

Wireless Gateway

Model No.: FWSG





Date: 22-Dec-2013

Report Prepared By:

Sasikala Subramani

EMC Test Report

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

Prepared By: Technical Lead Name : Sasikala Subramani Signature:  Date : 23-Dec-2013	Reviewed By: Project Lead Name : Loganathan Joghee 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

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.

TEST SUMMARY						
#	Name	Specification	Test Method	Pass	Fail	NA
FHSS						
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"/>
DTS						
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

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

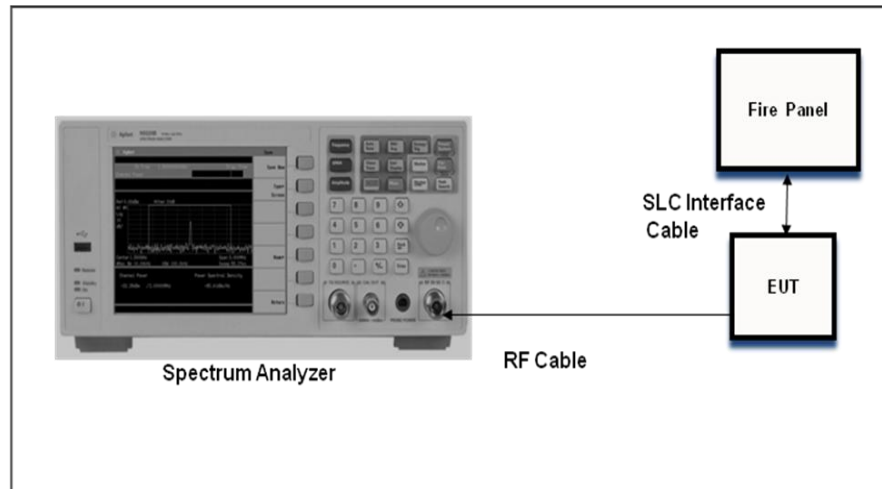
TEST CONFIGURATION	
Config #	Description
DTS	EUT is Powered by SLC interface line from Fire Panel. EUT Debug port (UART) is connected to Laptop through USB to UART converter cable. EUT is configured to the respective operating mode through Hyper Terminal. Antenna 1 is selected for the test as this is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

OPERATING MODES	
Mode #	Description
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

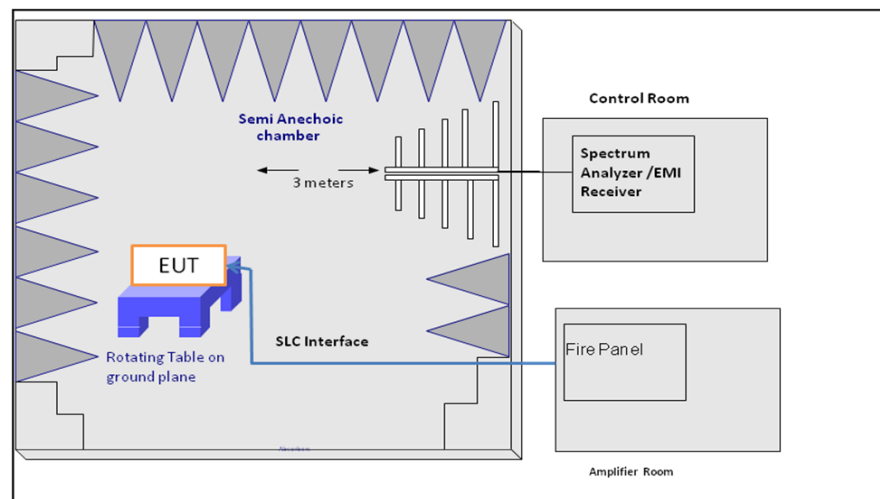
INPUT AND OUTPUT CABLES					
Port #	Name	Port Type	Cable Length	Cable type Shielded/ Unshielded	Comments
1	SLC Interface Cable	Input	5m	Unshielded	
*Note: AC = AC Power Port TP = Telecommunication Ports (eg. Ethernet) N/E = Non-Electrical DC = DC Power Port DI/ DO = Digital Input/ Output AI/ AO = Analog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

SUPPORT EQUIPMENTS AND ACCESSORIES USED					
#	Item Description	Make	Model	Part No. / Sl. No	Cal Due Date
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

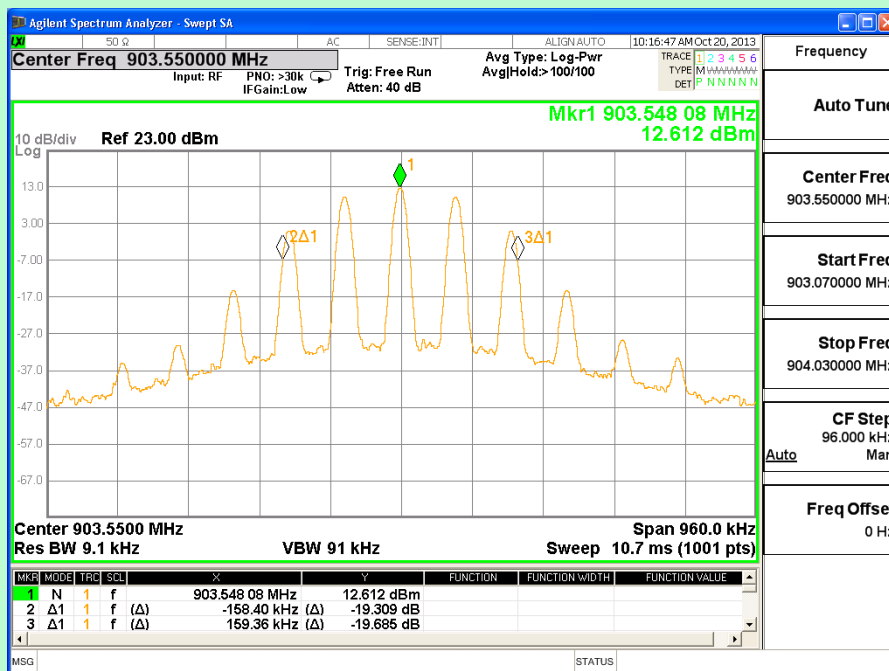
2.1 20dB BANDWIDTH

EUT Nomenclature	Wireless Gateway	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		
TEST PARAMETERS			
Antenna Height	NA	Turntable Rotation	NA
Equipment Class	NA	Measurement Distance	NA

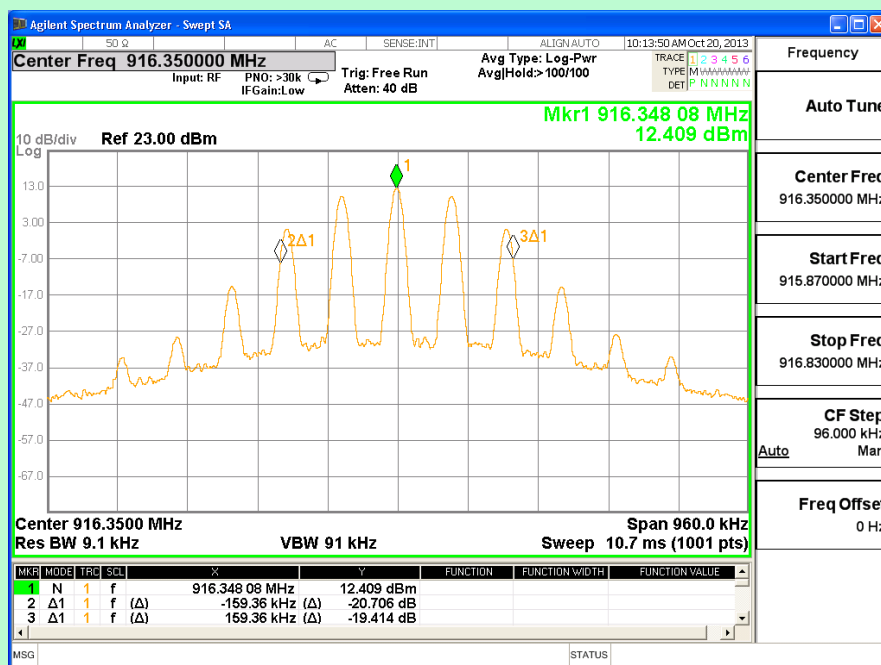
TEST EQUIPMENT

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

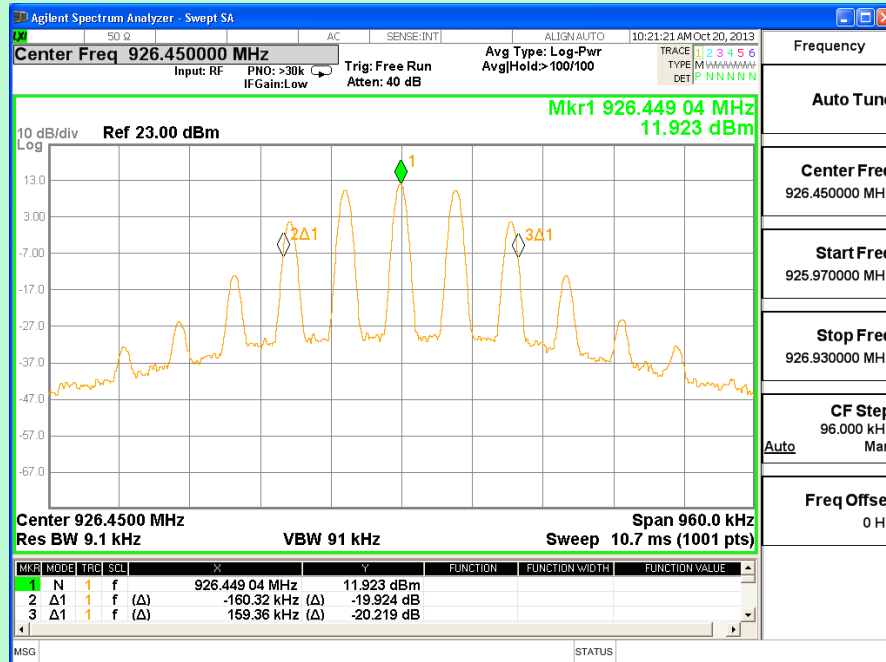
TEST GRAPHS



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

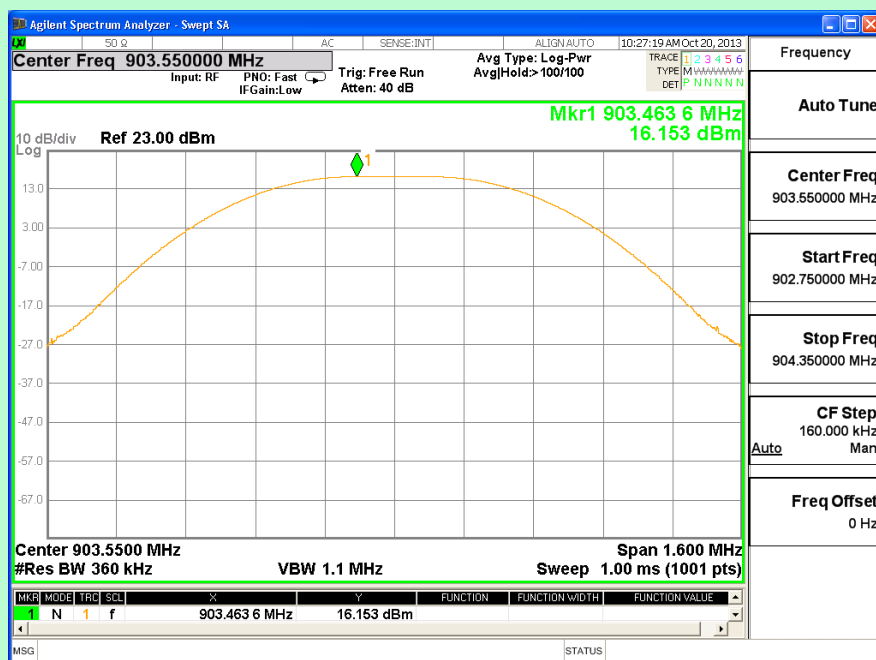
2.2 PEAK OUTPUT POWER

EUT Nomenclature	Wireless Gateway	Test Request 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	
TEST PARAMETERS			
Antenna Height	NA	Turntable Rotation	NA
Equipment Class	NA	Measurement Distance	NA

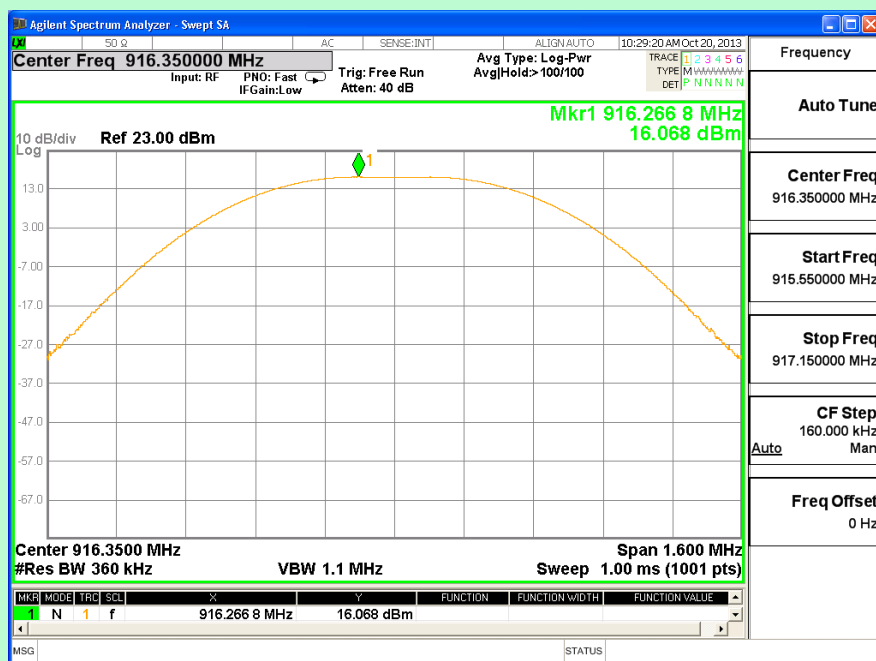
TEST EQUIPMENT

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

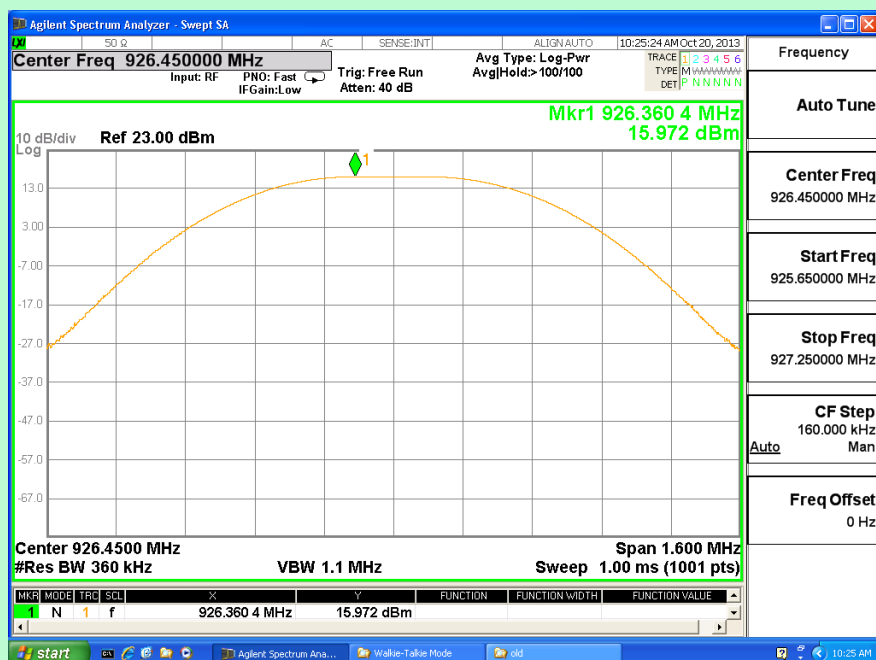
TEST GRAPHS



Channel 1 (903.55 MHz)



Channel (916.35 MHz)



Channel 52 (926.45 M Hz)

TEST RESULT

Channel #	Frequency MHz	Measured Power Level dBm	Cable Loss dB	Transmitter Power Level dBm	Limit dBm	Result
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

2.3 CARRIER FREQUENCY SEPARATION

EUT Nomenclature	Wireless Gateway	Test Request No.	EMC-1259-1
Model No.	FWSG	Serial No.	05303
Test Start Date	29-Aug-2013	Temperature (°C)	23.1
Test End Date	29-Aug-2013	Humidity RH (%)	55.2
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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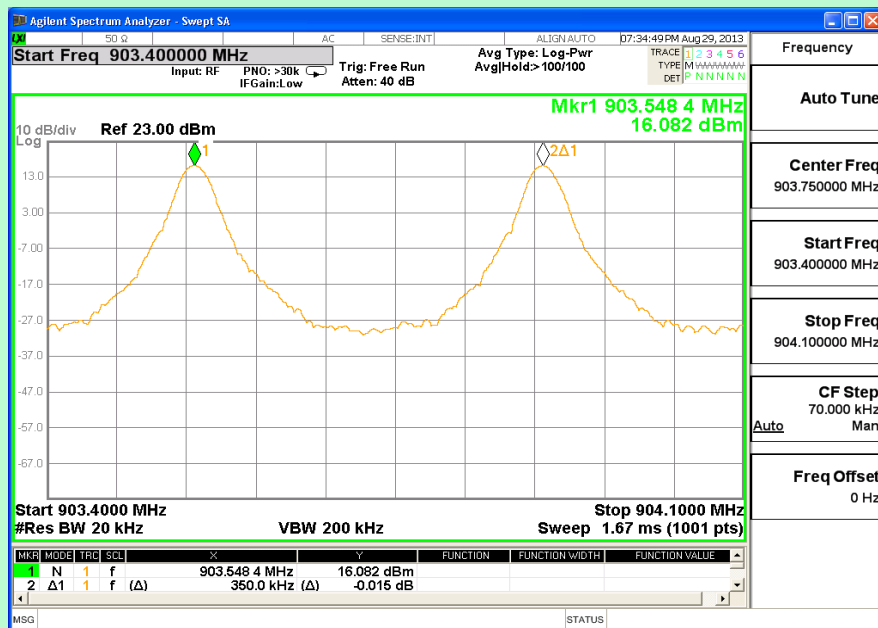
TEST PARAMETERS

