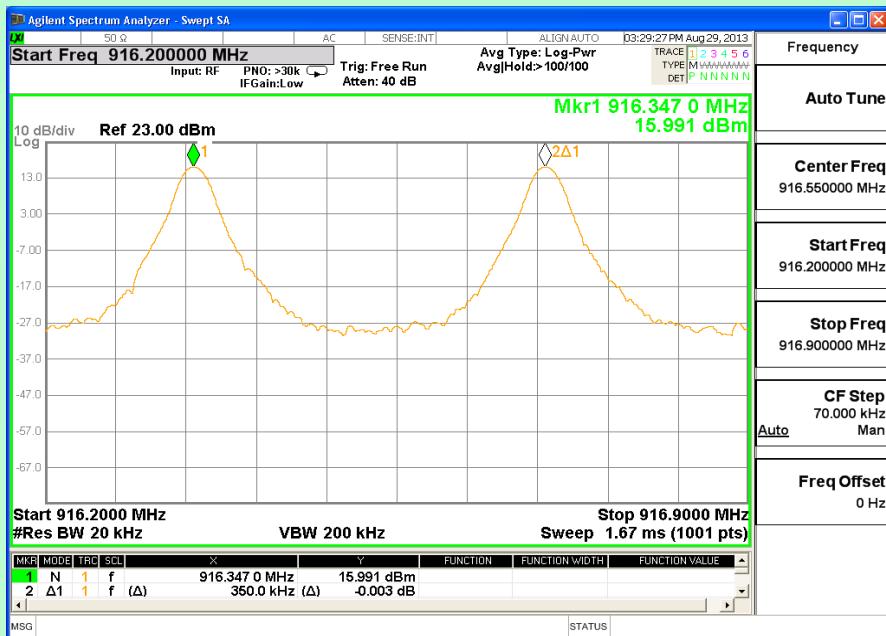
Channel 24 and 25



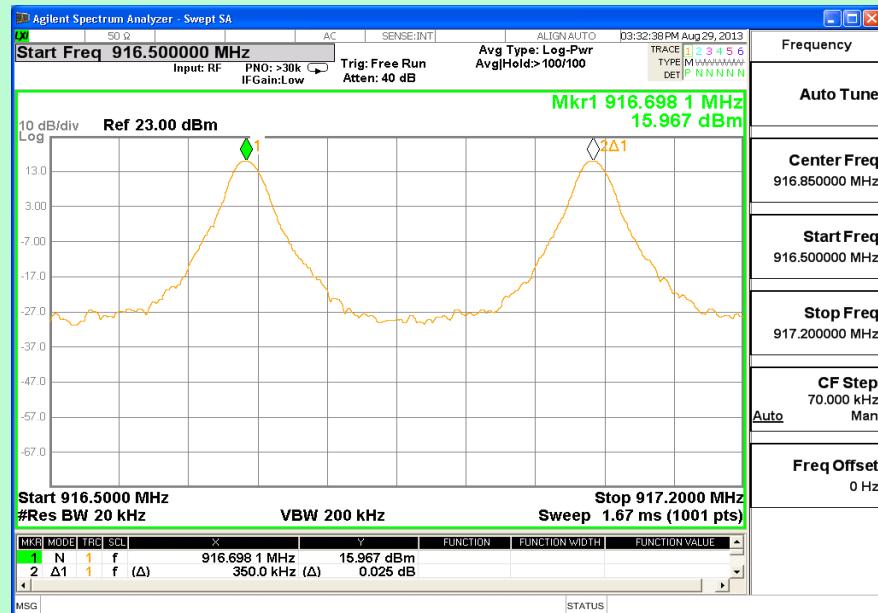
Channel 25 and 26



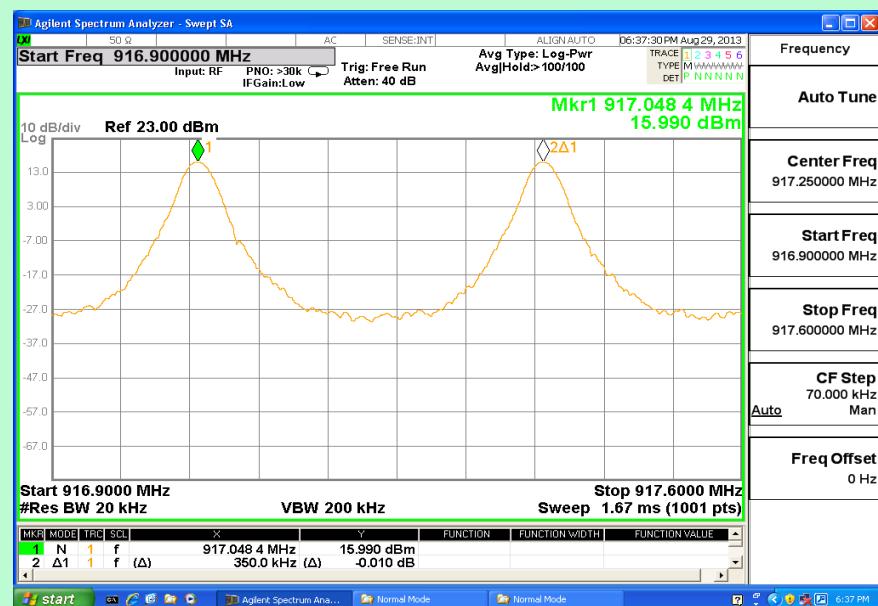
Channel 26 and 27



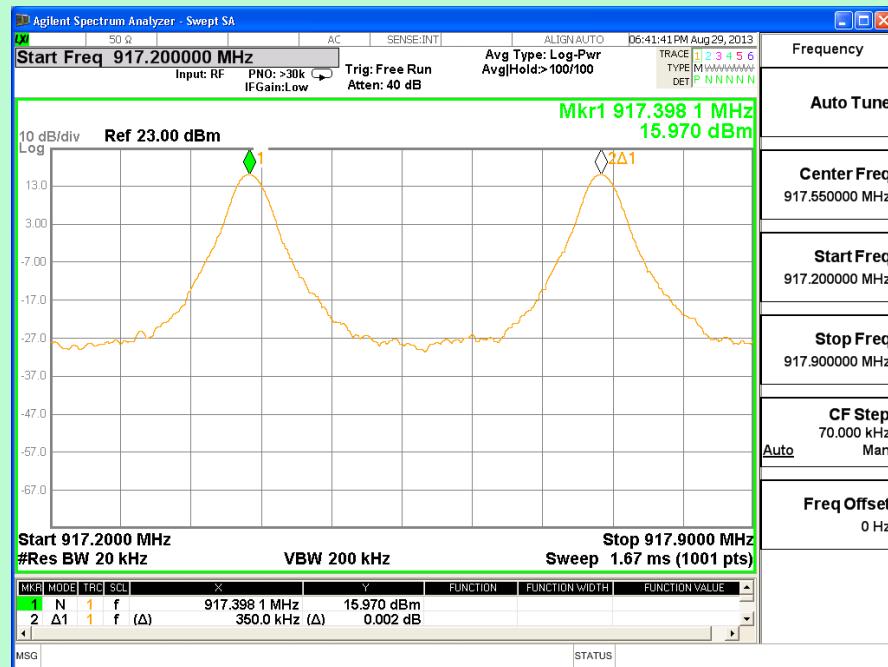
Channel 27 and 28



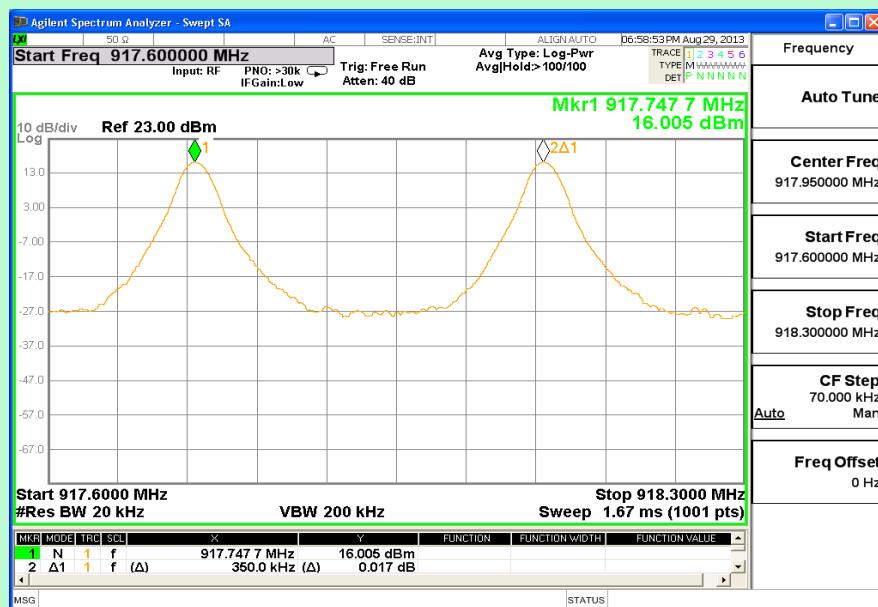
Channel 28 and 29



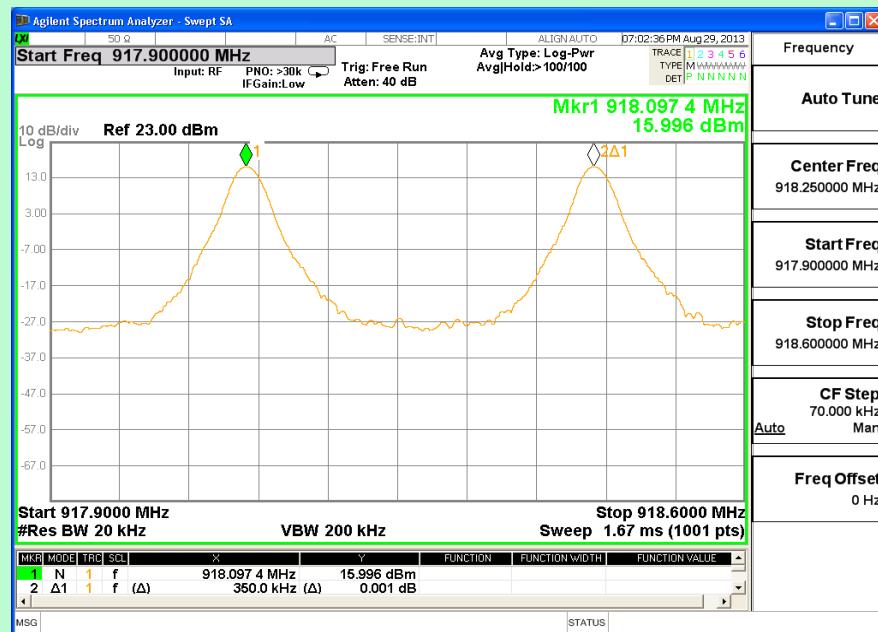
Channel 29 and 30



Channel 30 and 31



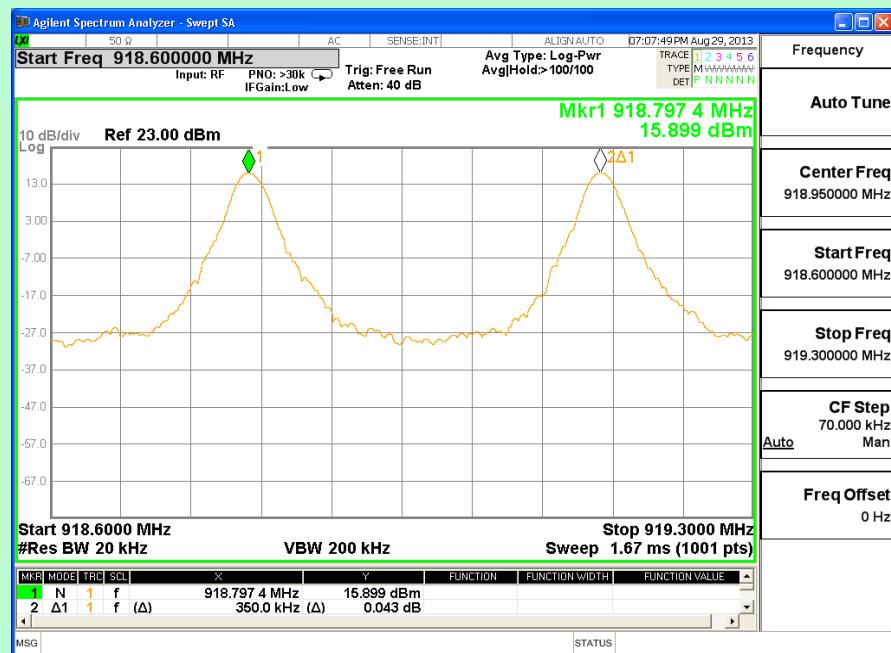
Channel 31 and 32



Channel 32 and 33



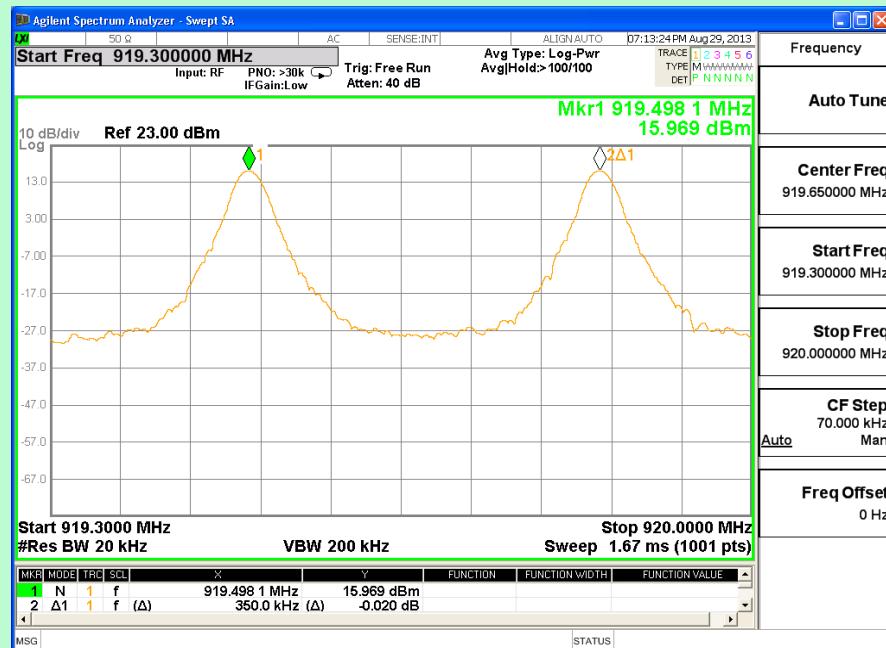
Channel 33 and 34



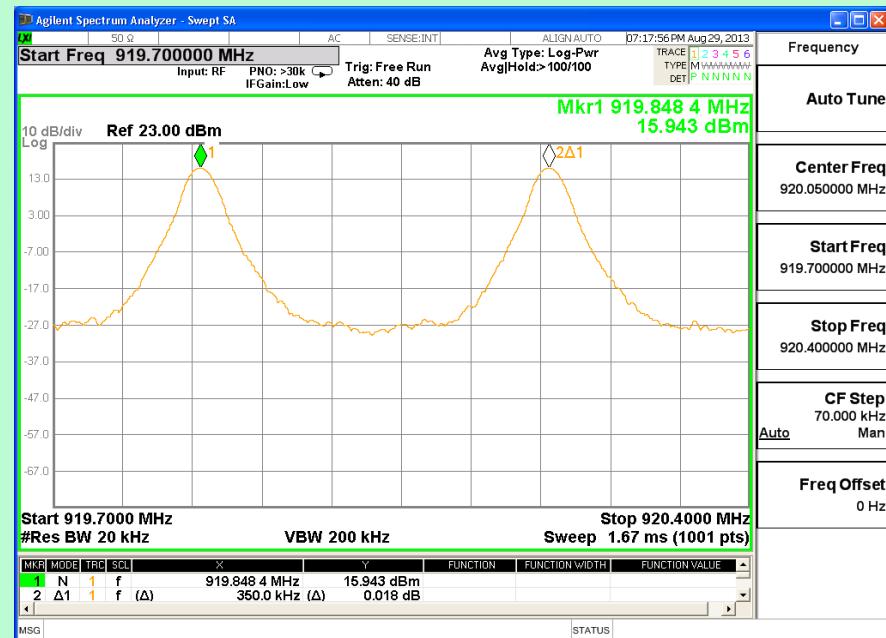
Channel 34 and 35



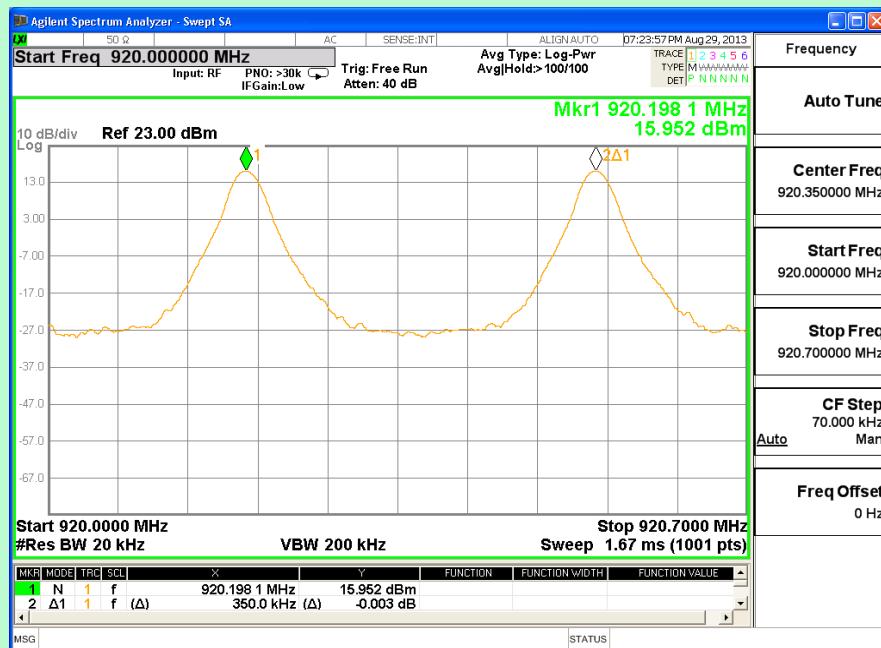
Channel 35 and 36



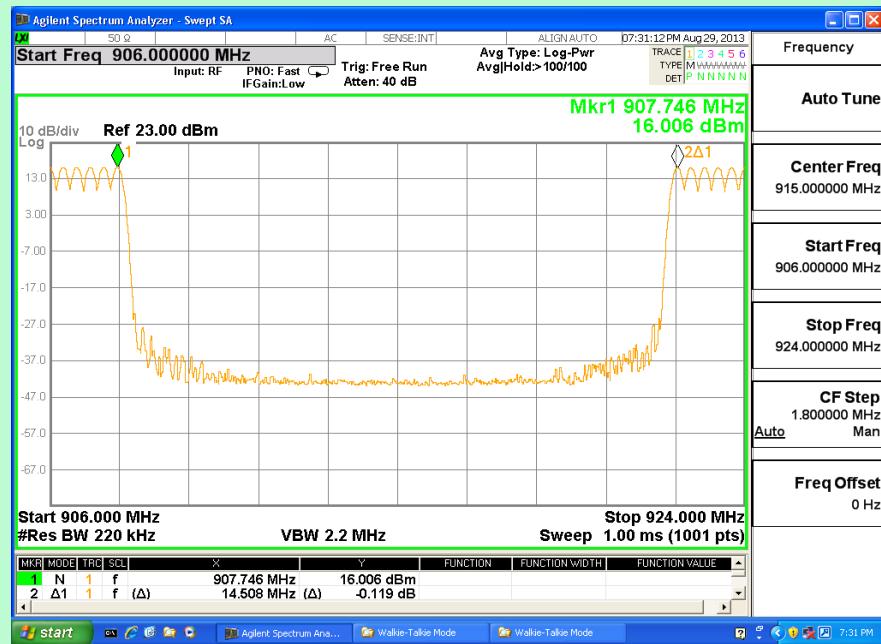
