MOTOROLA SOLUTIONS

MS ISO/IEC 17025
TESTING
SAMM No. 0825

MOTOROLA PENANG ADV. COMM. LABORATORY
Motorola Solutions Malaysia Sdn Bhd
Innoplex Plot 2A, Medan Bayan Lepas,
Mukim 12 S.W.D, 11900 Bayan Lepas,
Penang, Malaysia.

FCC / ISED TEST REPORT
Report Revision : Rev.B

Date/s Tested	:	1-APR-2019 - 12-APR-2019
Report Issue Date	:	6-MAY-2019
Manufacturer/Location	:	Motorola Solutions Malaysia Sdn Bhd
Requestor	:	BALAGANABATHY
Product Type	:	Portable
Model Number	:	126TVD2949
Frequency Band	:	806-941Mhz
Low / Max RF Output Power	:	1 Watts / 3 Watts
Application Name	:	Motorola Solutions Inc
Manufacturer Address	:	Plot 2, Bayan Lepas Technoplex, 11900 Bayan Lepas, Penang, Malaysia
ISED Registrations	:	109AK
FCC Registrations	:	461337
Firmware Version	:	D02.10.00.0146

The equipment was tested accordance to the requirement listed below:

(LMR)	
FCC 47 CFR Part 24/90	**PASS**
ISED RSS119 Issue 12, RSS 134 Issue 2	

Prepared By:

Tan Sze Khai
Test Personnel

Approved By:

Vincent Foong Chuen Kit
Deputy Technical Manager

Table of Contents

Report Revision History

Revision History	Description	Date	Originator
Rev. A	Initial Report	4-Feb-2019	Tan Sze Khai
Rev. B	Addressed TCB feedback on emission designator	13-June-2019	Vincent Foong

1.0 General Information

EUT Description:

Technologies	Land Mobile Radio (LMR)
Modulation Type	Analog

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 C63.4-2014
ANSI C63.26-2015

2.0 Summary of Test Results

FCC General Rules Part (47CFR)	ISED General Rules Part	Test Item	Result	Remark
2.1046, 90541(700Mhz),22.565,74.46 1,74.534, 80.215, RSS 119, Part90,Part24	RSS-119, RSS-134	RF Power Output	Pass	-
2.1055, 90.213, 22.355,Part 24	RSS-119, RSS-134	Frequency Stability	Pass	-
2.1047, 74.463, 80.213,Part90	RSS-119	Audio Frequency Response	Pass	-
2.1047, 74.463, 80.213,Part90	RSS-119	Audio Low Pass Filter Response	Pass	-
2.1047, 74.463, 80.213,Part90	RSS-119	Modulation limiting	Pass	-
2.1049,90.210, 22.359,RSS119 ,90.691,Part24	RSS-119, RSS-134	Occupied Bandwidth	Pass	16K0F3E–15.0481kHz 11K0F3E –9.9042kHz 7K60F1D-7.6073 kHz 7K60F1E-7.3788kHz 7K60F1W-7.4480kHz
-	-	Band Edge Conducted Spurious Emission	NA	-
-	-	Transient Frequency Behavior	NA	-
-	-	Adjacent Channel Power	NA	-
Part 90,RSS119,Par t 15B,RSS GEN, Part 90, Part 24	RSS-119, RSS-134	Conducted Spurious Emissions	Pass	No spur detected
Part 90,RSS119,Par t 15B,RSS GEN, Part 90	RSS-119	Radiated Spurious Emission	Pass	Highest Radiated Emission Level -32.92dBm
-	-	GNSS (EIRP for 1559 – 1610MHz)	NA	-
-	-	Effective Radiated Power (ERP)	NA	-

NA → **Not Applicable**

3.0 Measurement Uncertainty

Measurement	Frequency	Expended Uncertainty (k=1.96) (±)
AC Power Line Conducted Spurious Emission	150KHz ~ 30MHz	3.43
Radiated Emissions up to 1 GHz	30MHz ~ 200MHz	5.01
	200MHz ~ 1000MHz	5.01
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	5.01
	18GHz ~ 25GHz	5.01

4.0 Equipment List

FCC Analog ATE#1: (SW version: 2.4.5 & FCC_Frequency Stability 1.0.3 rev.)

Description	Model	Serial Number	Calibration Date	Calibration Due Date
Audio Analyzer	8903B	3011A10475	9-Jul-18	9-Jul-19
SIGNAL GENERATOR	2042	203002/747	22-Jan-19	22-Jan-20
MODULATION ANALYZER	8901B	3216A03889	9-Jul-18	9-Jul-19
DSA	36570A	MY42506781	6-Jul-18	6-Jul-19
POWER SENSOR	E9031A	MY41498969	17-Apr-18	17-Apr-19
POWER METER	E4416A	GB41293855	09-May-17	09-May-19
POWER SUPPLY	6031A	3232A08203	11-Apr-19	11-Apr-20
CHAMBER	SH-641	92009188	29-Mar-2019	29-Mar-2020
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_R1.1.2)

Description	Model	Serial Number	Calibration Date	Calibration Due Date
POWER SUPPLY	6032A	2818A03549	11-Jul-18	11-Jul-19
POWER SENSOR	E4412A	MY41498918	29-Jul-18	29-Jul-19
POWER METER	E4416A	GB41293866	26-Feb-19	26-Feb-21
ATTENUATORS/SWITCH DRIVER	11713A	2508A10141	CNR	CNR
STEP ATTENUATOR/11dB	8494G	MY42143006	16-Apr-18	16-Apr-19
STEP ATTENUATOR/110dB	8496G	MY421430125	16-Apr-18	16-Apr-19
OSCILLOSCOPE	MSO8104A	MY45002372	26-Jun-18	26-Jun-19
AUDIO ANALYZER	8903B	3729A17409	18-Jul-18	18-Jul-19
AUDIO ANALYZER	8903B	3413A14586	7-Jul-18	7-Jul-19
MODULATION ANALYZER	8901B	3616A03889	9-Jul-18	9-Jul-19
SIGNAL GENERATOR	8657A	3039A3205	5-Jul-18	5-Jul-19
SPECTRUM ANAYLYZER	E4440A	MY46185415	16-Aug-17	16-Aug-19
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
SWITCH CONTROL UNIT	3488A	2719A36210	CNR	CNR

CONDUCTED SPUR EMISSION ATE # 1 (SW version: Conducted Spur ATE_rev 1.23.02)

Description	Model	Serial Number	Calibration Date	Calibration Due Date
SWITCH CONTROL UNIT	3488A	2719A32735	CNR	CNR
PSA Series Spectrum Analyzer	E4445A	MY46181732	12-Mar-19	12-Mar-21
POWER SUPPLY	6032A	MY41002067	11-Jul-18	11-Jul-19
HIGH PASS FILTER SWITCH BOX	-	CS001	5-Jul-18	5-Jul-19
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
Vector Signal Generator	SMU200A	103537	22-Jul-17	22-Jul-20

Chamber 2

Description	Model #	Serial Number	Calibration Date	Calibration Due Date
EMI TEST RECEIVER	ESIB40	100264	04-Jul-2018	04-Jul-2019
3m Semi-anechoic Chamber	NA	888032	No Cal. Req'd	No Cal. Req'd
TURNTABLE FLUSH MOUNT 2M	T-200-S	N/A	No Cal. Req'd	No Cal. Req'd
Bore sight Antenna mast	MBS-500	N/A	No Cal. Req'd	No Cal. Req'd
PROGRAMMING CONTROLLER	3000	MF780208272	No Cal. Req'd	No Cal. Req'd
POWER SUPPLY	6674A	3126A-00133	07-Nov-17	07-Nov-19
SIGNAL ANALYZER	FSV40	101103	04-Ju1-18	03-Jul-19
DATA LOGGER	SDL500	A.016800	19-Mar-19	19-Mar-20
BILOG ANTENNA	CBL6112D	30991	23-Apr-18	23-Apr-19
DRG HORN FREQ.	SAS-571	566	27-Sep-17	27-Sep-19
PREAMPLIFIER	PAM-0118	427	No Cal. Req'd	No Cal. Req'd
MICROWAVE GENERATOR	SMP04	100146	12-Jul-18	11-Jul-19
DRG HORN FREQ.	SAS-571	1027	3-Apr-18	3-Apr-20
BILOG ANTENNA	CBL6112B	2964	16-Feb-18	16-Feb-20
Test Software	EMC_FCC_IC_Bluetooth_RE_Test			
Version	EMC_FCC_RE_v1.5.2			

CNR → Calibration Not Require

5.0 Test Condition

5.1. Transmitter Test Conditions

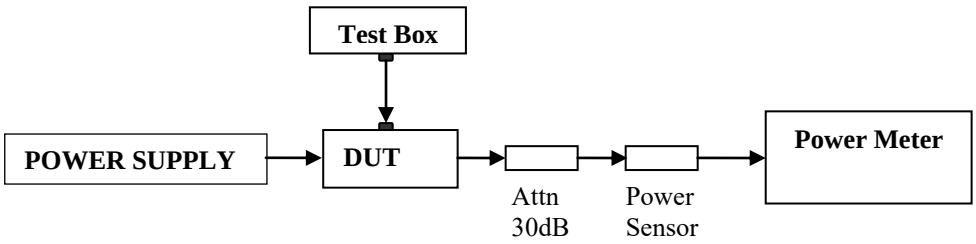
Test Item, (Channel Spacing)	Power (W)	Modulation	Test Frequency (MHz)	Tested By
RF Output Power	**Low & Max**	**Analog**	**806.0125,814.9875, 823.9875,851.0125, 860.0125,868.8875, 896.0125,900.9875, 935.0125,939.9875, 901.5,940.5,**	**Tan Sze Khai**
Frequency Stability	**Max**	**Analog**	**823.9875,896.0125, 940.5**	**Tan Sze Khai**
Audio Frequency Response (12.5kHz / 25kHz)	**Max**	**Analog**	**823.9875,896.0125**	**Tan Sze Khai**
Audio Low Pass Filter Response (12.5kHz / 25kHz)	**Max**	**Analog**	**823.9875,896.0125**	**Tan Sze Khai**
Modulation limiting (12.5kHz / 25kHz)	**Max**	**Analog**	**823.9875,896.0125**	**Tan Sze Khai**
Occupied Bandwidth (12.5kHz / 25kHz)	**Max**	**Analog**	**806.0125,814.9875, 823.9875,851.0125, 853.9875860.0125, 868.8875,896.0125, 900.9875,935.0125, 939.9875,901.5,940.5**	**Tan Sze Khai**
Band Edge Conducted Spurious Emissions (Part 22) (12.5kHz / 20kHz / 25kHz)	**Max**	**Analog**	**NA**	**NA**
Transient Frequency Behavior *(UHF & VHF Band)* (12.5kHz / 25kHz)	**Max**	**Analog**	**NA**	**NA**
Adjacent Channel Power *(700MHz Band)* (12.5kHz)	**Max**	**Analog**	**NA**	**NA**
Conducted Spurious Emissions- (12.5kHz / 25kHz)	**Low / Max**	**Analog**	**806.0125,814.9875, 823.9875,851.0125, 860.0125,868.8875, 901.5,940.5**	**Tan Sze Khai**
Radiated Spurious Emission (12.5kHz / 25kHz)	**Low / Max**	**Analog**	**806.0125,814.9875, 823.9875,851.0125, 860.0125,868.8875**	**Azil,Faris & Aiman**
GNSS (EIRP for 1559 - 1610MHz) (12.5kHz / 25kHz)	**Max**	**Analog**	**NA**	**NA**
Effective Radiated Power (ERP) (12.5kHz / 25kHz)	**Max**	**Analog**	**NA**	**NA**

NA → Not Applicable

6.0 Transmitter Test Parameters

6.1. RF Output Power

6.1.1. Test Setup



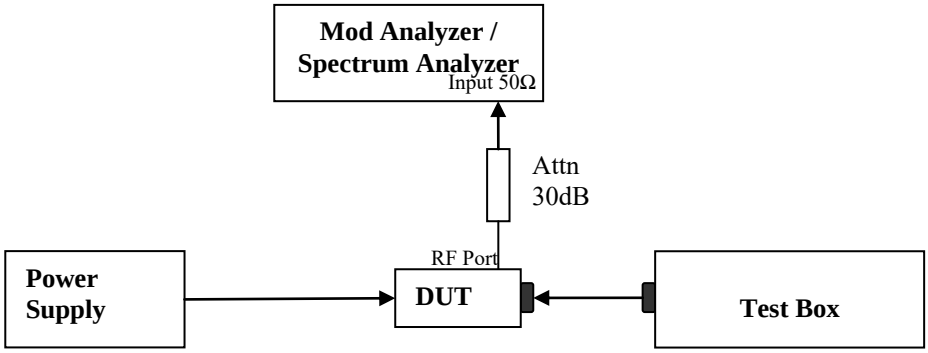
1) The DUT transmitter connected to Power Meter using the 30 dB attenuator and power sensor with above setup.
2) Path loss for the measurement included.
3) All the measurement was done at low, mid, high frequency for each band.
4) Record the power into the test report.

6.1.2. Test Result

Temperature	25˚C				
Voltage (V)	7.2V				
Frequency (MHz)	Low Power (W)	Current (A)	Max Power (W)	Current (A)	Remarks
806.0125	1	0.75	2.91	0.98	
814.9875	1.02	0.71	2.91	0.91	
823.9875	0.98	0.62	2.95	0.92	
851.0125	0.99	0.73	2.97	1.12	
860.0125	1	0.79	2.99	1.21	
868.6875	0.98	0.83	2.98	1.29	
896.0125	1.03	0.87	2.93	1.48	
900.9875	1.01	0.87	2.92	1.49	
901.5	0.98	0.95	2.85	1.7	
940.5	0.98	0.92	2.91	1.64	
935.0125	0.98	0.85	2.93	1.52	
939.9875	1.03	0.85	2.96	1.47	

6.2. Frequency Stability

6.2.1. Test Setup



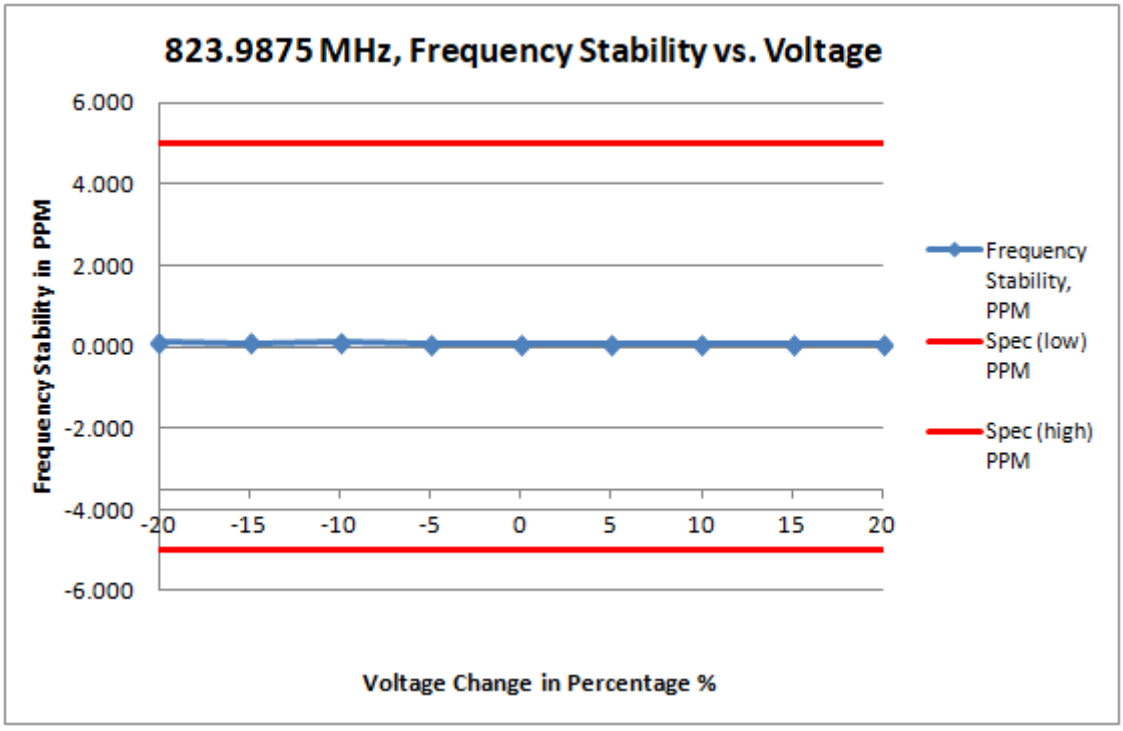
1) The DUT transmitter output port was connected to Modulation / Spectrum Analyzer.
2) Path loss for the measurement included.
3) Transmit the DUT and record the freq in MCF_{MHz}.
4) Test in 2 conditions:
   - Temperature: The frequency of the transmitter was measured from -30°C to 50°C.
   - Supply 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 ± x % as specified by the manufacturer

5) Calculate the ppm frequency error by the following:

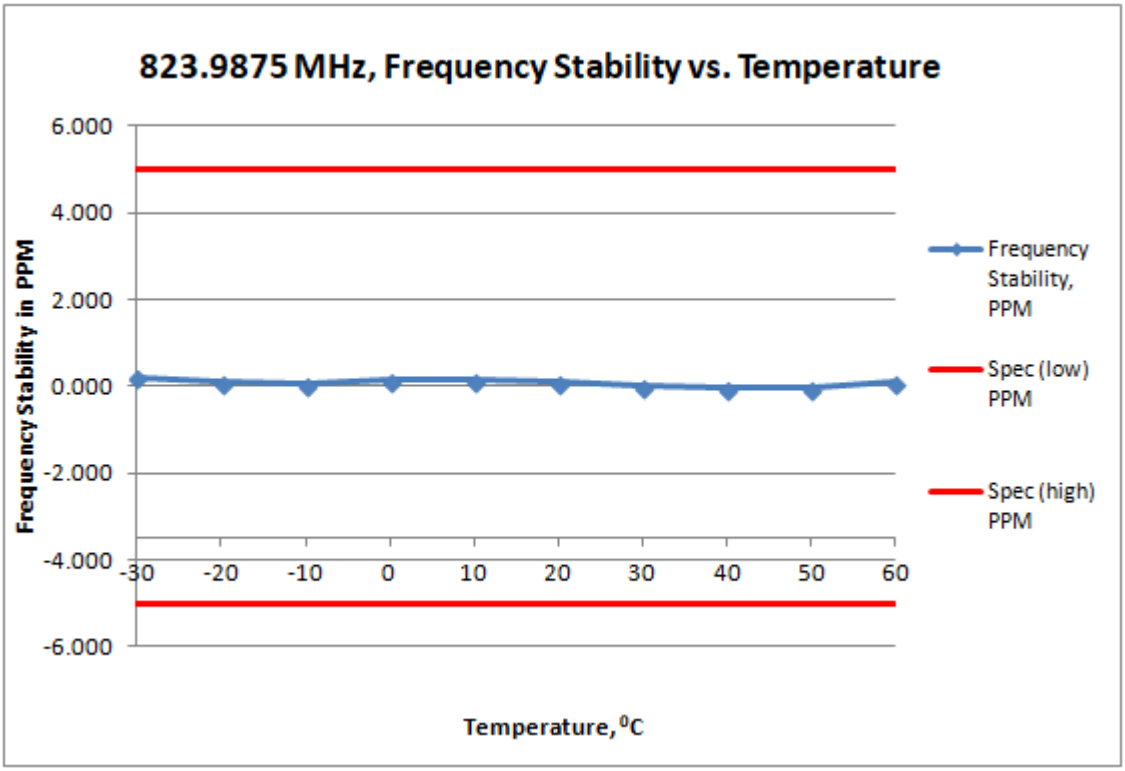
$$ppm\ error = \left(\frac{MCF_{MHz}}{ACF_{MHz}} - 1\right) * 10^6$$

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

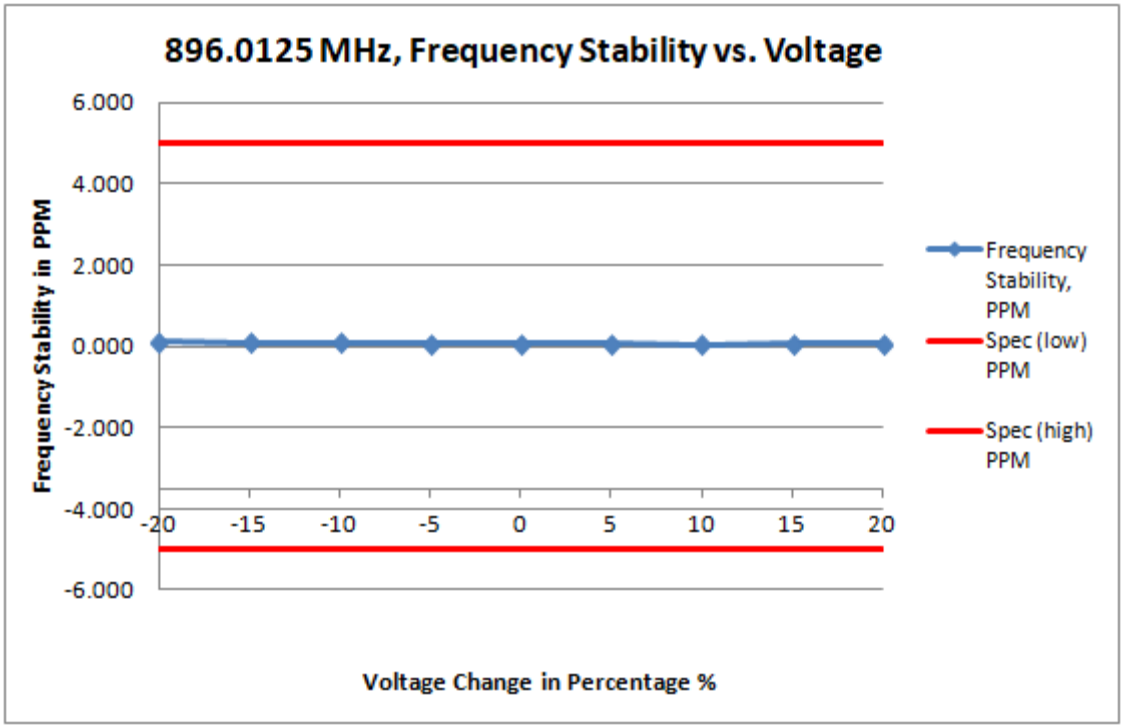
6.2.2. Test Result



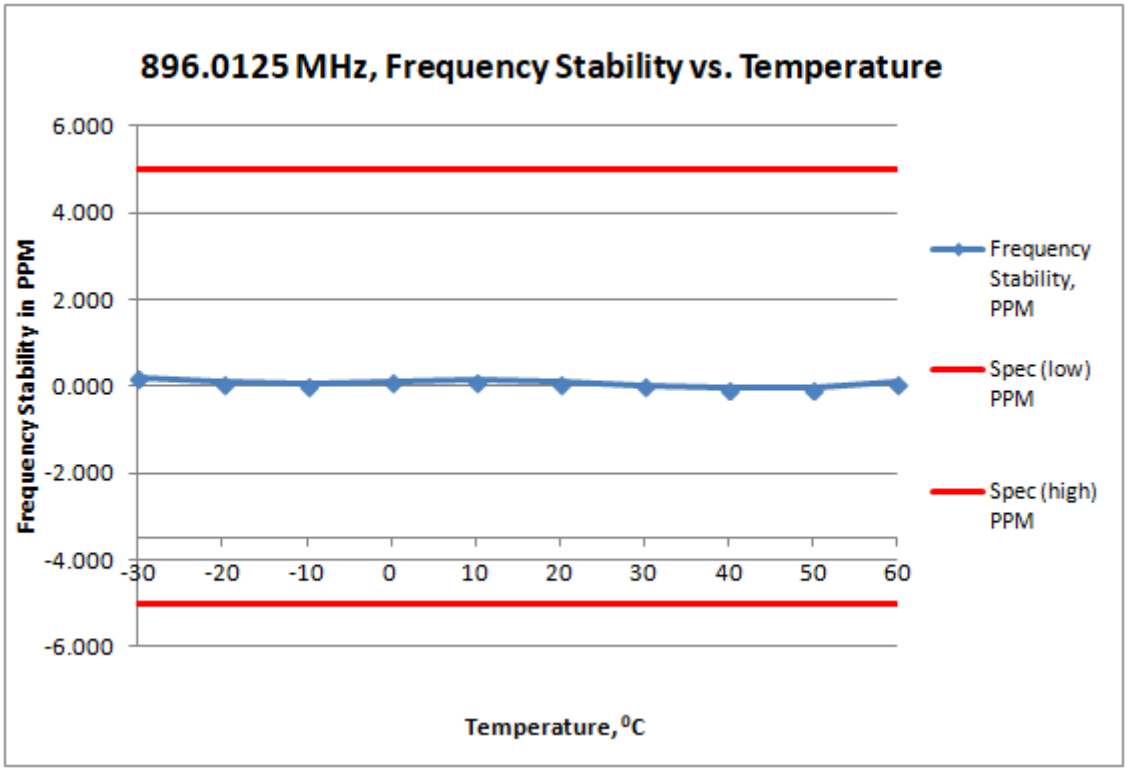
Frequency / Channel Spacing	823.9875 MHz / 12.5 kHz				
Temperature, ^{0}C	25				
Voltage %	Voltage, V	Frequency, MHz	Frequency Stability, PPM	Spec (low) PPM	Spec (high) PPM
-20	6.370	823.987600	0.121	-5.000	5.000
-15	6.750	823.987580	0.097	-5.000	5.000
-10	7.120	823.987590	0.109	-5.000	5.000
-5	7.500	823.987570	0.085	-5.000	5.000
0	7.870	823.987570	0.085	-5.000	5.000
5	8.250	823.987560	0.073	-5.000	5.000
10	8.620	823.987550	0.061	-5.000	5.000
15	9.000	823.987560	0.073	-5.000	5.000
20	9.000	823.987560	0.073	-5.000	5.000



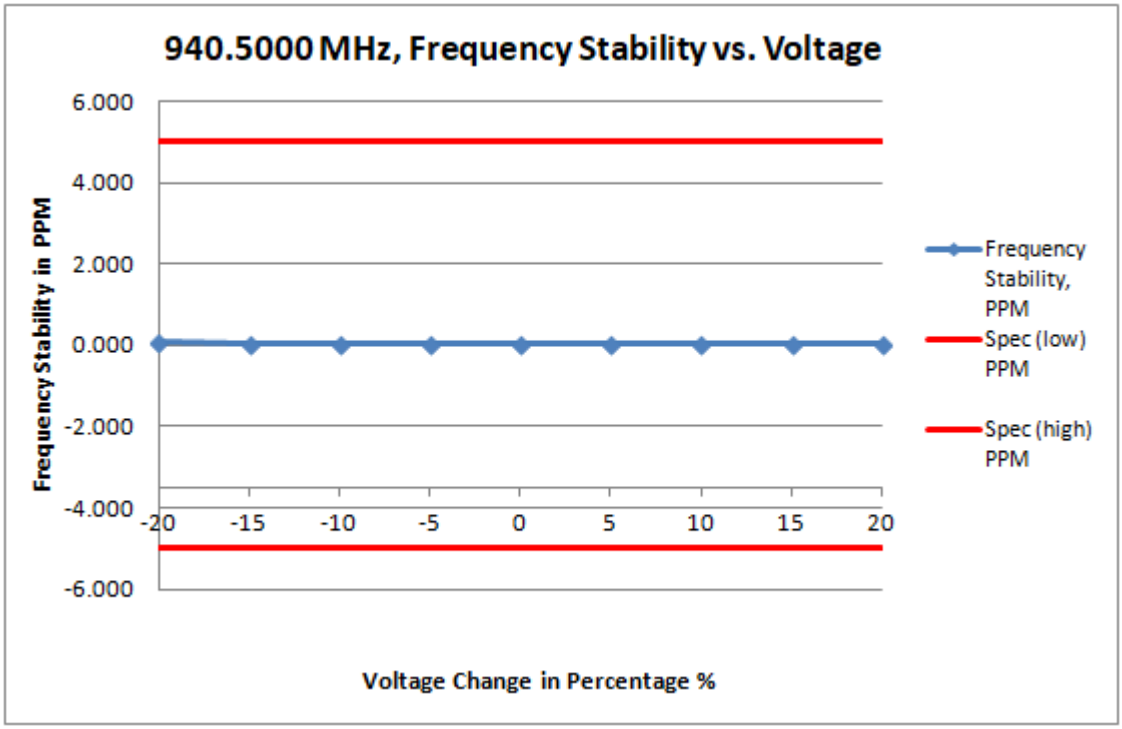
Frequency / Channel Spacing	823.9875 MHz / 12.5 kHz			
Voltage, V	7.5			
Temperature, °C	Frequency, MHz	Frequency Stability, PPM	Spec (low) PPM	Spec (high) PPM
-30	823.987680	0.218	-5.000	5.000
-20	823.987590	0.109	-5.000	5.000
-10	823.987540	0.049	-5.000	5.000
0	823.987620	0.146	-5.000	5.000
10	823.987630	0.158	-5.000	5.000
20	823.987580	0.097	-5.000	5.000
30	823.987520	0.024	-5.000	5.000
40	823.987470	-0.036	-5.000	5.000
50	823.987460	-0.049	-5.000	5.000
60	823.987580	0.097	-5.000	5.000



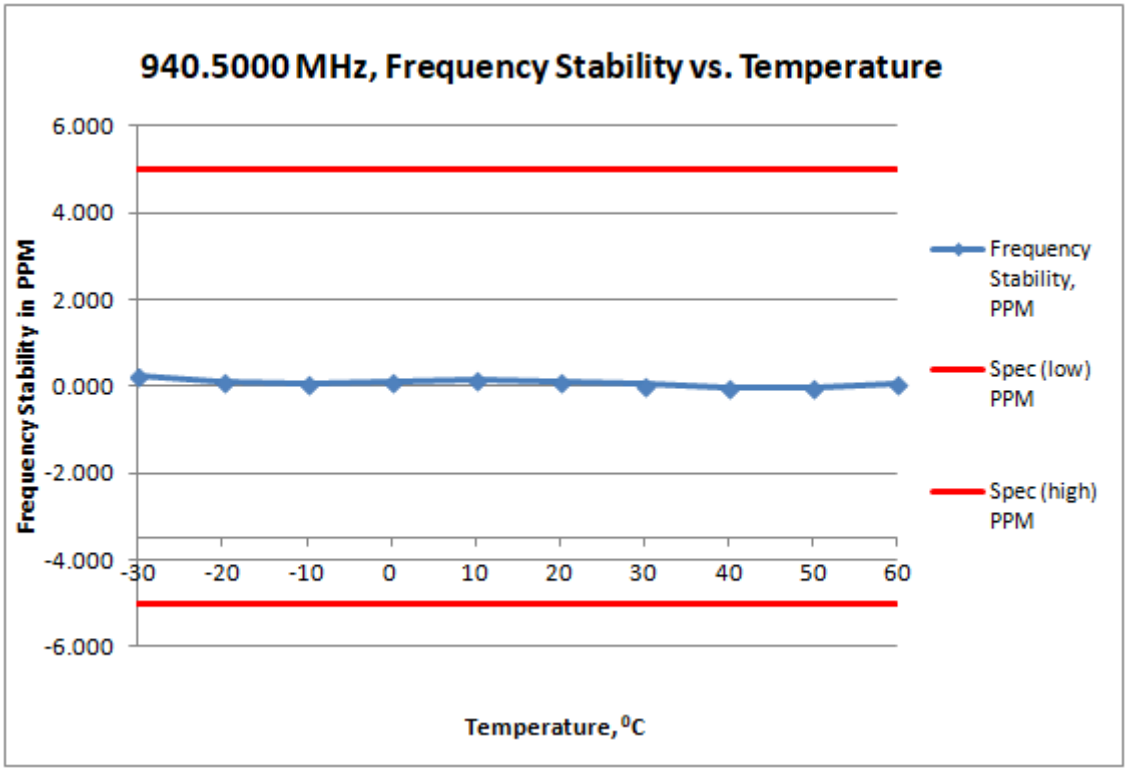
Frequency / Channel Spacing	896.0125 MHz / 12.5 kHz				
Temperature, ^{0}C	25				
Voltage %	Voltage, V	Frequency, MHz	Frequency Stability, PPM	Spec (low) PPM	Spec (high) PPM
-20	6.370	896.012600	0.112	-5.000	5.000
-15	6.750	896.012580	0.089	-5.000	5.000
-10	7.120	896.012590	0.100	-5.000	5.000
-5	7.500	896.012570	0.078	-5.000	5.000
0	7.870	896.012570	0.078	-5.000	5.000
5	8.250	896.012560	0.067	-5.000	5.000
10	8.620	896.012550	0.056	-5.000	5.000
15	9.000	896.012560	0.067	-5.000	5.000
20	9.000	896.012560	0.067	-5.000	5.000



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	896.012680	0.201	-5.000	5.000
-20	896.012590	0.100	-5.000	5.000
-10	896.012540	0.045	-5.000	5.000
0	896.012620	0.134	-5.000	5.000
10	896.012630	0.145	-5.000	5.000
20	896.012580	0.089	-5.000	5.000
30	896.012520	0.022	-5.000	5.000
40	896.012470	-0.033	-5.000	5.000
50	896.012460	-0.045	-5.000	5.000
60	896.012580	0.089	-5.000	5.000



Frequency / Channel Spacing	940.5000 MHz / 12.5 kHz				
Temperature, ^{0}C	25				
Voltage %	Voltage, V	Frequency, MHz	Frequency Stability, PPM	Spec (low) PPM	Spec (high) PPM
-20	6.370	940.500070	0.074	-5.000	5.000
-15	6.750	940.500060	0.064	-5.000	5.000
-10	7.120	940.500050	0.053	-5.000	5.000
-5	7.500	940.500050	0.053	-5.000	5.000
0	7.870	940.500040	0.043	-5.000	5.000
5	8.250	940.500040	0.043	-5.000	5.000
10	8.620	940.500030	0.032	-5.000	5.000
15	9.000	940.500030	0.032	-5.000	5.000
20	9.000	940.500030	0.032	-5.000	5.000



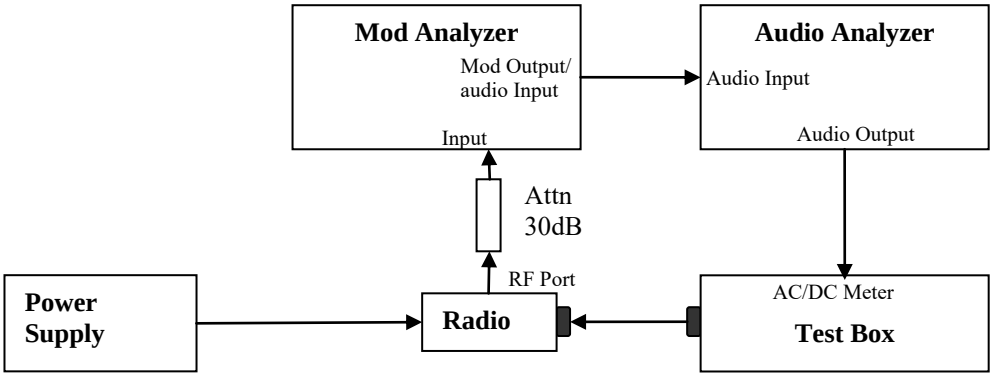
Frequency / Channel Spacing	940.5000 MHz / 12.5 kHz			
Voltage, V	13.6			
Temperature, °C	Frequency, MHz	Frequency Stability, PPM	Spec (low) PPM	Spec (high) PPM
-30	940.500220	0.234	-5.000	5.000
-20	940.500120	0.128	-5.000	5.000
-10	940.500060	0.064	-5.000	5.000
0	940.500120	0.128	-5.000	5.000
10	940.500150	0.159	-5.000	5.000
20	940.500110	0.117	-5.000	5.000
30	940.500040	0.043	-5.000	5.000
40	940.499990	-0.011	-5.000	5.000
50	940.499970	-0.032	-5.000	5.000
60	940.500060	0.064	-5.000	5.000

6.2.3. Test Limit

As per manufacturer declared spec +/- 1.5ppm

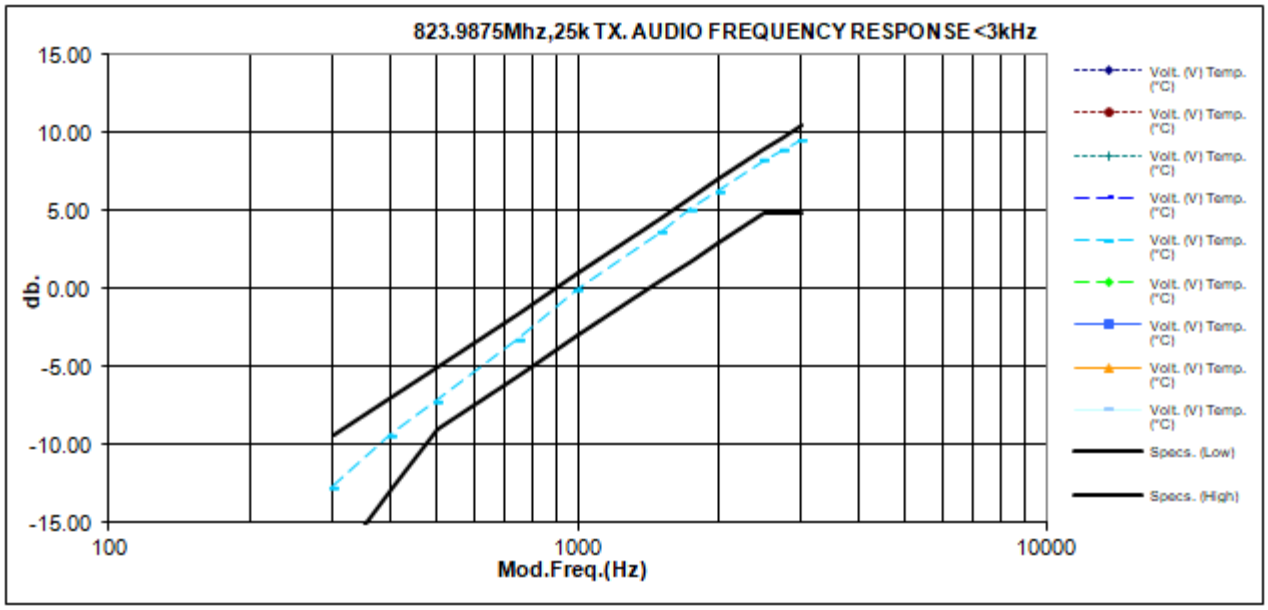
6.3. Audio Frequency Response

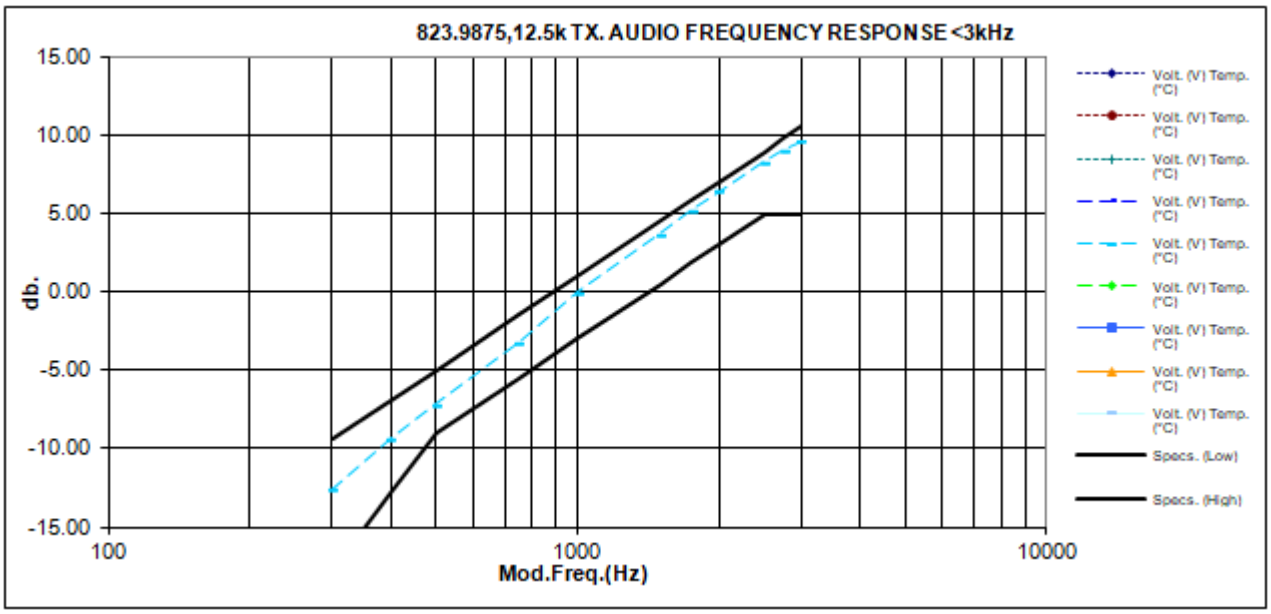
6.3.1. Test Setup

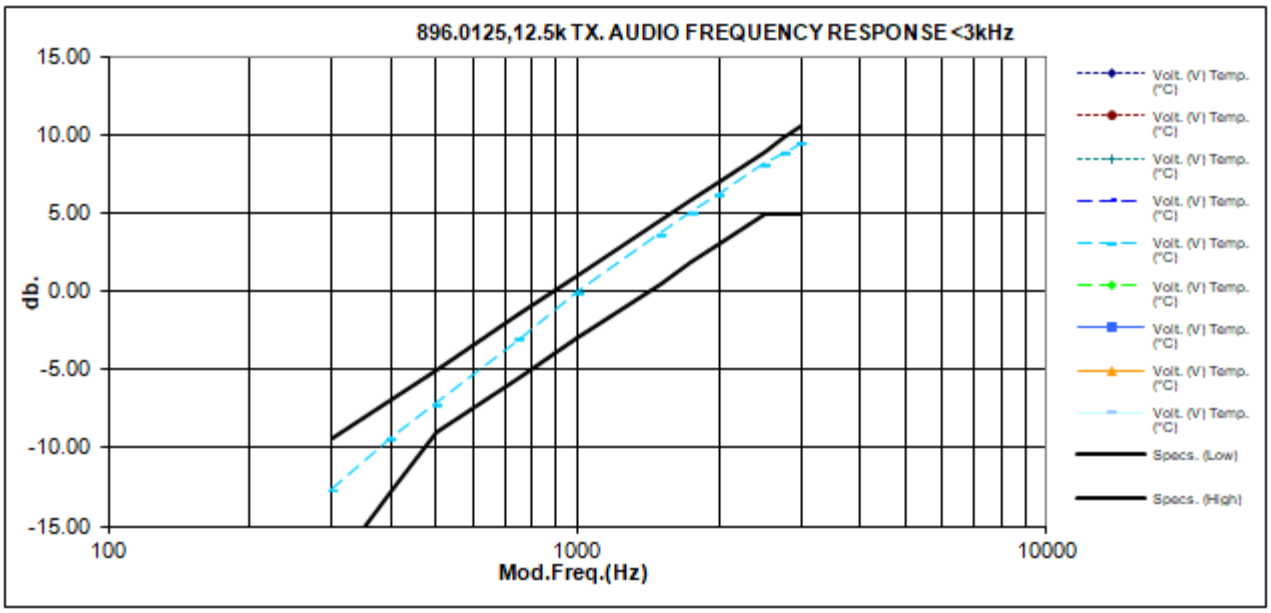


1) The DUT transmitter output port was connected to Modulation Analyzer.
2) Path loss for the measurement included.
3) Set the audio bandwidth filter to 15 kHz and 50 kHz.
4) Transmit the radio and set the audio analyzer to 1 kHz audio frequency and 20% of the Full rated system deviation.
5) On audio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

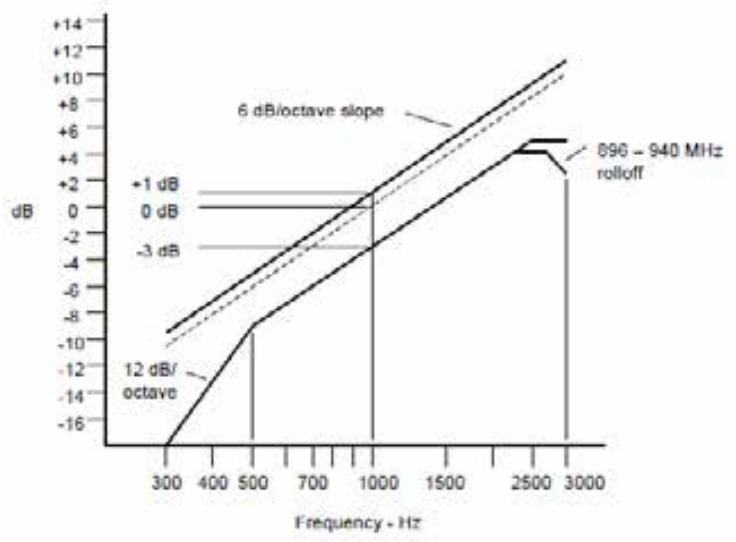
6.3.2. Test Result







6.3.3. Test Limit

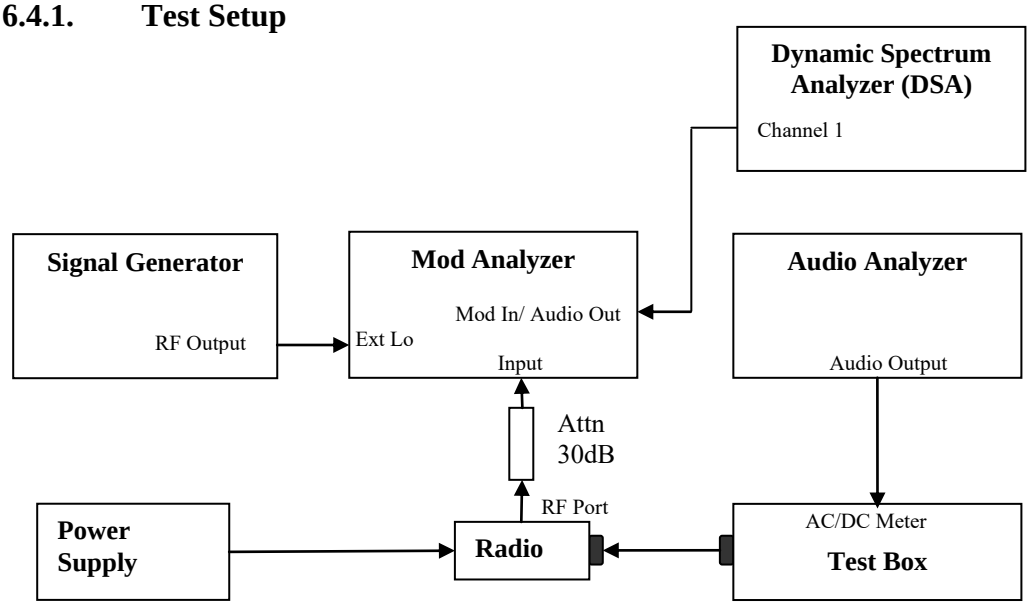


Note:

- *There are additional 6 dB per octave attenuation is allowed from 2.5KHz to 3KHz in equipment 25MHz to 869MHz radio.*
- *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.*

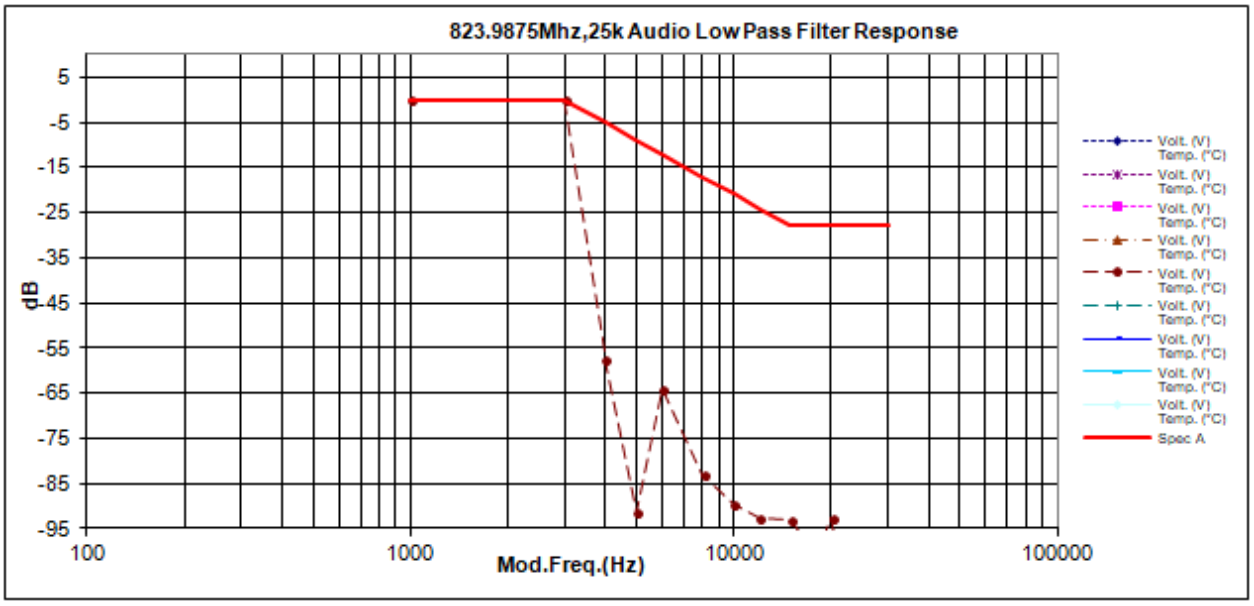
6.4. Audio Low Pass Filter Response

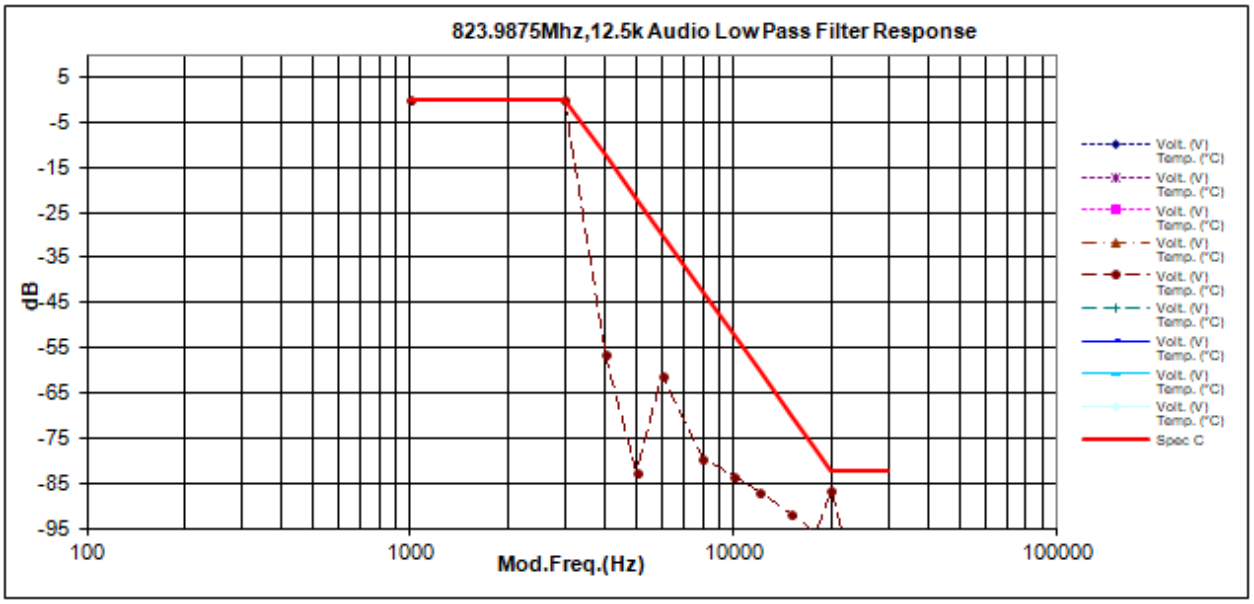
6.4.1. Test Setup

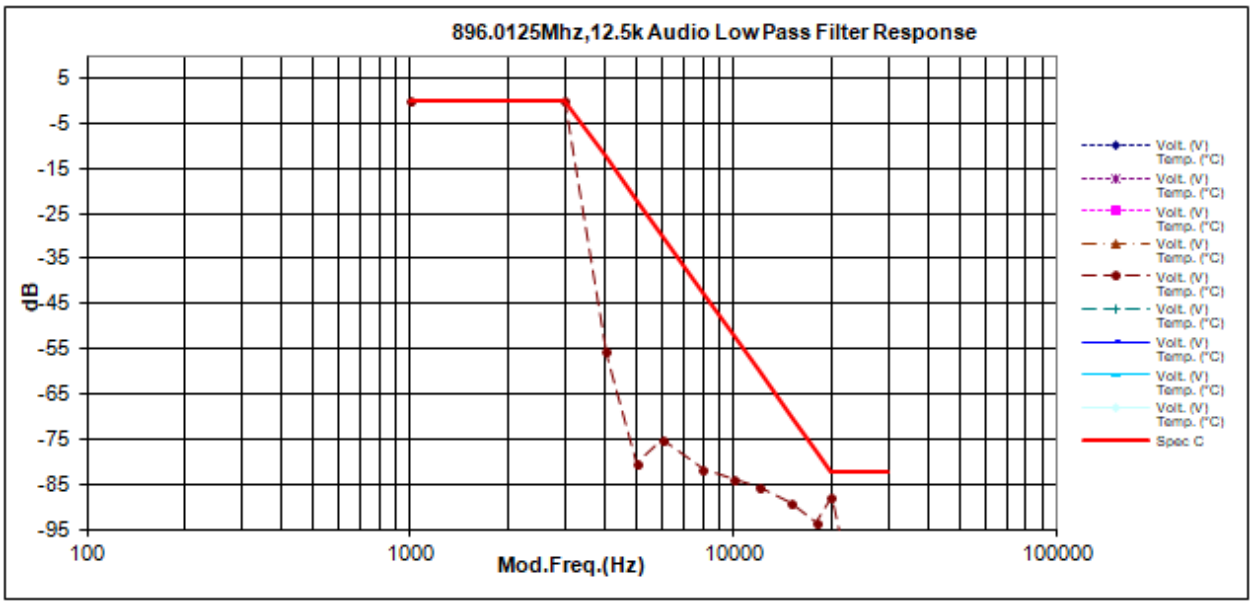


1) The DUT transmitter output port was connected to Modulation Analyzer.
2) Path loss for the measurement included.
3) Press 23.1SPCL on modulation analyzer to enable the external LO from Sigen.
4) Set the Sigen frequency to Fc + 1.5 MHz, RF output level to 0dBm without modulation.
5) Transmit the radio and set the audio analyzer to 1 kHz audio frequency and 60% of the Full rated system deviation.
6) Up the amplitude by 20dB.
7) On DSA, get the reference point to 0dB.
8) Vary the frequency on audio analyzer from 3 kHz to 20 kHz, record the audio tone from DSA.

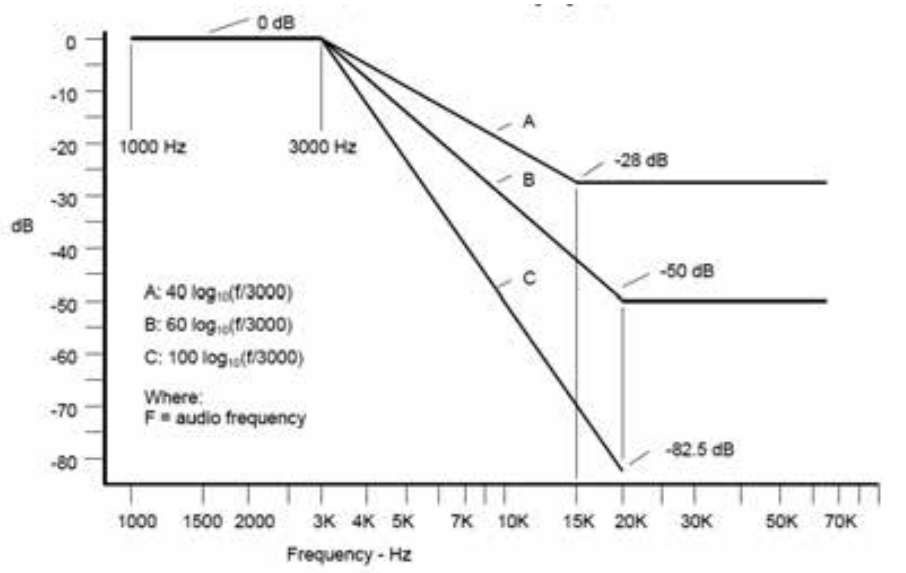
6.4.2. Test Result






896.0125Mhz,12.5k Audio Low Pass Filter Response
5
-5
-15
-25
-35
-45
-55
-65
-75
-85
-95
dB
100
1000
10000
100000
Mod.Freq.(Hz)
Volt. (V)
Temp. (°C)
Spec C

6.4.3. Test Limit



For audio frequencies above 3000 Hz, the audio response of the post limiter low-pass filter shall meet or exceed the following requirements:

a) For equipment operating on 20, 25 or 30 kHz channel bandwidth in the 25 MHz to 174 MHz range:

At frequencies from 3000 Hz through 15,000 Hz the attenuation shall be greater than the attenuation at 1000 Hz by at least: 40 $\log_{10}(f / 3000)$ dB

where: f is the audio frequency in Hz.