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

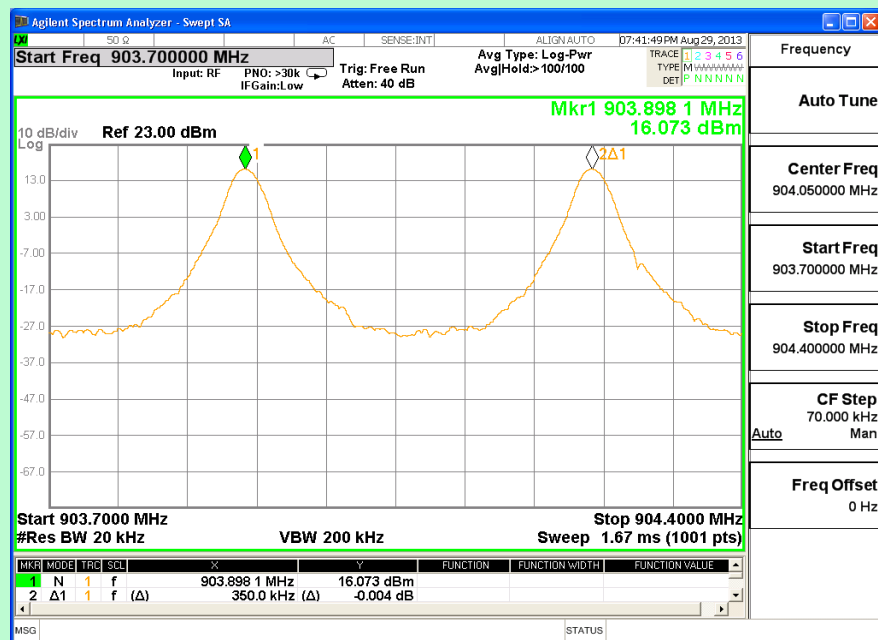
TEST EQUIPMENT

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

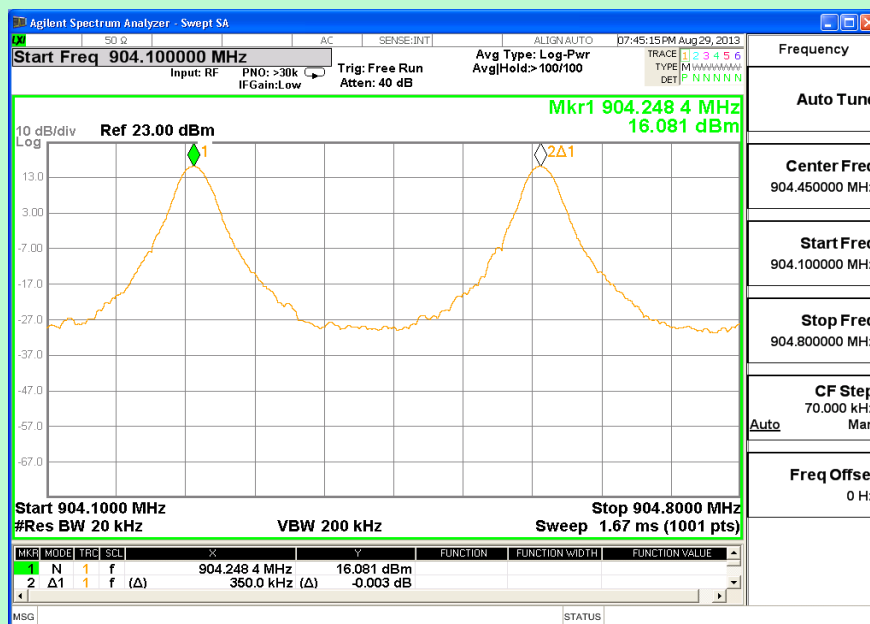
TEST GRAPHS



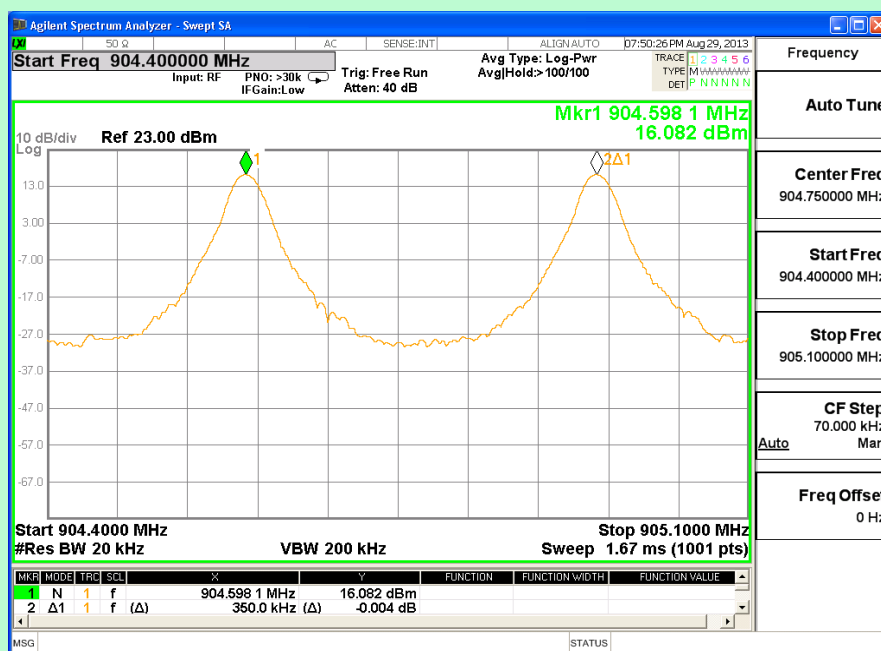
Channel 1 and 2



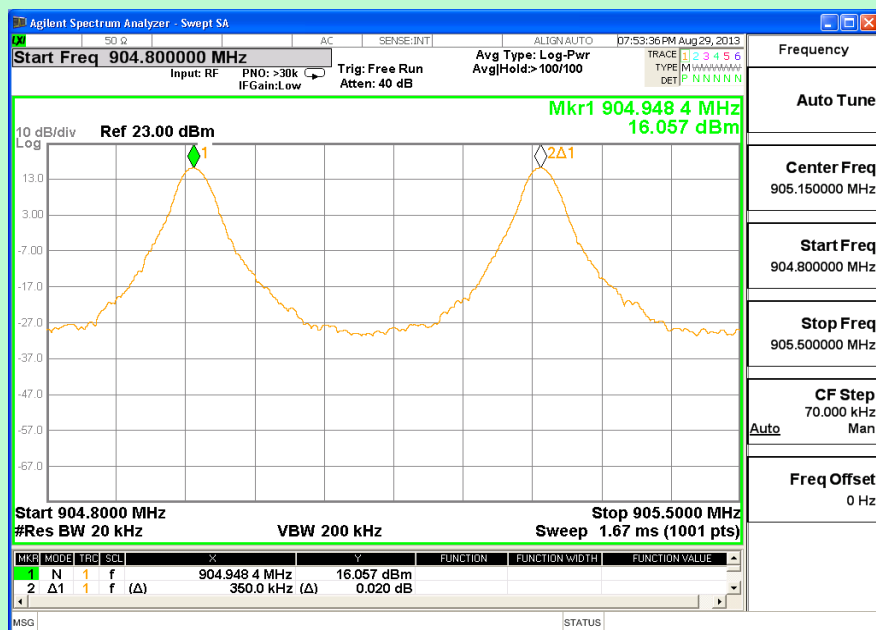
Channel 2 and 3



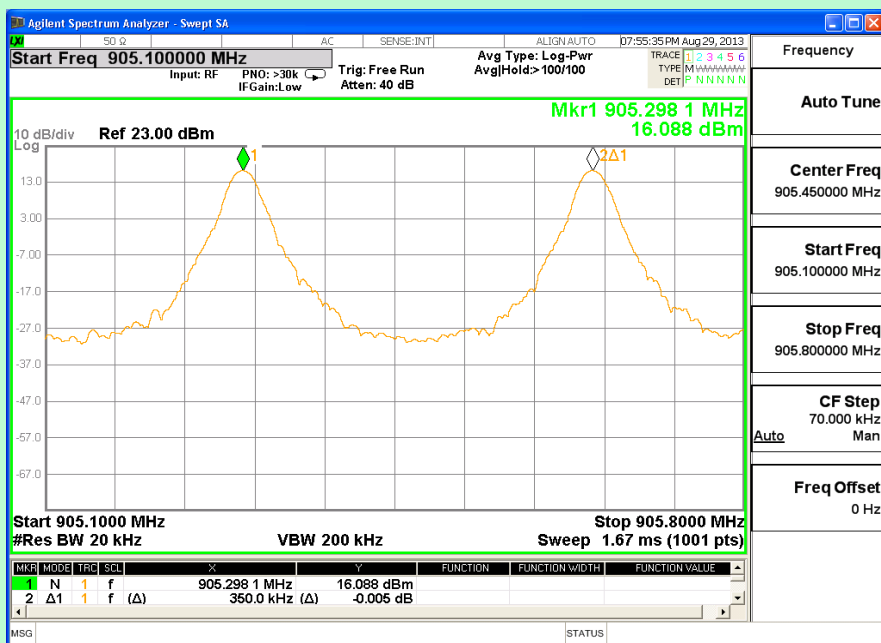
Channel 3 and 4



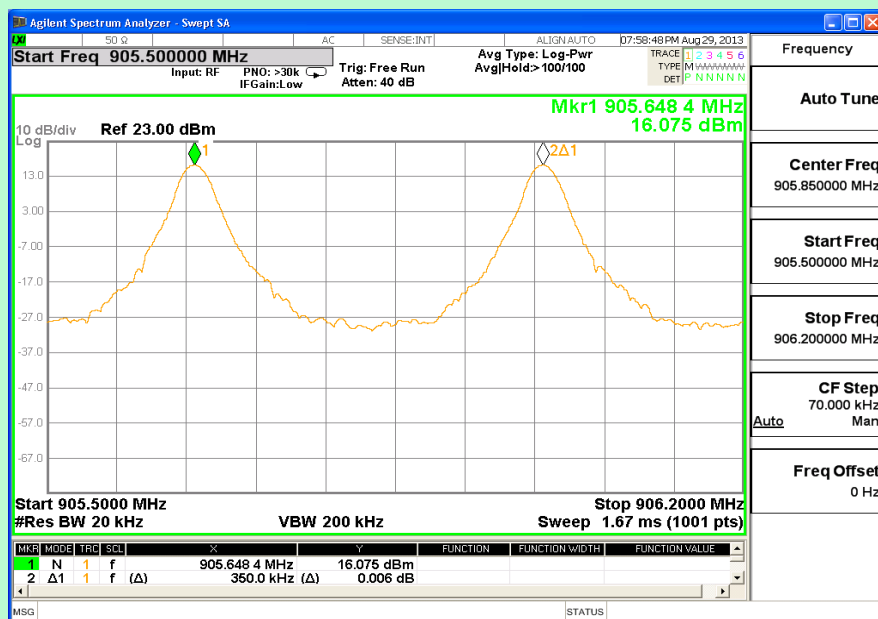
Channel 4 and 5



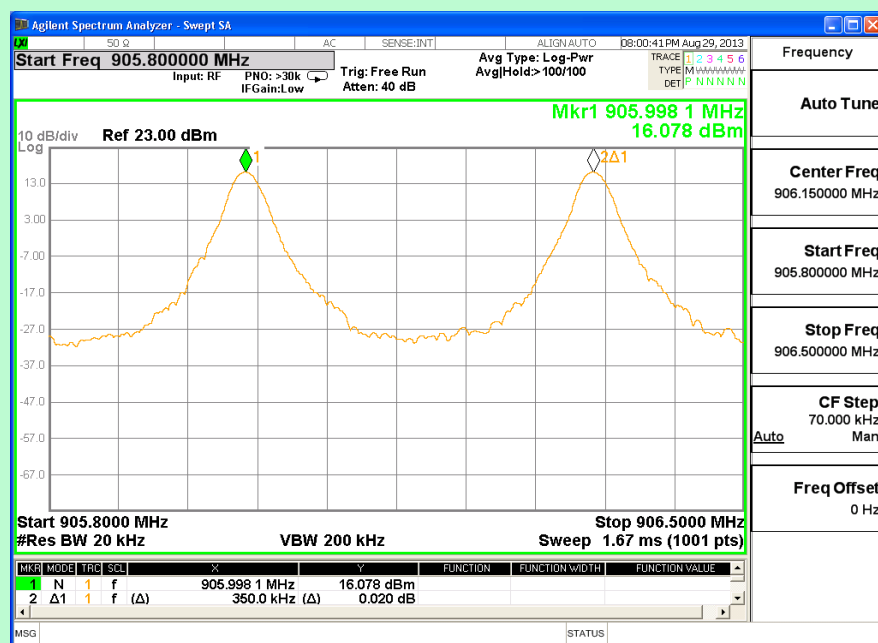
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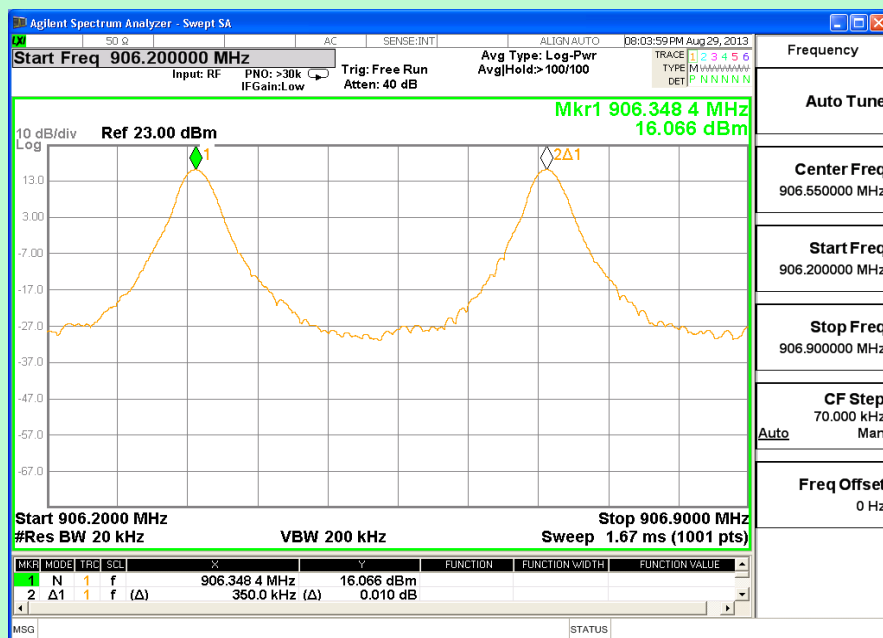
Channel 6 and 7