Channel 36 and 37



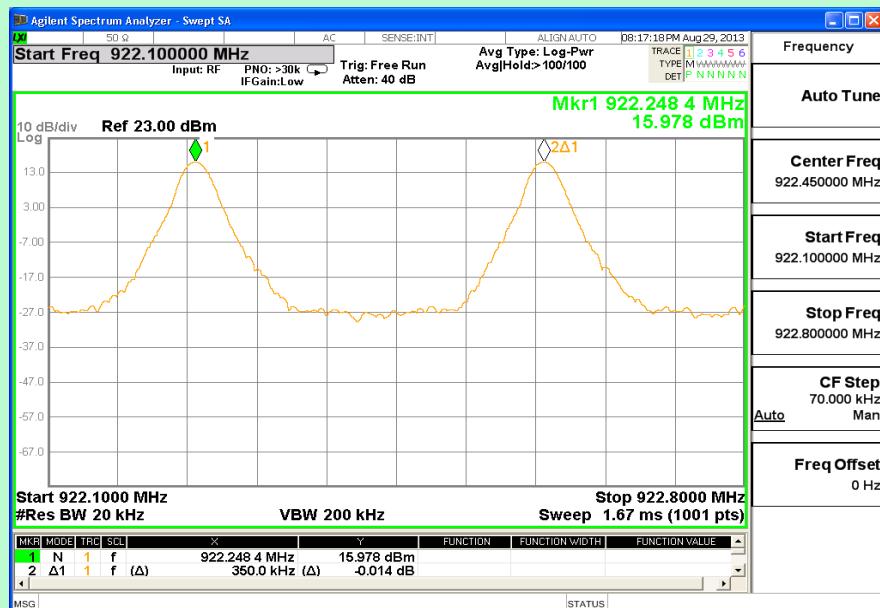
Channel 37 and 38



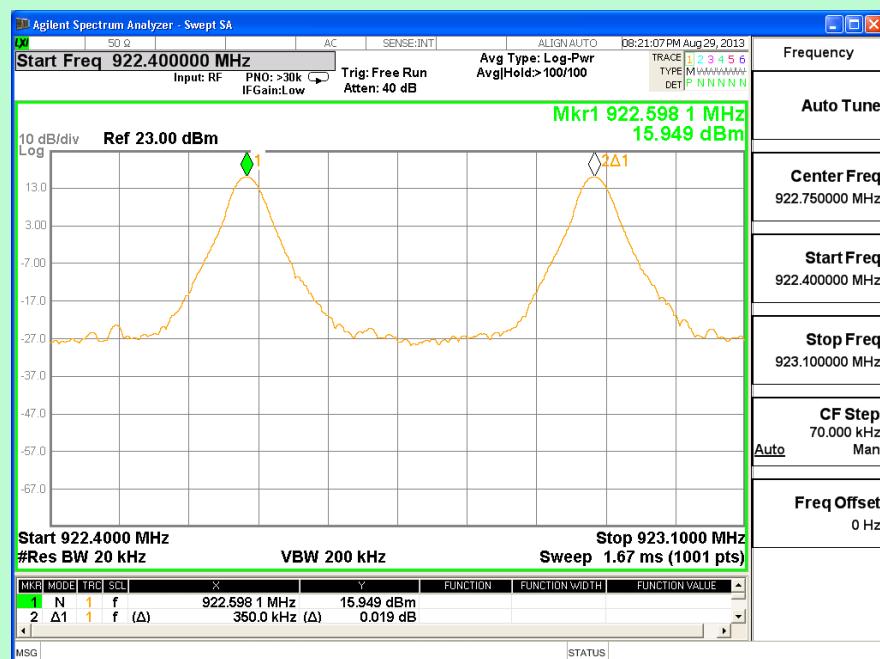
Channel 38 and 39



Channel 13 and 40



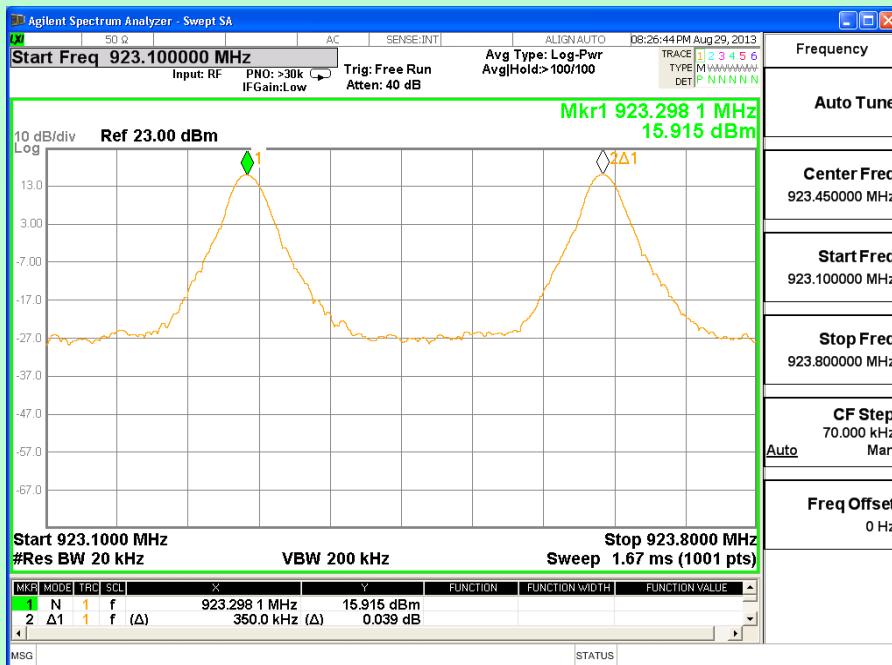
Channel 40 and 41



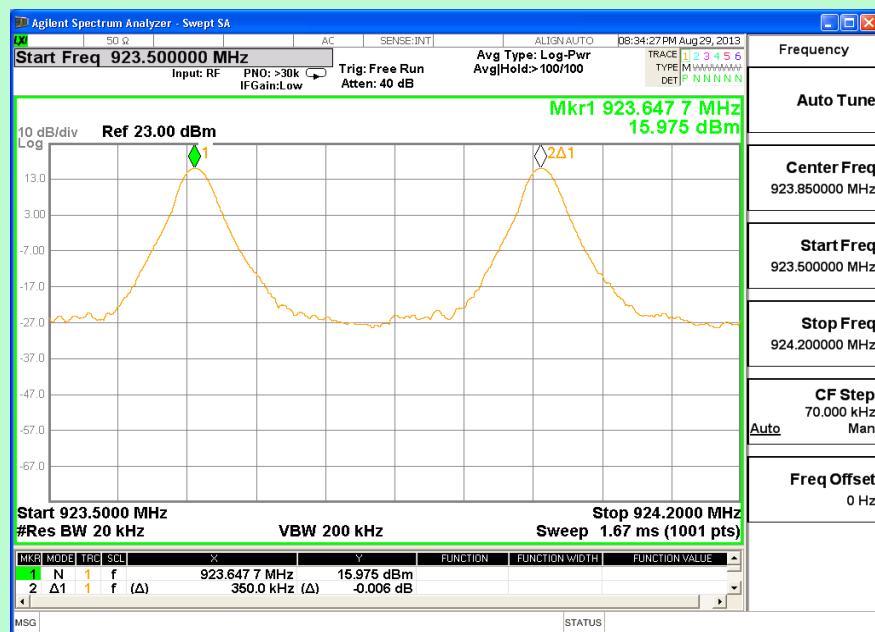
Channel 41 and 42



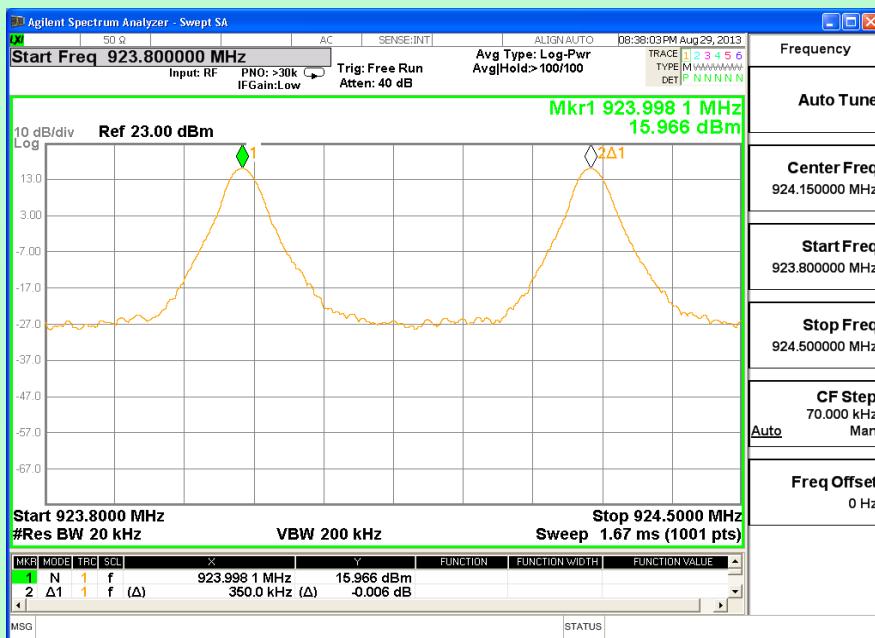
Channel 42 and 43



Channel 43 and 44



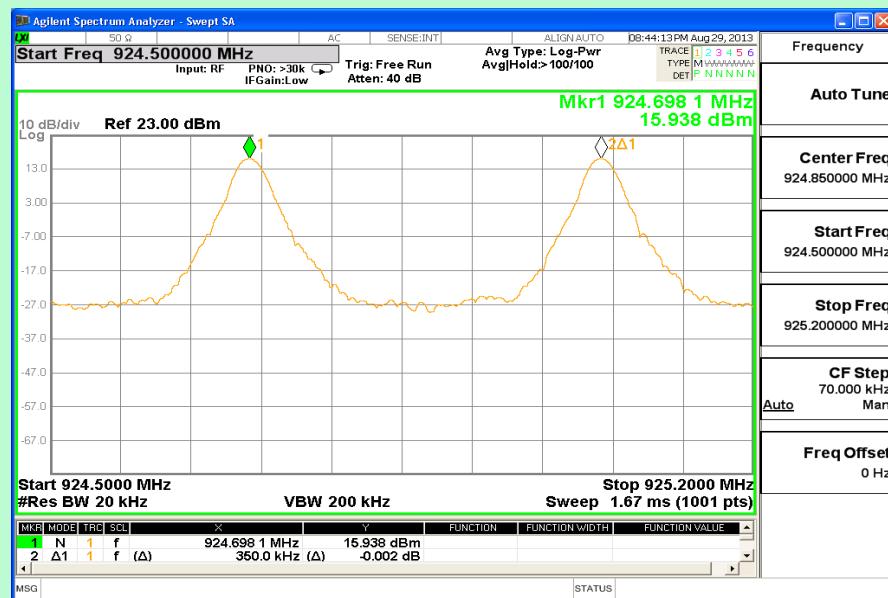
Channel 44 and 45



Channel 45 and 46



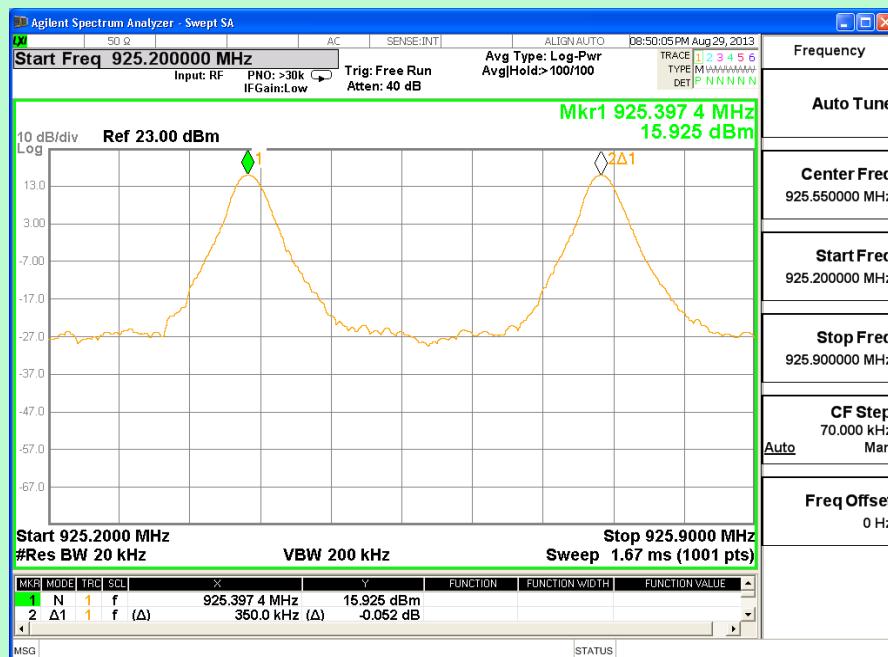
Channel 46 and 47



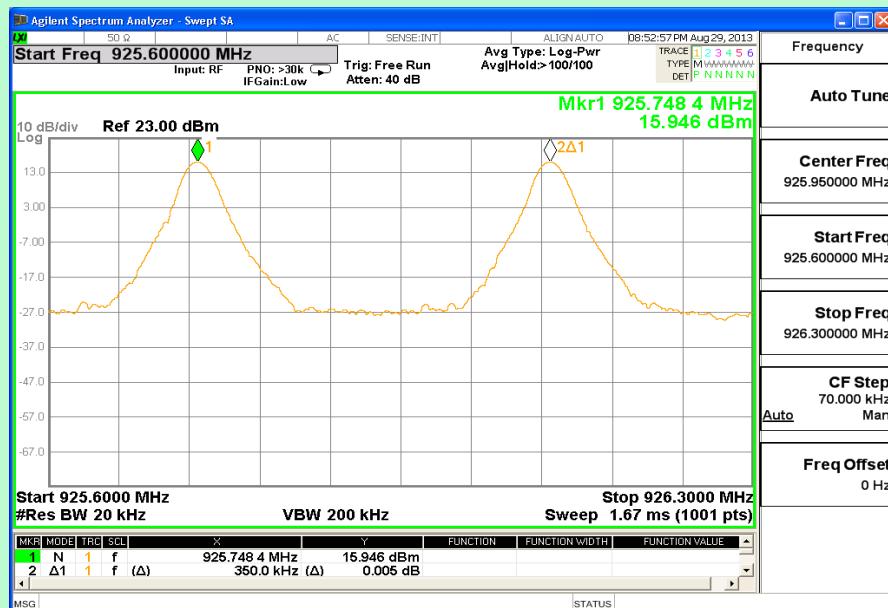
Channel 47 and 48



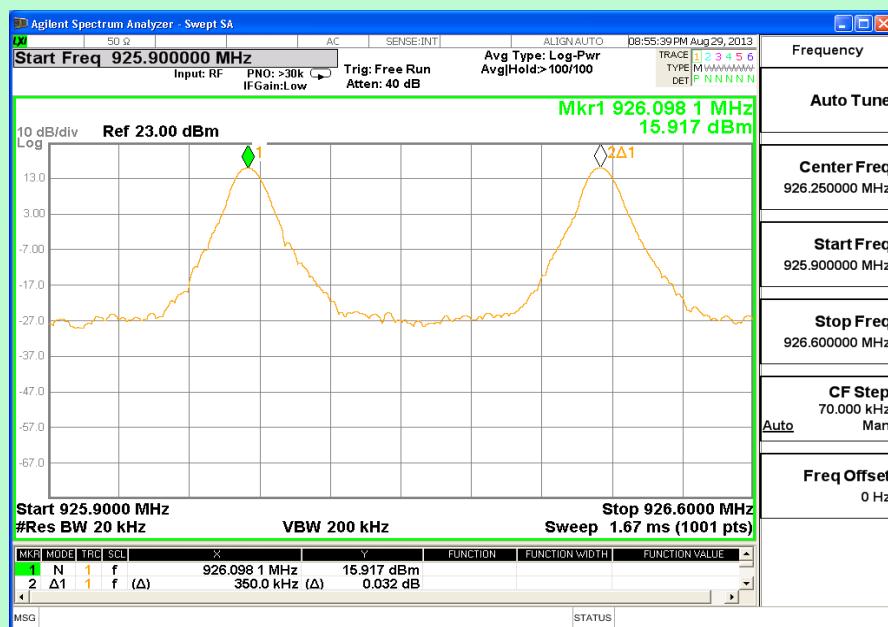
Channel 48 and 49



Channel 49 and 50



Channel 50 and 51



Channel 51 and 52

TEST RESULT			