At frequencies above 15,000 Hz, the attenuation shall be greater than the attenuation at 1000 Hz, by at least: 28 dB.

b) For equipment operating with 25 kHz bandwidth channels between 406 and 512 MHz through 896 MHz, and between 929 MHz through 930 MHz:

At frequencies from 3000 Hz through 20,000 Hz, the attenuation shall be greater than the attenuation at 1000 Hz by at least: 60 $\log_{10}(f / 3000)$ dB

where: f is the audio frequency in Hz.

At frequencies above 20,000 Hz the attenuation shall be greater than the attenuation at 1000 Hz by at least: 50 dB.

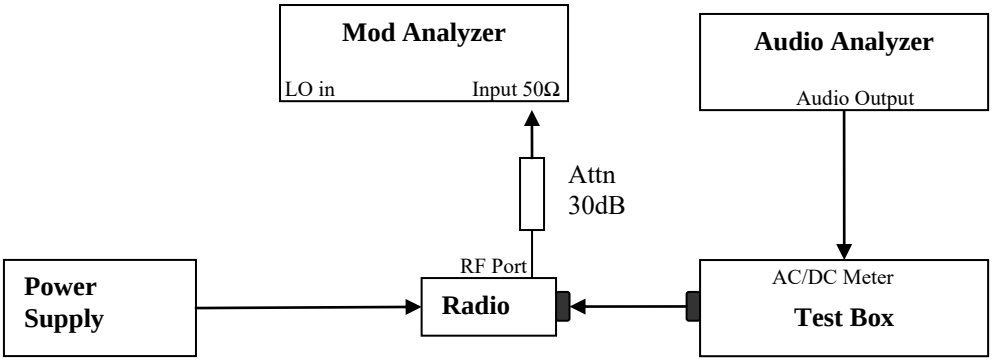
c) For equipment operating on channels between 896 MHz through 901 MHz, between 935 MHz through 940 MHz, and 12.5 or 15 kHz spaced channels in the frequency range 138-174 MHz and 406-512 MHz.

At frequencies from 3000 Hz through 20,000 Hz the attenuation shall be greater than the attenuation at 1000 Hz by at least: 100 $\log_{10}(f / 3000)$ dB

where: f is the audio frequency in Hz.

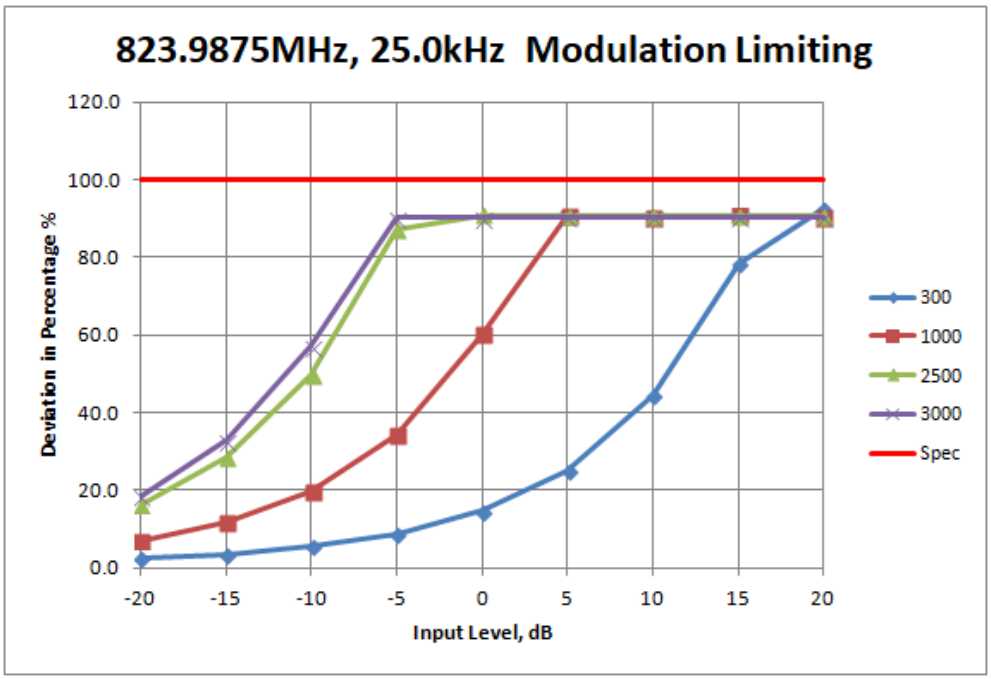
6.5. Modulation Limiting

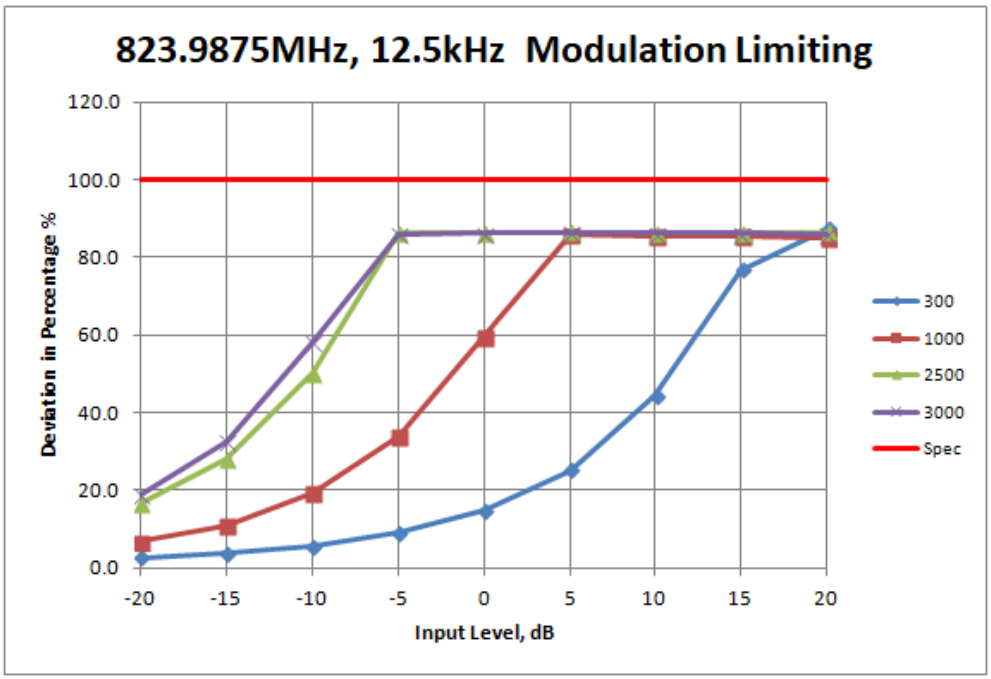
6.5.1. Test Setup

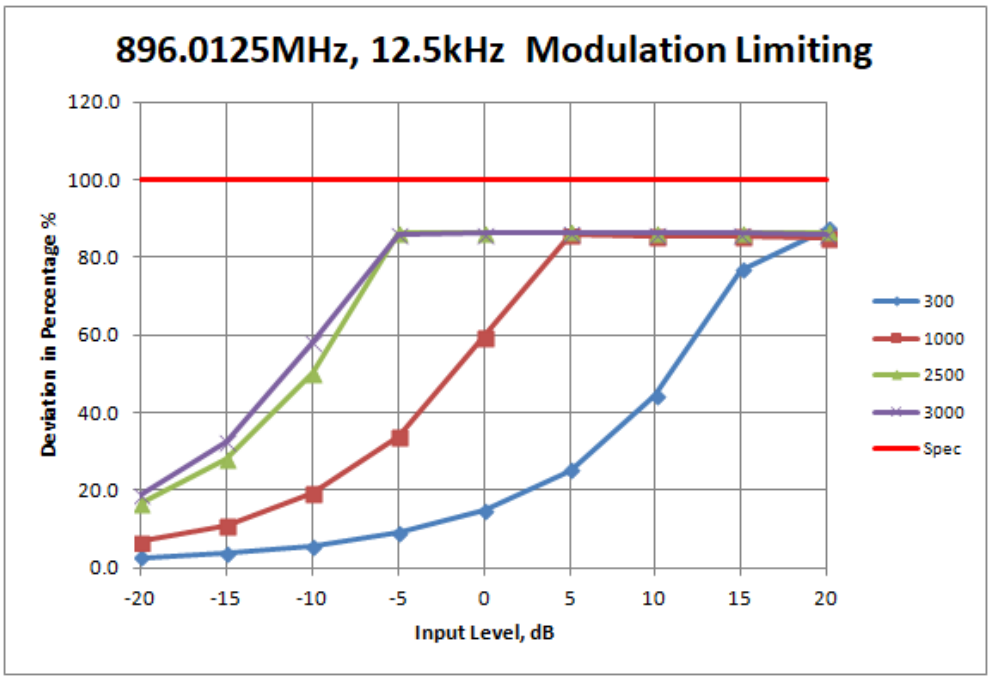


1) The DUT transmitter output port was connected to Modulation Analyzer.
2) Path loss for the measurement included.
3) Set the audio bandwidth filter to 15 kHz.
4) Transmit the radio and set the audio analyzer to 1 kHz audio frequency and 60% of the Full rated system deviation.
5) Record the frequency 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.

6.5.2. Test Result





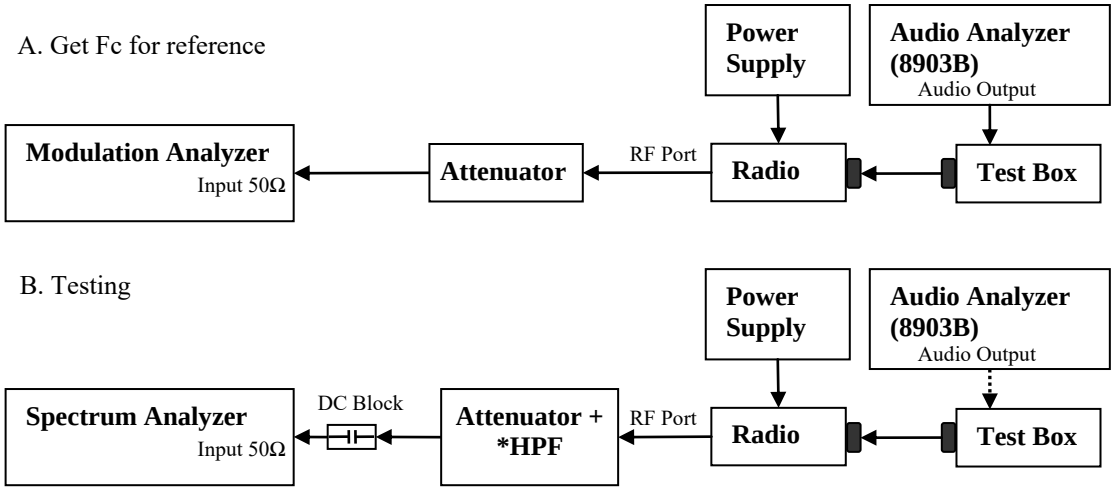


6.5.3. Test Limit

Modulation Limiting shall not exceed 100 percent.

6.6. Occupied Bandwidth

6.6.1. Test Setup (Analog)

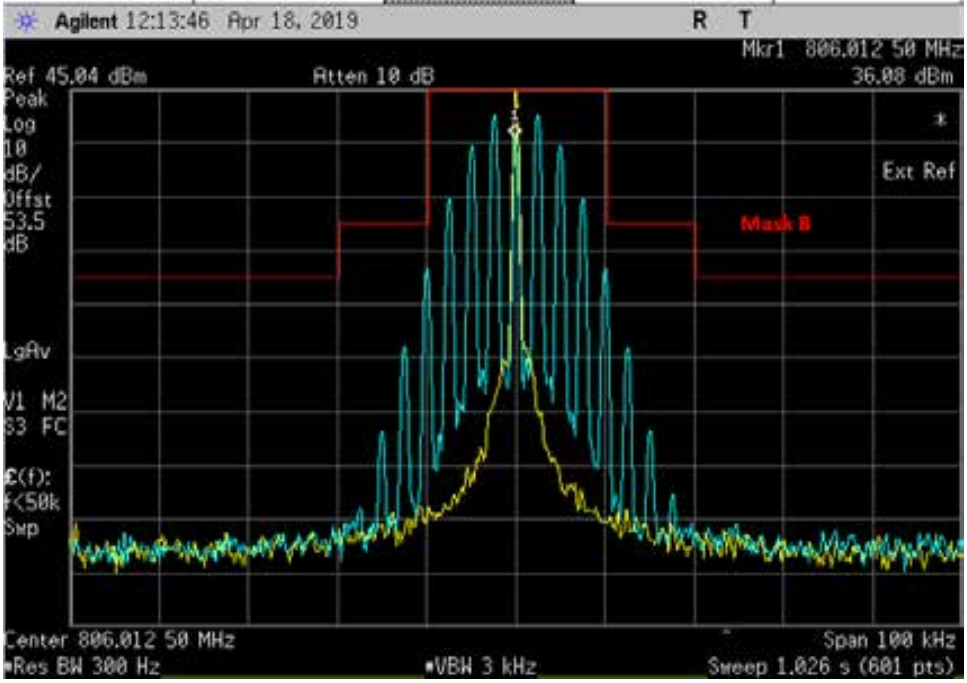


1) The DUT transmitter output port was connected to Modulation Analyzer.
2) Set the audio bandwidth filter to 15 kHz low pass filter and 50 kHz high pass filter.
3) Transmit the radio and set the audio analyzer to 2.5 kHz audio frequency and 50% of the rated deviation. Up the amplitude by 16 dB. Dekey the DUT.
4) Path loss for the measurement included.
5) Select the Occupied Bandwidth measurement for 99% Emissions Bandwidth Measurement.
6) Key in the Fc and Resolution Bandwidth (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.

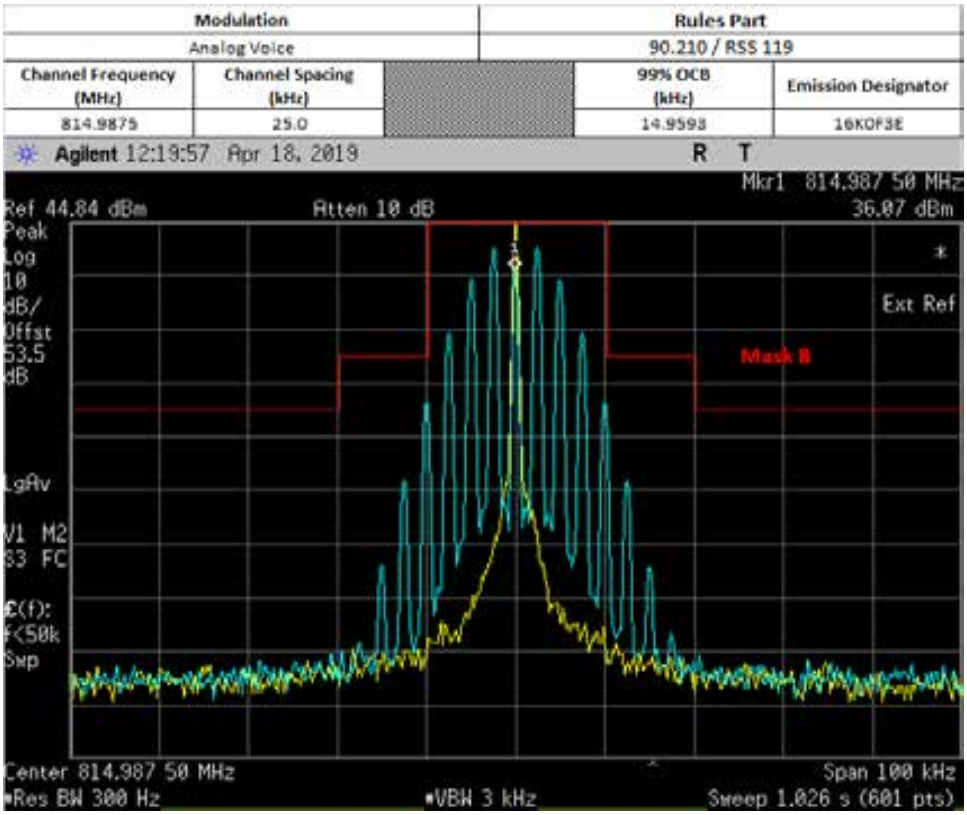
6.6.2. Test Result (Analog)

Modulation	Rules Part		
Analog Voice	90.210 / RSS 119		
Channel Frequency (MHz)	**Channel Spacing (kHz)**	**99% OCB (kHz)**	**Emission Designator**
806.0125	25.0	14.9810	16K0F3E



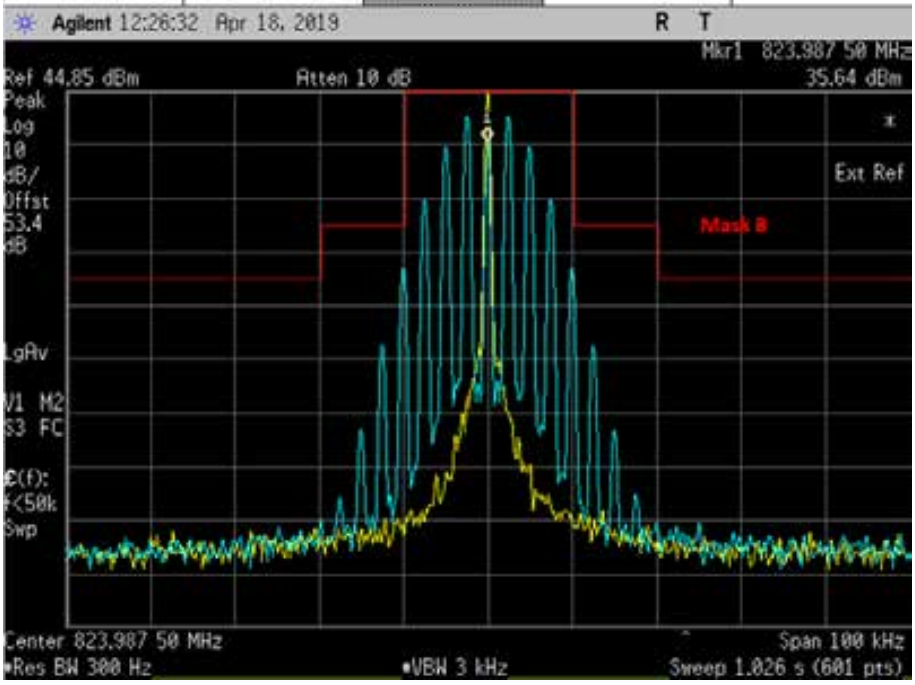
NOT FOR FCC REVIEW

Modulation	Rules Part		
Analog Voice	90.210 / RSS 119		
Channel Frequency (MHz)	**Channel Spacing (kHz)**	**99% OCB (kHz)**	**Emission Designator**
814.9875	25.0	14.9593	16K0F3E



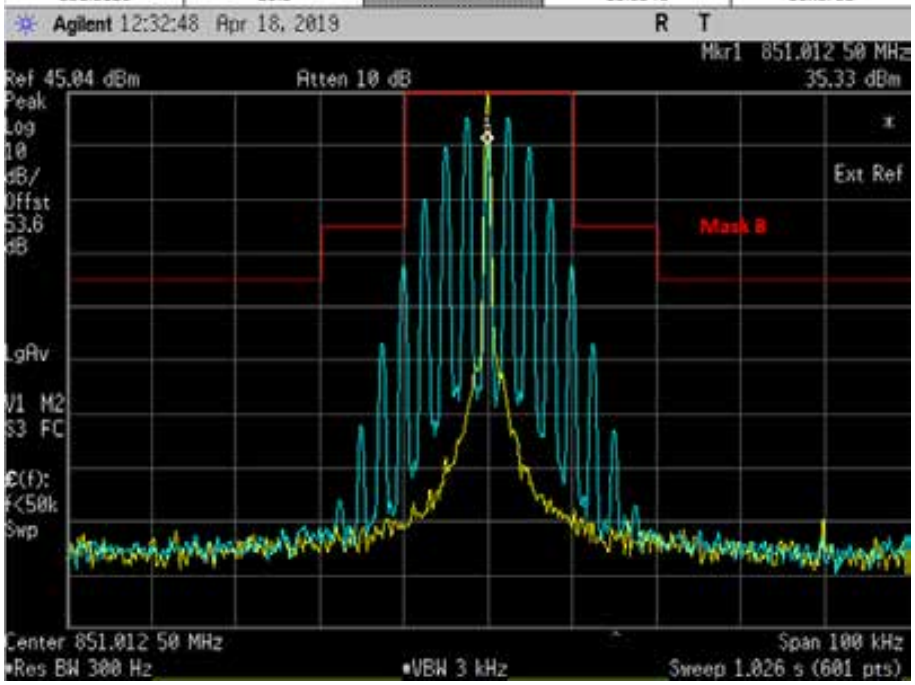
NOT FOR FCC REVIEW

Modulation	Rules Part			
Analog Voice	90.210/ RSS 119			
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
823.9875	25.0		14.9953	16K0F3E



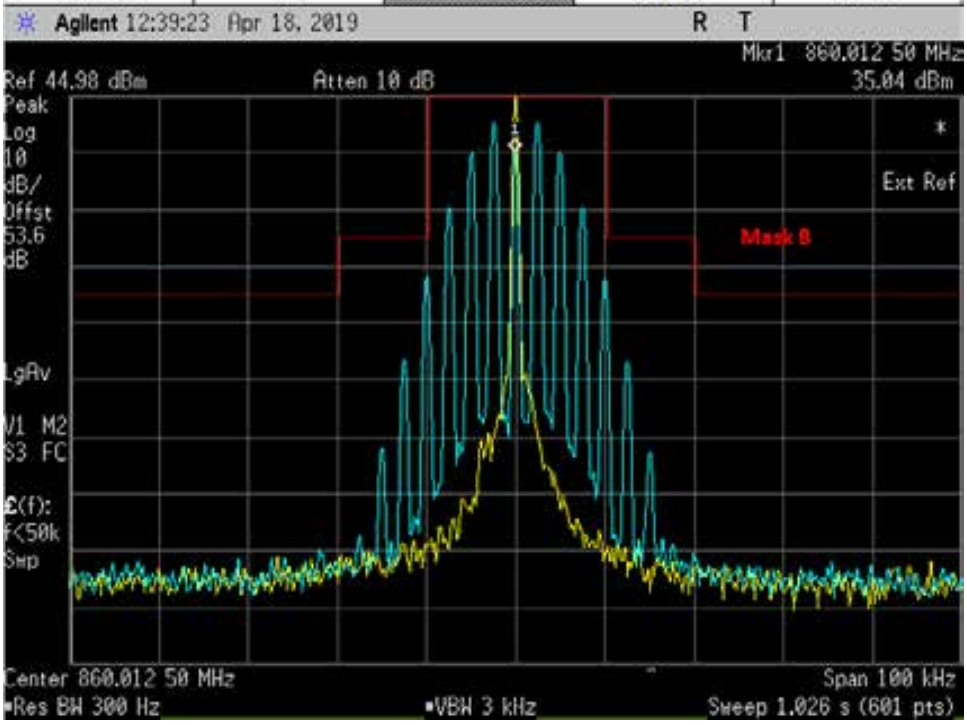
NOT FOR FCC REVIEW

Modulation	Rules Part			
Analog Voice	90.210/ RSS 119			
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
851.0125	25.0		15.0346	16K0F3E



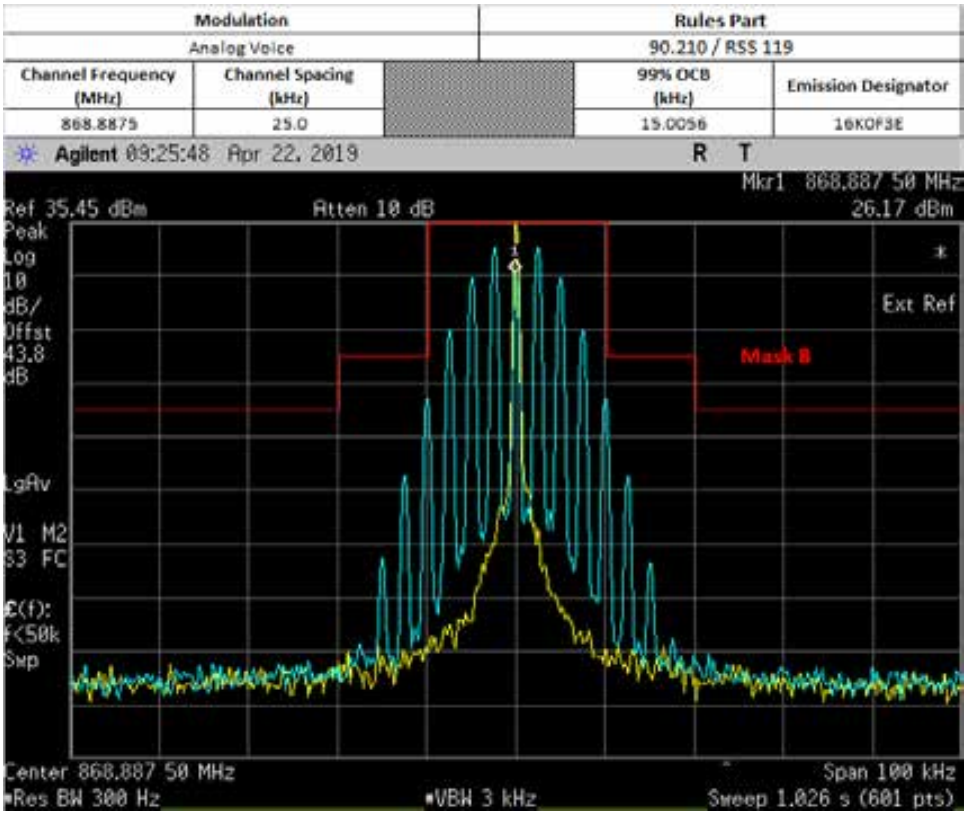
NOT FOR FCC REVIEW

Modulation	Rules Part			
Analog Voice	90.210 / RSS 119			
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
860.0125	25.0		15.0481	16K0F3E



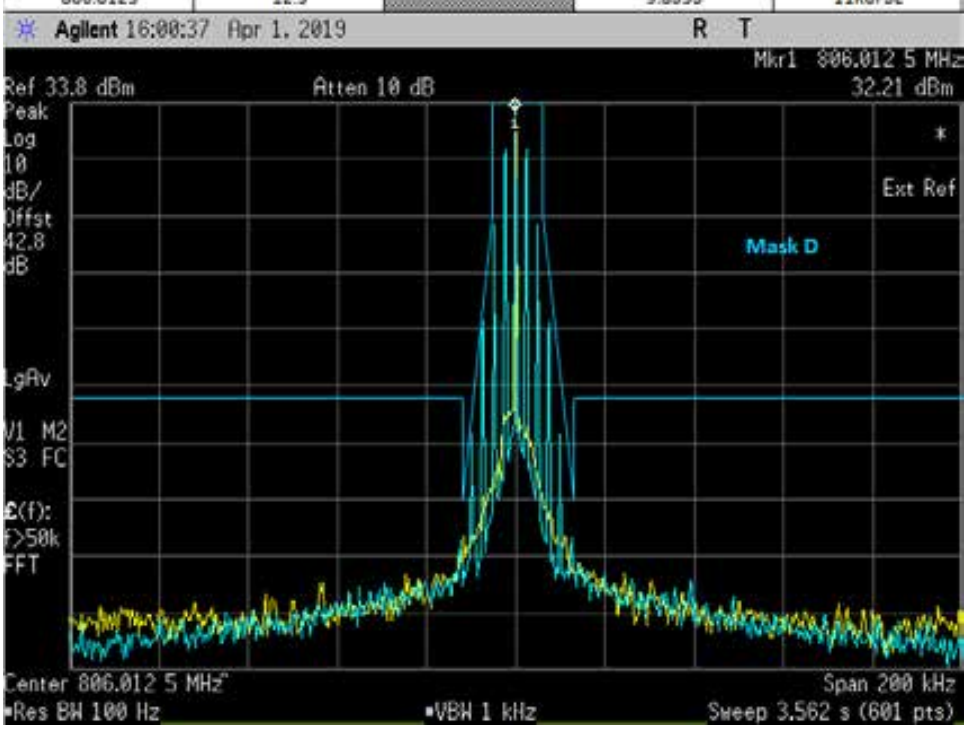
NOT FOR FCC REVIEW

Modulation	Rules Part			
Analog Voice	90.210 / RSS 119			
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
868.8875	25.0		15.0056	16K0F3E

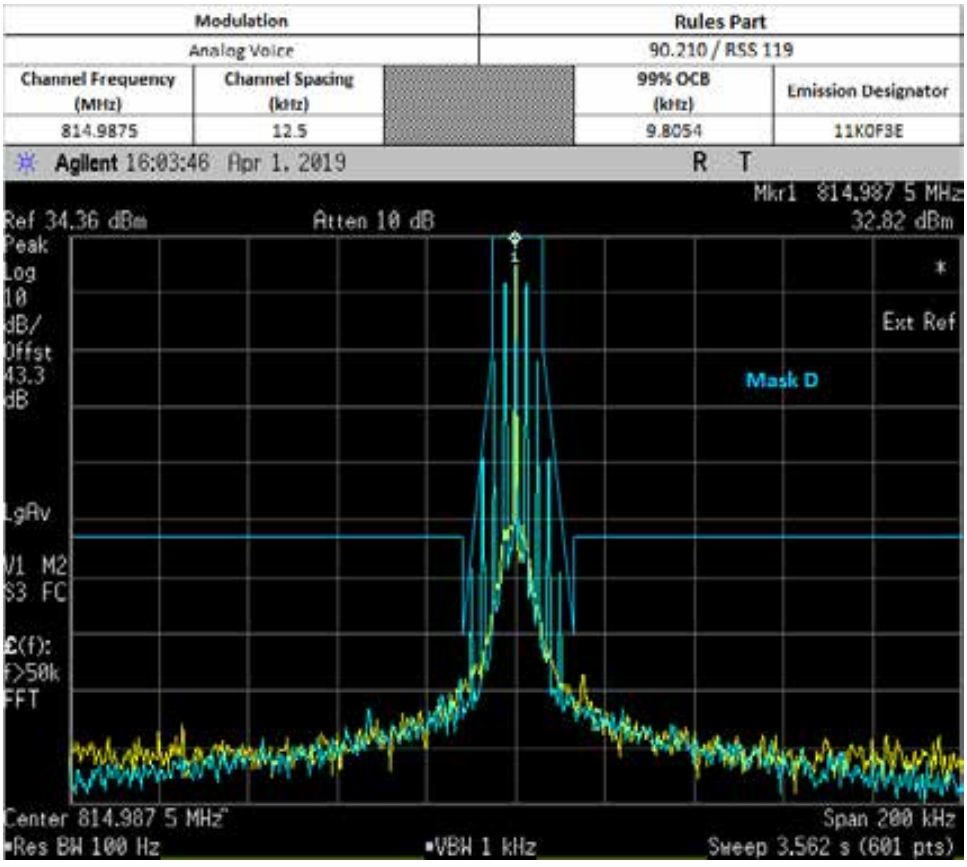


NOT FOR FCC REVIEW

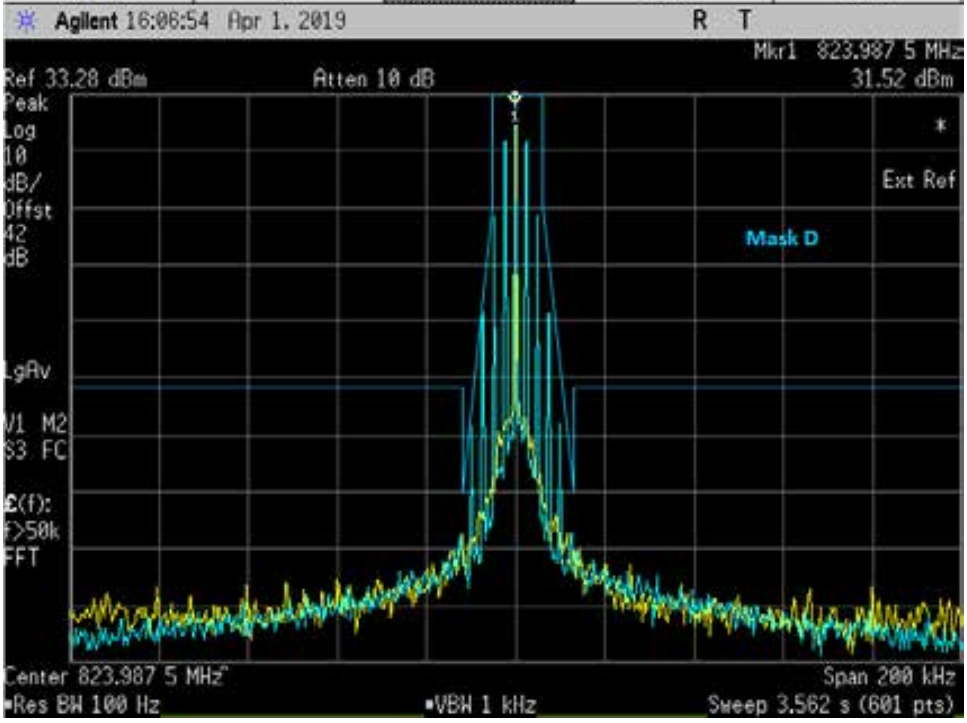
Modulation			Rules Part	
Analog Voice			90.210/ RSS 119	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
806.0125	12.5		9.8353	11K0F3E



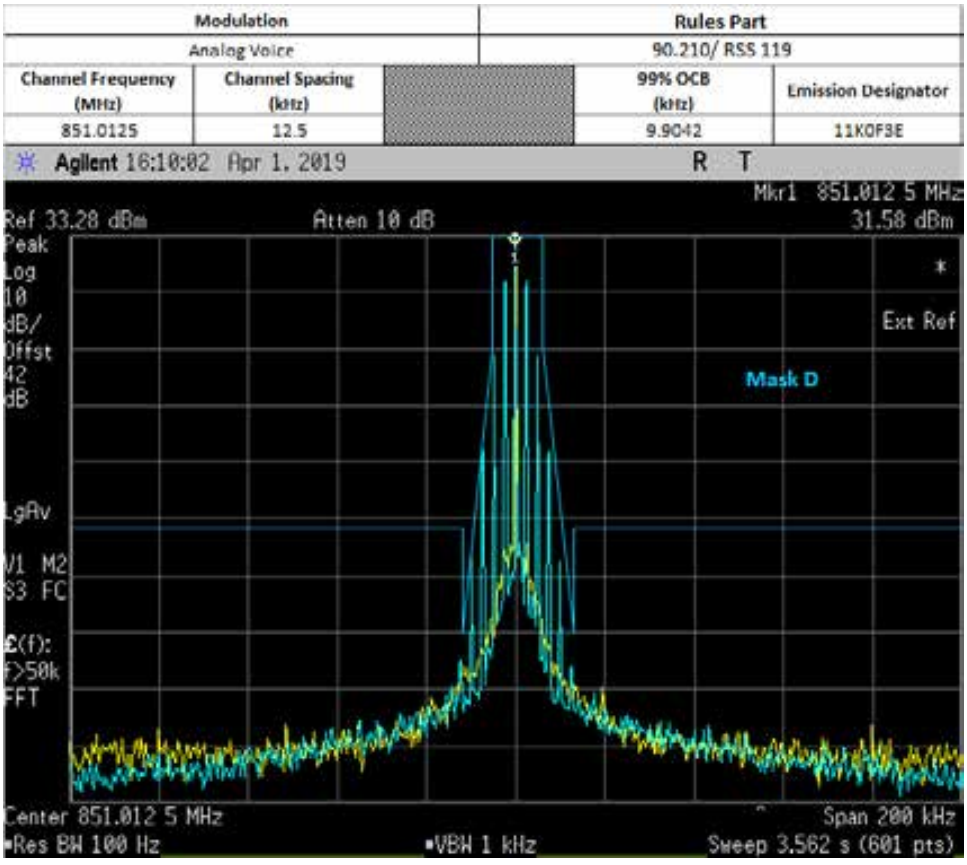
Modulation			Rules Part	
Analog Voice			90.210 / RSS 119	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
814.9875	12.5		9.8054	11K0F3E



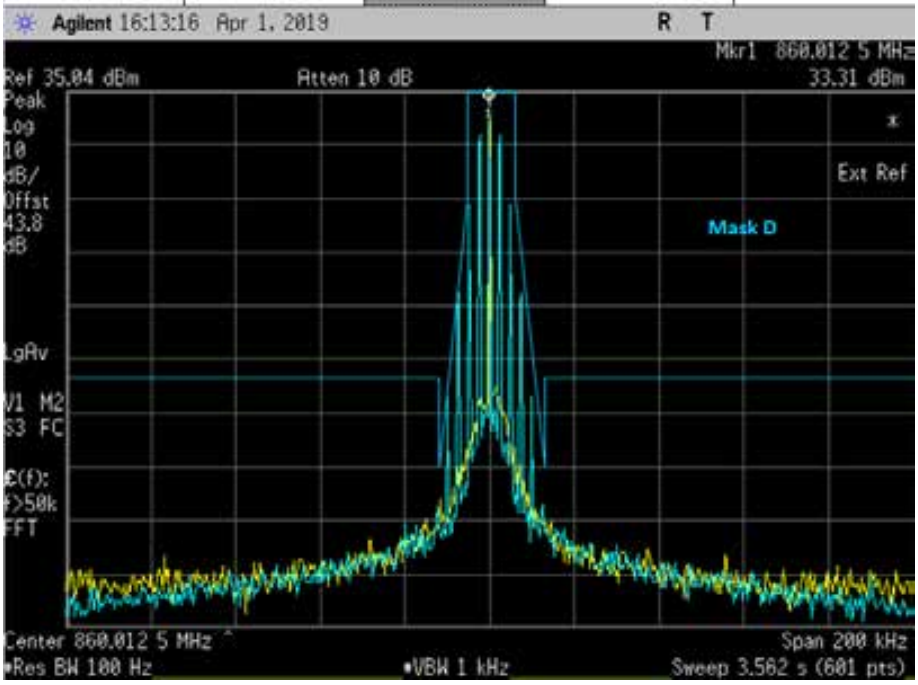
Modulation	Rules Part			
Analog Voice	90.210/ RSS 119			
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
823.9875	12.5		9.8546	11K0F3E



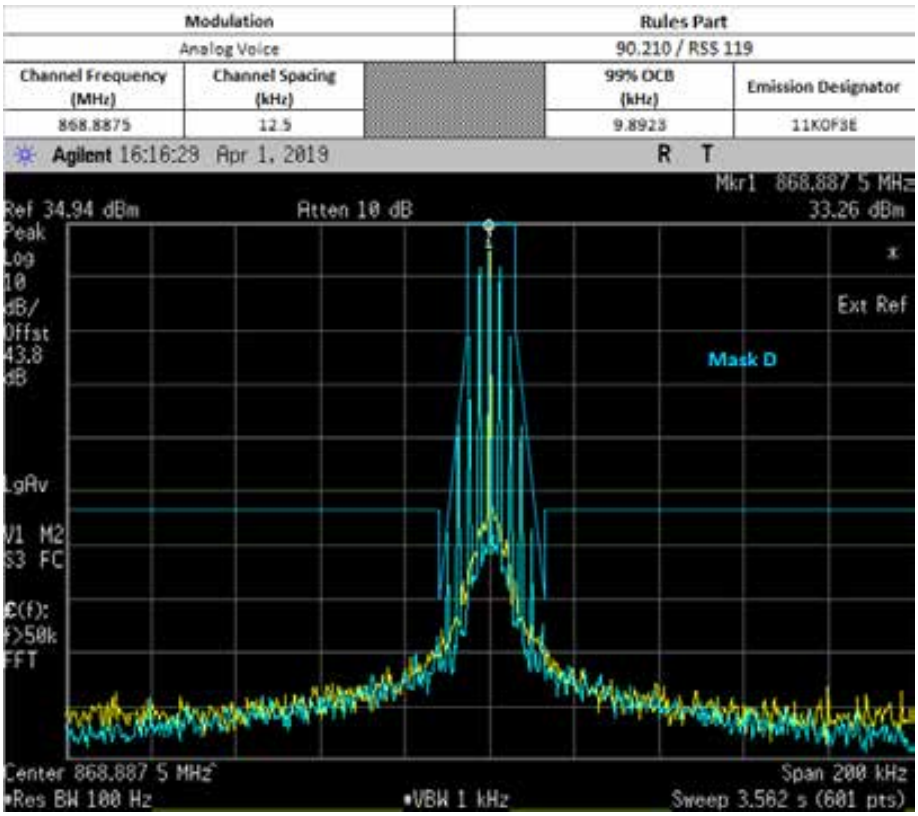
Modulation	Rules Part			
Analog Voice	90.210/ RSS 119			
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
851.0125	12.5		9.9042	11K0F3E



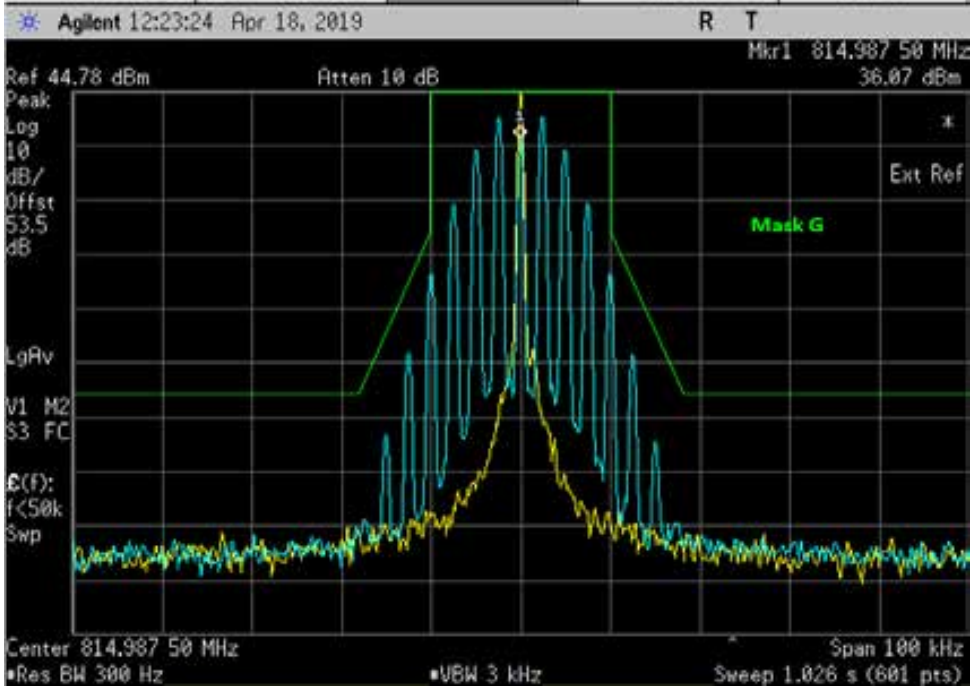
Modulation	Rules Part			
Analog Voice	90.210 / RSS 119			
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
860.0125	12.5		9.8995	11K0F3E



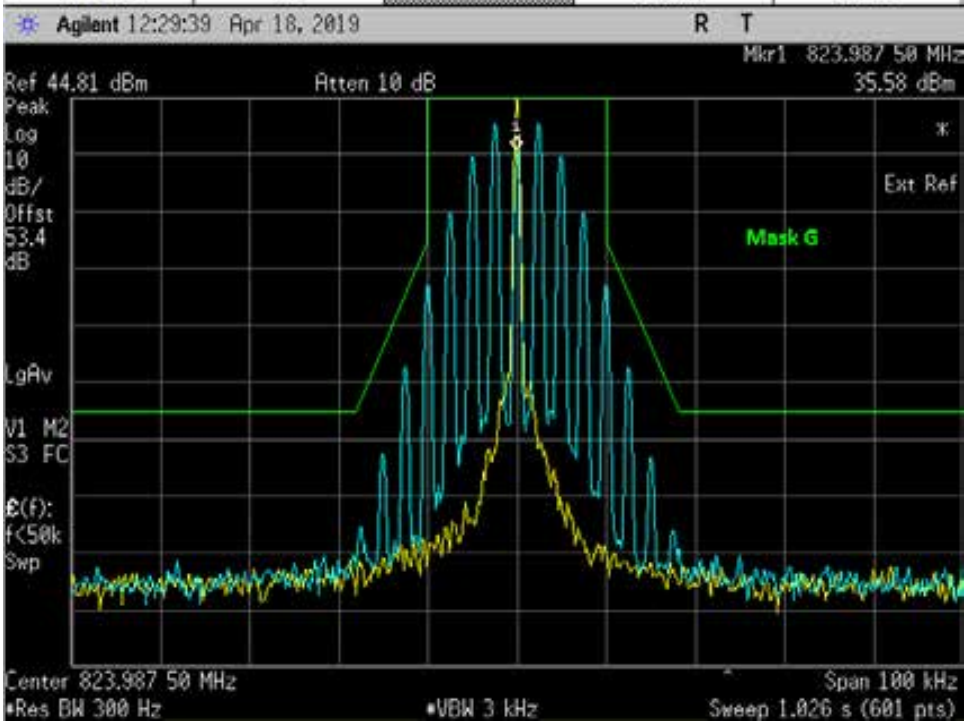
Modulation	Rules Part			
Analog Voice	90.210 / RSS 119			
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
868.8875	12.5		9.8923	11K0F3E



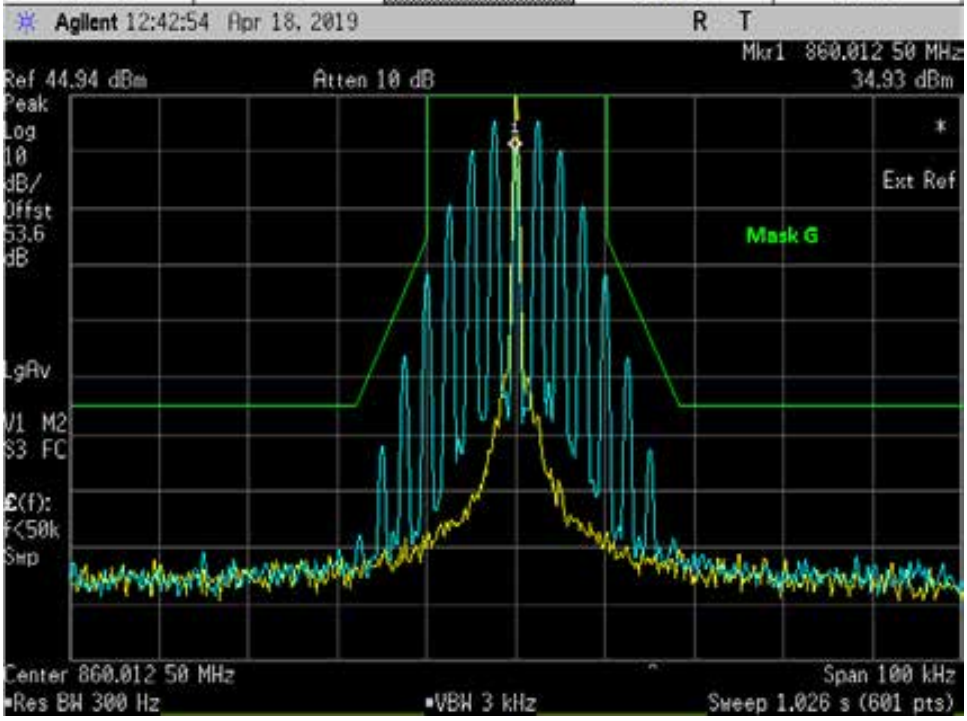
Modulation			Rules Part	
Analog Voice			90.210/ RSS 119	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
814.9875	25.0		14.9551	16K0F3E



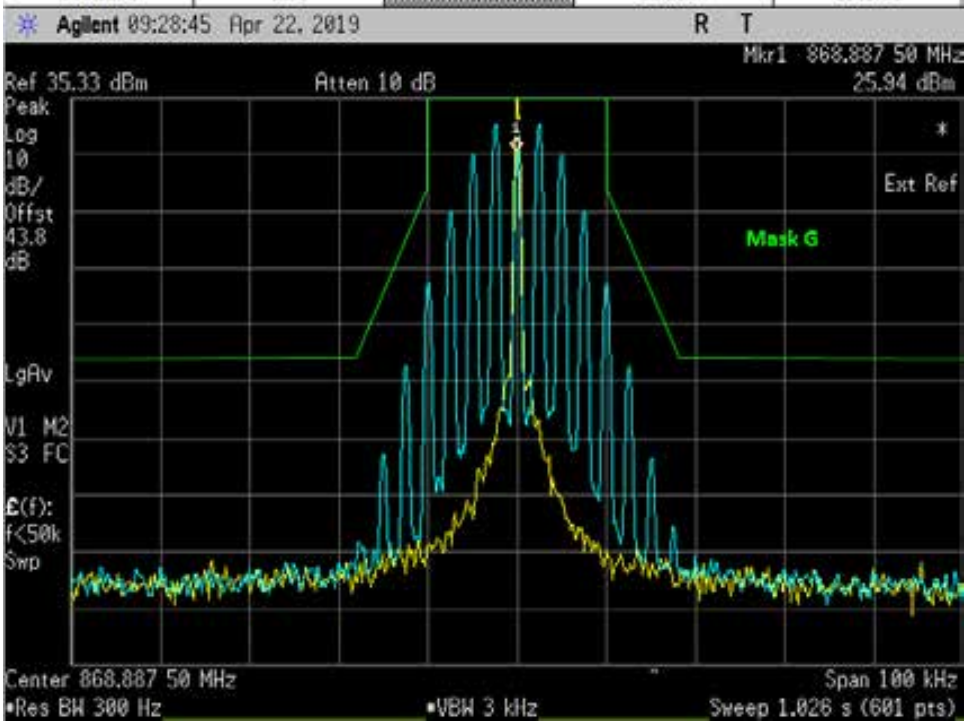
Modulation			Rules Part	
Analog Voice			90.210 / RSS 119	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
823.9875	25.0		15.0017	16K0F3E



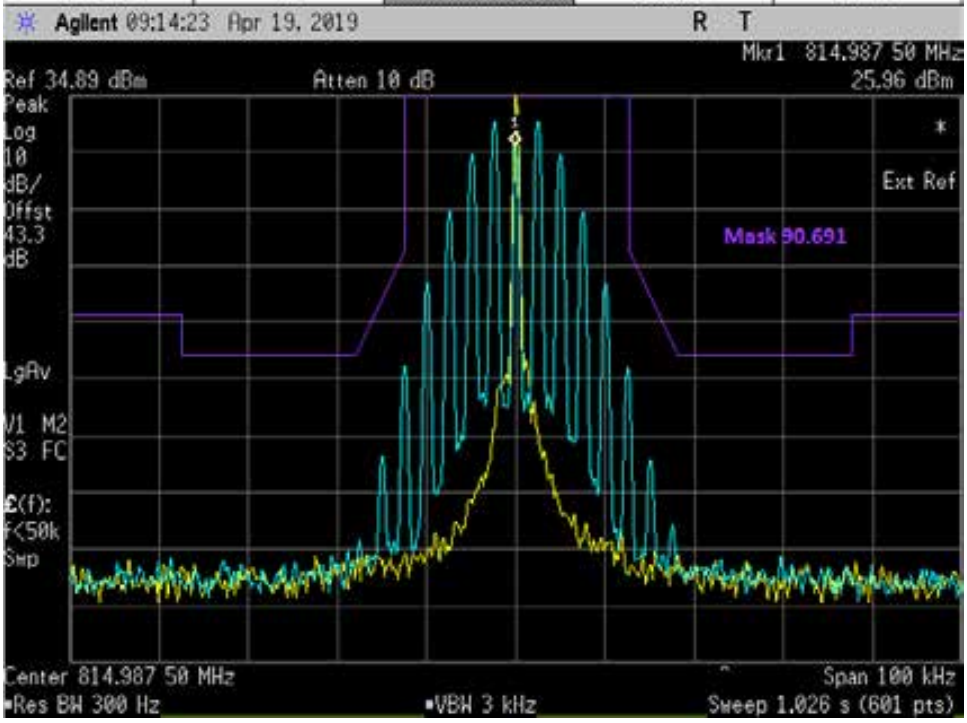
Modulation	Rules Part			
Analog Voice	FCC Part 90 / RSS 119			
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
860.0125	25.0		15.0466	16K0F3E



Modulation	Rules Part			
Analog Voice	90.210 / RSS 119			
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
868.8875	25.0		15.0084	16K0F3E

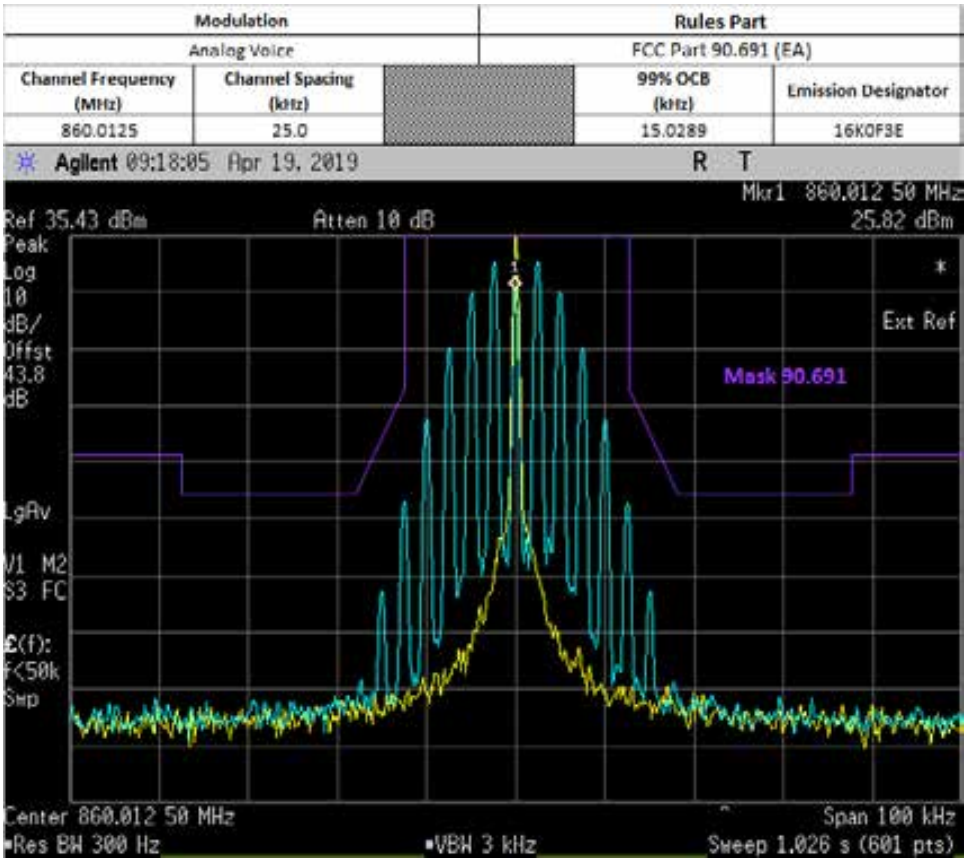


Modulation			Rules Part	
Analog Voice			FCC Part 90.691 (EA)	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
814.9875	25.0		14.9783	16K0F3E



