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<table><tr><td>Date/s Tested</td><td>: 23-JULY-2025 - 29-JULY-2025</td></tr><tr><td>Report Issue Date</td><td>: 09-JAN-2026</td></tr><tr><td>Test Site Location</td><td>: Motorola Penang Advanced Communication Laboratory (ACL)</td></tr><tr><td>Manufacturer</td><td>: Motorola Solutions INC. (Plantation)</td></tr><tr><td>Manufacturer Address</td><td>: Motorola Solutions INC. (Plantation), 8000 West Sunrise Blv d MD 41-128, USA Plantation FL 333222-9947</td></tr><tr><td>Requestor</td><td>: GEDDIE CALEB</td></tr><tr><td>Product Type</td><td>: Portable</td></tr><tr><td>Product Marketing Version (PMN)</td><td>: APX 900</td></tr><tr><td>Hardware Version Identification Number (HVIN)</td><td>: H92WCH9PW7AN</td></tr><tr><td>Frequency Band</td><td>: 896-902MHz, 902-928MHz, 935-941MHz</td></tr><tr><td>Max RF Output Power</td><td>: 3 Watts</td></tr><tr><td>Applicant Name</td><td>: Motorola Solutions Inc</td></tr><tr><td>Applicant Address</td><td>: Plot 2A, Medan Bayan Lepas, Mukim 12 SWD, 11900 Bayan Lepas, Penang, Malaysia.</td></tr><tr><td>ISED Registrations</td><td>: MY0001</td></tr><tr><td>FCC Registrations</td><td>: 461337</td></tr><tr><td>Firmware Version Identification Number (FVIN)</td><td>: R36.01.00</td></tr></table> The equipment was tested accordance to the requirement listed below: <table><tr><td>(LMR) FCC 47 CFR Part 90 ISED RSS-Gen Issue 5, Amendment 1 (Mar 2019) Amendment 2 (Feb 2021) / RSS-119 Issue 12 Amendment (April 1, 2022)</td><td>PASS</td></tr></table>		Date/s Tested	: 23-JULY-2025 - 29-JULY-2025	Report Issue Date	: 09-JAN-2026	Test Site Location	: Motorola Penang Advanced Communication Laboratory (ACL)	Manufacturer	: Motorola Solutions INC. (Plantation)	Manufacturer Address	: Motorola Solutions INC. (Plantation), 8000 West Sunrise Blv d MD 41-128, USA Plantation FL 333222-9947	Requestor	: GEDDIE CALEB	Product Type	: Portable	Product Marketing Version (PMN)	: APX 900	Hardware Version Identification Number (HVIN)	: H92WCH9PW7AN	Frequency Band	: 896-902MHz, 902-928MHz, 935-941MHz	Max RF Output Power	: 3 Watts	Applicant Name	: Motorola Solutions Inc	Applicant Address	: Plot 2A, Medan Bayan Lepas, Mukim 12 SWD, 11900 Bayan Lepas, Penang, Malaysia.	ISED Registrations	: MY0001	FCC Registrations	: 461337	Firmware Version Identification Number (FVIN)	: R36.01.00	(LMR) FCC 47 CFR Part 90 ISED RSS-Gen Issue 5, Amendment 1 (Mar 2019) Amendment 2 (Feb 2021) / RSS-119 Issue 12 Amendment (April 1, 2022)	PASS
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Prepared By:  Farah Nur Arina Test Personnel	Approved Signatory:  Ho Sze Khian Responsible Engineer																																		

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Report Revision History

Revision History	Description	Date	Originator
Rev. A	Initial Report	18-Sep-2025	Farah
Rev. B	Update Firmware Version Identification Number (FVIN)	7-Oct-2025	Farah
Rev. C	Update remark in clause 6.1.2 and add 6.1.3 test limit, adding 99% emission plot for OBW and update conducted emission result	9-Jan-2026	Farah

1.0 General Information

EUT Description:

Technologies	Land Mobile Radio (LMR)
Modulation Type	Analog, C4FM, Phase II

The EUT contains following accessory devices and data cable:

Item	Brand	Model or P/N
NA	NA	NA

General Description of Applied Standards

The EUT is a RF Product. According to the specifications of the manufacturer, the EUT is to comply with the requirements of the following standards:

ANSI C63.26-2015

No modifications were done to the UUT to facilitate the tests in this report.

Deviation from standard

Not applicable as no deviation from standard test method

Antenna gain disclaimer

Antenna gain information is provided by customer. The validity of the results is dependent upon this information. The lab will not be held accountable in the event the supplied information affects compliance.

Test configuration of EUT

All relevant configurations involving radio models and accessories (including chargers, batteries, and antennas) were assessed. Only worst case configurations will be included in this report.

2.0 Summary of Test Results

FCC General Rules Part (47CFR)	ISED General Rules Part	Test Item	Result	Remarks	Serial number tested
2.1046(a)	RSS-119	RF Power Output	Pass		837TBK2552
2.1055	RSS-119	Frequency Stability	Pass		837TBK2552
2.1047	-	Audio Frequency Response	Pass		837TBK2552
2.1047	-	Audio Low Pass Filter Response	Pass		837TBK2552
2.1047	-	Modulation limiting	Pass		837TBK2552
2.1049, 90.210	RSS-119	Occupied Bandwidth	Pass	11K0F3E: 9.9426 kHz 8K10F1D: 7.8916 kHz 8K10F1E: 7.6693 kHz 8K10F1W: 7.9403 kHz	837TBK2552
2.1051	-	Band Edge Conducted Spurious Emission	NA		
90.214	RSS-119	Transient Frequency Behavior	NA		
90.543(a), (b)	RSS-119	Adjacent Channel Power	NA		
2.1051, 90.210	RSS-119	Conducted Spurious Emissions	Pass	Worst case: -40.49 dBm	837TBK2552
2.1051	RSS-119	Radiated Spurious Emission	NA		
-	-	GNSS (EIRP for 1559 – 1610MHz)	NA		
-	-	Effective Radiated Power (ERP)	NA		

NA → Not Applicable

3.0 Measurement Uncertainty

Measurement	Frequency	Expanded Uncertainty (k=1.96) (±)
AC Power Line Conducted Spurious Emission	150KHz ~ 30MHz	3.43 dB
Radiated Emissions up to 1 GHz dBμV/m (Field Strength)	30MHz ~ 1000MHz	6.00 dB
Radiated Emissions above 1 GHz dBμV/m (Field Strength)	1GHz ~ 18GHz	5.14 dB
	18GHz ~ 40GHz	5.36 dB
Radiated Emissions dBm (ERP/EIRP)	30MHz ~ 18GHz	4.03 dB
Conducted Spurious Emissions	9kHz ~ 12.75GHz	2.82 dB
Frequency Stability	9kHz ~ 12.75GHz	0.0085 ppm
Audio Frequency Response / Low Pass Filter Response	300Hz – 20kHz	4.09 %
Modulation Limiting	300Hz – 3kHz	1.15 %
Occupied Bandwidth	9kHz ~ 12.75GHz	2.82 dB
Band Edge Conducted Spurious Emission	9kHz ~ 12.75GHz	2.82 dB
Transient Frequency Behavior	9kHz ~ 12.75GHz	5.4 ms
Adjacent Channel Power	9kHz ~ 12.75GHz	2.82 dB

4.0 Equipment List

FCC Analog ATE#1: (SW version: FCC_Analog_v2.5.0)

Description	Model	Serial Number	Calibration Date	Calibration Due Date
CHAMBER	SH-641	92009188	6-Mar-25	6-Mar-26
POWER SENSOR	MA2411B	2214139	26-Feb-25	26-Feb-26
POWER METER	ML2495A	0844003	17-Mar-25	17-Mar-26
AUDIO ANALYZER	U8903B	MY61070007	17-Aug-24	17-Aug-25
CXA SIGNAL ANALYZER	N9000B	MY60250694	16-Dec-24	16-Dec-25
POWER SUPPLY	6031A	3325A02771	23-Apr-25	23-Apr-26
N to N RF Cable # 1	M17/128-RG400	NA	NA	NA
BNC to N RF Cable # 1	RG 58	NA	NA	NA
BNC to BNC RF Cable # 1	RG 58	NA	NA	NA
BNC to BNC RF Cable # 2	RG 58	NA	NA	NA
BNC to BNC RF Cable # 3	RG 58	NA	NA	NA
BNC to BNC RF Cable # 4	RG 58	NA	NA	NA
BNC to BNC RF Cable # 5	RG 58	NA	NA	NA
BNC to BNC RF Cable # 6	RG 58	NA	NA	NA
BNC to BNC RF Cable # 7	RG 58	NA	NA	NA
N to SMA RF Cable # 1	RG 58	NA	NA	NA
N to SMA RF Cable # 2	RG 58	NA	NA	NA
N to SMA RF Cable # 3	RG 58	NA	NA	NA
Aeroflex Attenuator 30dB	49-30-34-LIM	NA	NA	NA

FCC Transient ATE #1: (SW version: FCC Transient ATE_R1.2.1)

Description	Model	Serial Number	Calibration Date	Calibration Due Date
SWITCH CONTROL UNIT	3488A	2719A36210	Not Required	Not Required
SWITCH DRIVER	11713A	3748A09090	Not Required	Not Required
ATTENUATOR/11DB	8494G	MY52300223	15-Aug-24	15-Aug-25
ATTENUATOR/110DB	8496G	MY52300088	15-Aug-24	15-Aug-25
MODULATION ANALYZER	8901B	3403A04772	18-Sep-24	18-Sep-25
POWER SUPPLY	6031A	3506A03271	26-Sep-24	26-Sep-25
CXA SIGNAL ANALYZER	N9000B	MY60250716	03-Dec-24	03-Dec-25
AUDIO ANALYZER	8903B	3011A12380	19-Mar-25	19-Mar-26
AUDIO ANALYZER	8903B	2836A05866	03-Apr-25	03-Apr-26
SIGNAL GENERATOR	8657A	3250A05137	16-Nov-24	16-Nov-25
N to N RF Cable # 1	SF126/11N/11N	NA	NA	NA
N to N RF Cable # 1	SF126/11N/11N	NA	NA	NA
N to N RF Cable # 2	M17/128-RG400	NA	NA	NA
N to N RF Cable # 3	M17/128-RG400	NA	NA	NA
N to N RF Cable # 4	M17/128-RG400	NA	NA	NA
N to N RF Cable # 5	M17/128-RG400	NA	NA	NA
N to N RF Cable # 6	M17/128-RG400	NA	NA	NA
N to N RF Cable # 7	M17/128-RG400	NA	NA	NA
N to N RF Cable # 8	M17/128-RG400	NA	NA	NA
N to N RF Cable # 9	M17/128-RG400	NA	NA	NA
BNC to BNC RF Cable # 1	RG 58	NA	NA	NA
BNC to BNC RF Cable # 2	RG 58	NA	NA	NA
BNC to BNC RF Cable # 3	RG 58	NA	NA	NA
BNC to BNC RF Cable # 4	RG 58	NA	NA	NA
BNC to BNC RF Cable # 5	RG 58	NA	NA	NA
BNC to BNC RF Cable # 6	RG 58	NA	NA	NA
BNC to N RF Cable # 1	RG 58	NA	NA	NA
Aeroflex Attenuator 10dB	49-10-43-LIM	NA	NA	NA
Aeroflex Attenuator 10dB	33-10-34-LIM	NA	NA	NA

FCC CONDUCTED SPUR EMISSION ATE # 1 (SW version: Conducted Spur ATE_rev 1.23.06)

Description	Model	Serial Number	Calibration Date	Calibration Due Date
SWITCH CONTROL UNIT	3488A	2719A32735	Not Required	Not Required
INTERFACE BOX - FILTER	NA	CS001	Not Required	Not Required
POWER SUPPLY	6031A	3416A02942	24-Sep-24	24-Sep-25
SPECTRUM ANALYZER	E4445A	MY46181250	19-Oct-24	19-Oct-25
N to N RF Cable # 1	SF126/11N/11N	NA	NA	NA
N to N RF Cable # 2	SF126/11N/11N	NA	NA	NA
BNC to BNC RF Cable # 1	RG 58	NA	NA	NA
Aeroflex Attenuator 30dB	49-30-43-LIM	NA	NA	NA
Aeroflex Attenuator 10dB	33-10-34-LIM	NA	NA	NA

RADIATED EMISSION CHAMBER

Not Applicable

5.0 Test Condition

5.1. Transmitter Test Conditions

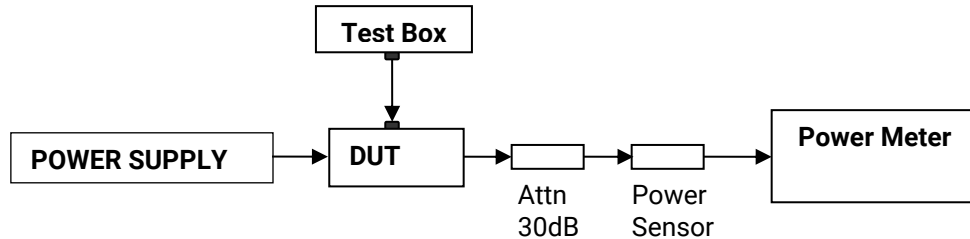
Test Item, (Channel Spacing)	Power (W)	Modulation	Test Frequency (MHz)	Tested By	Environmental conditions
RF Output Power	Low & Max	FM	896.0125, 900.9875, 935.0125, 939.9875	Farah	23.4°C, 50%RH
Frequency Stability	Max	FM	896.0125	Farah	25.1°C, 54.3%RH, 60.3°C, 50%RH, -30.1°C, 51.2%RH
Audio Frequency Response (12.5kHz / 25kHz)	Max	FM	900.9875	Farah	23.4°C, 50%RH
Audio Low Pass Filter Response (12.5kHz / 25kHz)	Max	FM	900.9875	Farah	23.4°C, 50%RH
Modulation limiting (12.5kHz / 25kHz)	Max	FM	900.9875	Farah	23.4°C, 50%RH
Occupied Bandwidth (12.5kHz / 20kHz / 25kHz)	Max	FM/C4FM/Phase II	896.0125, 900.9875, 935.0125, 939.9875	Farah	23.4°C, 50%RH
Band Edge Conducted Spurious Emissions (Part 22) (12.5kHz / 25kHz)	Max	FM/C4FM/Phase II	NA		
Transient Frequency Behavior (UHF & VHF Band) (12.5kHz / 25kHz)	Max	FM/C4FM	NA		
Adjacent Channel Power (700MHz Band) (12.5kHz / 20kHz)	Max	FM/C4FM/Phase II	NA		
Conducted Spurious Emissions (12.5kHz / 25kHz)	Low / Max	FM/C4FM/Phase II	896.0125, 900.9875, 935.0125, 939.9875	Farah	23.4°C, 50%RH
Radiated Spurious Emission (12.5kHz / 25kHz)	Low / Max	FM/C4FM/Phase II	NA		
GNSS (EIRP for 1559 - 1610MHz) (12.5kHz / 25kHz)	Max	FM	NA		
Effective Radiated Power (ERP) (12.5kHz / 25kHz)	Max	FM	NA		

NA → Not Applicable

6.0 Transmitter Test Parameters

6.1. RF Output Power

6.1.1. Test Setup



- 1) The DUT transmitter connected to Power Meter using the 30 dB attenuator and peak power sensor with above setup.
- 2) Path loss for the measurement included.
- 3) All the measurement was done at low, mid, high frequency for each band, with unmodulated carrier.
- 4) Record the power into the test report.

6.1.2. Test Result

Temperature	25°C				Remark
Voltage (V)	7.5V				
Frequency (MHz)	Low Power (W)	Current (A)	Max Power (W)	Current (A)	
896.01250	0.97	0.99	2.84	1.47	
900.98750	0.98	0.99	2.88	1.47	
935.01250	0.96	0.99	2.79	1.47	
939.98750	0.97	0.99	2.81	1.47	

Remark:

Low Power is within ± 1 dB of the manufacturer's Rated Power 1W (0.79W – 1.26W)

Max Power is within ± 1 dB of the manufacturer's Rated Power 3W (2.38W – 3.78W)

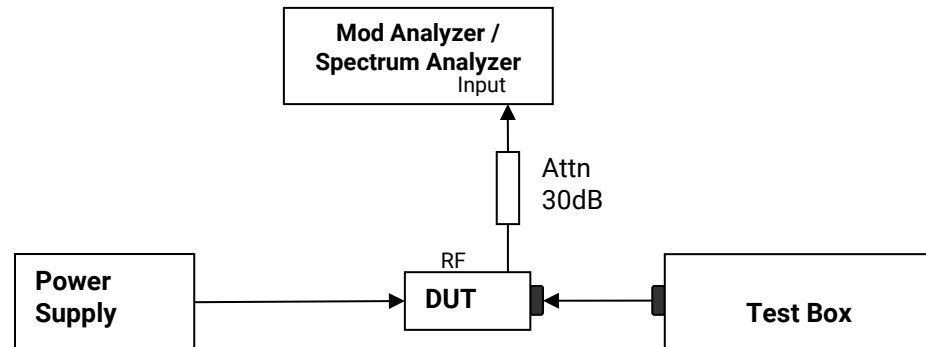
6.1.3. Test Limit

For RSS-119

Table 2 – Transmitter Output Power	
Frequency Bands (MHz)	Transmitter Output Power (W)
	Mobile Equipment
138-174	60
406.1-430 and 450-470	60
768-776 and 798-806	30
	3 W ERP for portable equipment
806-821/851-866 and 821-824/866-869	30

6.2. Frequency Stability

6.2.1. Test Setup

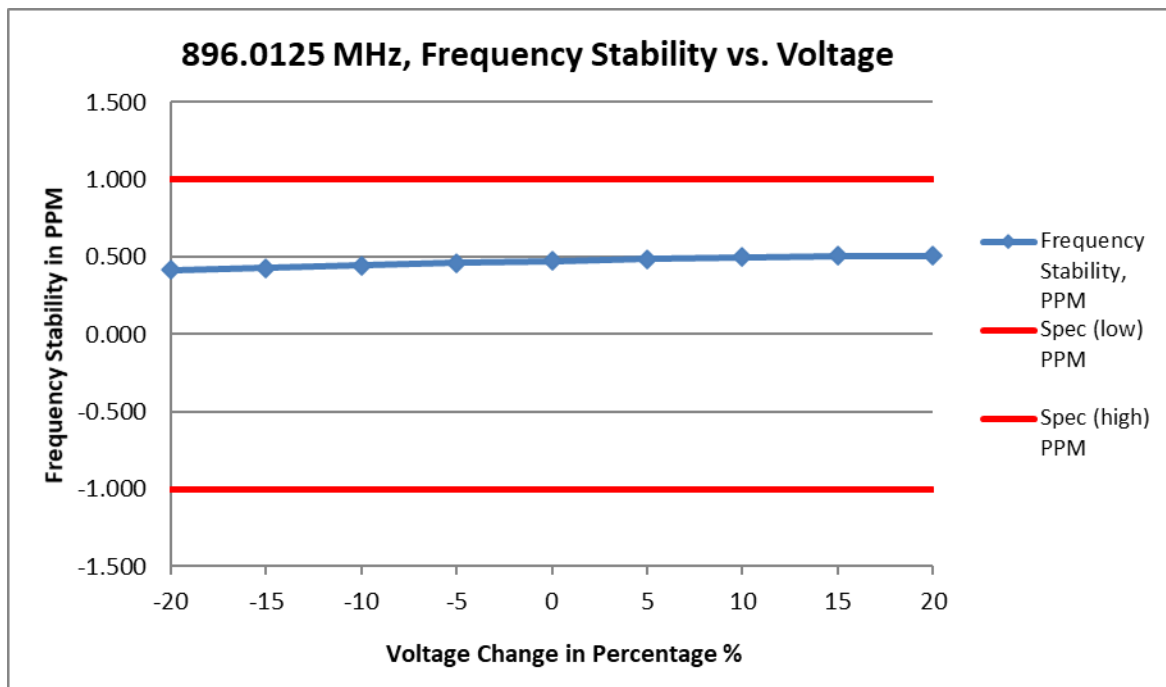


- 1) The DUT transmitter output port was connected to Modulation / Spectrum Analyzer.
- 2) Path loss for the measurement included.
- 3) Transmit the DUT and record the freq in MCF_{MHz} .
- 4) Test in 2 conditions:
 - Temperature: The frequency of the transmitter was measured from -30°C to 50°C.
 - Supply Voltage:
 - Mobile: The frequency of the transmitter was measured from 85% to 115% of the nominal operating input voltage.
 - Portable: The frequency of the transmitter was measured from nominal $\pm x$ % as specified by the manufacturer
- 5) Calculate the ppm frequency error by the following:

$$ppm\ error = \left(\frac{MCF_{MHz}}{ACF_{MHz}} - 1 \right) * 10^6$$

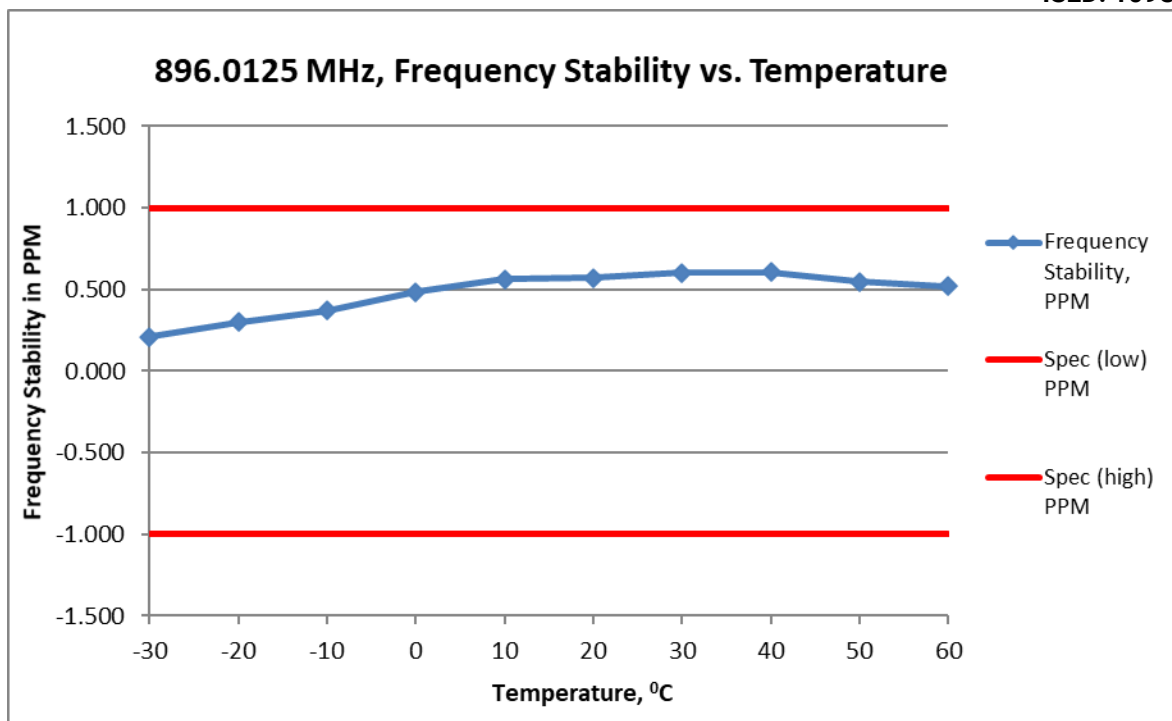
Where: MCF_{MHz} is the Measured Carrier Frequency in MHz
 ACF_{MHz} is the Assigned Carrier Frequency in MHz

6.2.2. Test Result



(i) Frequency Stability VS Voltage

896.0125 MHz / 12.5 kHz					
25					
Frequency / Channel Spacing					
Temperature, °C					
Voltage %	Voltage, V	Frequency, MHz	Frequency Stability, PPM	Spec (low) PPM	Spec (high) PPM
-20	6.000	896.012873	0.416	-1.000	1.000
-15	6.375	896.012885	0.430	-1.000	1.000
-10	6.750	896.012899	0.445	-1.000	1.000
-5	7.125	896.012912	0.460	-1.000	1.000
0	7.500	896.012924	0.473	-1.000	1.000
5	7.875	896.012936	0.486	-1.000	1.000
10	8.250	896.012945	0.497	-1.000	1.000
15	8.625	896.012955	0.508	-1.000	1.000
20	9.000	896.012490	-0.011	-1.000	1.000



(ii) Frequency Stability VS temperature

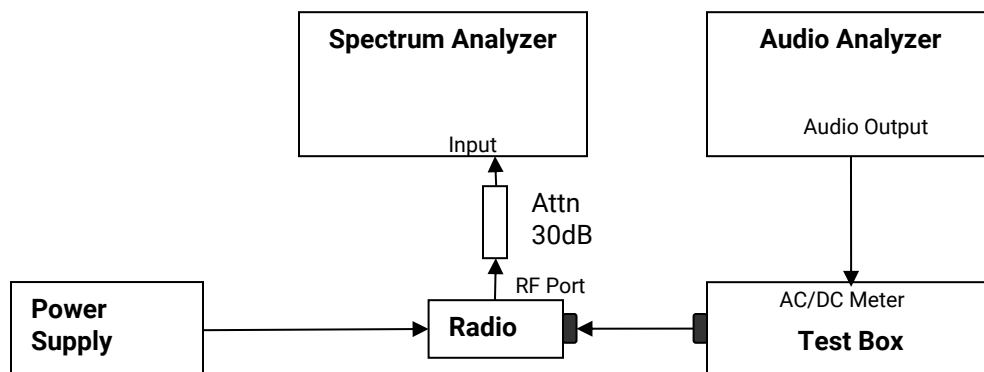
Frequency / Channel Spacing	896.0125 MHz / 12.5 kHz			
Voltage, V	7.5			
Temperature, °C	Frequency, MHz	Frequency Stability, PPM	Spec (low) PPM	Spec (high) PPM
-30	896.012689	0.211	-1.000	1.000
-20	896.012768	0.299	-1.000	1.000
-10	896.012832	0.371	-1.000	1.000
0	896.012936	0.487	-1.000	1.000
10	896.013005	0.564	-1.000	1.000
20	896.013010	0.569	-1.000	1.000
30	896.013039	0.601	-1.000	1.000
40	896.013045	0.608	-1.000	1.000
50	896.012991	0.548	-1.000	1.000
60	896.012967	0.521	-1.000	1.000

6.2.3. Test Limit

As per manufacturer declared spec +/- 1.0ppm

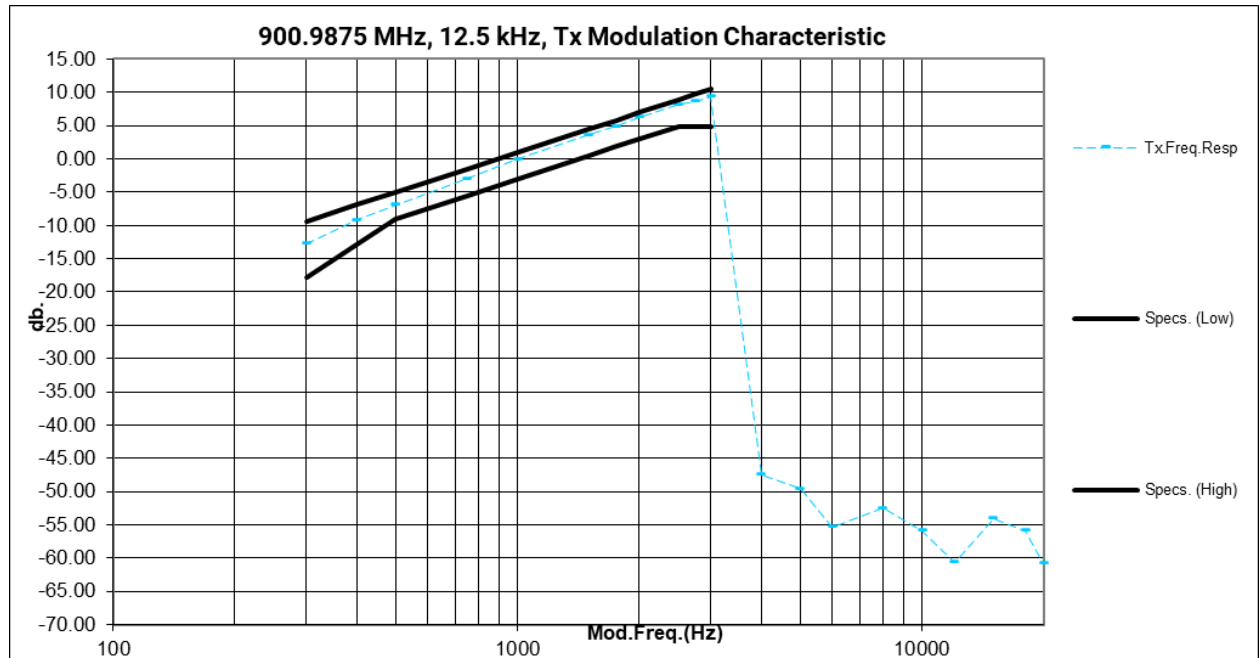
6.3. Modulation Characteristics

6.3.1. Test Setup

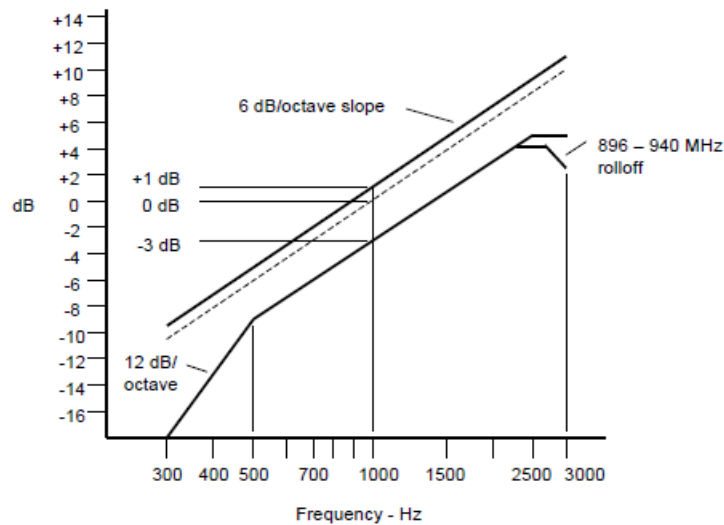


- 1) The DUT transmitter output port was connected to Modulation Analyzer.
- 2) Path loss for the measurement included.
- 3) Set the audio bandwidth filter to 15 kHz and 50 kHz.
- 4) Transmit the radio and set the audio analyzer to 1 kHz audio frequency and 20% of the Full rated system deviation.
- 5) On audio analyzer, set the rated level as 0dB reference
- 6) Vary the audio frequency from 300 Hz to 20 kHz. Record the change in modulation in reference to step 5.