Channel	Measured value	Limit	Result
#	KHz		
1 and 2	350	>20dB BW	PASS
2 and 3	350	>20dB BW	PASS
3 and 4	350	>20dB BW	PASS
4 and 5	350	>20dB BW	PASS
5 and 6	350	>20dB BW	PASS
6 and 7	350	>20dB BW	PASS
7 and 8	350	>20dB BW	PASS
8 and 9	350	>20dB BW	PASS
9 and 10	350	>20dB BW	PASS
10 and 11	350	>20dB BW	PASS
11 and 12	350	>20dB BW	PASS
12 and 13	350	>20dB BW	PASS
13 and 14	350	>20dB BW	PASS
14 and 15	350	>20dB BW	PASS
15 and 16	350	>20dB BW	PASS
16 and 17	350	>20dB BW	PASS
17 and 18	350	>20dB BW	PASS
18 and 19	350	>20dB BW	PASS
19 and 20	350	>20dB BW	PASS
20 and 21	350	>20dB BW	PASS
21 and 22	350	>20dB BW	PASS
22 and 23	350	>20dB BW	PASS
23 and 24	350	>20dB BW	PASS
24 and 25	350	>20dB BW	PASS
25 and 26	350	>20dB BW	PASS
26 and 27	2700	>20dB BW	PASS
27 and 29	350	>20dB BW	PASS
29 and 30	350	>20dB BW	PASS
30 and 31	350	>20dB BW	PASS
31 and 32	350	>20dB BW	PASS
32 and 33	350	>20dB BW	PASS
33 and 34	350	>20dB BW	PASS
34 and 35	350	>20dB BW	PASS
35 and 36	350	>20dB BW	PASS
36 and 37	350	>20dB BW	PASS
37 and 38	350	>20dB BW	PASS
38 and 39	350	>20dB BW	PASS
13 and 40	14508	>20dB BW	PASS
40 and 41	350	>20dB BW	PASS
41 and 42	350	>20dB BW	PASS
42 and 43	350	>20dB BW	PASS
43 and 44	350	>20dB BW	PASS
44 and 45	350	>20dB BW	PASS
45 and 46	350	>20dB BW	PASS
46 and 47	350	>20dB BW	PASS
47 and 48	350	>20dB BW	PASS
48 and 49	350	>20dB BW	PASS
49 and 50	350	>20dB BW	PASS
50 and 51	350	>20dB BW	PASS
51 and 52	350	>20dB BW	PASS