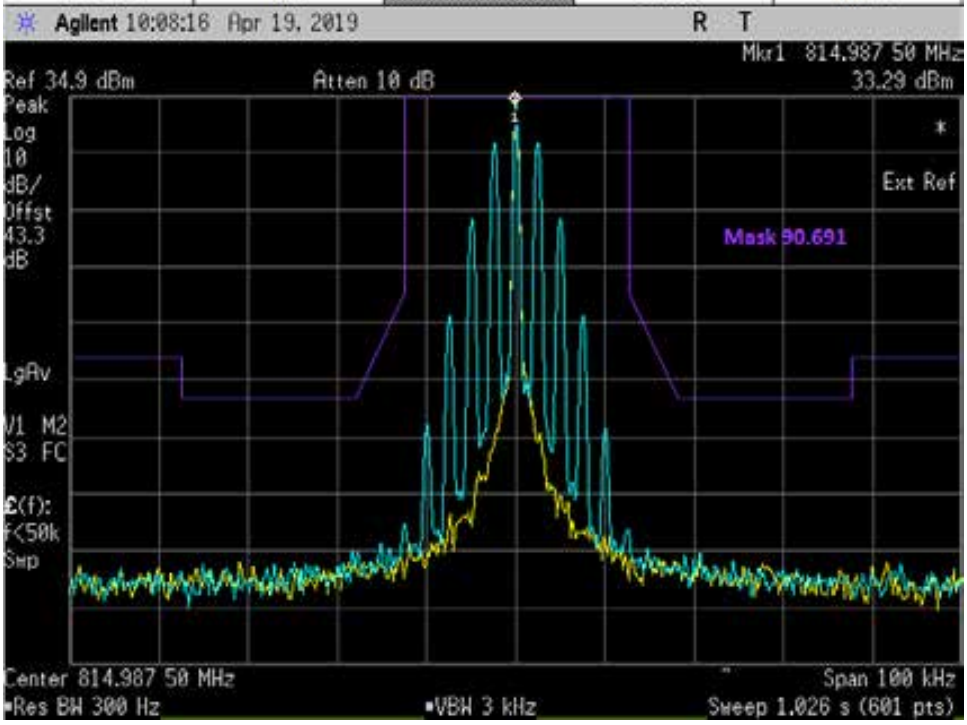
NOT FOR IC REVIEW

Modulation			Rules Part	
Analog Voice			FCC Part 90.691 (EA)	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
860.0125	25.0		15.0289	16K0F3E



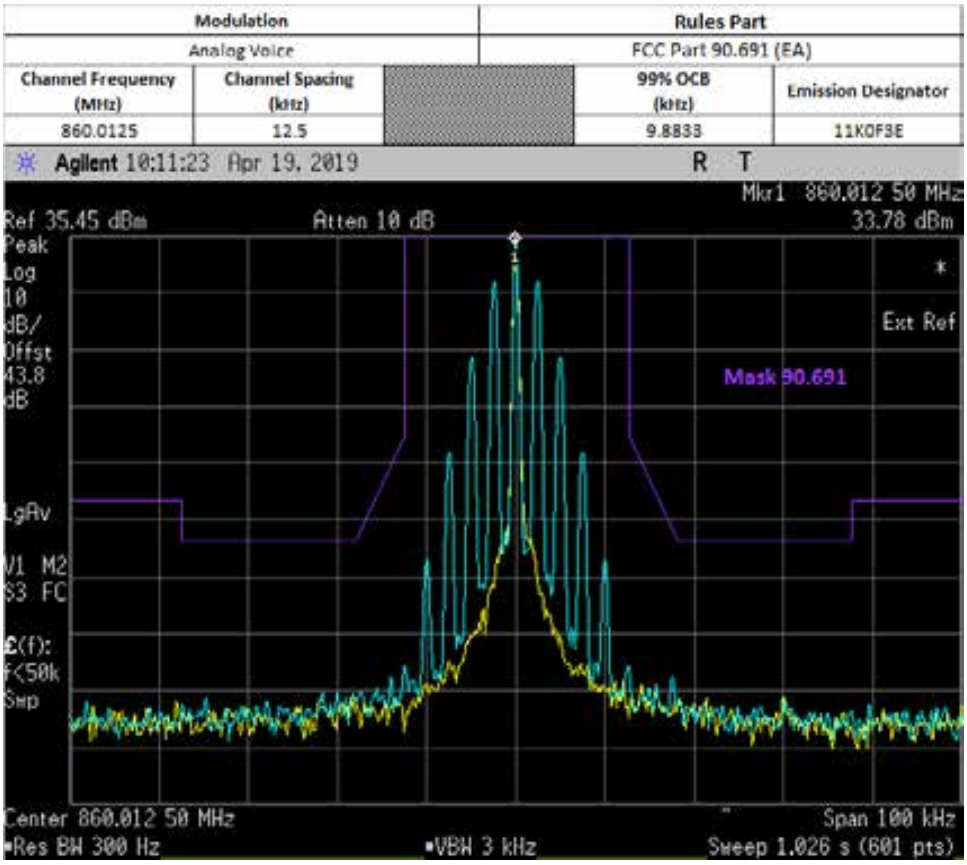
NOT FOR IC REVIEW

Modulation	Rules Part			
Analog Voice	FCC Part 90.691 (EA)			
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
814.9875	12.5		9.8389	11K0F3E



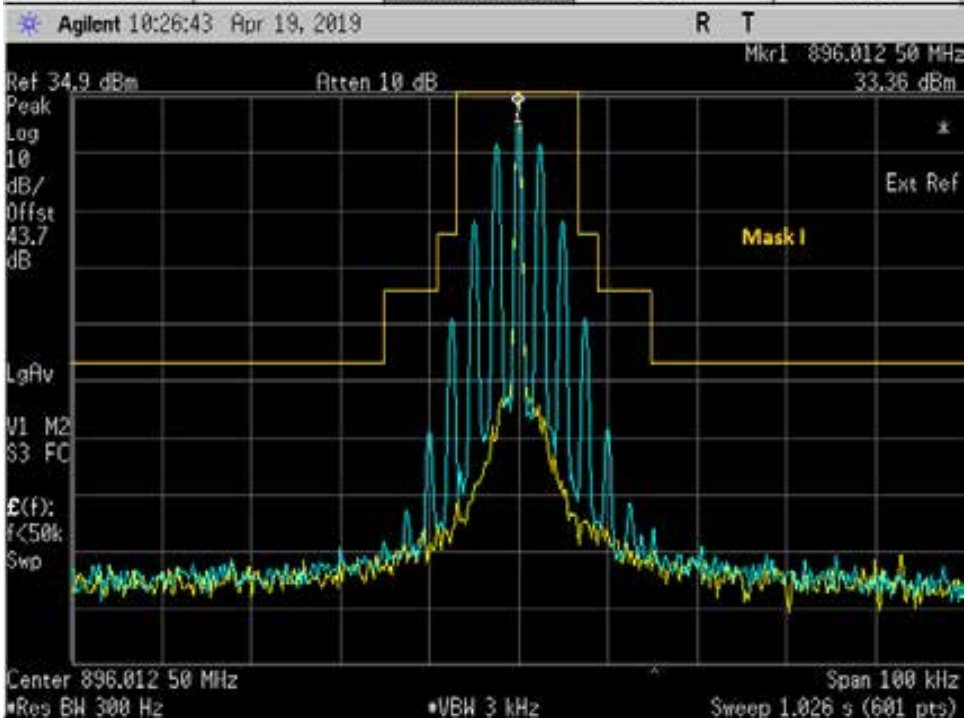
NOT FOR IC REVIEW

Modulation	Rules Part			
Analog Voice	FCC Part 90.691 (EA)			
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
860.0125	12.5		9.8833	11K0F3E

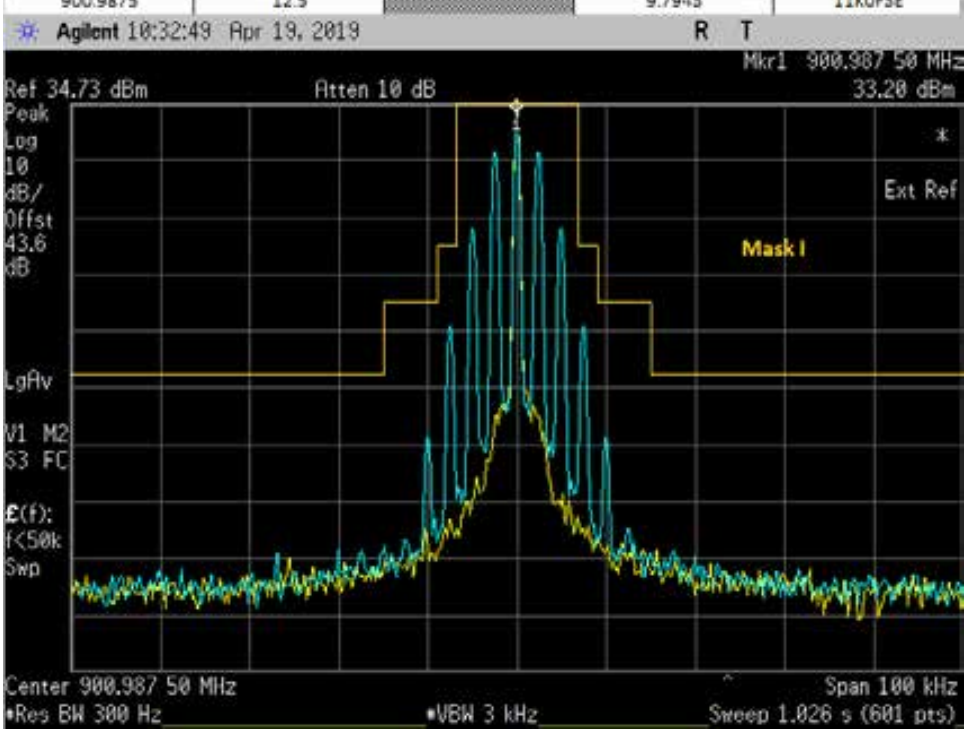


NOT FOR IC REVIEW

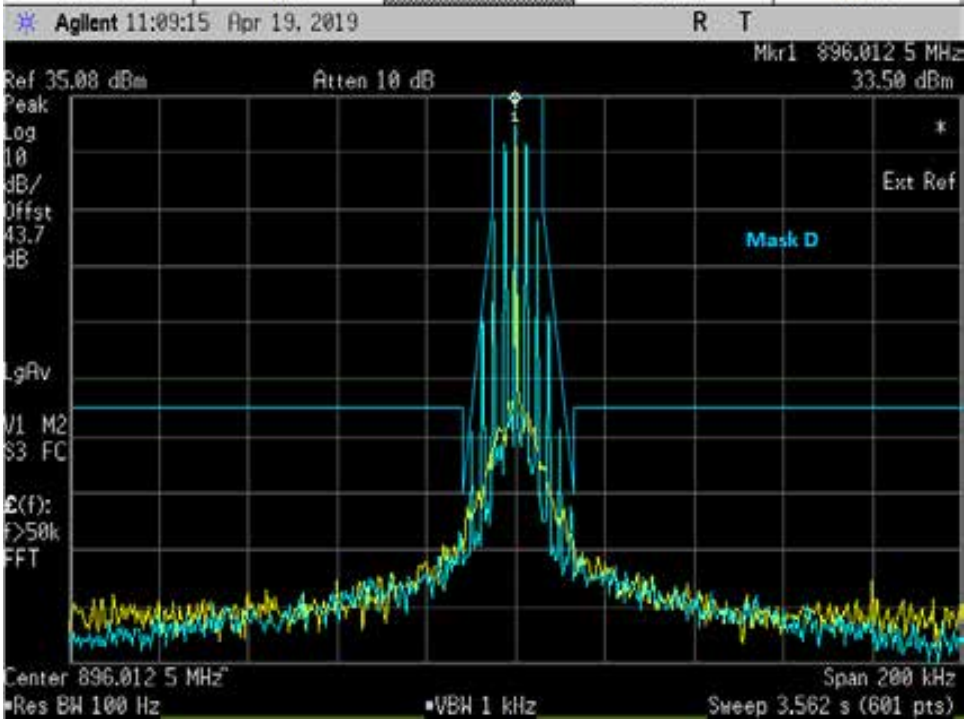
Modulation			Rules Part	
Analog Voice			90.210	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
896.0125	12.5		9.8055	11K0F3E



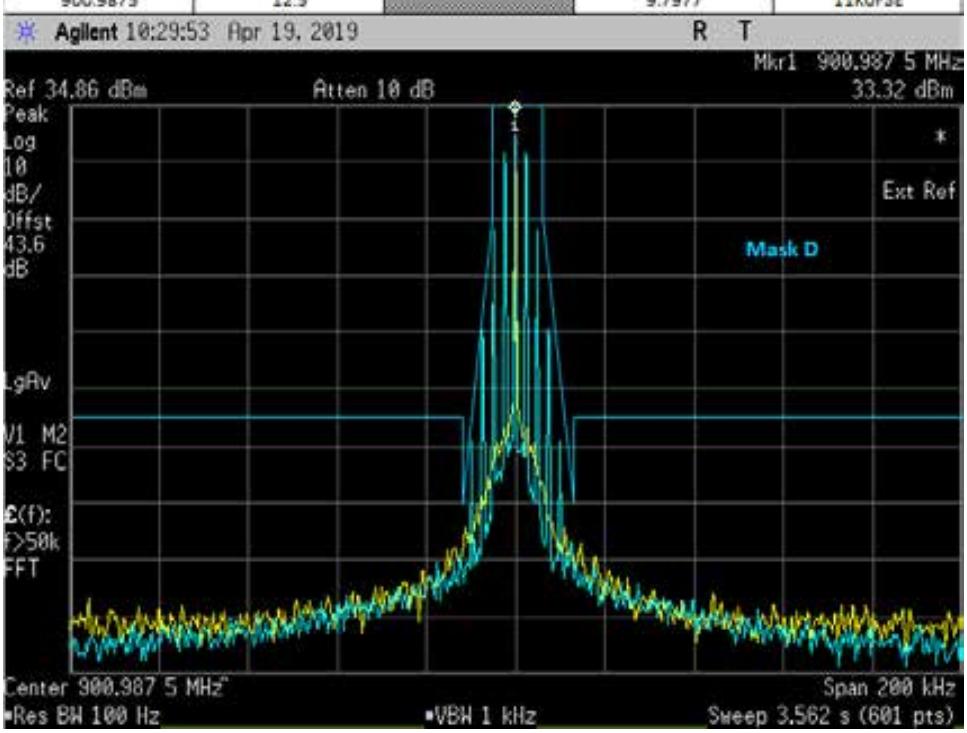
Modulation			Rules Part	
Analog Voice			90.210	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
900.9875	12.5		9.7943	11K0F3E



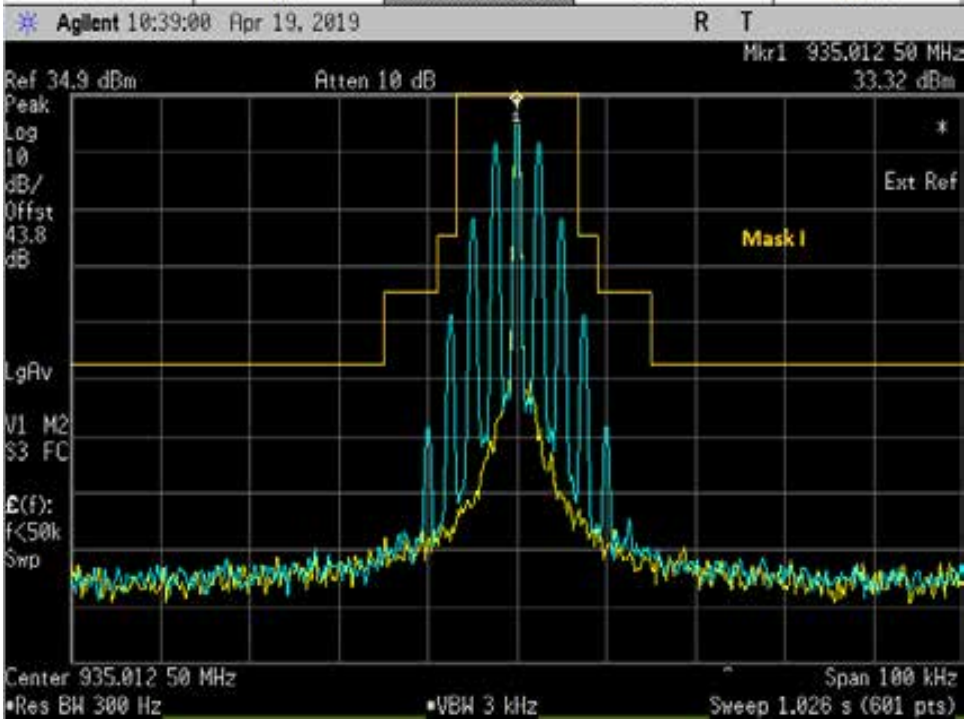
Modulation			Rules Part	
Analog Voice			90.210	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
896.0125	12.5		9.8190	11K0F3E



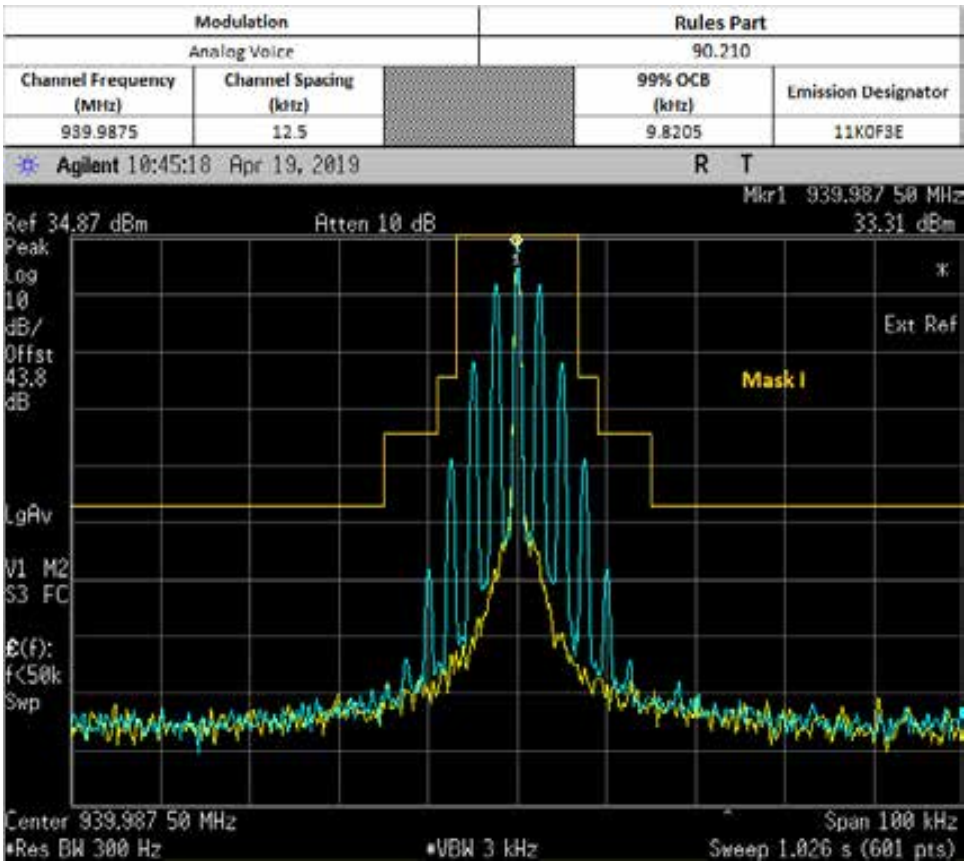
Modulation			Rules Part	
Analog Voice			90.210	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
900.9875	12.5		9.7977	11K0F3E



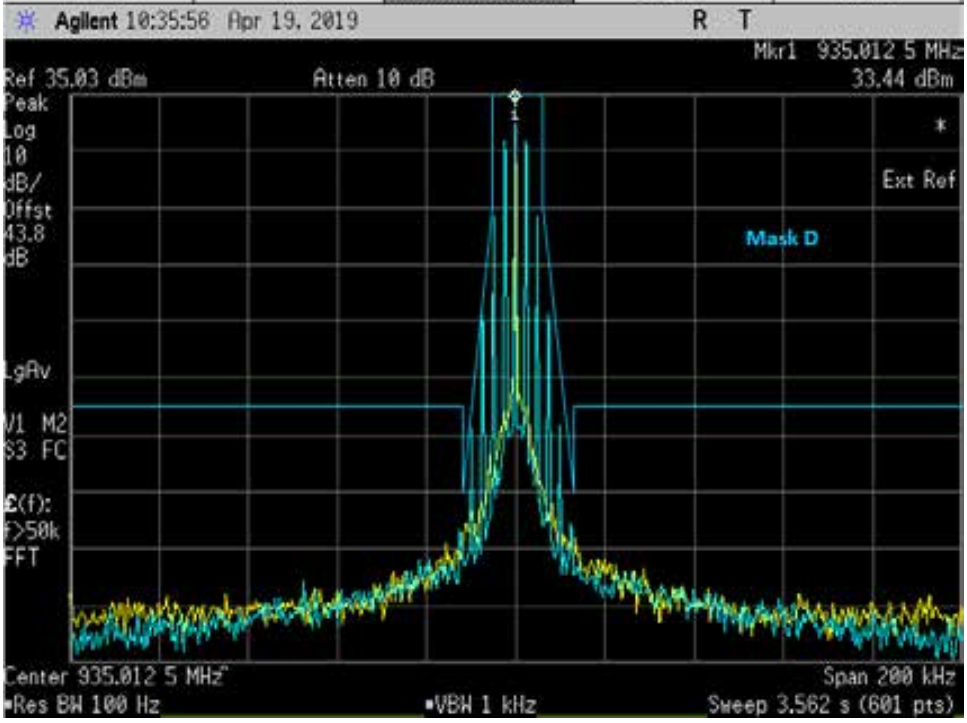
Modulation			Rules Part	
Analog Voice			90.210	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
935.0125	12.5		9.8362	11K0F3E



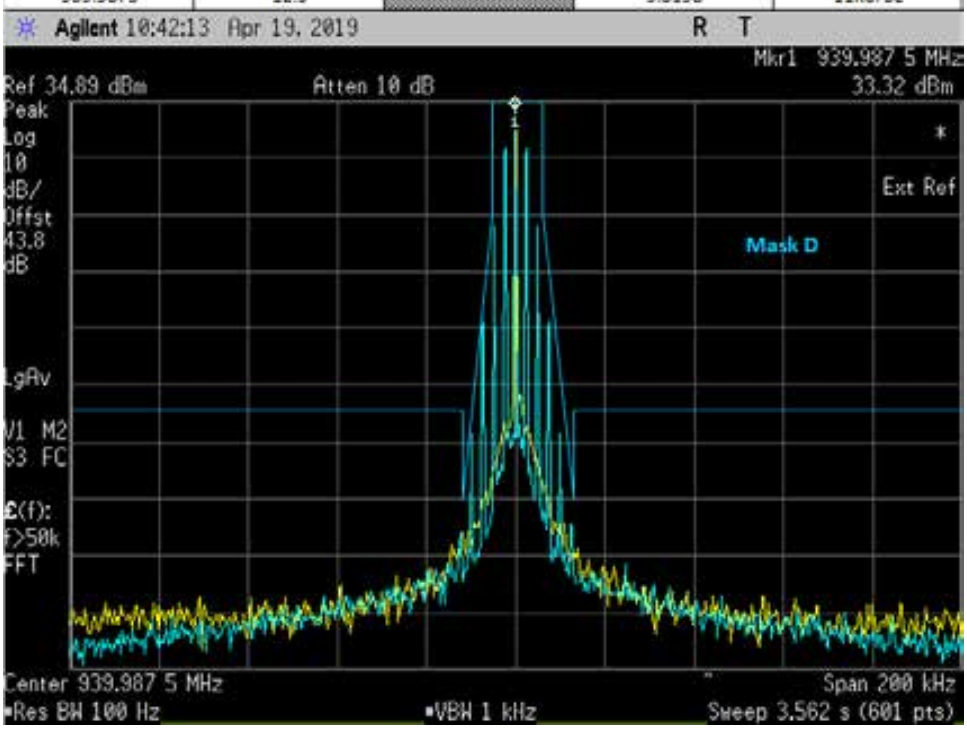
Modulation			Rules Part	
Analog Voice			90.210	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
939.9875	12.5		9.8205	11K0F3E



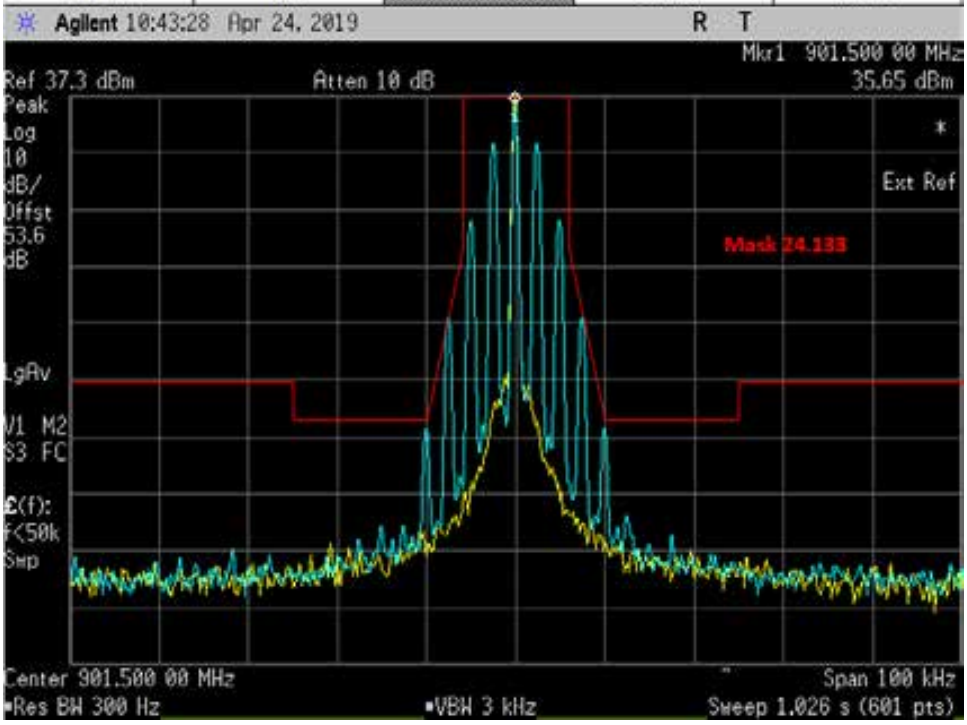
Modulation			Rules Part	
Analog Voice			90.210	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
935.0125	12.5		9.8309	11K0F3E



Modulation			Rules Part	
Analog Voice			90.210	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
939.9875	12.5		9.8198	11K0F3E

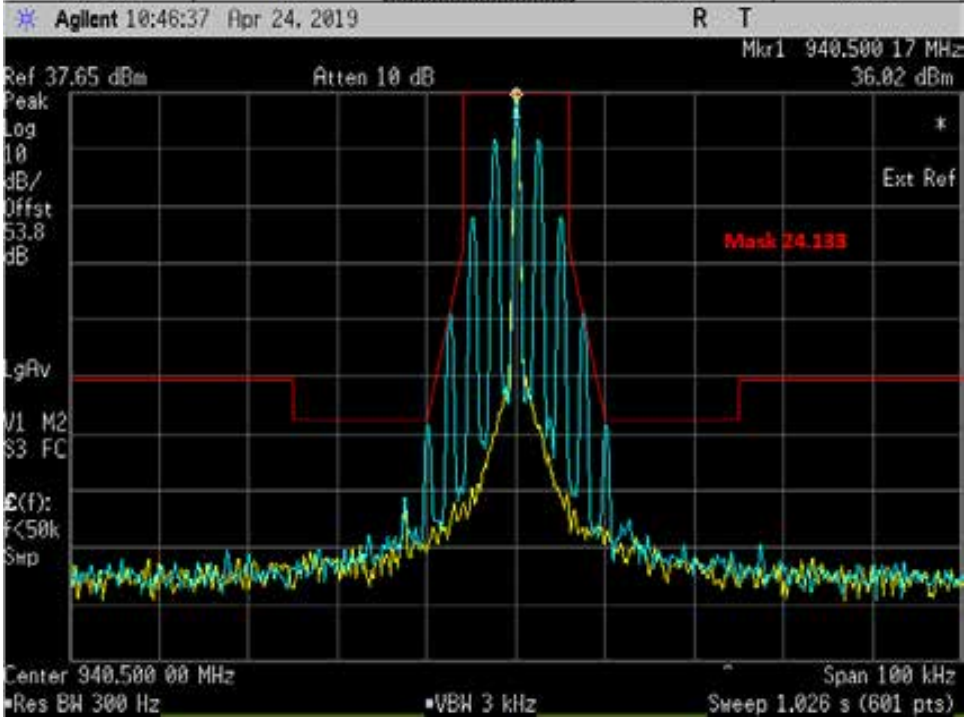


Modulation	Rules Part			
Analog Voice	24.133 / ISED RSS134			
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
901.5000	12.5		9.8000	10K0F3E



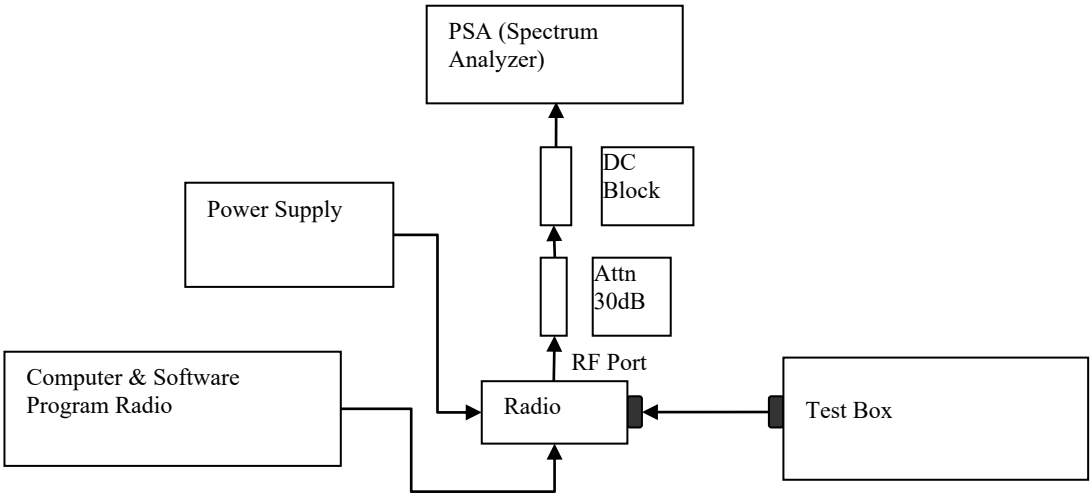
Part 24

Modulation	Rules Part			
Analog Voice	24.133 / ISED RSS134			
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
940.5000	12.5		9.8209	10K0F3E



Part 24

6.6.3. Test Setup (Digital)



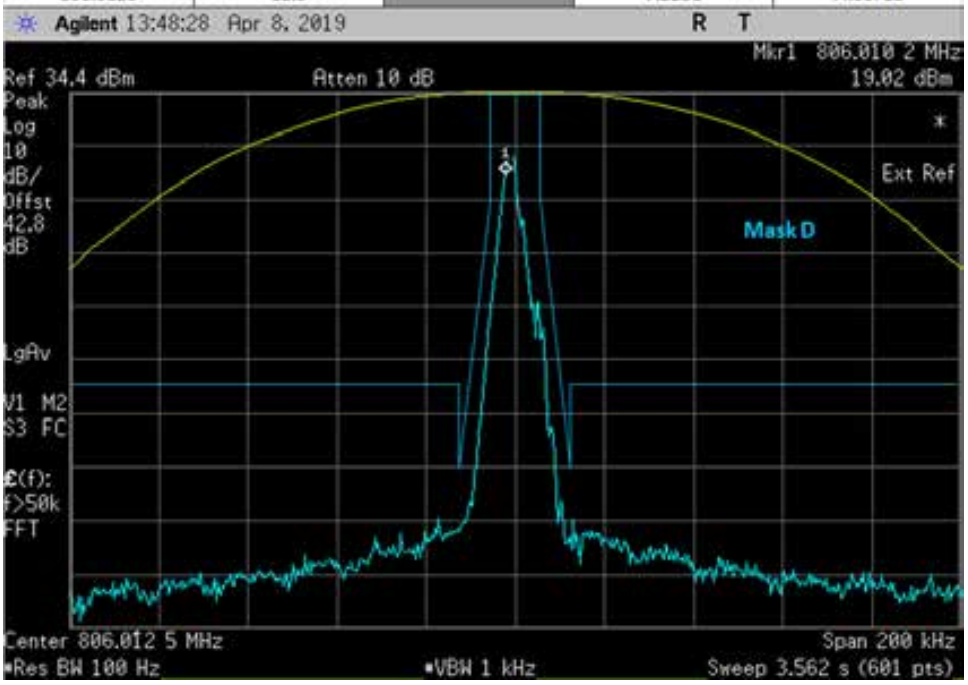
1) Program and set radio to operate in desire test frequency and digital mode with modulation. (*4FSK, C4FM or other digital modulation form).
2) Path loss for the measurement included.
3) Select the Occupied Bandwidth measurement for 99% Emissions Bandwidth Measurement.
4) Key in the Fc and Resolution 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.

*Note:

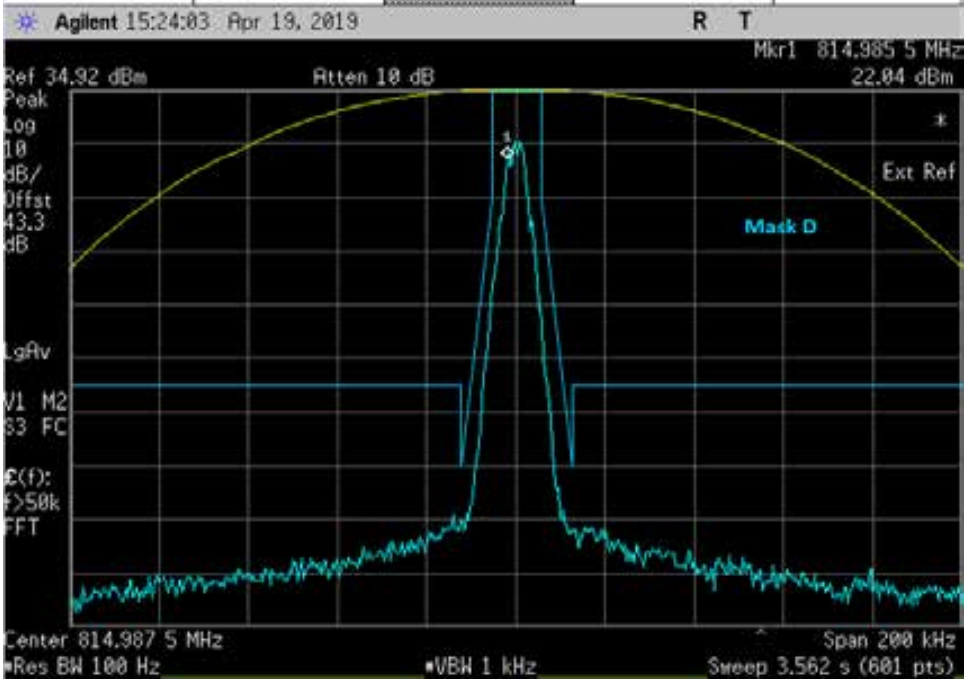
- For Digital Modulation, 12.5 kHz Data F1D & FXD would be the same. Therefore only measurements with F1D modulation shown below.
- For Digital Modulation, 12.5 kHz Data F1E & FXE would be the same. Therefore only measurements with F1E modulation shown below.

6.6.4. Test Result (Digital Data)

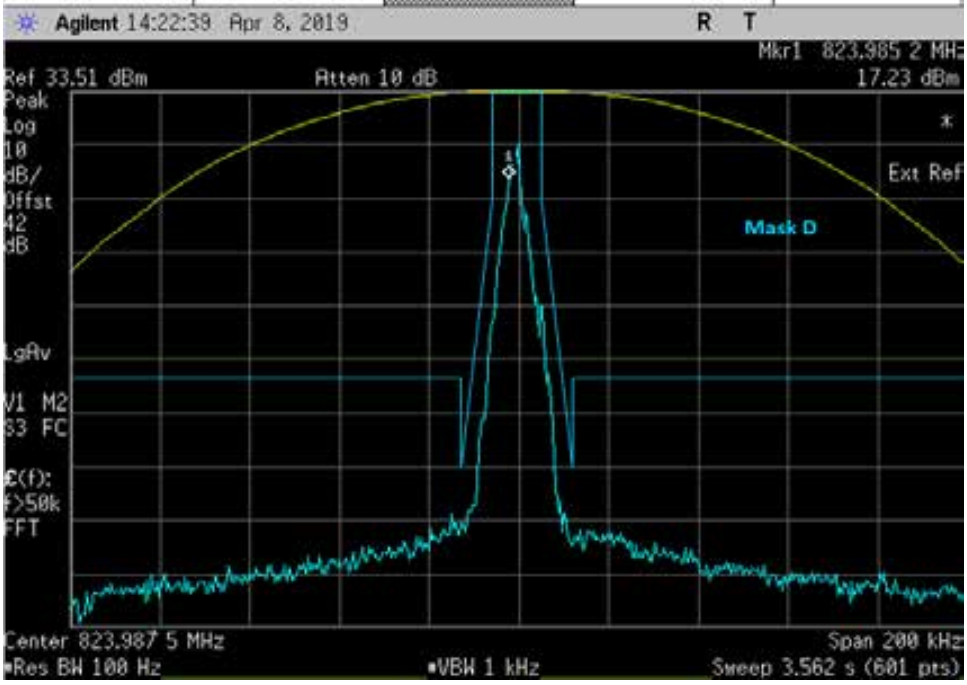
Modulation	Rules Part			
4FSK Data	90.210 / RSS 119			
Channel Frequency (MHz)	**Channel Spacing (kHz)**		**99% OCB (kHz)**	**Emission Designator**
806.0125	12.5		7.2251	7K60F1D



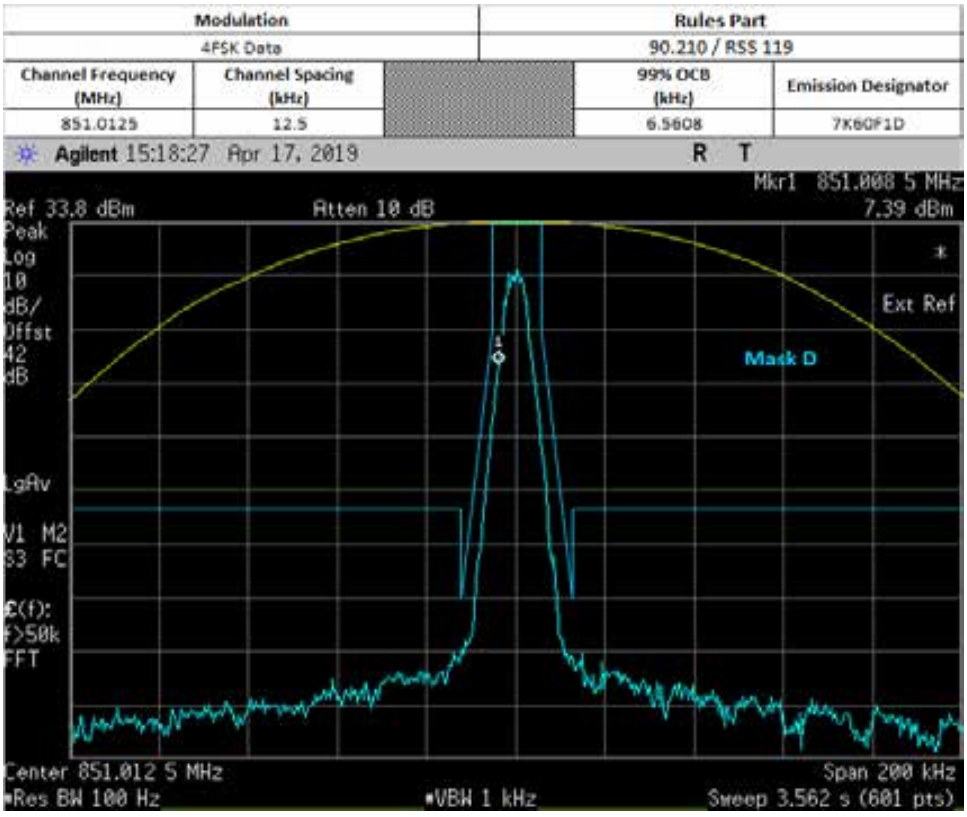
Modulation	Rules Part			
4FSK Data	90.210 / RSS 119			
Channel Frequency (MHz)	**Channel Spacing (kHz)**		**99% OCB (kHz)**	**Emission Designator**
814.9875	12.5		7.0149	7K60F1D



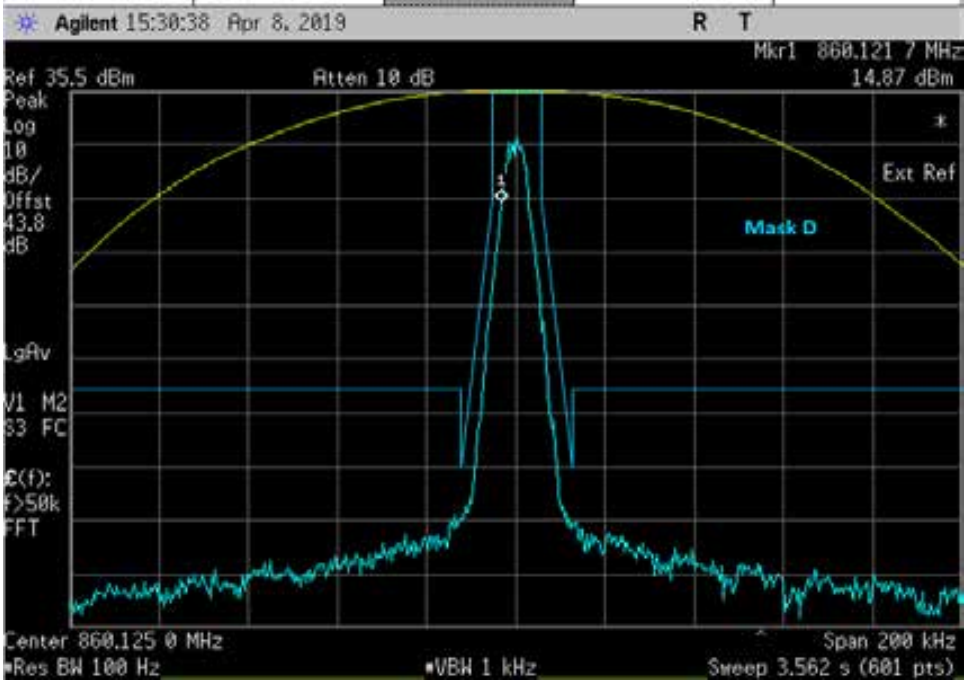
Modulation	Rules Part			
4FSK Data	90.210 / RSS 119			
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
823.9875	12.5		6.5250	7K60F1D



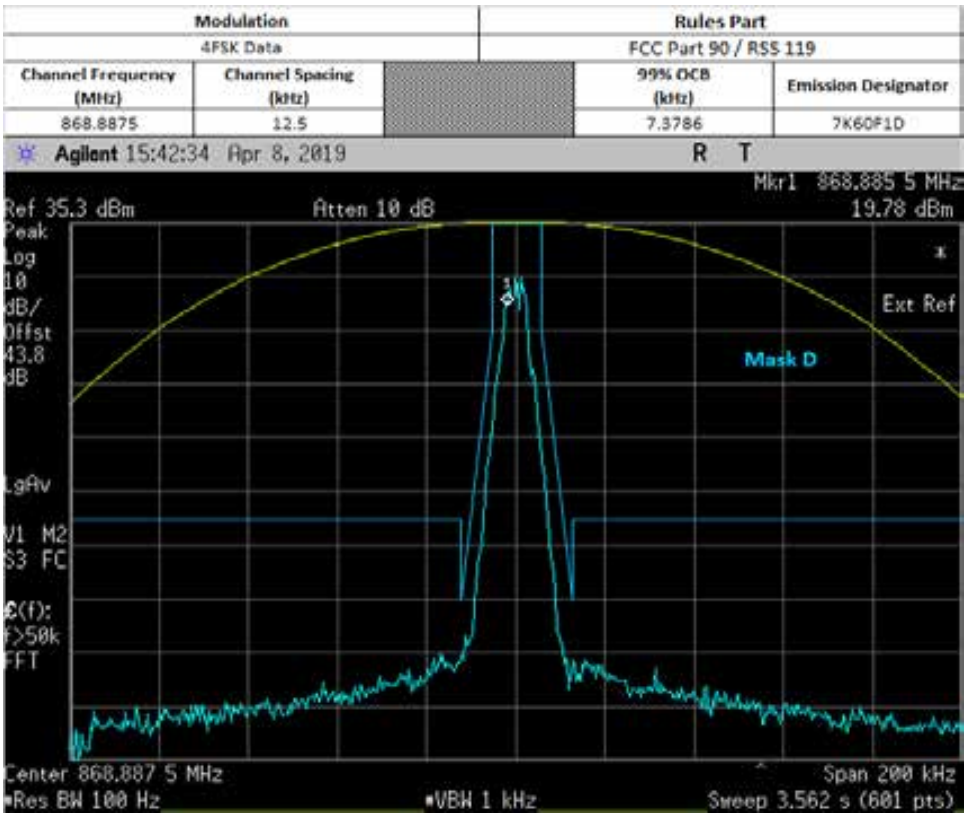
Modulation	Rules Part			
4FSK Data	90.210 / RSS 119			
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
851.0125	12.5		6.5608	7K60F1D



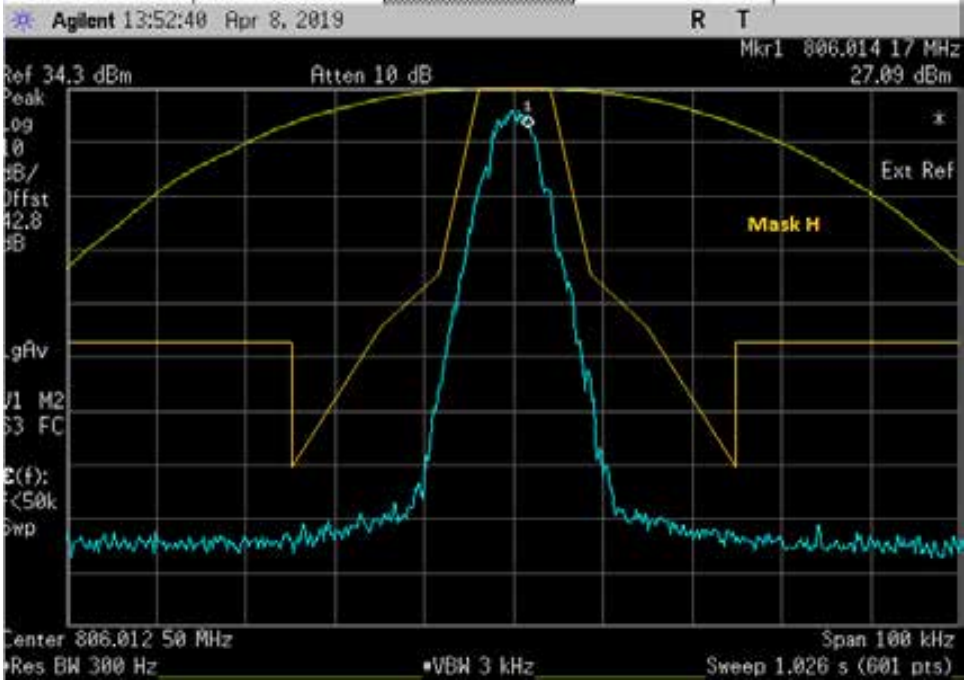
Modulation			Rules Part	
4FSK Data			90.210 / RSS 119	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
860.1250	12.5		7.2661	7K60F1D



Modulation			Rules Part	
4FSK Data			FCC Part 90 / RSS 119	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
868.8875	12.5		7.3786	7K60F1D

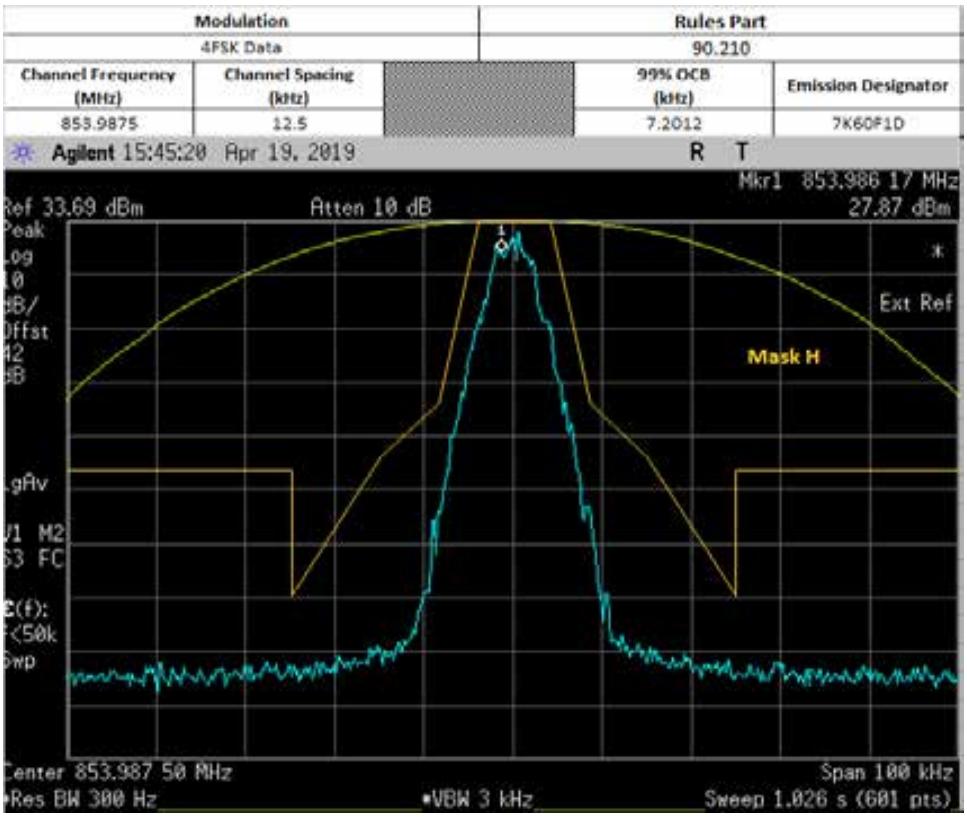


Modulation			Rules Part	
4FSK Data			90.210	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
806.0125	12.5		6.8291	7K60F1D



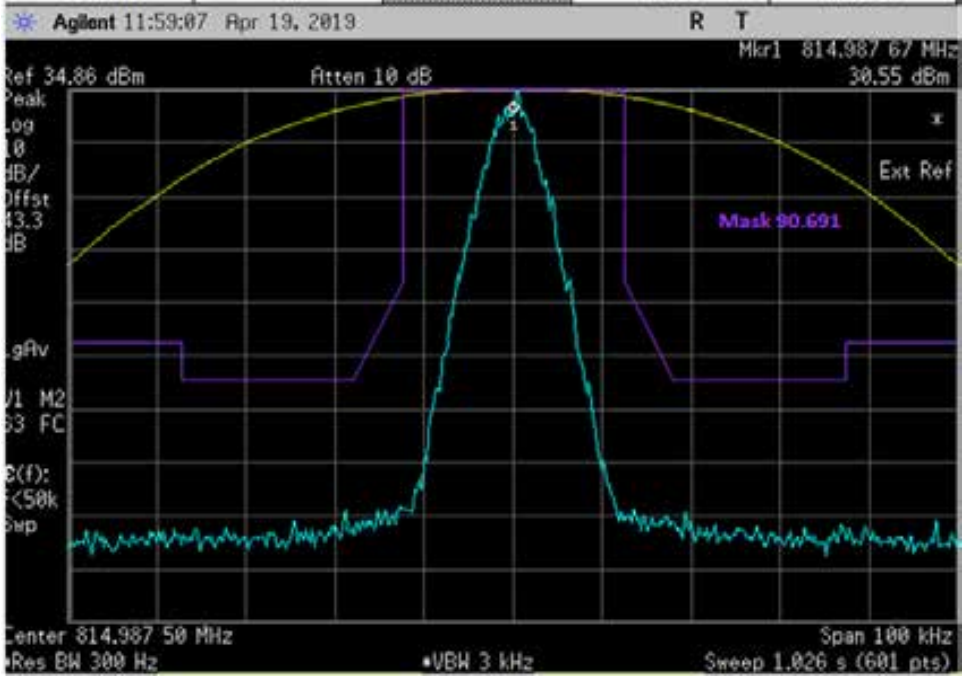
NOT FOR IC REVIEW

Modulation			Rules Part	
4FSK Data			90.210	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
853.9875	12.5		7.2012	7K60F1D



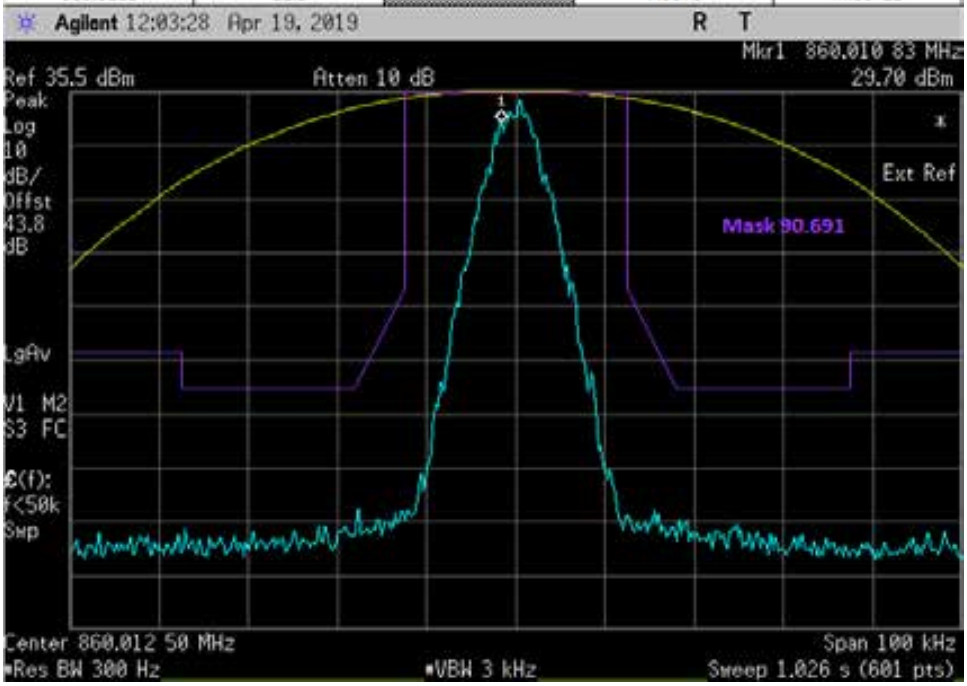
NOT FOR IC REVIEW

Modulation			Rules Part	
4FSK Data			FCC Part 90.691 (EA)	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
814.9875	12.5		7.4865	7K60F1D