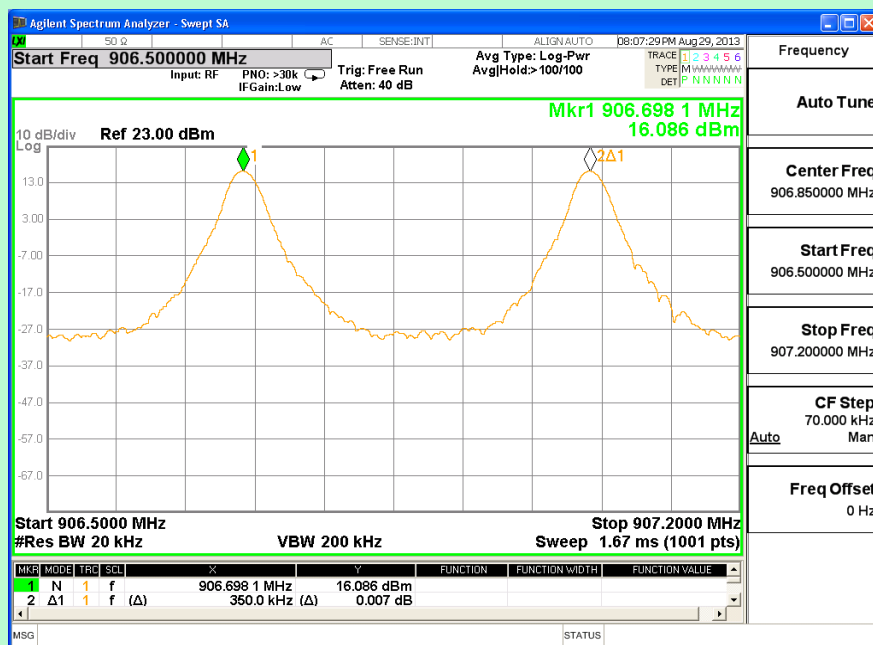
Channel 7 and 8



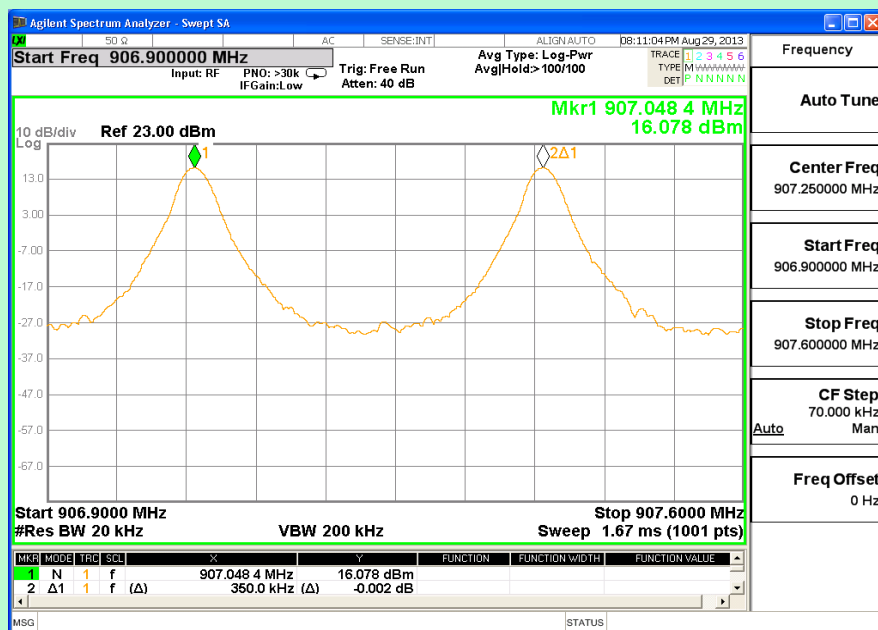
Channel 8 and 9



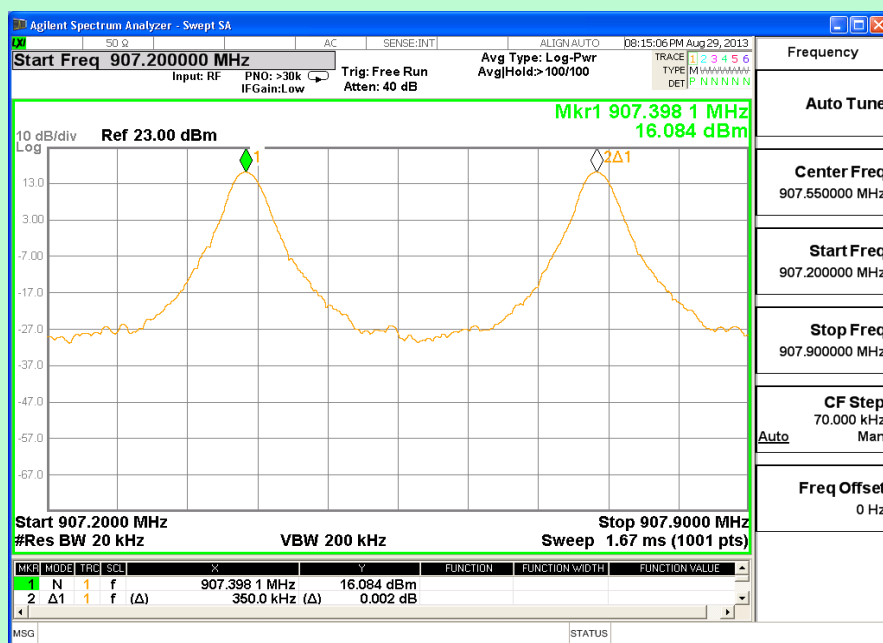
Channel 9 and 10



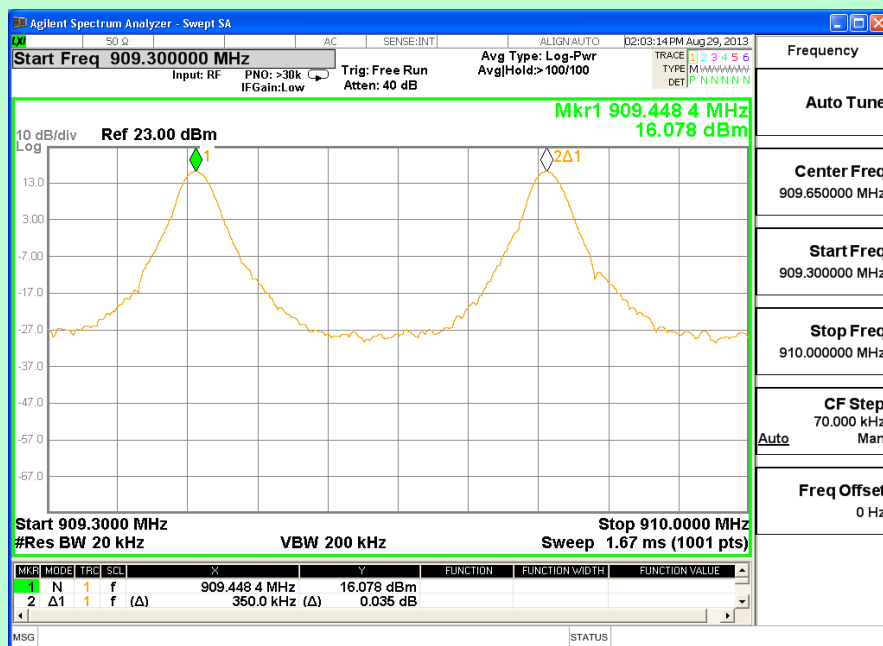
Channel 10 and 11



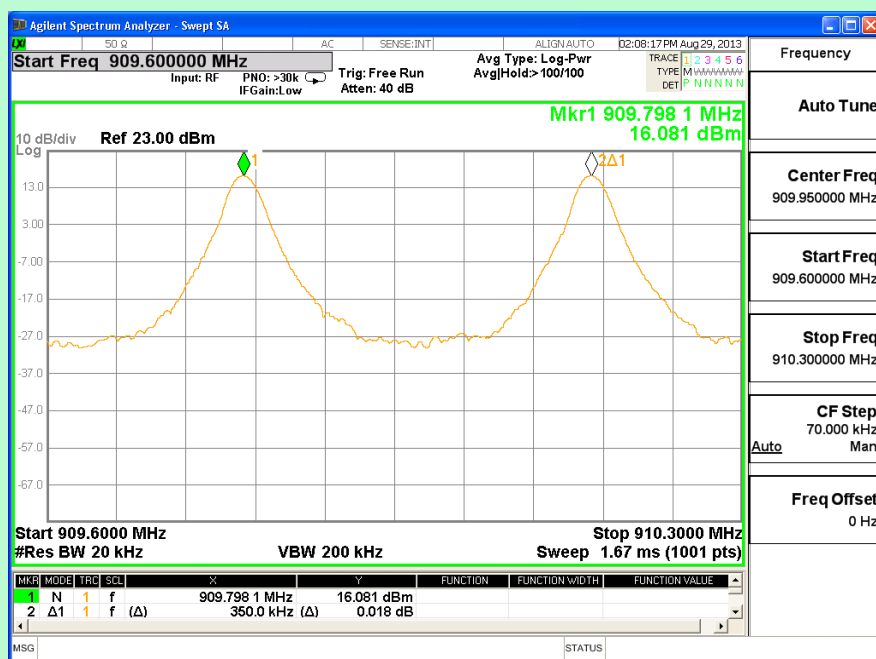
Channel 11 and 12



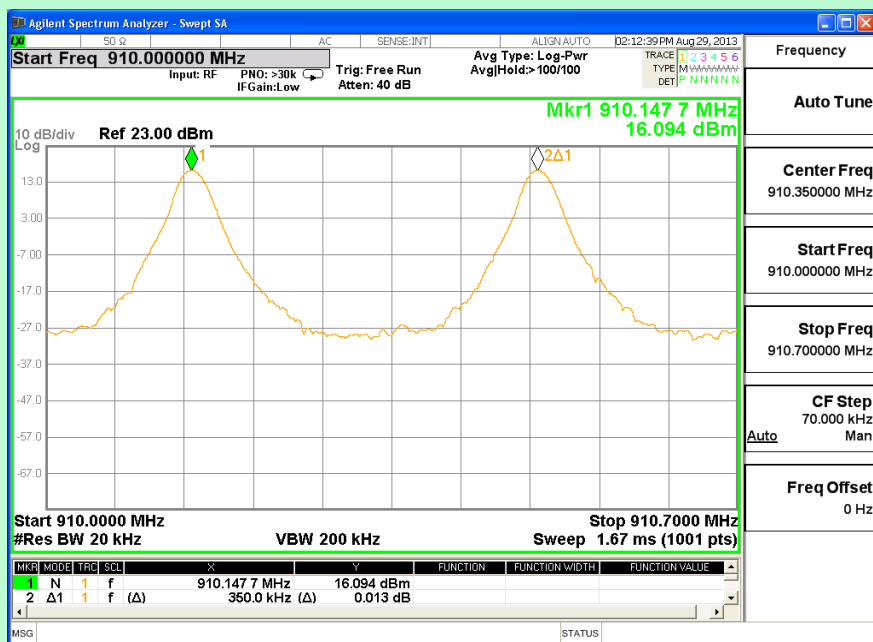
Channel 12 and 13



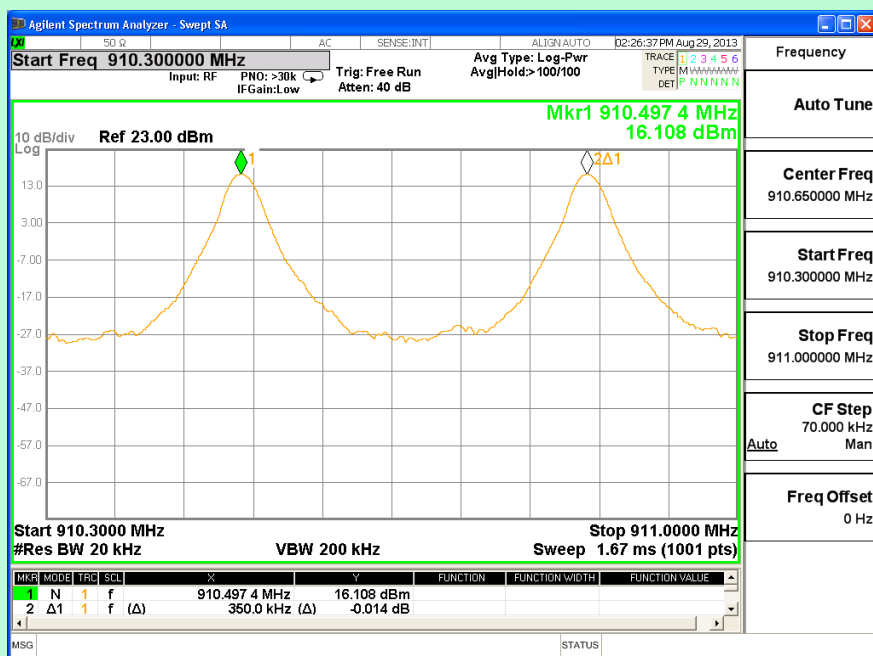
Channel 14 and 15



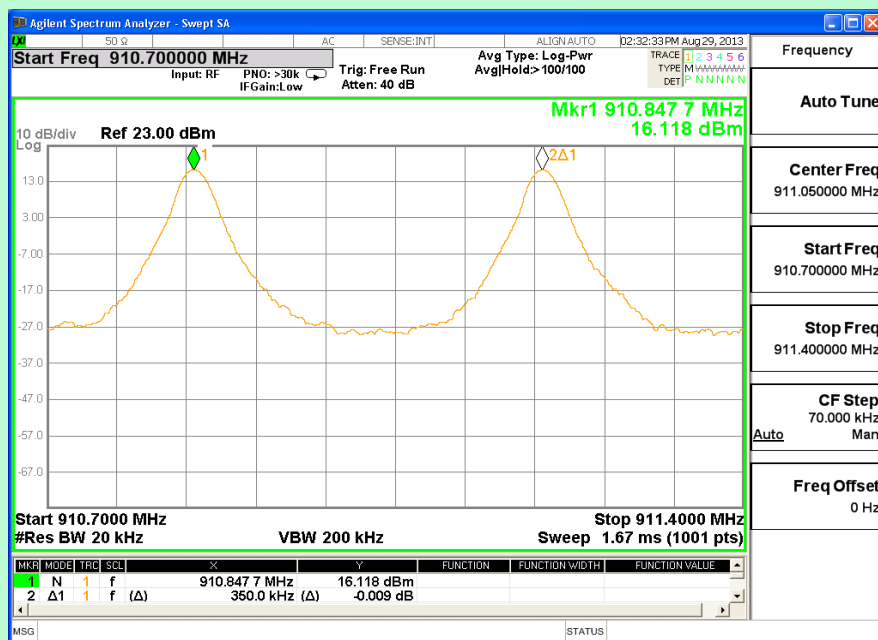
Channel 15 and 16



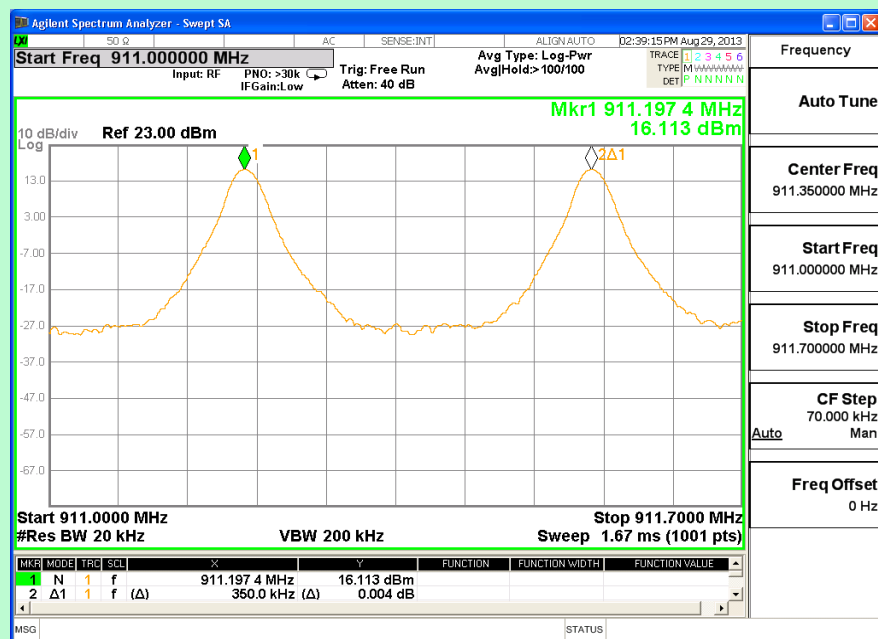
Channel 16 and 17



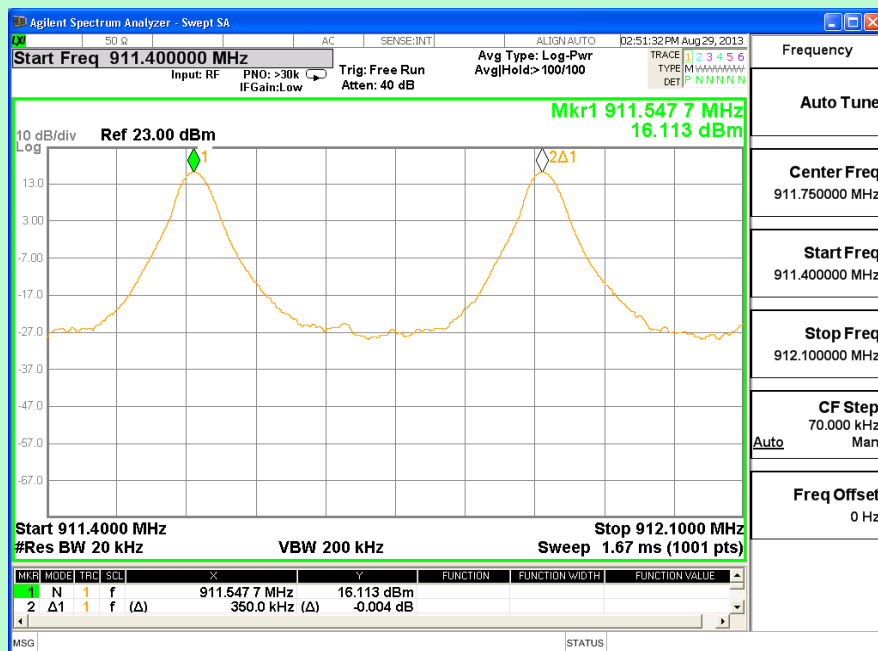
Channel 17 and 18



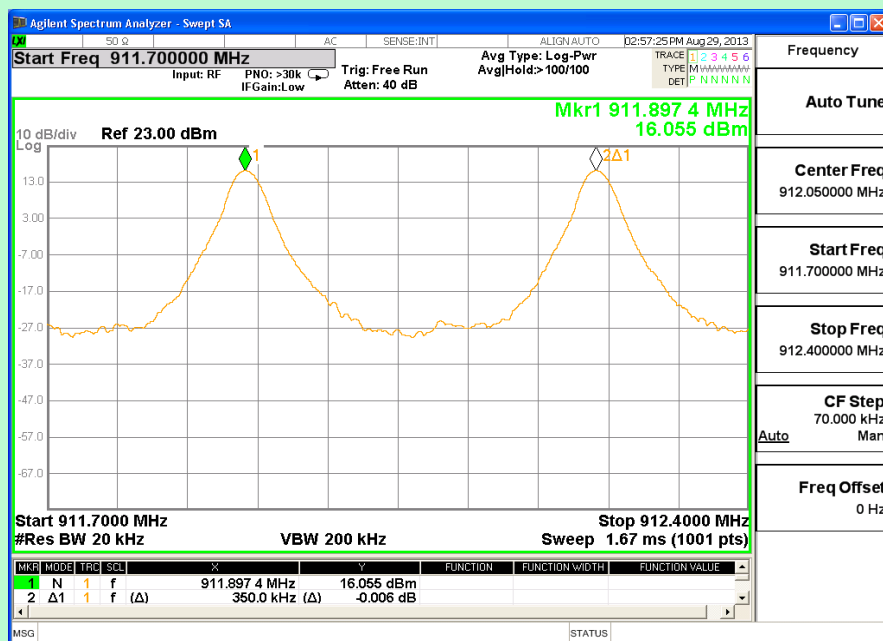
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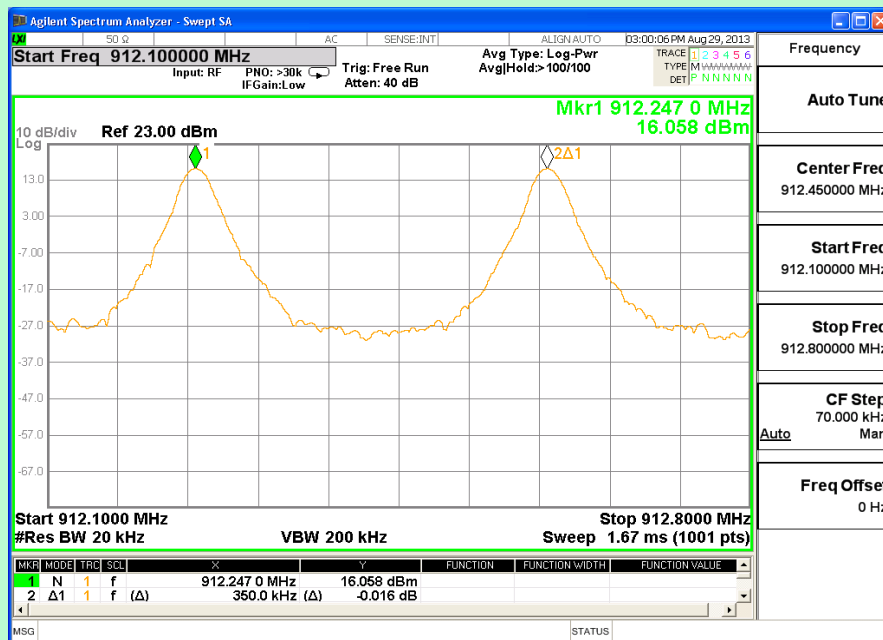
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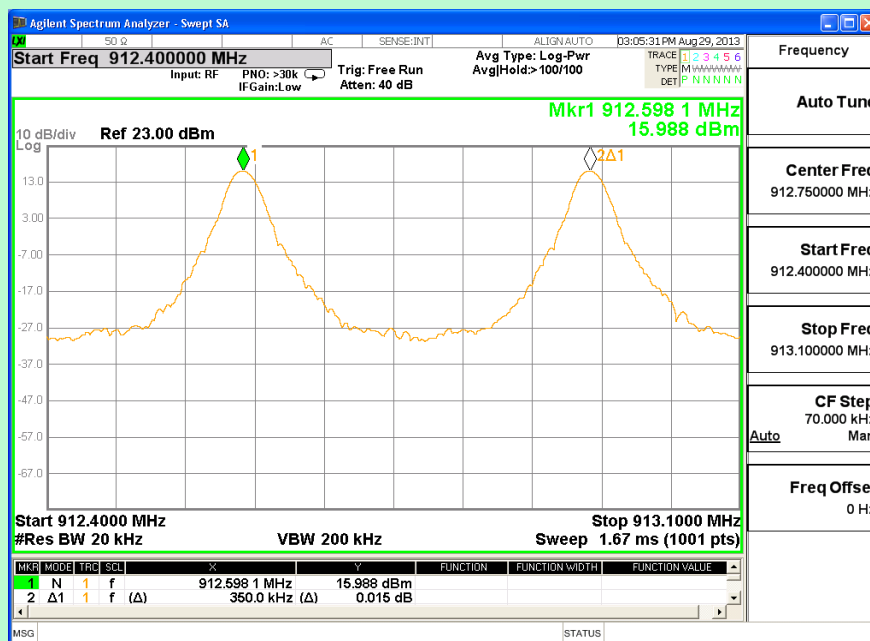
Channel 20 and 21