**TEST SETUP PHOTOGRAPHS**

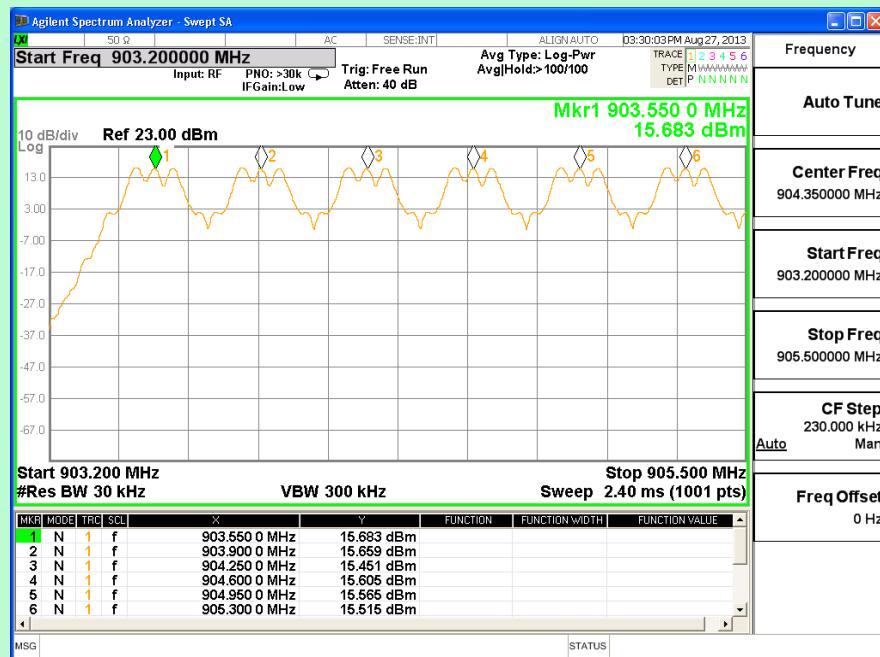
Refer Annexure-1

**Conducted RF Test Setup**

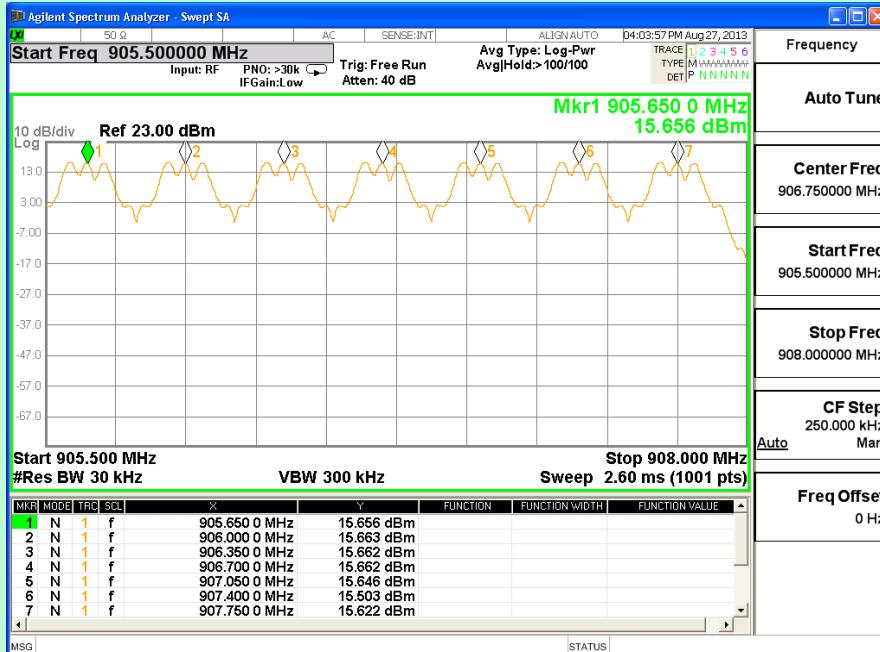
<b>2.4 NUMBER OF HOPPING FREQUENCIES</b>			
<b>EUT Nomenclature</b>	Wireless Gatewy	<b>Test Request No.</b>	EMC-1259-1
<b>Model No.</b>	FWSG	<b>Serial No.</b>	05303
<b>Test Start Date</b>	27-Aug-2013	<b>Temperature (°C)</b>	23.1
<b>Test End Date</b>	27-Aug-2013	<b>Humidity RH (%)</b>	55.2
<b>Tested By</b>	Loganathan Joghee	<b>Pressure (mbar)</b>	NR
<b>Input Voltage / Freq</b>	24 Vdc		
<b>Operating Mode</b>	Refer Page 5 for Operating Mode Table		
<b>Test configuration</b>	Refer Page 5 for Test Configuration Table		
<b>Deviation from Std</b>	NA		
<b>Applicable standard</b>	FCC Part 15.247		
<b>Test Method</b>	DA 00-705		
<b>Comment</b>			
<b>TEST DETAILS</b>			
<b>Method</b>	<input checked="" type="checkbox"/> Conducted	<input type="checkbox"/> Radiated	
<b>TEST PARAMETERS</b>			
<b>Antenna Height</b>	NA	<b>Turntable Rotation</b>	NA
<b>Equipment Class</b>	NA	<b>Measurement Distance</b>	NA

<b>TEST EQUIPMENT</b>					
<b>Y/N</b>	<b>Equipment</b>	<b>Make</b>	<b>Model</b>	<b>Serial Number</b>	<b>Cal Due Date</b>
Y	Spectrum Analyzer	Agilent	N9010A	MY48031005	28-Nov-2014
Y	RF Cable	Huber- Suhner	SF104/2X11PC3542/500	NA	NA

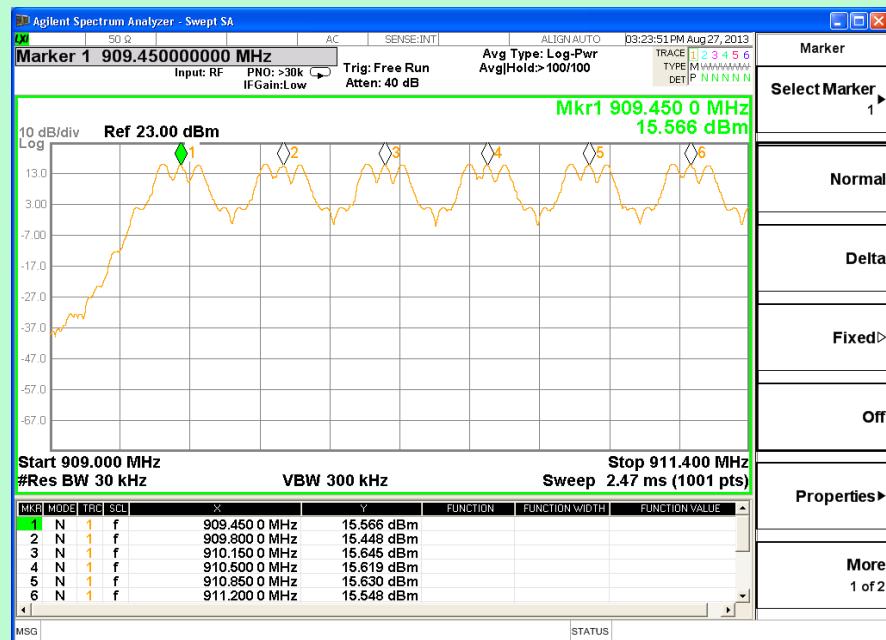
## TEST GRAPHS



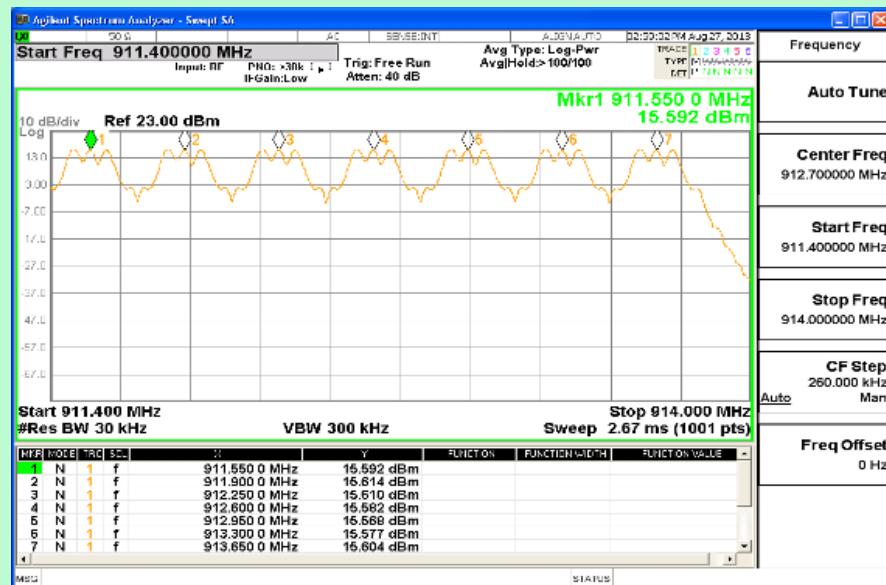
Channel 1 – 6 (Walkie-Talkie Mode)