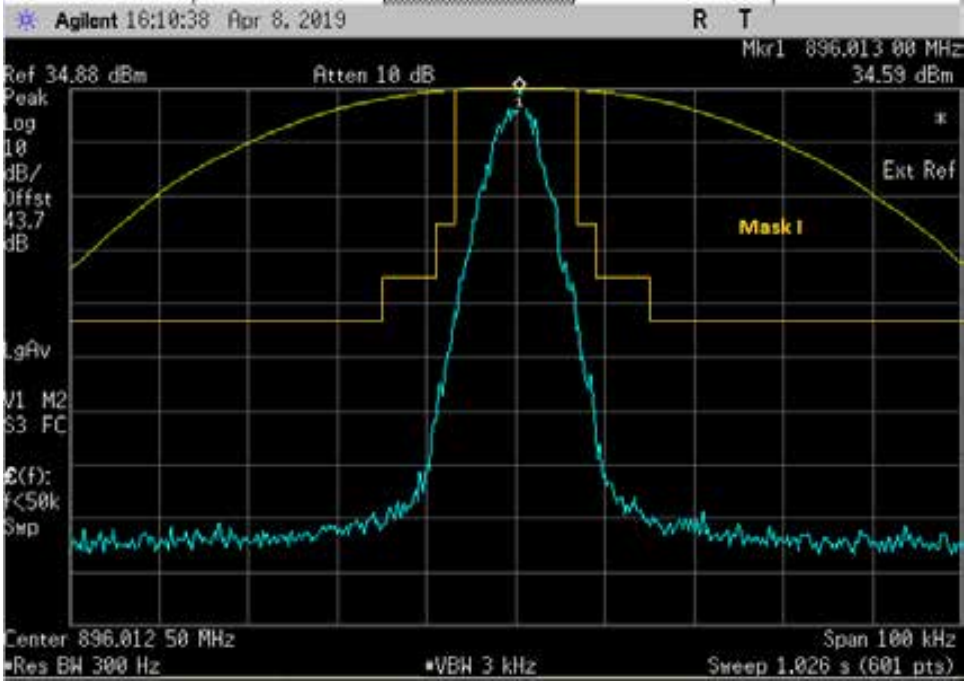
NOT FOR IC REVIEW

Modulation			Rules Part	
4FSK Data			FCC Part 90.691 (EA)	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
860.0125	12.5		7.6073	7K60F1D

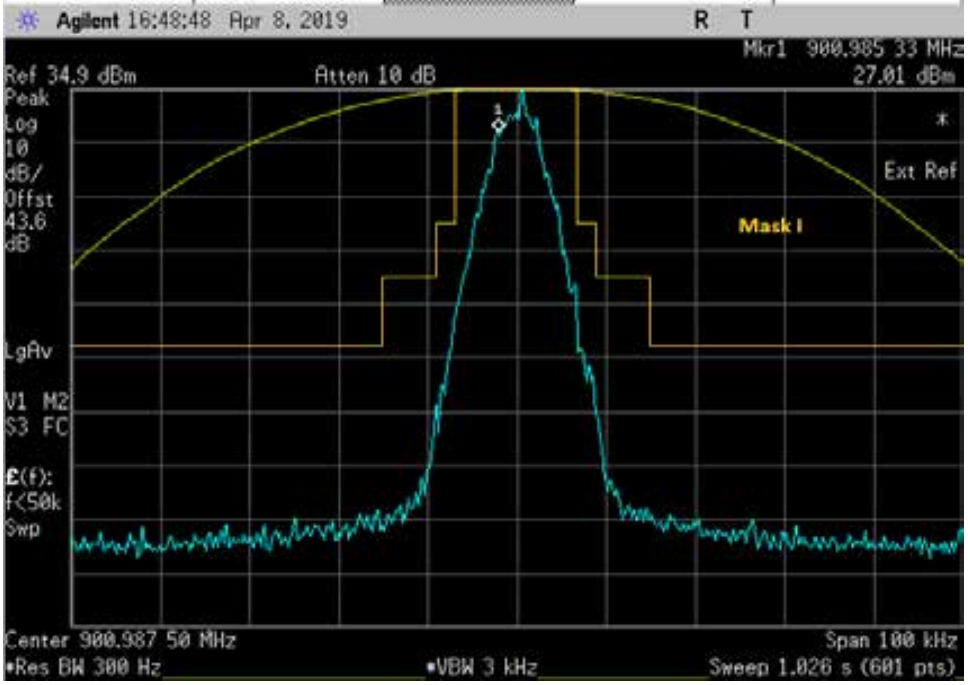


NOT FOR IC REVIEW

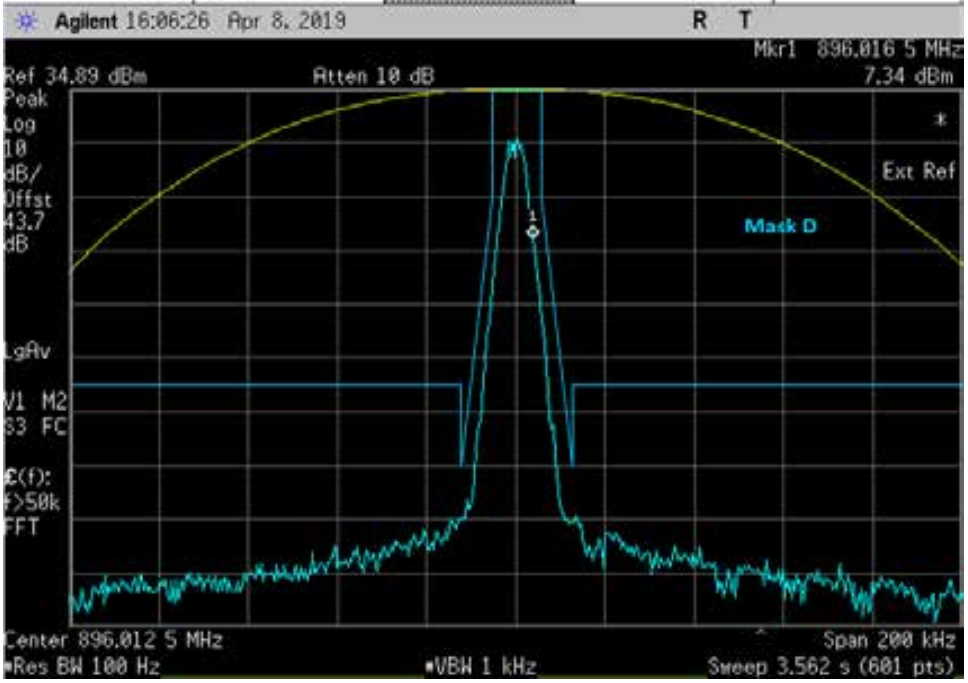
Modulation	Rules Part		
4FSK Data	90.210		
Channel Frequency (MHz)	**Channel Spacing (kHz)**	**99% OCB (kHz)**	**Emission Designator**
896.0125	12.5	6.8985	7K60F1D



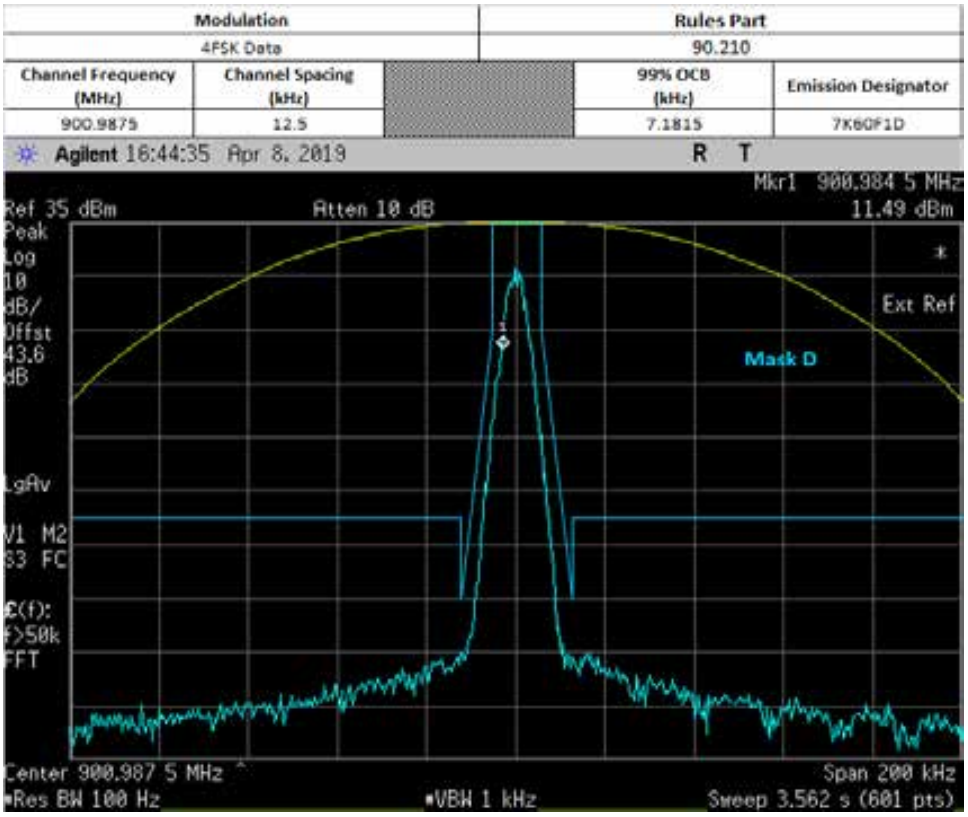
Modulation	Rules Part		
4FSK Data	90.210		
Channel Frequency (MHz)	**Channel Spacing (kHz)**	**99% OCB (kHz)**	**Emission Designator**
900.9875	12.5	7.3127	7K60F1D



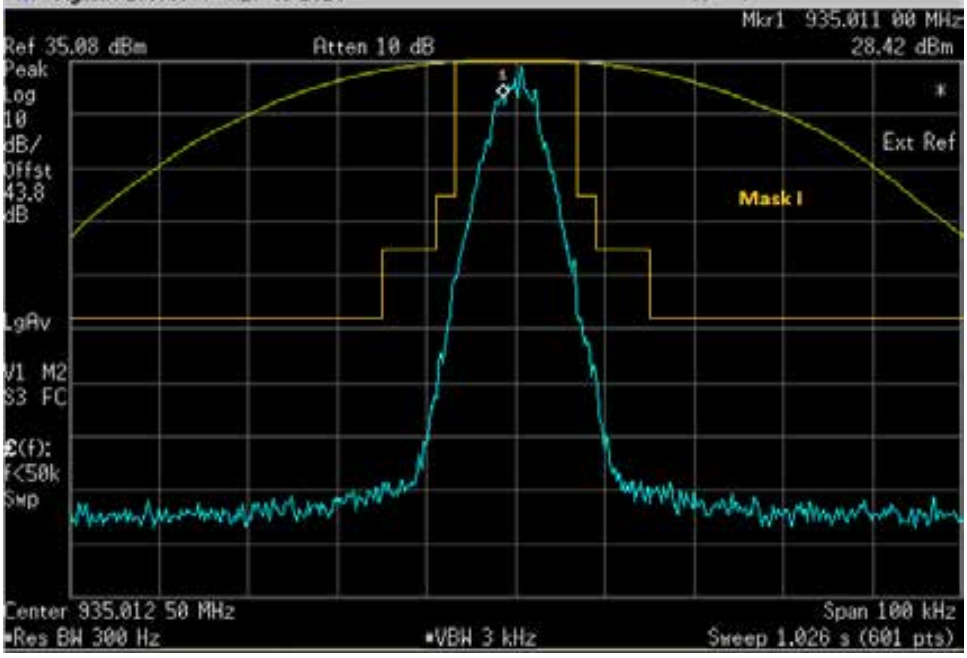
Modulation	Rules Part			
4FSK Data	90.210			
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
896.0125	12.5		6.7647	7K60F1D



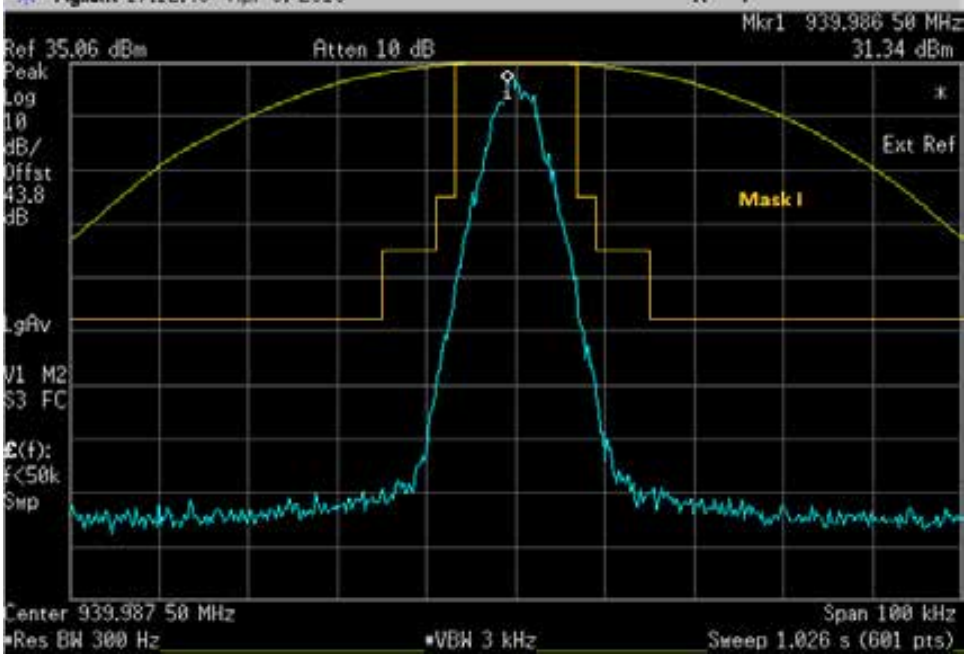
Modulation	Rules Part			
4FSK Data	90.210			
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
900.9875	12.5		7.1815	7K60F1D



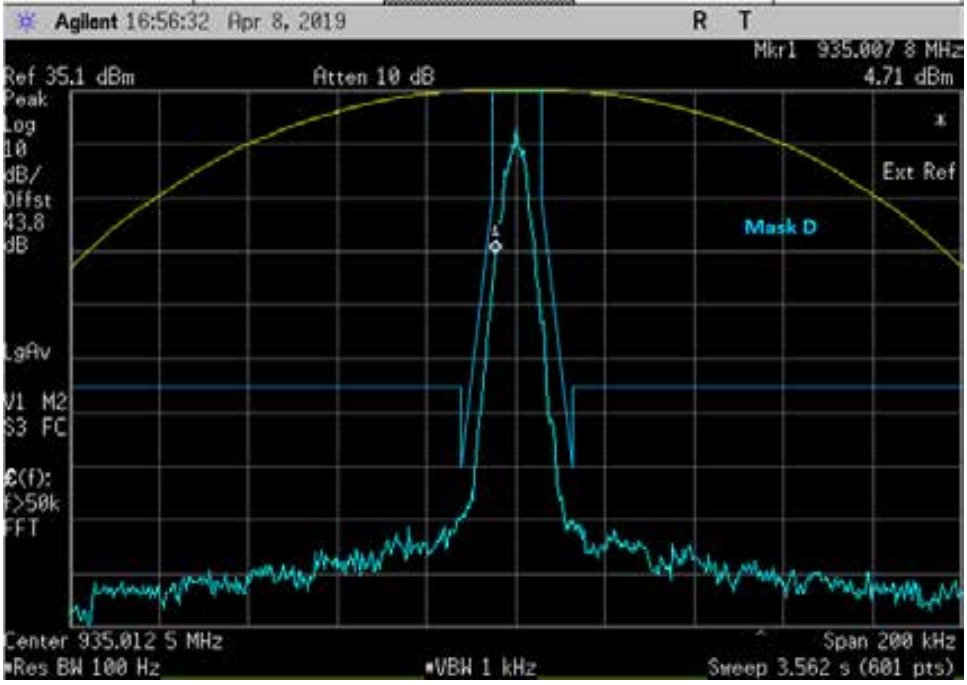
Modulation			Rules Part	
4FSK Data			90.210	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
935.0125	12.5		7.1773	7K60F1D



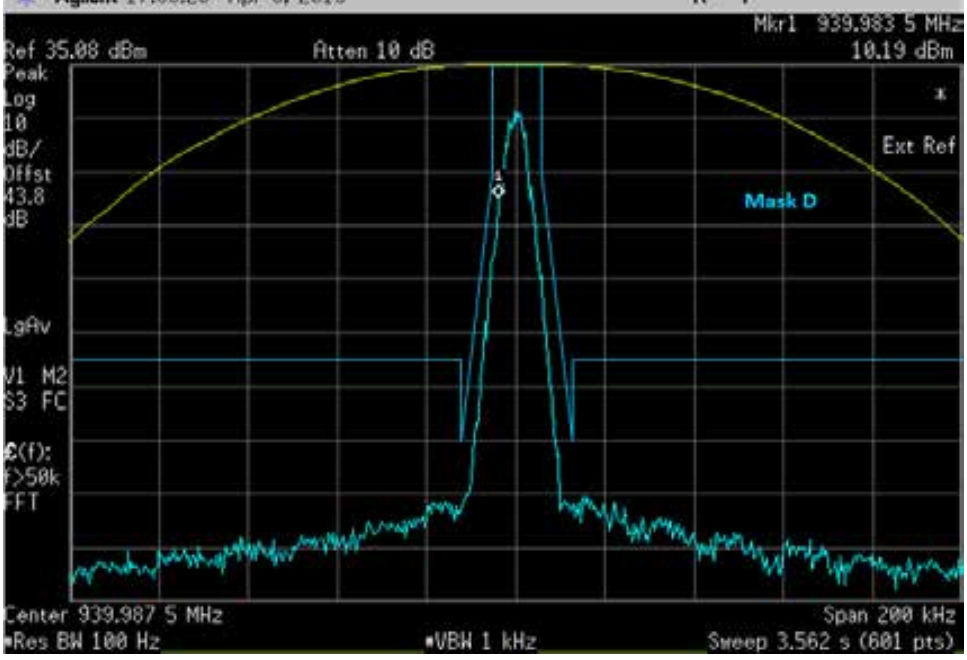
Modulation			Rules Part	
4FSK Data			90.210	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
939.9875	12.5		7.5301	7K60F1D



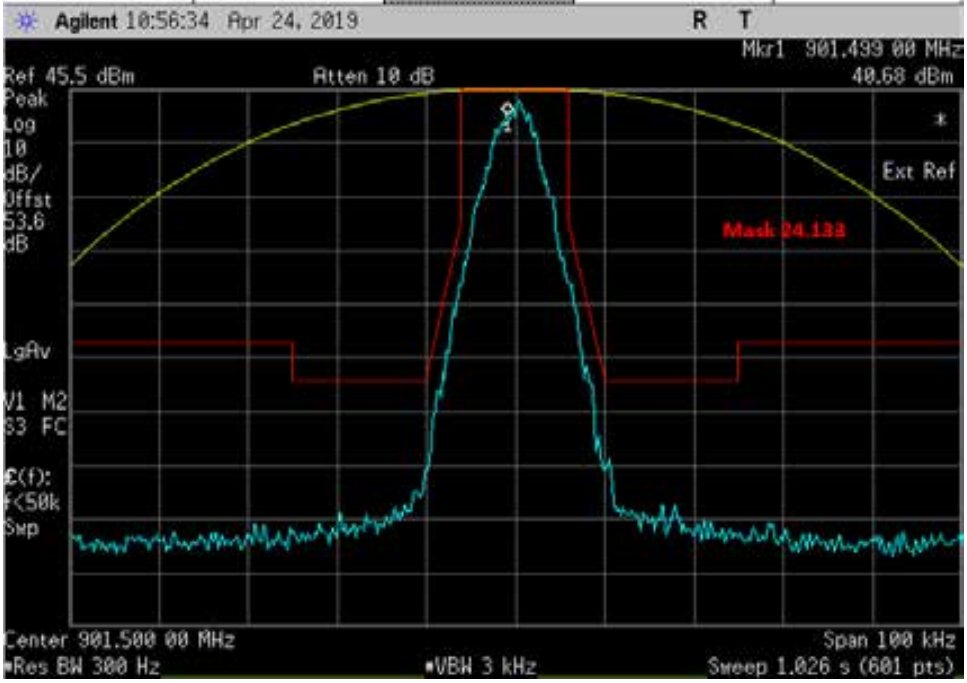
Modulation			Rules Part	
4FSK Data			90.210	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
935.0125	12.5		7.1125	7K60F1D



Modulation			Rules Part	
4FSK Data			90.210	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
939.9875	12.5		6.8677	7K60F1D



Modulation	Rules Part			
4FSK Data	24.133 / ISED RSS134			
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
901.5000	12.5		7.2900	7K60F1D



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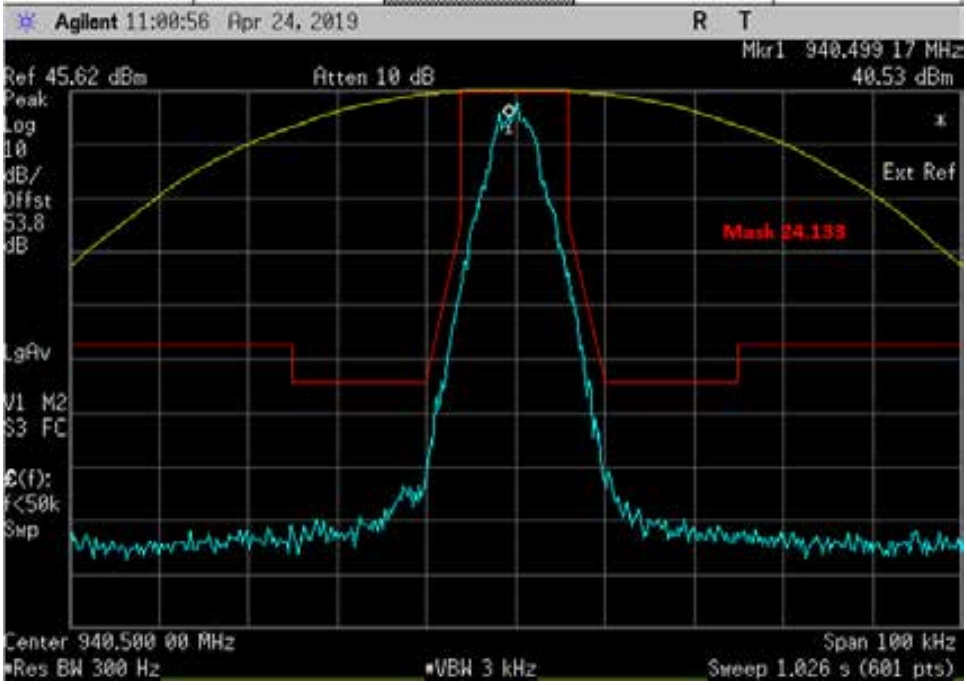
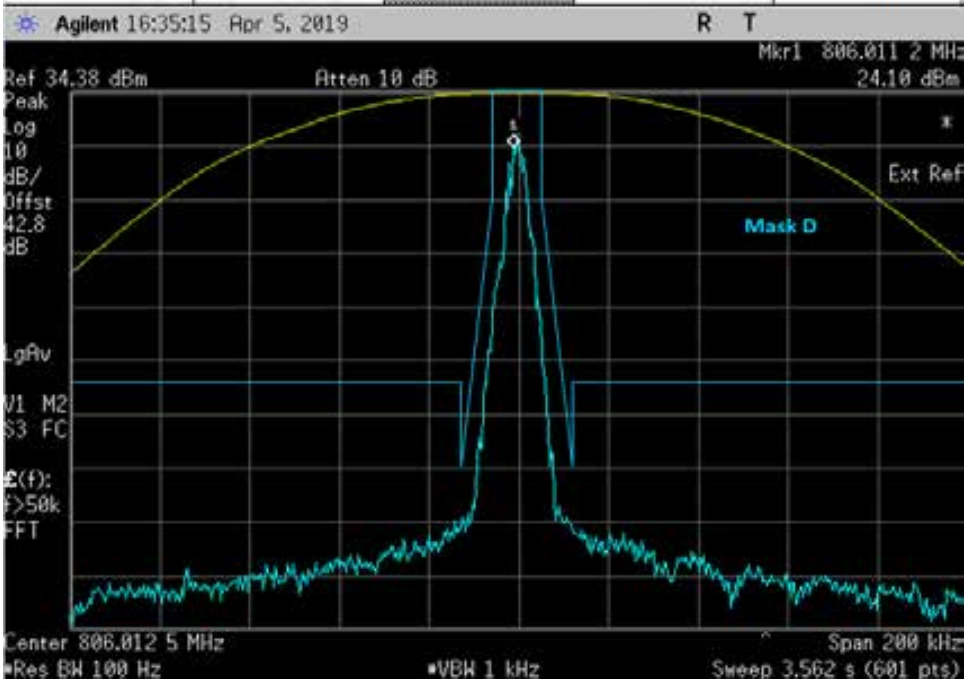
Modulation	Rules Part			
4FSK Data	24.133 / ISED RSS134			
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
940.5000	12.5		7.1707	7K60F1D



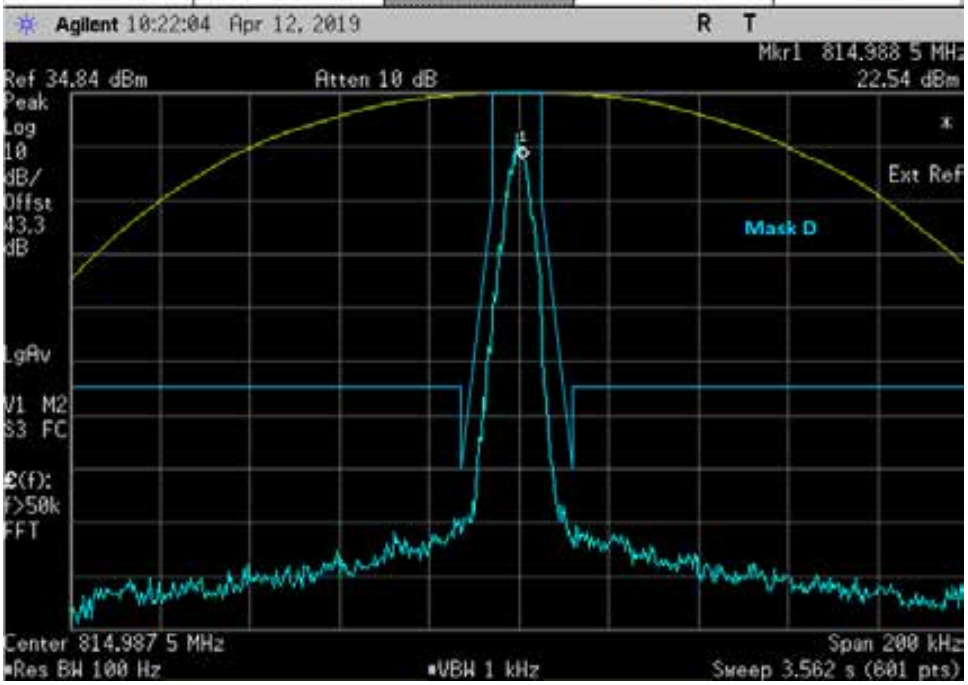
Part 24

6.6.5. Test Result (Digital Voice)

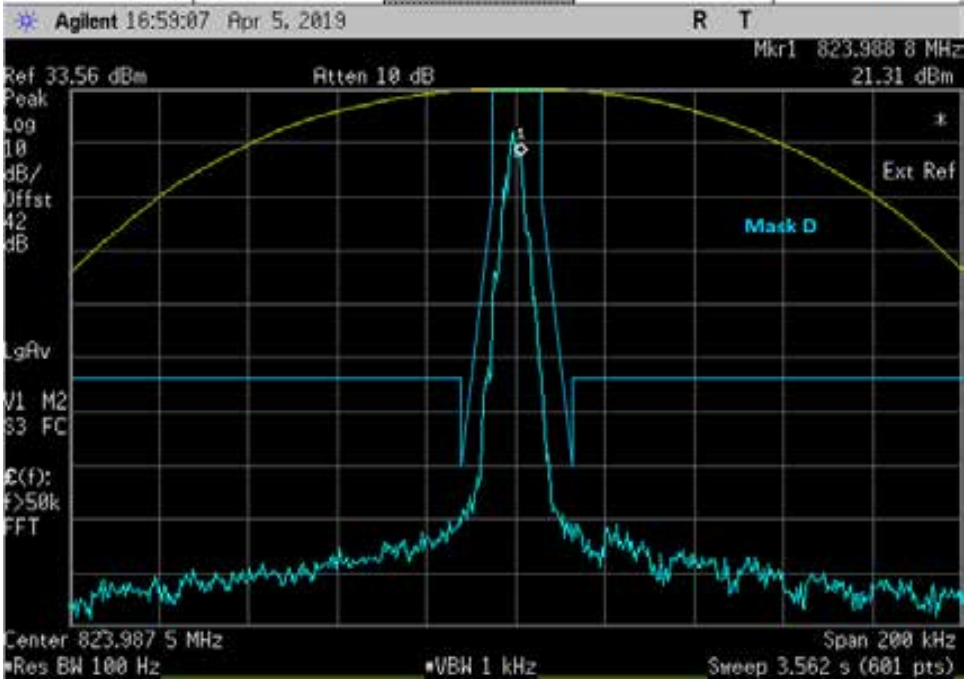
Modulation	Rules Part			
4FSK Voice	90.210/ RSS 119			
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
806.0125	12.5		6.9016	7K60F1E



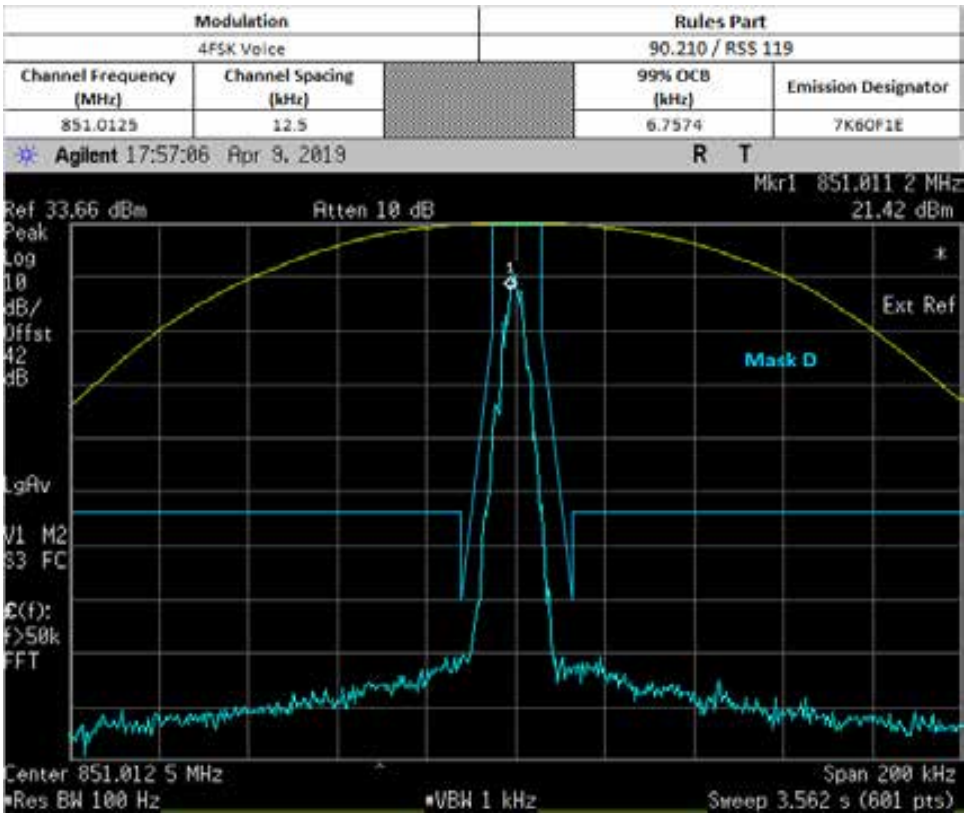
Modulation	Rules Part			
4FSK Voice	90.210 / RSS 119			
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
814.9875	12.5		6.8038	7K60F1E



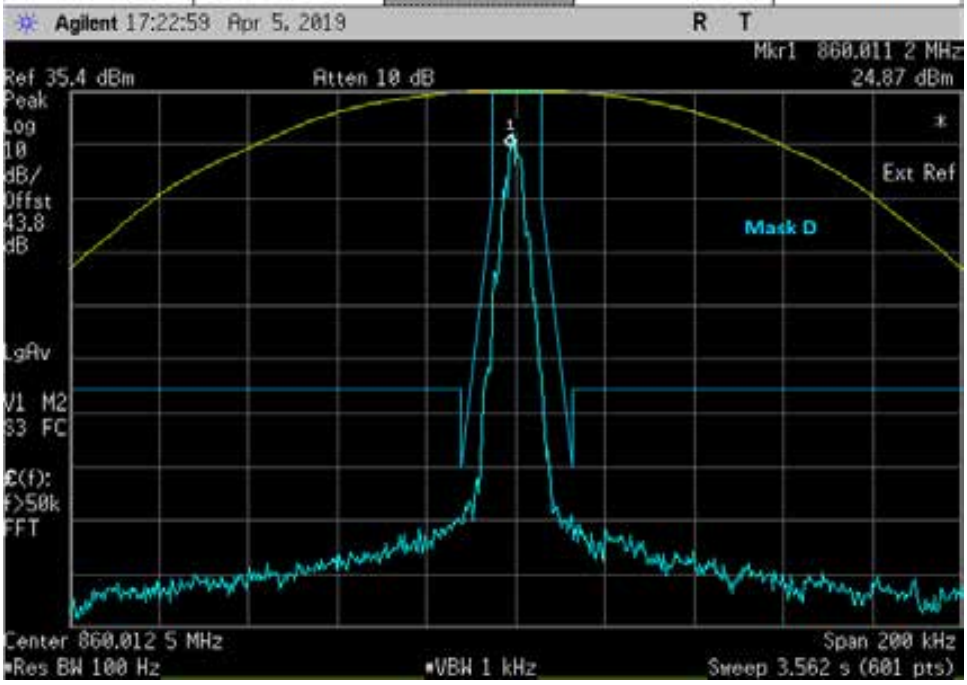
Modulation	Rules Part			
4FSK Voice	90.210 / RSS 119			
Channel Frequency (MHz)	**Channel Spacing (kHz)**		**99% OCB (kHz)**	**Emission Designator**
823.9875	12.5		5.9472	7K60F1E



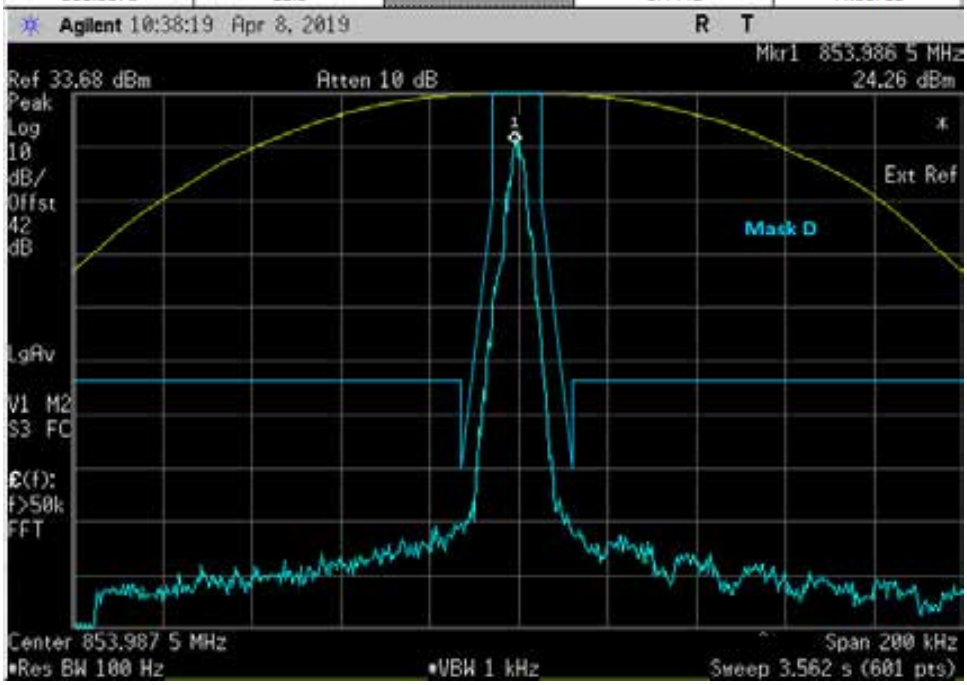
Modulation	Rules Part			
4FSK Voice	90.210 / RSS 119			
Channel Frequency (MHz)	**Channel Spacing (kHz)**		**99% OCB (kHz)**	**Emission Designator**
851.0125	12.5		6.7574	7K60F1E



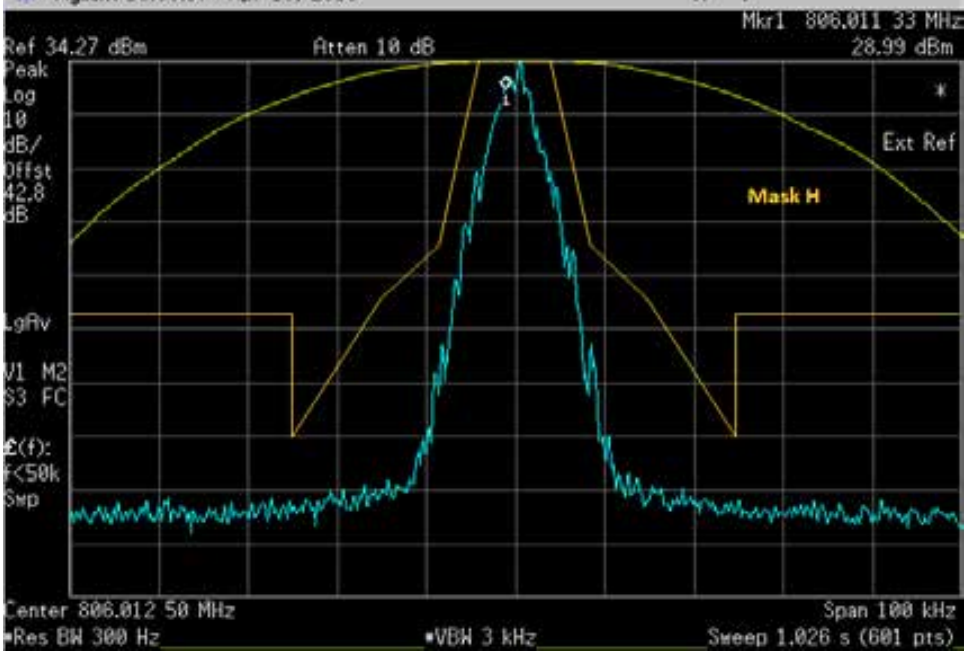
Modulation	Rules Part			
4FSK Voice	90.210 / RSS 119			
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
860.0125	12.5		6.2220	7K60F1E



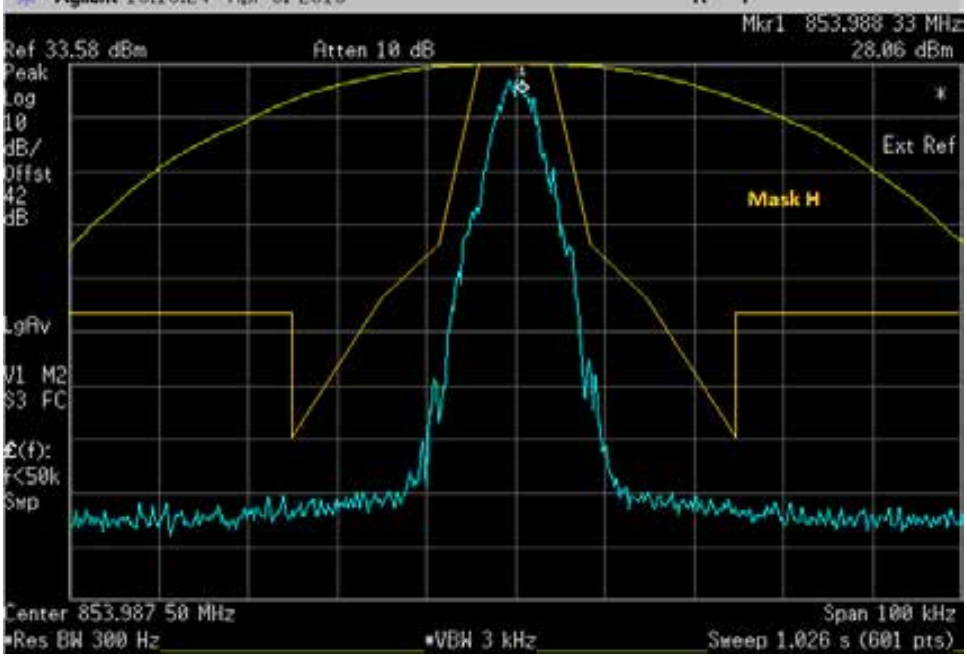
Modulation	Rules Part			
4FSK Voice	90.210 / RSS 119			
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
868.8875	12.5		6.4441	7K60F1E



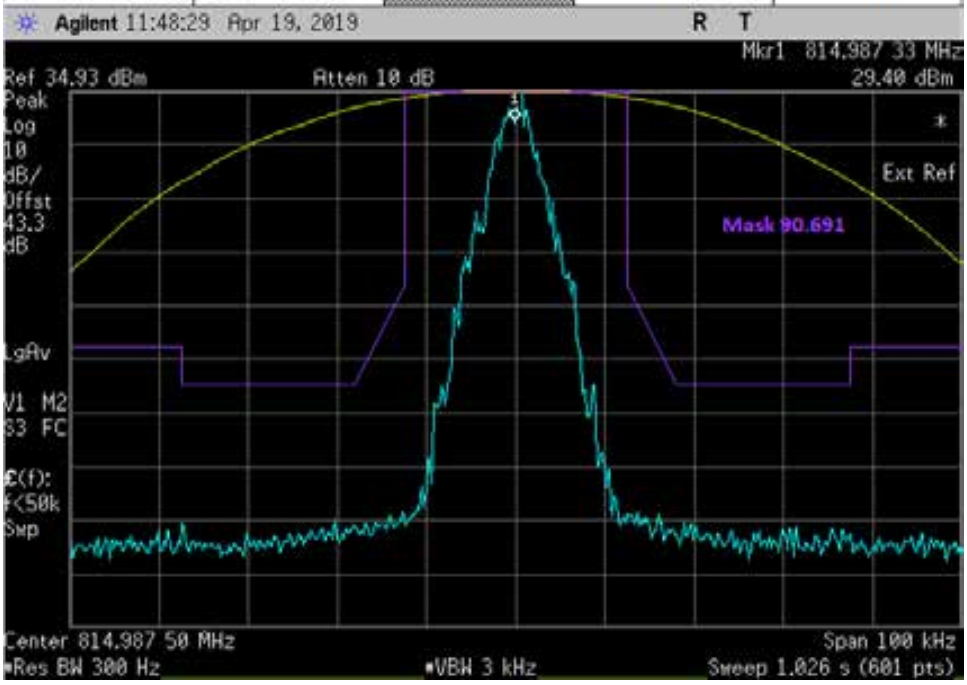
Modulation			Rules Part	
4FSK Voice			90.210	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
806.0125	12.5		6.1851	7K60F1E



Modulation			Rules Part	
4FSK Voice			90.210	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
853.9875	12.5		6.7602	7K60F1E

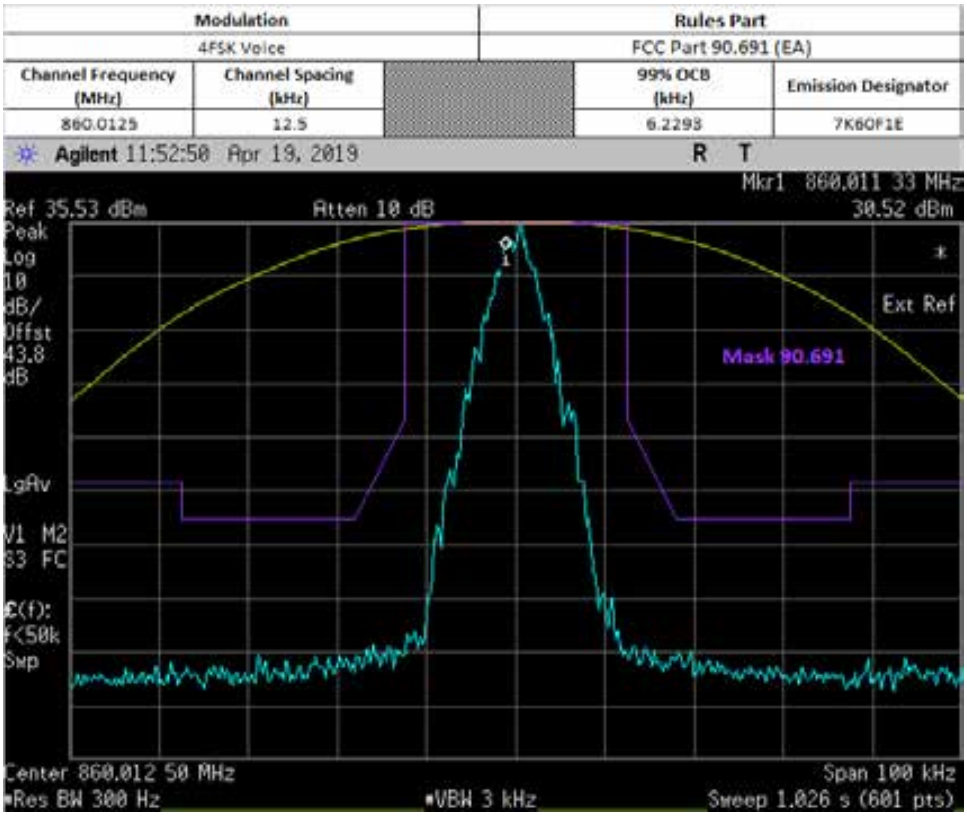


Modulation	Rules Part			
4FSK Voice	FCC Part 90.691 (EA)			
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
814.9875	12.5		6.5214	7K60F1E



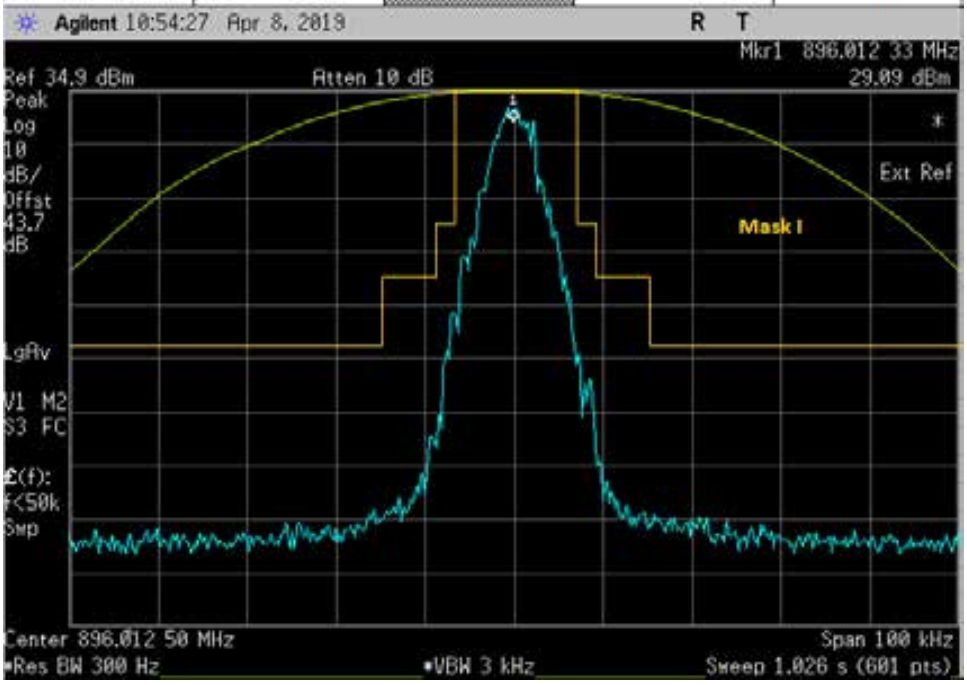
NOT FOR IC REVIEW

Modulation	Rules Part			
4FSK Voice	FCC Part 90.691 (EA)			
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
860.0125	12.5		6.2293	7K60F1E

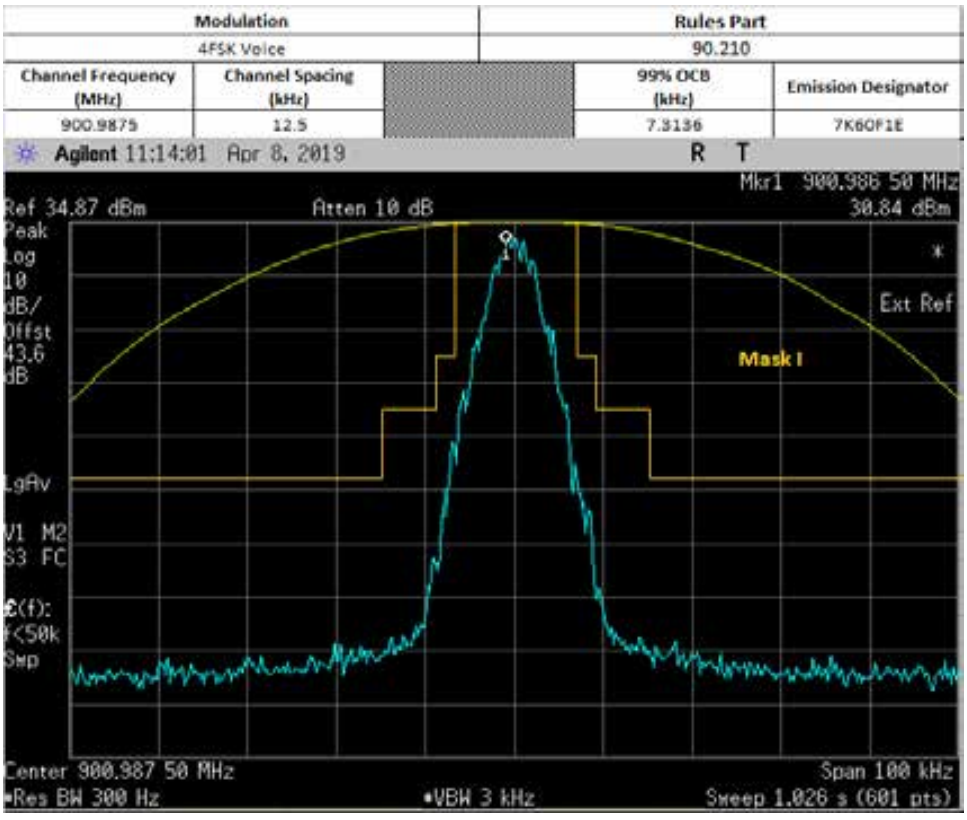


NOT FOR IC REVIEW

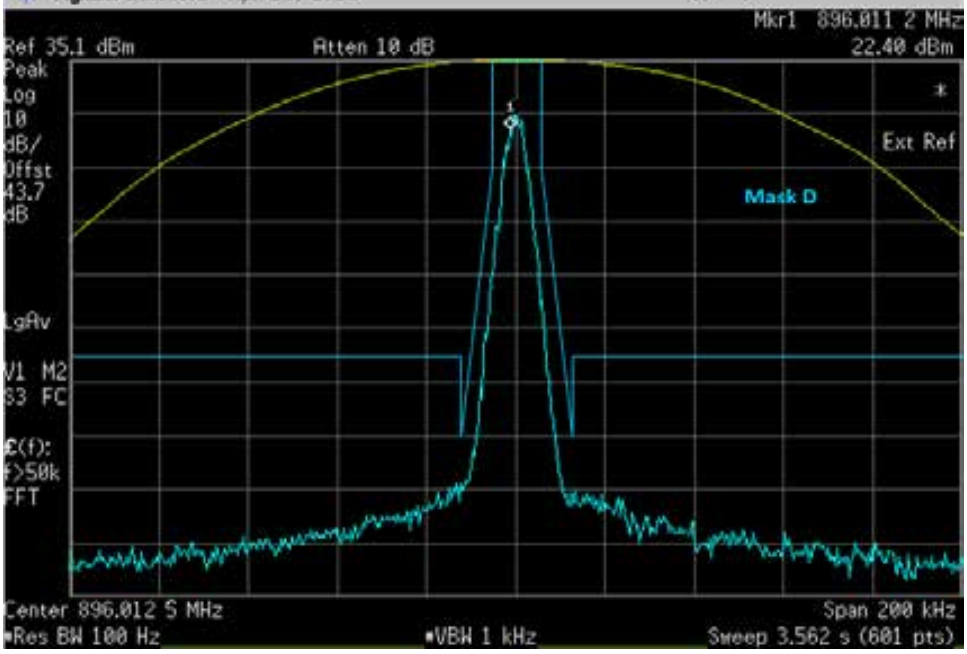
Modulation			Rules Part	
4FSK Voice			90.210	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
896.0125	12.5		6.0264	7K60F1E



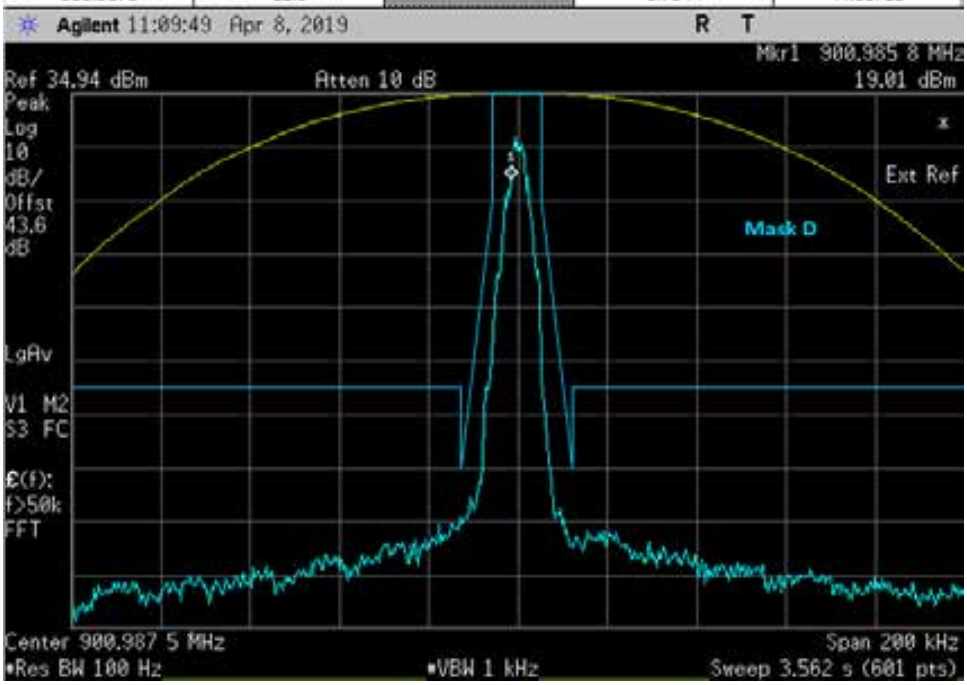
Modulation			Rules Part	
4FSK Voice			90.210	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
900.9875	12.5		7.3136	7K60F1E



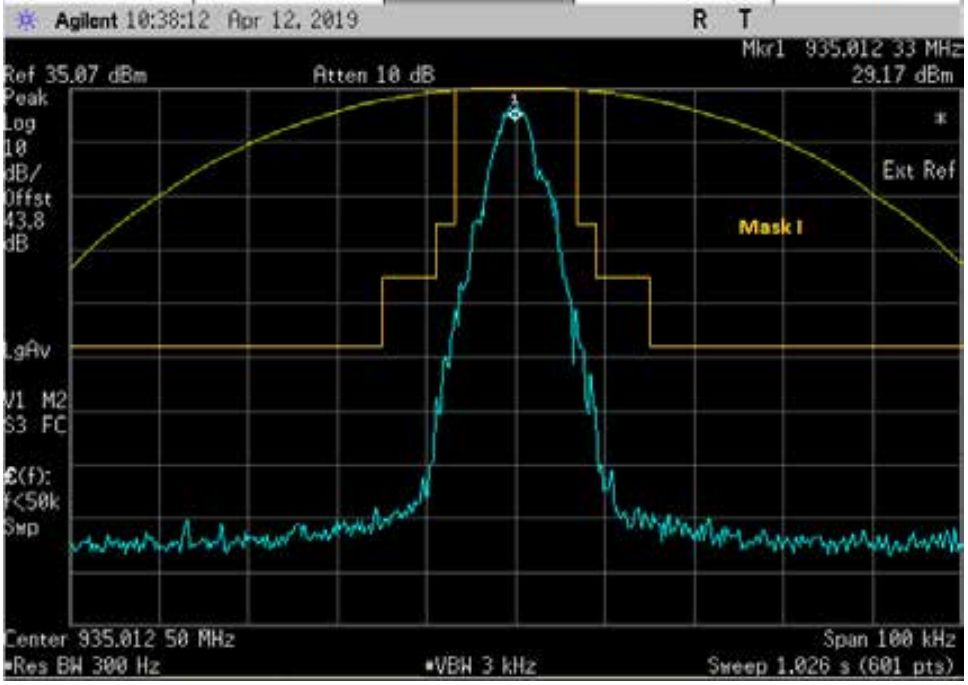
Modulation			Rules Part	
4FSK Voice			90.210	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
896.0125	12.5		7.3788	7K60F1E