6.3.2. Test Result



6.3.3. Test Limit

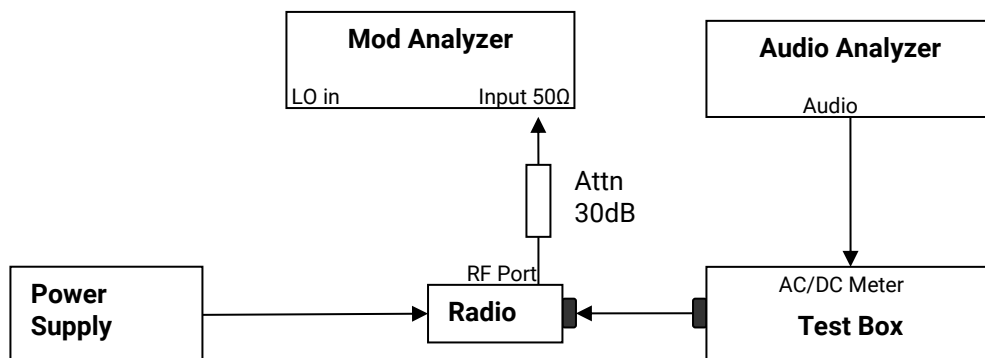


Note:

- o There are additional 6 dB per octave attenuation is allowed from 2.5KHz to 3KHz in equipment 25MHz to 869MHz radio.
- o Additional 6 dB per octave attenuation is allowed from 2.3KHz to 2.7KHz & additional 12 dB per octave attenuation is allowed from 2.7KHz to 3KHz in equipment 896MHz to 940MHz radio.

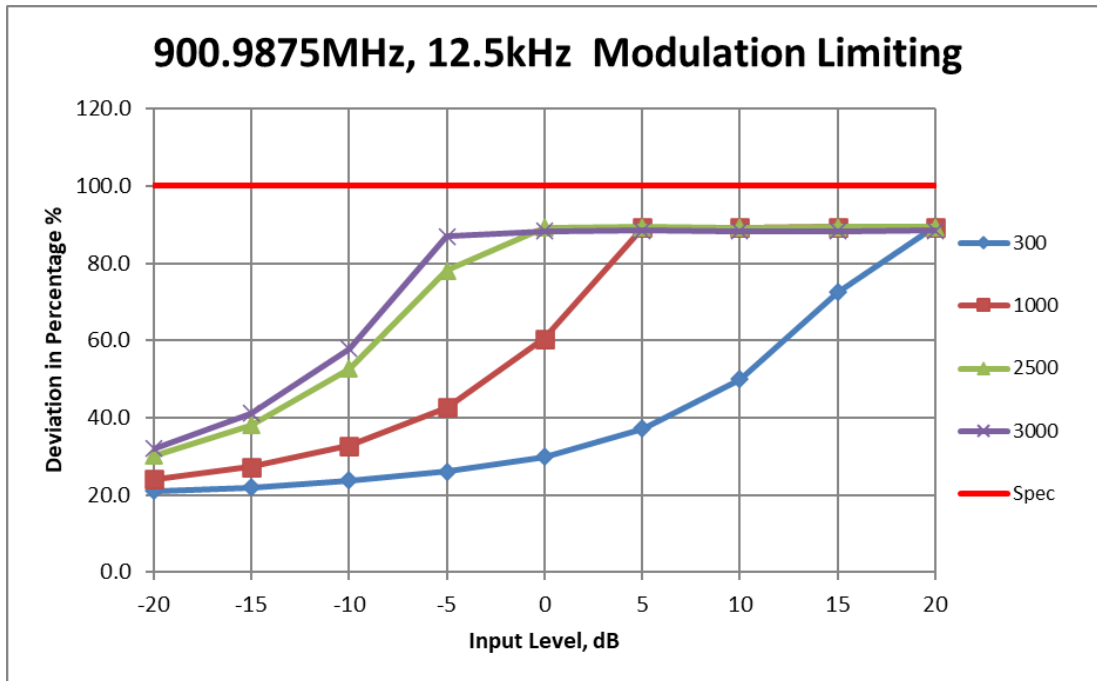
6.4. Modulation Limiting

6.4.1. Test Setup



- 1) The DUT transmitter output port was connected to Modulation Analyzer.
- 2) Path loss for the measurement included.
- 3) Set the audio bandwidth filter to 15 kHz.
- 4) Transmit the radio and set the audio analyzer to 1 kHz audio frequency and 60% of the Full rated system deviation.
- 5) Record the frequency deviation as 0dB input level at 1kHz audio frequency.
- 6) Repeat the step and record the frequency deviation from -20 dB to 20dB by 5 dB increments and different audio freq 300 Hz, 2.5 kHz and 3 kHz.

6.4.2. Test Result

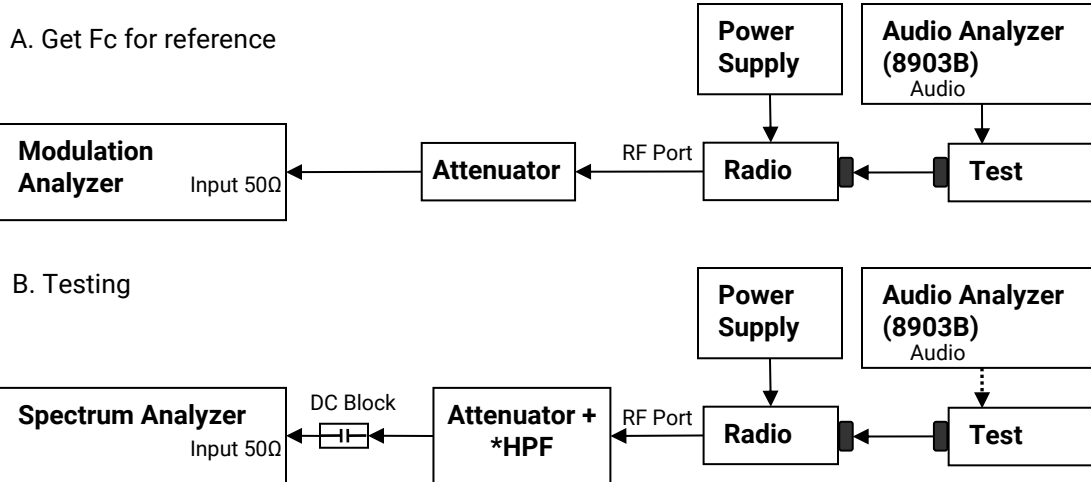


6.4.3. Test Limit

Modulation Limiting shall not exceed 100 percent.

6.5. Occupied Bandwidth

6.5.1. Test Setup (Analog)



- 1) The DUT transmitter output port was connected to Modulation Analyzer.
- 2) Set the audio bandwidth filter to 15 kHz low pass filter and 50 kHz high pass filter.
- 3) Transmit the radio and set the audio analyzer to 2.5 kHz audio frequency and 50% of the rated deviation. Up the amplitude by 16 dB. Dekey the DUT.
- 4) Path loss for the measurement included.
- 5) Select the Occupied Bandwidth measurement for 99% Emissions Bandwidth Measurement.
- 6) Key in the F_c and Resolution Bandwidth (RBW is 240Hz, within 1~5% of emission designator).
- 7) Transmit the DUT and record the occupied Bandwidth frequency.
- 8) Preset the spectrum analyzer for sideband spectrum measurement.
- 9) Set the span and Resolution Bandwidth (according to FCC/ ISED standard).
- 10) Save the screen shot as modulated signal
- 11) Remove the audio tone from audio analyzer to capture unmodulated signal.

* Only HPF added for Mask 80.211 measurement with attenuator.

* 99% Bandwidth measurement is computed by the spectrum analyzer and is consistent with the C63.26 5.4.4 method.

6.5.2. Test Result (Analog)

Standard Audio Modulation (25 kHz Channelization, Analog Voice):
Emission Designator = 16K0F3E

In this case, the maximum modulating frequency is 3 kHz with a 5 kHz deviation.

$BW = 2(M+D) = 2*(3 \text{ kHz} + 5 \text{ kHz}) = 16 \text{ kHz} = 16K0F3E$ portion of the designator indicates voice.

Therefore, the entire designator for 25 kHz channelization analog voice is 16K0F3E.

Standard Audio Modulation (12.5 kHz Channelization, Analog Voice):
Emission Designator = 11K0F3E

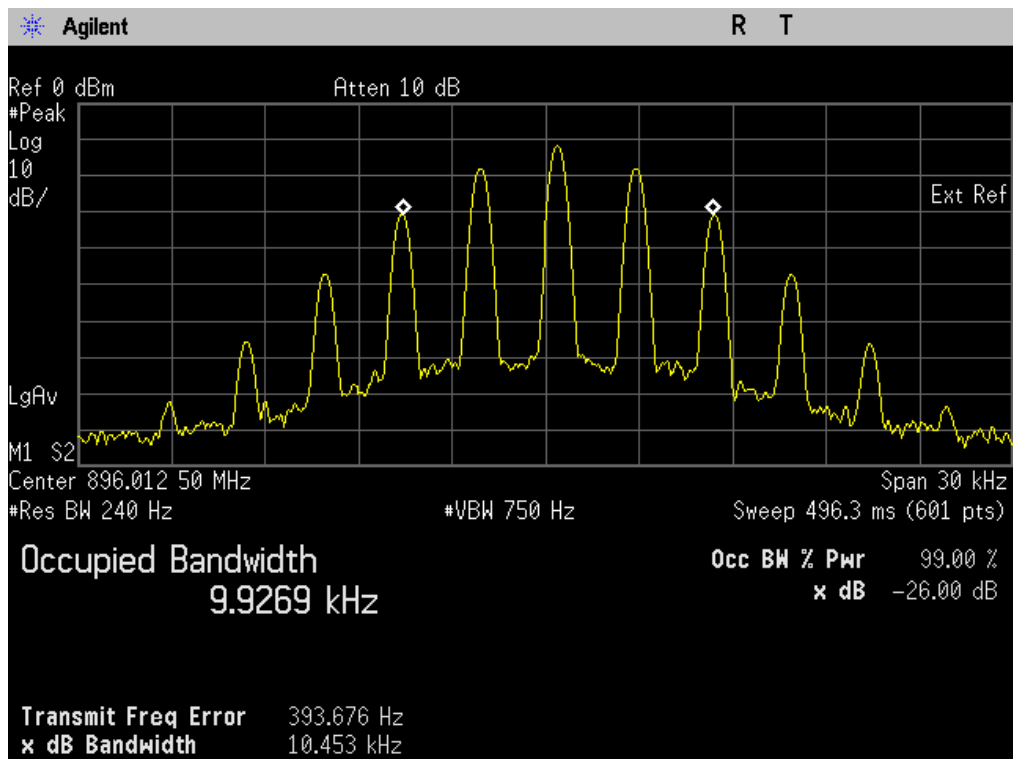
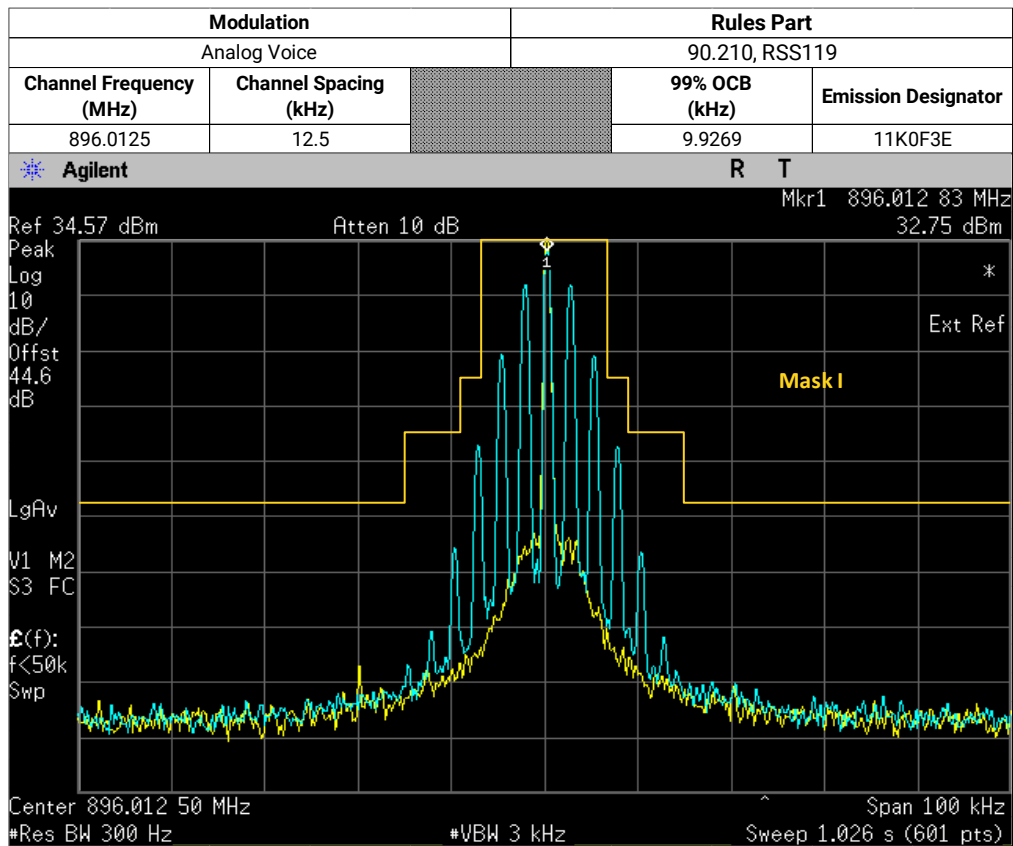
In this case, the maximum modulating frequency is 3.0 kHz with a 2.5 kHz deviation.

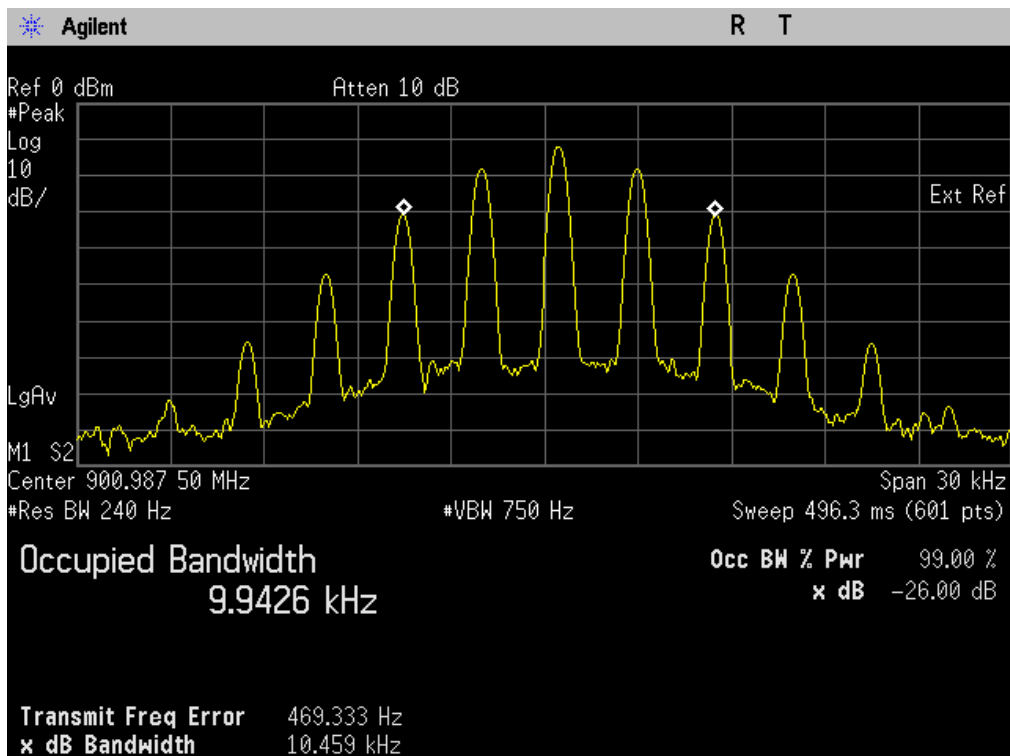
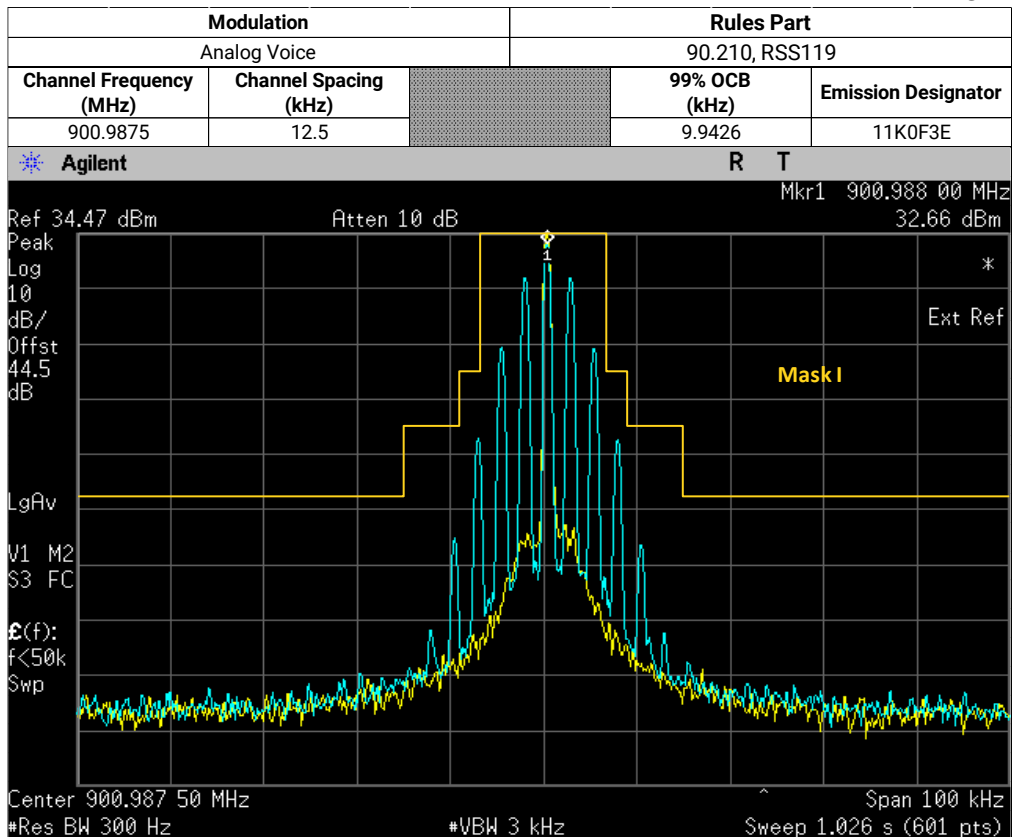
$BW = 2(M+D) = 2*(3.0 \text{ kHz} + 2.5 \text{ kHz}) = 11 \text{ kHz} = 11K0F3E$ portion of the designator indicates voice.

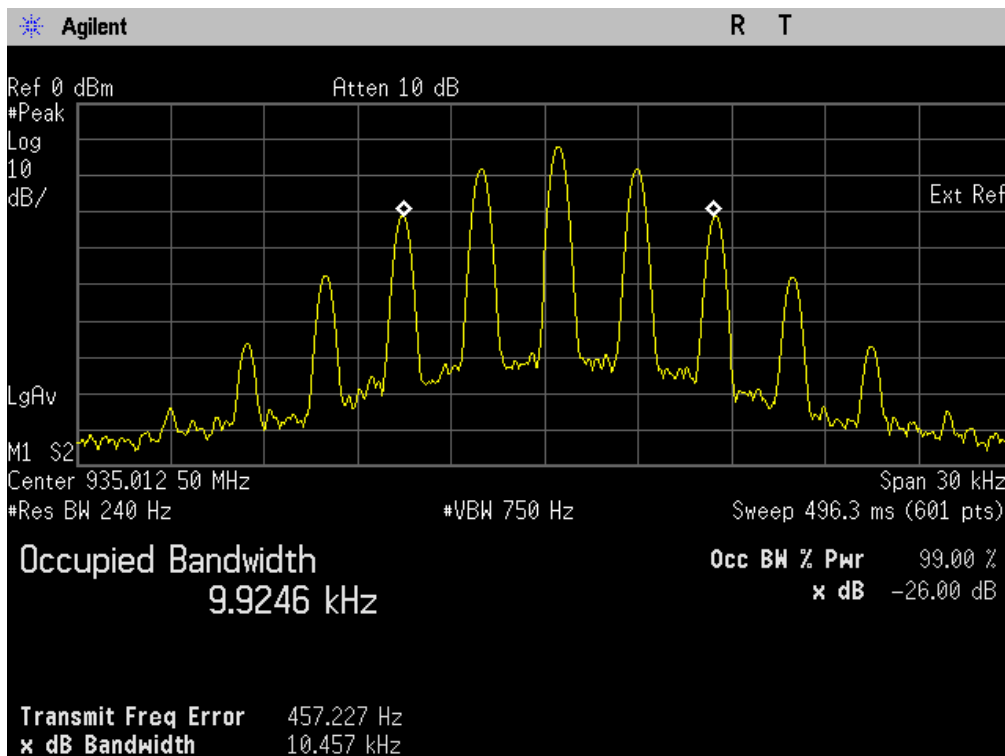
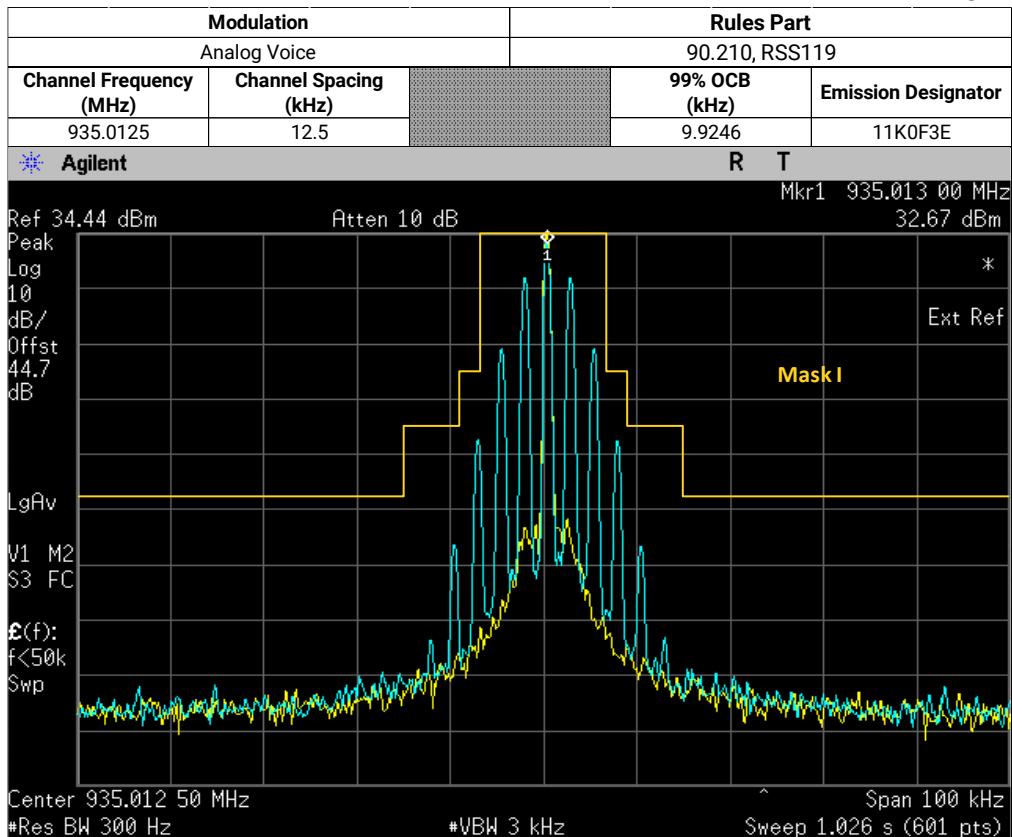
Therefore, the entire designator for 12.5 kHz channelization analog voice is 11K0F3E.

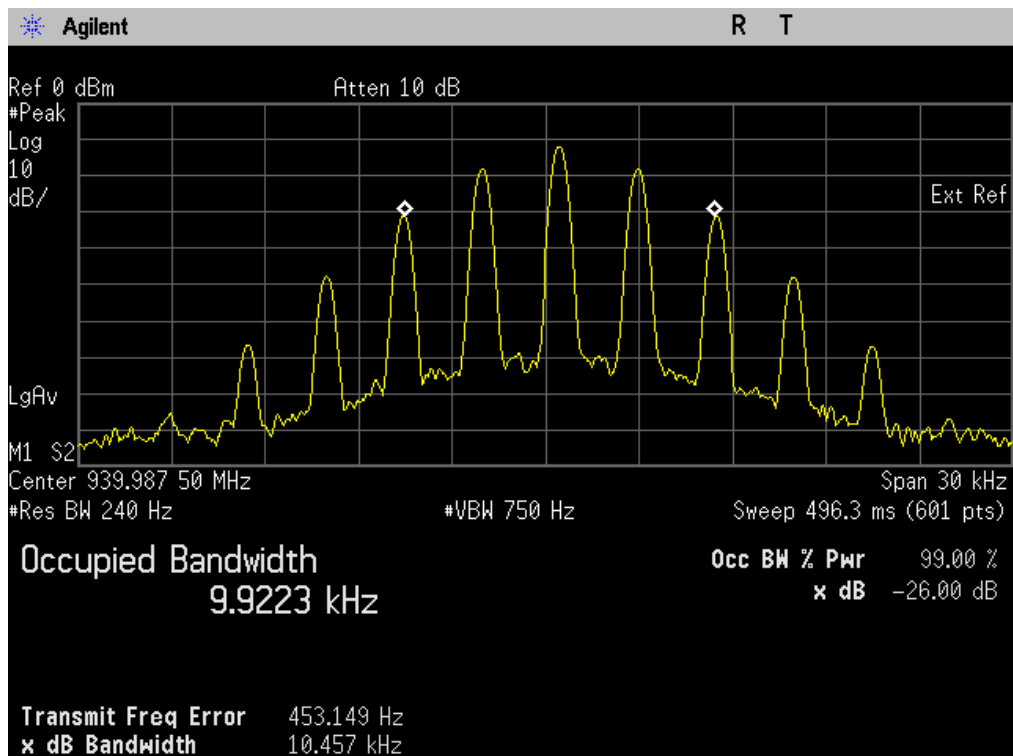
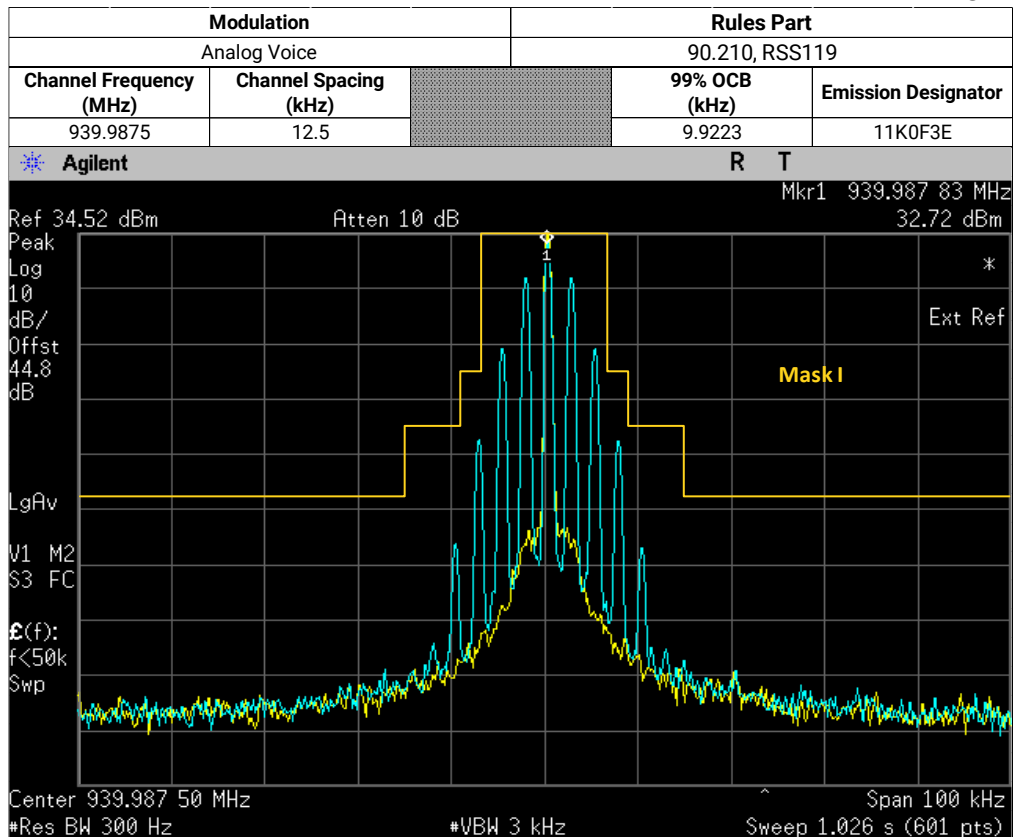
Justification for only testing at high power:

The occupied bandwidth of a signal is largely determined by the device's Power Amplifier (PA). As a transmitter's power approaches its maximum limit (the compression point), the PA operates in its most non-linear region. Non-linearity in the PA creates intermodulation products and spectral regrowth (spatter). This results in a less clean transmitted signal spectrum. Therefore, the scenario has a higher probability to violate regulatory limits and cause interference will occur when the device is operating at its maximum rated output power. Testing at lower power levels would not demonstrate the true worst-case spectral performance.