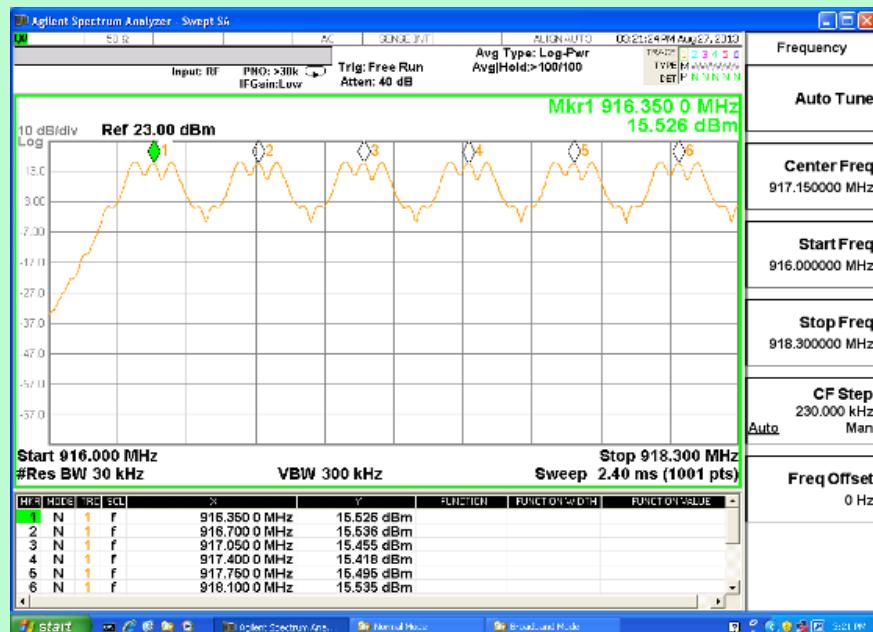
Channel 7 – 13 (Walkie-Talkie Mode)



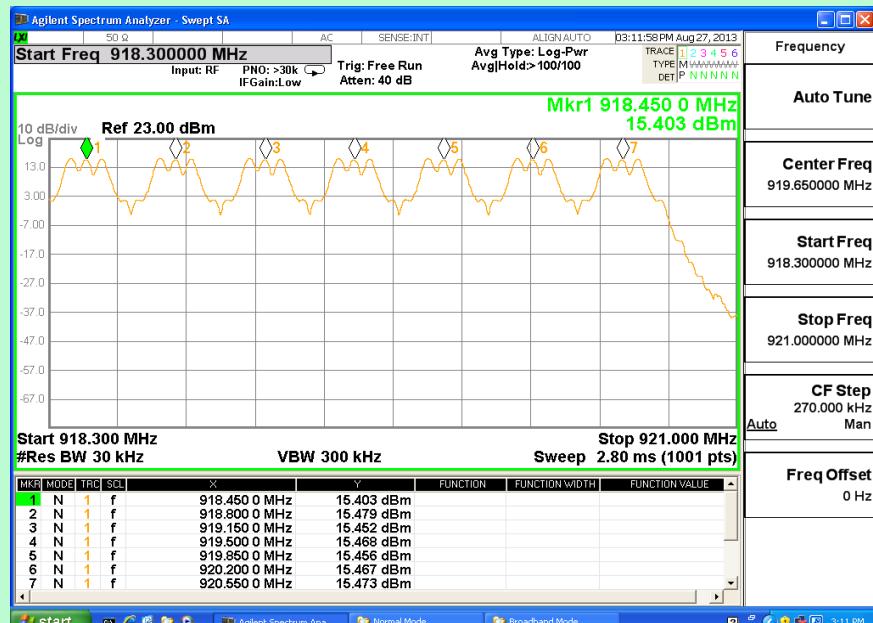
Channel 14 – 19 (Normal Mode)



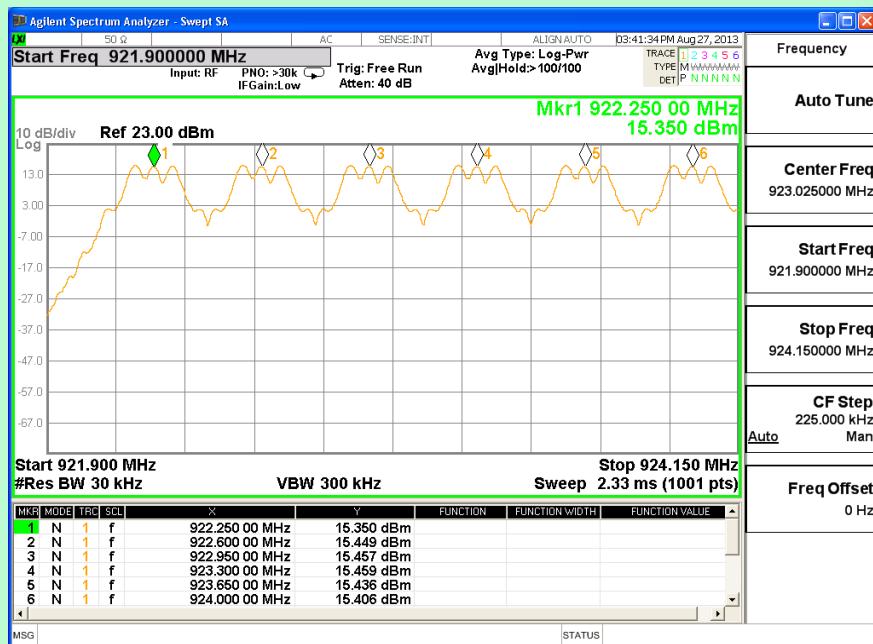
Channel 20 – 26 (Normal Mode)



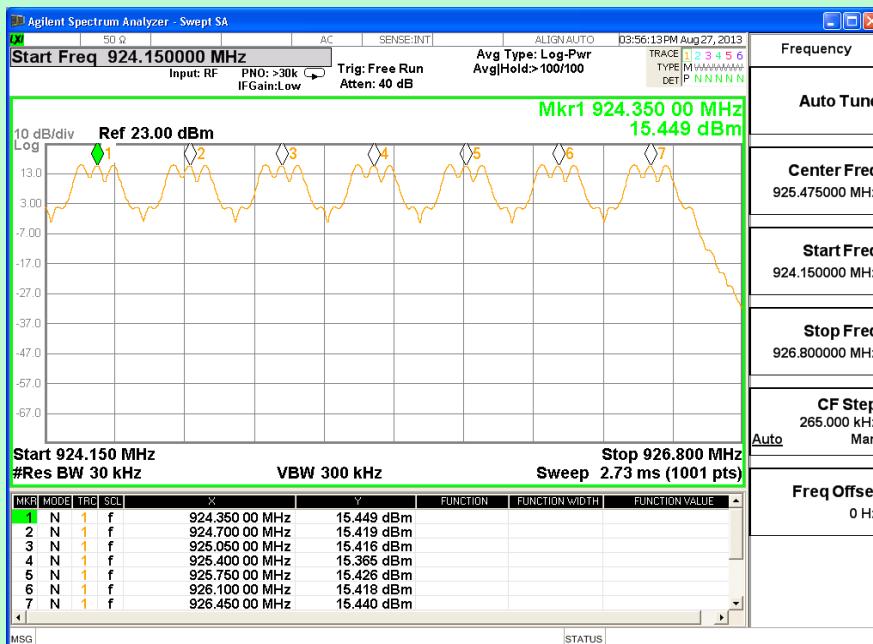
Channel 27 – 32 (Normal Mode)



Channel 33 – 39 (Normal Mode)



Channel 40 – 45 (Walkie-Talkie Mode)



Channel 46 – 52 (Walkie-Talkie Mode)

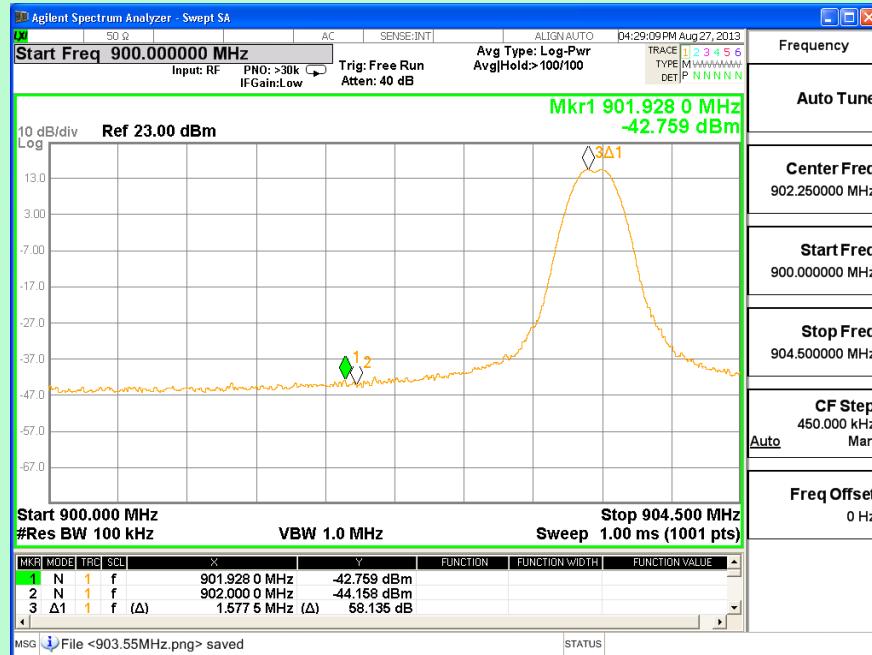
<b>TEST RESULT</b>			
<b>Mode of Operation</b>	<b>No. of Channels Measured</b>	<b>Limit (No. of Channels)</b>	<b>Test Results</b>
Normal Mode	26	≥25	PASS
Walkie-Talkie Mode	26	≥25	PASS

<b>TEST SETUP PHOTOGRAPHS</b>
<p>Refer Annexure-1</p> <p><b>Conducted RF Test Setup</b></p>