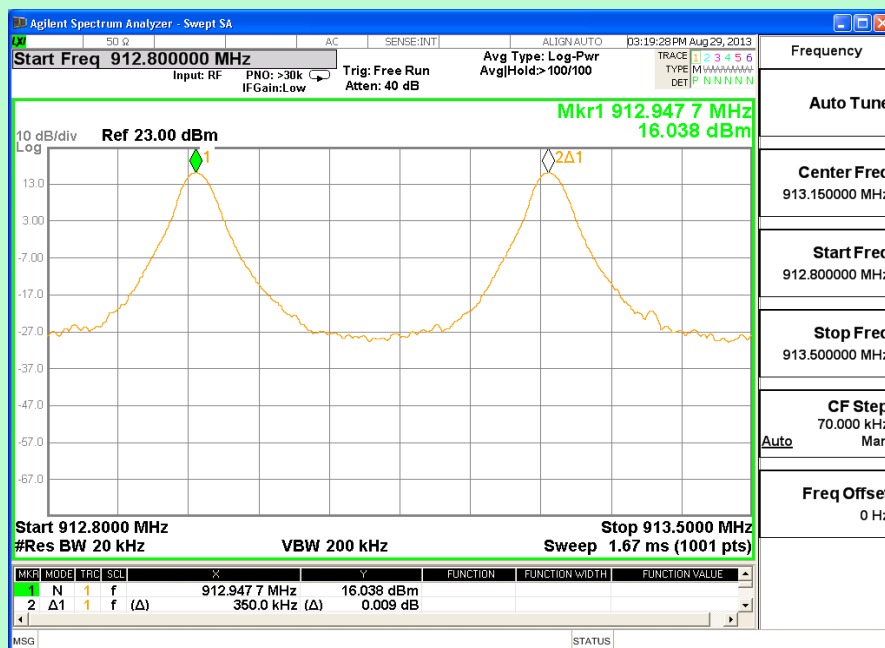
Channel 21 and 22



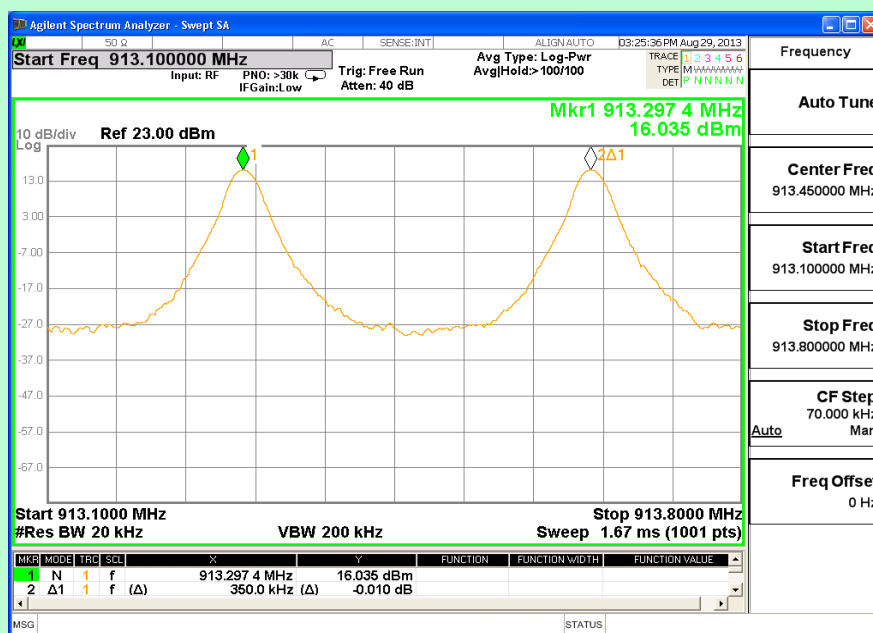
Channel 22 and 23



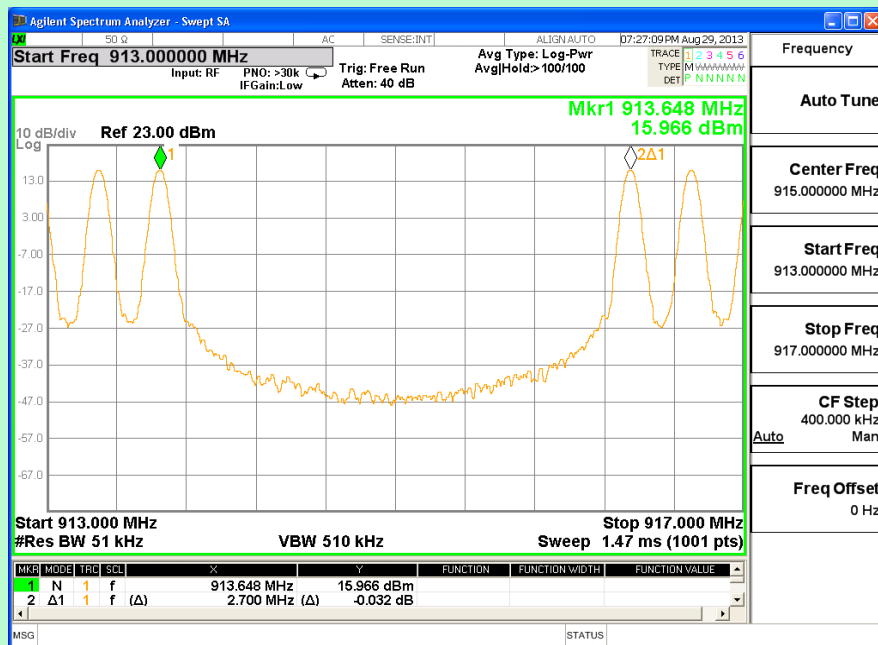
Channel 23 and 24



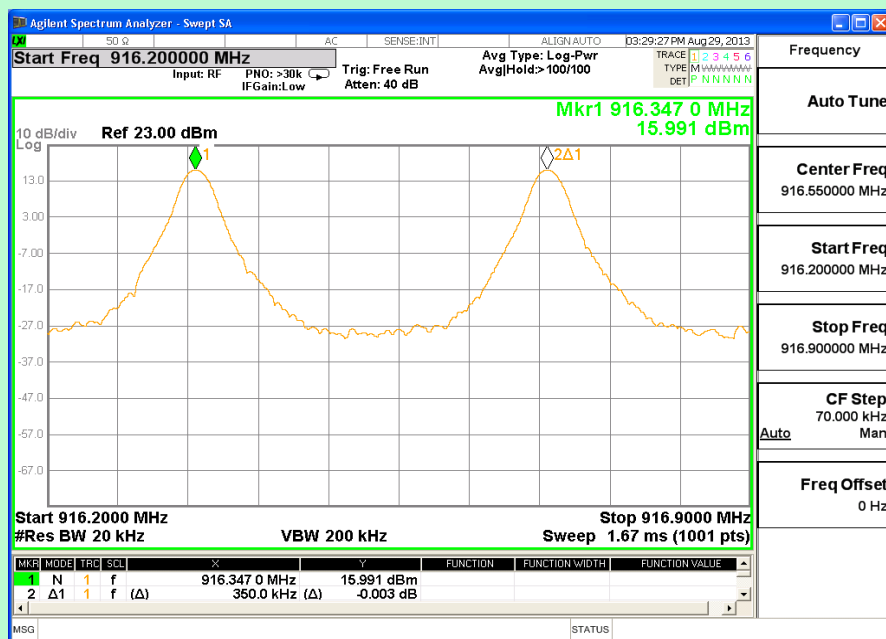
Channel 24 and 25



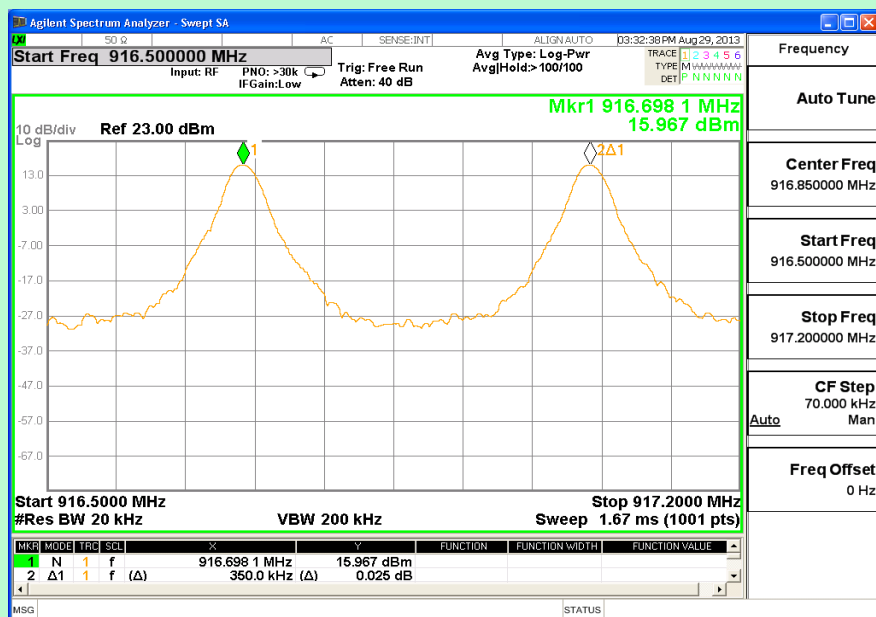
Channel 25 and 26



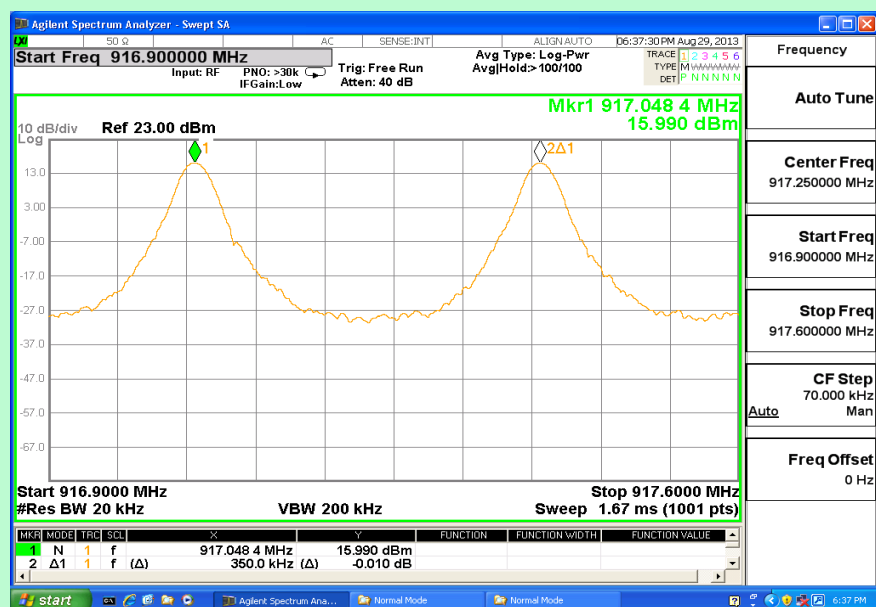
Channel 26 and 27



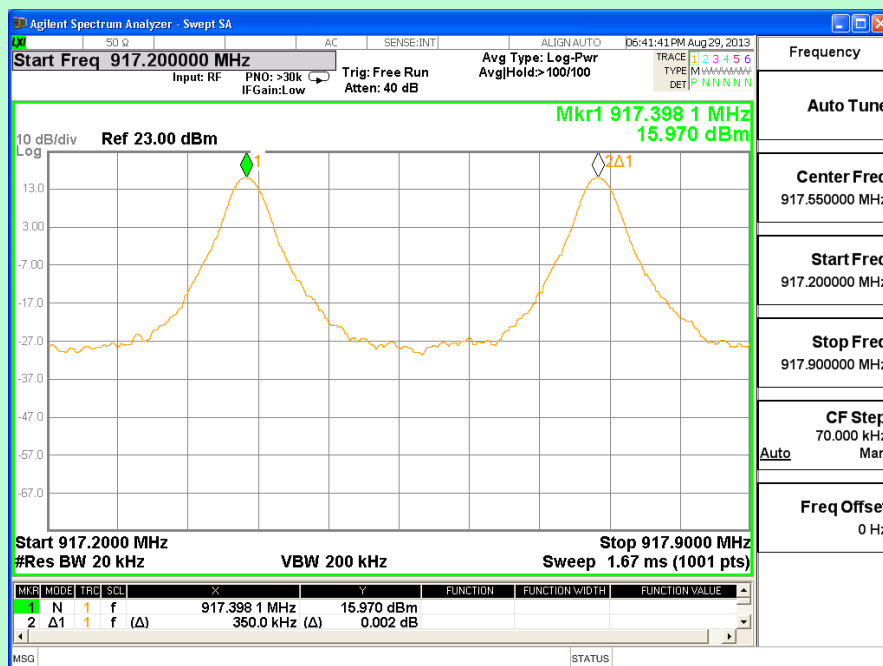
Channel 27 and 28



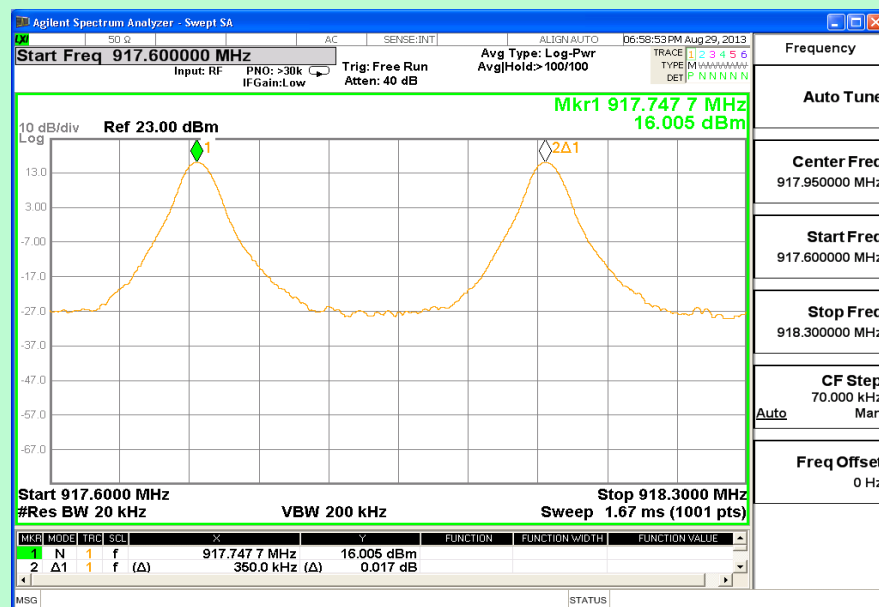
Channel 28 and 29



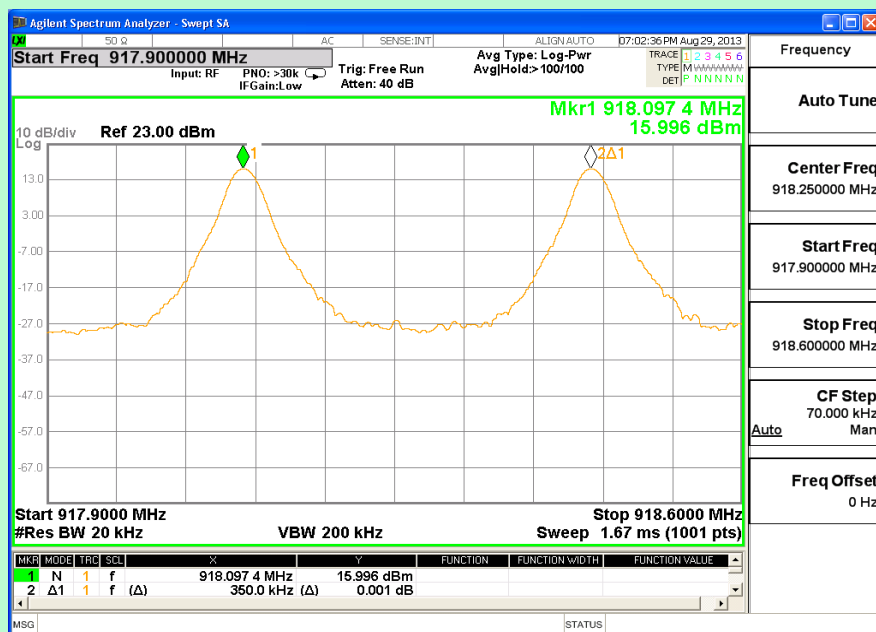