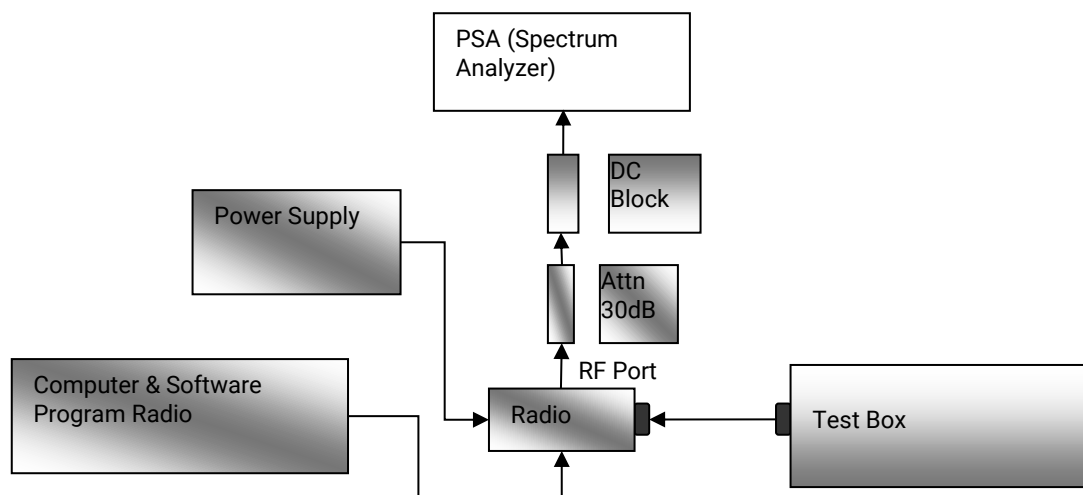








6.5.3. Test Setup (Digital)



- 1) Program and set radio to operate in desire test frequency and digital mode with modulation. (*4FSK, C4FM or other digital modulation form).
- 2) Path loss for the measurement included.
- 3) Select the Occupied Bandwidth measurement for 99% Emissions Bandwidth Measurement.
- 4) Key in the Fc and Resolution Bandwidth (1 ~ 5 % of emission designator).
- 5) Transmit the DUT and record the occupied Bandwidth frequency.
- 6) Preset the spectrum analyzer for modulation emission spectrum measurement.
- 7) Set the span and Resolution Bandwidth (according to FCC/ ISED standard).
- 8) Capture the screen shot as modulated signal.

* 99% Bandwidth measurement is computed by the spectrum analyzer and is consistent with the C63.26 5.4.4 method.

***Note:**

- For Digital Modulation, 12.5 kHz Data F1D & FXD would be the same. Therefore only measurements with F1D modulation shown below.
- For Digital Modulation, 12.5 kHz Data F1E & FXE would be the same. Therefore only measurements with F1E modulation shown below.

6.5.4. Test Result (Digital)

Digital (12.5 kHz Channelization, Digital Voice/Data/Voice+Data):
Emission Designator = 8K10F1E/D/W

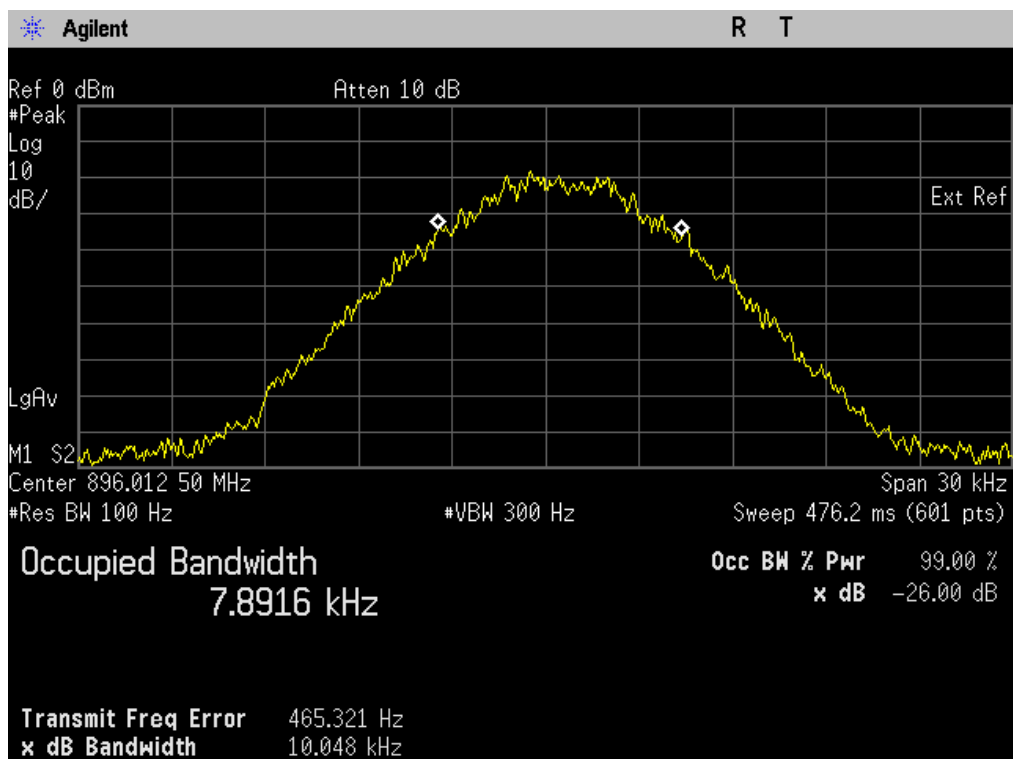
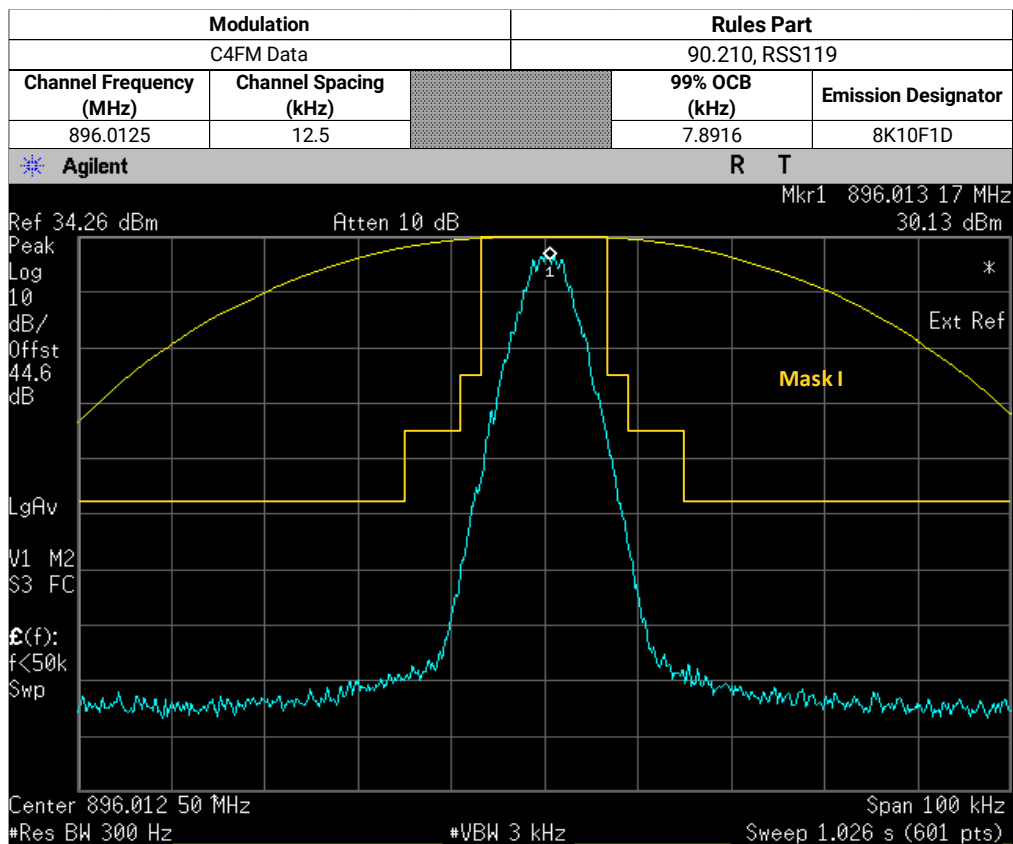
The 99% energy rule (title 47CFR 2.989) was used for digital mode and is more accurate than Carson's rule. It basically states that 99% of the modulation energy falls within X kHz, in this case, 7.60 kHz. Measurements were performed in accordance with TIA/EIA TSB102.CAAB Section 2.2.5.2. The emission mask was obtained from 47CFR 90.210(d).

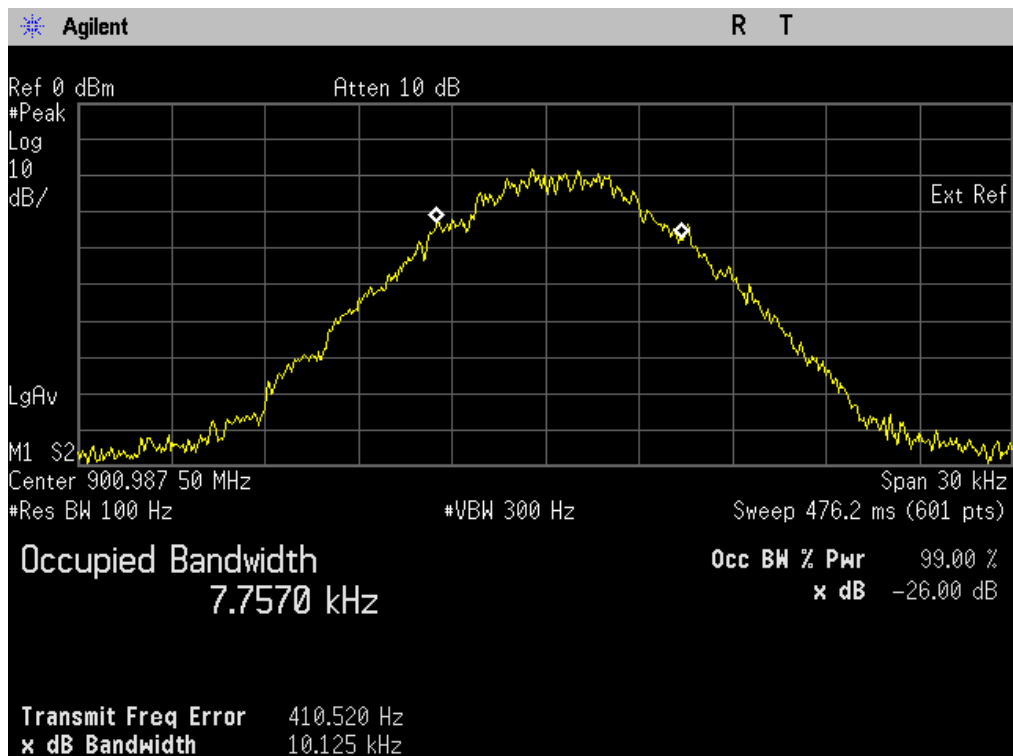
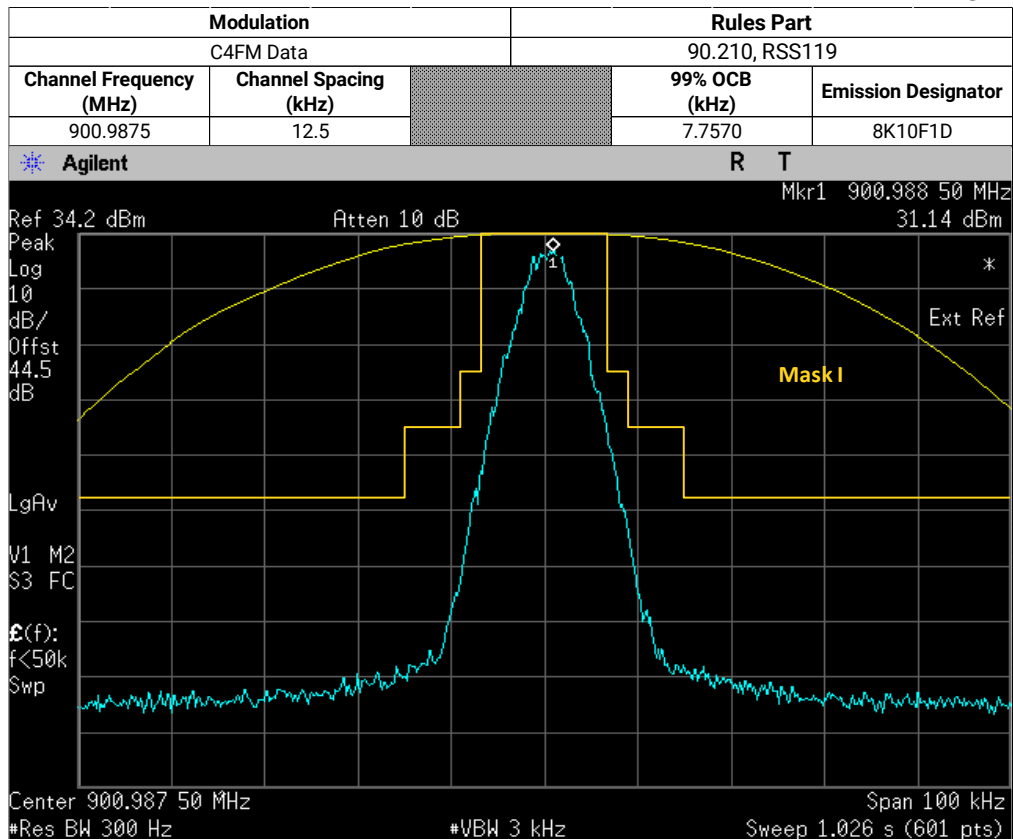
F1E/D/W portion of the designator indicates digital voice/data/voice+data.

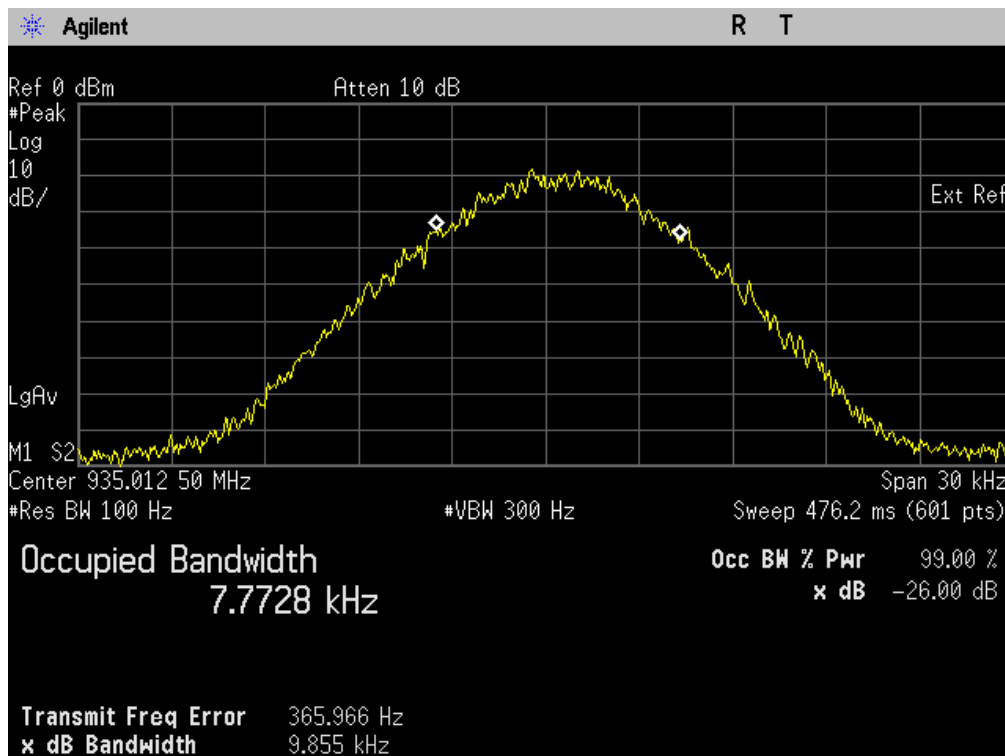
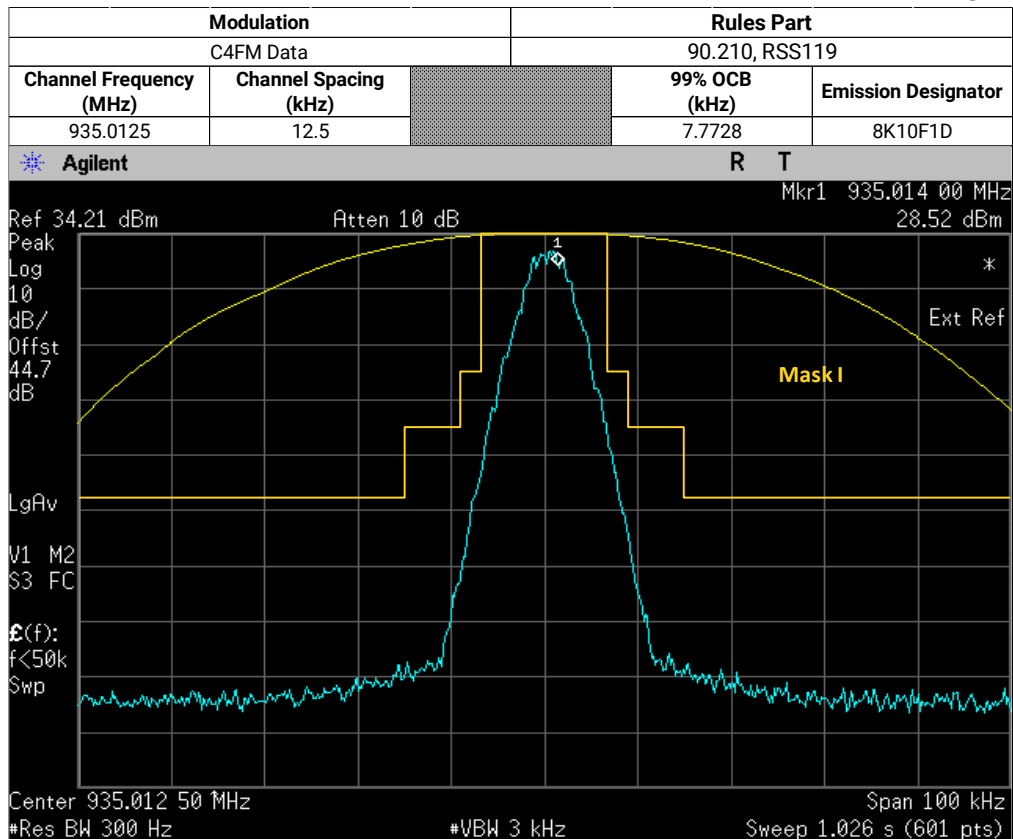
Therefore, the entire designator for 12.5 kHz channelization digital voice is 8K10F1E/D/W.

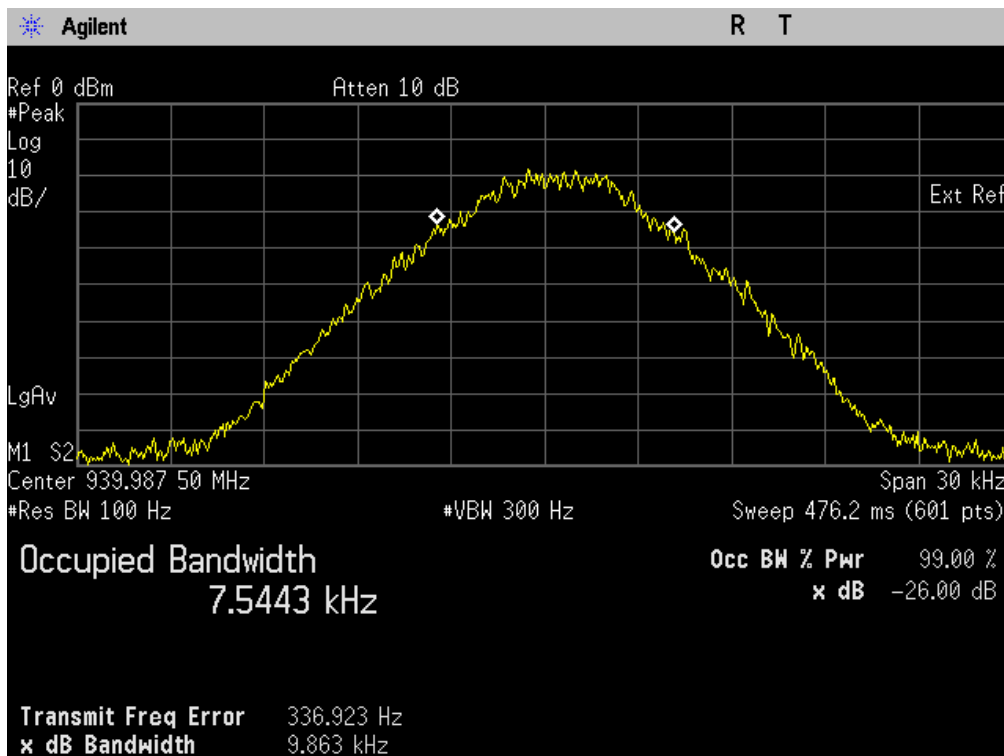
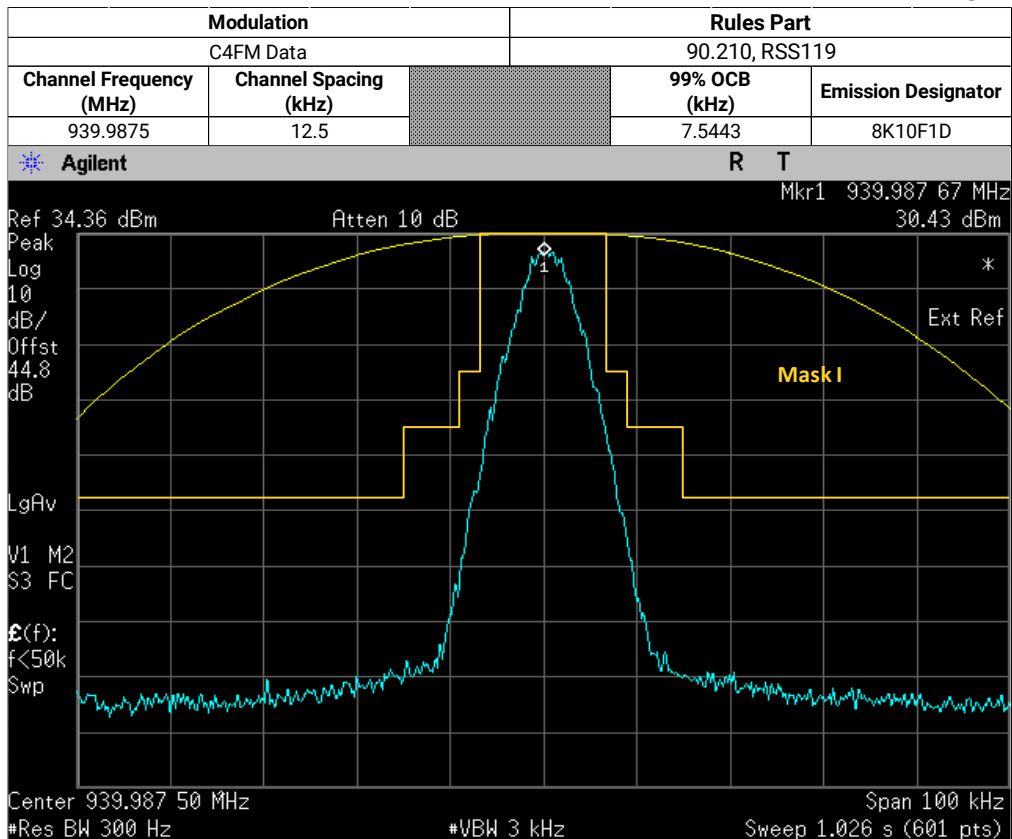
Justification for only testing at high power:

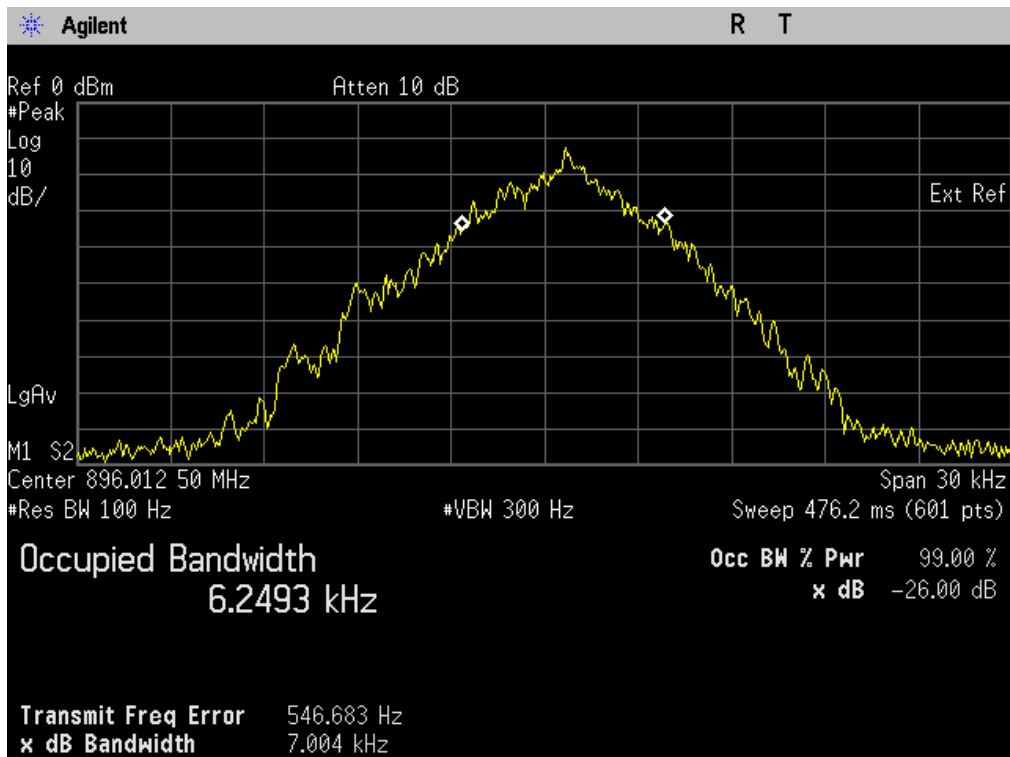
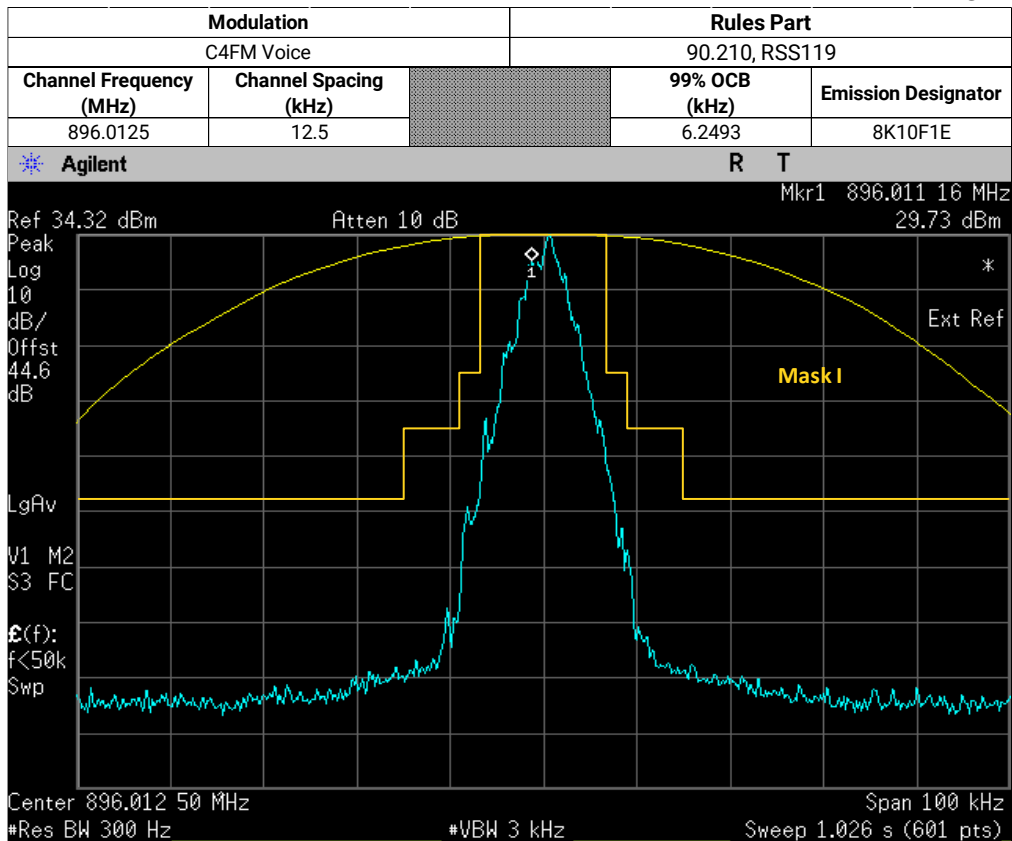
The occupied bandwidth of a signal is largely determined by the device's Power Amplifier (PA). As a transmitter's power approaches its maximum limit (the compression point), the PA operates in its most non-linear region. Non-linearity in the PA creates intermodulation products and spectral regrowth (spatter). This results in a less clean transmitted signal spectrum. Therefore, the scenario has a higher probability to violate regulatory limits and cause interference will occur when the device is operating at its maximum rated output power. Testing at lower power levels would not demonstrate the true worst-case spectral performance.