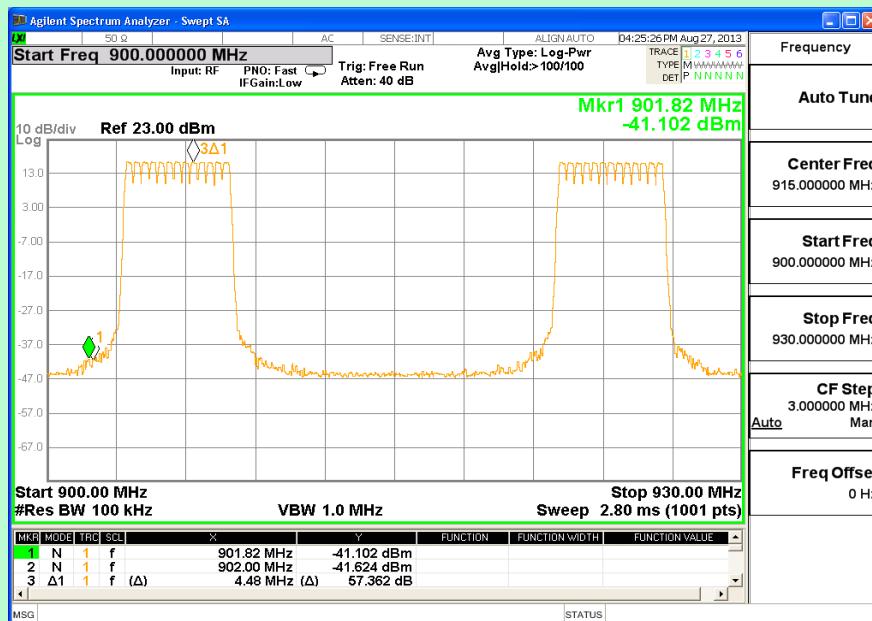
<b>2.5 BAND-EDGE COMPLIANCE</b>			
<b>EUT Nomenclature</b>	Wireless Gatewy	<b>Test Request No.</b>	EMC-1259-1
<b>Model No.</b>	FWSG	<b>Serial No.</b>	05303
<b>Test Start Date</b>	27-Aug-2013	<b>Temperature (°C)</b>	23.2
<b>Test End Date</b>	27-Aug-2013	<b>Humidity RH (%)</b>	55.1
<b>Tested By</b>	Loganathan Joghee	<b>Pressure (mbar)</b>	NR
<b>Input Voltage / Freq</b>	24 Vdc		
<b>Operating Mode</b>	Refer Page 5 for Operating Mode Table		
<b>Test configuration</b>	Refer Page 5 for Test Configuration Table		
<b>Deviation from Std</b>	NA		
<b>Applicable standard</b>	FCC Part 15.247		
<b>Test Method</b>	DA 00-705		
<b>Comment</b>			
<b>TEST DETAILS</b>			
<b>Method</b>	<input checked="" type="checkbox"/> Conducted	<input type="checkbox"/> Radiated	
<b>TEST PARAMETERS</b>			
<b>Antenna Height</b>	NA	<b>Turntable Rotation</b>	NA
<b>Equipment Class</b>	NA	<b>Measurement Distance</b>	NA

<b>TEST EQUIPMENT</b>					
Y/N	Equipment	Make	Model	Serial Number	Cal Due Date
Y	Spectrum Analyzer	Agilent	N9010A	MY48031005	28-Nov-2014
Y	RF Cable	Huber- Suhner	SF104/2X11PC3542/500	NA	NA

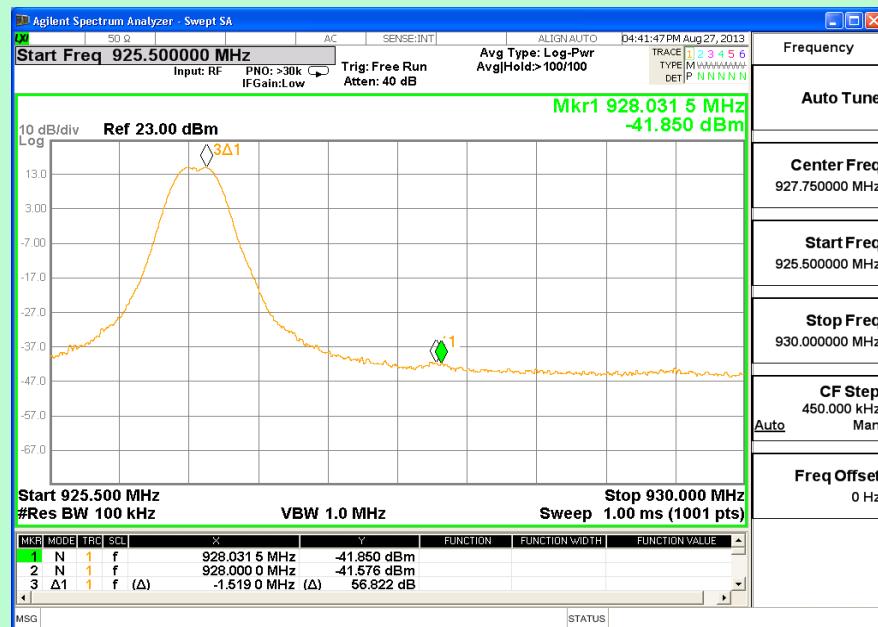
## TEST GRAPHS



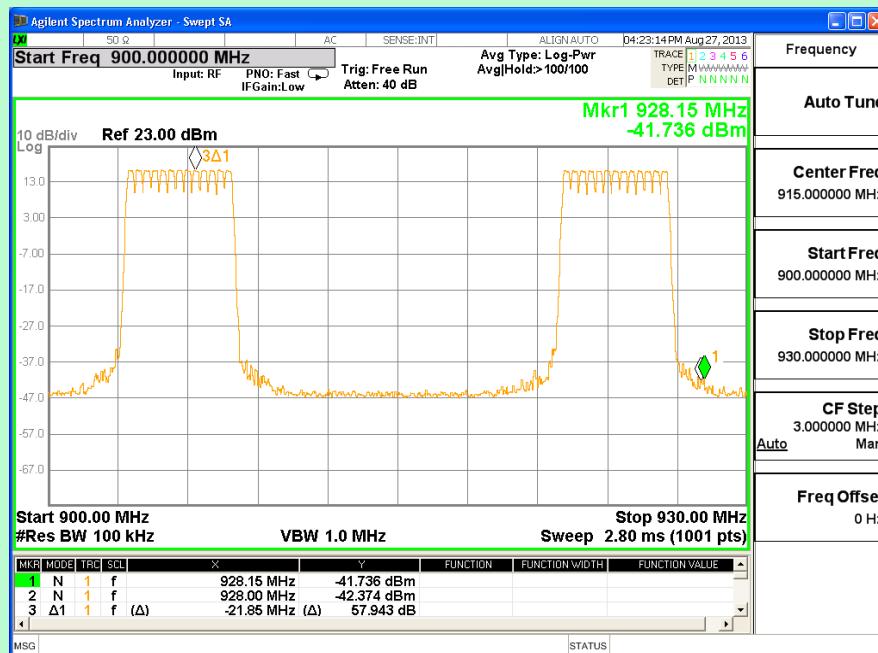
Band-edge at 902 MHz - Channel 1 (903.55 MHz)



Band-edge at 902 MHz – Hopping Enabled



Band-edge at 928 MHz - Channel 52 (926.45 MHz)



Band-edge at 928 MHz – Hopping Enabled

<b>TEST RESULT</b>					
Channel	Frequency	Measured difference		Limit	Test Results
#	MHz	SINGLE CHANNEL	FHSS ENABLED	dBc	
1	903.55	58.135	57.362	>20	PASS
52	926.45	56.822	57.943	>20	PASS

<b>TEST SETUP PHOTOGRAPHS</b>
<p>Refer Annexure-1</p> <p><b>Conducted RF Test Setup</b></p>

2.6 TIME OF OCCUPANCY (DWELL TIME)			
<b>EUT Nomenclature</b>	Wireless Gatew ay	<b>Test Request No.</b>	EMC-1259-1
<b>Model No.</b>	FWSG	<b>Serial No.</b>	05303
<b>Test Start Date</b>	05-Nov-2013	<b>Temperature (°C)</b>	23.1
<b>Test End Date</b>	05-Nov-2013	<b>Humidity RH (%)</b>	55.2
<b>Tested By</b>	Loganathan Joghee	<b>Pressure (mbar)</b>	NR
<b>Input Voltage / Freq</b>	24 Vdc		
<b>Operating Mode</b>	Refer Page 5 for Operating Mode Table		
<b>Test configuration</b>	Refer Page 5 for Test Configuration Table		
<b>Deviation from Std</b>	NA		
<b>Applicable standard</b>	FCC Part 15.247		
<b>Test Method</b>	DA 00-705		
<b>Comment</b>			
TEST DETAILS			
<b>Method</b>	<input checked="" type="checkbox"/> Conducted	<input type="checkbox"/> Radiated	
TEST PARAMETERS			
<b>Antenna Height</b>	NA	<b>Turntable Rotation</b>	NA
<b>Equipment Class</b>	NA	<b>Measurement Distance</b>	NA

TEST EQUIPMENT					
Y/N	Equipment	Make	Model	Serial Number	Cal Due Date
Y	Spectrum Analyzer	Agilent	N9010A	MY48031005	28-Nov-2014
Y	RF Cable	Huber- Suhner	SF104/2X11PC3542/500	NA	NA