Channel 29 and 30



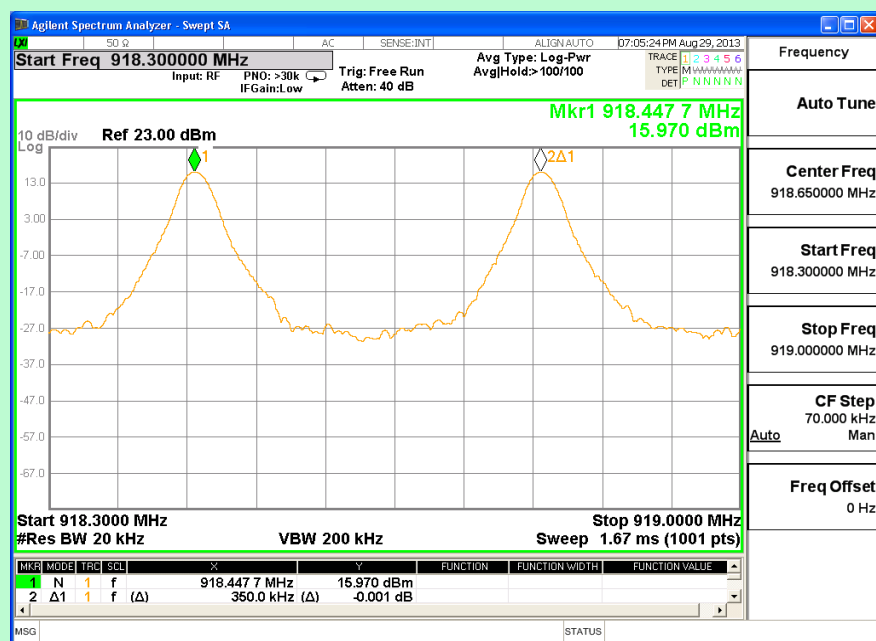
Channel 30 and 31



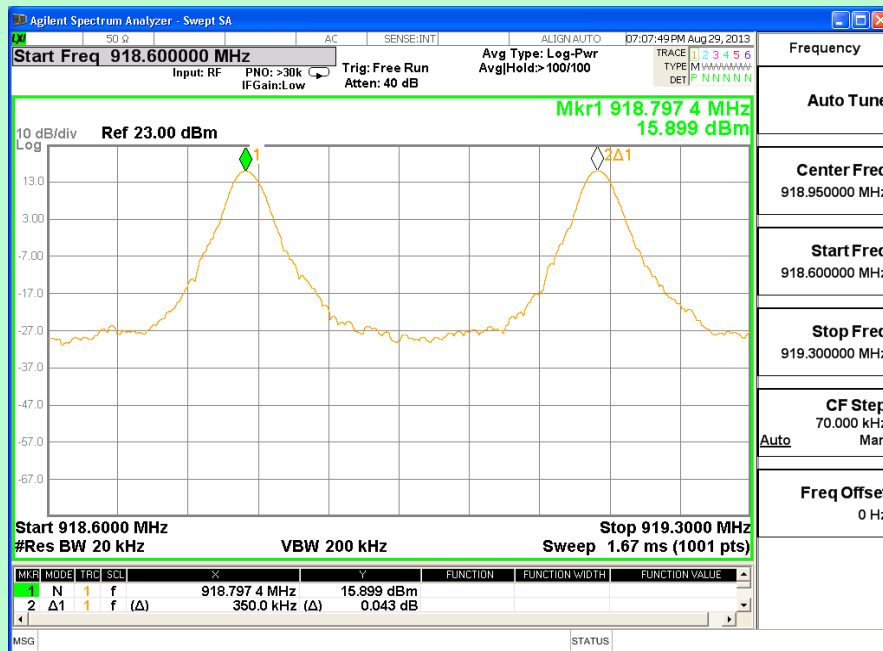
Channel 31 and 32



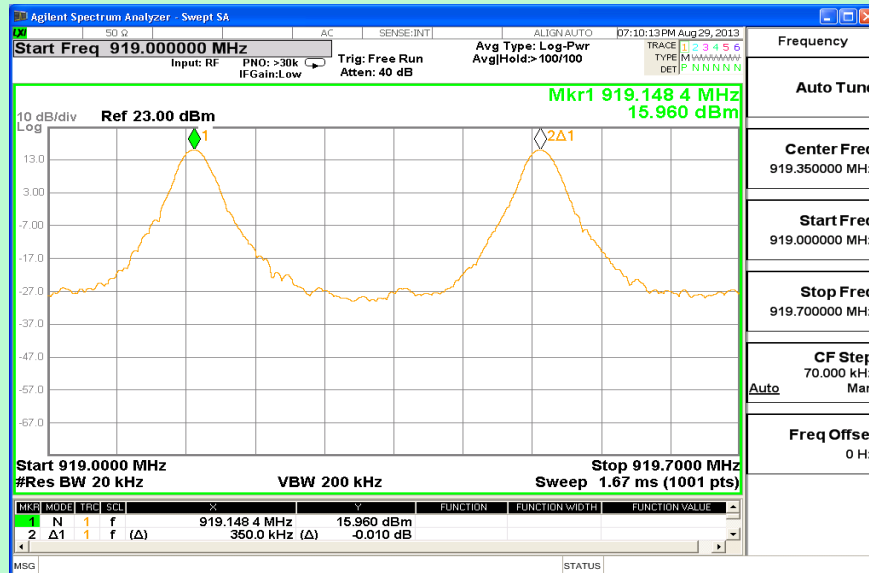
Channel 32 and 33



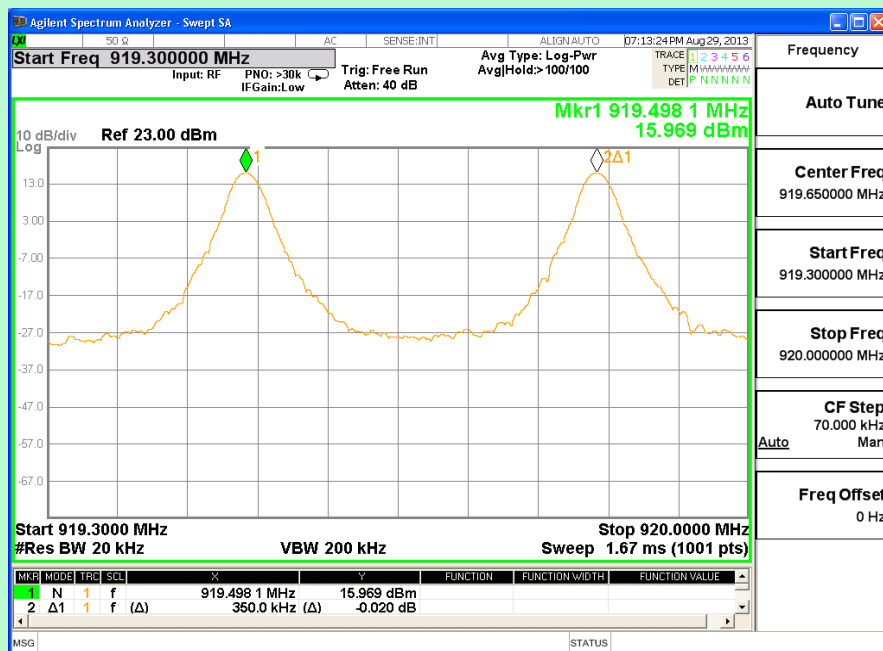
Channel 33 and 34



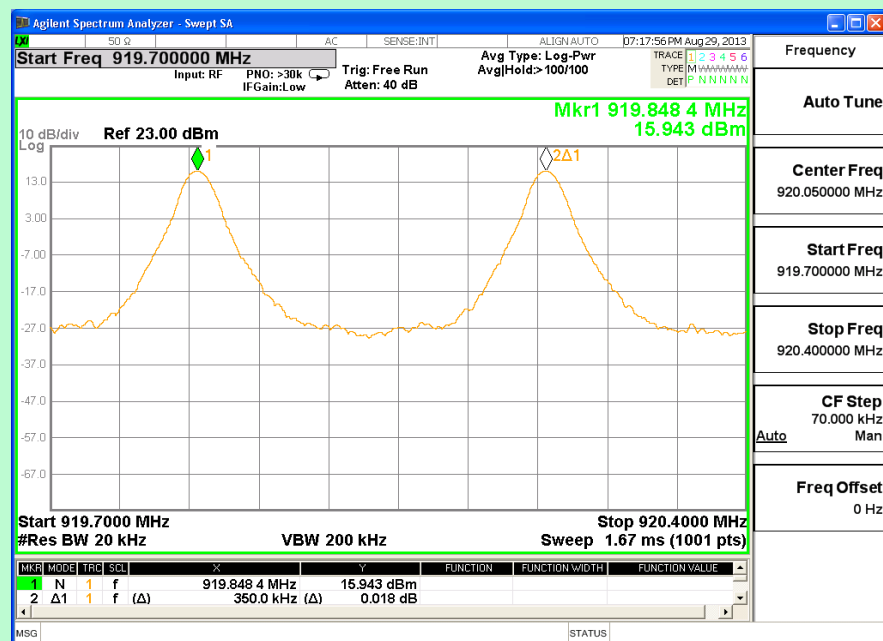
Channel 34 and 35



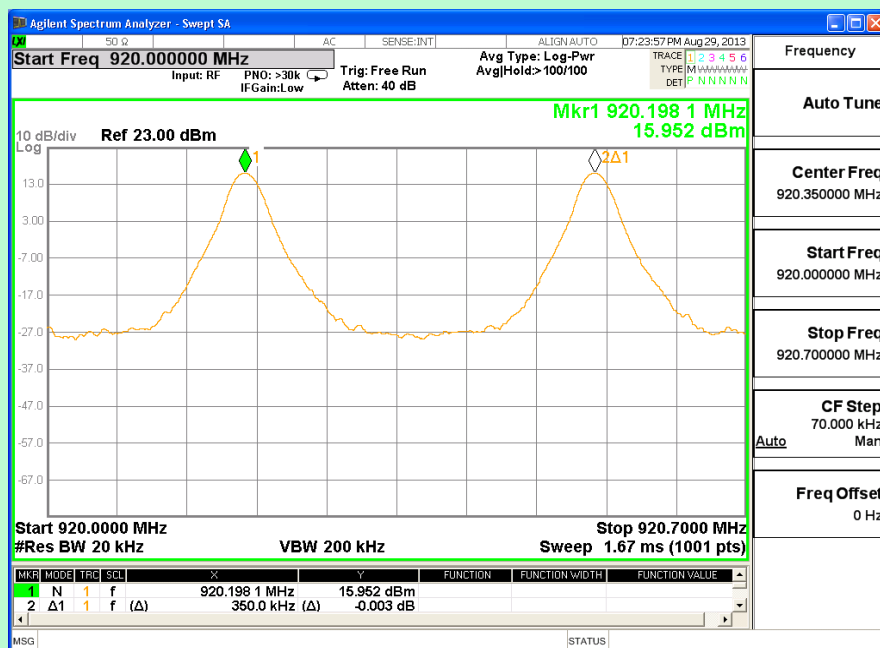
Channel 35 and 36



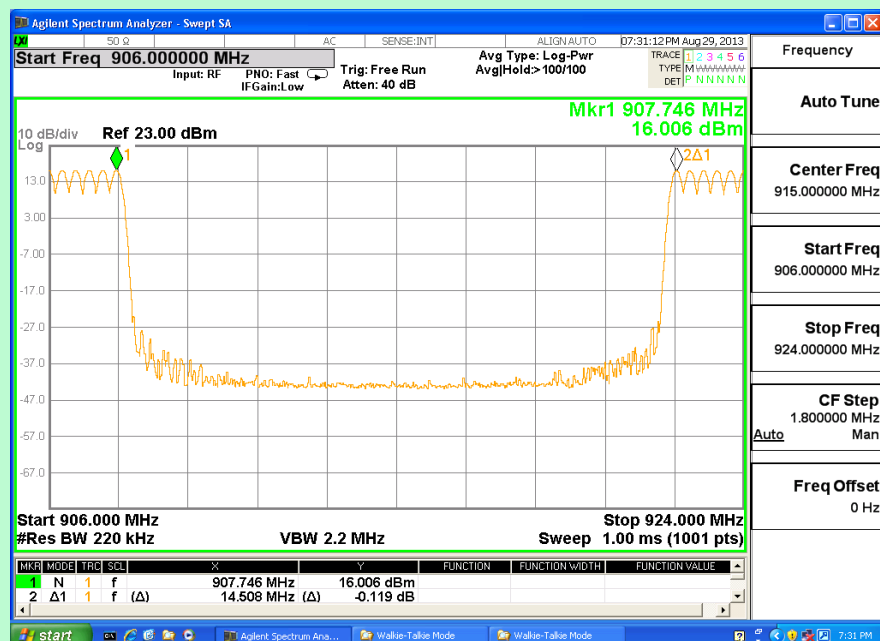
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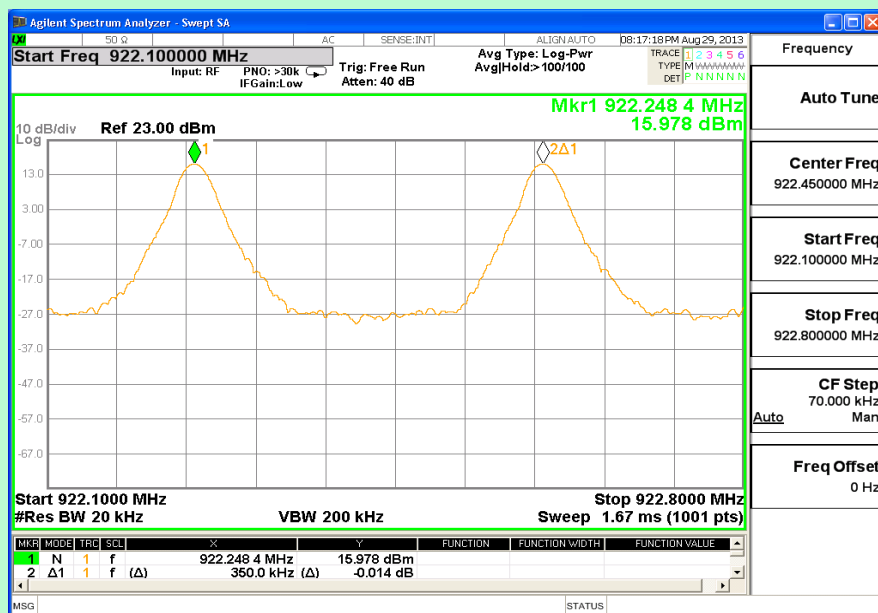
Channel 37 and 38