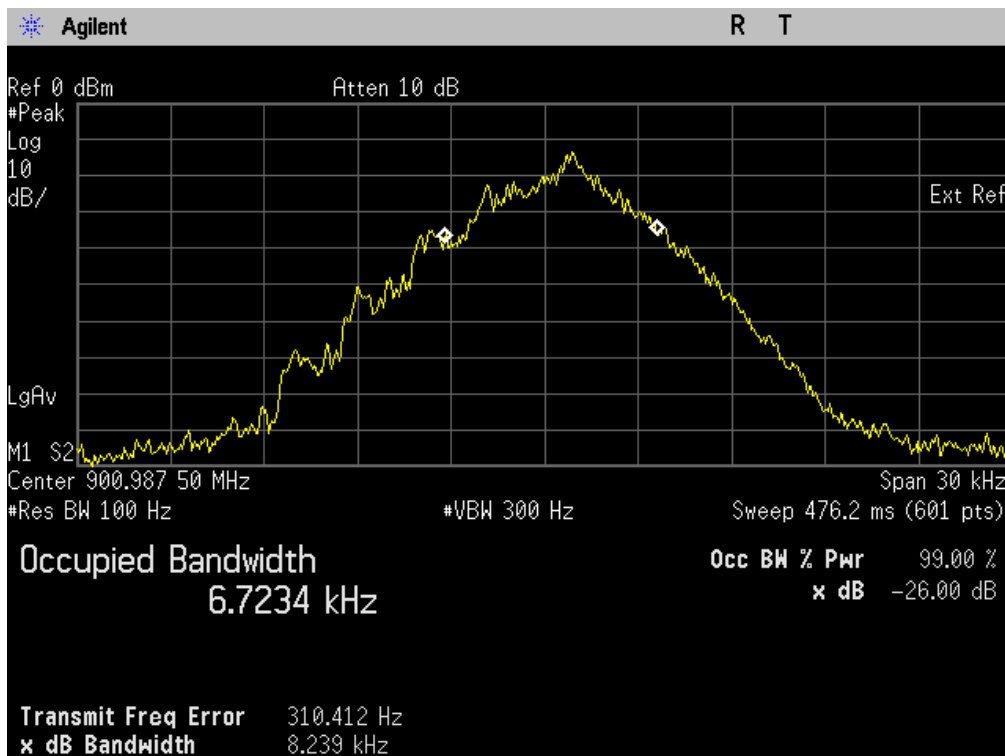
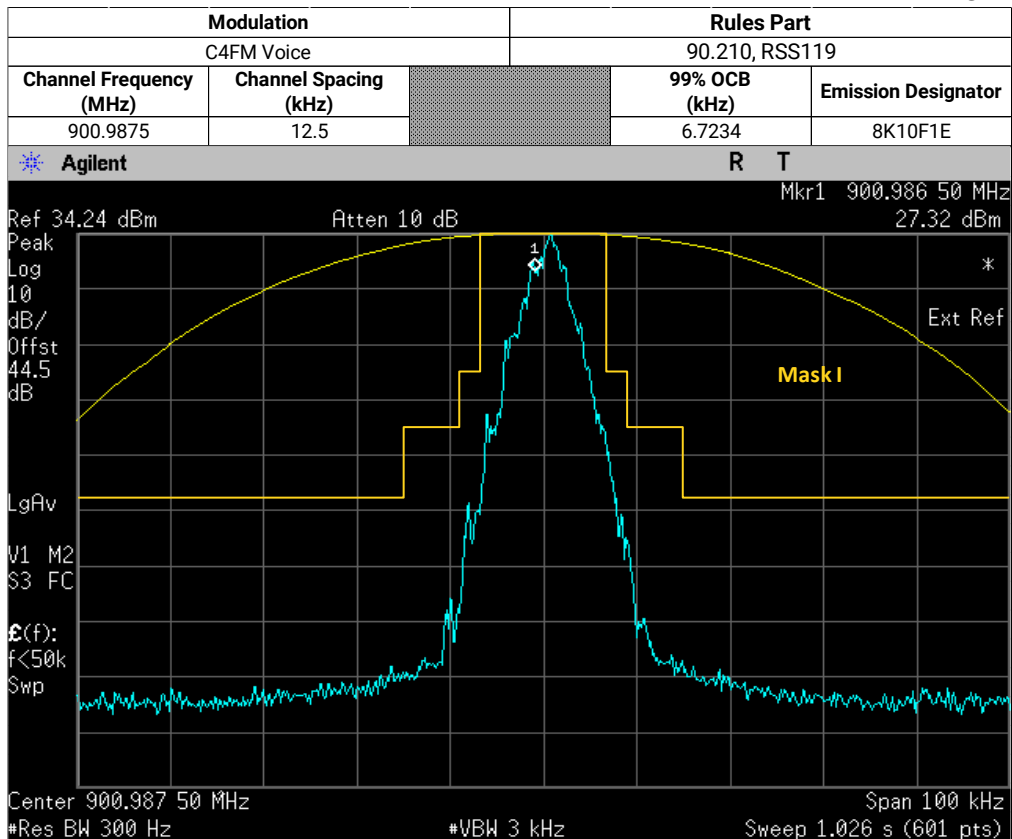


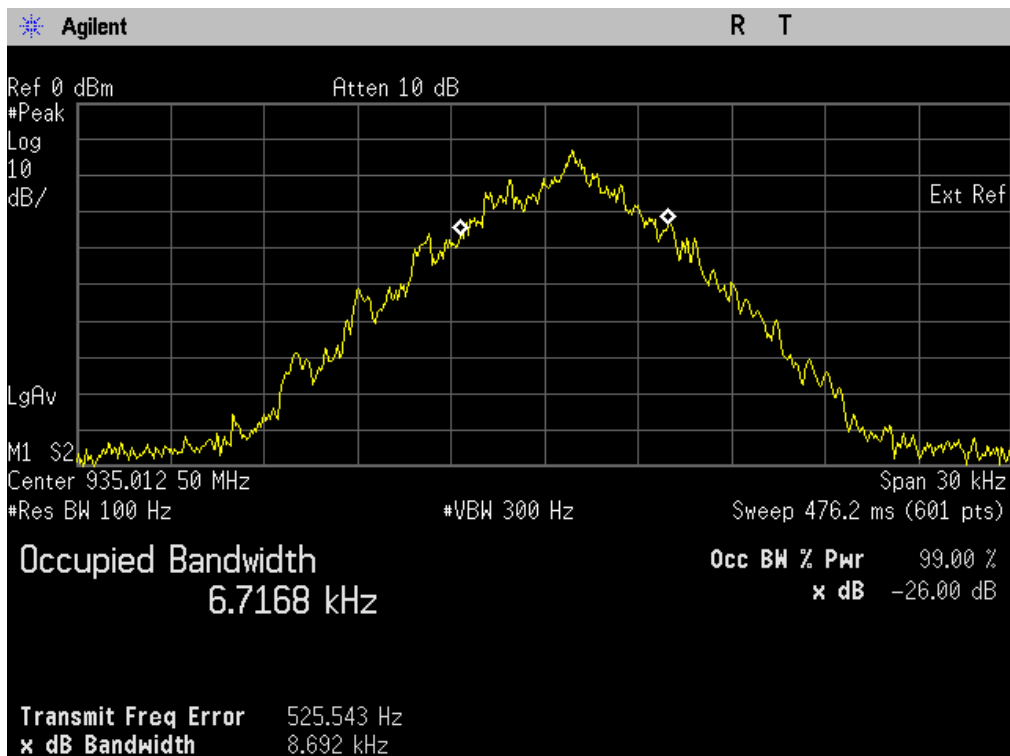
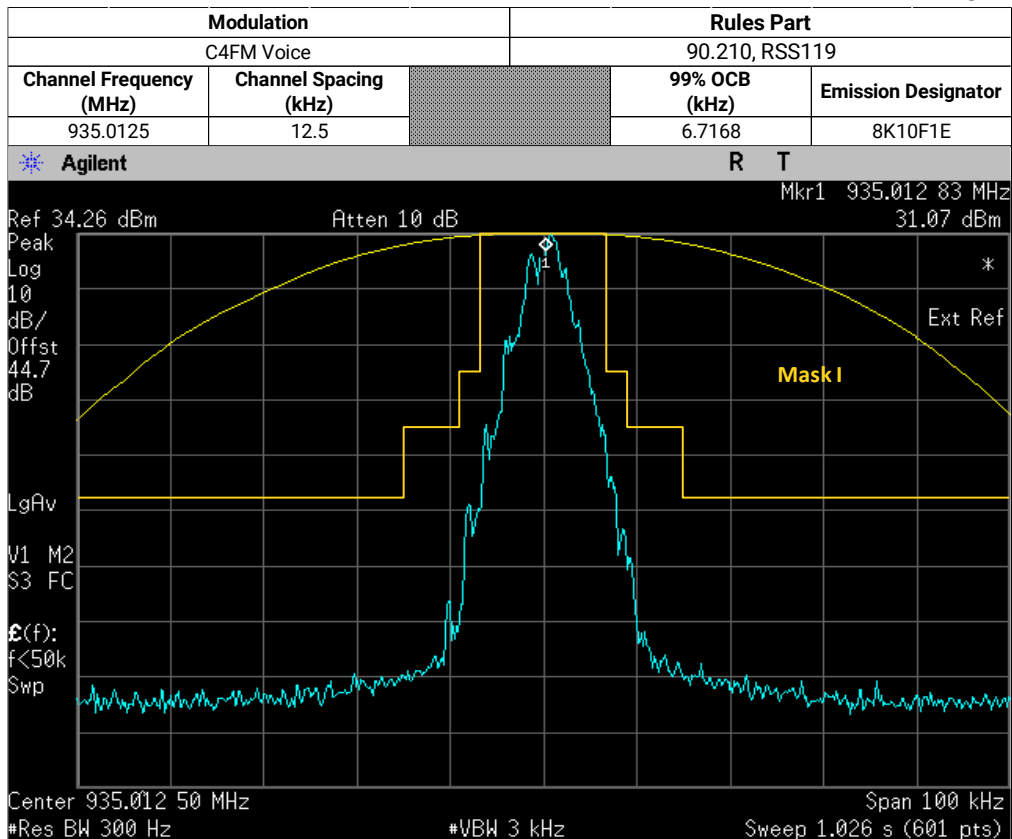


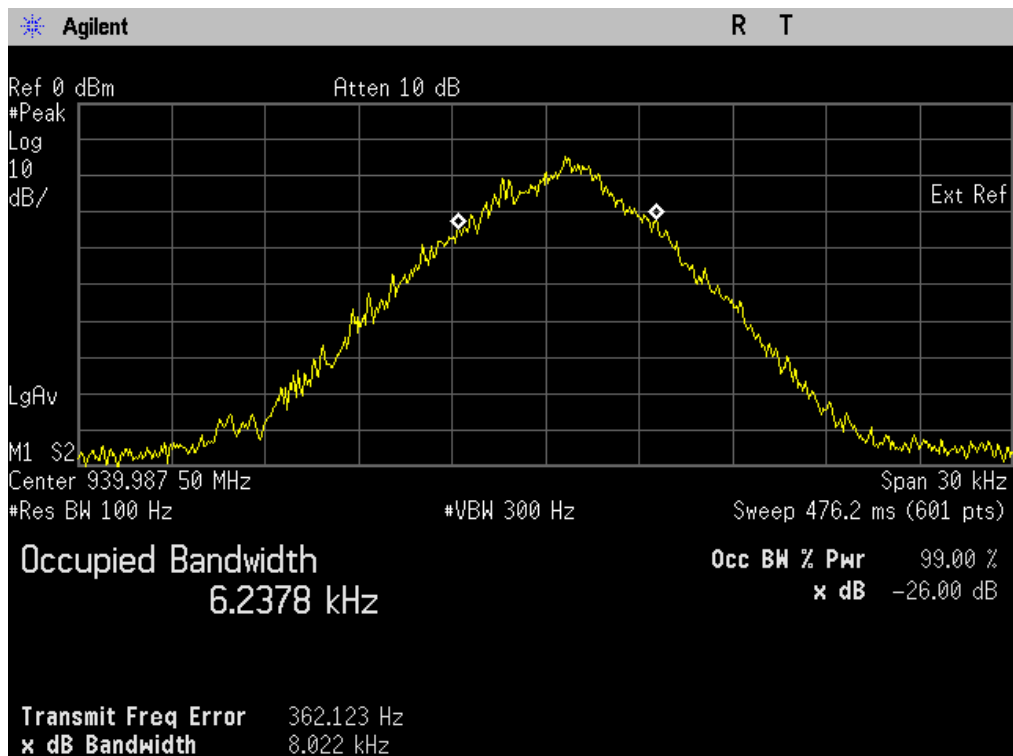
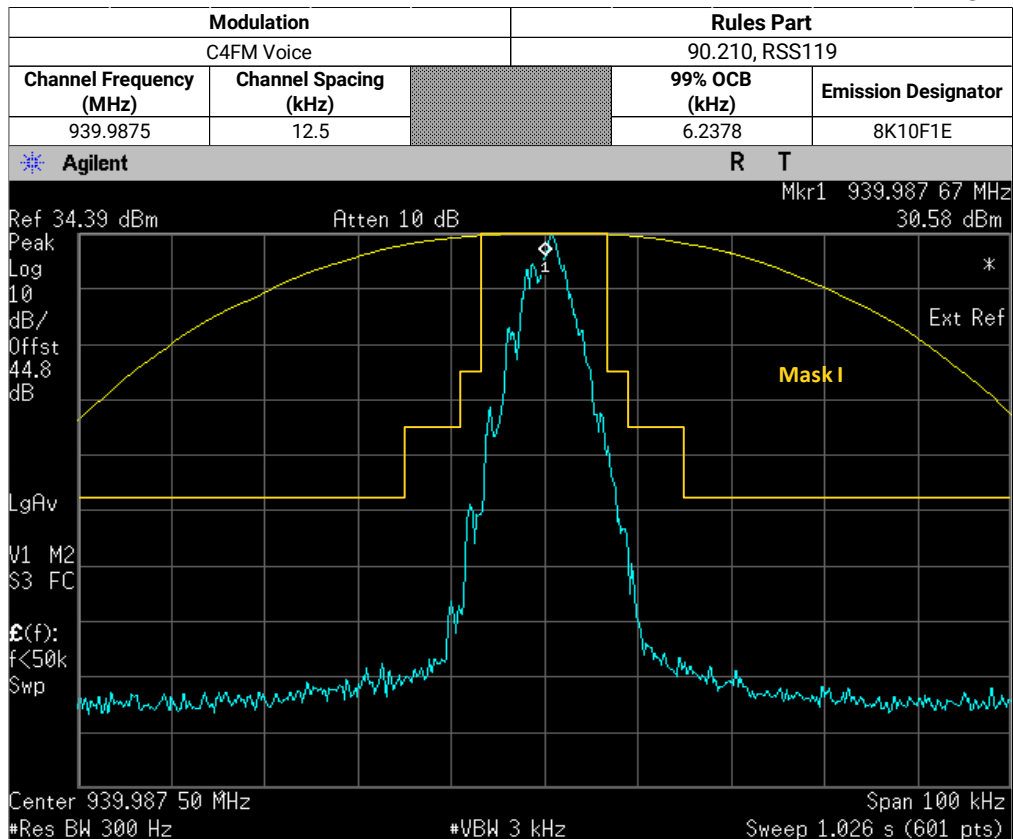


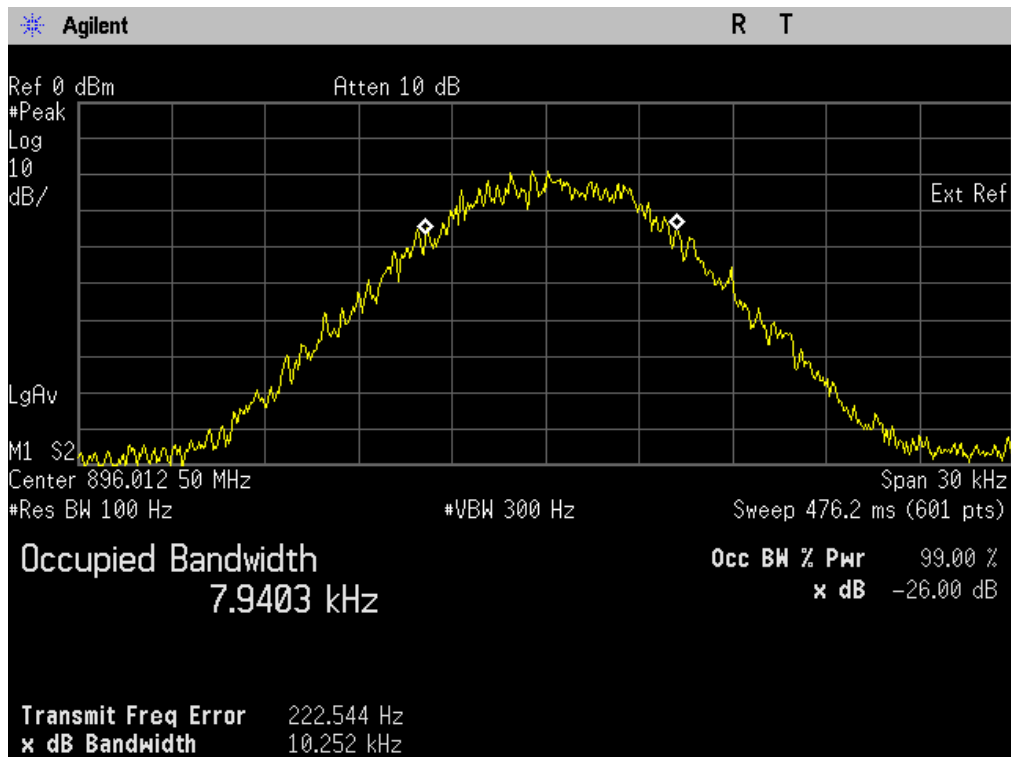
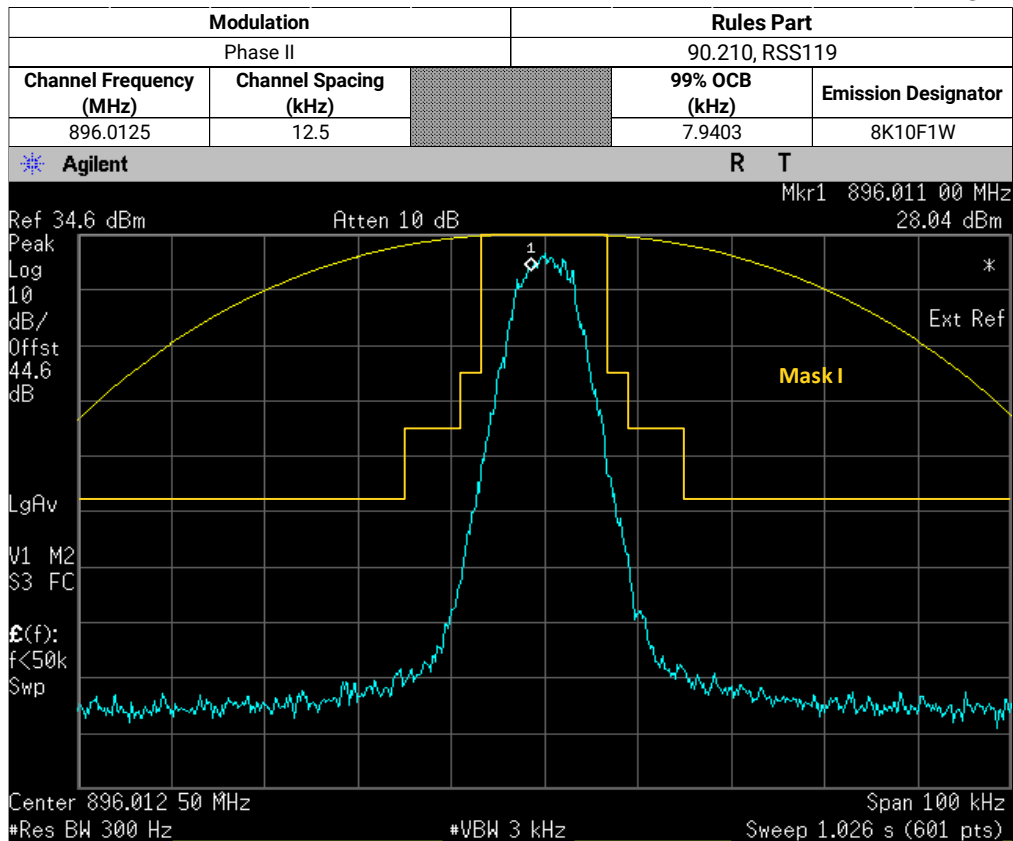


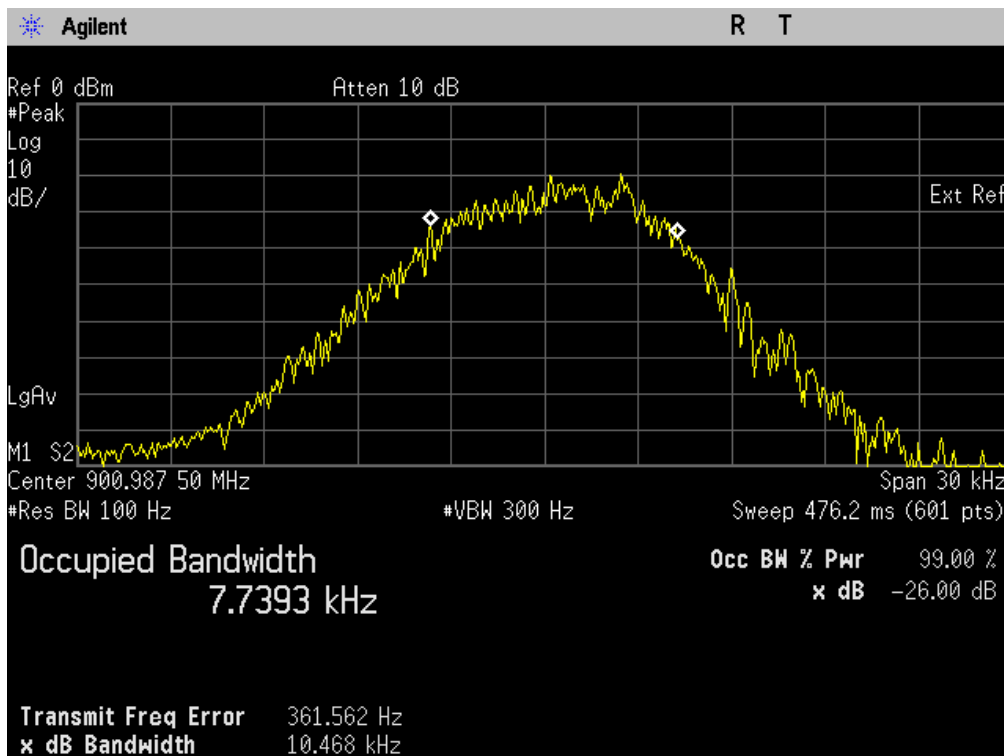
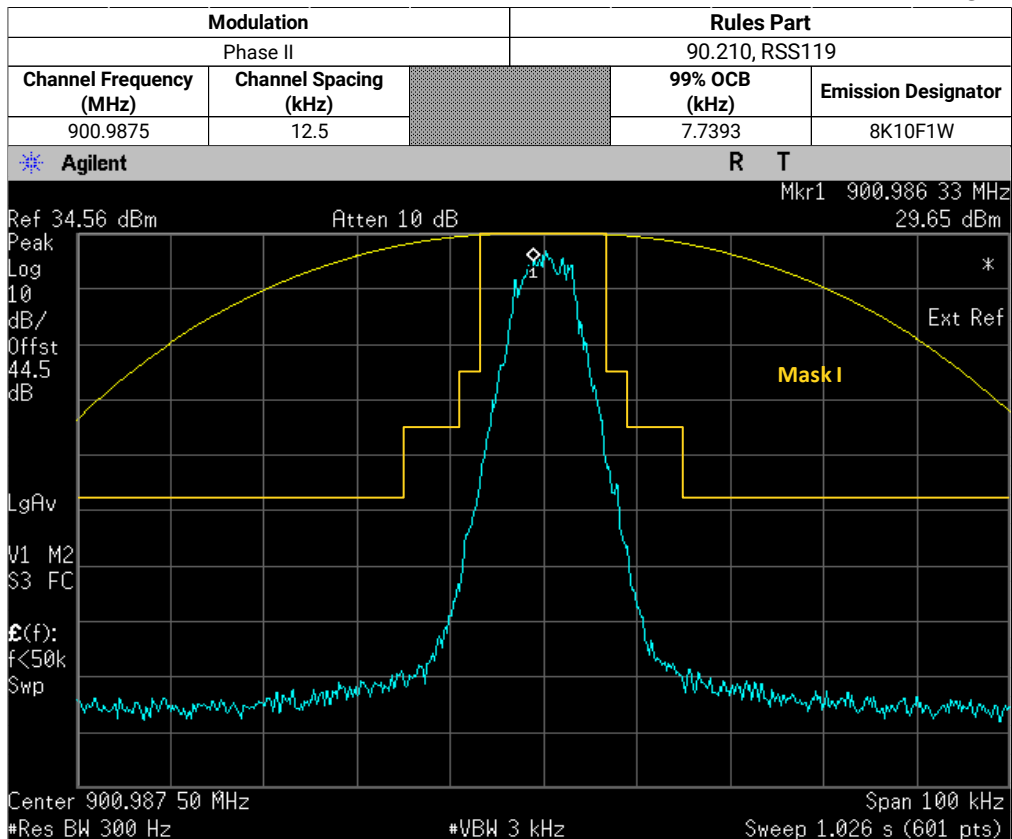