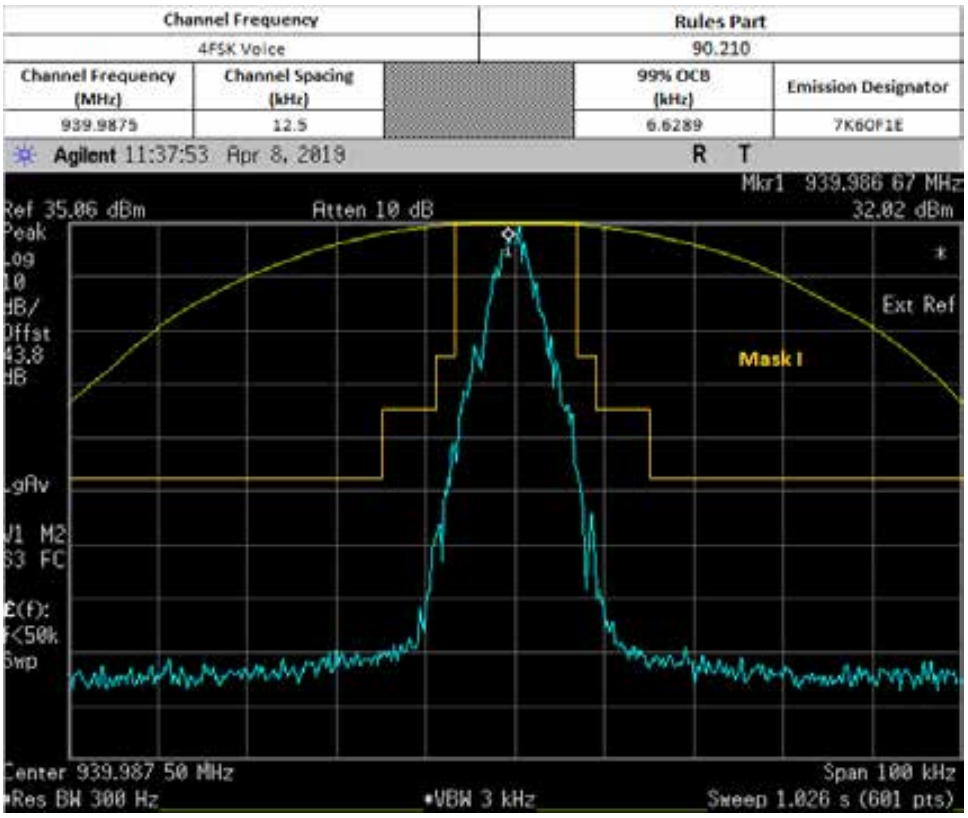
Modulation			Rules Part	
4FSK Voice			90.210	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
900.9875	12.5		6.7844	7K60F1E



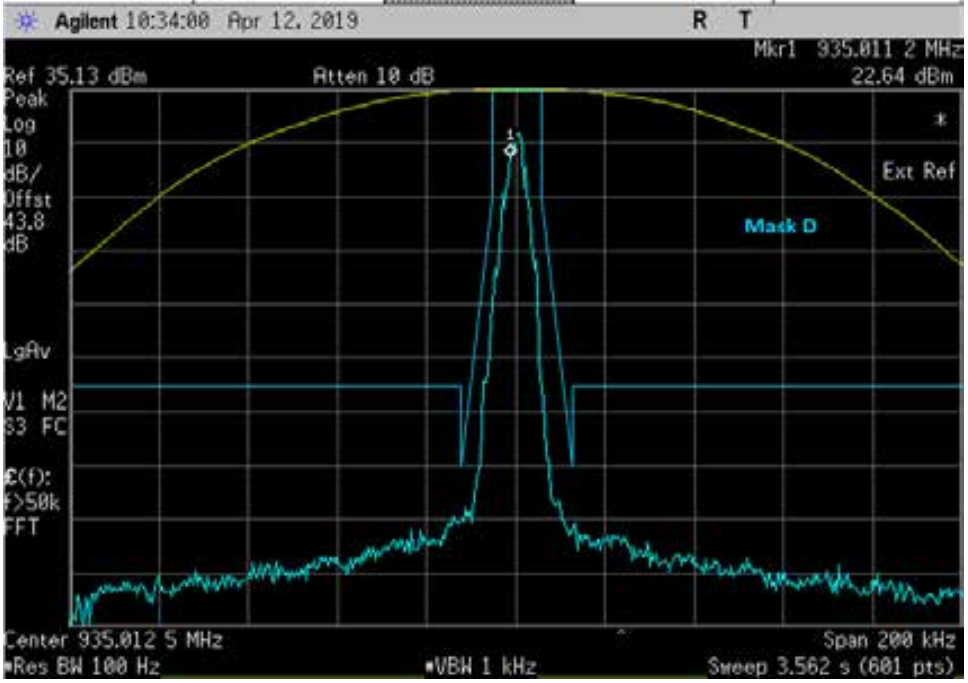
Modulation			Rules Part	
4FSK Voice			90.210	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
935.0125	12.5		6.5938	7K60F1E



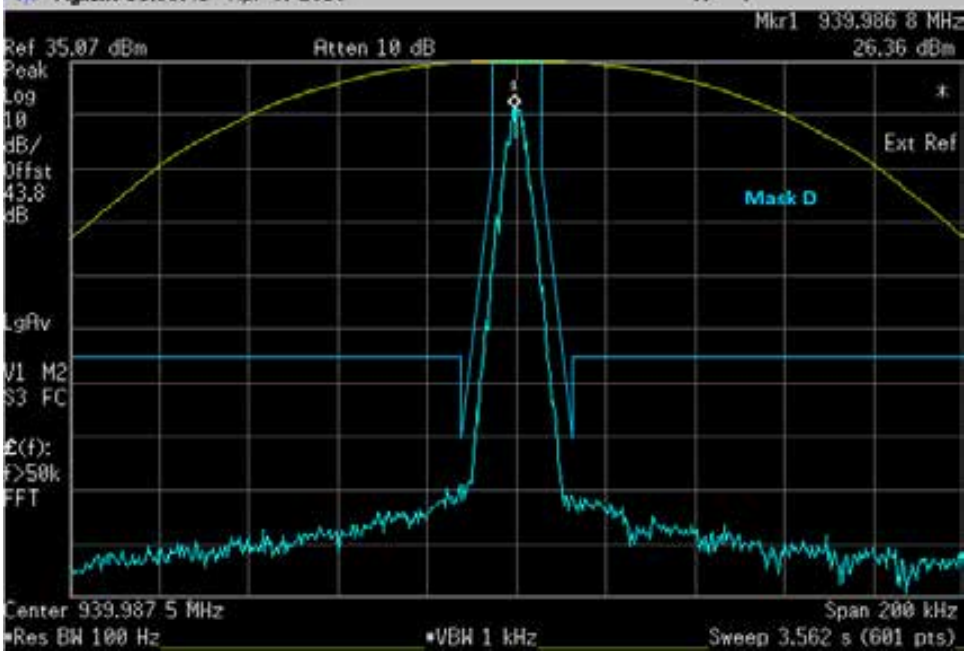
Channel Frequency			Rules Part	
4FSK Voice			90.210	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
939.9875	12.5		6.6289	7K60F1E



Modulation	Rules Part		
4FSK Voice	90.210		
Channel Frequency (MHz)	**Channel Spacing (kHz)**	**99% OCB (kHz)**	**Emission Designator**
935.0125	12.5	7.0060	7K60F1E

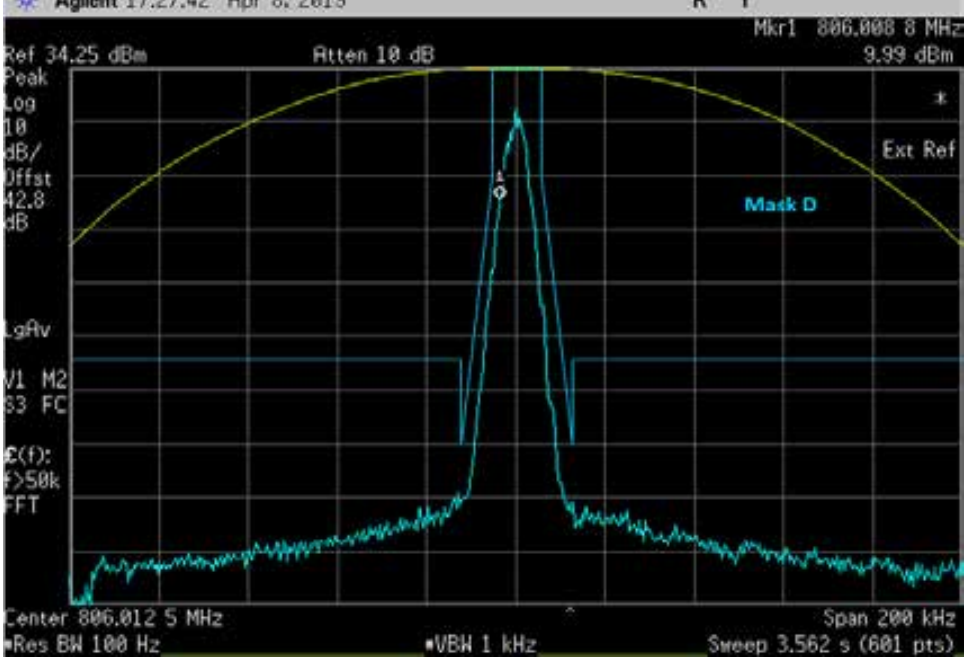


Modulation	Rules Part		
4FSK Voice	90.210		
Channel Frequency (MHz)	**Channel Spacing (kHz)**	**99% OCB (kHz)**	**Emission Designator**
939.9875	12.5	6.6053	7K60F1E

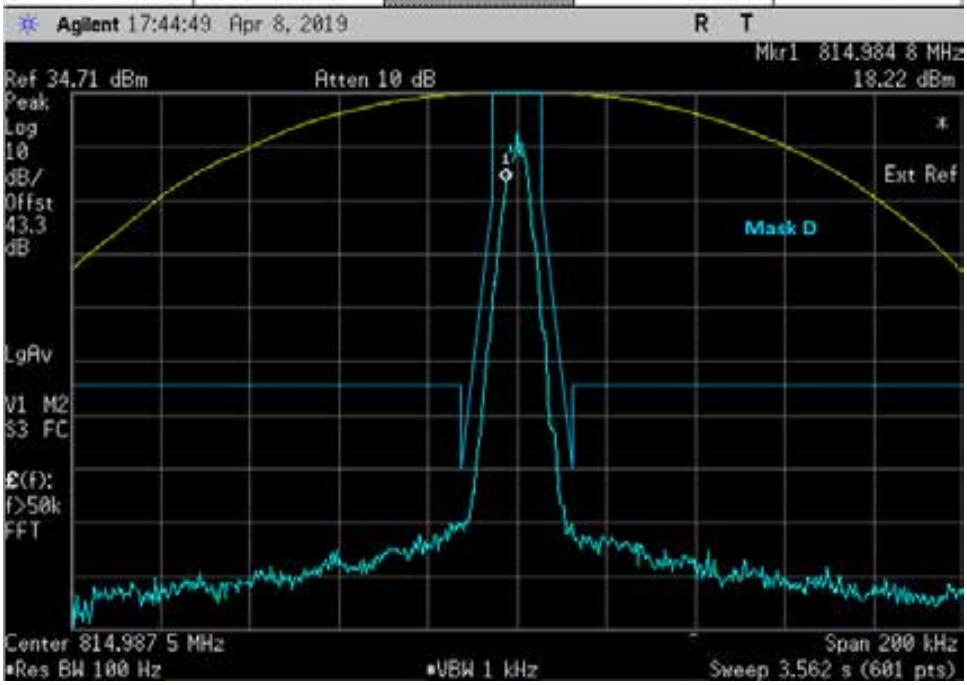


6.6.6. Test Result (Digital Phase 2)

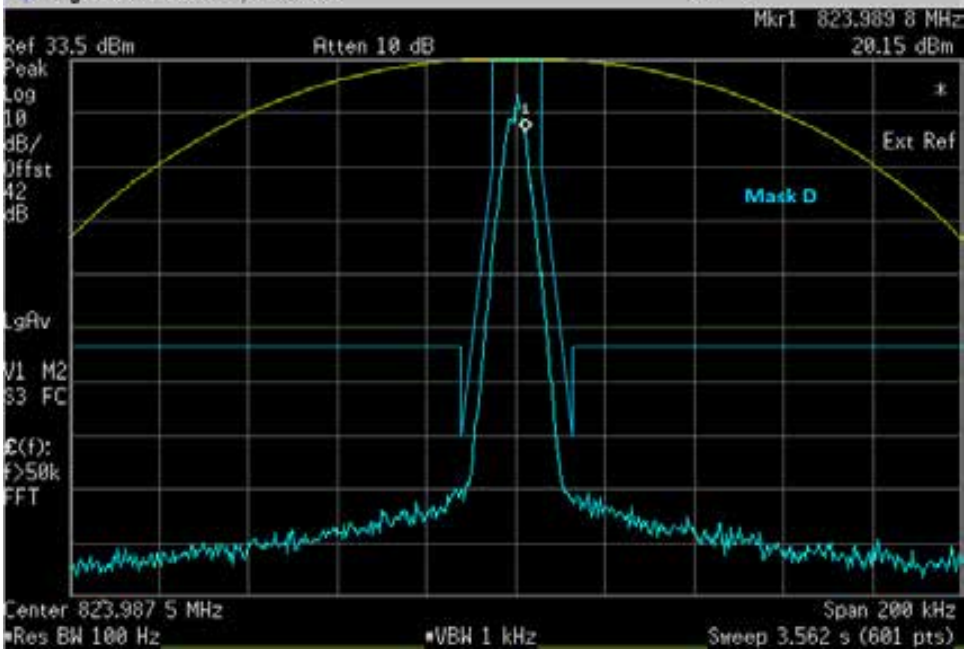
Modulation	Rules Part			
4F5K Data+Voice	90.210			
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
806.0125	12.5		7.2781	7K60F1W



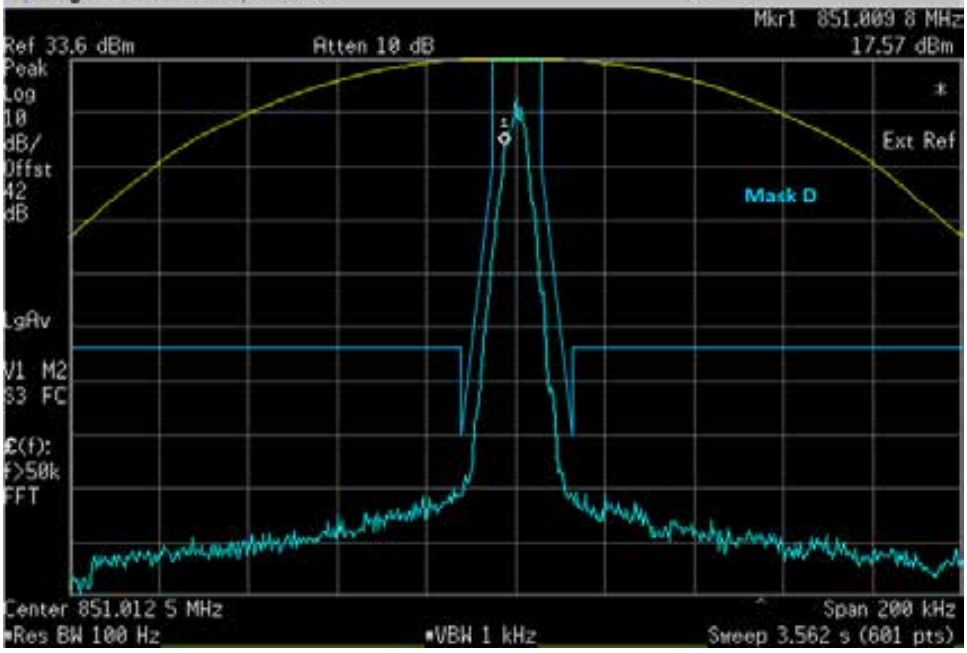
Modulation	Rules Part			
4F5K Data+Voice	90.210			
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
814.9875	12.5		7.4389	7K60F1W



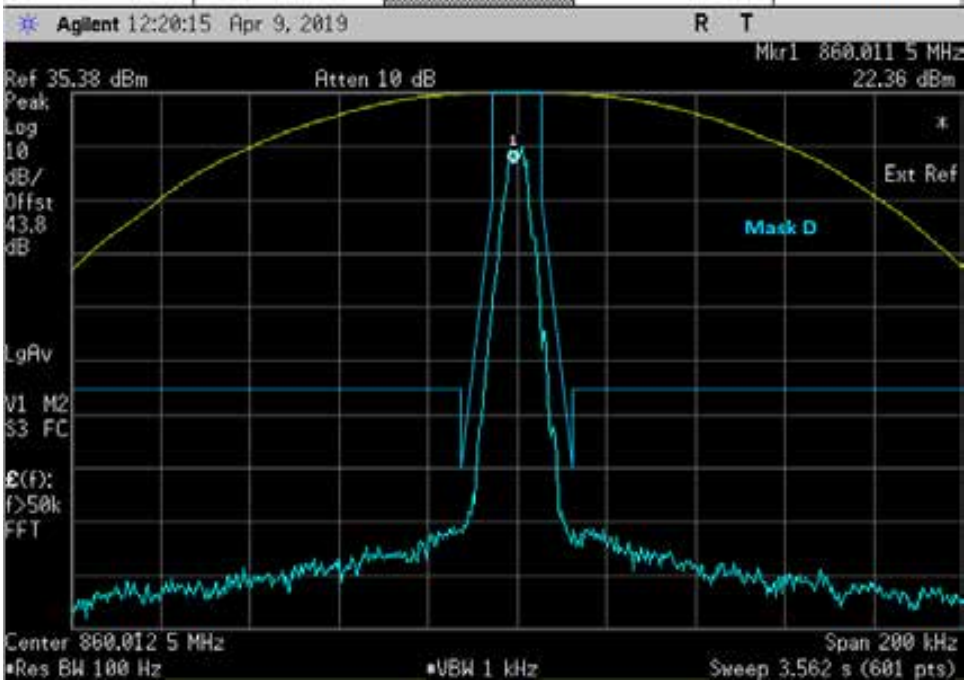
Modulation	Rules Part			
4F5K Data+Voice	90.210			
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
823.9875	12.5		7.3969	7K60F1W



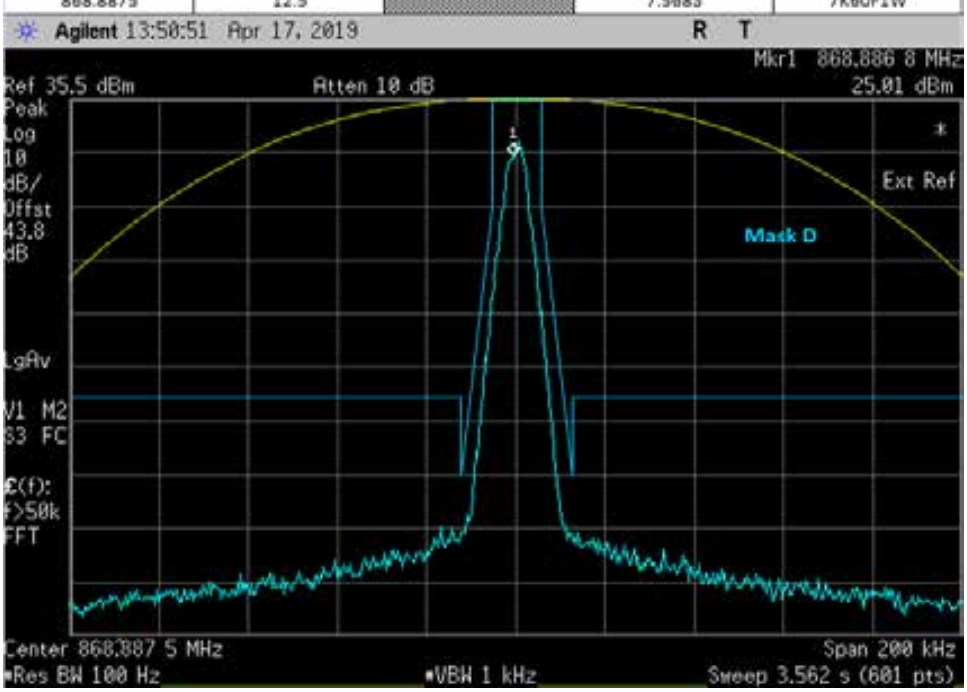
Modulation	Rules Part			
4F5K Data+Voice	90.210			
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
851.0125	12.5		6.9049	7K60F1W



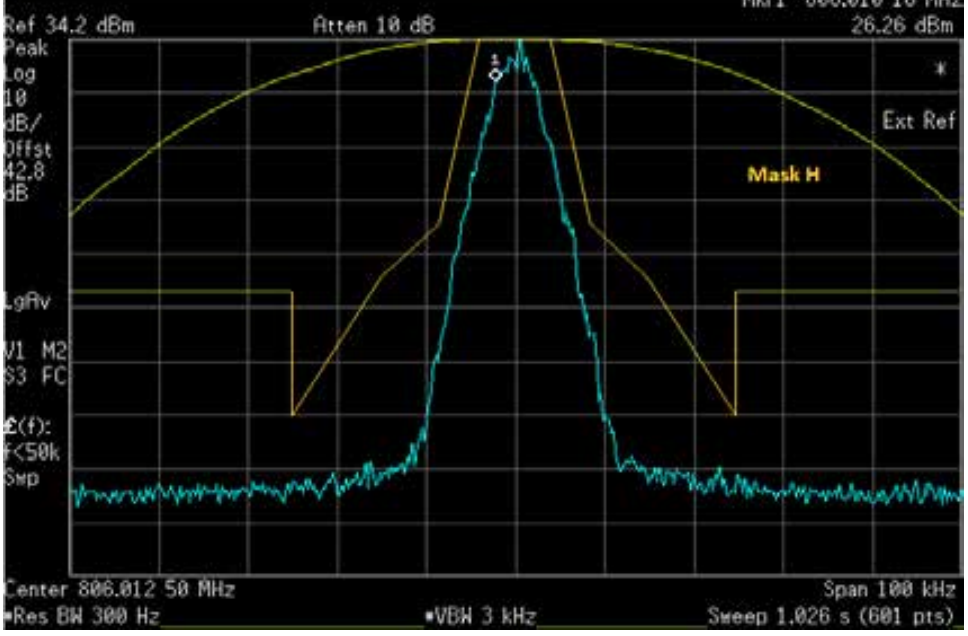
Modulation			Rules Part	
4F5K Data+Voice			90.210	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
860.0125	12.5		7.4480	7K60F1W



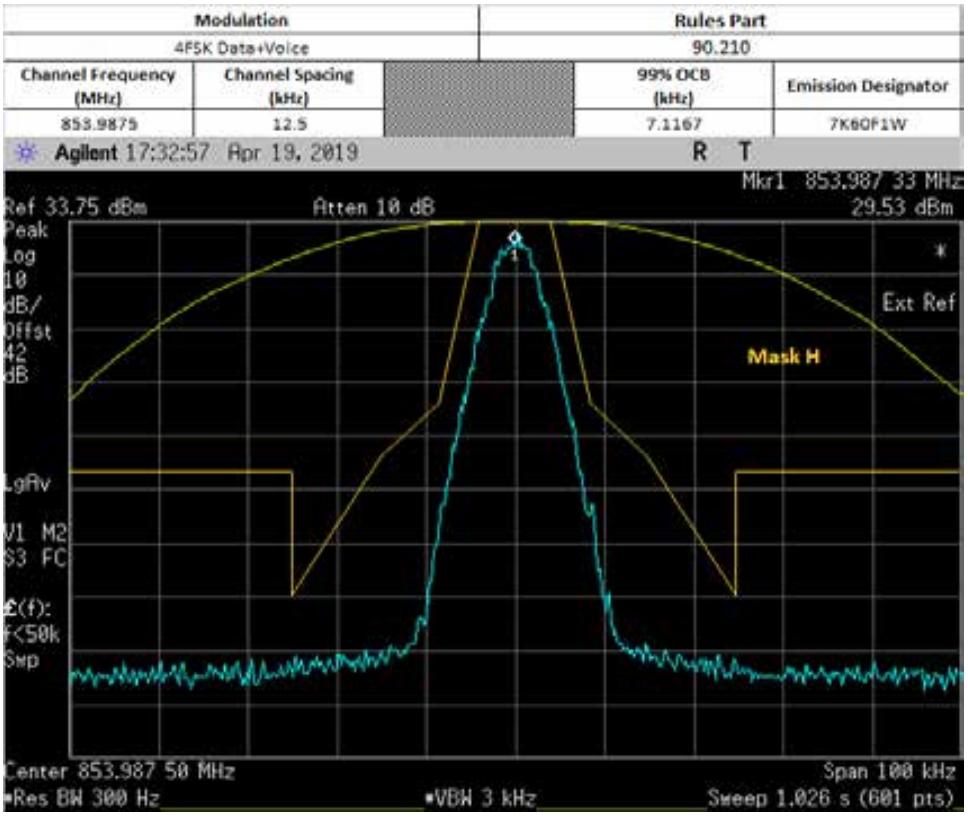
Modulation			Rules Part	
4F5K Data+Voice			90.210	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
868.8875	12.5		7.5683	7K60F1W



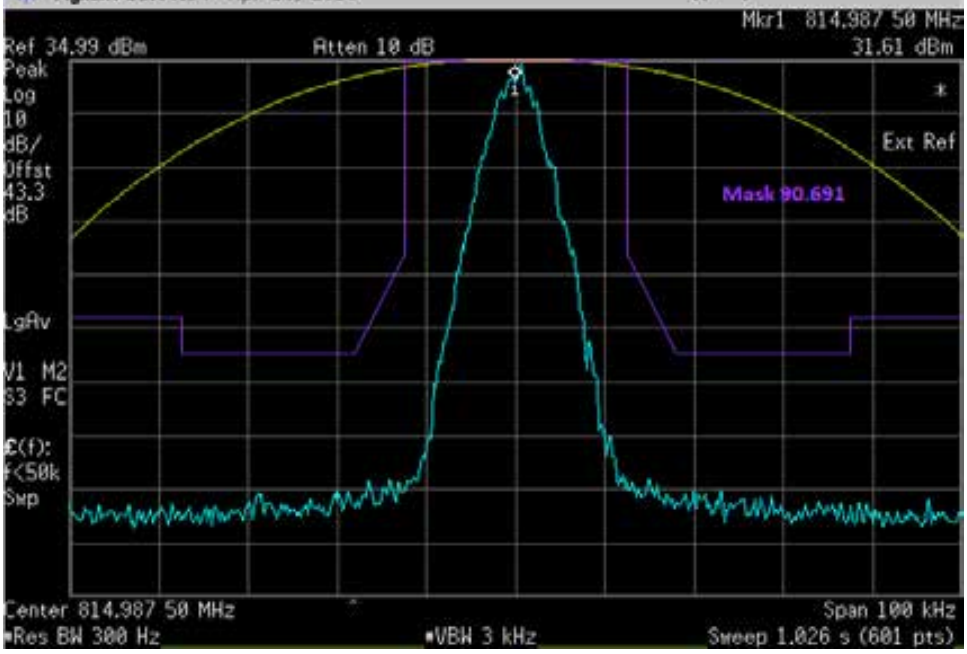
Modulation	Rules Part			
4F5K Data+Voice	90.210			
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
806.0125	12.5		7.3276	7K60F1W



Modulation	Rules Part			
4F5K Data+Voice	90.210			
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
853.9875	12.5		7.1167	7K60F1W

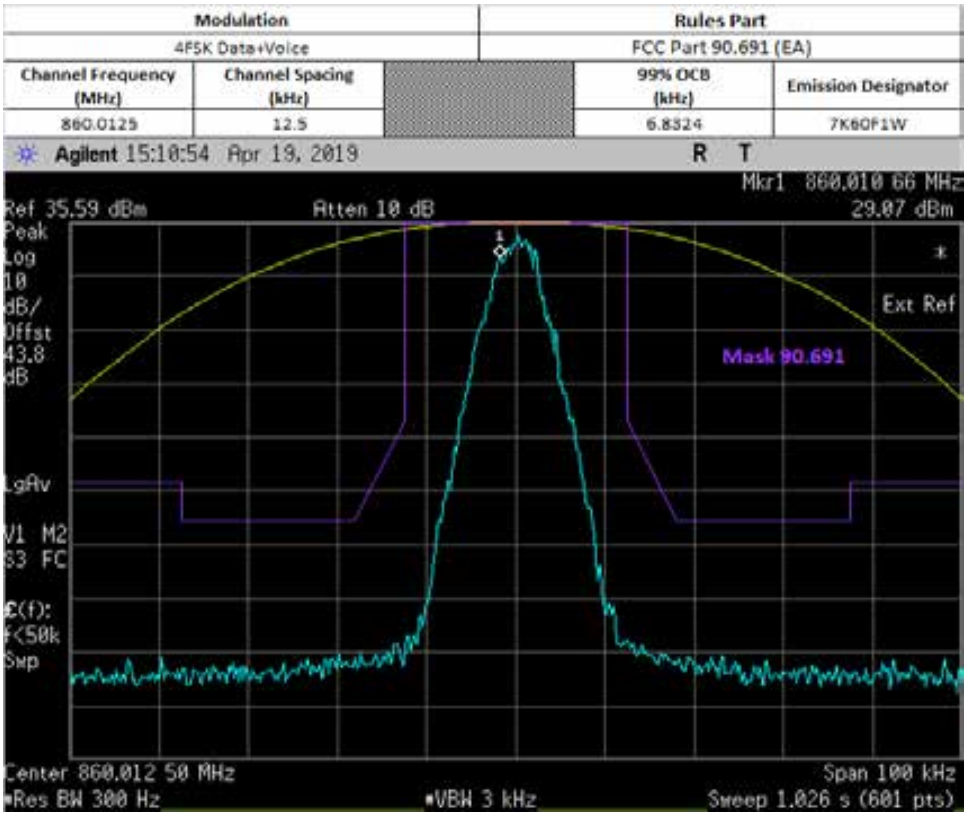


Modulation			Rules Part	
4F5K Data+Voice			FCC Part 90.691 (EA)	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
814.9875	12.5		7.1775	7K60F1W



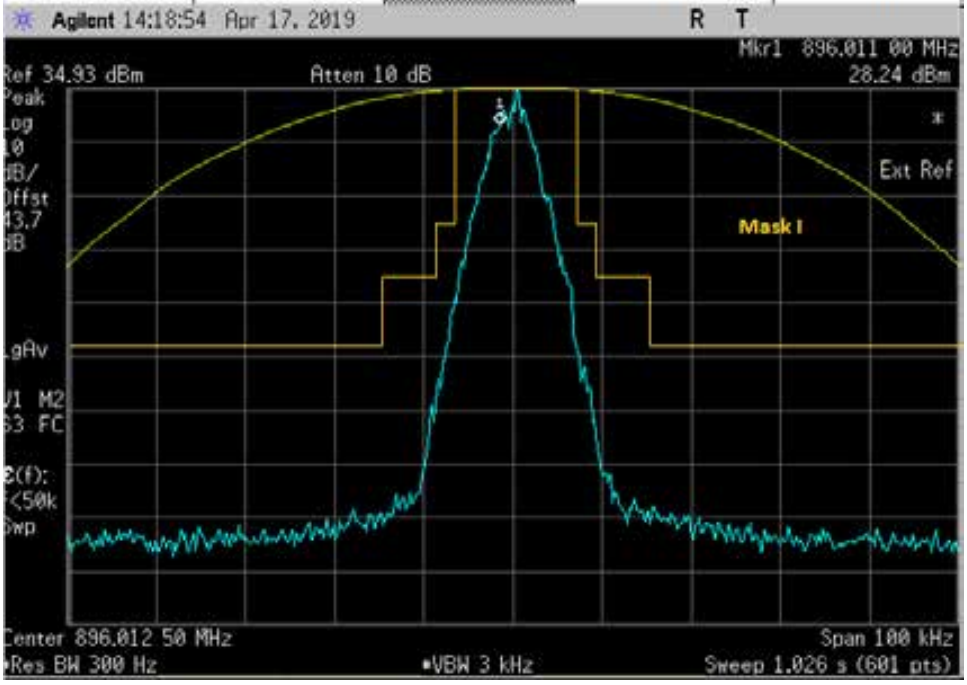
NOT FOR IC REVIEW

Modulation			Rules Part	
4F5K Data+Voice			FCC Part 90.691 (EA)	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
860.0125	12.5		6.8324	7K60F1W

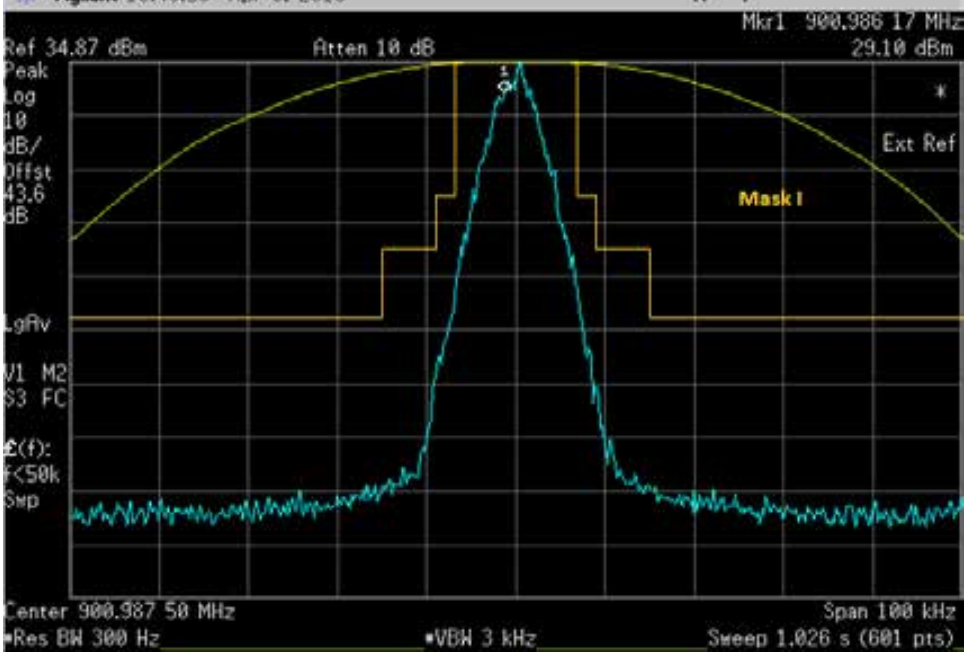


NOT FOR IC REVIEW

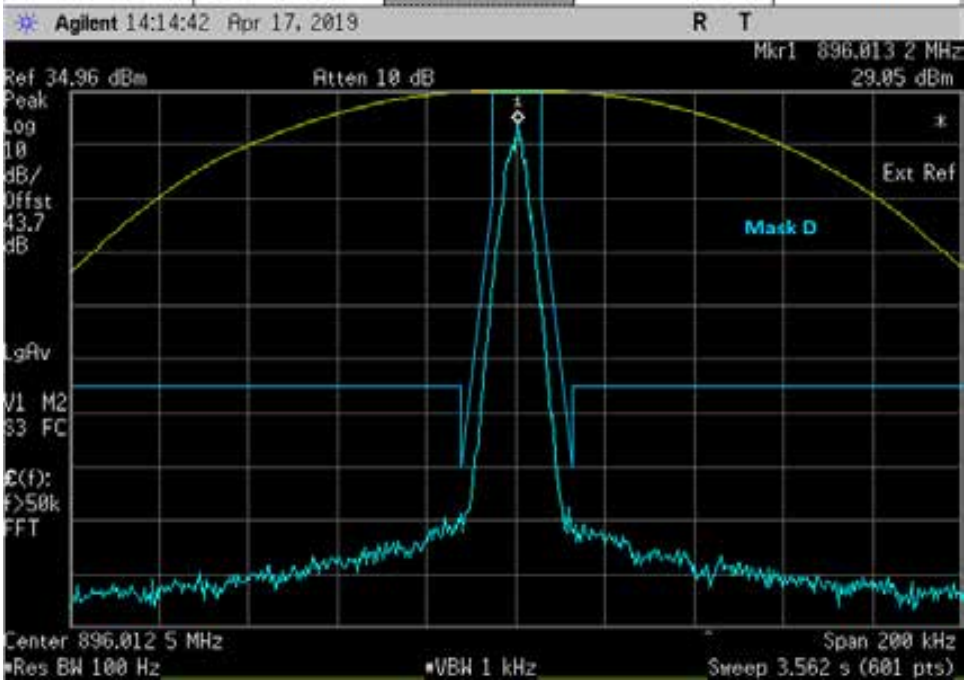
Modulation			Rules Part	
4F5K Data+Voice			90.210	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
896.0125	12.5		6.8080	7K60F1W



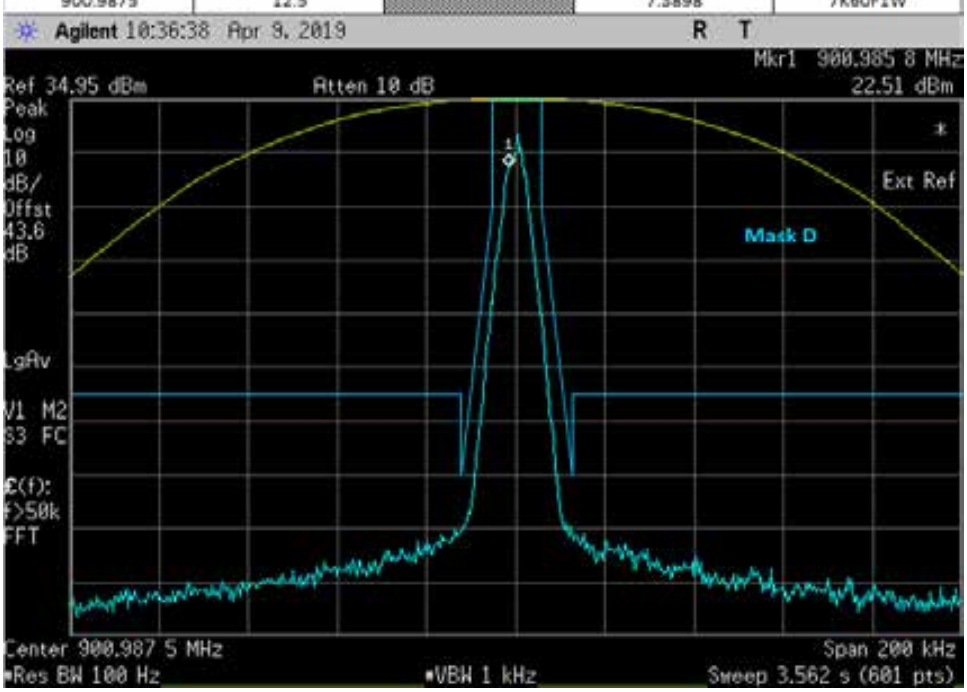
Modulation			Rules Part	
4F5K Data+Voice			90.210	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
900.9875	12.5		7.3354	7K60F1W



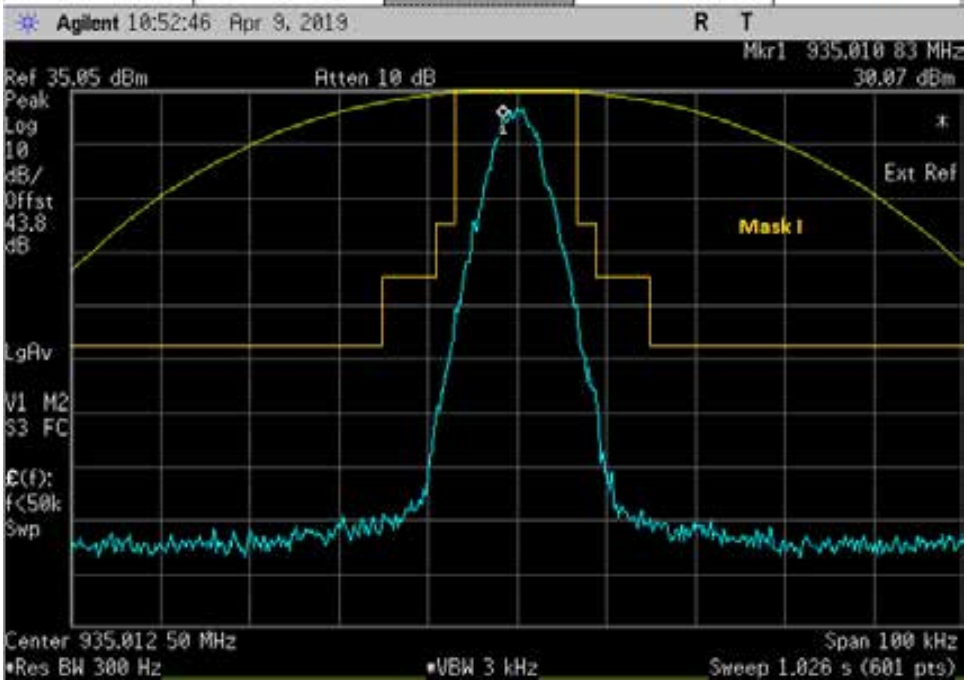
Modulation			Rules Part	
4F5K Data+Voice			90.210	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
896.0125	12.5		7.4422	7K60F1W



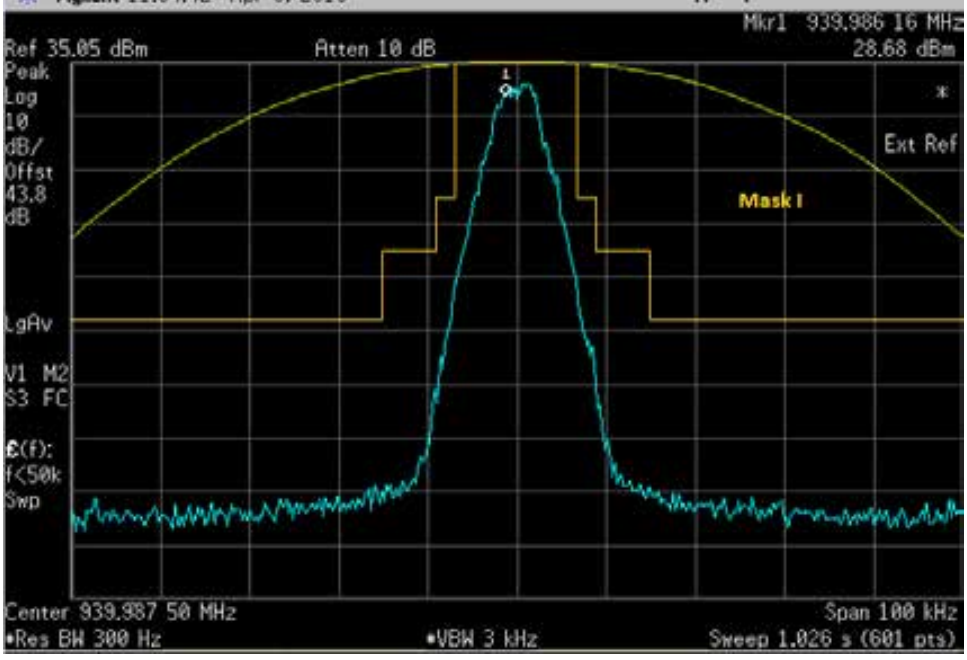
Modulation			Rules Part	
4F5K Data+Voice			90.210	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
900.9875	12.5		7.3898	7K60F1W



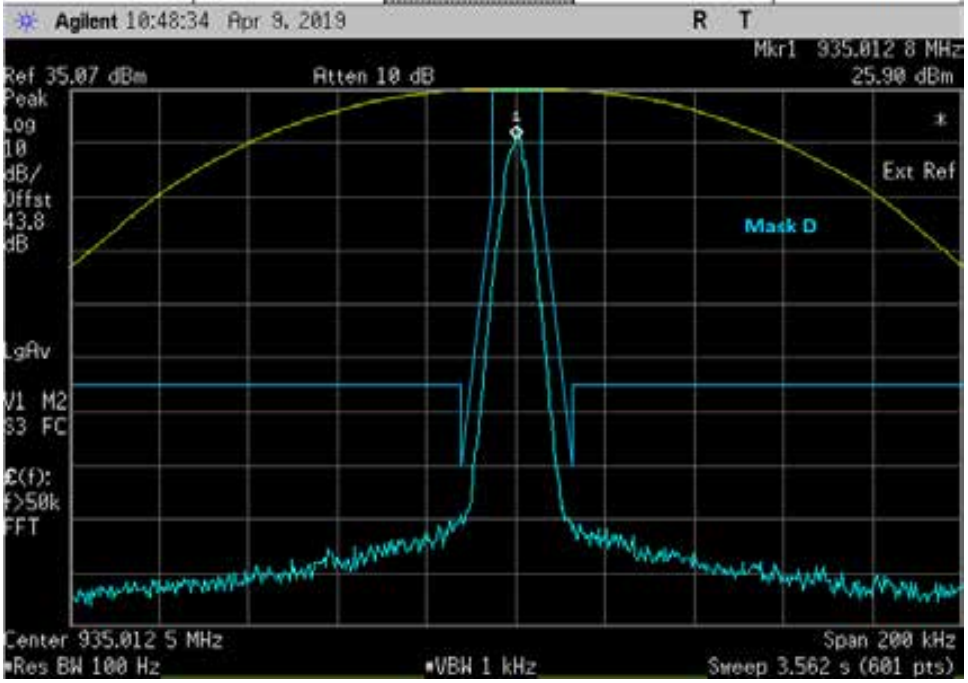
Modulation			Rules Part	
4F5K Data+Voice			90.210	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
935.0125	12.5		7.4062	7K60F1W



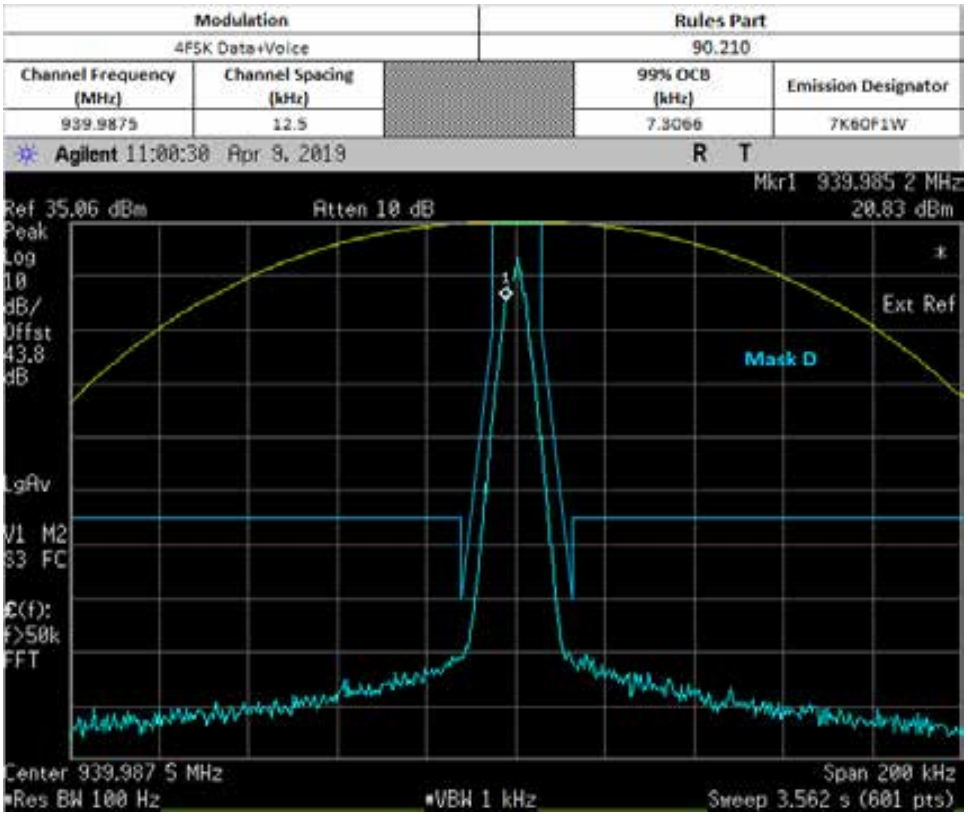
Modulation			Rules Part	
4F5K Data+Voice			90.210	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
939.9875	12.5		7.2175	7K60F1W



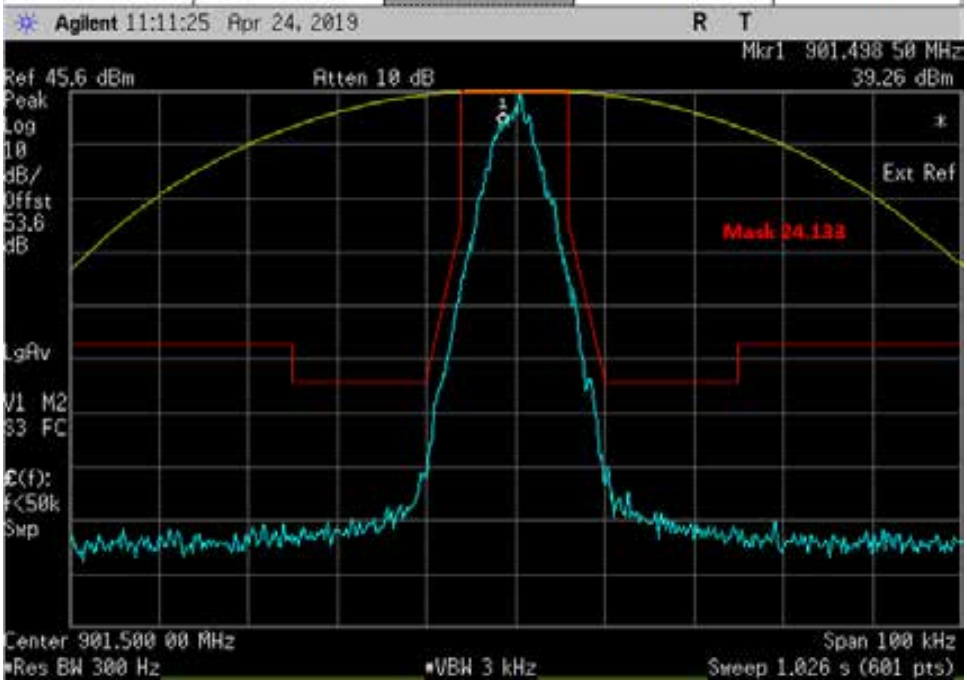
Modulation	Rules Part			
4F5K Data+Voice	90.210			
Channel Frequency (MHz)	**Channel Spacing (kHz)**		**99% OCB (kHz)**	**Emission Designator**
935.0125	12.5		7.2575	7K60F1W



Modulation	Rules Part			
4F5K Data+Voice	90.210			
Channel Frequency (MHz)	**Channel Spacing (kHz)**		**99% OCB (kHz)**	**Emission Designator**
939.9875	12.5		7.3066	7K60F1W

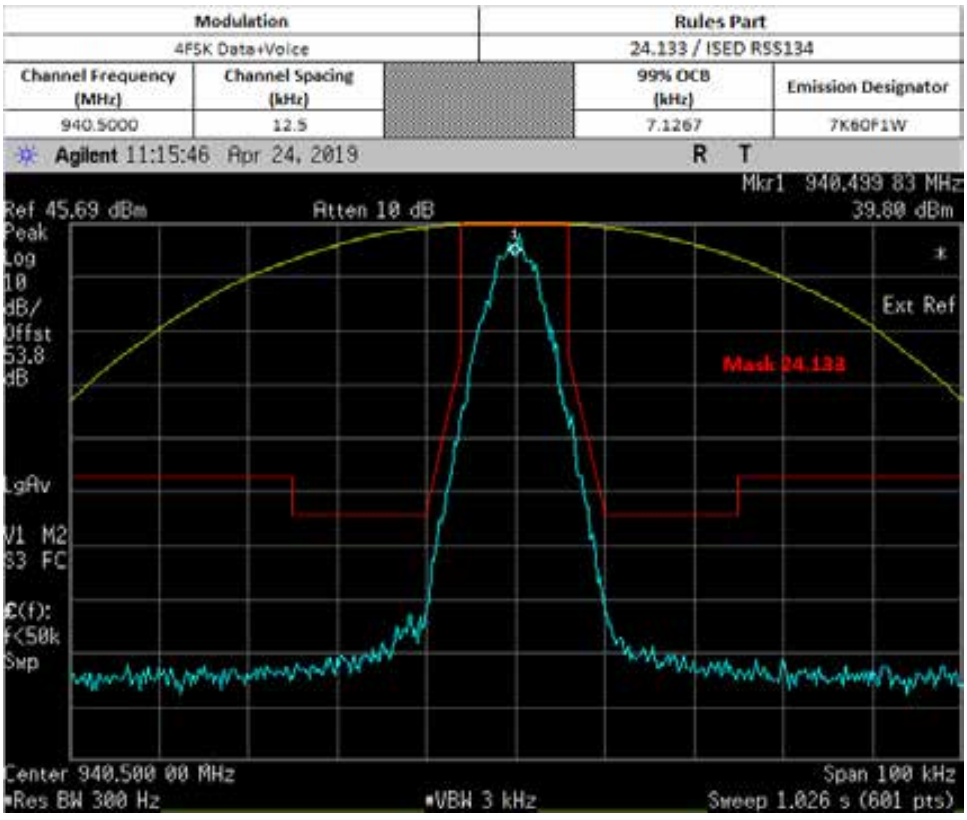


Modulation			Rules Part	
4F5K Data+Voice			24.133 / ISED RSS134	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
901.5000	12.5		5.8652	7K60F1W



PART 24

Modulation			Rules Part	
4F5K Data+Voice			24.133 / ISED RSS134	
Channel Frequency (MHz)	Channel Spacing (kHz)		99% OCB (kHz)	Emission Designator
940.5000	12.5		7.1267	7K60F1W



PART 24

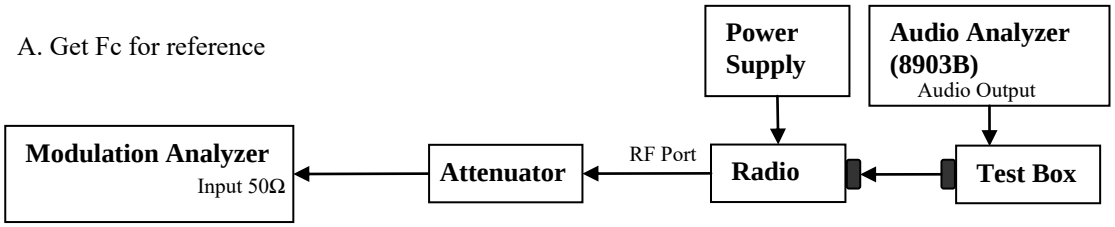
6.6.7. Test Limit

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.