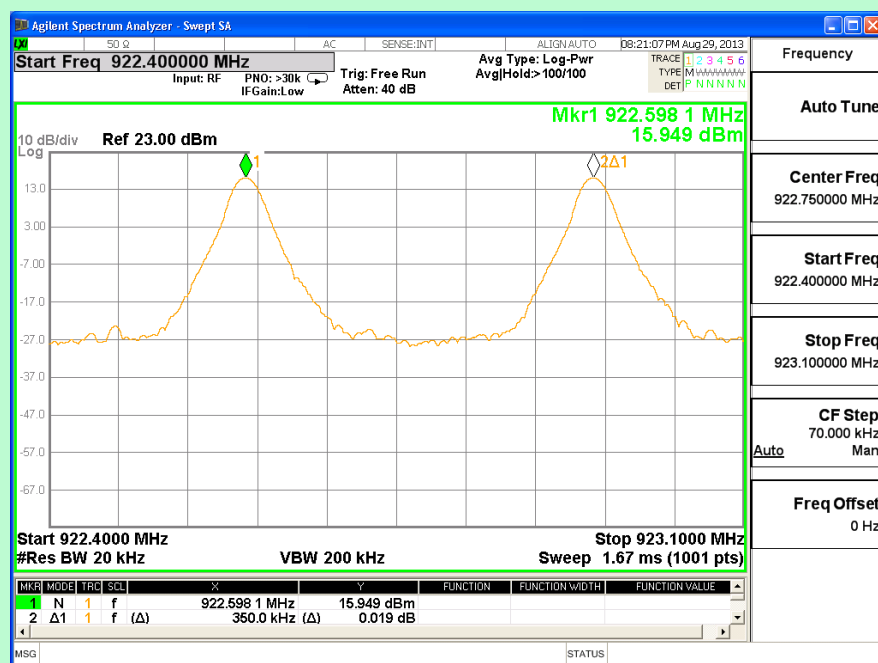
Channel 38 and 39



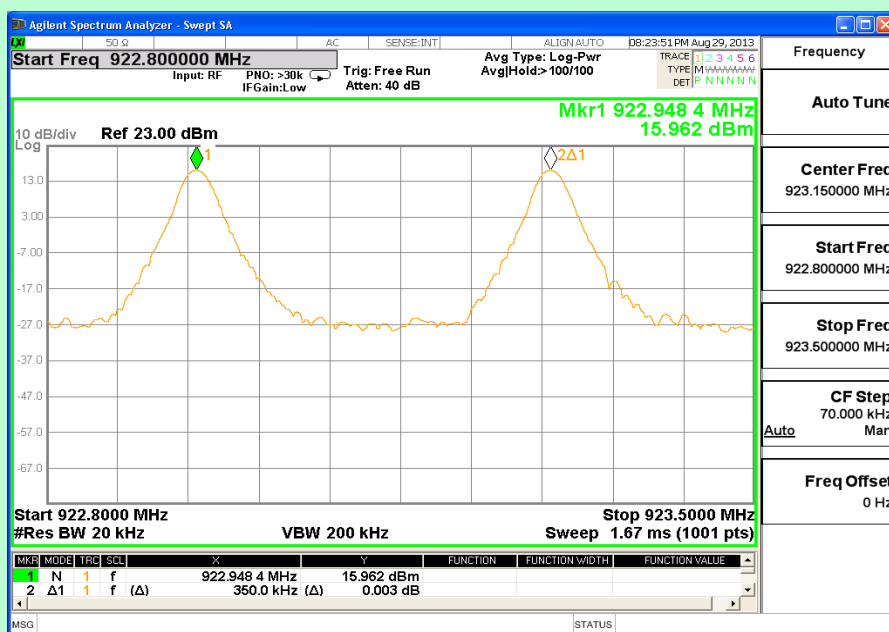
Channel 13 and 40



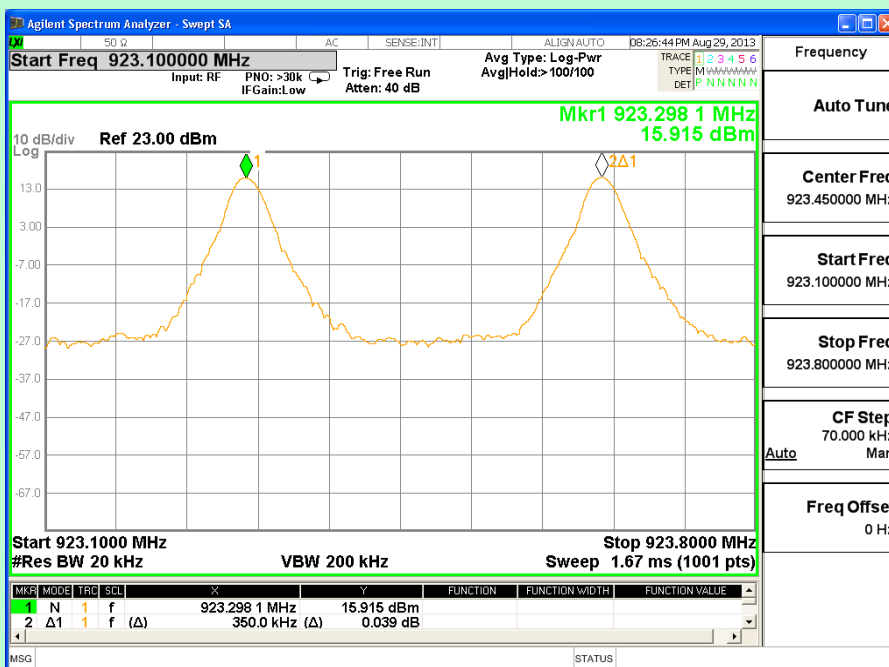
Channel 40 and 41



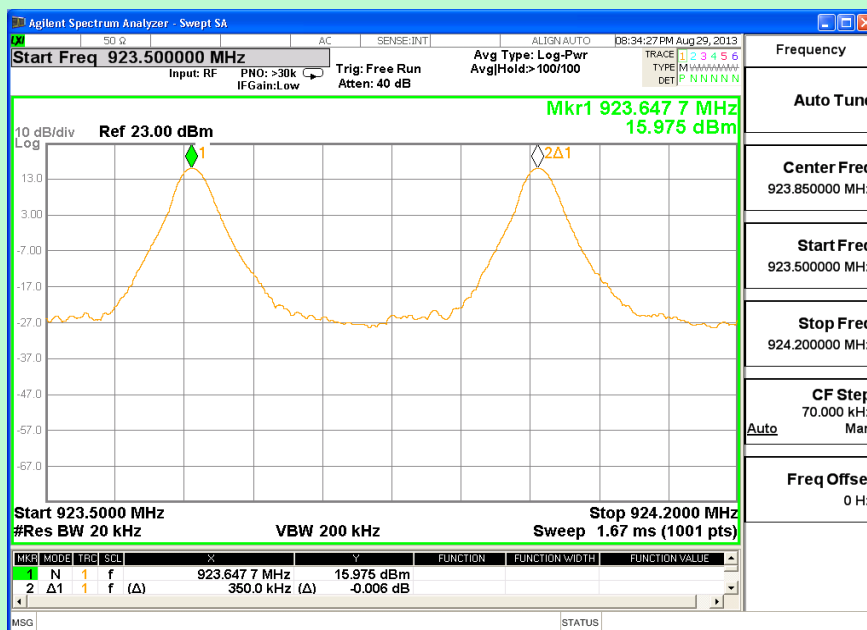
Channel 41 and 42



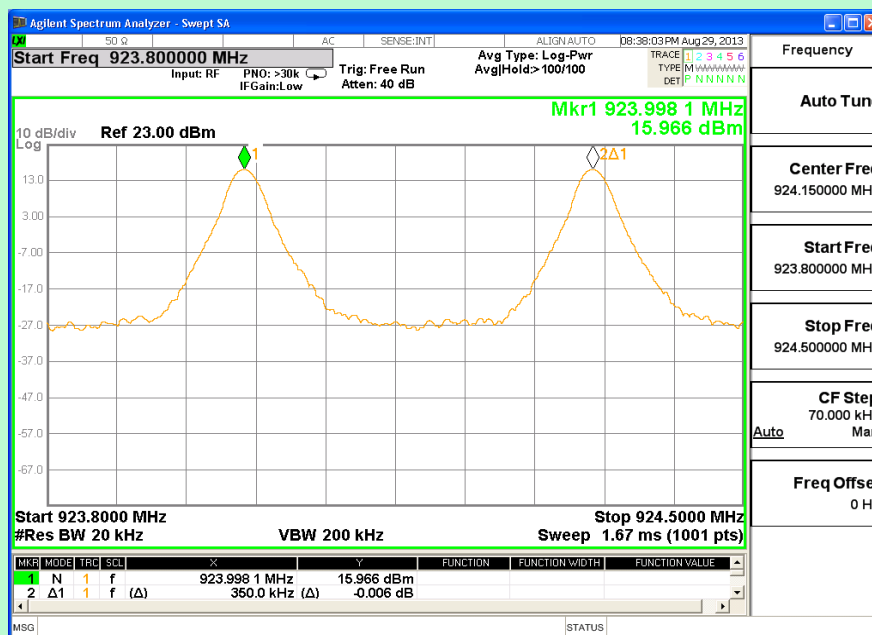
Channel 42 and 43



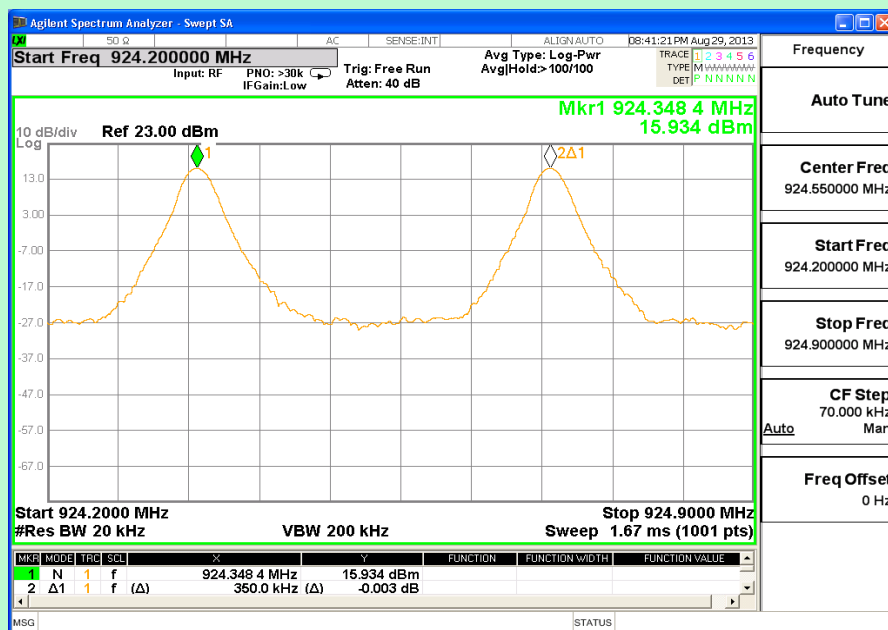
Channel 43 and 44



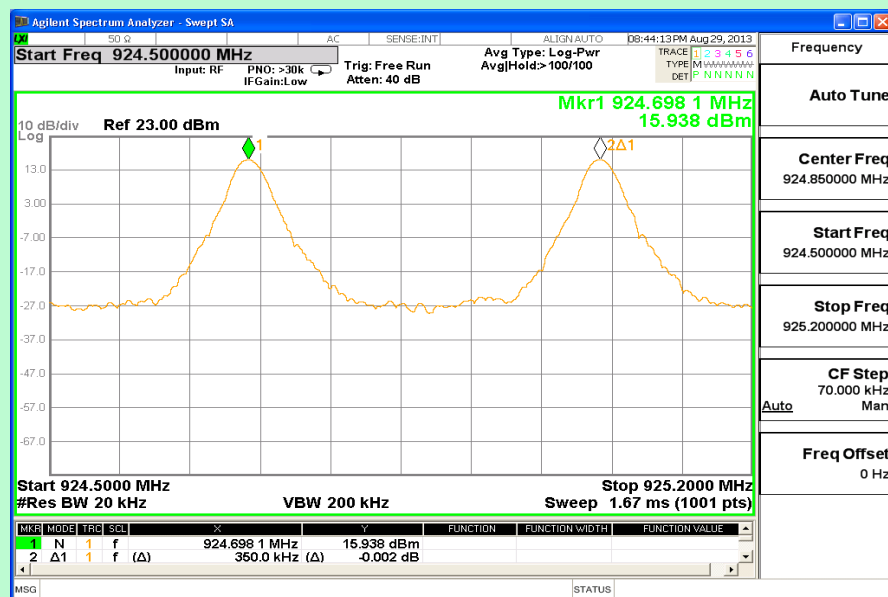
Channel 44 and 45



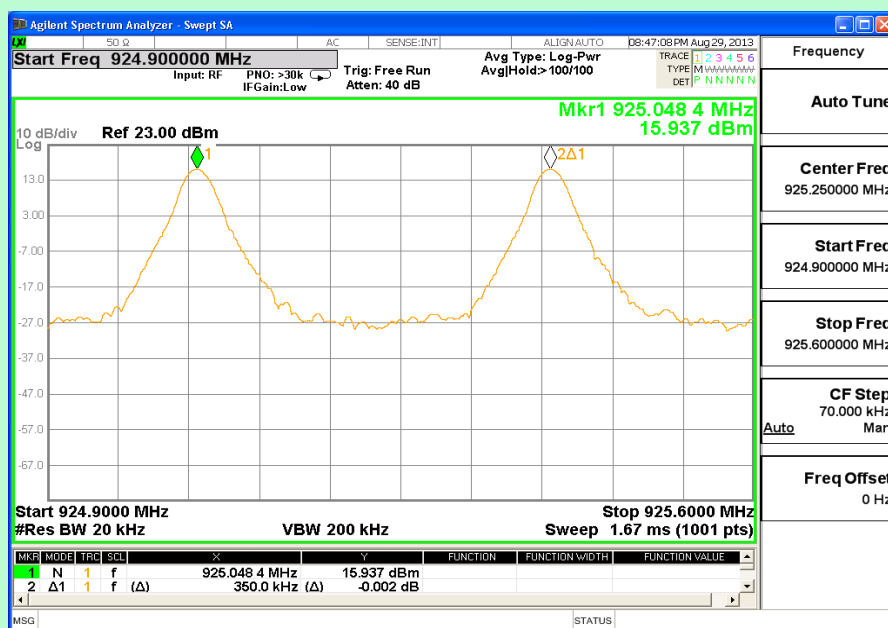
Channel 45 and 46



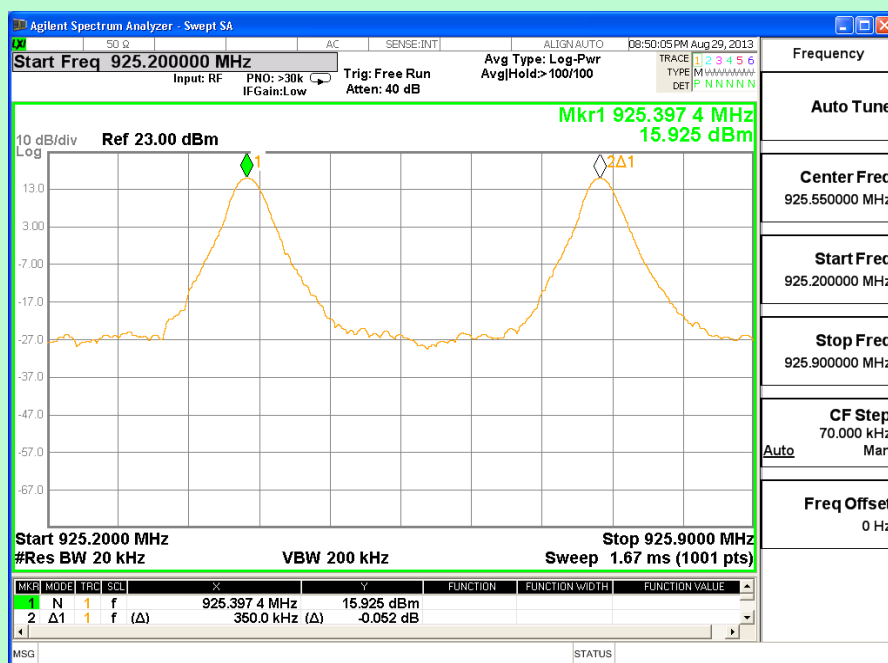
Channel 46 and 47



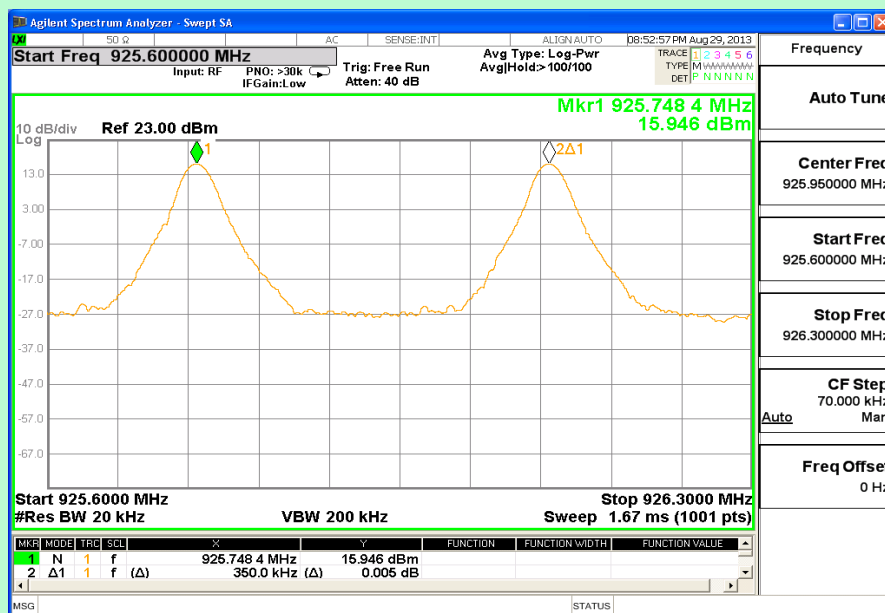
Channel 47 and 48



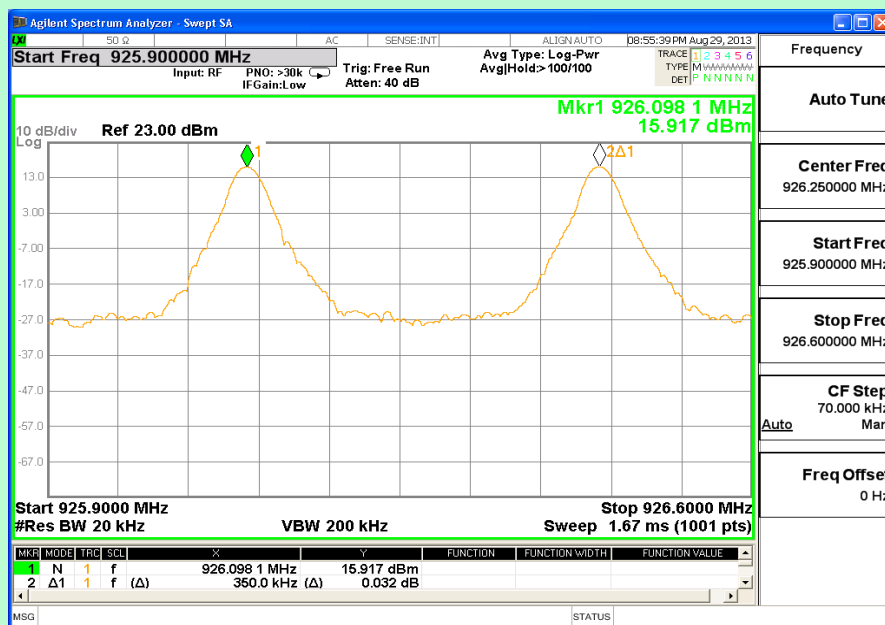
Channel 48 and 49



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

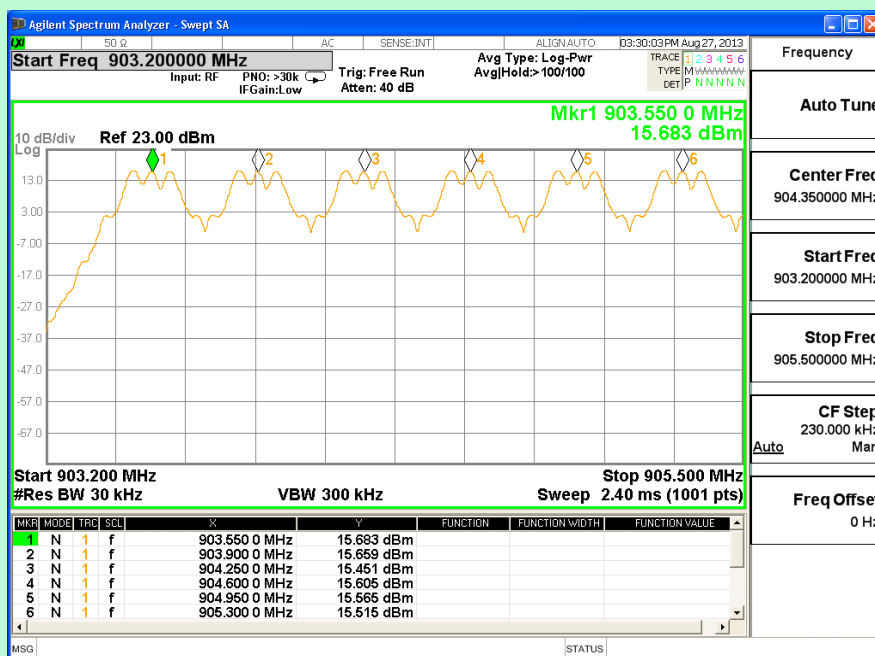
Conducted RF Test Setup

2.4 NUMBER OF HOPPING FREQUENCIES

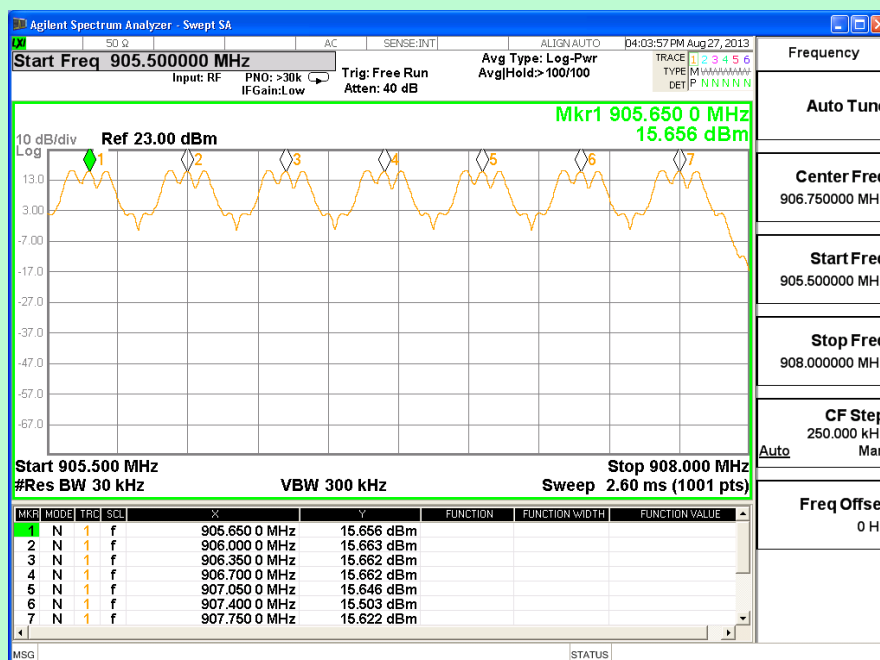
EUT Nomenclature	Wireless Gateway	Test Request No.	EMC-1259-1			
Model No.	FWSG	Serial No.	05303			
Test Start Date	27-Aug-2013	Temperature (°C)	23.1			
Test End Date	27-Aug-2013	Humidity RH (%)	55.2			
Tested By	Loganathan Joghee	Pressure (mbar)	NR			
Input Voltage / Freq	24 Vdc					
Operating Mode	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					
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