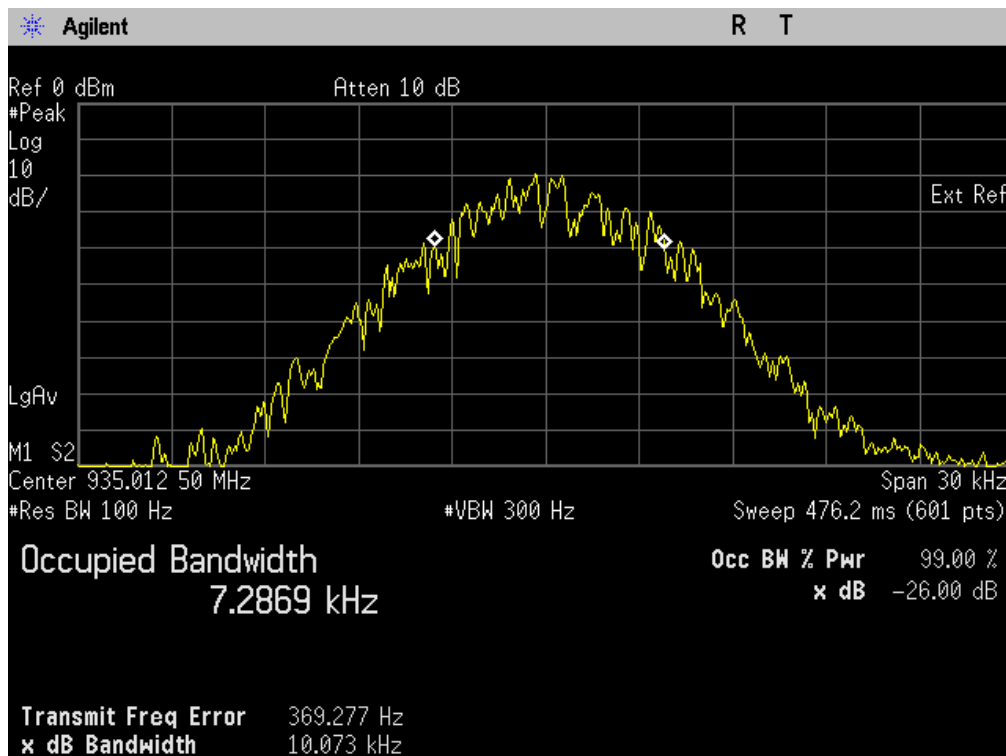
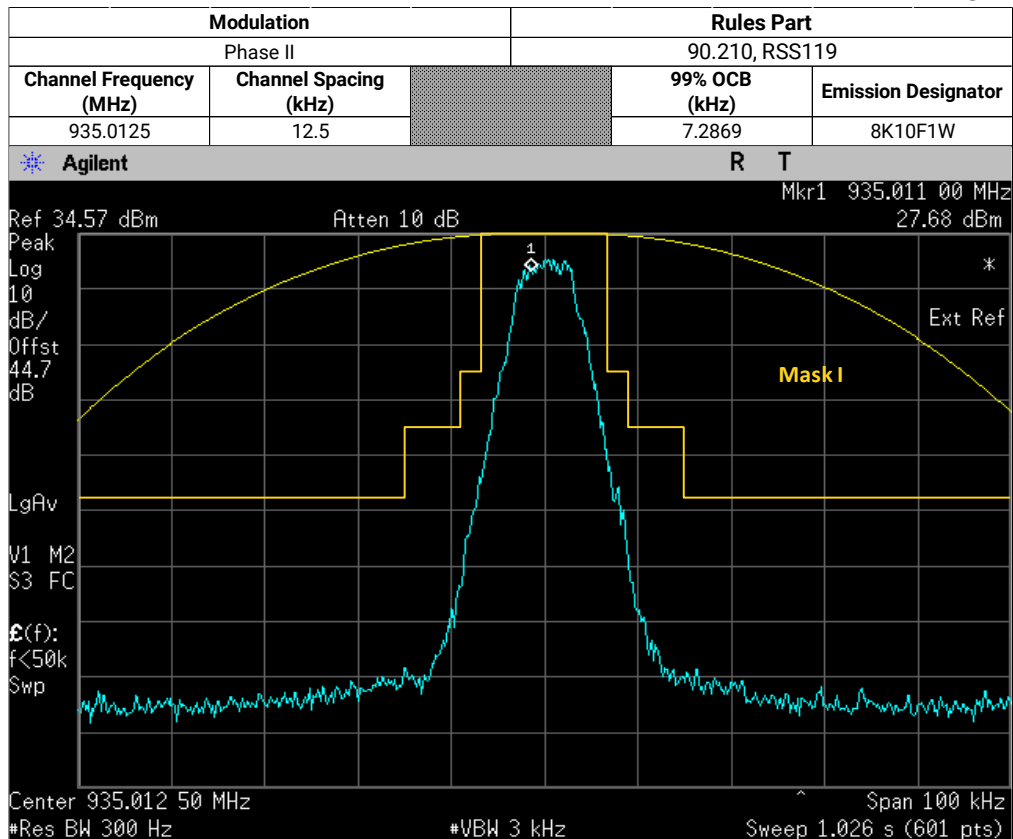


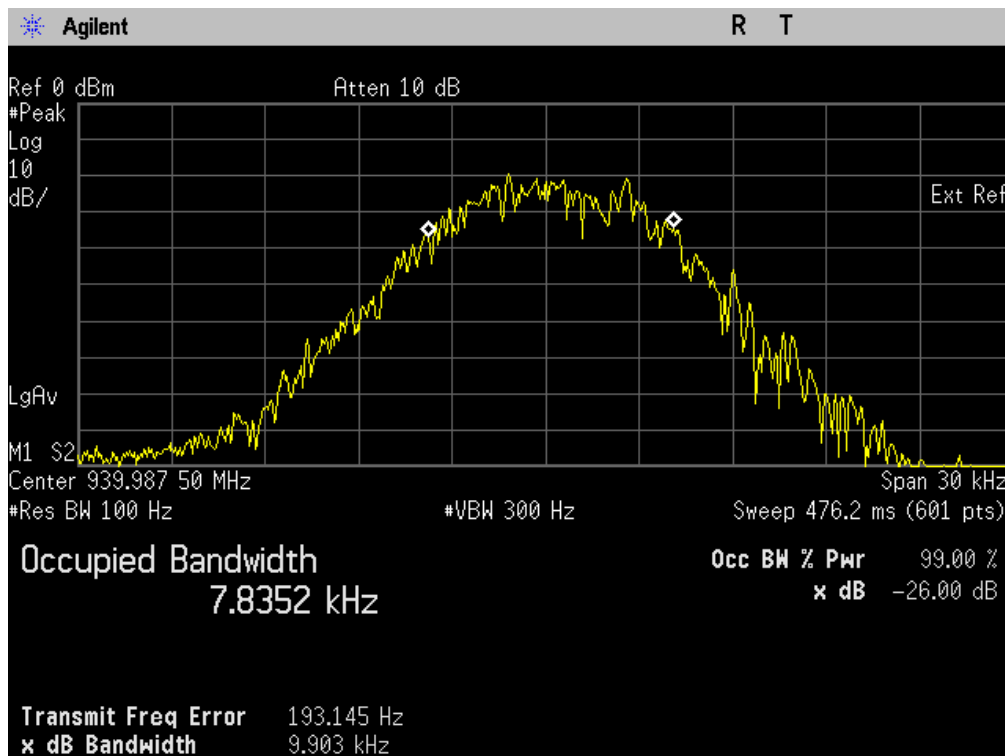
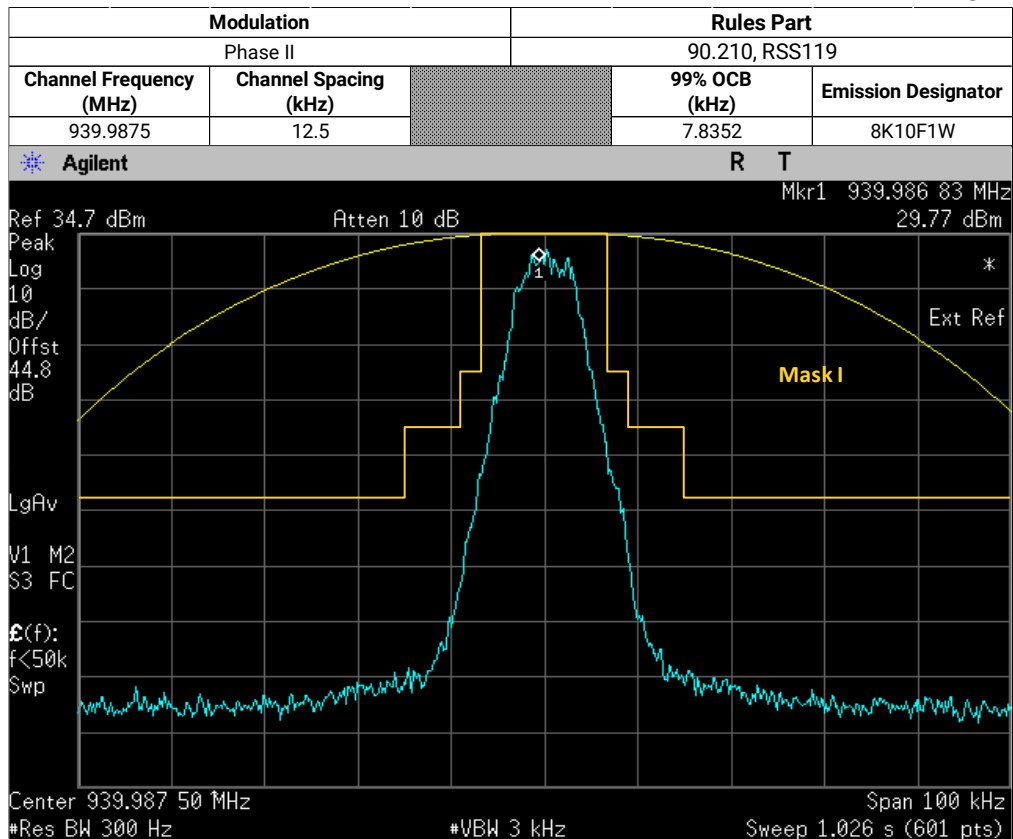


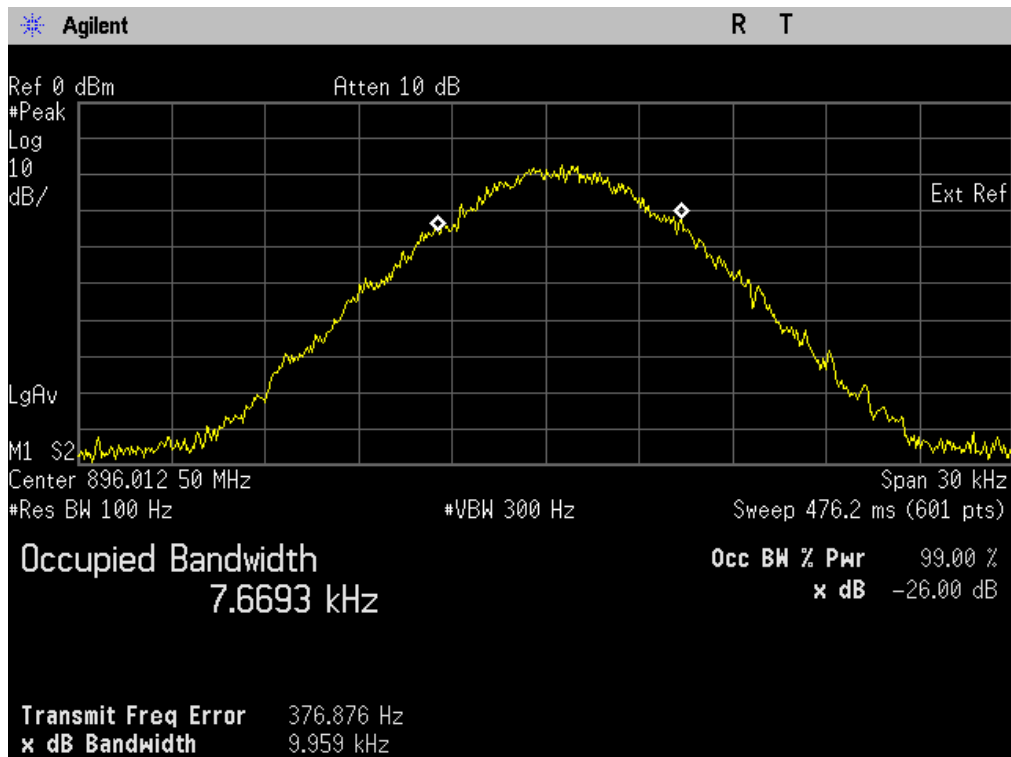
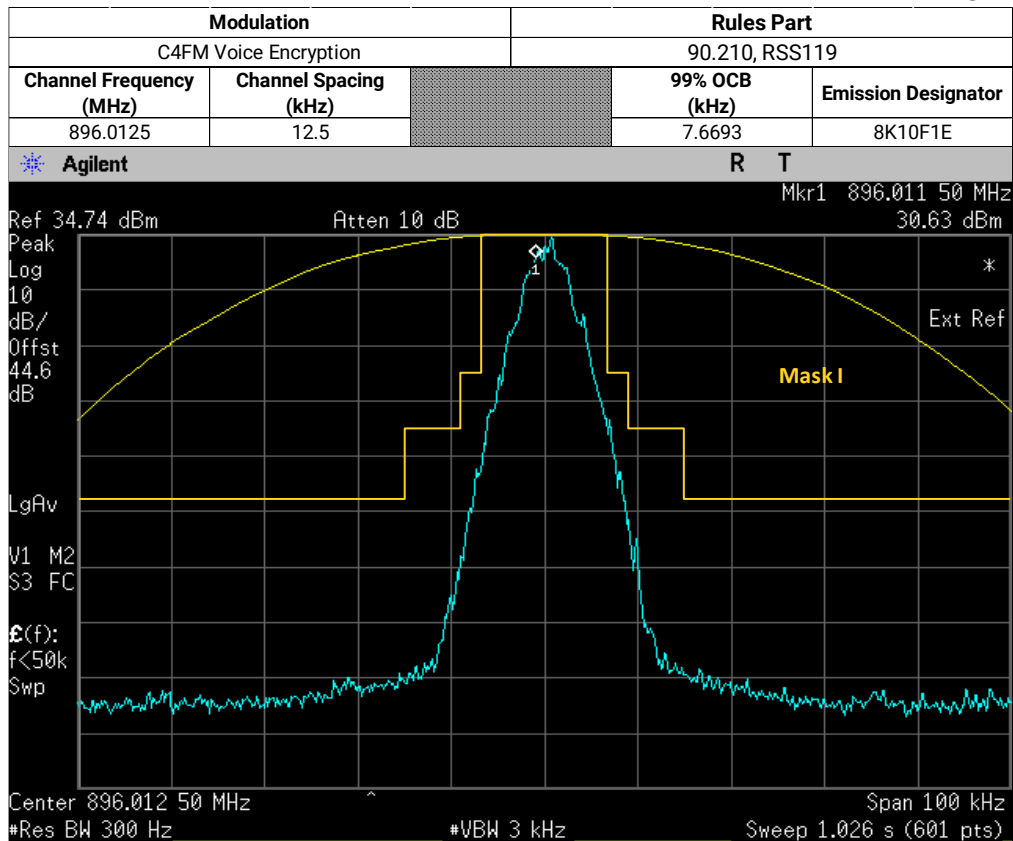


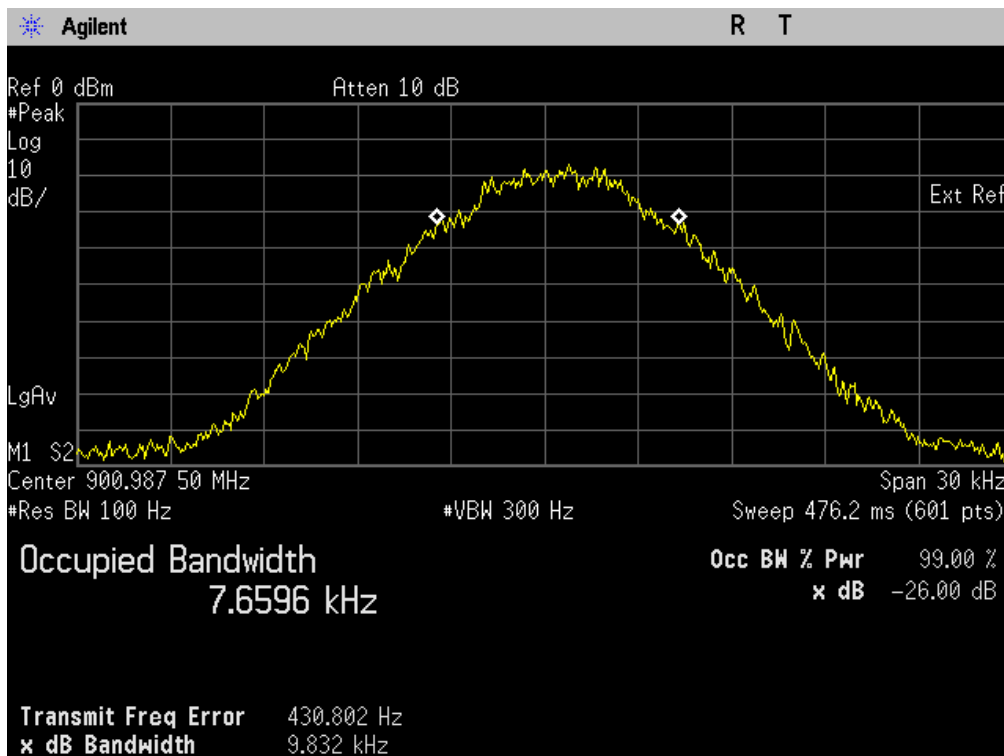
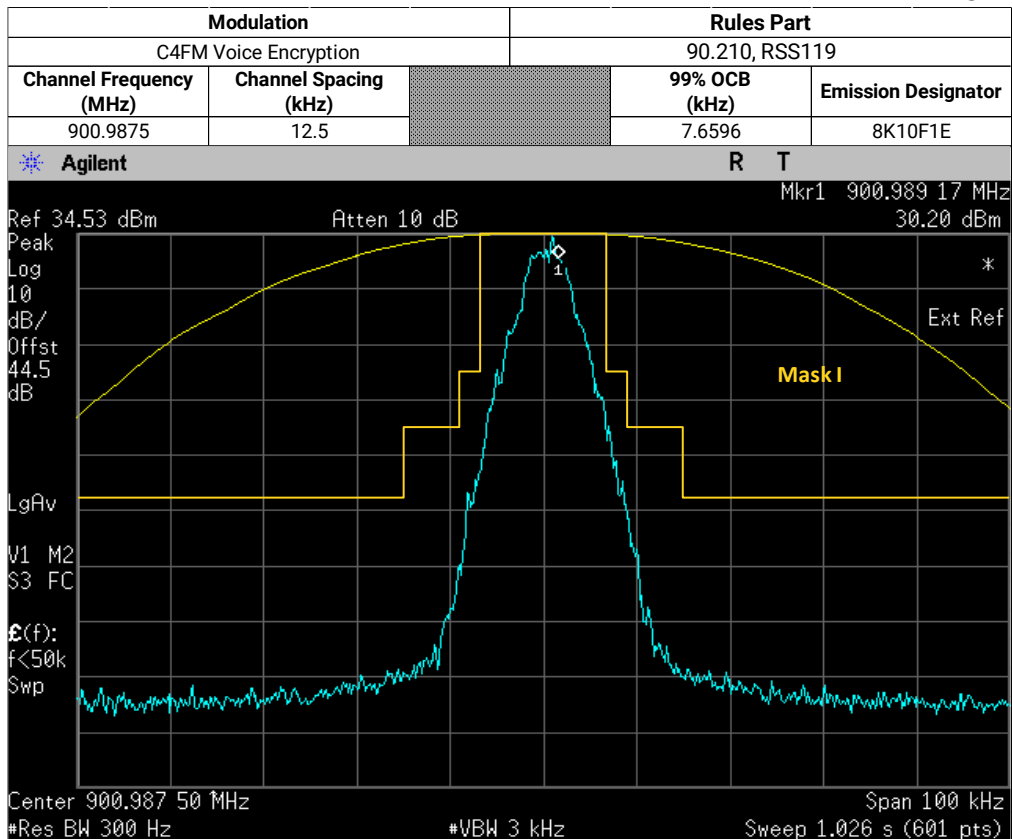


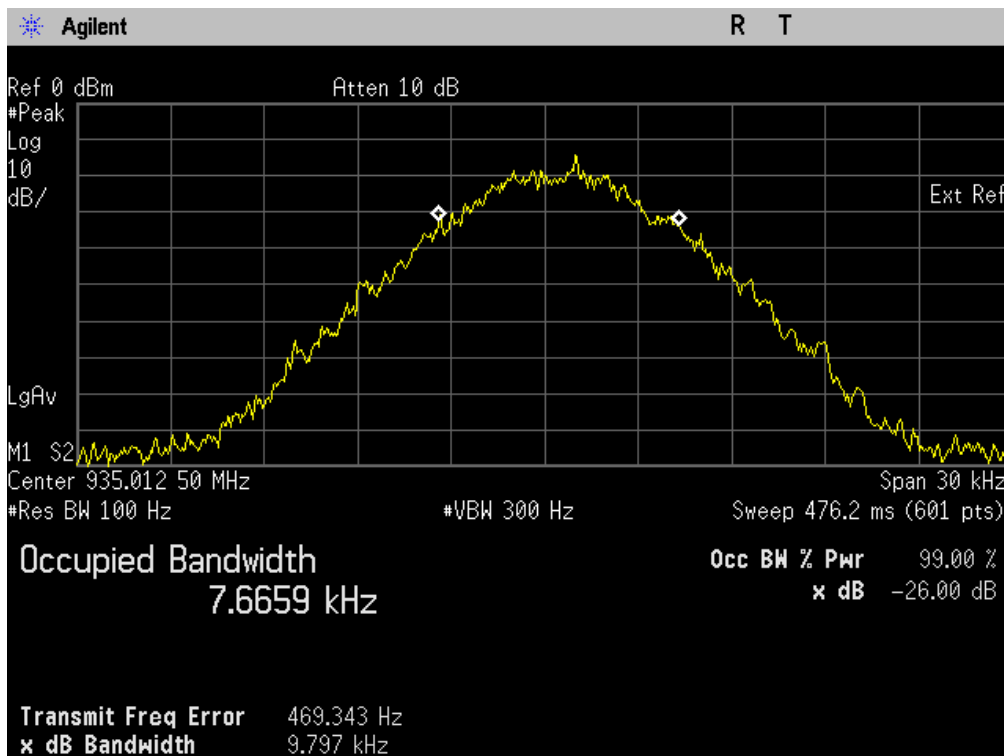
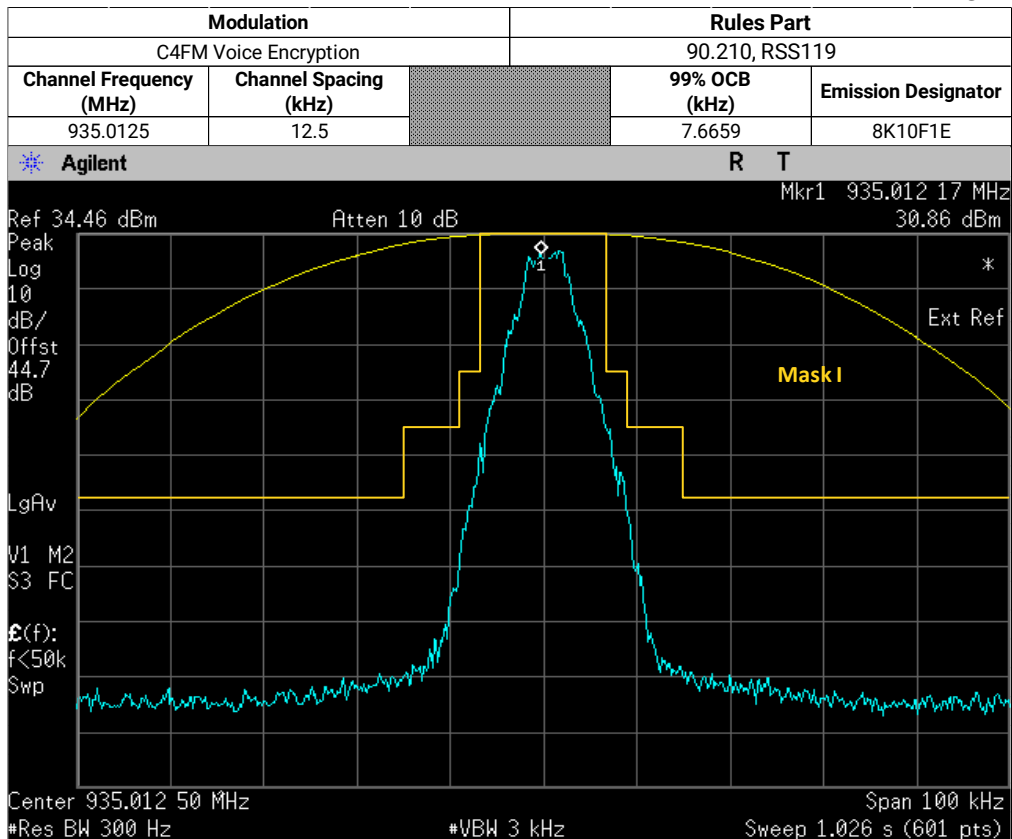


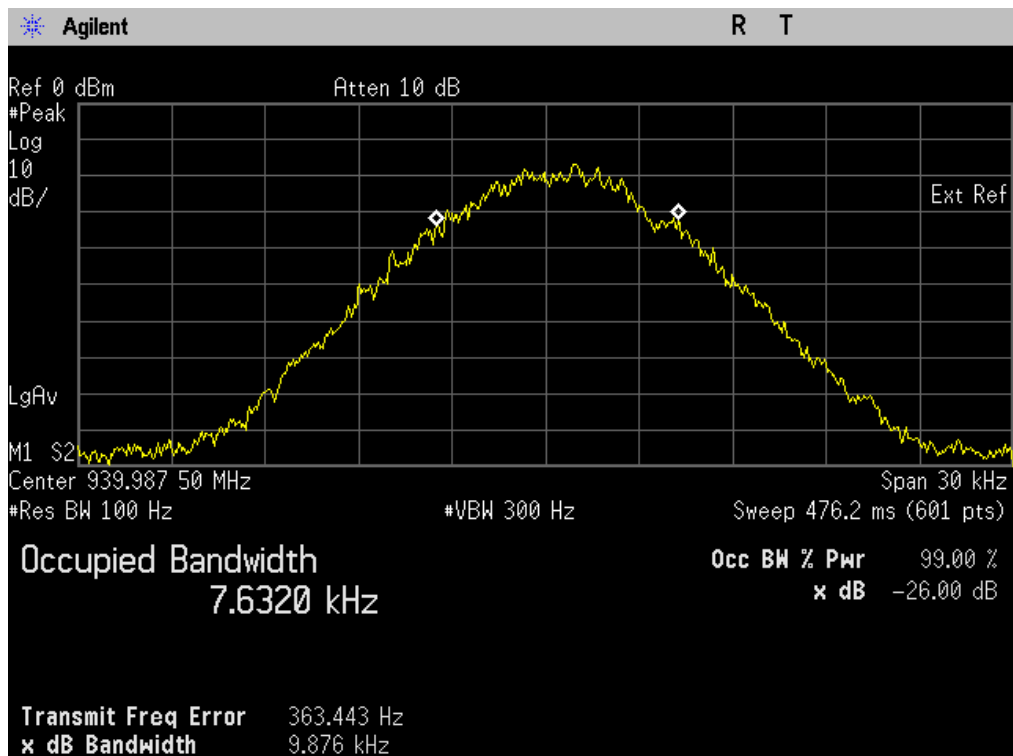
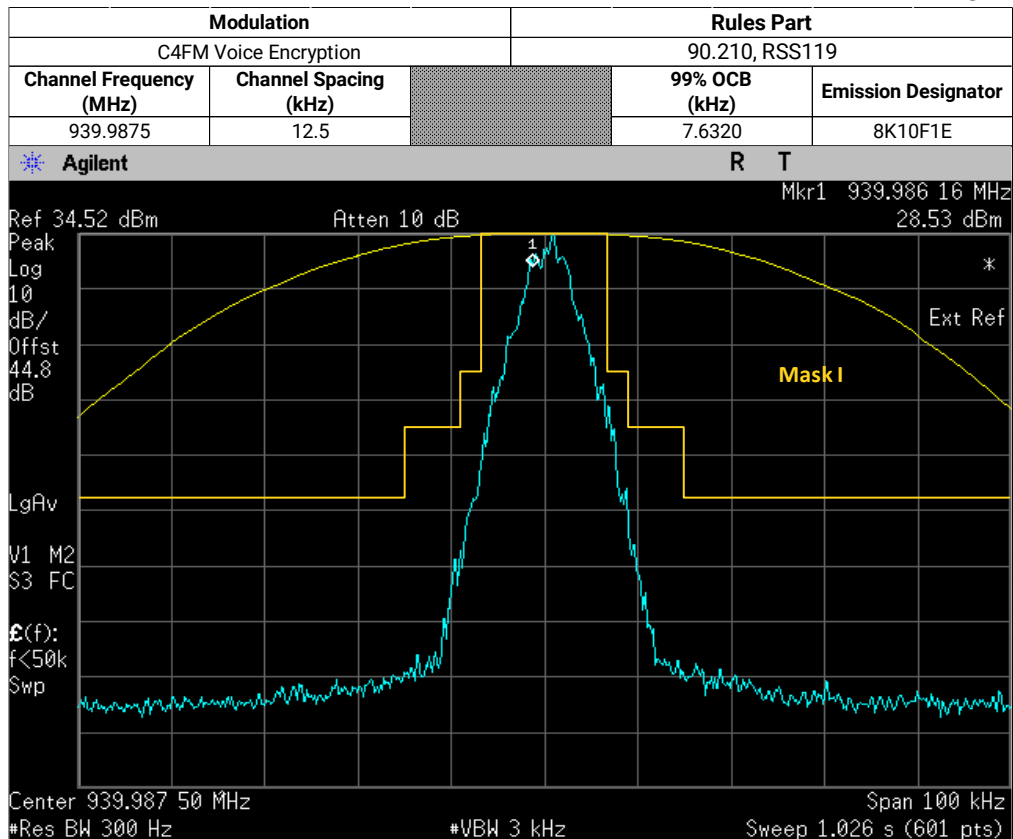










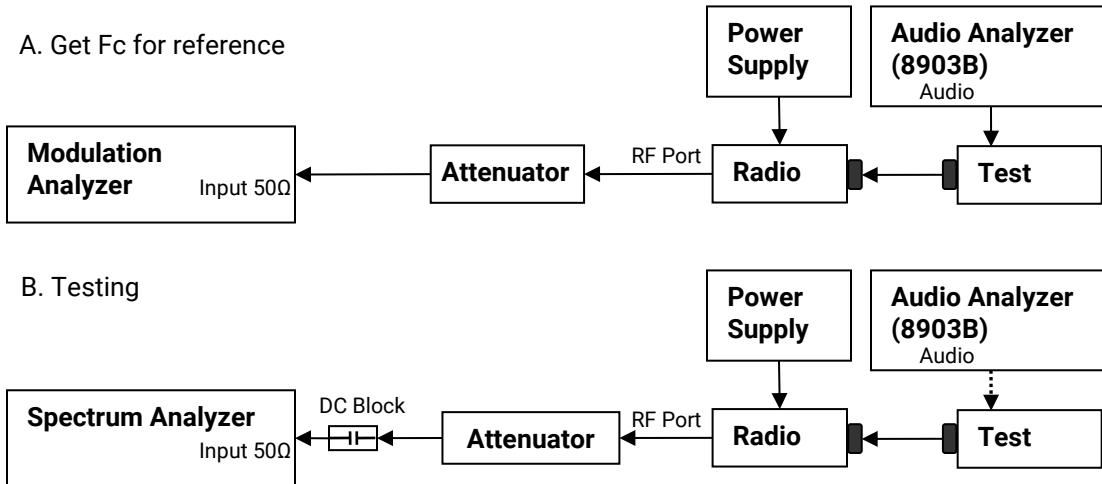


6.5.5. Test Limit

The 99% occupied bandwidth is the width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5% of the total mean transmitted power.