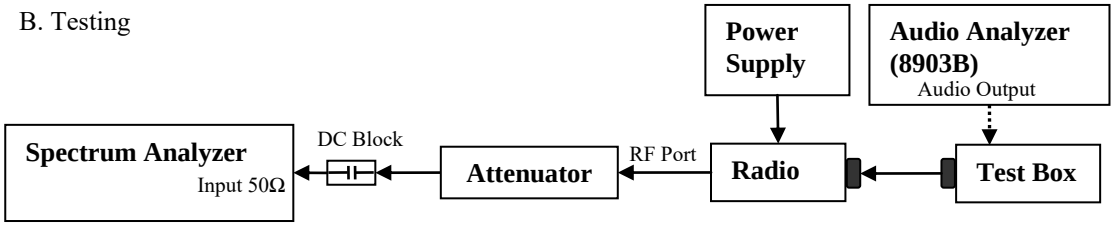
6.7. Band Edge Conducted Spurious Emission (Part 22)

6.7.1. Test Setup (Analog)

A. Get Fc for reference



B. Testing



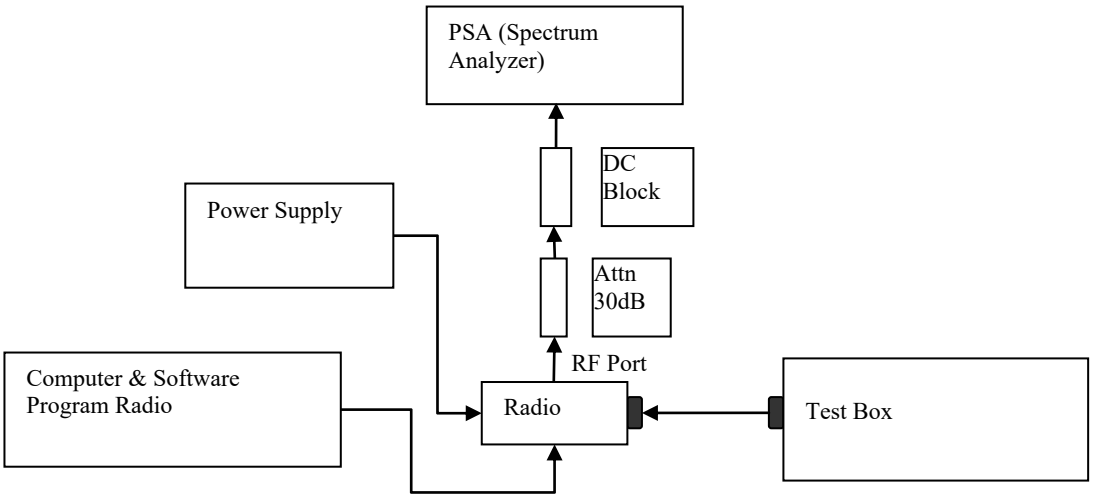
1) The DUT transmitter output port was connected to Modulation Analyzer.
2) Set the audio bandwidth filter to 15 kHz low pass filter and 50 kHz high pass filter.
3) Transmit the radio and set the audio analyzer to 2.5 kHz audio frequency and 50% of the rated deviation. Up the amplitude by 16 dB. Dekey 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.

6.7.2. Test Result (Analog)

NA → Not Applicable

6.7.3. 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:
- All digital modulation modes utilize the same high deviation test pattern, and they are therefore identical. Hence, only F1D plots will be shown.

6.7.4. Test Result (Digital)

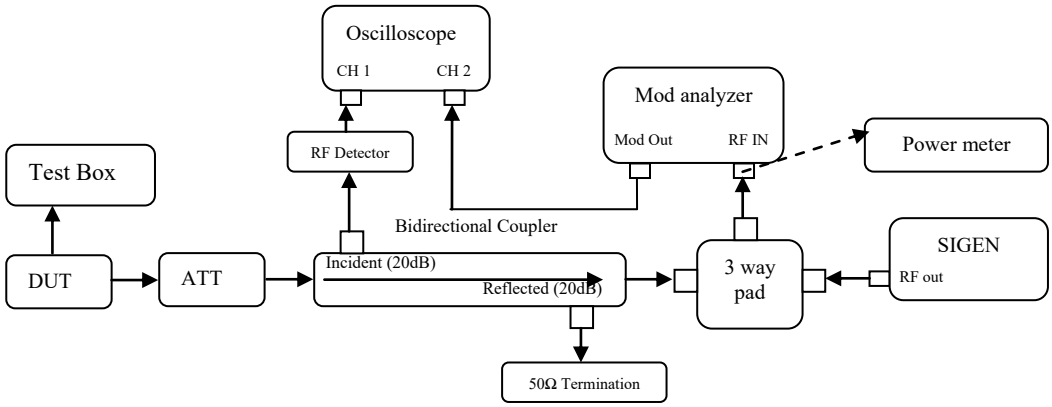
NA → Not Applicable

6.7.5. 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.

6.8. Transient Frequency Behavior

6.8.1. Test Setup



1) Connect the setup as figure above.
2) Path loss for the measurement included.
3) Set on Sigen 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 ≤ -11dBm 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.

6.8.2. Test Result

NA → Not Applicable

6.8.3. 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] t_{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.

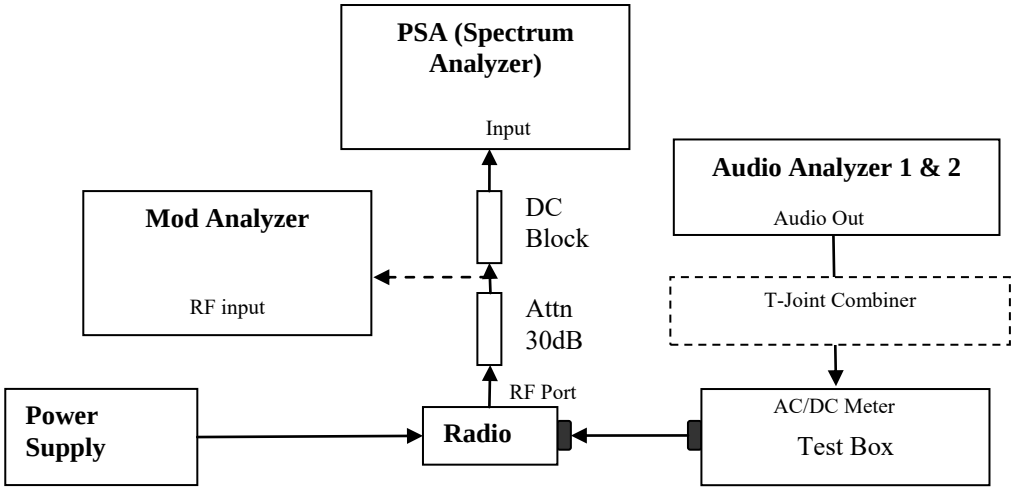
[2] During the time from the end of t_2 to the beginning of t_3, the frequency difference must not exceed the limits specified in §90.213.

[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.

6.9. Adjacent Channel Power

6.9.1. Test Setup (Analog)

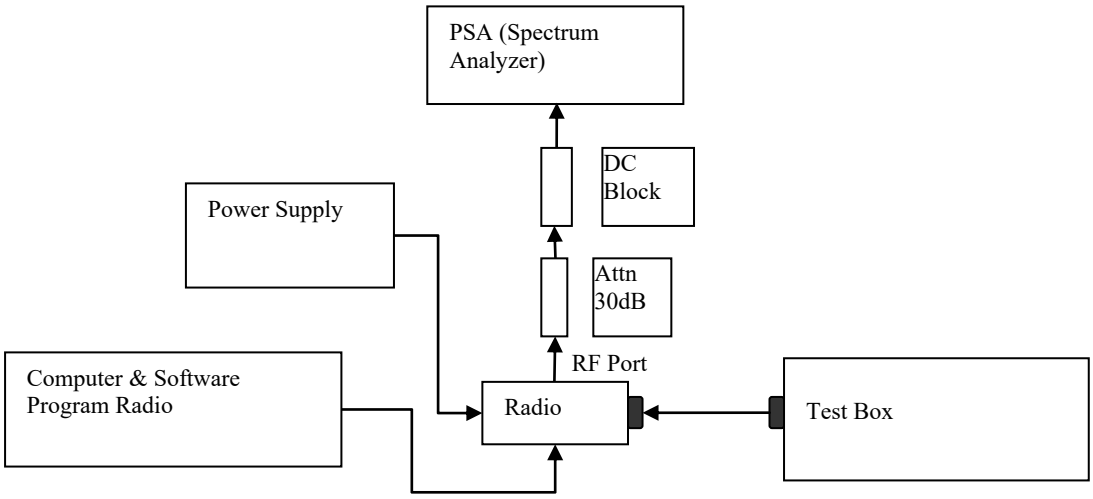


1) The DUT transmitter output port was connected to modulation analyzer.
2) Transmit the radio and turn on 1st audio analyzer with audio frequency 650Hz, 50% rated deviation, and record the amplitude value as AmpT1.
3) Turn off Audio analyzer 1 and turn on audio analyzer 2, set the audio frequency to 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.

6.9.2. Test Result

NA → Not Applicable

6.9.3. 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.

6.9.4. Test result

NA → Not Applicable

6.9.5. 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

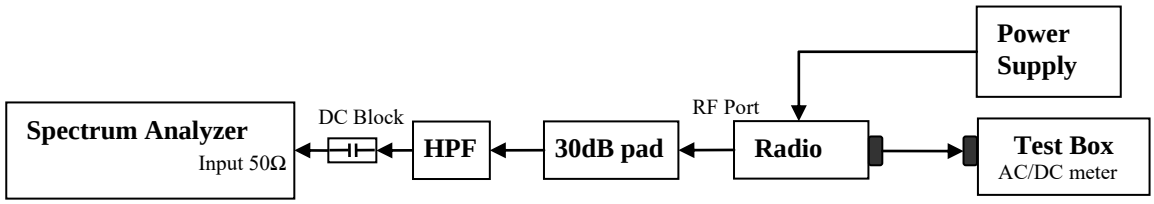
Offset from center frequency (kHz)	Measurement bandwidth (kHz)	Maximum ACP (dBc)
9.375	6.25	−40
15.625	6.25	−60
21.875	6.25	−60
37.5	25	−60
62.5	25	−65
87.5	25	−65
150	100	−65
250	100	−65
350.00	100	−65
>400 kHz to 12 MHz	30 (s)	−80
12 MHz to paired receive band	30 (s)	−80
In the paired receive band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

6.10. Conducted Spurious Emission

6.10.1. Test Setup

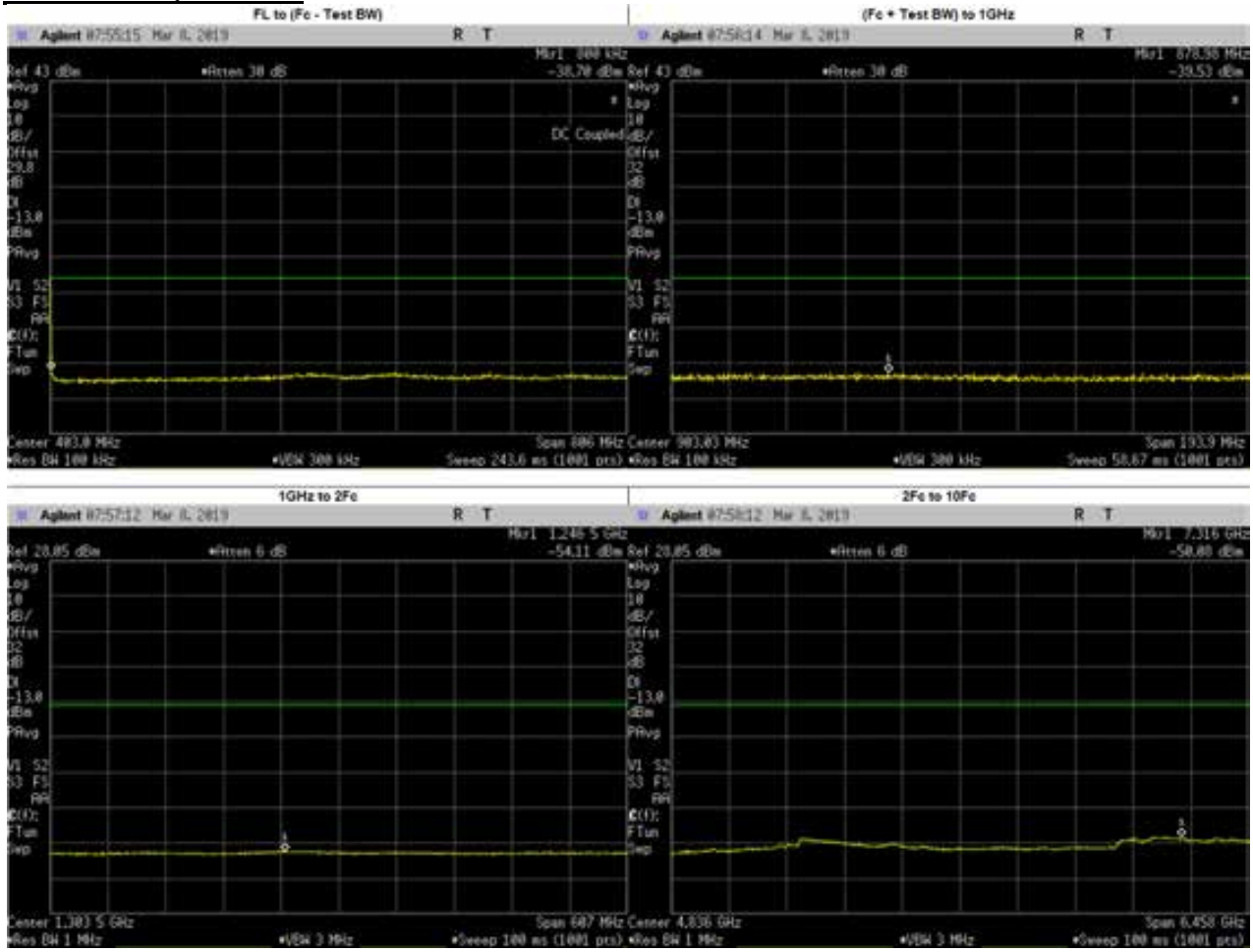


1) The DUT transmitter output port was connected to Spectrum Analyzer with above setup.
2) Program and set radio to operate in desire test frequency and mode. (Analog / digital modulation form).
3) Path loss for the measurement included.
4) Set the PSA Resolution Bandwidth as per rules part.
5) Set the 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 KHz to Fc – Test Bandwidth
    b. Fc + Test Bandwidth to 2Fc – 5MHz.
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 2Fc to 10Fc
11) Key up the DUT and record the highest spur levels of spurious emissions.

6.10.2. Test Result (Analog)

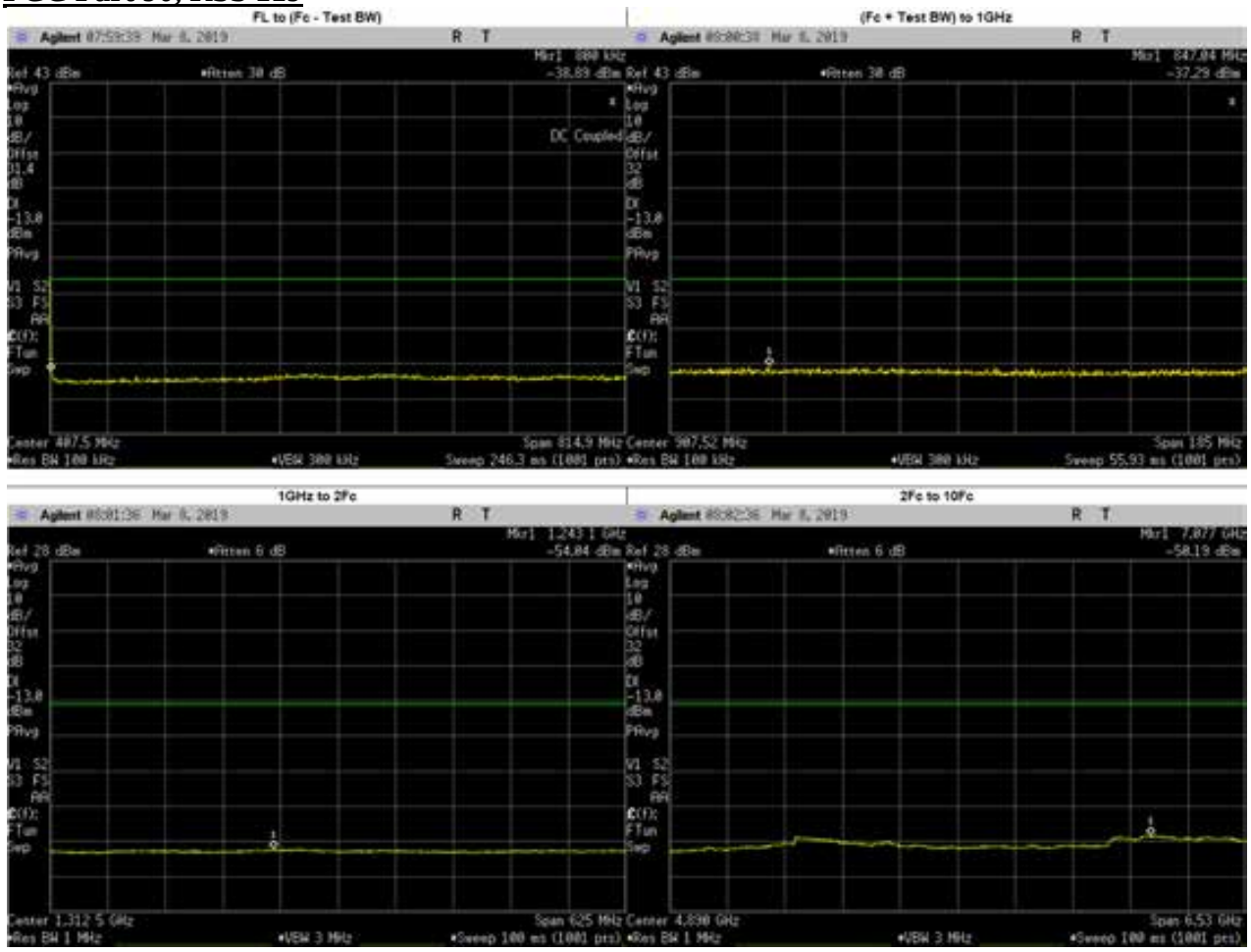
Analog: 806.0125 MHz, 25kHz Channel Spacing, Max Power

FCC Part 90, RSS 119



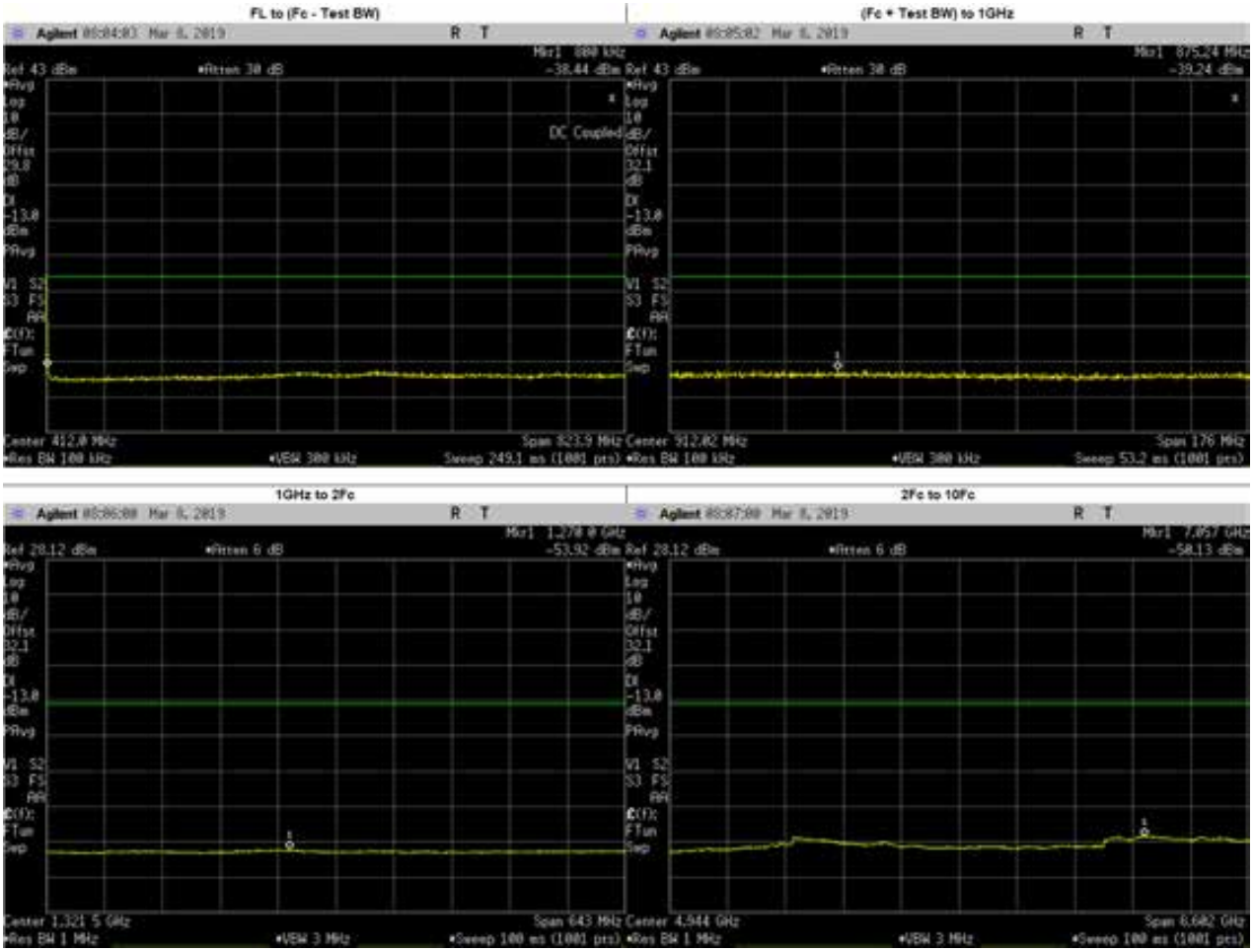
Frequency Range	Highest Spur Frequency (MHz)	Spurious Level (dBm)	Failing Limit (dBm)	Results
FL to (Fc - Test BW)	365.1059	-39.49	-13	PASS
(Fc + Test BW) to 1GHz	878.9830	-39.53	-13	PASS
1GHz to 2Fc	1246.4520	-54.11	-13	PASS
2Fc to 10Fc	7315.9850	-50.08	-13	PASS
	1612.0250	-54.78	-13	PASS
	2418.0370	-53.89	-13	PASS
	3224.0500	-51.14	-13	PASS
	4030.0620	-52.47	-13	PASS
	4836.0750	-53.50	-13	PASS
	5642.0870	-53.45	-13	PASS
	6448.1000	-53.37	-13	PASS
	7254.1130	-50.58	-13	PASS
	8060.1250	-51.44	-13	PASS

Analog: 814.9875 MHz, 25.5kHz Channel Spacing, Max Power
FCC Part 90, RSS 119



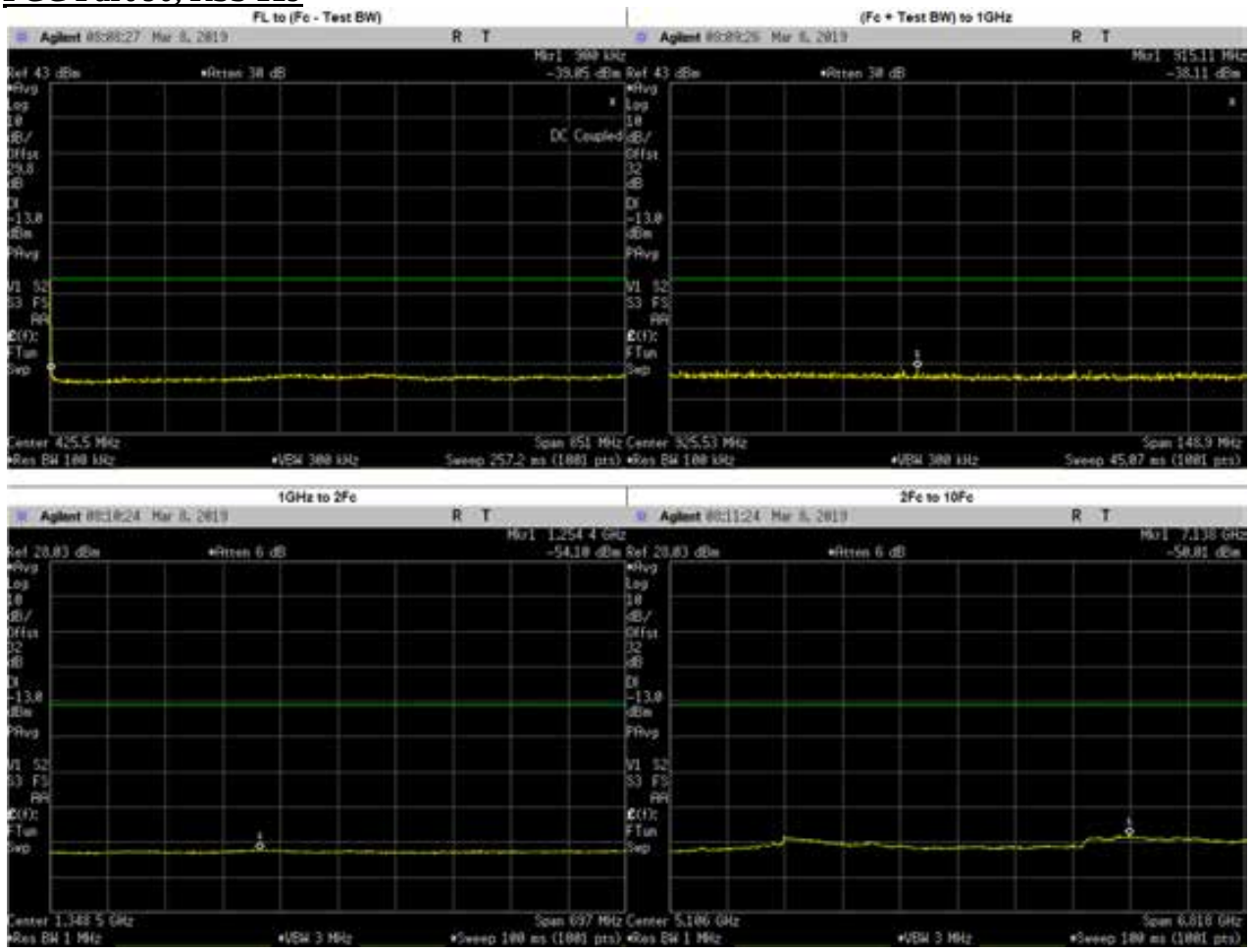
Frequency Range	Highest Spur Frequency (MHz)	Spurious Level (dBm)	Failing Limit (dBm)	Results
FL to (Fc - Test BW)	474.2974	-39.67	-13	PASS
(Fc + Test BW) to 1GHz	847.0360	-37.29	-13	PASS
1GHz to 2Fc	1243.1150	-54.04	-13	PASS
2Fc to 10Fc	7077.4410	-50.19	-13	PASS
	1629.9750	-54.64	-13	PASS
	2444.9630	-53.65	-13	PASS
	3259.9500	-51.26	-13	PASS
	4074.9370	-52.36	-13	PASS
	4889.9250	-53.73	-13	PASS
	5704.9130	-53.20	-13	PASS
	6519.9000	-53.40	-13	PASS
	7334.8870	-50.98	-13	PASS
	8149.8750	-51.69	-13	PASS

Analog: 823.9875 MHz, 25.0kHz Channel Spacing, Max Power
FCC Part 90, RSS 119



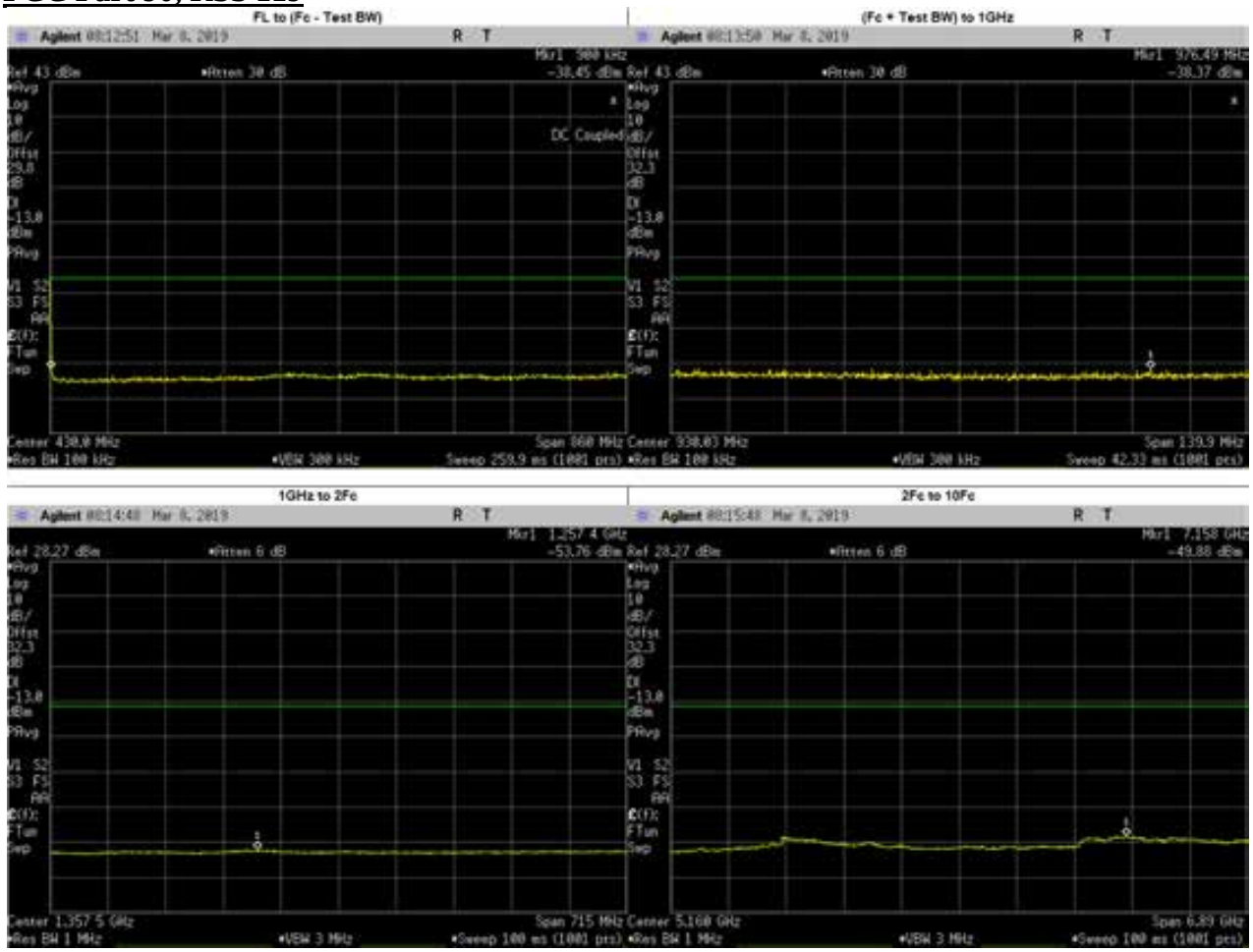
Frequency Range	Highest Spur Frequency (MHz)	Spurious Level (dBm)	Failing Limit (dBm)	Results
FL to (Fc - Test BW)	470.4722	-39.63	-13	PASS
(Fc + Test BW) to 1GHz	875.2426	-39.24	-13	PASS
1GHz to 2Fc	1270.0500	-53.92	-13	PASS
2Fc to 10Fc	7056.5330	-50.13	-13	PASS
	1647.9750	-54.57	-13	PASS
	2471.9630	-53.66	-13	PASS
	3295.9500	-51.27	-13	PASS
	4119.9370	-52.10	-13	PASS
	4943.9250	-53.56	-13	PASS
	5767.9130	-53.16	-13	PASS
	6591.9000	-53.19	-13	PASS
	7415.8870	-51.09	-13	PASS
	8239.8750	-51.63	-13	PASS

Analog: 851.0125 MHz, 25.0kHz Channel Spacing, Max Power
FCC Part 90, RSS 119



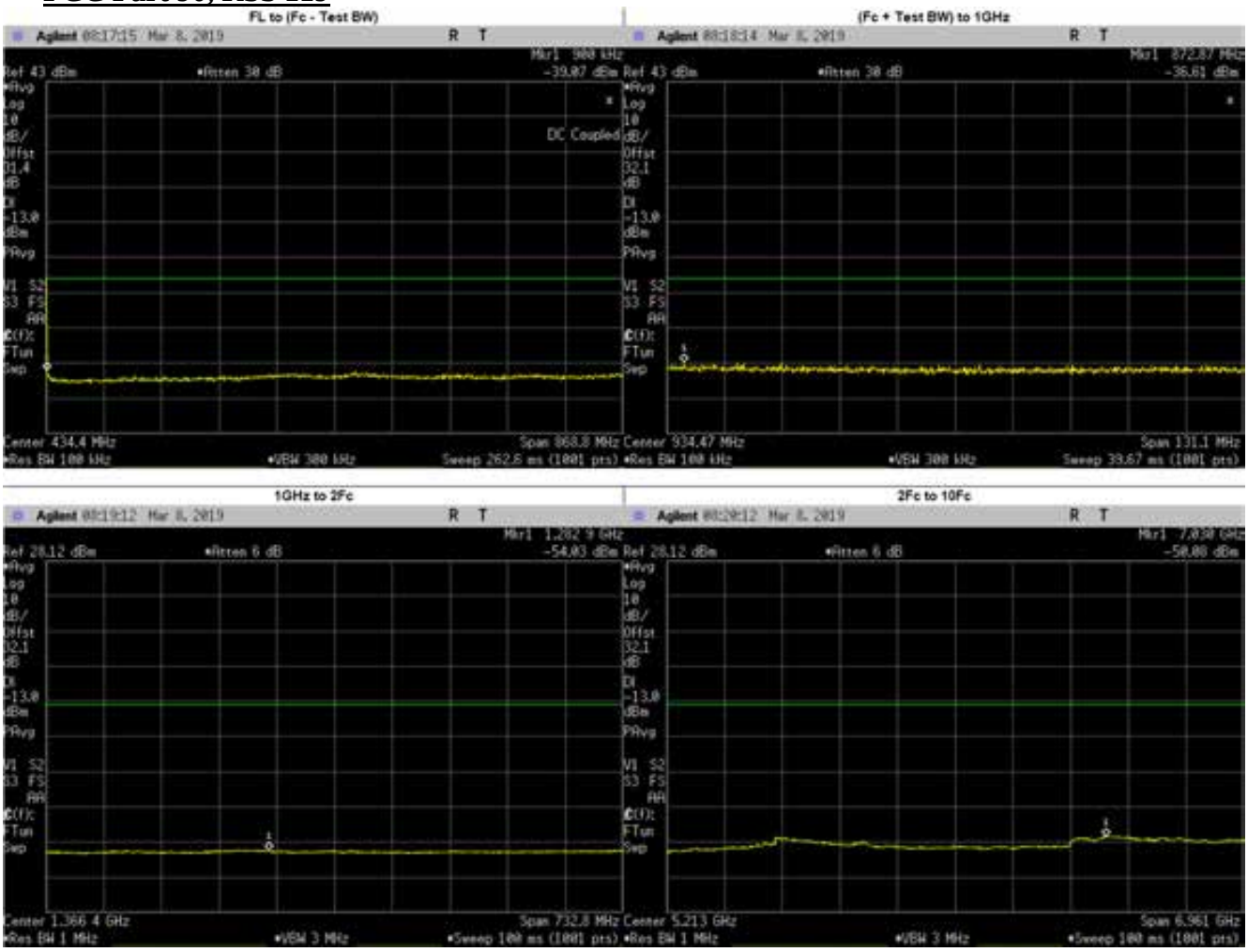
Frequency Range	Highest Spur Frequency (MHz)	Spurious Level (dBm)	Failing Limit (dBm)	Results
FL to (Fc - Test BW)	2.5619	-39.45	-13	PASS
(Fc + Test BW) to 1GHz	915.1056	-38.11	-13	PASS
1GHz to 2Fc	1254.4140	-54.10	-13	PASS
2Fc to 10Fc	7137.8690	-50.01	-13	PASS
	1702.0250	-54.67	-13	PASS
	2553.0370	-53.68	-13	PASS
	3404.0500	-51.58	-13	PASS
	4255.0620	-53.30	-13	PASS
	5106.0750	-53.60	-13	PASS
	5957.0870	-53.72	-13	PASS
	6808.1000	-51.01	-13	PASS
	7659.1130	-50.97	-13	PASS
	8510.1250	-51.34	-13	PASS

<u>Analog:</u> 860.0125 MHz, 25.0kHz Channel Spacing, Max Power
<u>FCC Part 90, RSS 119</u>



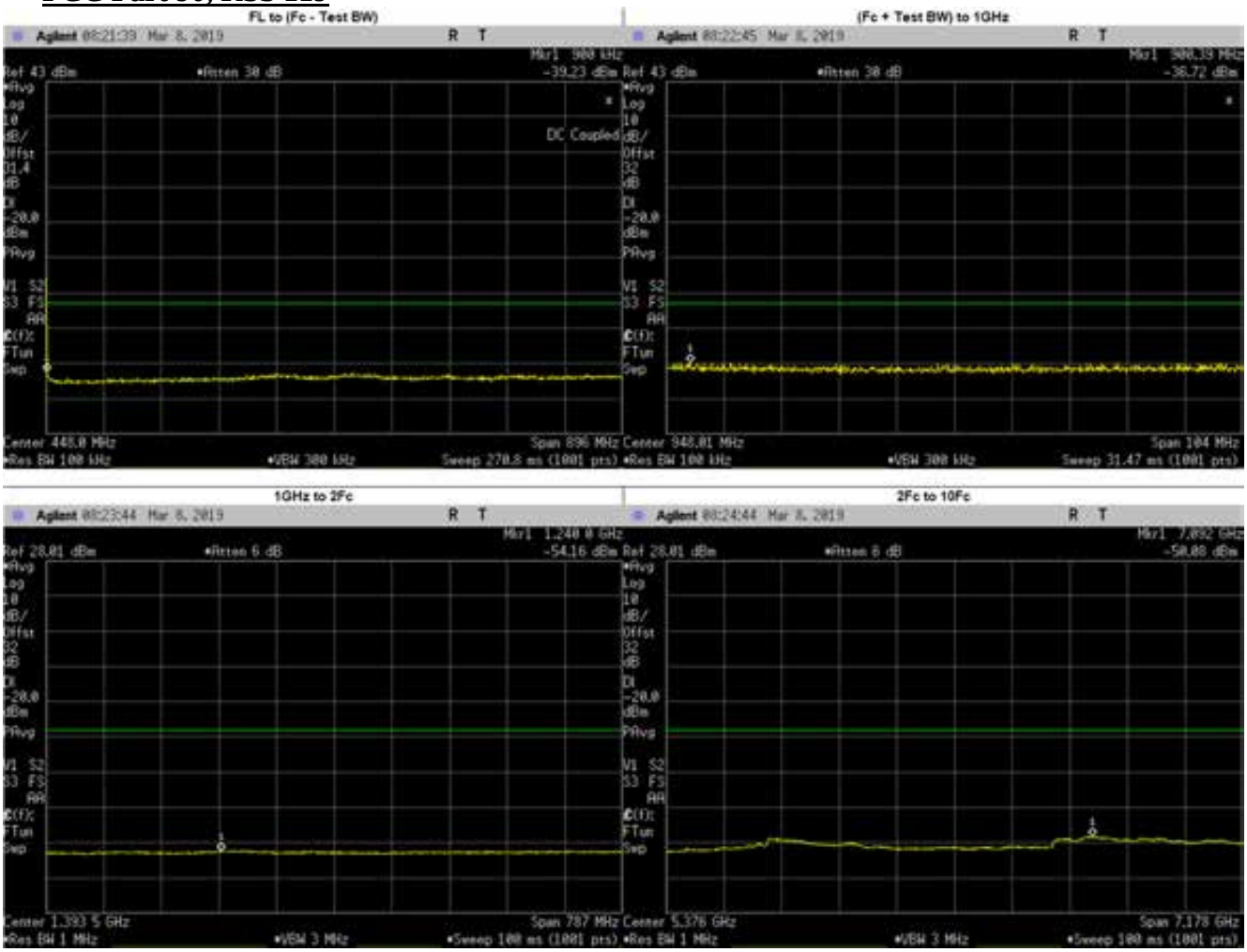
Frequency Range	Highest Spur Frequency (MHz)	Spurious Level (dBm)	Failing Limit (dBm)	Results
FL to (Fc - Test BW)	356.0297	-39.40	-13	PASS
(Fc + Test BW) to 1GHz	976.4905	-38.37	-13	PASS
1GHz to 2Fc	1257.4090	-53.76	-13	PASS
2Fc to 10Fc	7158.2040	-49.88	-13	PASS
	1720.0250	-54.44	-13	PASS
	2580.0370	-53.09	-13	PASS
	3440.0500	-51.33	-13	PASS
	4300.0620	-53.08	-13	PASS
	5160.0750	-53.18	-13	PASS
	6020.0870	-53.22	-13	PASS
	6880.1000	-51.07	-13	PASS
	7740.1130	-50.76	-13	PASS
	8600.1250	-51.15	-13	PASS

Analog: 868.8875 MHz, 25.0kHz Channel Spacing, Max Power
FCC Part 90, RSS 119



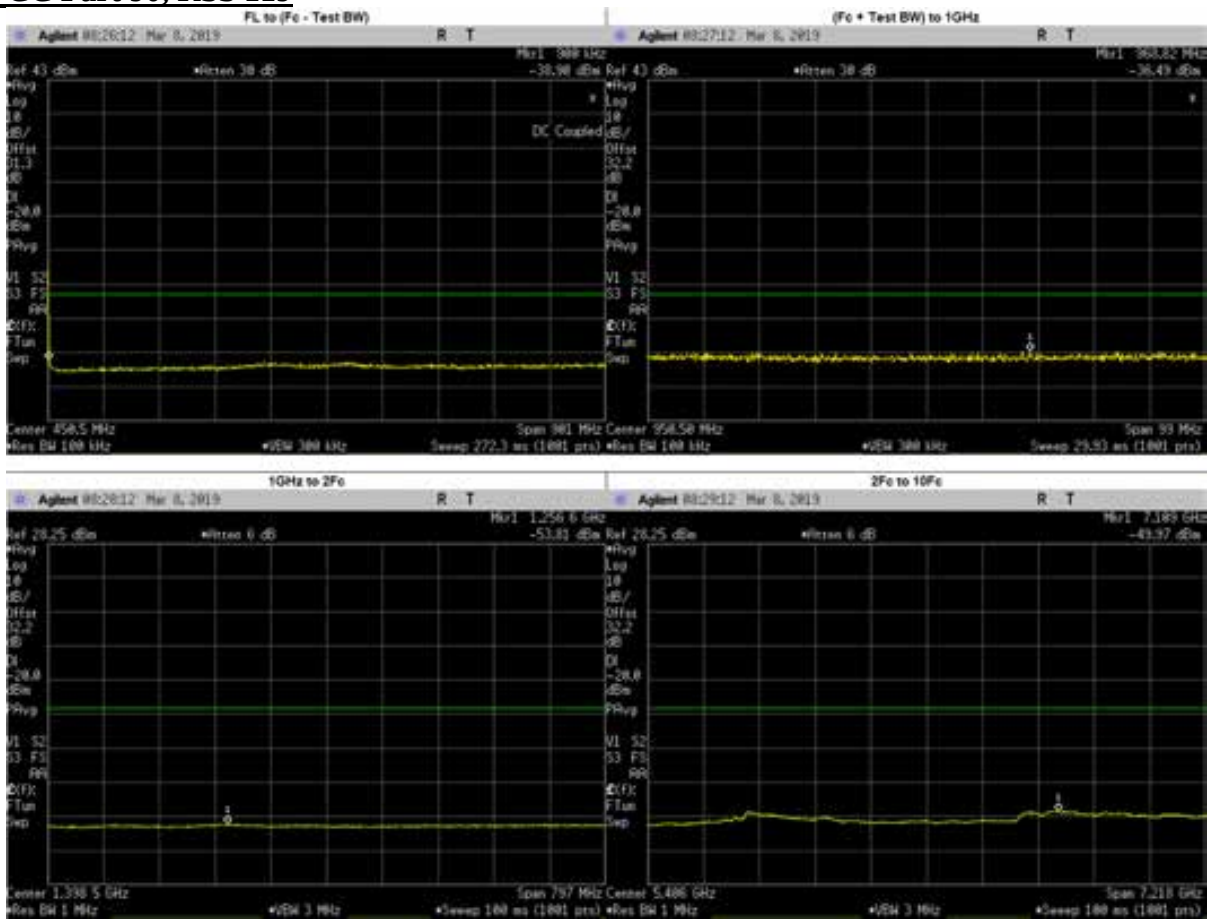
Frequency Range	Highest Spur Frequency (MHz)	Spurious Level (dbm)	Failing Limit (dBm)	Results
FL to (Fc - Test BW)	465.7011	-39.49	-13	PASS
(Fc + Test BW) to 1GHz	872.8694	-36.61	-13	PASS
1GHz to 2Fc	1282.8510	-54.03	-13	PASS
2Fc to 10Fc	7030.1720	-50.08	-13	PASS
	1737.7750	-54.58	-13	PASS
	2606.6620	-53.60	-13	PASS
	3475.5500	-51.74	-13	PASS
	4344.4370	-53.26	-13	PASS
	5213.3250	-53.29	-13	PASS
	6082.2120	-53.17	-13	PASS
	6951.1000	-50.98	-13	PASS
	7819.9880	-51.18	-13	PASS
	8688.8750	-51.26	-13	PASS

Analog: 896.0125 MHz, 12.5kHz Channel Spacing, Max Power
FCC Part 90, RSS 119



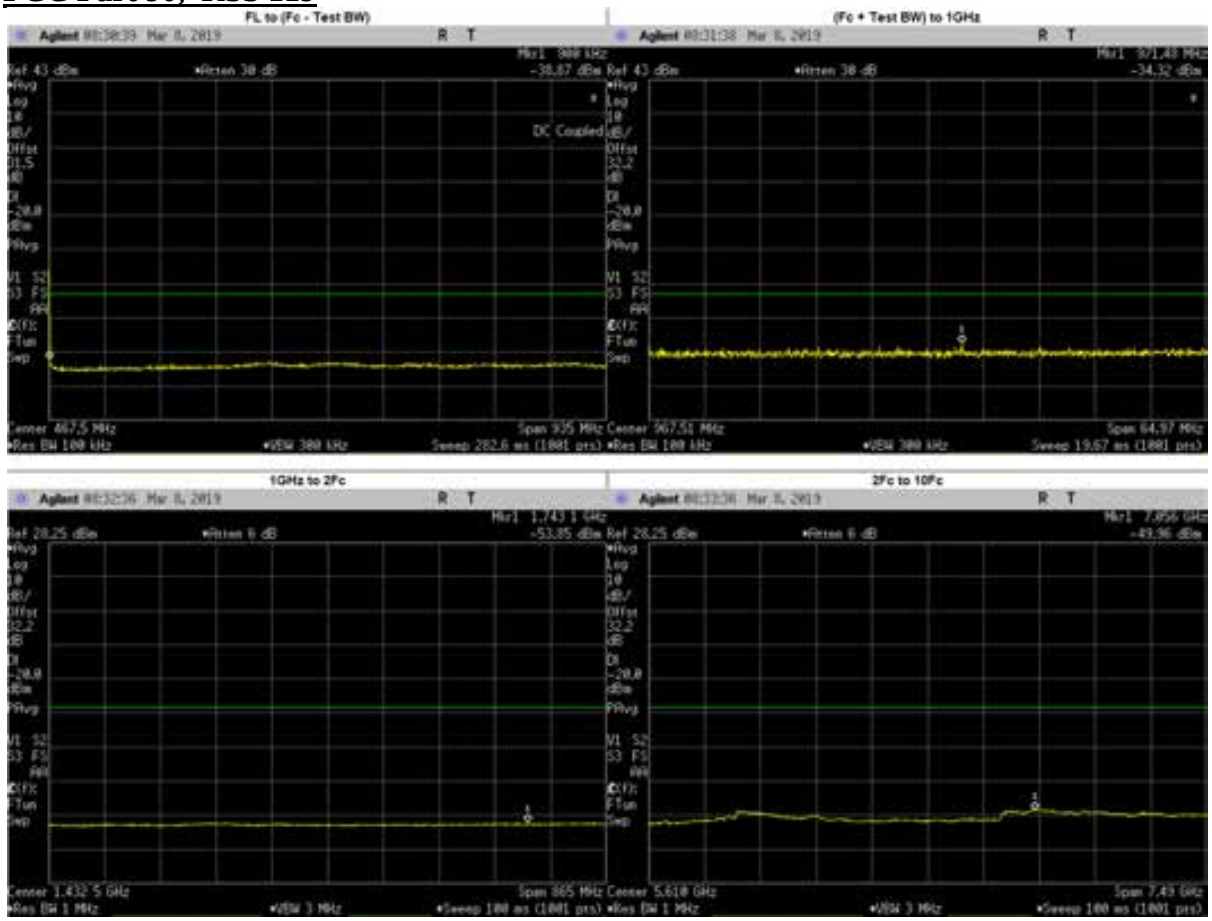
Frequency Range	Highest Spur Frequency (MHz)	Spurious Level (dBm)	Failing Limit (dBm)	Results
FL to (Fc - Test BW)	476.6749	-39.60	-20	PASS
(Fc + Test BW) to 1GHz	900.3943	-36.72	-20	PASS
1GHz to 2Fc	1240.0430	-54.16	-20	PASS
2Fc to 10Fc	7091.6410	-50.08	-20	PASS
	1792.0250	-54.56	-20	PASS
	2688.0370	-53.62	-20	PASS
	3584.0500	-52.34	-20	PASS
	4480.0620	-52.99	-20	PASS
	5376.0750	-53.15	-20	PASS
	6272.0870	-53.28	-20	PASS
	7168.1000	-50.59	-20	PASS
	8064.1130	-51.56	-20	PASS
	8960.1250	-52.07	-20	PASS

Analog: 900.9875 MHz, 12.5kHz Channel Spacing, Max Power
FCC Part 90, RSS 119



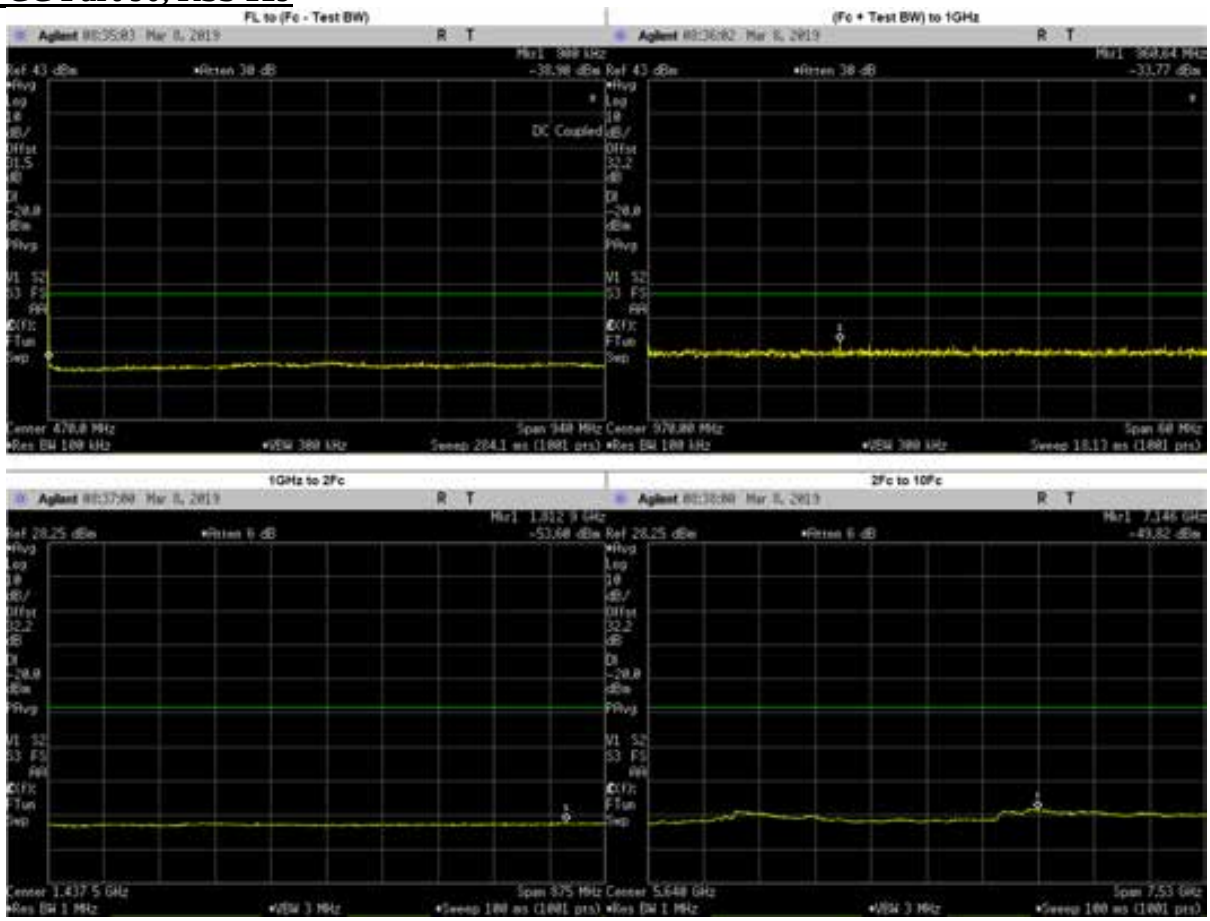
Frequency Range	Highest Spur Frequency (MHz)	Spurious Level (dBm)	Failing Limit (dBm)	Results
FL to (Fc - Test BW)	349.5828	-39.59	-20	PASS
(Fc + Test BW) to 1GHz	968.8158	-36.49	-20	PASS
1GHz to 2Fc	1256.6260	-53.81	-20	PASS
2Fc to 10Fc	7109.3490	-49.97	-20	PASS
	1801.9750	-54.13	-20	PASS
	2702.9630	-53.31	-20	PASS
	3603.9500	-52.17	-20	PASS
	4504.9370	-53.00	-20	PASS
	5405.9250	-53.32	-20	PASS
	6306.9130	-52.95	-20	PASS
	7207.9000	-50.37	-20	PASS
	8108.8870	-51.58	-20	PASS
	9009.8750	-51.55	-20	PASS

Analog: 935.0125 MHz, 12.5kHz Channel Spacing, Max Power
FCC Part 90, RSS 119



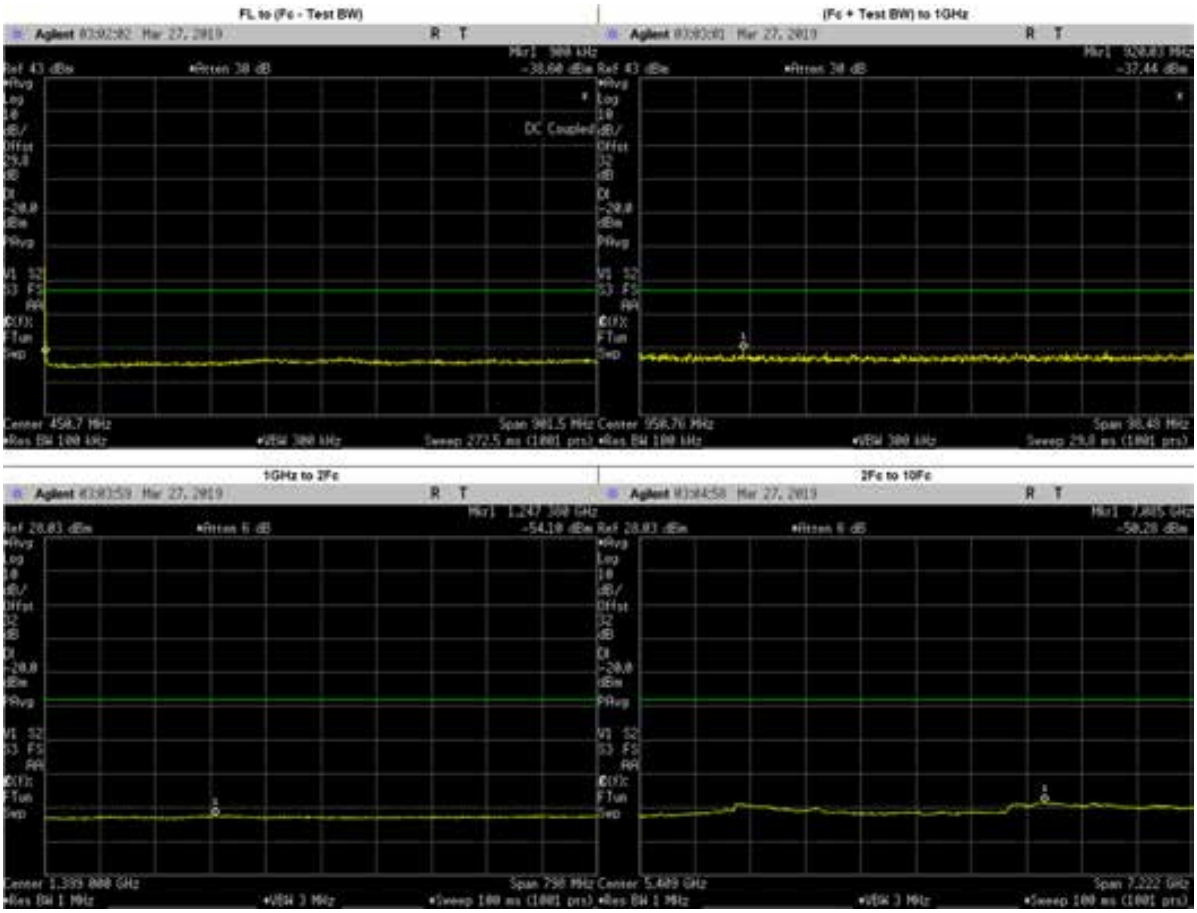
Frequency Range	Highest Spur Frequency (MHz)	Spurious Level (dBm)	Failing Limit (dBm)	Results
FL to (Fc - Test BW)	382.4193	-39.85	-20	PASS
(Fc + Test BW) to 1GHz	971.4771	-34.32	-20	PASS
1GHz to 2Fc	1743.0560	-53.85	-20	PASS
2Fc to 10Fc	7055.6640	-49.96	-20	PASS
	1870.0250	-54.31	-20	PASS
	2805.0370	-52.64	-20	PASS
	3740.0500	-52.33	-20	PASS
	4675.0620	-53.36	-20	PASS
	5610.0750	-53.29	-20	PASS
	6545.0870	-53.04	-20	PASS
	7480.1000	-50.98	-20	PASS
	8415.1120	-51.65	-20	PASS
	9350.1250	-51.84	-20	PASS