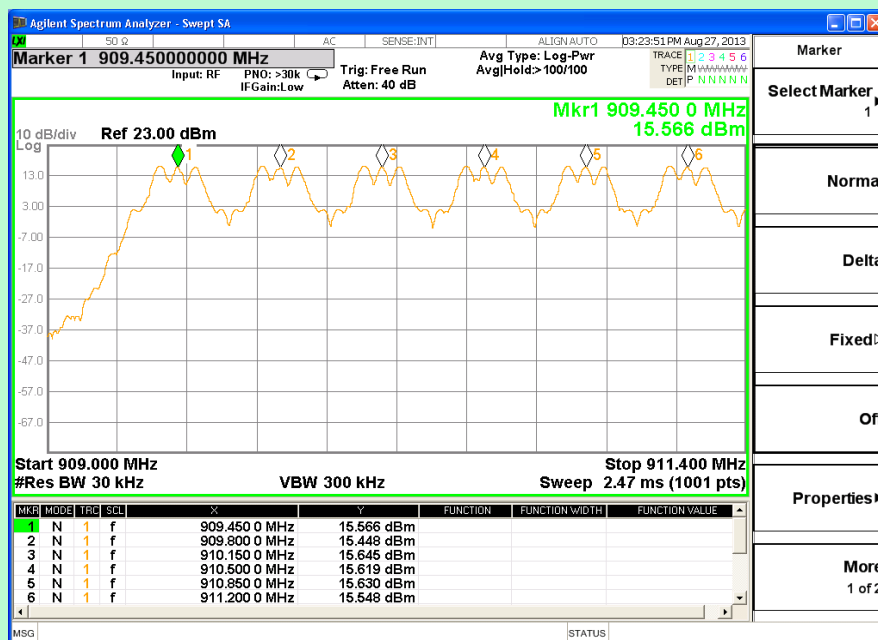
TEST GRAPHS



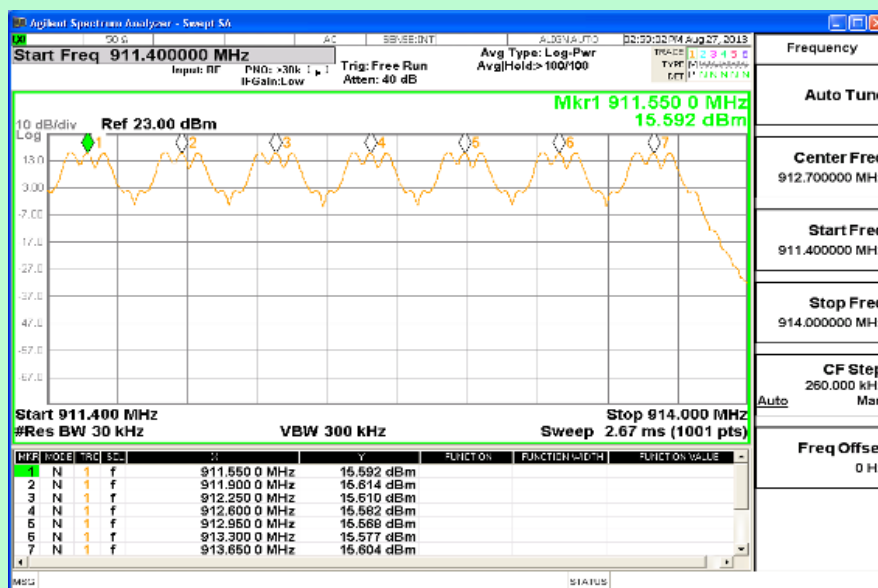
Channel 1 – 6 (Walkie-Talkie Mode)



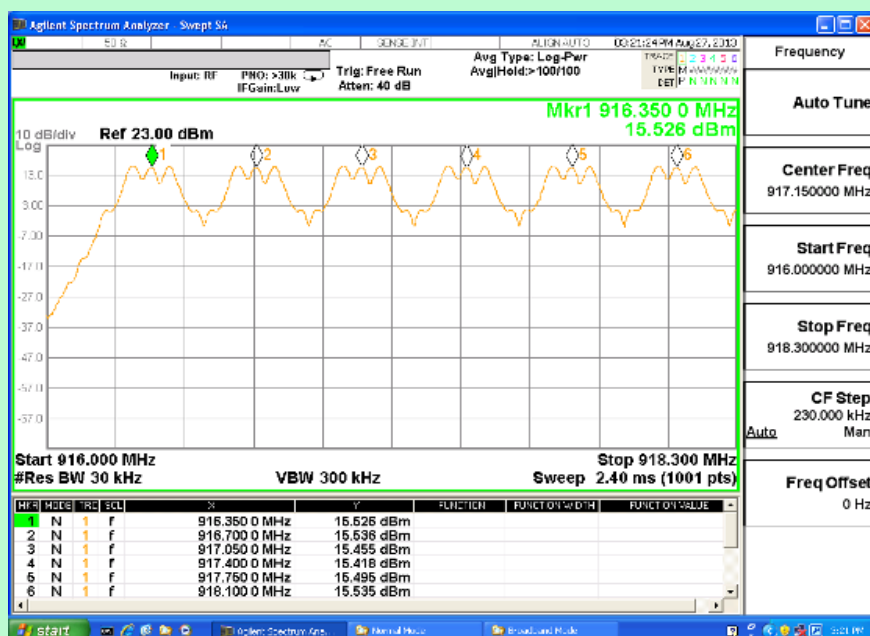
Channel 7 – 13 (Walkie-Talkie Mode)



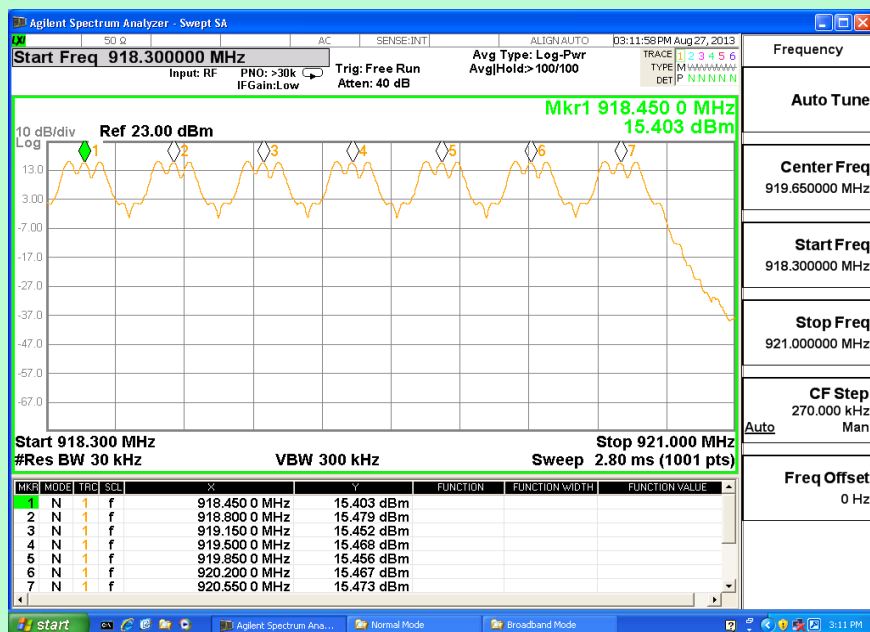
Channel 14 – 19 (Normal Mode)



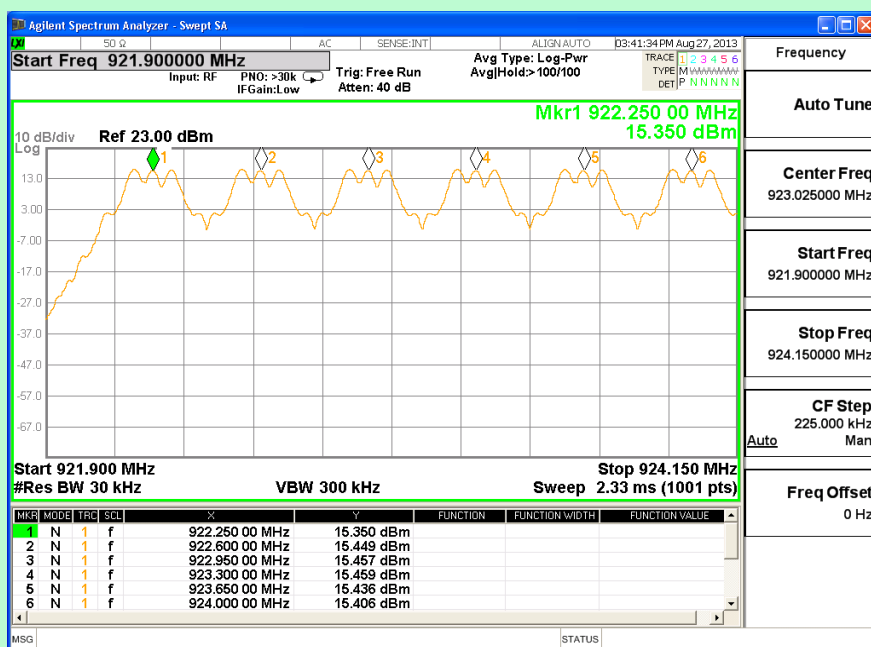
Channel 20 – 26 (Normal Mode)



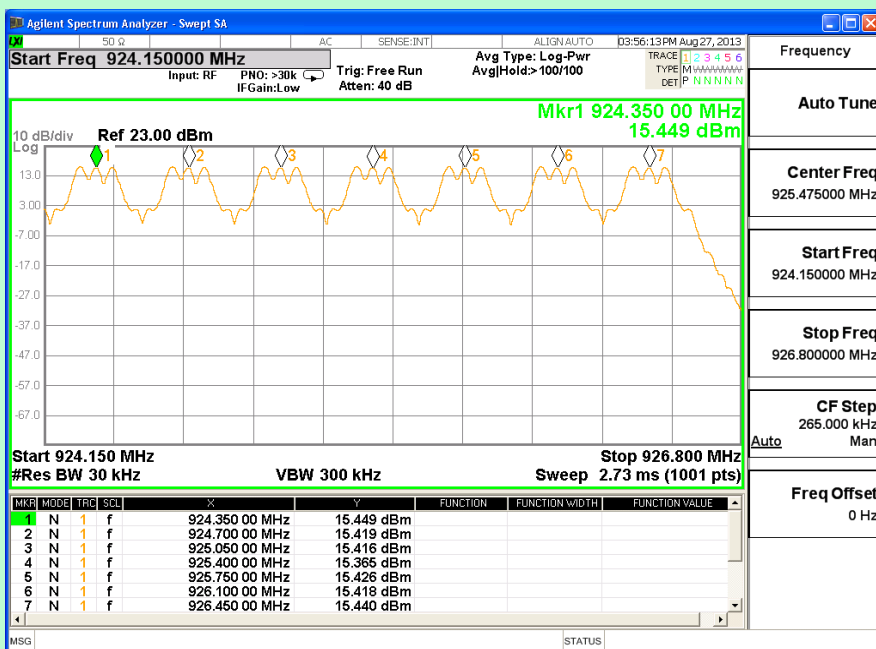
Channel 27 – 32 (Normal Mode)



Channel 33 – 39 (Normal Mode)



Channel 40 – 45 (Walkie-Talkie Mode)



Channel 46 – 52 (Walkie-Talkie Mode)

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

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

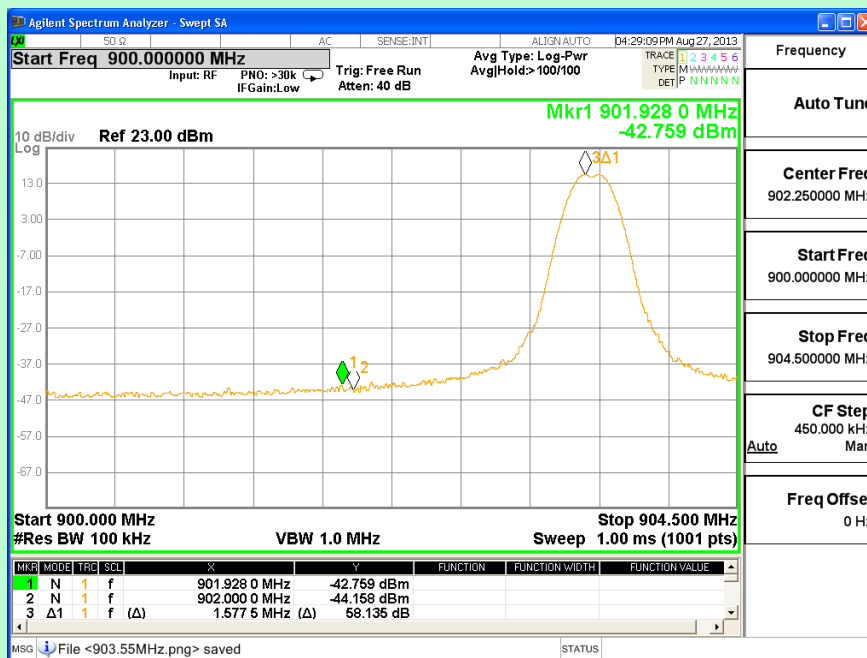
2.5 BAND-EDGE COMPLIANCE

EUT Nomenclature	Wireless Gateway	Test Request No.	EMC-1259-1
Model No.	FWSG	Serial No.	05303
Test Start Date	27-Aug-2013	Temperature (°C)	23.2
Test End Date	27-Aug-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		
TEST PARAMETERS			
Antenna Height	NA	Turntable Rotation	NA
Equipment Class	NA	Measurement Distance	NA

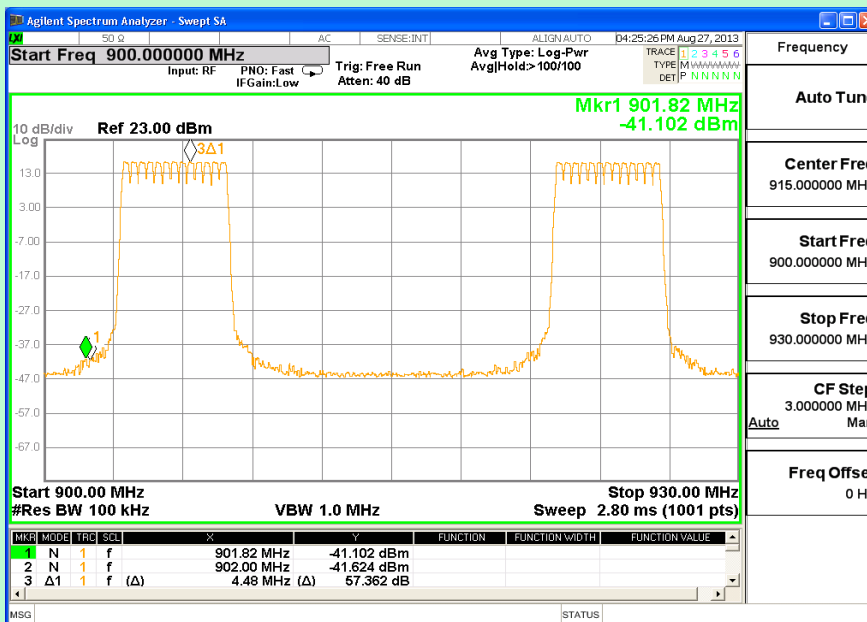
TEST EQUIPMENT

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

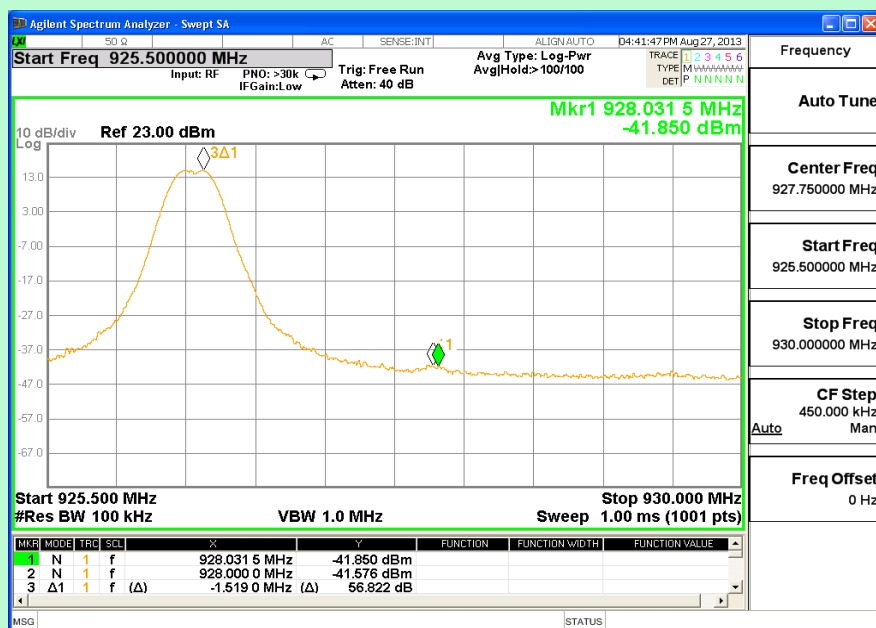
TEST GRAPHS



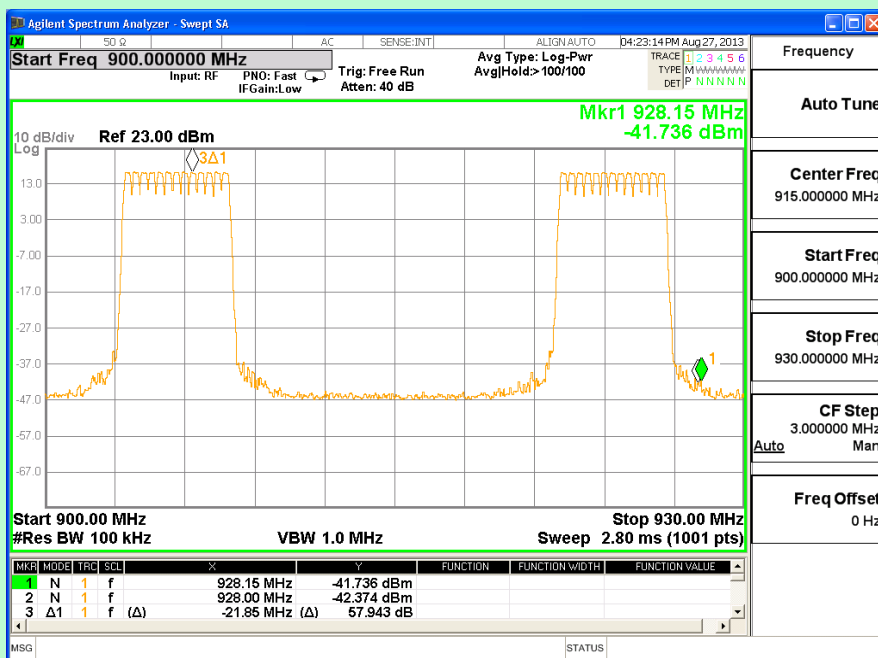
Band-edge at 902 MHz - Channel 1 (903.55 MHz)