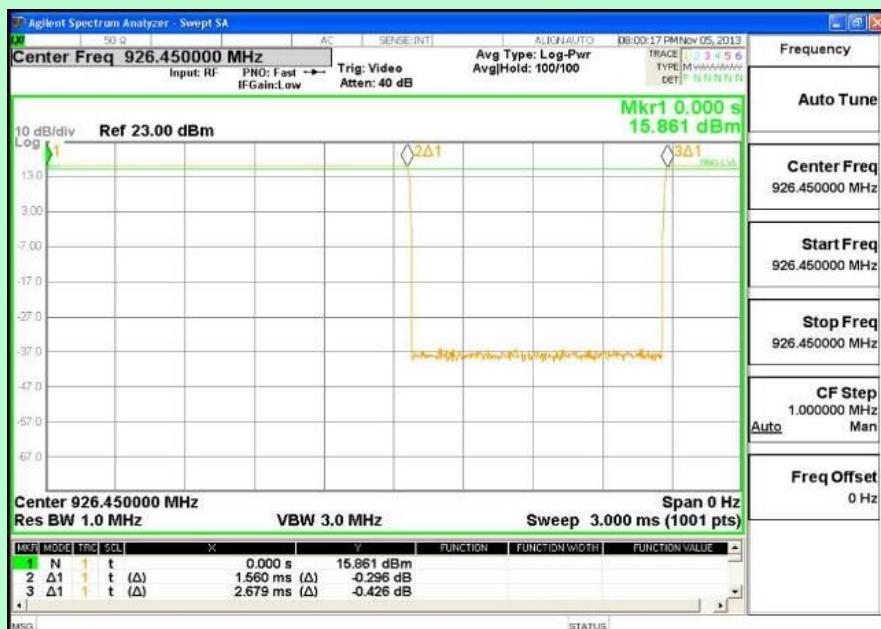
## TEST GRAPHS



Channel 1 (903.55 MHz)



Channel 27 (916.35 MHz)



Channel 52 (926.45 MHz)

**TEST RESULT**

Channel	Channel Frequency	Measured Dwell Time	No. of bursts	Total Dwell Time in 10sec	Limit in 10s period	Results
#	MHz	ms	#	ms	ms	
1	903.55	1.561	8	12.488	≤ 400	PASS
27	916.35	1.561	8	12.488	≤ 400	PASS
52	926.45	1.560	8	12.48	≤ 400	PASS

**TEST SETUP PHOTOGRAPHS**

Refer Annexure-1

Conducted RF Test Setup

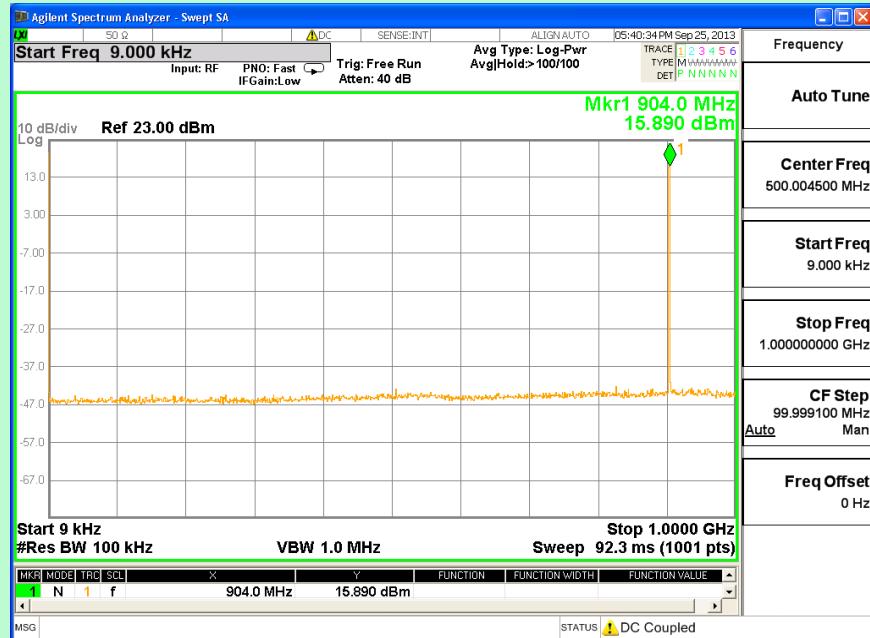
**2.7 SPURIOUS RF CONDUCTED EMISSIONS**

<b>EUT Nomenclature</b>	Wireless Gatewy	<b>Test Request No.</b>	EMC-1259-1
<b>Model No.</b>	FWSG	<b>Serial No.</b>	05303
<b>Test Start Date</b>	23-Sep-2013	<b>Temperature (°C)</b>	23.2
<b>Test End Date</b>	25-Sep-2013	<b>Humidity RH (%)</b>	55.1
<b>Tested By</b>	Loganathan Joghee	<b>Pressure (mbar)</b>	NR
<b>Input Voltage / Freq</b>	24 Vdc		
<b>Operating Mode</b>	Refer Page 5 for Operating Mode Table		
<b>Test configuration</b>	Refer Page 5 for Test Configuration Table		
<b>Deviation from Std</b>	NA		
<b>Applicable standard</b>	FCC Part 15.247		
<b>Test Method</b>	DA 00-705		
<b>Comment</b>			
<b>TEST DETAILS</b>			
<b>Method</b>	<input checked="" type="checkbox"/> Conducted	<input type="checkbox"/> Radiated	
<b>TEST PARAMETERS</b>			
<b>Antenna Height</b>	NA	<b>Turntable Rotation</b>	NA
<b>Equipment Class</b>	NA	<b>Measurement Distance</b>	NA

**TEST EQUIPMENT**

Y/N	Equipment	Make	Model	Serial Number	Cal Due Date
Y	Spectrum Analyzer	Agilent	N9010A	MY48031005	28-Nov-2014
Y	RF Cable	Huber- Suhner	SF104/2X11PC3542/500	NA	NA

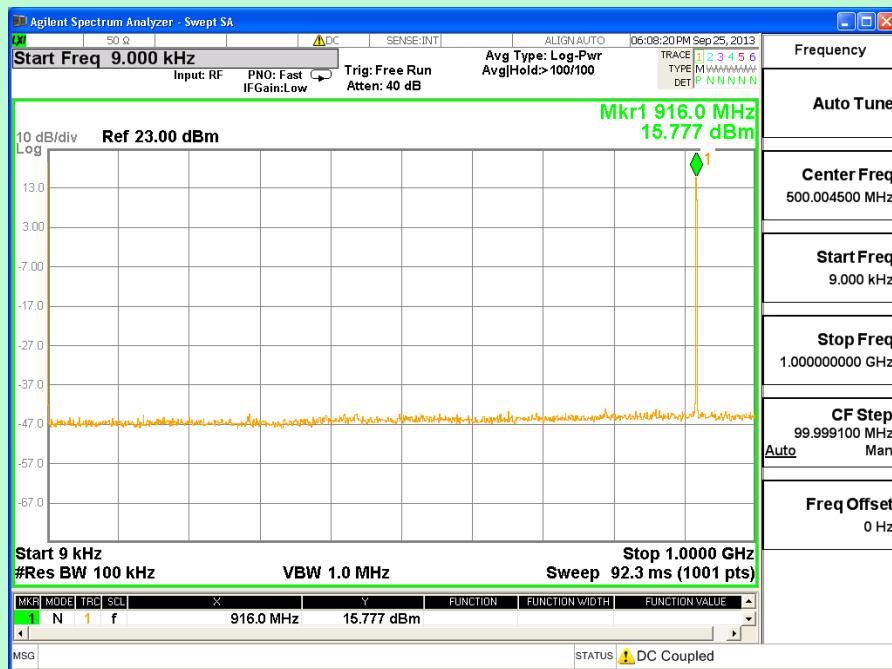
## TEST GRAPHS



Channel 1 (903.55 MHz) – 9 kHz to 1 GHz



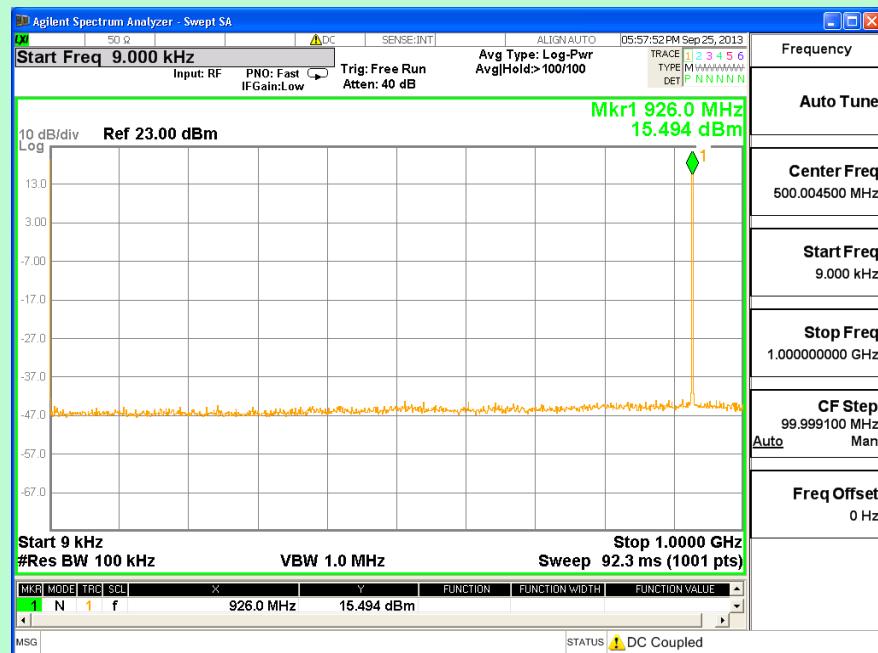
Channel 1 (903.55 MHz) – 1 GHz to 10 GHz



Channel 27 (916.35 MHz) – 9 kHz to 1 GHz



Channel 27 (916.35 MHz) – 1 GHz to 10 GHz



Channel 52 (926.45 MHz) – 9 kHz to 1 GHz



Channel 52 (926.45 MHz) – 1 GHz to 10 GHz

<b>TEST RESULT</b>					
Channel	Channel Frequency	Measured Parameters		Limit	Results
#	MHz	Frequency (GHz)	Level (dBm)	dBc	
1	903.55	5.968	-36.647	>20	PASS
27	916.35	5.986	-36.915	>20	PASS
52	926.45	6.031	-37.675	>20	PASS

**TEST SETUP PHOTOGRAPHS**

Refer Annexure-1

**Conducted RF Test Setup**