6.6. Band Edge Conducted Spurious Emission (Part 22)

6.6.1. Test Setup (Analog)



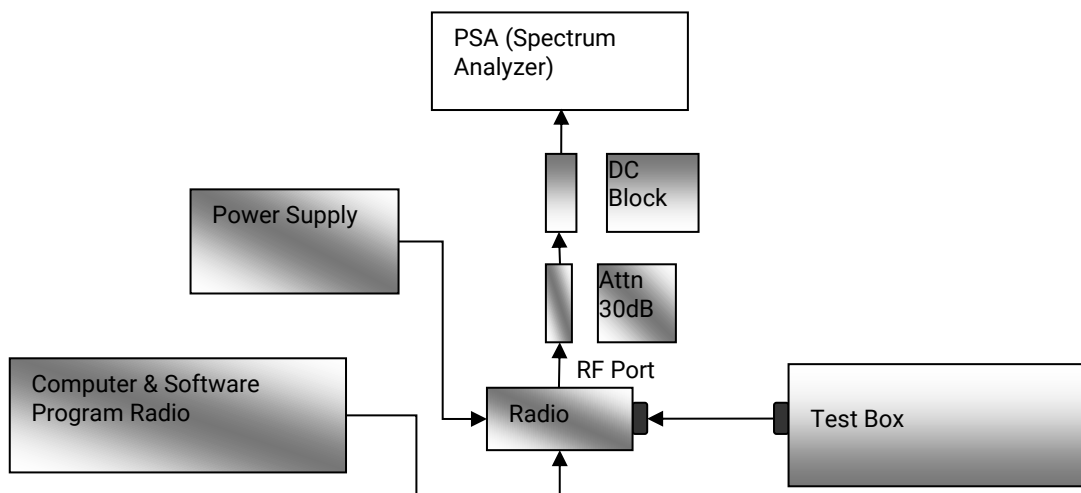
- 1) The DUT transmitter output port was connected to Modulation Analyzer.
- 2) Set the audio bandwidth filter to 15 kHz low pass filter and 50 kHz high pass filter.
- 3) Transmit the radio and set the audio analyzer to 2.5 kHz audio frequency and 50% of the rated deviation. Up the amplitude by 16 dB. Dekey the DUT.
- 4) Path loss for the measurement included.
- 5) Select the Occupied Bandwidth measurement for 99% and 26dB Emissions Bandwidth Measurement.
- 6) Key in the Fc and Resolution Bandwidth.
- 7) Transmit the DUT and record the occupied Bandwidth frequencies.
- 8) Preset the spectrum analyzer for band edge measurement.
- 9) The band edges of lowest and highest channels were measured.
- 10) Key in the Lowest and highest channel frequency, span is 60 kHz and Resolution Bandwidth is at least 1% of Emission Bandwidth.
- 11) Save the screen shot as modulated signal.
- 12) Remove the audio tone from audio analyzer to capture unmodulated signal.

*Note:

- For emission designator ending with F3E, 16K0F3E is the worst case and therefore only 16K0F3E will be shown.

6.6.2. Test Result (Analog) **Not Applicable**

6.6.3. Test Setup (Digital)



- 1) Program and set radio to operate in desire test frequency and digital mode with modulation. (*4FSK, C4FM or other digital modulation form).
- 2) Path loss for the measurement included.
- 3) Select the Occupied Bandwidth measurement for 99% and 26dB Emissions Bandwidth Measurement.
- 4) Key in the Fc and Resolution Bandwidth.
- 5) Transmit radio record the occupied Bandwidth frequencies.
- 6) Preset the spectrum analyzer for band edge measurement.
- 7) Key in the lowest and highest channels frequency, span is 60 kHz and Resolution Bandwidth is at least 1% of Emission Bandwidth.
- 8) Save the screen shot.

*Note:

- For Digital Modulation, 12.5 kHz Data F1D & FXD would be the same. Therefore only measurements with F1D modulation shown below.
- For Digital Modulation, 12.5 kHz Data F1E & FXE would be the same. Therefore only measurements with F1E modulation shown below.

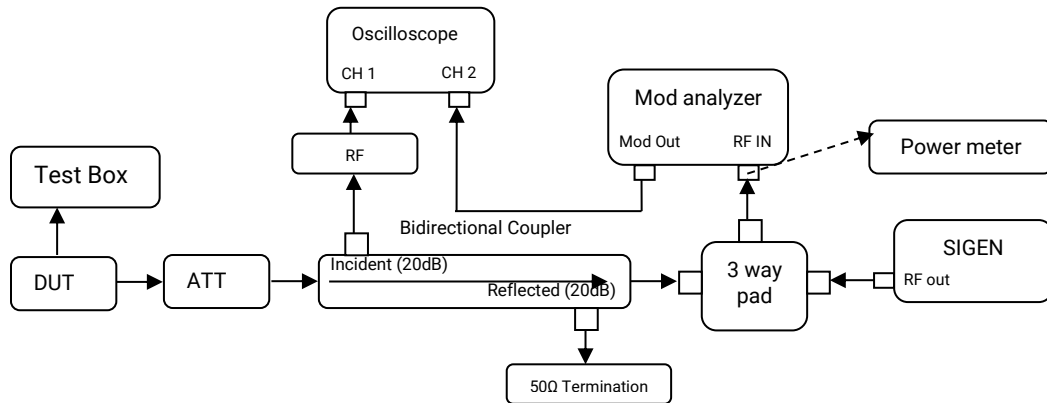
6.6.4. Test Result (Digital) Not Applicable

6.6.5. Test Limit

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

6.7. Transient Frequency Behavior

6.7.1. Test Setup



- 1) Connect the setup as figure above.
- 2) Path loss for the measurement included.
- 3) Set on Siggen with the assigned center frequency, internal 1 kHz FM tone.
FM Deviation: Analog 25kHz Channel Spacing = 25 kHz
Analog 12.5 kHz Channel Spacing = 12.5 kHz
C4FM = 12.5 kHz
- 4) Turn on 50 kHz high pass filter and 15 kHz low pass filter on modulation analyzer.
- 5) Supply sufficient attenuation ATT to provide the output power of $\leq -11\text{dBm}$ into power meter when DUT is keying up.
- 6) Note the power level on power meter and dekey the DUT.
- 7) Adjust the amplitude of the signal generator to the level power meter, maintained the amplitude throughout the rest of the measurement.
- 8) Connect the output to modulation analyzer.
- 9) Reduce 30dB attenuation and transmit the radio to get the trigger line.
- 10) Capture the screen shot for key-up (rising edge) and de-key (falling edge) mode.

6.7.2. Test Result Not Applicable

6.7.3. Test Limit

Transmitters designed to operate in the 150-174 MHz and 421-512 MHz frequency bands must maintain transient frequencies within the maximum frequency difference limits during the time intervals indicated:

Time intervals ¹ 2	Maximum frequency difference ³	All equipment	
		150 to 174 MHz	421 to 512 MHz
Transient Frequency Behavior for Equipment Designed to Operate on 25 kHz Channels			
t ₁ ⁴	±25.0 kHz	5.0 ms	10.0 ms
t ₂	±12.5 kHz	20.0 ms	25.0 ms
t ₃ ⁴	±25.0 kHz	5.0 ms	10.0 ms
Transient Frequency Behavior for Equipment Designed to Operate on 12.5 kHz Channels			
t ₁ ⁴	±12.5 kHz	5.0 ms	10.0 ms
t ₂	±6.25 kHz	20.0 ms	25.0 ms
t ₃ ⁴	±12.5 kHz	5.0 ms	10.0 ms
Transient Frequency Behavior for Equipment Designed to Operate on 6.25 kHz Channels			
t ₁ ⁴	±6.25 kHz	5.0 ms	10.0 ms
t ₂	±3.125 kHz	20.0 ms	25.0 ms
t ₃ ⁴	±6.25 kHz	5.0 ms	10.0 ms

¹_{on} is the instant when a 1 kHz test signal is completely suppressed, including any capture time due to phasing.

t_1 is the time period immediately following t_{on} .

t_2 is the time period immediately following t_1 .

t_3 is the time period from the instant when the transmitter is turned off until t_{off} .

t_{off} is the instant when the 1 kHz test signal starts to rise.

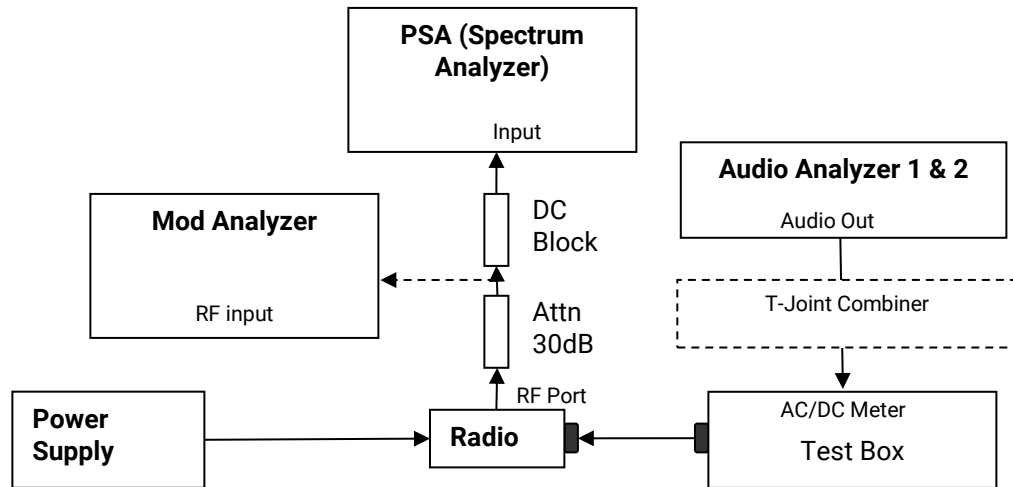
² During the time from the end of t_2 to the beginning of t_3 , the frequency difference must not exceed the limits specified in §90.213.

³ Difference between the actual transmitter frequency and the assigned transmitter frequency.

⁴ If the transmitter carrier output power rating is 6 watts or less, the frequency difference during this time period may exceed the maximum frequency difference for this time period.

6.8. Adjacent Channel Power

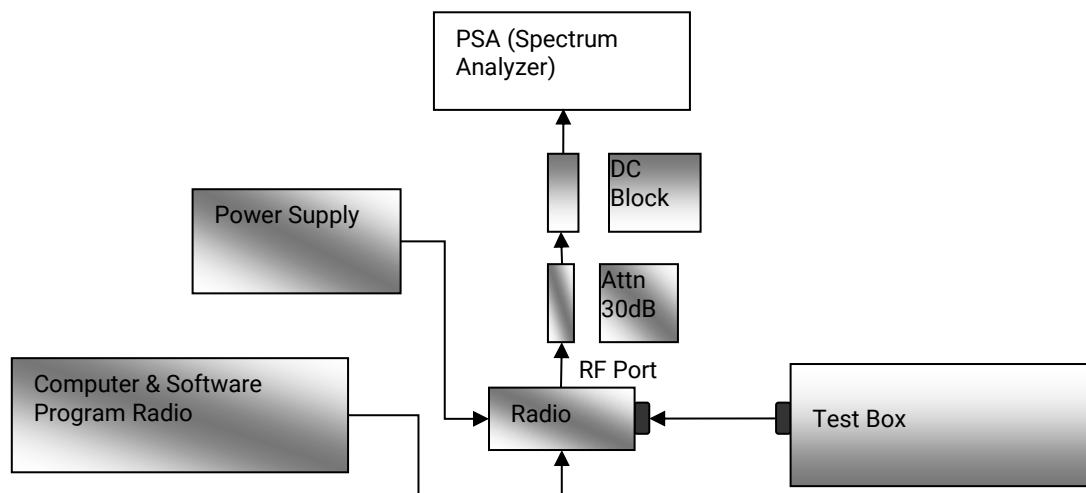
6.8.1. Test Setup (Analog)



- 1) The DUT transmitter output port was connected to modulation analyzer.
- 2) Transmit the radio and turn on 1st audio analyzer with audio frequency 650Hz, 50% rated deviation, and record the amplitude value as AmpT1.
- 3) Turn off Audio analyzer 1 and turn on audio analyzer 2, set the audio frequency to 2.2 kHz and 50% deviation. Record the amplitude as AmpT2.
- 4) Turn both audio analyzers ON and up 10dB amplitude level.
- 5) Connect the output to PSA and set to assigned center frequency.
- 6) Set Span, Resolution Bandwidth and Video Bandwidth per rules part.
- 7) Transmit the radio and record the Adjacent Channel Power value in dBc.

6.8.2. Test Result Not Applicable

6.8.3. Test Setup (Digital)



- 1) Program and set radio to operate in desire test frequency and digital mode with modulation. (4FSK, C4FM or other digital modulation form).
- 2) Prepare setup as per picture.
- 3) Turn on the ACP Measurement – Press Measure, ACP.
- 4) Set Span, Resolution Bandwidth and Video Bandwidth as per rules part.
- 5) Transmit the radio and record the Adjacent Channel Power value in dBc.

6.8.4. Test Result Not Applicable

6.8.5. Test Limit

12.5 kHz MOBILE TRANSMITTER ACP REQUIREMENTS

Offset from center frequency (kHz)	Measurement bandwidth (kHz)	Maximum ACP relative (dBc)
9.375	6.25	-40
15.625	6.25	-60
21.875	6.25	-60
37.50	25.00	-60
62.50	25.00	-65
87.50	25.00	-65
150.00	100	-65
250.00	100	-65
350.00	100	-65
>400 to 12 MHz	30 (s)	-75
12 MHz to paired receive band	30 (s)	-75
In the paired receive band	30 (s)	-100

25 kHz MOBILE TRANSMITTER ACP REQUIREMENTS

Offset from center frequency (kHz)	Measurement bandwidth (kHz)	Maximum ACP relative (dBc)
15.625	6.25	-40
21.875	6.25	-60
37.50	25	-60
62.50	25	-65
87.50	25	-65
150.00	100	-65
250.00	100	-65
350.00	100	-65
>400 kHz to 12 MHz	30 (s)	-75
12 MHz to paired receive band	30 (s)	-75
In the paired receive band	30 (s)	-100

12.5 kHz BASE TRANSMITTER ACP REQUIREMENTS

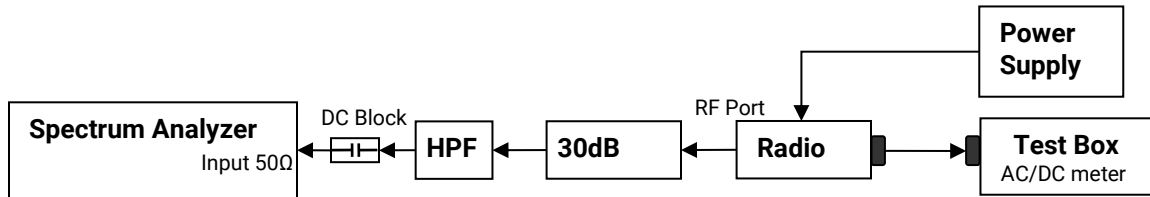
Offset from center frequency (kHz)	Measurement bandwidth (kHz)	Maximum ACP (dBc)
9.375	6.25	-40
15.625	6.25	-60
21.875	6.25	-60
37.5	25	-60
62.5	25	-65
87.5	25	-65
150	100	-65
250	100	-65
350.00	100	-65
>400 kHz to 12 MHz	30 (s)	-80
12 MHz to paired receive band	30 (s)	-80
In the paired receive band	30 (s)	¹ -85

25 kHz BASE TRANSMITTER ACP REQUIREMENTS

Offset from center frequency (kHz)	Measurement bandwidth (kHz)	Maximum ACP (dBc)
15.625	6.25	-40
21.875	6.25	-60
37.5	25	-60
62.5	25	-65
87.5	25	-65
150	100	-65
250	100	-65
350	100.00	-65
>400 kHz to 12 MHz	30 (s)	-80
12 MHz to paired receive band	30 (s)	-80
In the paired receive band	30 (s)	¹ -85

6.9. Conducted Spurious Emission

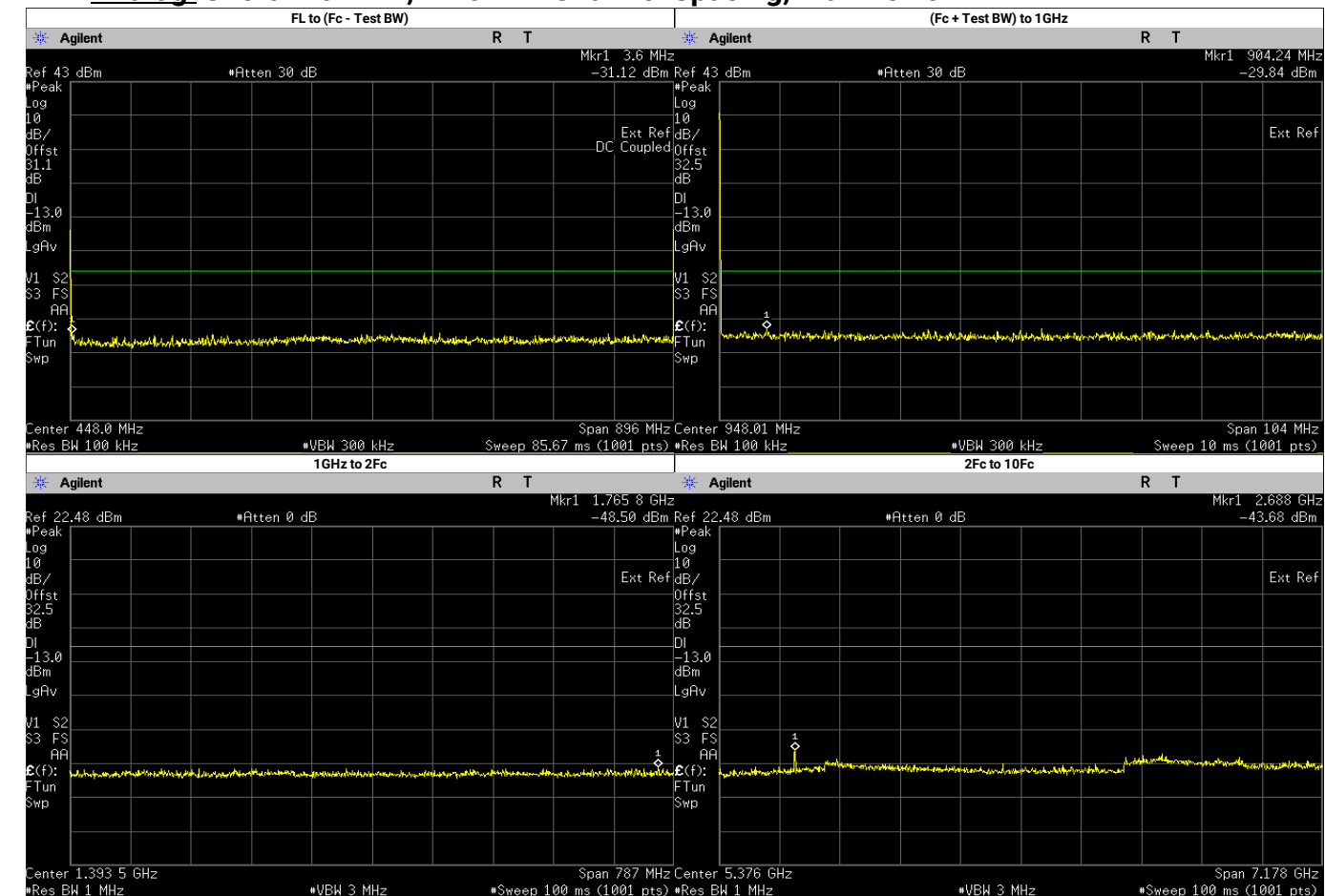
6.9.1. Test Setup



- 1) The DUT transmitter output port was connected to Spectrum Analyzer with above setup.
- 2) Program and set radio to operate in desire test frequency and mode. (Analog / digital modulation form).
- 3) Path loss for the measurement included.
- 4) Set the PSA Resolution Bandwidth as per rules part.
- 5) Set the Ref offset from the pathloss offset calibration file.
- 6) Adjust the center frequency of the spectrum analyzer for incremental coverage of the range from:
 - a. $9 \text{ KHz to } F_c - \text{Test Bandwidth}$
 - b. $F_c + \text{Test Bandwidth to } 2F_c - 5\text{MHz}$.
- 7) Key up the DUT, Peak Search the highest Spur and record the levels of spurious emissions
- 8) Dekey the DUT.
- 9) Turn On High Pass Filter path and Key up the DUT.
- 10) Adjust the PSA Freq for incremental coverage of range from $2F_c$ to $10F_c$
- 11) Key up the DUT and record the highest spur levels of spurious emissions.

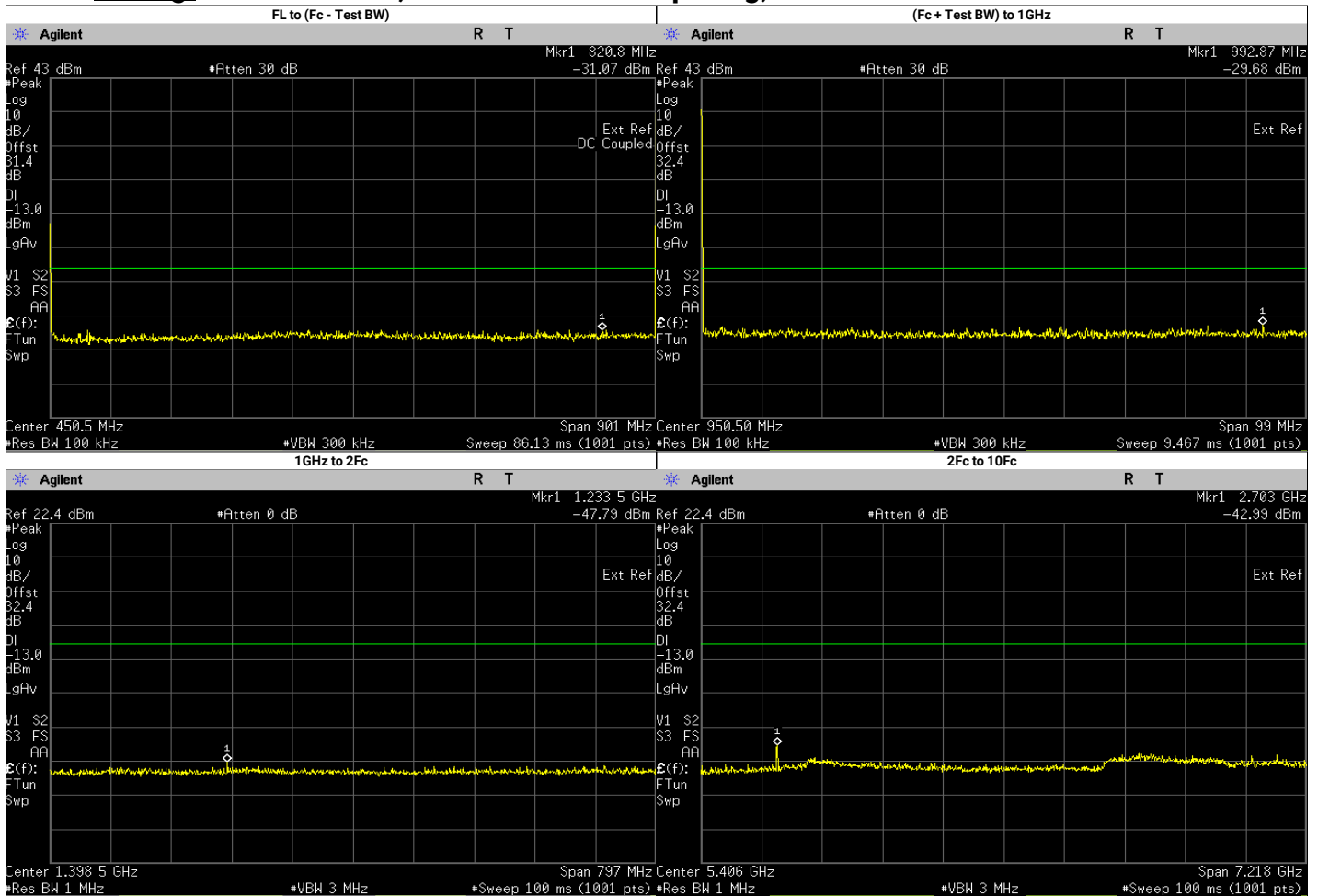
6.9.2. Test Result (Analog)