Band-edge at 902 MHz – Hopping Enabled



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



Band-edge at 928 MHz – Hopping Enabled

TEST RESULT					
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

TEST SETUP PHOTOGRAPHS

Refer Annexure-1

Conducted RF Test Setup

2.6 TIME OF OCCUPANCY (DWELL TIME)

EUT Nomenclature	Wireless Gateway	Test Request No.	EMC-1259-1
Model No.	FWSG	Serial No.	05303
Test Start Date	05-Nov-2013	Temperature (°C)	23.1
Test End Date	05-Nov-2013	Humidity RH (%)	55.2
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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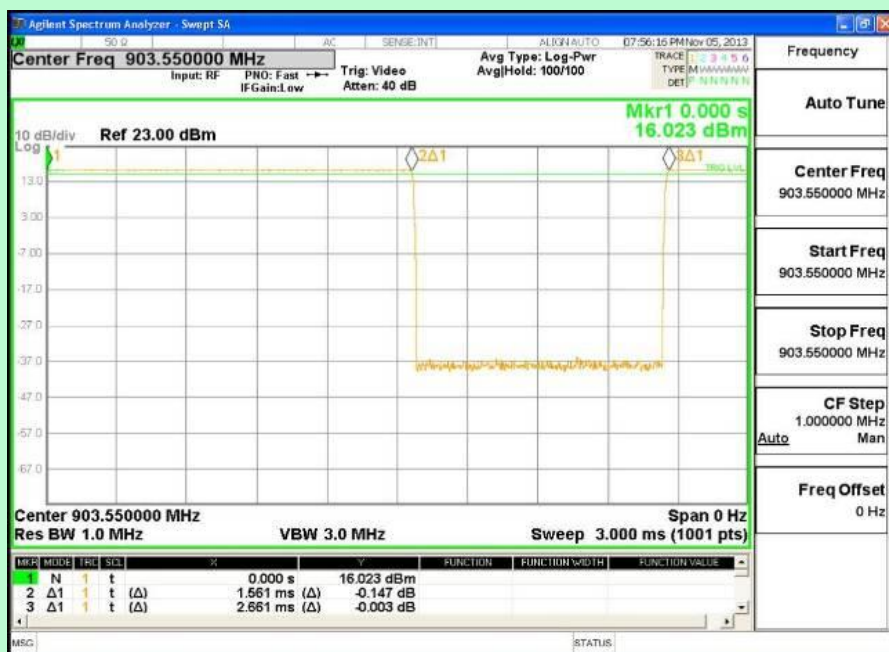
TEST PARAMETERS

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

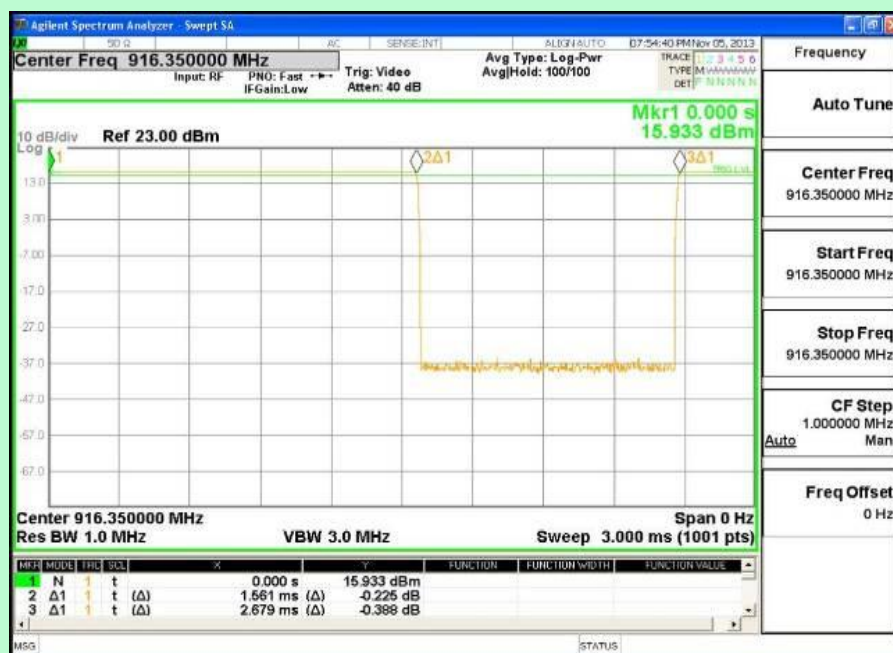
TEST EQUIPMENT

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 M Hz)



Channel 27 (916.35 M Hz)



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	PA SS
27	916.35	1.561	8	12.488	≤ 400	PA SS
52	926.45	1.560	8	12.48	≤ 400	PA SS

TEST SETUP PHOTOGRAPHS

Refer Annexure-1

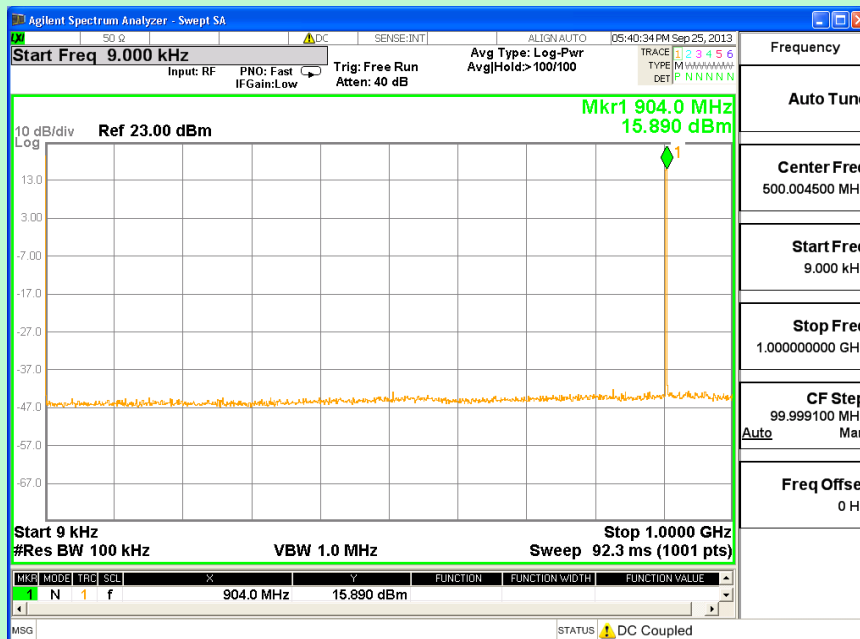
Conducted RF Test Setup

2.7 SPURIOUS RF CONDUCTED EMISSIONS

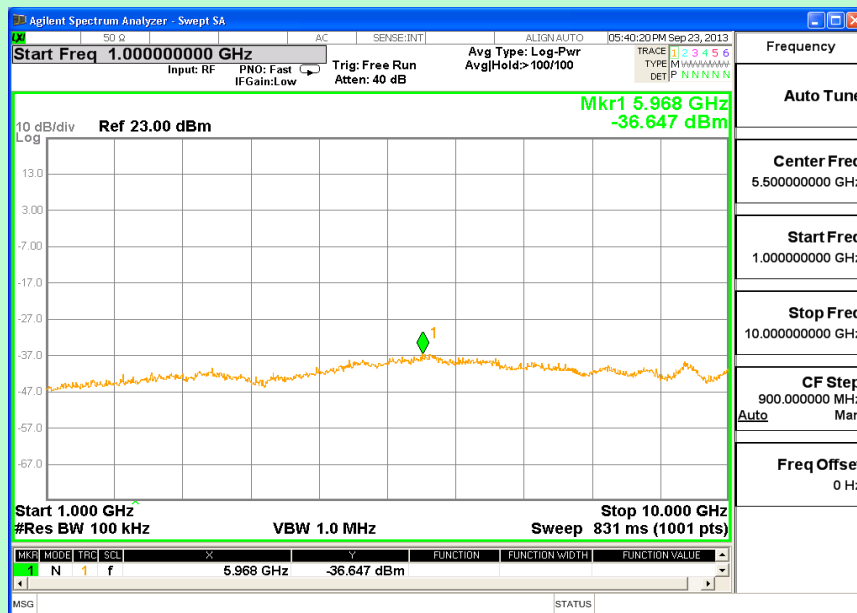
EUT Nomenclature	Wireless Gateway	Test Request No.	EMC-1259-1
Model No.	FWSG	Serial No.	05303
Test Start Date	23-Sep-2013	Temperature (°C)	23.2
Test End Date	25-Sep-2013	Humidity RH (%)	55.1
Tested By	Loganathan Joghee	Pressure (mbar)	NR
Input Voltage / Freq	24 Vdc		
Operating Mode	Refer Page 5 for Operating 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	
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

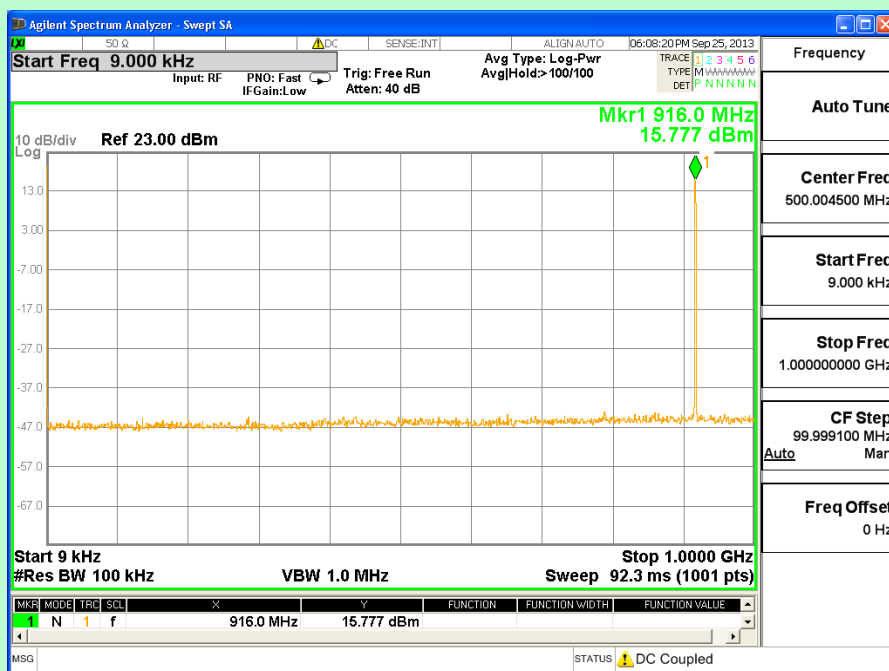
TEST GRAPHS



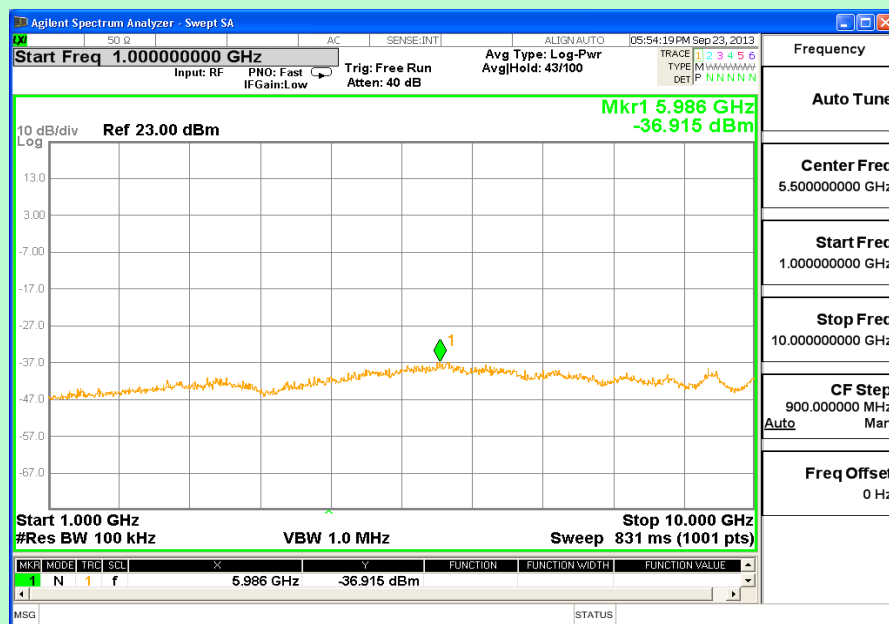
Channel 1 (903.55 MHz) – 9 KHz to 1 GHz



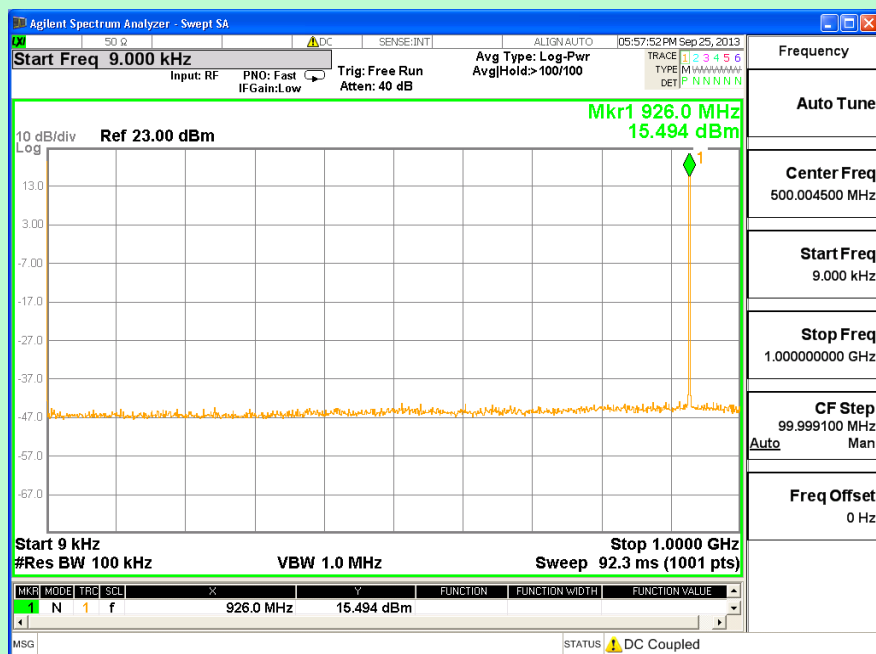
Channel 1 (903.55 MHz) – 1 GHz to 10 GHz



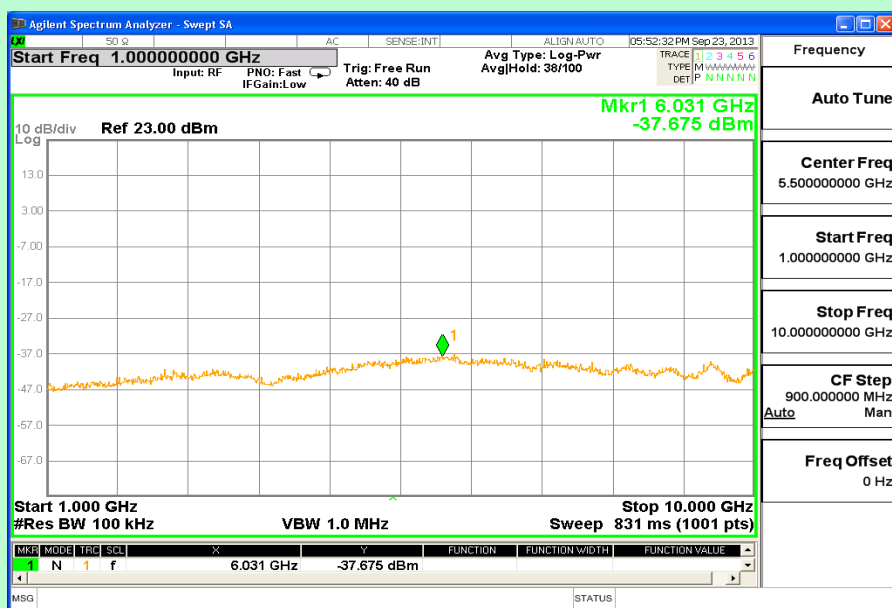
Channel 27 (916.35 MHz) – 9 KHz to 1 GHz



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

TEST RESULT					
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	