Analog: 939.9875 MHz, 12.5kHz Channel Spacing, Max Power
FCC Part 90, RSS 119



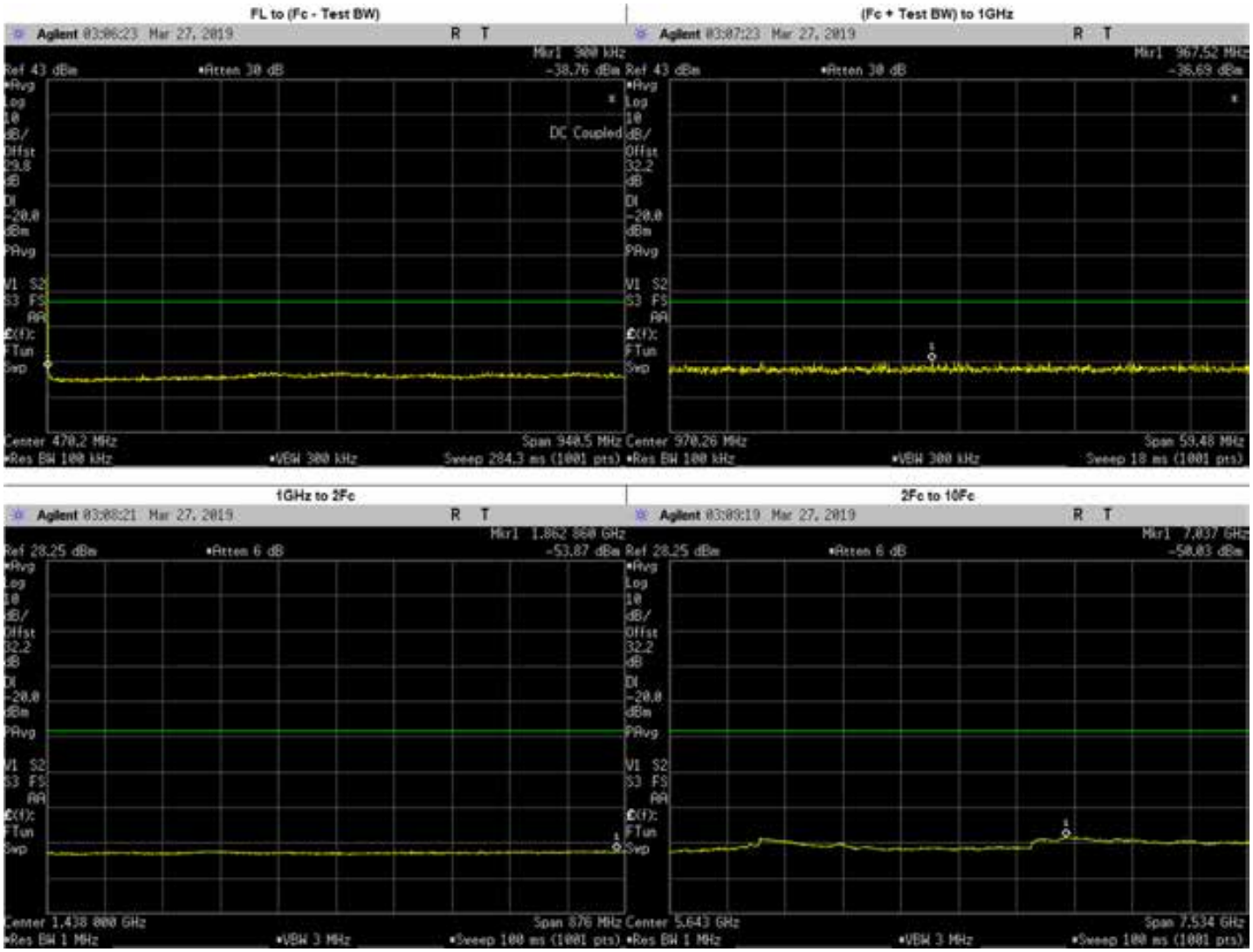
Frequency Range	Highest Spur Frequency (MHz)	Spurious Level (dBm)	Failing Limit (dBm)	Results
FL to (Fc - Test BW)	629.7845	-39.77	-20	PASS
(Fc + Test BW) to 1GHz	960.6416	-33.77	-20	PASS
1GHz to 2Fc	1812.8520	-53.60	-20	PASS
2Fc to 10Fc	7145.9050	-49.82	-20	PASS
	1879.9750	-54.36	-20	PASS
	2819.9630	-52.64	-20	PASS
	3759.9500	-52.48	-20	PASS
	4699.9370	-53.56	-20	PASS
	5639.9250	-53.35	-20	PASS
	6579.9130	-52.91	-20	PASS
	7519.9000	-51.02	-20	PASS
	8459.8880	-51.59	-20	PASS
	9399.8750	-51.64	-20	PASS

Analog: 901.5 MHz, 12.5kHz Channel Spacing, Max Power
FCC Part 24, RSS 134



Frequency Range	Highest Spur Frequency (MHz)	Spurious Level (dbm)	Failing Limit (dBm)	Results
FL to (Fc - Test BW)	732.9090	-37.6981	-20	PASS
(Fc + Test BW) to 1GHz	920.0302	-37.4400	-20	PASS
1GHz to 2Fc	1247.3800	-54.1000	-20	PASS
2Fc to 10Fc	7084.5040	-50.2800	-20	PASS
	1803.0000	-54.3729	-20	PASS
	2704.5000	-53.5980	-20	PASS
	3606.0000	-52.4299	-20	PASS
	4507.5000	-53.3922	-20	PASS
	5409.0000	-53.5270	-20	PASS
	6310.5000	-53.4389	-20	PASS
	7212.0000	-50.7706	-20	PASS
	8113.5000	-51.7306	-20	PASS
	9015.0000	-52.0791	-20	PASS

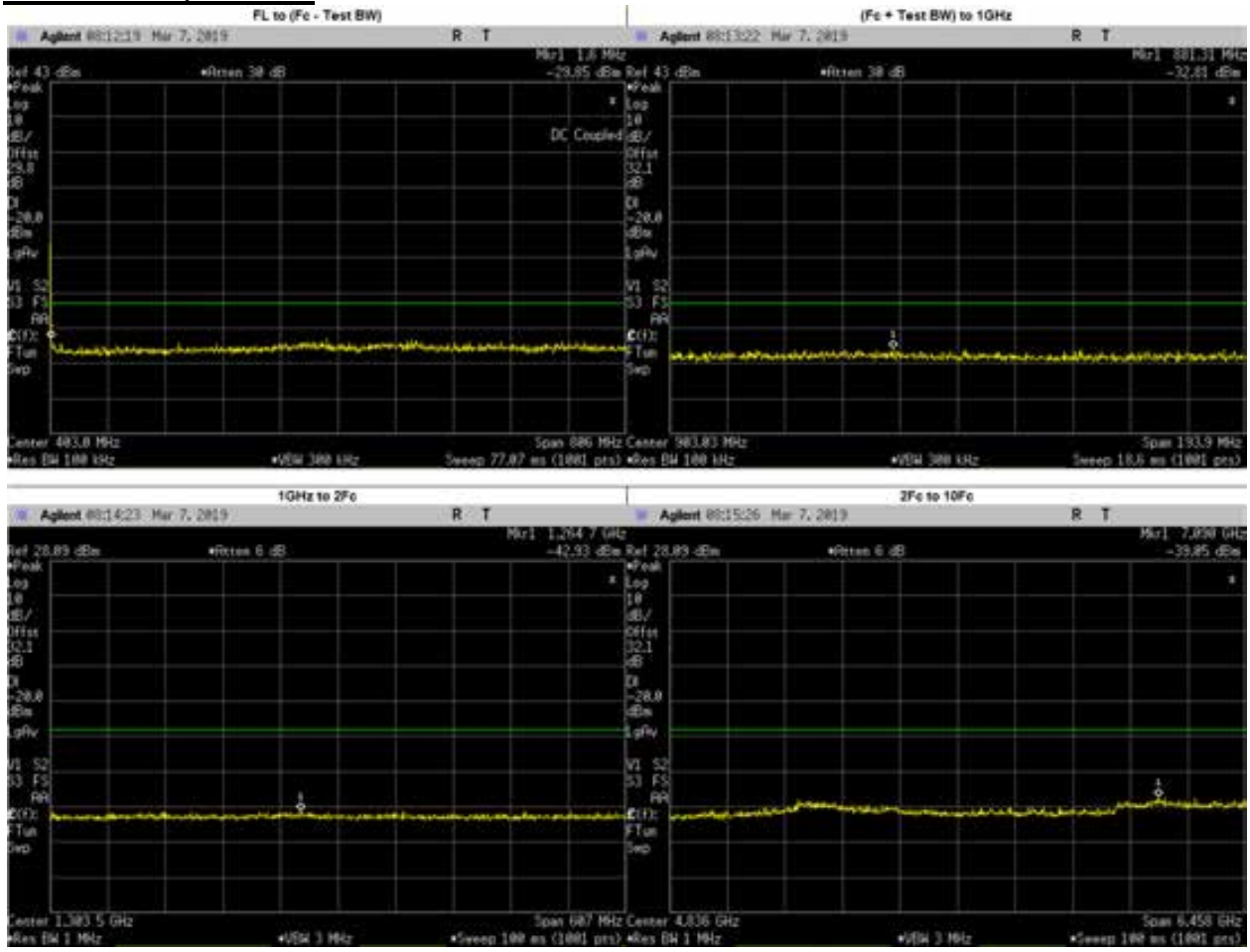
Analog: 940.5 MHz, 12.5kHz Channel Spacing, Max Power
FCC Part 24, RSS 134



Frequency Range	Highest Spur Frequency (MHz)	Spurious Level (dbm)	Failing Limit (dBm)	Results
FL to (Fc - Test BW)	715.7112	-37.6662	-20	PASS
(Fc + Test BW) to 1GHz	967.5212	-36.6900	-20	PASS
1GHz to 2Fc	1862.8600	-53.8700	-20	PASS
2Fc to 10Fc	7036.7900	-50.0300	-20	PASS
	1881.0000	-54.3738	-20	PASS
	2821.5000	-52.6492	-20	PASS
	3762.0000	-52.4414	-20	PASS
	4702.5000	-53.6003	-20	PASS
	5643.0000	-53.4410	-20	PASS
	6583.5000	-53.1456	-20	PASS
	7524.0000	-51.1603	-20	PASS
	8464.5000	-51.4999	-20	PASS
	9405.0000	-51.5314	-20	PASS

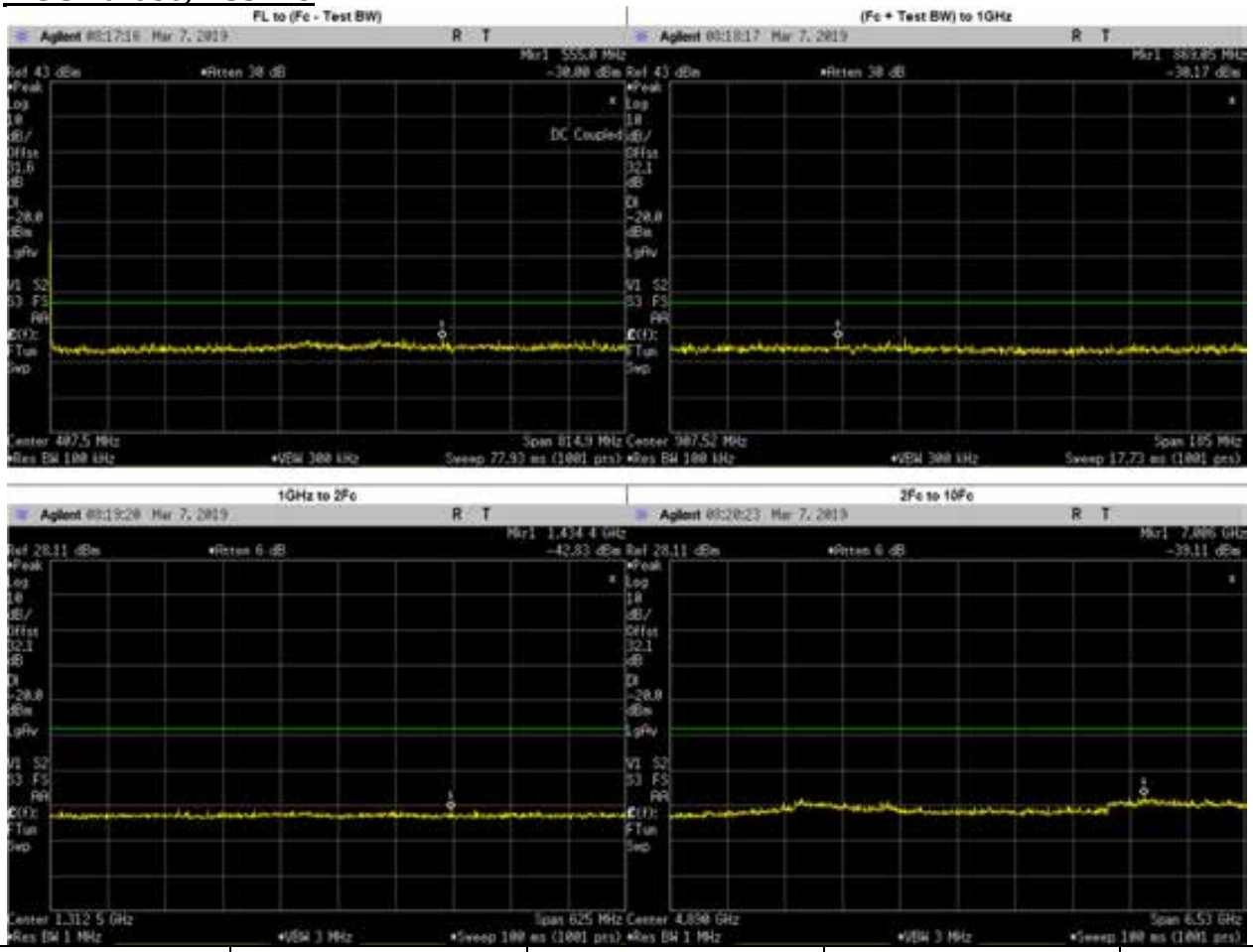
6.10.3. Test Result (Digital)

Digital: 806.0125 MHz, 12.5kHz Channel Spacing, Max Power
FCC Part 90, RSS 119



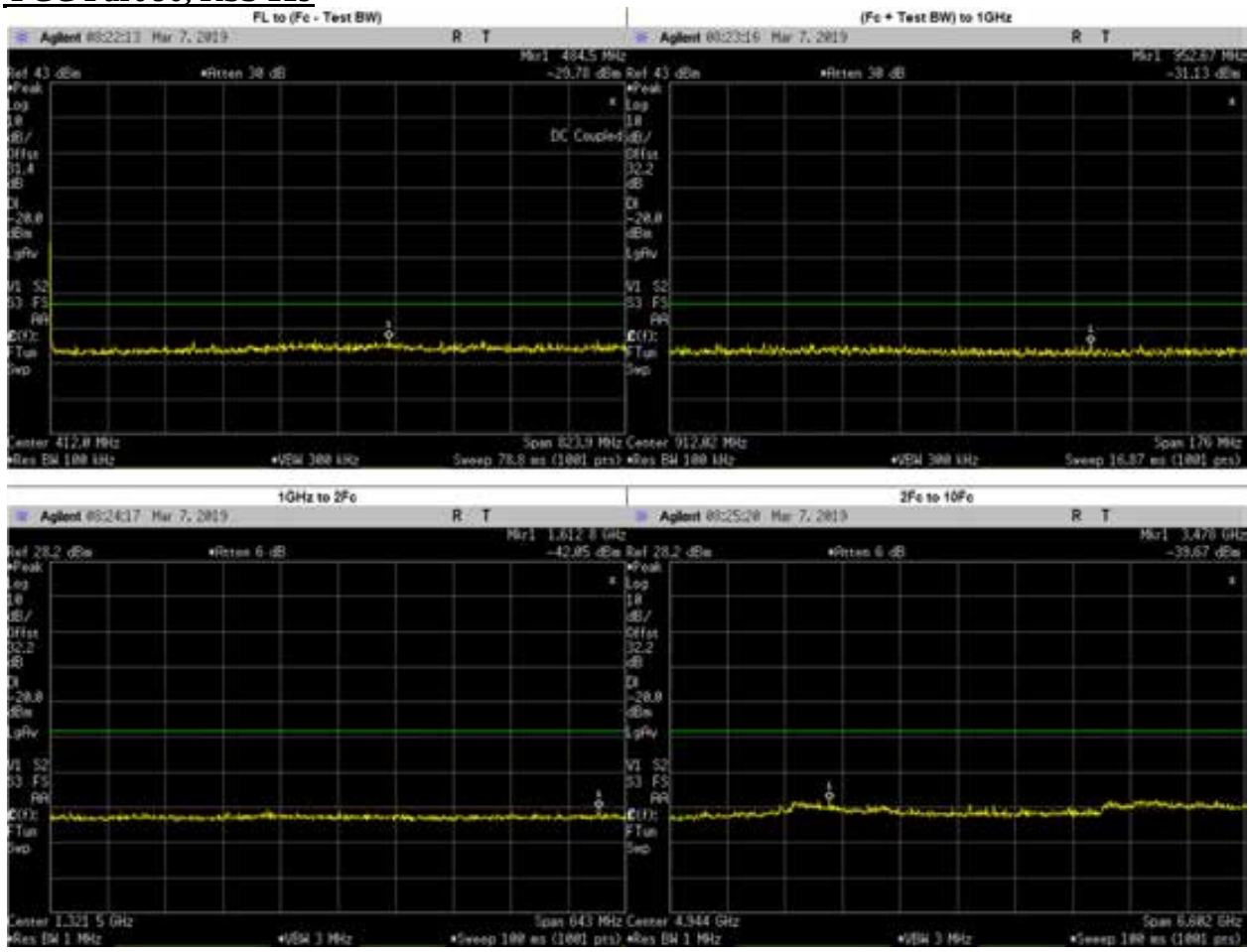
Frequency Range	Highest Spur Frequency (MHz)	Spurious Level (dBm)	Failing Limit (dBm)	Results
FL to (Fc - Test BW)	776.1422	-29.97	-20	PASS
(Fc + Test BW) to 1GHz	893.5283	-32.81	-20	PASS
1GHz to 2Fc	1228.8480	-42.93	-20	PASS
2Fc to 10Fc	1612.0250	-39.05	-20	PASS
	2418.0370	-44.77	-20	PASS
	3224.0500	-41.47	-20	PASS
	4030.0620	-41.41	-20	PASS
	4836.0750	-43.57	-20	PASS
	5642.0870	-44.25	-20	PASS
	6448.1000	-43.76	-20	PASS
	7254.1130	-40.88	-20	PASS
	8060.1250	-42.07	-20	PASS

<u>Digital:</u> 814.9875 MHz, 12.5kHz Channel Spacing, Max Power
FCC Part 90, RSS 119



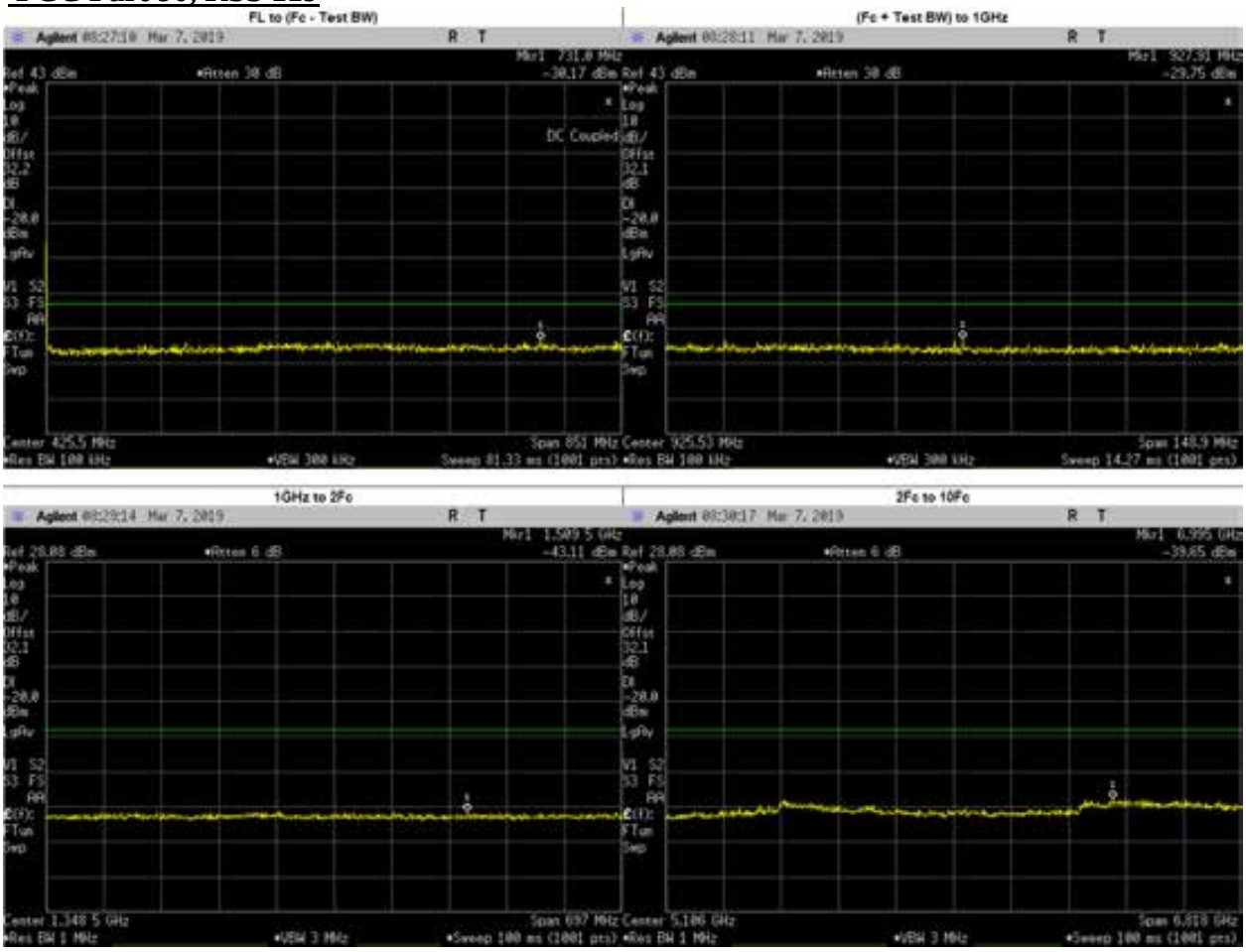
Frequency Range	Highest Spur Frequency (MHz)	Spurious Level (dBm)	Failing Limit (dBm)	Results
FL to (Fc - Test BW)	468.5929	-30.00	-20	PASS
(Fc + Test BW) to 1GHz	847.7759	-30.17	-20	PASS
1GHz to 2Fc	1409.3590	-42.83	-20	PASS
2Fc to 10Fc	1629.9750	-39.11	-20	PASS
	2444.9630	-44.33	-20	PASS
	3259.9500	-41.17	-20	PASS
	4074.9370	-42.76	-20	PASS
	4889.9250	-44.44	-20	PASS
	5704.9130	-42.68	-20	PASS
	6519.9000	-43.62	-20	PASS
	7334.8870	-41.05	-20	PASS
	8149.8750	-41.48	-20	PASS

Digital: 823.9875 MHz, 12.5kHz Channel Spacing, Max Power
FCC Part 90, RSS 119



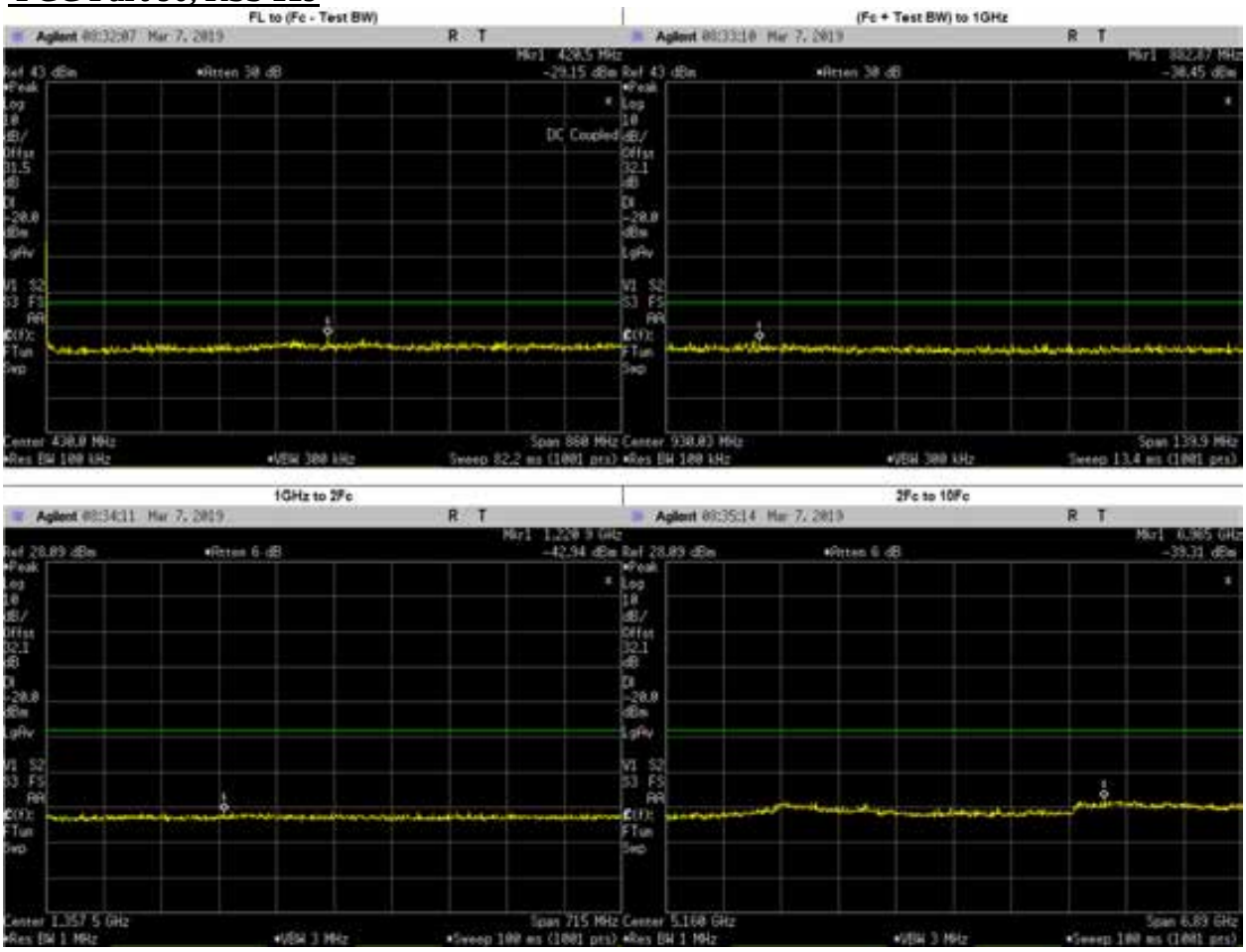
Frequency Range	Highest Spur Frequency (MHz)	Spurious Level (dBm)	Failing Limit (dBm)	Results
FL to (Fc - Test BW)	602.3007	-28.45	-20	PASS
(Fc + Test BW) to 1GHz	878.0580	-31.13	-20	PASS
1GHz to 2Fc	1329.8460	-42.05	-20	PASS
2Fc to 10Fc	3385.8770	-39.67	-20	PASS
	1647.9750	-45.04	-20	PASS
	2471.9630	-44.17	-20	PASS
	3295.9500	-41.65	-20	PASS
	4119.9370	-42.40	-20	PASS
	4943.9250	-43.63	-20	PASS
	5767.9130	-43.48	-20	PASS
	6591.9000	-42.64	-20	PASS
	7415.8870	-41.24	-20	PASS
	8239.8750	-42.38	-20	PASS

Digital: 851.0125 MHz, 12.5kHz Channel Spacing, Max Power
FCC Part 90, RSS 119



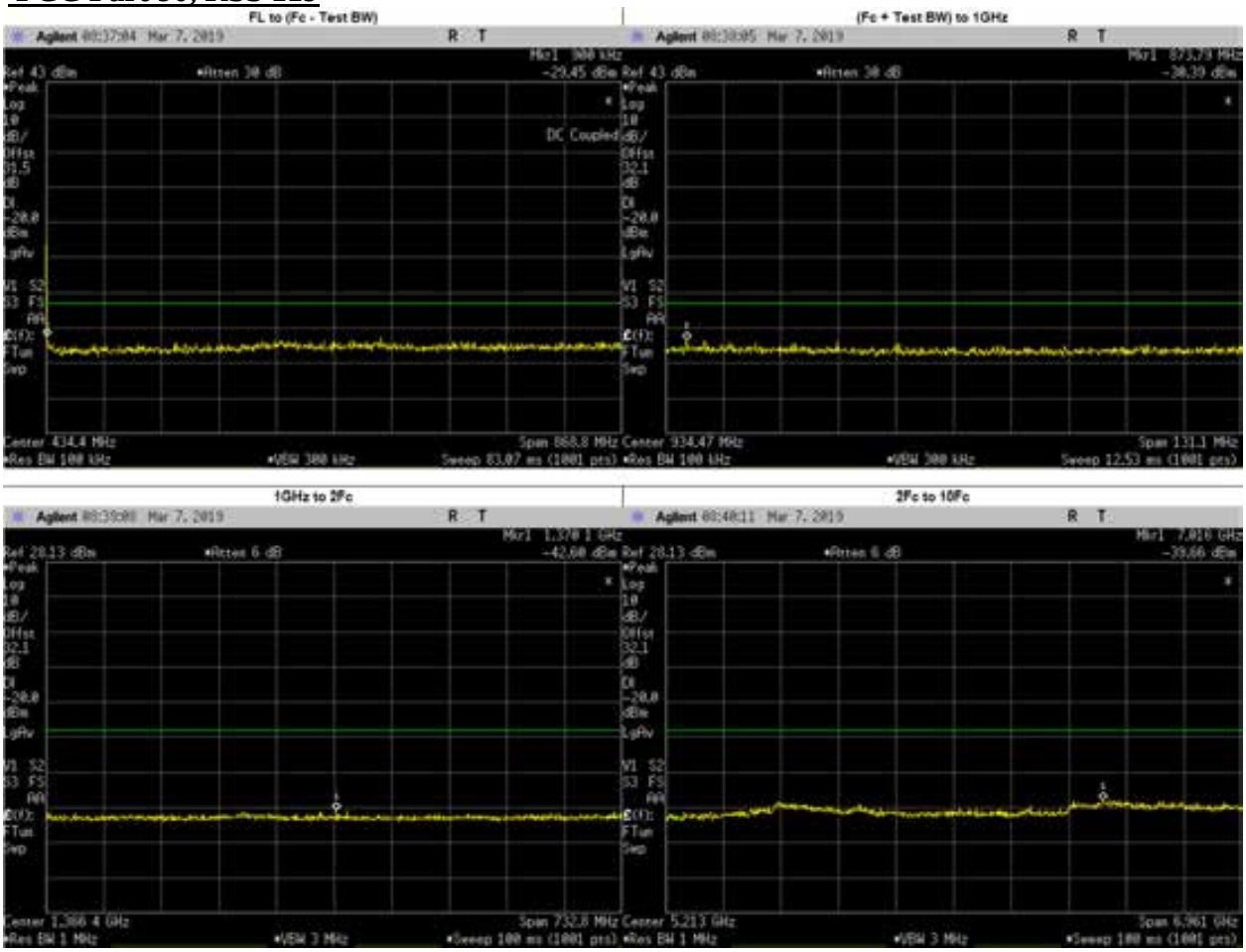
Frequency Range	Highest Spur Frequency (MHz)	Spurious Level (dBm)	Failing Limit (dBm)	Results
FL to (Fc - Test BW)	816.9244	-30.27	-20	PASS
(Fc + Test BW) to 1GHz	969.7657	-29.75	-20	PASS
1GHz to 2Fc	1405.6690	-43.11	-20	PASS
2Fc to 10Fc	1702.0250	-39.65	-20	PASS
	2553.0370	-43.50	-20	PASS
	3404.0500	-41.37	-20	PASS
	4255.0620	-43.15	-20	PASS
	5106.0750	-43.99	-20	PASS
	5957.0870	-44.34	-20	PASS
	7659.1130	-41.06	-20	PASS
	8510.1250	-41.18	-20	PASS
	6808.1000	-41.91	-20	PASS

Digital: 860.0125 MHz, 12.5kHz Channel Spacing, Max Power
FCC Part 90, RSS 119



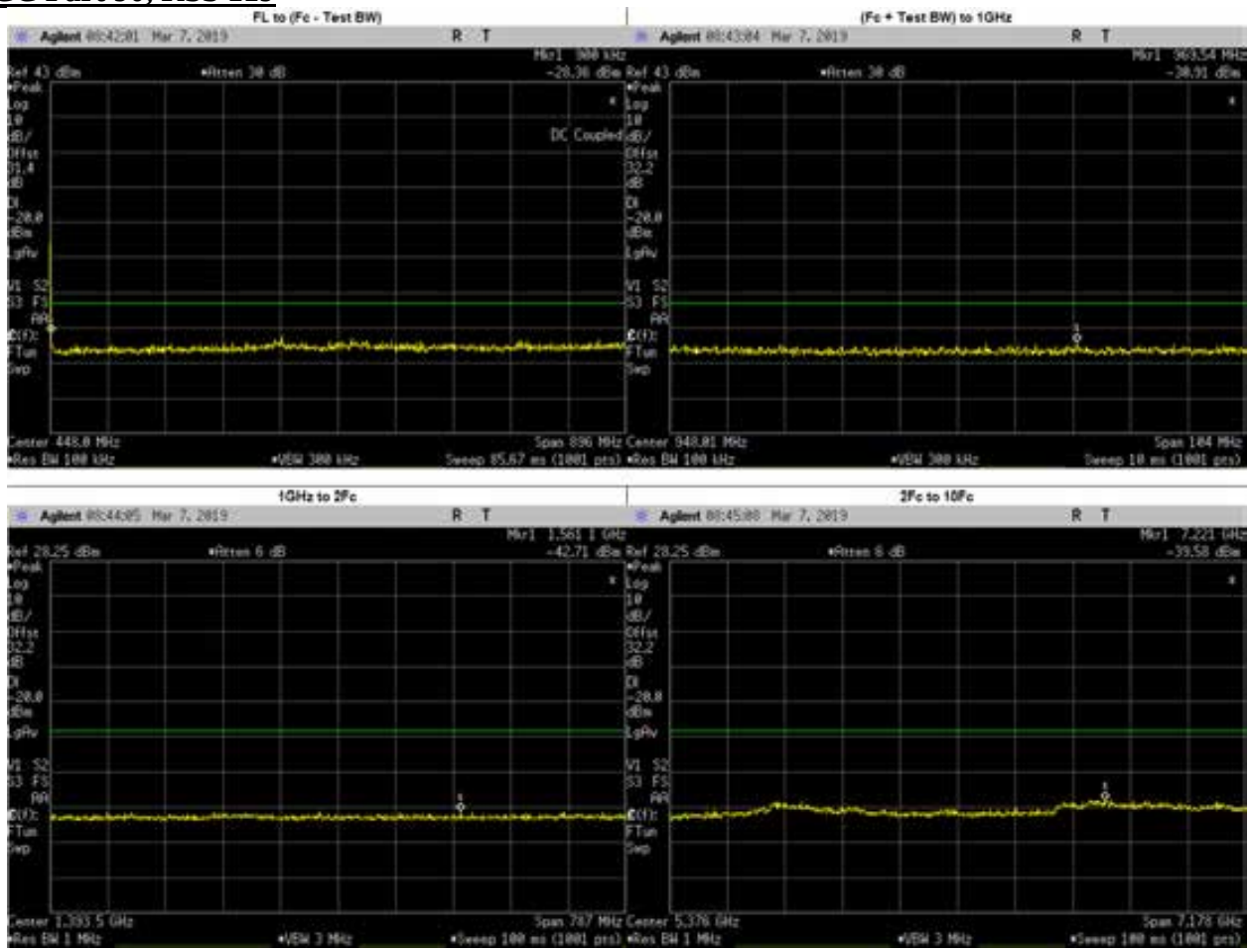
Frequency Range	Highest Spur Frequency (MHz)	Spurious Level (dBm)	Failing Limit (dBm)	Results
FL to (Fc - Test BW)	439.4452	-30.13	-20	PASS
(Fc + Test BW) to 1GHz	881.3330	-30.45	-20	PASS
1GHz to 2Fc	1255.2640	-42.94	-20	PASS
2Fc to 10Fc	1720.0250	-39.31	-20	PASS
	2580.0370	-43.91	-20	PASS
	3440.0500	-41.77	-20	PASS
	4300.0620	-43.66	-20	PASS
	5160.0750	-44.39	-20	PASS
	6020.0870	-43.83	-20	PASS
	6880.1000	-41.83	-20	PASS
	7740.1130	-41.48	-20	PASS
	8600.1250	-41.58	-20	PASS
	6979.0610	-40.74	-20	PASS

<u>Digital:</u> 868.8875 MHz, 12.5kHz Channel Spacing, Max Power
<u>FCC Part 90, RSS 119</u>



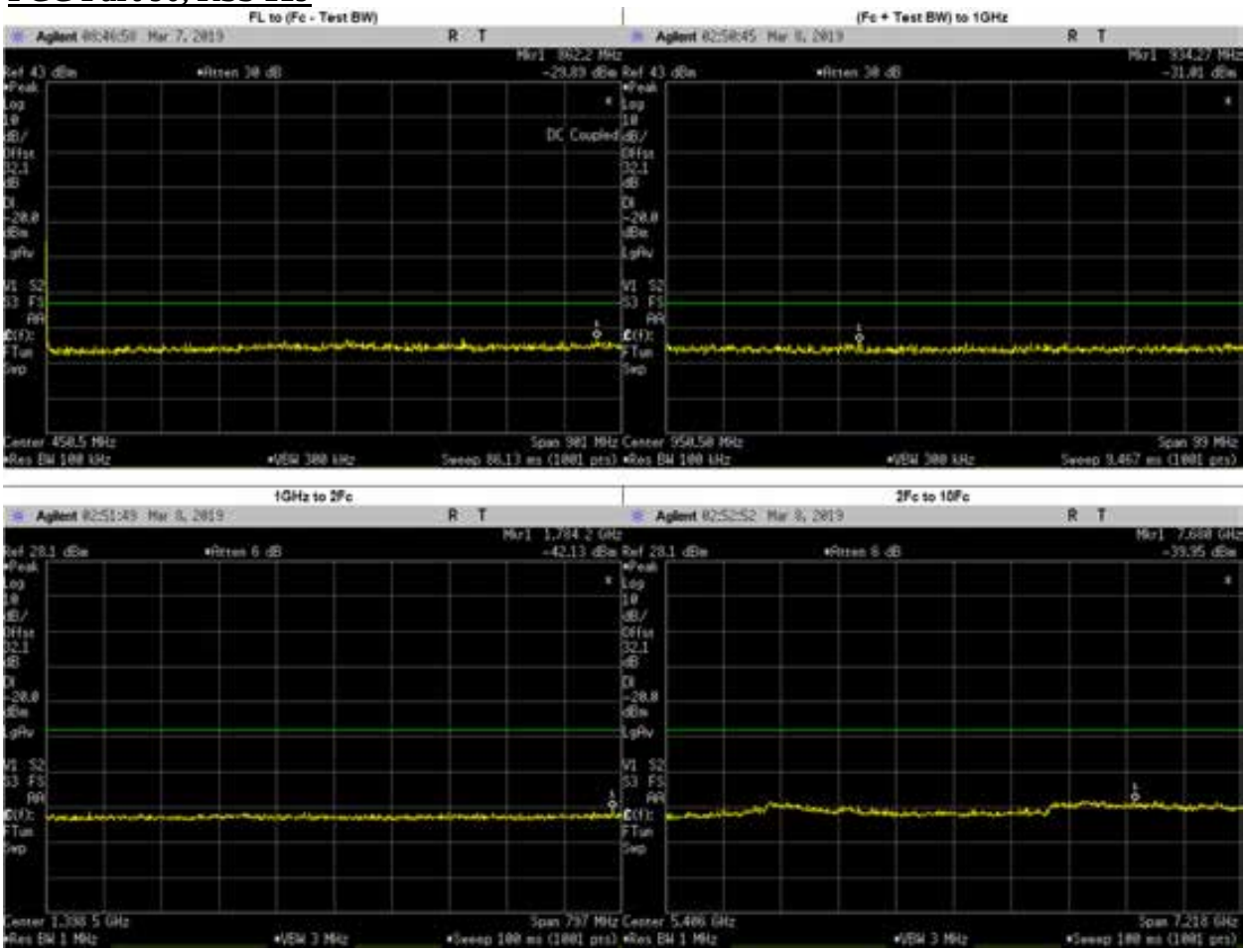
Frequency Range	Highest Spur Frequency (MHz)	Spurious Level (dBm)	Failing Limit (dBm)	Results
FL to (Fc - Test BW)	809.7572	-30.50	-20	PASS
(Fc + Test BW) to 1GHz	999.0826	-30.39	-20	PASS
1GHz to 2Fc	1361.2580	-42.60	-20	PASS
2Fc to 10Fc	1737.7750	-39.66	-20	PASS
	2606.6620	-43.53	-20	PASS
	3475.5500	-41.34	-20	PASS
	4344.4370	-42.74	-20	PASS
	5213.3250	-43.32	-20	PASS
	6082.2120	-43.29	-20	PASS
	6951.1000	-40.89	-20	PASS
	7819.9880	-41.40	-20	PASS
	8688.8750	-41.02	-20	PASS

Digital: 896.0125 MHz, 12.5kHz Channel Spacing, Max Power
FCC Part 90, RSS 119



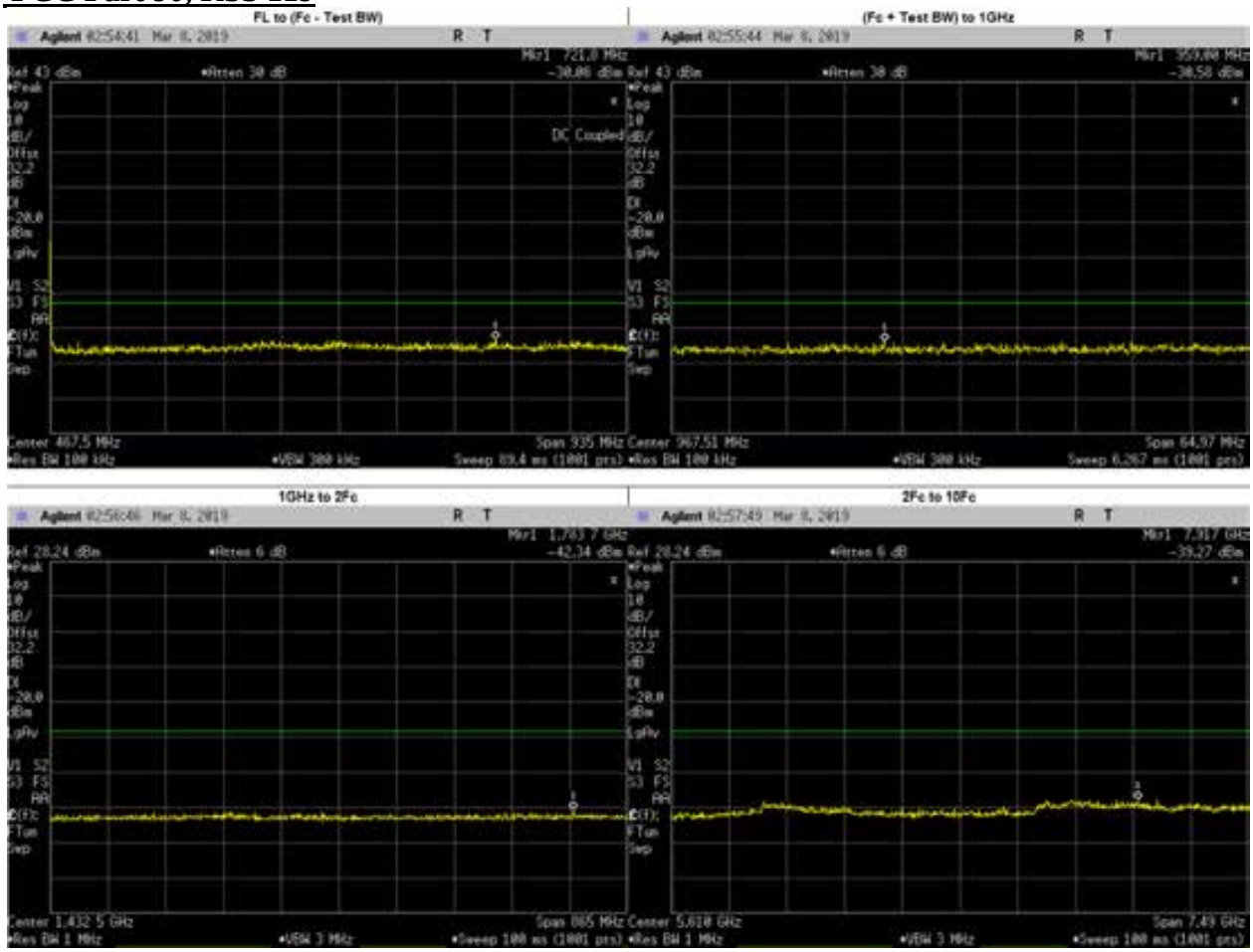
Frequency Range	Highest Spur Frequency (MHz)	Spurious Level (dBm)	Failing Limit (dBm)	Results
FL to (Fc - Test BW)	796.5428	-30.11	-20	PASS
(Fc + Test BW) to 1GHz	957.6832	-30.91	-20	PASS
1GHz to 2Fc	1556.4270	-42.71	-20	PASS
2Fc to 10Fc	1792.0250	-39.58	-20	PASS
	2688.0370	-43.33	-20	PASS
	3584.0500	-41.27	-20	PASS
	4480.0620	-43.71	-20	PASS
	5376.0750	-42.99	-20	PASS
	6272.0870	-43.58	-20	PASS
	7168.1000	-40.47	-20	PASS
	8064.1130	-41.31	-20	PASS
	8960.1250	-40.75	-20	PASS

<u>Digital:</u> 900.9875 MHz, 12.5kHz Channel Spacing, Max Power
<u>FCC Part 90, RSS 119</u>



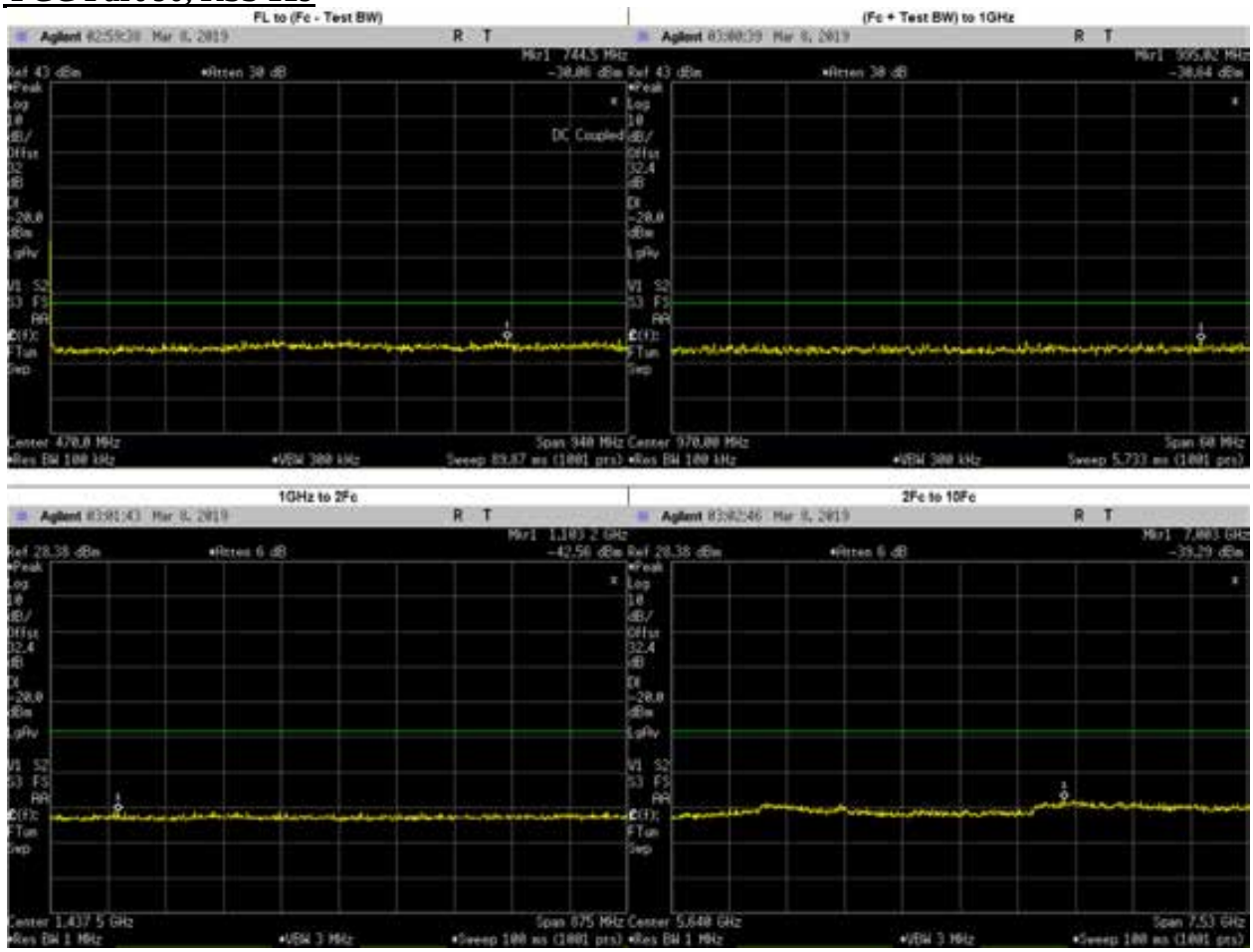
Frequency Range	Highest Spur Frequency (MHz)	Spurious Level (dBm)	Failing Limit (dBm)	Results
FL to (Fc - Test BW)	891.0619	-30.01	-20	PASS
(Fc + Test BW) to 1GHz	934.2657	-31.01	-20	PASS
1GHz to 2Fc	1784.2230	-42.13	-20	PASS
2Fc to 10Fc	7037.1700	-39.95	-20	PASS
	1801.9750	-44.80	-20	PASS
	2702.9630	-43.85	-20	PASS
	3603.9500	-42.82	-20	PASS
	4504.9370	-43.38	-20	PASS
	5405.9250	-43.82	-20	PASS
	6306.9130	-42.41	-20	PASS
	7207.9000	-40.96	-20	PASS
	8108.8870	-42.03	-20	PASS
	9009.8750	-42.32	-20	PASS

Digital: 935.0125 MHz, 12.5kHz Channel Spacing, Max Power
FCC Part 90, RSS 119



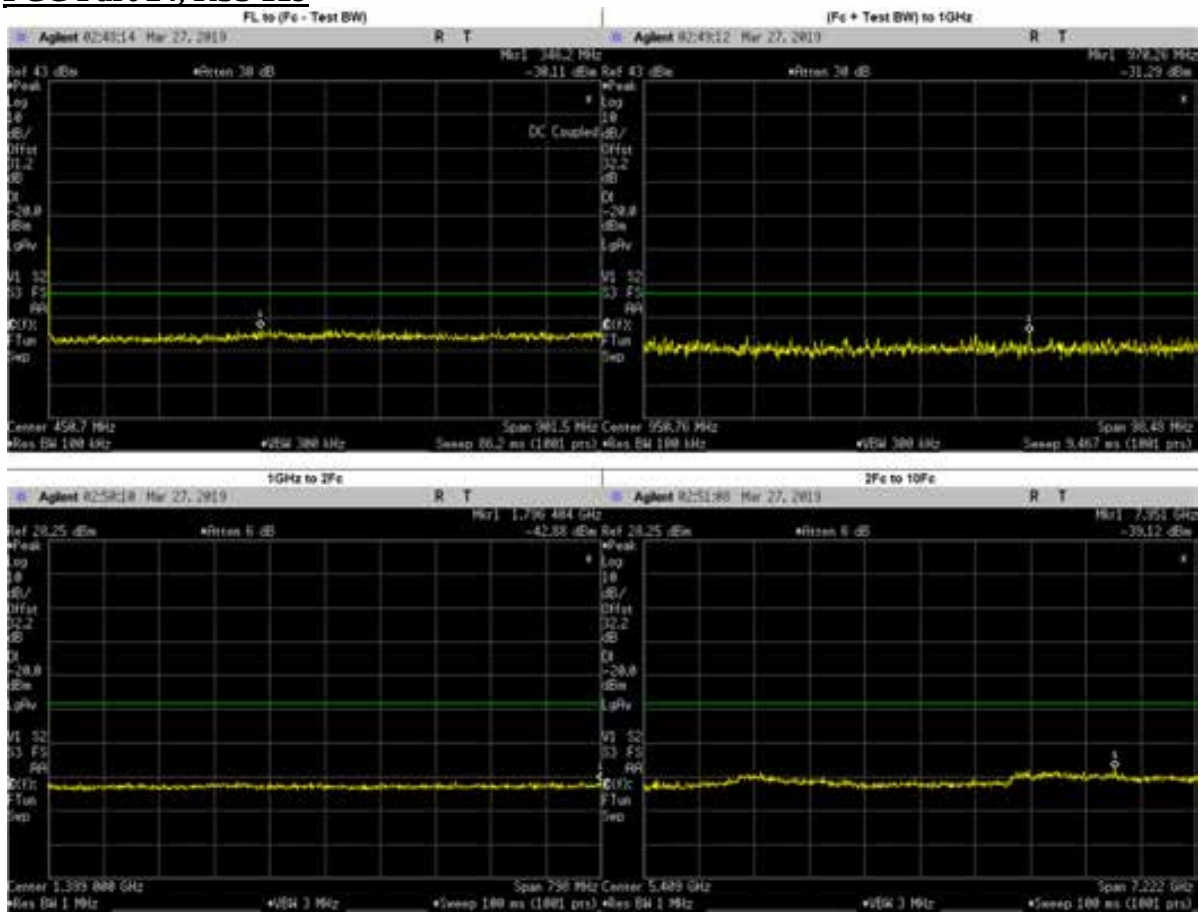
Frequency Range	Highest Spur Frequency (MHz)	Spurious Level (dBm)	Failing Limit (dBm)	Results
FL to (Fc - Test BW)	721.8201	-30.34	-20	PASS
(Fc + Test BW) to 1GHz	959.0024	-30.58	-20	PASS
1GHz to 2Fc	1783.7130	-42.34	-20	PASS
2Fc to 10Fc	1870.0250	-39.27	-20	PASS
	2805.0370	-43.22	-20	PASS
	3740.0500	-42.97	-20	PASS
	4675.0620	-43.96	-20	PASS
	5610.0750	-44.48	-20	PASS
	6545.0870	-43.47	-20	PASS
	7480.1000	-41.55	-20	PASS
	8415.1120	-42.10	-20	PASS
	9350.1250	-41.54	-20	PASS