Analog: 896.0125 MHz, 12.5 kHz Channel Spacing, Max Power



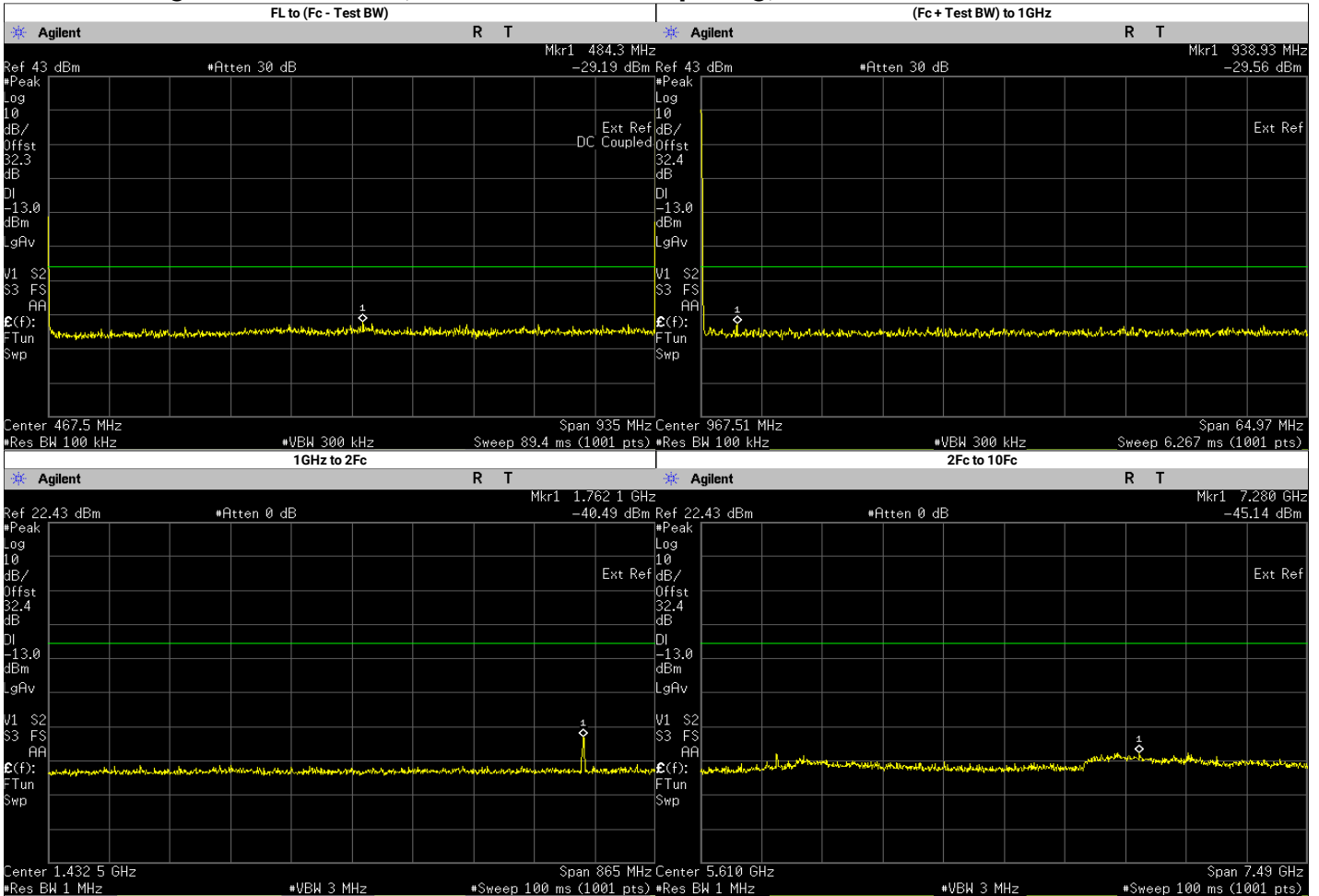
Frequency Range	Highest Spur Frequency (MHz)	Spurious Level (MHz)	Failing Limit (dBm)	Results
FL to (Fc - Test BW)	3.6000	-31.1230	-13	PASS
(Fc + Test BW) to 1GHz	904.2413	-29.8400	-13	PASS
1GHz to 2Fc	1765.7750	-48.5000	-13	PASS
2Fc to 10Fc	2688.0370	-43.6800	-13	PASS
	1792.0250	-49.4679	-13	PASS
	3584.0500	-48.2700	-13	PASS
	4480.0620	-49.3319	-13	PASS
	5376.0750	-49.2930	-13	PASS
	6272.0870	-49.1754	-13	PASS
	7168.1000	-46.9825	-13	PASS
	8064.1130	-48.4946	-13	PASS
	8960.1250	-47.9899	-13	PASS

Analog: 900.9875 MHz, 12.5 kHz Channel Spacing, Max Power



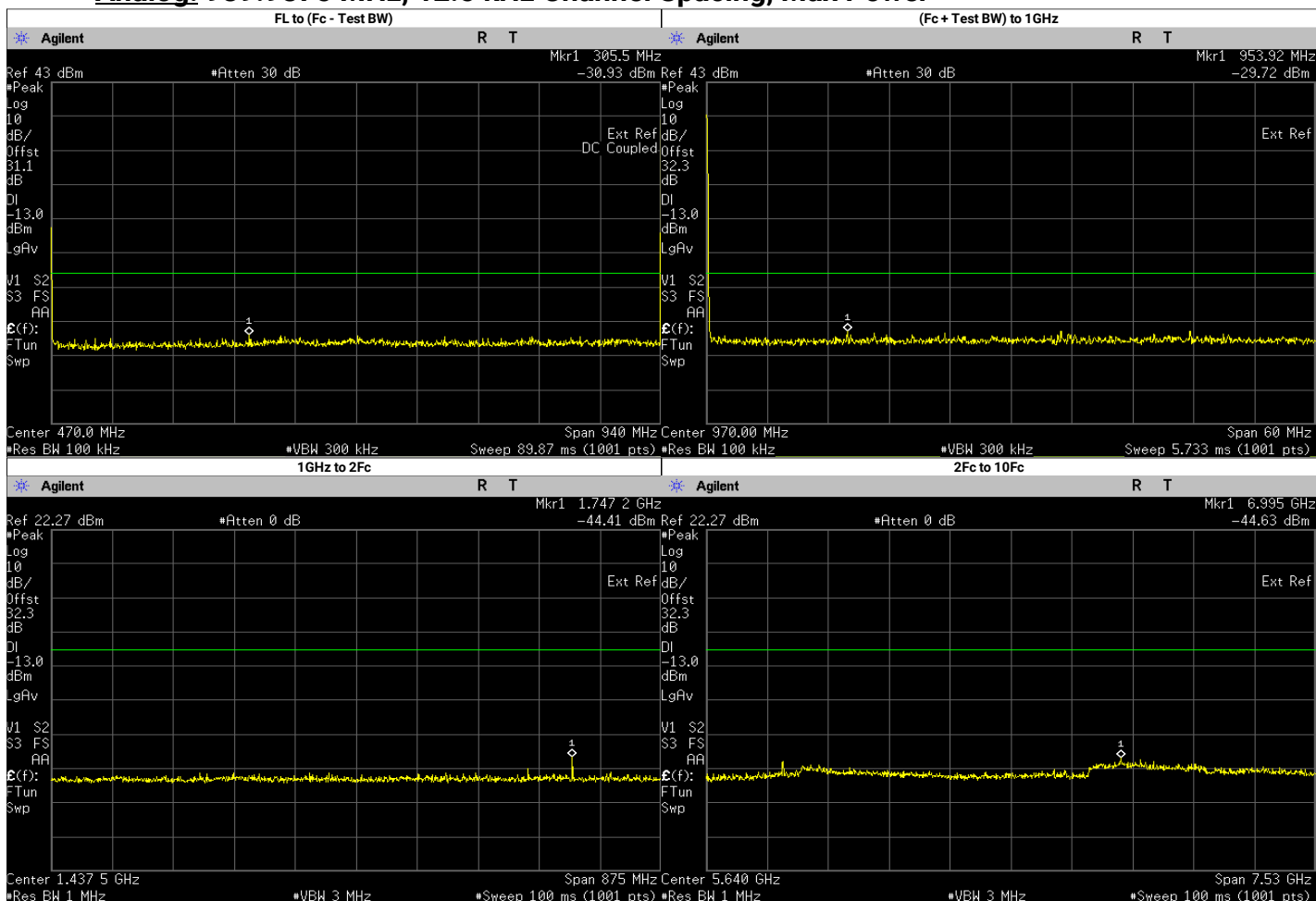
Frequency Range	Highest Spur Frequency (MHz)	Spurious Level (MHz)	Failing Limit (dBm)	Results
FL to (Fc - Test BW)	820.8000	-31.0690	-13	PASS
(Fc + Test BW) to 1GHz	992.8722	-29.6800	-13	PASS
1GHz to 2Fc	1233.5140	-47.7900	-13	PASS
2Fc to 10Fc	2702.9630	-42.9900	-13	PASS
	1801.9750	-49.5151	-13	PASS
	3603.9500	-48.7588	-13	PASS
	4504.9370	-49.1694	-13	PASS
	5405.9250	-49.7420	-13	PASS
	6306.9130	-49.9708	-13	PASS
	7207.9000	-46.7214	-13	PASS
	8108.8870	-48.8667	-13	PASS
	9009.8750	-48.4953	-13	PASS

Analog: 935.0125 MHz, 12.5 kHz Channel Spacing, Max Power



Frequency Range	Highest Spur Frequency (MHz)	Spurious Level (MHz)	Failing Limit (dBm)	Results
FL to (Fc - Test BW)	484.3000	-29.1890	-13	PASS
(Fc + Test BW) to 1GHz	938.9258	-29.5600	-13	PASS
1GHz to 2Fc	1762.0870	-40.4900	-13	PASS
2Fc to 10Fc	7280.3670	-45.1400	-13	PASS
	1870.0250	-50.1235	-13	PASS
	2805.0370	-45.6883	-13	PASS
	3740.0500	-48.2395	-13	PASS
	4675.0620	-49.2706	-13	PASS
	5610.0750	-50.4920	-13	PASS
	6545.0870	-49.1601	-13	PASS
	7480.1000	-47.8871	-13	PASS
	8415.1120	-48.4635	-13	PASS
	9350.1250	-48.8422	-13	PASS

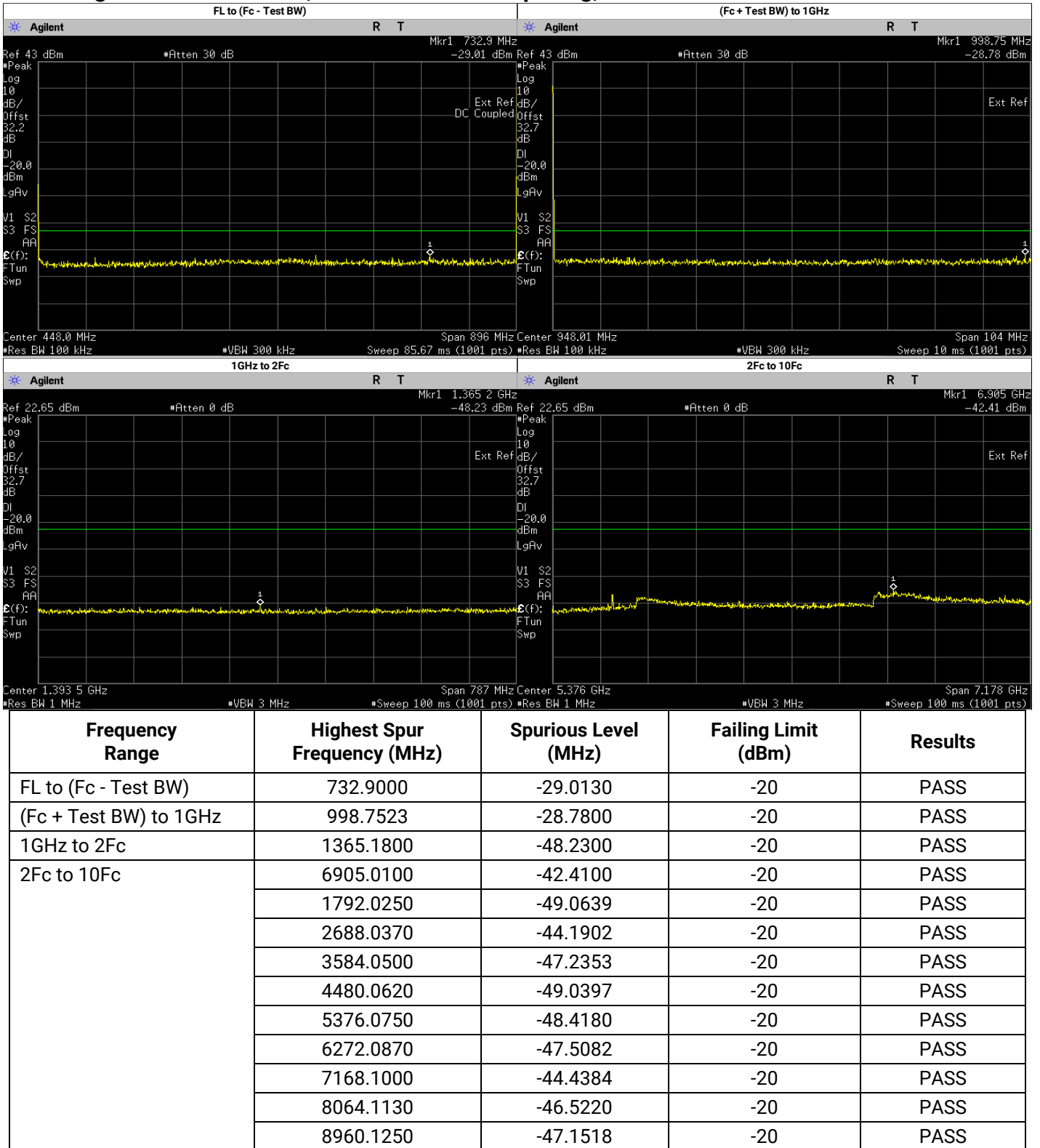
Analog: 939.9875 MHz, 12.5 kHz Channel Spacing, Max Power



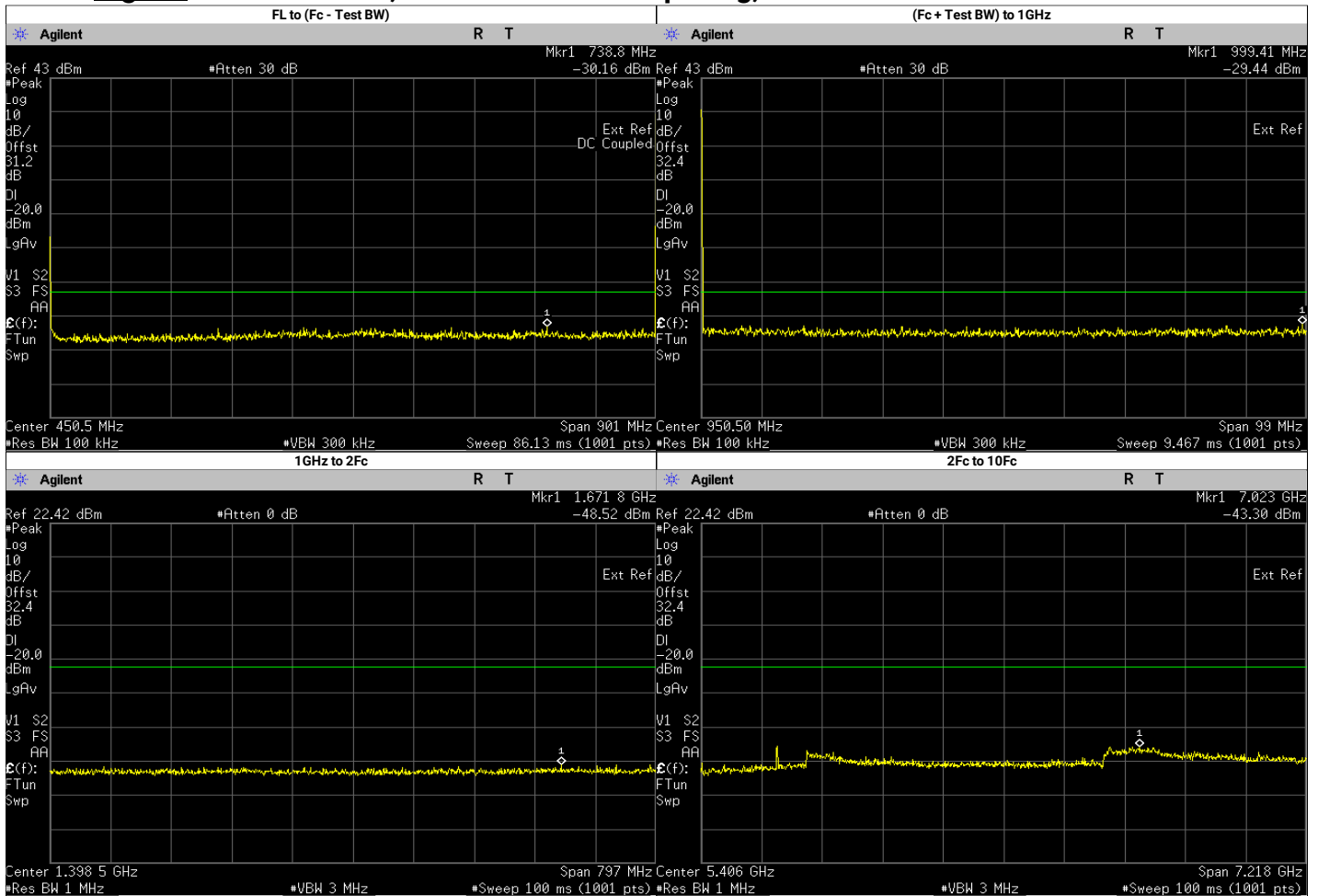
Frequency Range	Highest Spur Frequency (MHz)	Spurious Level (MHz)	Failing Limit (dBm)	Results
FL to (Fc - Test BW)	305.5000	-30.9270	-13	PASS
(Fc + Test BW) to 1GHz	953.9219	-29.7200	-13	PASS
1GHz to 2Fc	1747.2290	-44.4100	-13	PASS
2Fc to 10Fc	6995.3070	-44.6300	-13	PASS
	1879.9750	-49.7296	-13	PASS
	2819.9630	-45.7641	-13	PASS
	3759.9500	-48.9662	-13	PASS
	4699.9370	-49.9735	-13	PASS
	5639.9250	-49.2400	-13	PASS
	6579.9130	-50.1345	-13	PASS
	7519.9000	-47.4644	-13	PASS
	8459.8880	-48.3016	-13	PASS
	9399.8750	-49.0443	-13	PASS

6.9.3. Test Result (Digital)

Digital: 896.0125 MHz, 12.5 kHz Channel Spacing, Max Power

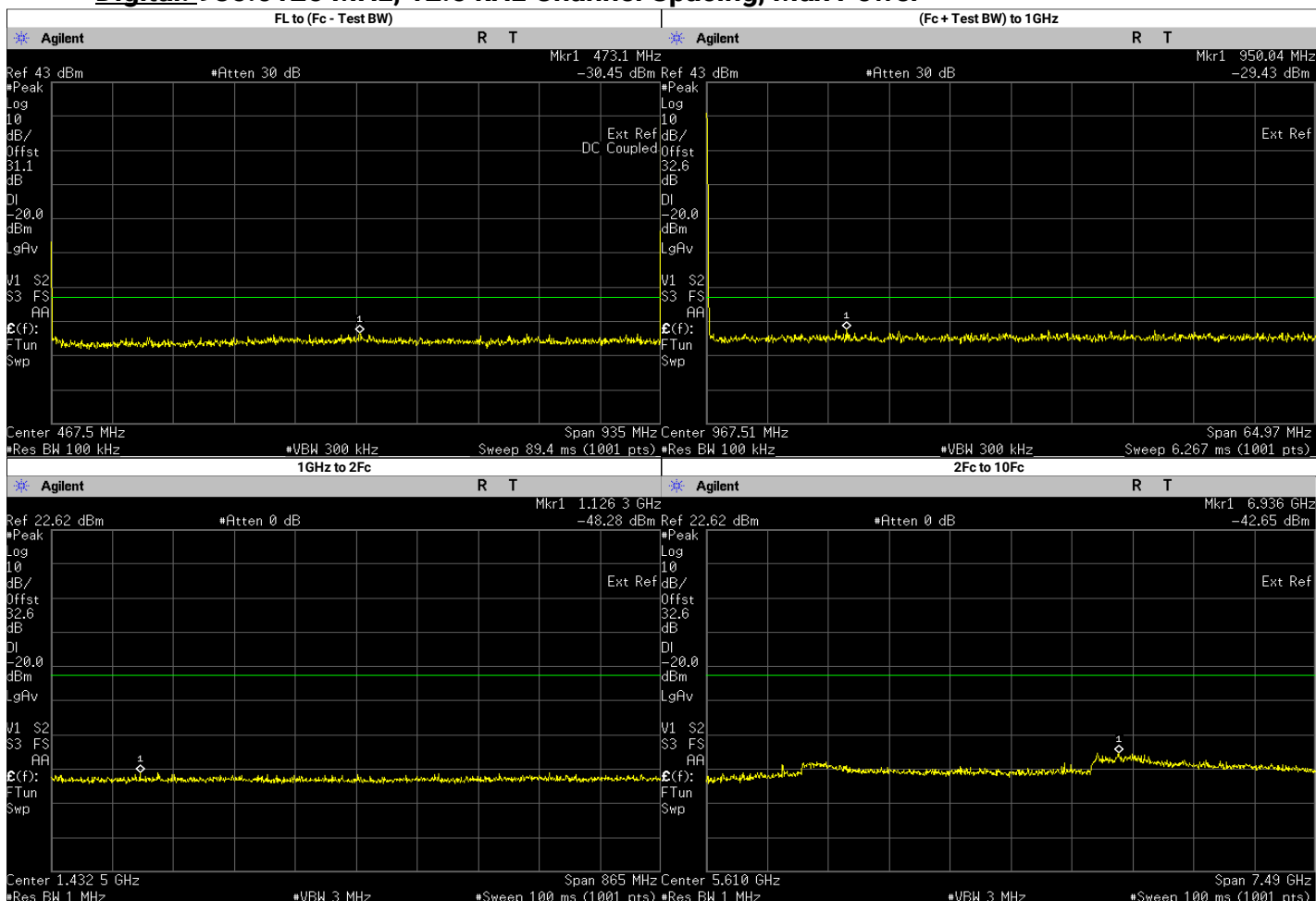


Digital: 900.9875 MHz, 12.5 kHz Channel Spacing, Max Power



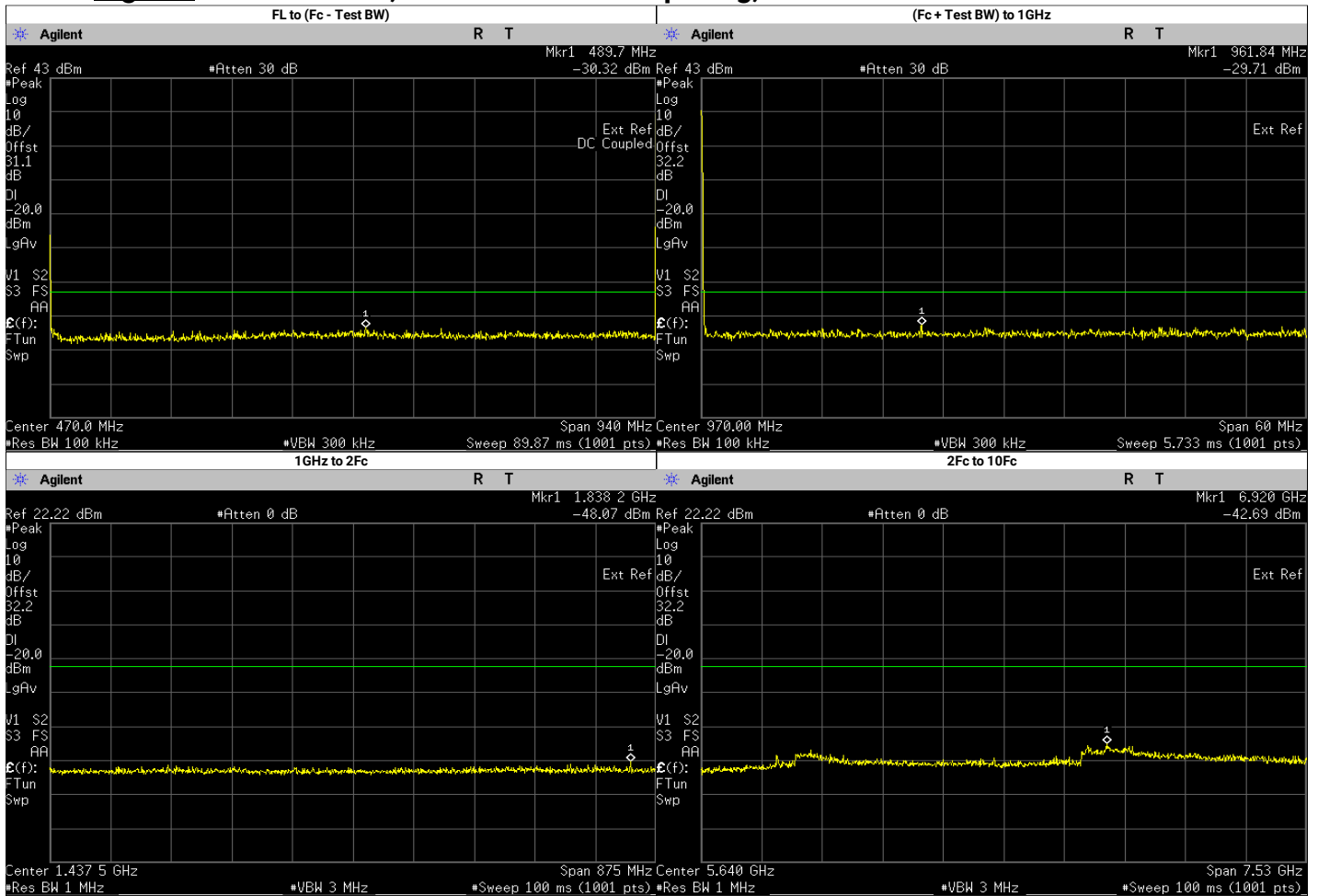
Frequency Range	Highest Spur Frequency (MHz)	Spurious Level (MHz)	Failing Limit (dBm)	Results
FL to (Fc - Test BW)	738.8000	-30.1560	-20	PASS
(Fc + Test BW) to 1GHz	999.4060	-29.4400	-20	PASS
1GHz to 2Fc	1671.8500	-48.5200	-20	PASS
2Fc to 10Fc	7022.7350	-43.3000	-20	PASS
	1801.9750	-48.8715	-20	PASS
	2702.9630	-43.3300	-20	PASS
	3603.9500	-47.7644	-20	PASS
	4504.9370	-49.1266	-20	PASS
	5405.9250	-49.0370	-20	PASS
	6306.9130	-48.1678	-20	PASS
	7207.9000	-44.4034	-20	PASS
	8108.8870	-46.4736	-20	PASS
	9009.8750	-46.5487	-20	PASS

Digital: 935.0125 MHz, 12.5 kHz Channel Spacing, Max Power



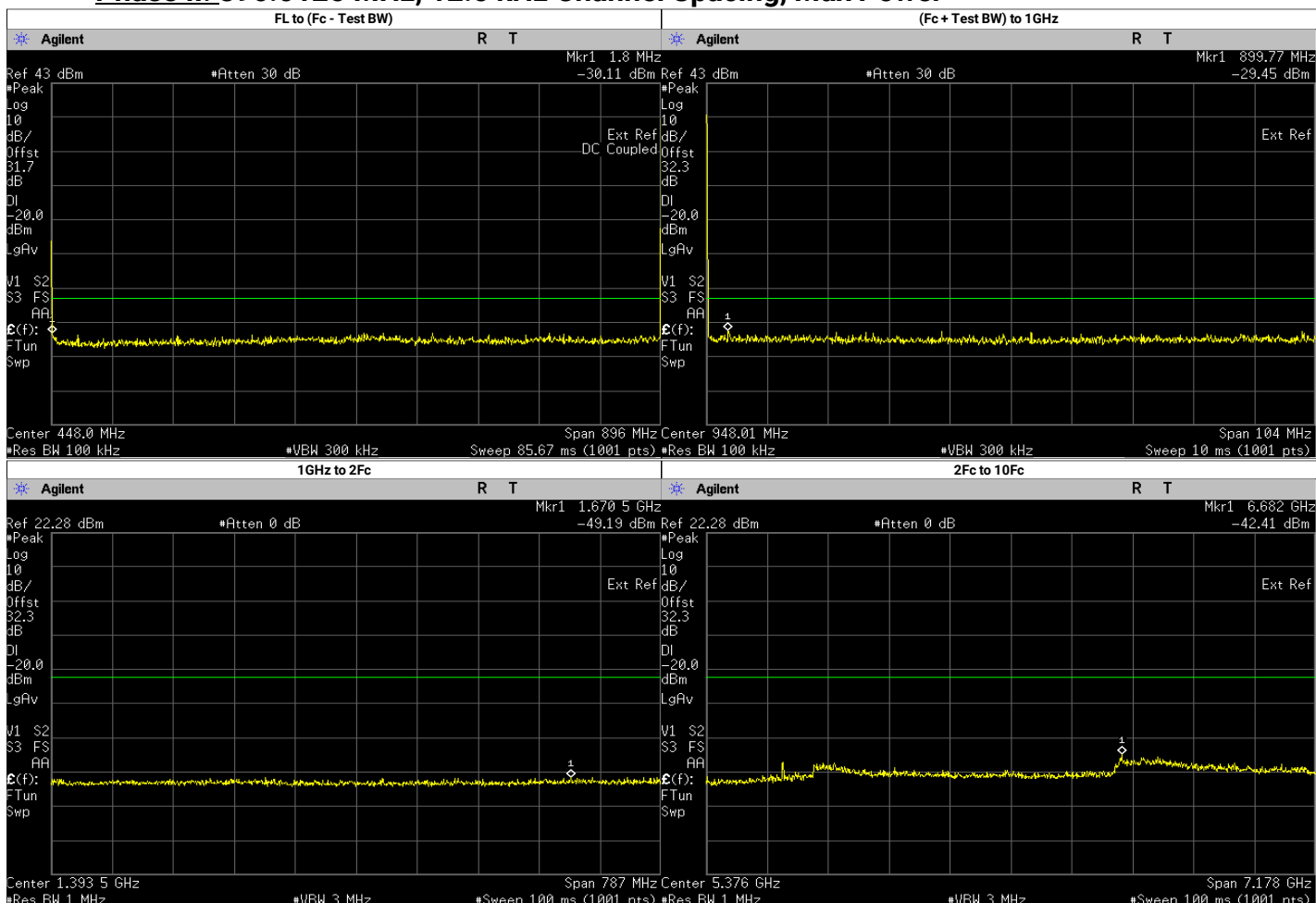
Frequency Range	Highest Spur Frequency (MHz)	Spurious Level (MHz)	Failing Limit (dBm)	Results
FL to (Fc - Test BW)	473.1000	-30.4470	-20	PASS
(Fc + Test BW) to 1GHz	950.0361	-29.4300	-20	PASS
1GHz to 2Fc	1126.2940	-48.2800	-20	PASS
2Fc to 10Fc	6935.8230	-42.6500	-20	PASS
	1870.0250	-50.0079	-20	PASS
	2805.0370	-46.2436	-20	PASS
	3740.0500	-47.9202	-20	PASS
	4675.0620	-48.9080	-20	PASS
	5610.0750	-48.3670	-20	PASS
	6545.0870	-48.0428	-20	PASS
	7480.1000	-45.7204	-20	PASS
	8415.1120	-46.4814	-20	PASS
	9350.1250	-47.7687	-20	PASS

Digital: 939.9875 MHz, 12.5 kHz Channel Spacing, Max Power



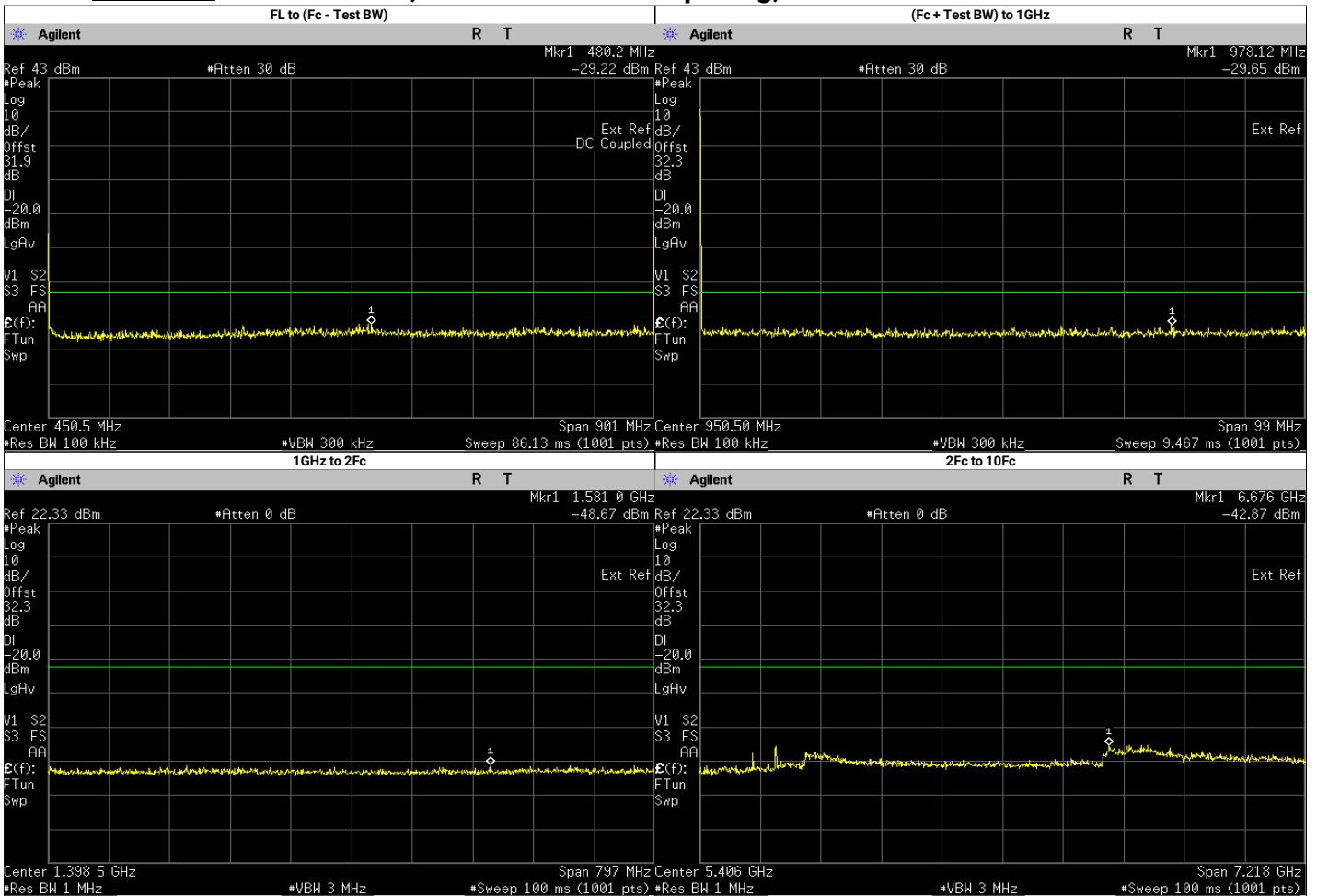
Frequency Range	Highest Spur Frequency (MHz)	Spurious Level (MHz)	Failing Limit (dBm)	Results
FL to (Fc - Test BW)	489.7000	-30.3230	-20	PASS
(Fc + Test BW) to 1GHz	961.8416	-29.7100	-20	PASS
1GHz to 2Fc	1838.2260	-48.0700	-20	PASS
2Fc to 10Fc	6920.0080	-42.6900	-20	PASS
	1879.9750	-50.0057	-20	PASS
	2819.9630	-46.4591	-20	PASS
	3759.9500	-48.2484	-20	PASS
	4699.9370	-49.0391	-20	PASS
	5639.9250	-49.3420	-20	PASS
	6579.9130	-48.5935	-20	PASS
	7519.9000	-45.6137	-20	PASS
	8459.8880	-46.9310	-20	PASS
	9399.8750	-47.9351	-20	PASS

Phase II: 896.0125 MHz, 12.5 kHz Channel Spacing, Max Power



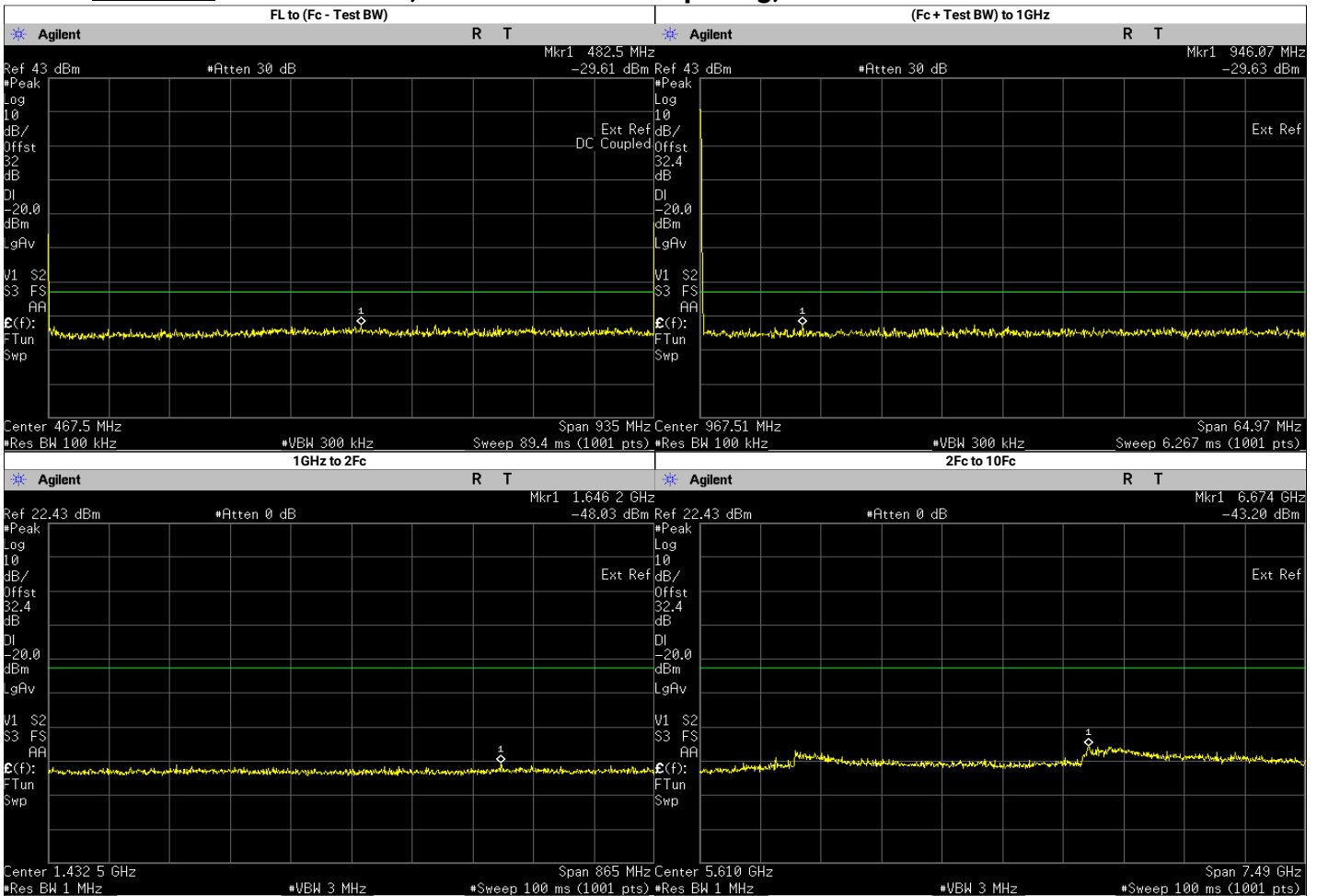
Frequency Range	Highest Spur Frequency (MHz)	Spurious Level (MHz)	Failing Limit (dBm)	Results
FL to (Fc - Test BW)	1.8000	-30.1080	-20	PASS
(Fc + Test BW) to 1GHz	899.7705	-29.4500	-20	PASS
1GHz to 2Fc	1670.5450	-49.1900	-20	PASS
2Fc to 10Fc	6682.4890	-42.4100	-20	PASS
	1792.0250	-49.6962	-20	PASS
	2688.0370	-44.9395	-20	PASS
	3584.0500	-47.4484	-20	PASS
	4480.0620	-48.8354	-20	PASS
	5376.0750	-48.3880	-20	PASS
	6272.0870	-47.7371	-20	PASS
	7168.1000	-44.2243	-20	PASS
	8064.1130	-46.9781	-20	PASS
	8960.1250	-48.1163	-20	PASS

Phase II: 900.9875 MHz, 12.5 kHz Channel Spacing, Max Power



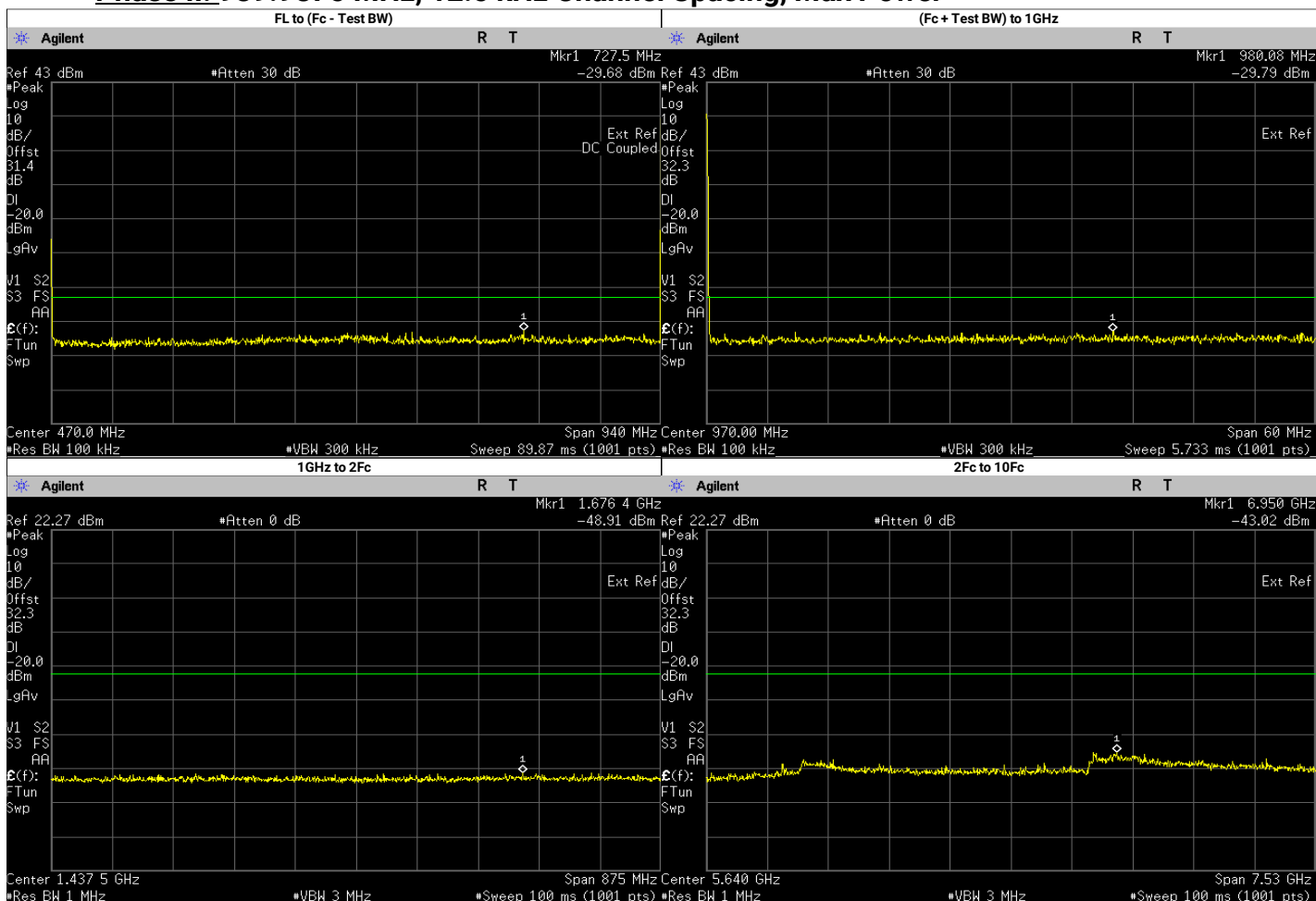
Frequency Range	Highest Spur Frequency (MHz)	Spurious Level (MHz)	Failing Limit (dBm)	Results
FL to (Fc - Test BW)	480.2000	-29.2180	-20	PASS
(Fc + Test BW) to 1GHz	978.1216	-29.6500	-20	PASS
1GHz to 2Fc	1580.9950	-48.6700	-20	PASS
2Fc to 10Fc	6676.2750	-42.8700	-20	PASS
	1801.9750	-49.9431	-20	PASS
	2702.9630	-43.4537	-20	PASS
	3603.9500	-47.8080	-20	PASS
	4504.9370	-48.3140	-20	PASS
	5405.9250	-48.7630	-20	PASS
	6306.9130	-48.0876	-20	PASS
	7207.9000	-44.9964	-20	PASS
	8108.8870	-47.2794	-20	PASS
	9009.8750	-47.7293	-20	PASS

Phase II: 935.0125 MHz, 12.5 kHz Channel Spacing, Max Power



Frequency Range	Highest Spur Frequency (MHz)	Spurious Level (MHz)	Failing Limit (dBm)	Results
FL to (Fc - Test BW)	482.5000	-29.6070	-20	PASS
(Fc + Test BW) to 1GHz	946.0728	-29.6300	-20	PASS
1GHz to 2Fc	1646.1740	-48.0300	-20	PASS
2Fc to 10Fc	6673.6690	-43.2000	-20	PASS
	1870.0250	-50.4794	-20	PASS
	2805.0370	-46.9988	-20	PASS
	3740.0500	-48.1923	-20	PASS
	4675.0620	-48.1569	-20	PASS
	5610.0750	-48.9620	-20	PASS
	6545.0870	-48.1999	-20	PASS
	7480.1000	-45.4423	-20	PASS
	8415.1120	-47.0333	-20	PASS
	9350.1250	-47.7051	-20	PASS

Phase II: 939.9875 MHz, 12.5 kHz Channel Spacing, Max Power



Frequency Range	Highest Spur Frequency (MHz)	Spurious Level (MHz)	Failing Limit (dBm)	Results
FL to (Fc - Test BW)	727.5000	-29.6790	-20	PASS
(Fc + Test BW) to 1GHz	980.0808	-29.7900	-20	PASS
1GHz to 2Fc	1676.3560	-48.9100	-20	PASS
2Fc to 10Fc	6950.1280	-43.0200	-20	PASS
	1879.9750	-50.4121	-20	PASS
	2819.9630	-46.2910	-20	PASS
	3759.9500	-48.4572	-20	PASS
	4699.9370	-48.8387	-20	PASS
	5639.9250	-49.5870	-20	PASS
	6579.9130	-49.3508	-20	PASS
	7519.9000	-46.1702	-20	PASS
	8459.8880	-46.8551	-20	PASS
	9399.8750	-48.1399	-20	PASS

6.9.4. Test Limit

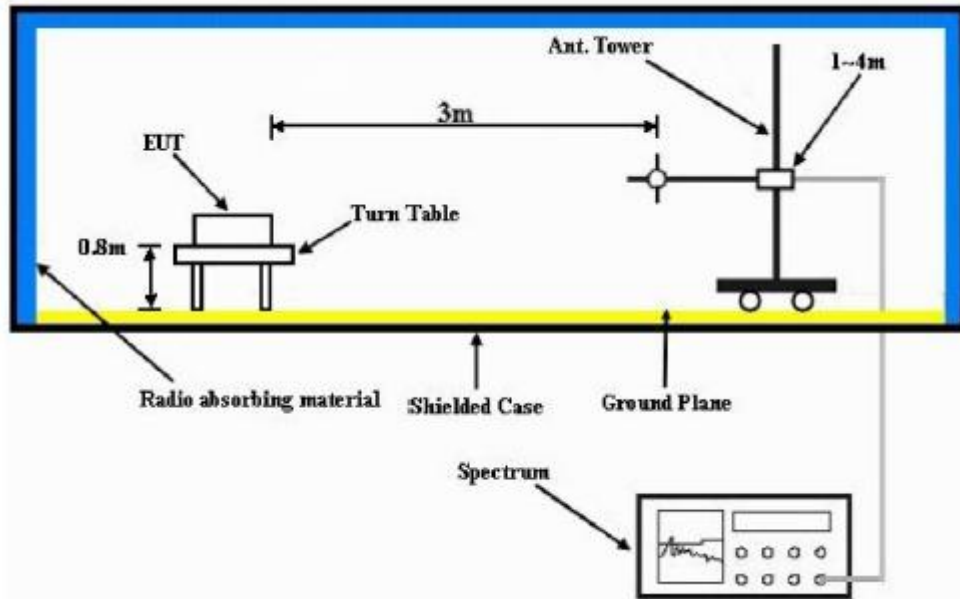
Table below summarized the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least

Channel Spacing	Part 22	Part 24D	Part 74	Part 80	Part 90 (UHF, VHF, 800, 900)	Part 90 (700)
12.5kHz	43 + log ₁₀ (P) (-13 dBm)	43 + log ₁₀ (P) (-13 dBm)	43 + log ₁₀ (P) (-13 dBm)	Not Applicable	50 + log ₁₀ (P) (-20 dBm)	43 + log ₁₀ (P) (-13 dBm)
25kHz		Not Applicable		43 + log ₁₀ (P) (-13 dBm)	43 + log ₁₀ (P) (-13 dBm)	43 + log ₁₀ (P) (-13 dBm)

Channel Spacing	RSS 134	RSS 182	RSS 119 (UHF, VHF, 800, 900)	RSS 119 (700)
12.5kHz	43 + log ₁₀ (P) (-13 dBm)	Not Applicable	50 + log ₁₀ (P) (-20 dBm)	43 + log ₁₀ (P) (-13 dBm)
25kHz	Not Applicable	43 + log ₁₀ (P) (-13 dBm)	43 + log ₁₀ (P) (-13 dBm)	43 + log ₁₀ (P) (-13 dBm)

6.10. Radiated Spurious Emission

6.10.1. Test Setup



- 1) The Resolution Bandwidth for scanning Radiated Emission below 1 GHz is 100 kHz with Video Bandwidth = 300 kHz and Resolution Bandwidth for above 1 GHz is 1 MHz with Video Bandwidth = 3 MHz. Detector mode is positive peak.
- 2) In the semi- anechoic chamber, setup as illustrated above the DUT placed on the 0.8m height (for $F_c < 1\text{GHz}$) or 1.5m height (for $F_c > 1\text{GHz}$) of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- 3) The substitution antenna is substituted for DUT at the same position and signals generator (S.G) export the CW signal to the substitution antenna via a TX cable. The receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum radiation power. Record the power level of maximum radiation power from spectrum. So, the measured substitution value = Ref level of S.G + TX cables loss – Substituted Antenna Gain.
- 4) Final Radiated Spurious Emission = "Read Value" + Measured substitution value.

6.10.2. Test Result (Analog) Not Applicable

6.10.3. Test Result (Digital) Not Applicable

6.10.4. Test Limit

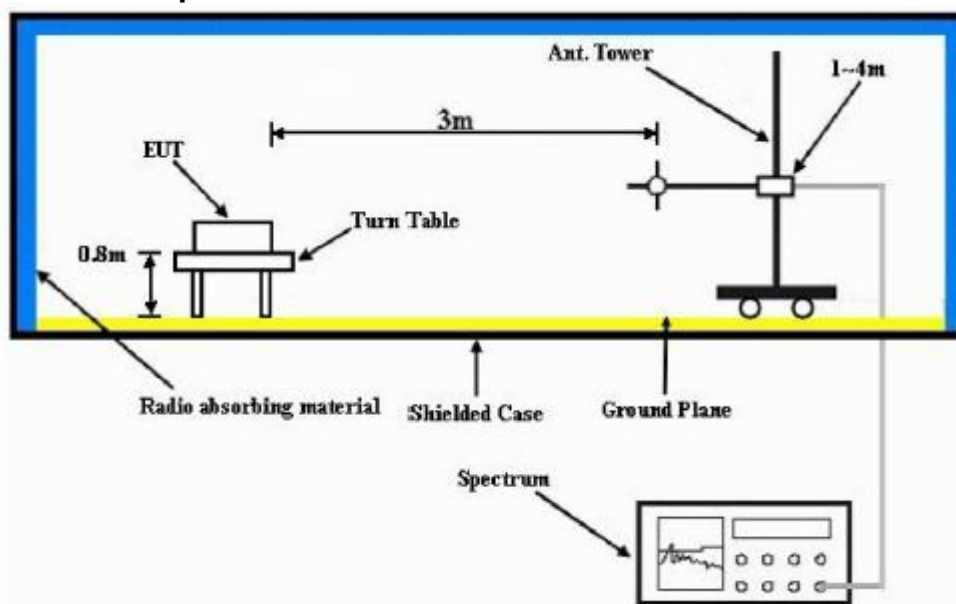
Table below summarized the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least

Channel Spacing	Part 22	Part 24D	Part 74	Part 80	Part 90 (UHF, VHF, 800, 900)	Part 90 (700)
12.5kHz	43 + log ₁₀ (P) (-13 dBm)	43 + log ₁₀ (P) (-13 dBm)	43 + log ₁₀ (P) (-13 dBm)	Not Applicable	50 + log ₁₀ (P) (-20 dBm)	43 + log ₁₀ (P) (-13 dBm)
25kHz		Not Applicable		43 + log ₁₀ (P) (-13 dBm)	43 + log ₁₀ (P) (-13 dBm)	43 + log ₁₀ (P) (-13 dBm)

Channel Spacing	RSS 134	RSS 182	RSS 119 (UHF, VHF, 800, 900)	RSS 119 (700)
12.5kHz	43 + log ₁₀ (P) (-13 dBm)	Not Applicable	50 + log ₁₀ (P) (-20 dBm)	43 + log ₁₀ (P) (-13 dBm)
25kHz	Not Applicable	43 + log ₁₀ (P) (-13 dBm)	43 + log ₁₀ (P) (-13 dBm)	43 + log ₁₀ (P) (-13 dBm)

6.11. Effective Radiated Power (ERP)

6.11.1. Test Setup



- 1) The Resolution Bandwidth for Equivalent Radiated Power (ERP) below 1 GHz is 100 kHz with Video Bandwidth = 300 kHz and Resolution Bandwidth for EIRP above 1 GHz is 1 MHz with Video Bandwidth = 3 MHz. Detector Mode is RMS.
- 2) In the semi-anechoic chamber, setup as illustrated above the DUT placed on the 0.8m height (for $F_c < 1\text{GHz}$) or 1.5m (for $F_c > 1\text{GHz}$) of Turn Table, rotated the table 45 degree each interval to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power for each degree interval. The "Read Value" is the spectrum reading of maximum power value.
- 3) The substitution antenna is substituted for DUT at the same position and signals generator (S.G) export the CW signal to the substitution antenna via a TX cable. The receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum radiation power. Record the power level of maximum radiation power from spectrum. So, the Measured substitution value = Ref level of S.G + TX cables loss – Substituted Antenna Gain.

6.11.2. Test Result Not Applicable

6.11.3. Test Limit

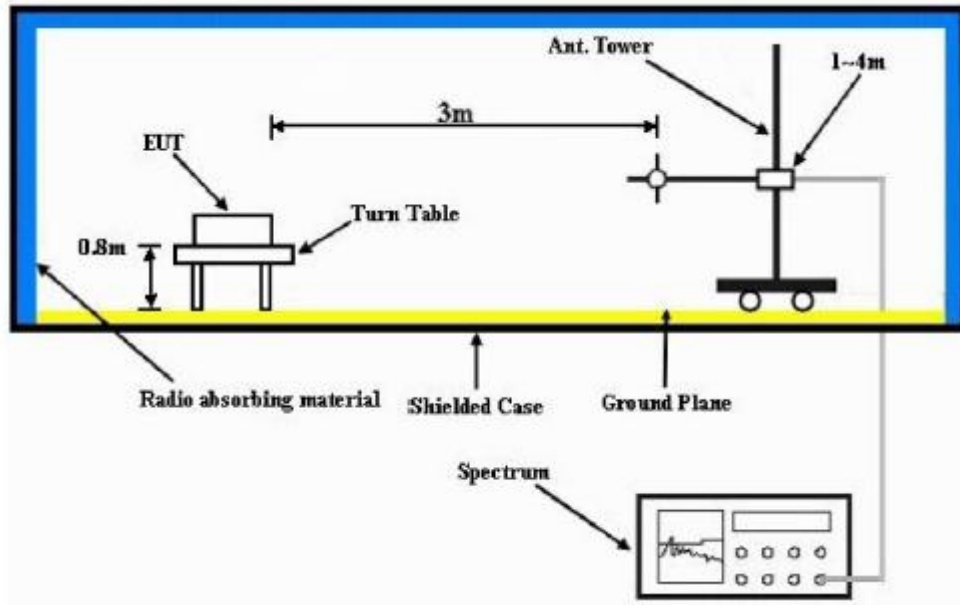
FCC CFR 47 Part90.541 The transmitting power and antenna height of base, mobile, portable and control stations operating in the 769-775 MHz and 799-805 MHz frequency bands must not exceed the maximum limits in this section. Power limits are listed in effective radiated power (ERP).

- a) The transmitting power and antenna height of base stations must not exceed the limits given in paragraph (a) of § 90.635.
- b) The transmitting power of a control station must not exceed 200 watts ERP.
- c) The transmitting power of a mobile unit must not exceed 100 watts ERP.
- d) The transmitting power of a portable (hand-held) unit must not exceed 3 watts ERP.
- e) Transmitters operating on the narrowband low power channels listed in § 90.531(b)(3) and (4), must not exceed 2 watts ERP.

FCC CFR 47 Part80.215 the transmitter power based on carrier power of 4 watts with transmitter connected to a dummy load of matching impedance. The effective radiated power must not exceed 2 watts.

6.12. GNSS (EIRP for 1559 - 1610MHz)

6.12.1. Test Setup



- 4) The Resolution Bandwidth for Equivalent Isotropically Radiated Power (EIRP) below 1 GHz is 100 kHz with Video Bandwidth = 300 kHz and Resolution Bandwidth for EIRP above 1 GHz is 1 MHz with Video Bandwidth = 3 MHz. Detector Mode is RMS.
- 5) In the semi-anechoic chamber, setup as illustrated above the DUT placed on the 0.8m height of Turn Table, rotated the table 45 degree each interval to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power for each degree interval. The "Read Value" is the spectrum reading of maximum power value.
- 6) The substitution antenna is substituted for DUT at the same position and signals generator (S.G) export the CW signal to the substitution antenna via a TX cable. The receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum radiation power. Record the power level of maximum radiation power from spectrum. So, the Measured substitution value = Ref level of S.G + TX cables loss – Substituted Antenna Gain.
- 7) $EIRP = \text{"Read Value"} + \text{Measured substitution value} + 2.15$.

6.12.1. Test Result Not Applicable

6.12.2. Test Limit

For operations in the 758-775 MHz and 788-805 MHz bands, all emissions including harmonics in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth.

~ End of Test Report ~