Digital: 939.9875 MHz, 12.5kHz Channel Spacing, Max Power
FCC Part 90, RSS 119



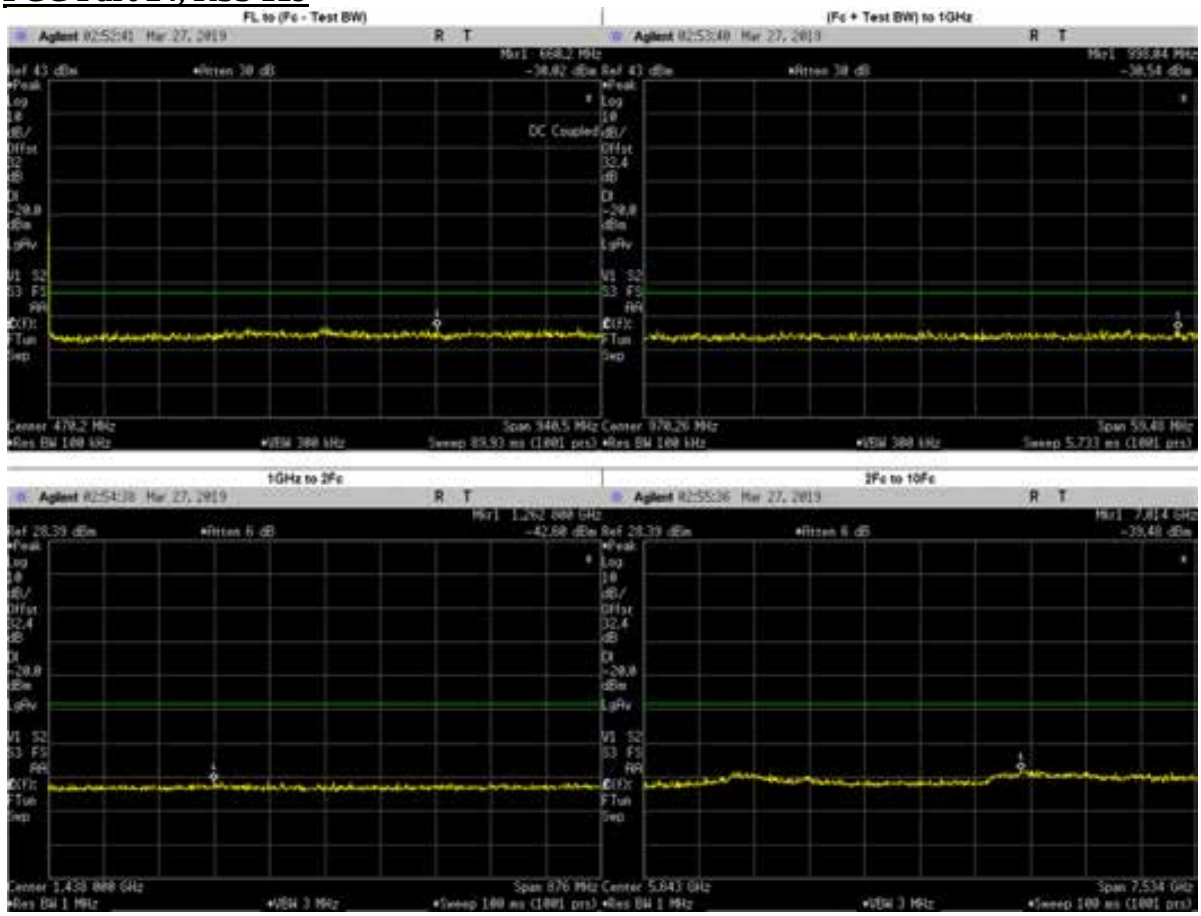
Frequency Range	Highest Spur Frequency (MHz)	Spurious Level (dBm)	Failing Limit (dBm)	Results
FL to (Fc - Test BW)	744.4601	-30.29	-20	PASS
(Fc + Test BW) to 1GHz	995.0202	-30.64	-20	PASS
1GHz to 2Fc	1103.2470	-42.56	-20	PASS
2Fc to 10Fc	1879.9750	-39.29	-20	PASS
	2819.9630	-43.05	-20	PASS
	3759.9500	-42.43	-20	PASS
	4699.9370	-43.49	-20	PASS
	5639.9250	-44.15	-20	PASS
	6579.9130	-42.99	-20	PASS
	7519.9000	-41.07	-20	PASS
	8459.8880	-41.70	-20	PASS
	9399.8750	-42.26	-20	PASS

<u>Digital:</u> 901.5 MHz, 12.5kHz Channel Spacing, Max Power
<u>FCC Part 24, RSS 119</u>



Frequency Range	Highest Spur Frequency (MHz)	Spurious Level (dbm)	Failing Limit (dBm)	Results
FL to (Fc - Test BW)	346.1758	-30.2884	-20	PASS
(Fc + Test BW) to 1GHz	970.2575	-31.2900	-20	PASS
1GHz to 2Fc	1796.4040	-42.8800	-20	PASS
2Fc to 10Fc	1803.0000	-45.2892	-20	PASS
	2704.5000	-44.0426	-20	PASS
	3606.0000	-42.6277	-20	PASS
	4507.5000	-44.0073	-20	PASS
	5409.0000	-43.7760	-20	PASS
	6310.5000	-42.8138	-20	PASS
	7212.0000	-41.2183	-20	PASS
	8113.5000	-42.3547	-20	PASS
	9015.0000	-42.1597	-20	PASS
	7951.1440	-39.1200	-20	PASS

<u>Digital:</u> 940.5 MHz, 12.5kHz Channel Spacing, Max Power
<u>FCC Part 24, RSS 119</u>



Frequency Range	Highest Spur Frequency (MHz)	Spurious Level (dbm)	Failing Limit (dBm)	Results
FL to (Fc - Test BW)	900.9850	-30.3215	-20	PASS
(Fc + Test BW) to 1GHz	998.0370	-30.5400	-20	PASS
1GHz to 2Fc	1262.8000	-42.6000	-20	PASS
2Fc to 10Fc	1881.0000	-44.9693	-20	PASS
	2821.5000	-42.9513	-20	PASS
	3762.0000	-41.8930	-20	PASS
	4702.5000	-44.0016	-20	PASS
	5643.0000	-43.1500	-20	PASS
	6583.5000	-43.1073	-20	PASS
	7524.0000	-41.1005	-20	PASS
	8464.5000	-41.8930	-20	PASS
	9405.0000	-41.7876	-20	PASS

6.10.4. Test Limit

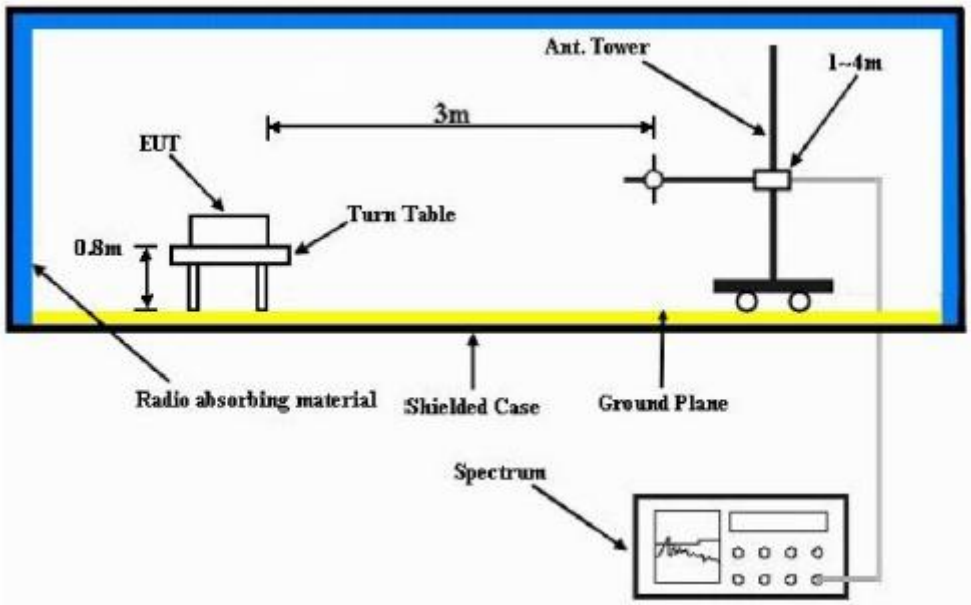
Table below summarized the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least

Channel Spacing	Part 22	Part 24D	Part 74	Part 80	Part 90 (UHF, VHF, 800, 900)	Part 90 (700)
12.5kHz	43 + log10(P) (-13 dBm)	43 + log10(P) (-13 dBm)	43 + log10(P) (-13 dBm)	Not Applicable	50 + log10(P) (-20 dBm)	43 + log10(P) (-13 dBm)
25kHz		Not Applicable		43 + log10(P) (-13 dBm)	43 + log10(P) (-13 dBm)	43 + log10(P) (-13 dBm)

Channel Spacing	RSS 134	RSS 182	RSS 119 (UHF, VHF, 800, 900)	RSS 119 (700)
12.5kHz	43 + log10(P) (-13 dBm)	Not Applicable	50 + log10(P) (-20 dBm)	43 + log10(P) (-13 dBm)
25kHz	Not Applicable	43 + log10(P) (-13 dBm)	43 + log10(P) (-13 dBm)	43 + log10(P) (-13 dBm)

6.11. Radiated Spurious Emission

6.11.1. 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 frequencies < 1GHz) or 1.5m (for frequencies > 1GHz) 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.

6.11.2. Test Result (Analog)

SAC Transmitter Radiated Emission:

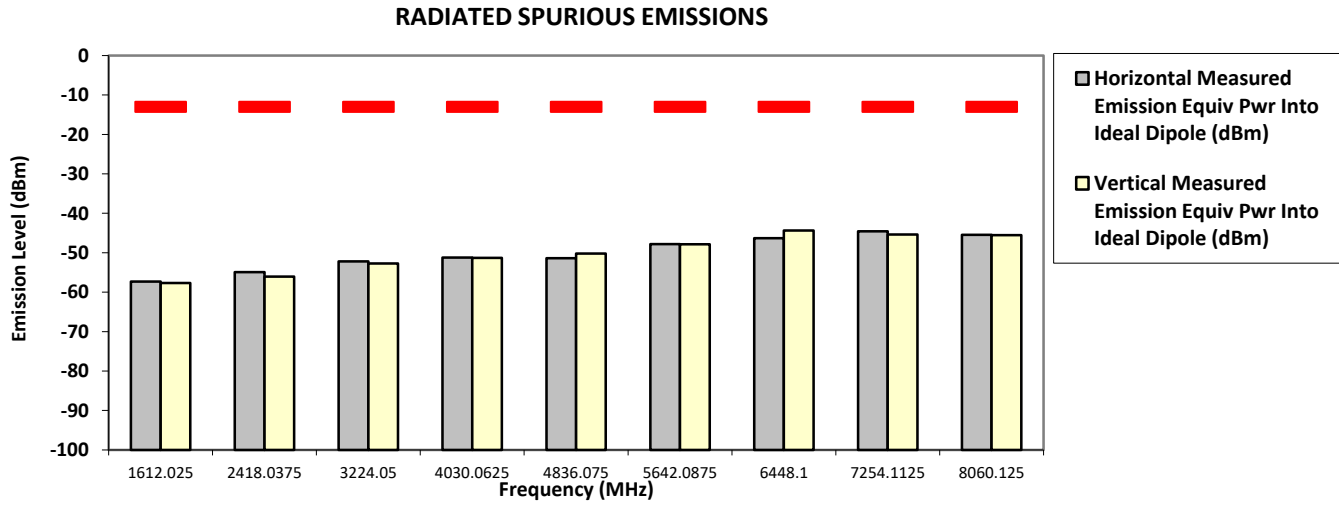
Model Number: AAH56UCN9RB1AN **S/N: 126TVD2899** **SR:02803-EMC-00055**

Battery Part No: PMNN4488A **Accy Part No: NA**

Test Mode: TX Analog

806.012500 MHz **25 kHz** **3.000 Watt(s) /Max Power**

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
1612.0250	-13.0000	-57.3031 **	-57.6870 **
2418.0375	-13.0000	-54.9076 **	-56.0762 **
3224.0500	-13.0000	-52.2117 **	-52.7280 **
4030.0625	-13.0000	-51.2140 **	-51.2965 **
4836.0750	-13.0000	-51.3686 **	-50.2243 **
5642.0875	-13.0000	-47.8318 **	-47.8398 **
6448.1000	-13.0000	-46.3032 **	-44.3661 **
7254.1125	-13.0000	-44.5515 **	-45.3672 **
8060.1250	-13.0000	-45.4812 **	-45.5494 **



The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 document.

Motorola Penang EMC Lab - Test Performed by: Azil,Faris & Aiman **Tue, Mar 26, 2019**

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.

***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported**

Temp(Deg): 22.9 Hum(%RH): 69.8

System MU: 4.9 dB

Remarks:

Passed Results	Marginal Results	Failed Results

SAC Transmitter Radiated Emission:

Model Number: AAH56UCN9RB1AN **S/N: 126TVD2899** **SR:02803-EMC-00055**

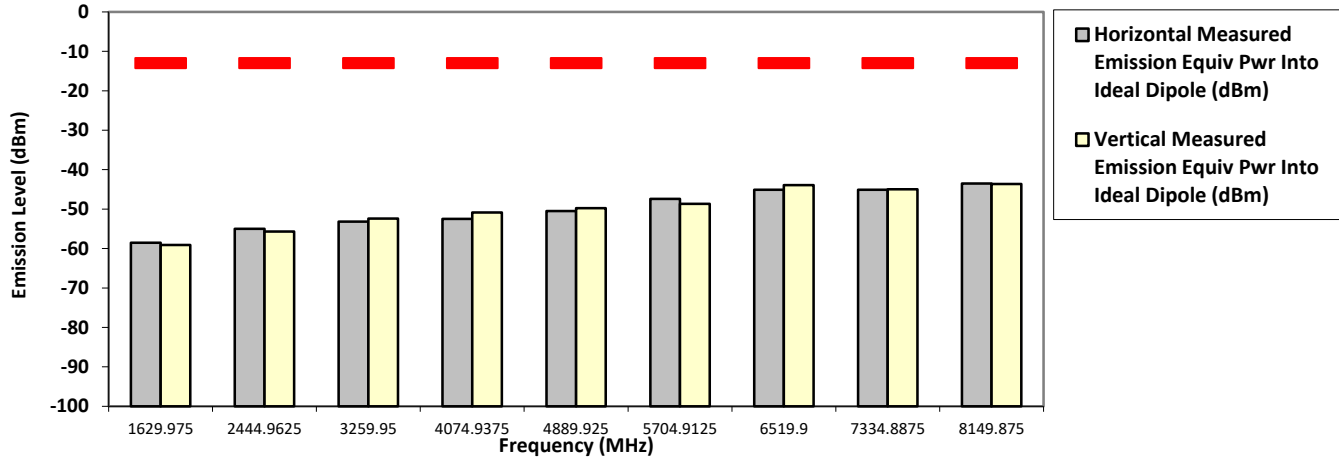
Battery Part No: PMNN4488A **Accy Part No: NA**

Test Mode: TX Analog

814.987500 MHz **25 kHz** **3.000 Watt(s) /Max Power**

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
1629.9750	-13.0000	-58.5169 **	-59.0911 **
2444.9625	-13.0000	-55.0188 **	-55.7097 **
3259.9500	-13.0000	-53.1562 **	-52.4208 **
4074.9375	-13.0000	-52.4651 **	-50.8490 **
4889.9250	-13.0000	-50.4760 **	-49.7736 **
5704.9125	-13.0000	-47.4303 **	-48.6576 **
6519.9000	-13.0000	-45.1100 **	-43.9202 **
7334.8875	-13.0000	-45.1105 **	-44.9949 **
8149.8750	-13.0000	-43.5219 **	-43.6407 **

RADIATED SPURIOUS EMISSIONS



The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 document.

Motorola Penang EMC Lab - Test Performed by: Azil,Faris & Aiman **Tue, Mar 26, 2019**

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.

***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported**

Temp(Deg): 22.9 Hum(%RH): 69.8

System MU: 4.9 dB

Remarks:

Passed Results	Marginal Results	Failed Results

SAC Transmitter Radiated Emission:

Model Number: AAH56UCN9RB1AN **S/N: 126TVD2899** **SR:02803-EMC-00055**

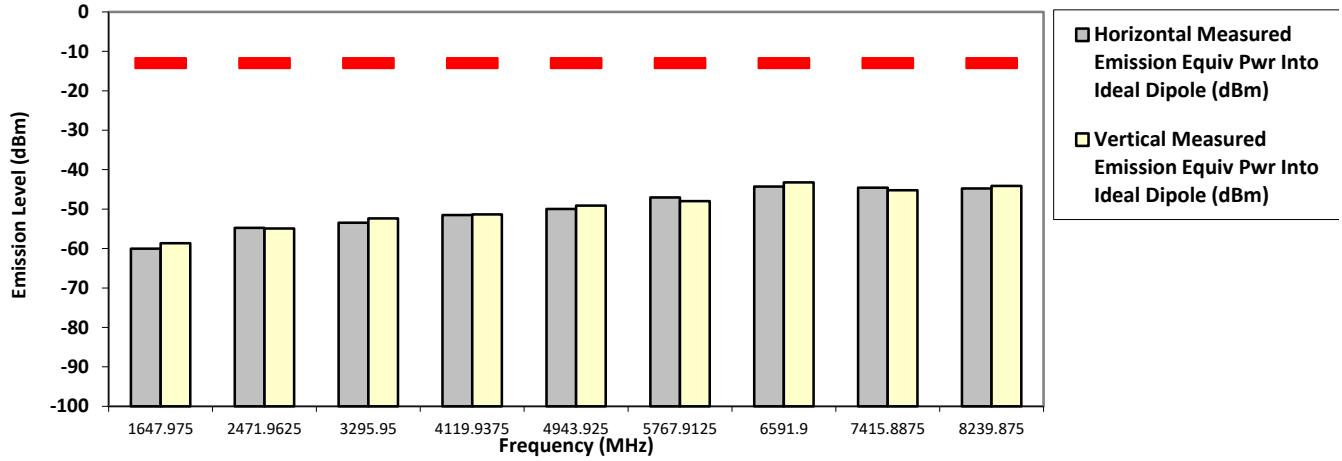
Battery Part No: PMNN4488A **Accy Part No: NA**

Test Mode: TX Analog

823.987500 MHz **25 kHz** **3.000 Watt(s) /Max Power**

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
1647.9750	-13.0000	-60.0168 **	-58.6562 **
2471.9625	-13.0000	-54.7570 **	-54.9070 **
3295.9500	-13.0000	-53.4537 **	-52.3590 **
4119.9375	-13.0000	-51.5082 **	-51.3369 **
4943.9250	-13.0000	-49.9781 **	-49.1070 **
5767.9125	-13.0000	-47.0425 **	-47.9632 **
6591.9000	-13.0000	-44.2836 **	-43.2308 **
7415.8875	-13.0000	-44.5597 **	-45.2322 **
8239.8750	-13.0000	-44.7891 **	-44.1353 **

RADIATED SPURIOUS EMISSIONS



The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 document.

Motorola Penang EMC Lab - Test Performed by: Azil,Faris & Aiman **Tue, Mar 26, 2019**

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.

***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported**

Temp(Deg): 22.9 Hum(%RH): 69.8

System MU: 4.9 dB

Remarks:

Passed Results	Marginal Results	Failed Results

SAC Transmitter Radiated Emission:

Model Number: AAH56UCN9RB1AN **S/N: 126TVD2899** **SR:02803-EMC-00055**

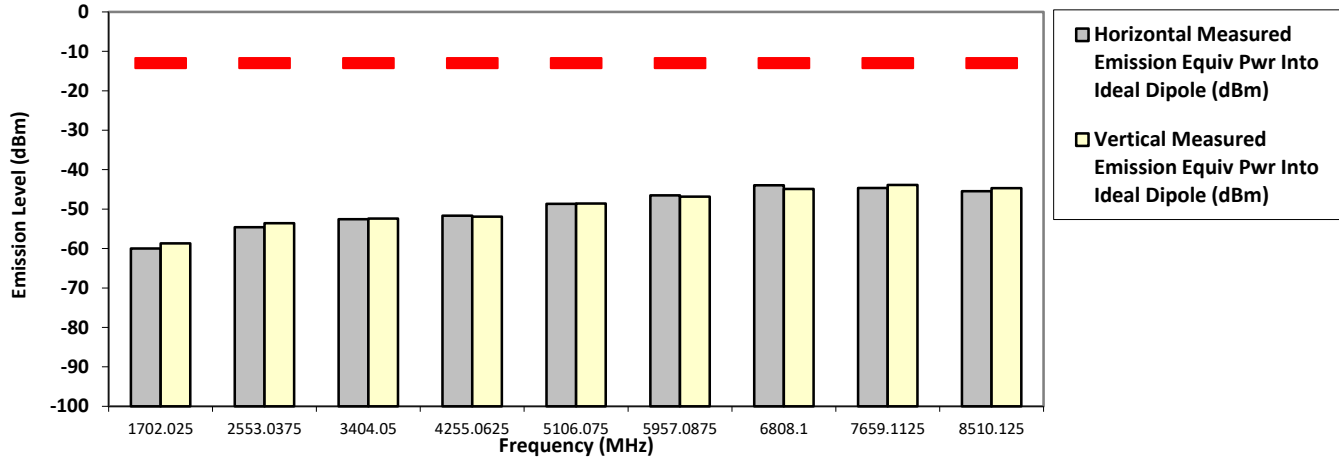
Battery Part No: PMNN4488A **Accy Part No: NA**

Test Mode: TX Analog

851.012500 MHz **25 kHz** **3.000 Watt(s) /Max Power**

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
1702.0250	-13.0000	-60.0134 **	-58.7015 **
2553.0375	-13.0000	-54.6085 **	-53.5706 **
3404.0500	-13.0000	-52.5806 **	-52.4169 **
4255.0625	-13.0000	-51.6802 **	-51.9200 **
5106.0750	-13.0000	-48.6556 **	-48.5693 **
5957.0875	-13.0000	-46.5281 **	-46.8271 **
6808.1000	-13.0000	-43.9472 **	-44.9066 **
7659.1125	-13.0000	-44.6511 **	-43.8779 **
8510.1250	-13.0000	-45.4805 **	-44.7093 **

RADIATED SPURIOUS EMISSIONS



The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 document.

Motorola Penang EMC Lab - Test Performed by: Azil,Faris & Aiman **Tue, Mar 26, 2019**

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.

***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported**

Temp(Deg): 22.9 Hum(%RH): 69.8

System MU: 4.9 dB

Remarks:

Passed Results	Marginal Results	Failed Results

SAC Transmitter Radiated Emission:

Model Number: AAH56UCN9RB1AN **S/N: 126TVD2899** **SR:02803-EMC-00055**

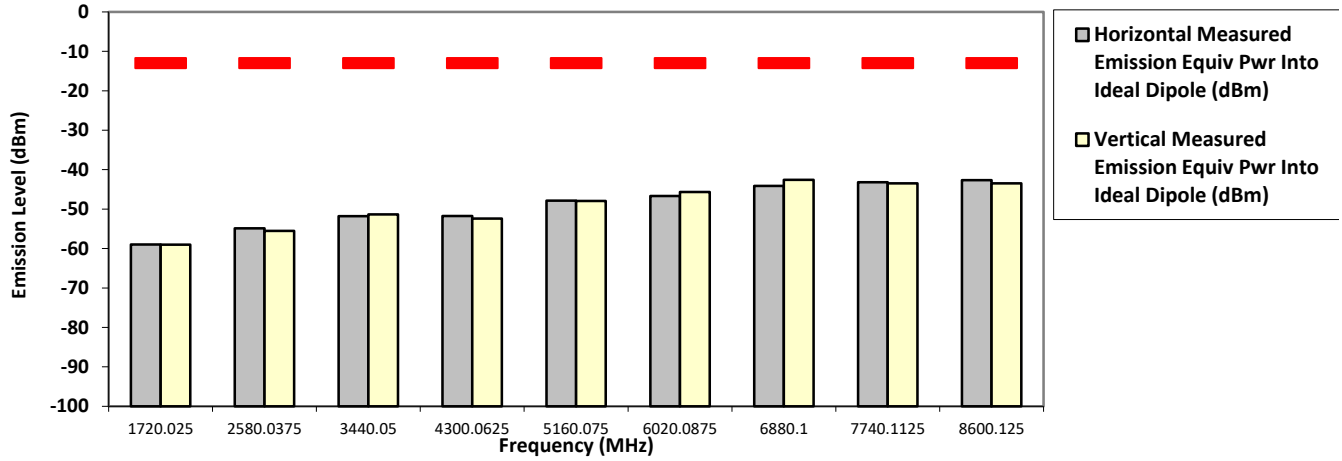
Battery Part No: PMNN4488A **Accy Part No: NA**

Test Mode: TX Analog

860.012500 MHz **25 kHz** **3.000 Watt(s) /Max Power**

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
1720.0250	-13.0000	-58.9813 **	-59.0231 **
2580.0375	-13.0000	-54.8783 **	-55.5306 **
3440.0500	-13.0000	-51.8013 **	-51.3491 **
4300.0625	-13.0000	-51.7378 **	-52.4034 **
5160.0750	-13.0000	-47.8728 **	-47.9365 **
6020.0875	-13.0000	-46.6660 **	-45.6588 **
6880.1000	-13.0000	-44.1057 **	-42.5714 **
7740.1125	-13.0000	-43.1870 **	-43.4587 **
8600.1250	-13.0000	-42.6598 **	-43.4884 **

RADIATED SPURIOUS EMISSIONS



The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 document.

Motorola Penang EMC Lab - Test Performed by: Azil,Faris & Aiman **Tue, Mar 26, 2019**

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.

***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported**

Temp(Deg): 22.9 Hum(%RH): 69.8

System MU: 4.9 dB

Remarks:

Passed Results	Marginal Results	Failed Results

SAC Transmitter Radiated Emission:

Model Number: AAH56UCN9RB1AN **S/N: 126TVD2899** **SR:02803-EMC-00055**

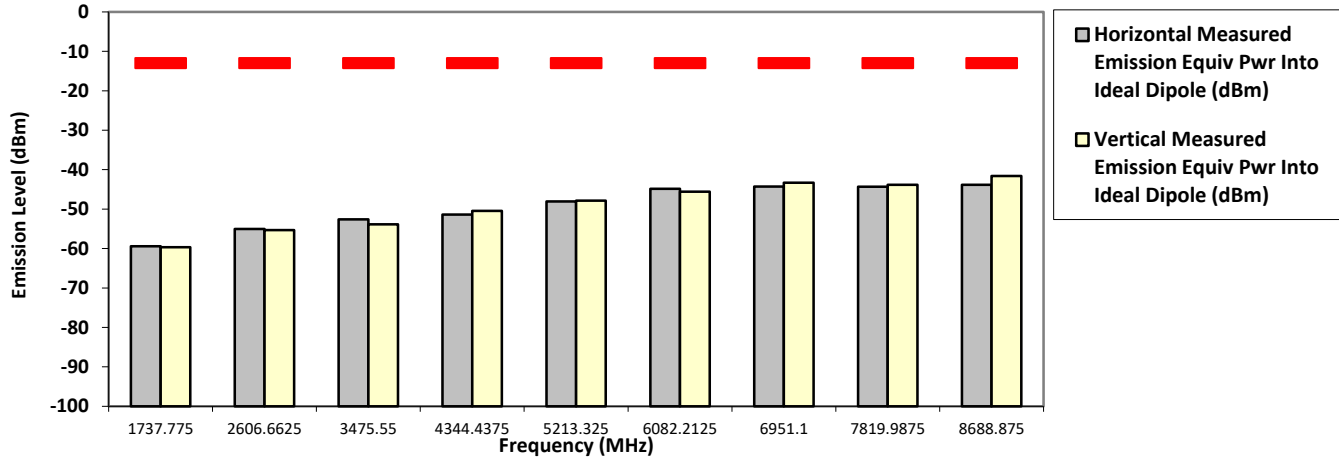
Battery Part No: PMNN4488A **Accy Part No: NA**

Test Mode: TX Analog

868.887500 MHz **25 kHz** **3.000 Watt(s) /Max Power**

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
1737.7750	-13.0000	-59.4063 **	-59.6670 **
2606.6625	-13.0000	-55.0364 **	-55.3433 **
3475.5500	-13.0000	-52.5967 **	-53.8520 **
4344.4375	-13.0000	-51.3932 **	-50.4753 **
5213.3250	-13.0000	-48.0542 **	-47.8684 **
6082.2125	-13.0000	-44.8651 **	-45.6032 **
6951.1000	-13.0000	-44.3053 **	-43.2981 **
7819.9875	-13.0000	-44.3288 **	-43.8393 **
8688.8750	-13.0000	-43.8504 **	-41.5890 **

RADIATED SPURIOUS EMISSIONS



The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 document.

Motorola Penang EMC Lab - Test Performed by: Azil,Faris & Aiman **Tue, Mar 26, 2019**

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.

***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported**

Temp(Deg): 22.9 Hum(%RH): 69.8

System MU: 4.9 dB

Remarks:

Passed Results	Marginal Results	Failed Results

SAC Transmitter Radiated Emission:

Model Number: AAH56UCN9RB1AN **S/N: 126TVD2899** **SR:02803-EMC-00055**

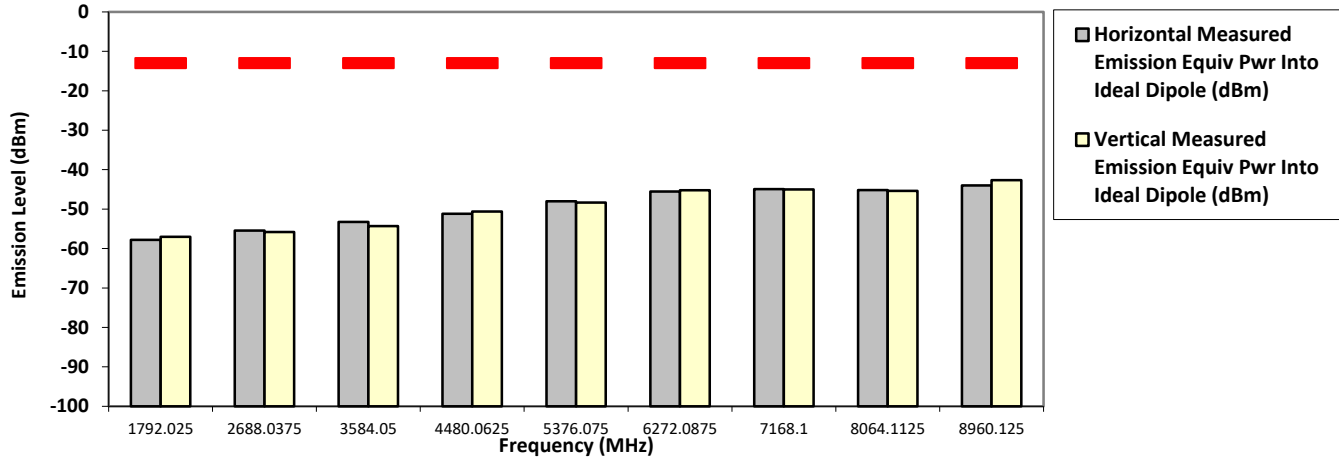
Battery Part No: PMNN4488A **Accy Part No: NA**

Test Mode: TX Analog

896.012500 MHz **12.5 kHz** **3.000 Watt(s) /Max Power**

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
1792.0250	-13.0000	-57.8081 **	-57.0435 **
2688.0375	-13.0000	-55.4569 **	-55.7992 **
3584.0500	-13.0000	-53.2640 **	-54.3292 **
4480.0625	-13.0000	-51.1767 **	-50.6356 **
5376.0750	-13.0000	-48.0297 **	-48.3332 **
6272.0875	-13.0000	-45.5384 **	-45.2157 **
7168.1000	-13.0000	-44.9477 **	-45.0020 **
8064.1125	-13.0000	-45.1648 **	-45.3681 **
8960.1250	-13.0000	-44.0064 **	-42.6628 **

RADIATED SPURIOUS EMISSIONS



The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 document.

Motorola Penang EMC Lab - Test Performed by: Azil,Faris & Aiman **Tue, Mar 26, 2019**

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.

***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported**

Temp(Deg): 22.9 Hum(%RH): 69.8

System MU: 4.9 dB

Remarks:

Passed Results	Marginal Results	Failed Results

SAC Transmitter Radiated Emission:

Model Number: AAH56UCN9RB1AN **S/N: 126TVD2899** **SR:02803-EMC-00055**

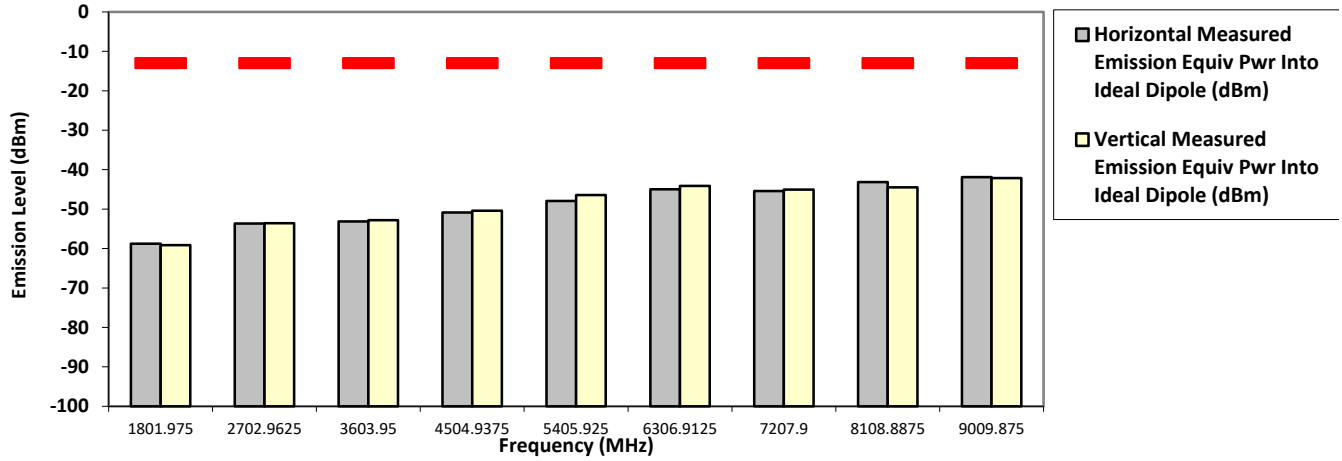
Battery Part No: PMNN4488A **Accy Part No: NA**

Test Mode: TX Analog

900.987500 MHz **12.5 kHz** **3.000 Watt(s) /Max Power**

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
1801.9750	-13.0000	-58.7636 **	-59.1304 **
2702.9625	-13.0000	-53.6478 **	-53.5872 **
3603.9500	-13.0000	-53.1167 **	-52.8131 **
4504.9375	-13.0000	-50.8797 **	-50.3990 **
5405.9250	-13.0000	-47.9530 **	-46.4201 **
6306.9125	-13.0000	-44.9920 **	-44.1227 **
7207.9000	-13.0000	-45.4040 **	-45.0382 **
8108.8875	-13.0000	-43.1467 **	-44.4739 **
9009.8750	-13.0000	-41.9076 **	-42.1445 **

RADIATED SPURIOUS EMISSIONS



The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 document.

Motorola Penang EMC Lab - Test Performed by: Azil,Faris & Aiman **Tue, Mar 26, 2019**

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.

***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported**

Temp(Deg): 22.9 Hum(%RH): 69.8

System MU: 4.9 dB

Remarks:

Passed Results	Marginal Results	Failed Results

SAC Transmitter Radiated Emission:

Model Number: AAH56UCN9RB1AN **S/N: 126TVD2899** **SR:02803-EMC-00055**

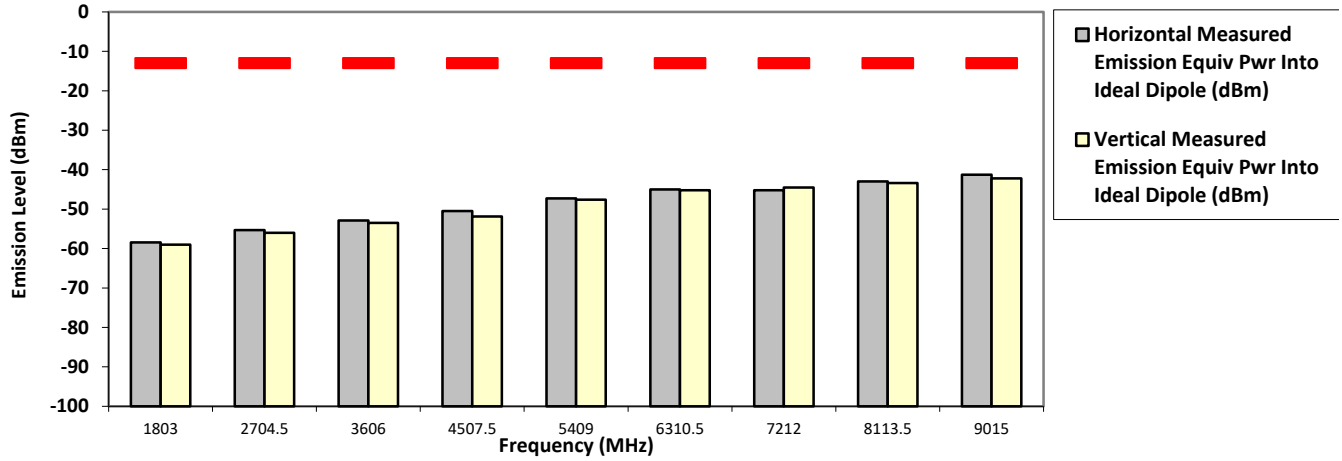
Battery Part No: PMNN4488A **Accy Part No: NA**

Test Mode: TX Analog

901.500000 MHz **12.5 kHz** **3.000 Watt(s) /Max Power**

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
1803.0000	-13.0000	-58.4564 **	-59.0290 **
2704.5000	-13.0000	-55.3327 **	-56.0317 **
3606.0000	-13.0000	-52.9071 **	-53.5076 **
4507.5000	-13.0000	-50.5065 **	-51.8794 **
5409.0000	-13.0000	-47.3046 **	-47.6217 **
6310.5000	-13.0000	-45.0179 **	-45.2042 **
7212.0000	-13.0000	-45.2071 **	-44.5127 **
8113.5000	-13.0000	-42.9715 **	-43.3938 **
9015.0000	-13.0000	-41.3011 **	-42.2057 **

RADIATED SPURIOUS EMISSIONS



The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 document.

Motorola Penang EMC Lab - Test Performed by: Azil,Faris & Aiman **Tue, Mar 26, 2019**

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.

***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported**

Temp(Deg): 22.9 Hum(%RH): 69.8

System MU: 4.9 dB

Remarks:

Passed Results	**Marginal Results**	**Failed Results**

SAC Transmitter Radiated Emission:

Model Number: AAH56UCN9RB1AN **S/N: 126TVD2899** **SR:02803-EMC-00055**

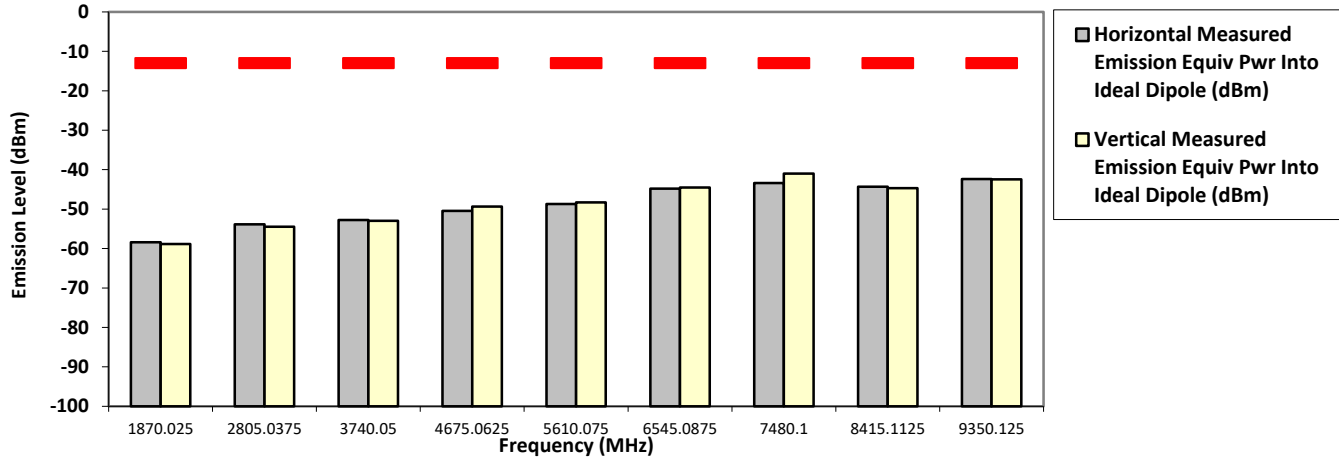
Battery Part No: PMNN4488A **Accy Part No: NA**

Test Mode: TX Analog

935.012500 MHz **12.5 kHz** **3.000 Watt(s) /Max Power**

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
1870.0250	-13.0000	-58.4280 **	-58.8704 **
2805.0375	-13.0000	-53.8515 **	-54.4616 **
3740.0500	-13.0000	-52.7627 **	-52.9738 **
4675.0625	-13.0000	-50.4562 **	-49.3563 **
5610.0750	-13.0000	-48.7069 **	-48.2915 **
6545.0875	-13.0000	-44.7969 **	-44.5180 **
7480.1000	-13.0000	-43.4071 **	-40.9857 **
8415.1125	-13.0000	-44.3222 **	-44.6783 **
9350.1250	-13.0000	-42.3824 **	-42.4634 **

RADIATED SPURIOUS EMISSIONS



The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 document.

Motorola Penang EMC Lab - Test Performed by: Azil,Faris & Aiman **Tue, Mar 26, 2019**

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.

***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported**

Temp(Deg): 22.9 Hum(%RH): 69.8

System MU: 4.9 dB

Remarks:

Passed Results	Marginal Results	Failed Results

SAC Transmitter Radiated Emission:

Model Number: AAH56UCN9RB1AN **S/N: 126TVD2899** **SR:02803-EMC-00055**

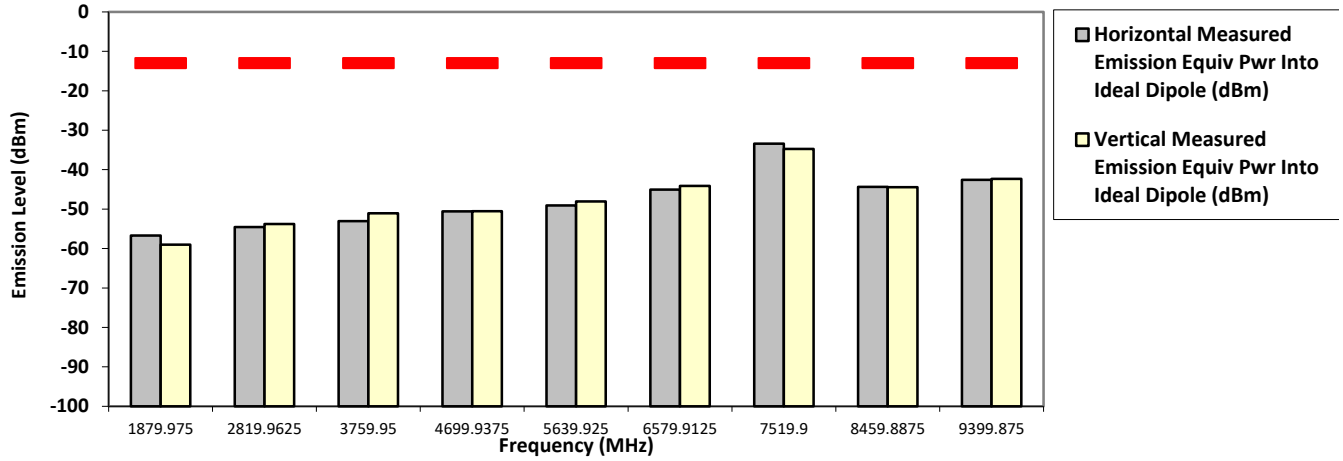
Battery Part No: PMNN4488A **Accy Part No: NA**

Test Mode: TX Analog

939.987500 MHz **12.5 kHz** **3.000 Watt(s) /Max Power**

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
1879.9750	-13.0000	-56.7129 **	-59.0105 **
2819.9625	-13.0000	-54.5443 **	-53.7646 **
3759.9500	-13.0000	-53.0428 **	-51.0794 **
4699.9375	-13.0000	-50.5867 **	-50.5270 **
5639.9250	-13.0000	-49.0820 **	-48.0472 **
6579.9125	-13.0000	-45.0593 **	-44.1431 **
7519.9000	-13.0000	-33.4200 *	-34.7500 *
8459.8875	-13.0000	-44.3575 **	-44.4641 **
9399.8750	-13.0000	-42.5784 **	-42.3557 **

RADIATED SPURIOUS EMISSIONS



The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 document.

Motorola Penang EMC Lab - Test Performed by: Azil,Faris & Aiman **Tue, Mar 26, 2019**

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.

***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported**

Temp(Deg): 22.9 Hum(%RH): 69.8

System MU: 4.9 dB

Remarks:

Passed Results	Marginal Results	Failed Results

SAC Transmitter Radiated Emission:

Model Number: AAH56UCN9RB1AN S/N: 126TVD2899 SR:02803-EMC-00055

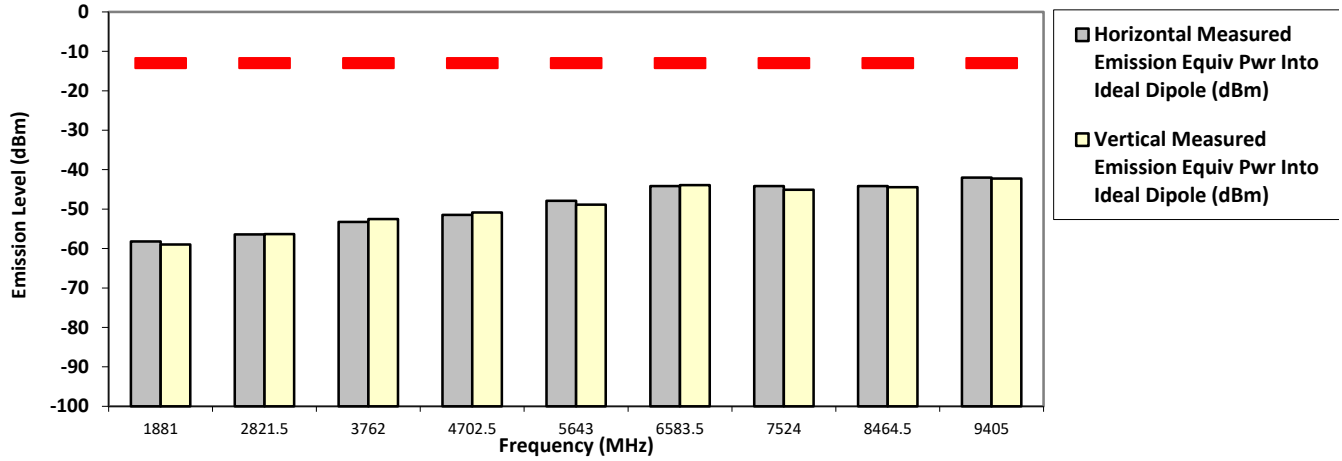
Battery Part No: PMNN4488A Accy Part No: NA

Test Mode: TX Analog

940.500000 MHz 12.5 kHz 3.000 Watt(s) /Max Power

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
1881.0000	-13.0000	-58.2200 **	-58.9704 **
2821.5000	-13.0000	-56.4351 **	-56.3280 **
3762.0000	-13.0000	-53.2400 **	-52.5295 **
4702.5000	-13.0000	-51.4807 **	-50.8578 **
5643.0000	-13.0000	-47.9168 **	-48.8909 **
6583.5000	-13.0000	-44.1477 **	-43.9049 **
7524.0000	-13.0000	-44.1634 **	-45.0826 **
8464.5000	-13.0000	-44.1672 **	-44.4362 **
9405.0000	-13.0000	-41.9980 **	-42.2499 **

RADIATED SPURIOUS EMISSIONS



The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 document.

Motorola Penang EMC Lab - Test Performed by: Azil,Faris & Aiman Tue, Mar 26, 2019

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.

***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported**

Temp(Deg): 22.9 Hum(%RH): 69.8

System MU: 4.9 dB

Remarks: Passed Results | **Marginal Results** | **Failed Results**

6.11.1. Test Result (Digital Fcc)

SAC Transmitter Radiated Emission:

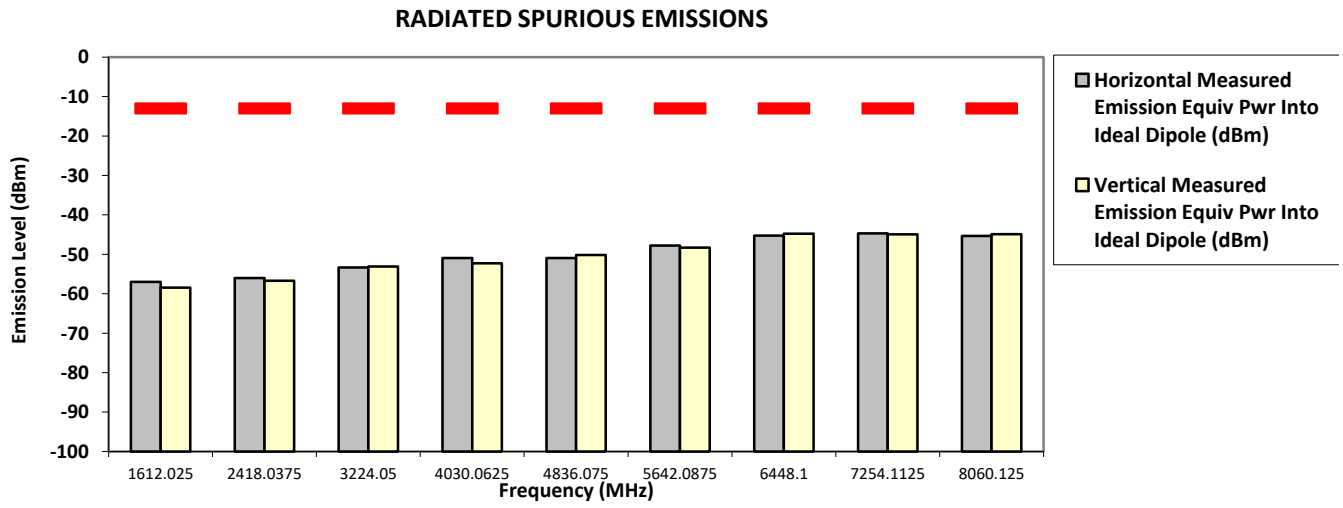
Model Number: AAH56UCN9RB1AN **S/N: 126TVD2899** **SR:02803-EMC-00055**

Battery Part No: PMNN4488A **Accy Part No: NA**

Test Mode: TX PCR Digital 4FSK

806.012500 MHz **12.5 kHz** **3.000 Watt(s) /Max Power**

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
1612.0250	-13.0000	-56.9818 **	-58.4456 **
2418.0375	-13.0000	-56.0140 **	-56.6901 **
3224.0500	-13.0000	-53.3174 **	-53.1100 **
4030.0625	-13.0000	-50.9343 **	-52.2812 **
4836.0750	-13.0000	-50.9418 **	-50.1717 **
5642.0875	-13.0000	-47.7732 **	-48.3146 **
6448.1000	-13.0000	-45.2746 **	-44.7789 **
7254.1125	-13.0000	-44.7086 **	-44.9345 **
8060.1250	-13.0000	-45.3212 **	-44.9053 **



The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 document.

Motorola Penang EMC Lab - Test Performed by: Azil,Faris & Aiman **Tue, Mar 26, 2019**

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.

***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported**

Temp(Deg): 22.9 Hum(%RH): 69.8

System MU: 4.9 dB

Remarks:

Passed Results	Marginal Results	Failed Results

SAC Transmitter Radiated Emission:

Model Number: AAH56UCN9RB1AN S/N: 126TVD2899 SR:02803-EMC-00055

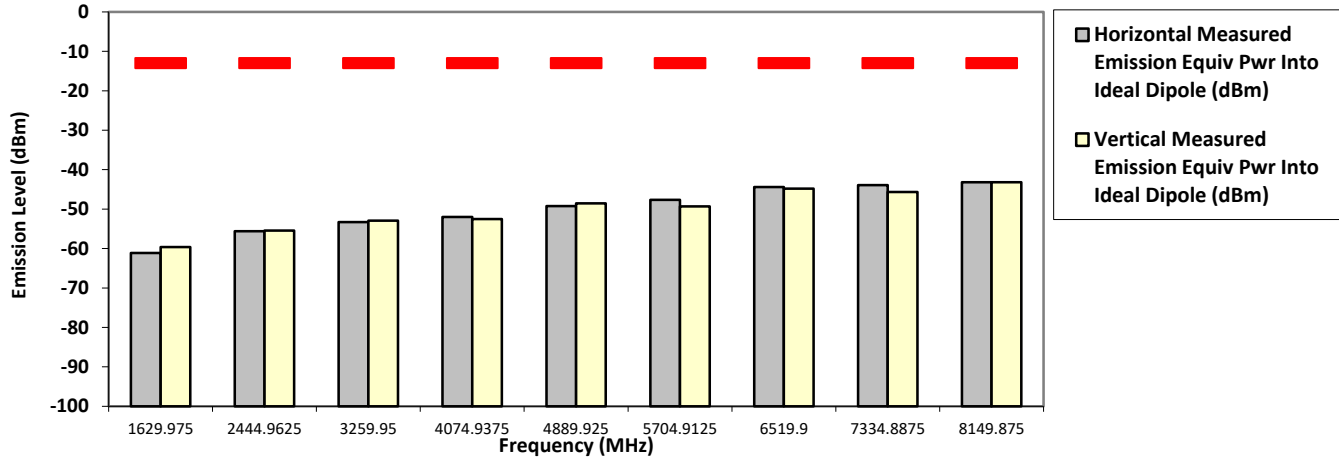
Battery Part No: PMNN4488A Accy Part No: NA

Test Mode: TX PCR Digital 4FSK

814.987500 MHz 12.5 kHz 3.000 Watt(s) /Max Power

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
1629.9750	-13.0000	-61.1415 **	-59.6406 **
2444.9625	-13.0000	-55.6190 **	-55.4290 **
3259.9500	-13.0000	-53.3149 **	-52.9462 **
4074.9375	-13.0000	-52.0052 **	-52.5195 **
4889.9250	-13.0000	-49.2400 **	-48.5289 **
5704.9125	-13.0000	-47.6672 **	-49.3141 **
6519.9000	-13.0000	-44.4005 **	-44.8013 **
7334.8875	-13.0000	-43.9170 **	-45.6761 **
8149.8750	-13.0000	-43.2051 **	-43.2008 **

RADIATED SPURIOUS EMISSIONS



The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 document.

Motorola Penang EMC Lab - Test Performed by: Azil,Faris & Aiman Tue, Mar 26, 2019

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.

***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported**

Temp(Deg): 22.9 Hum(%RH): 69.8

System MU: 4.9 dB

Remarks:

Passed Results	Marginal Results	Failed Results

SAC Transmitter Radiated Emission:

Model Number: AAH56UCN9RB1AN S/N: 126TVD2899 SR:02803-EMC-00055

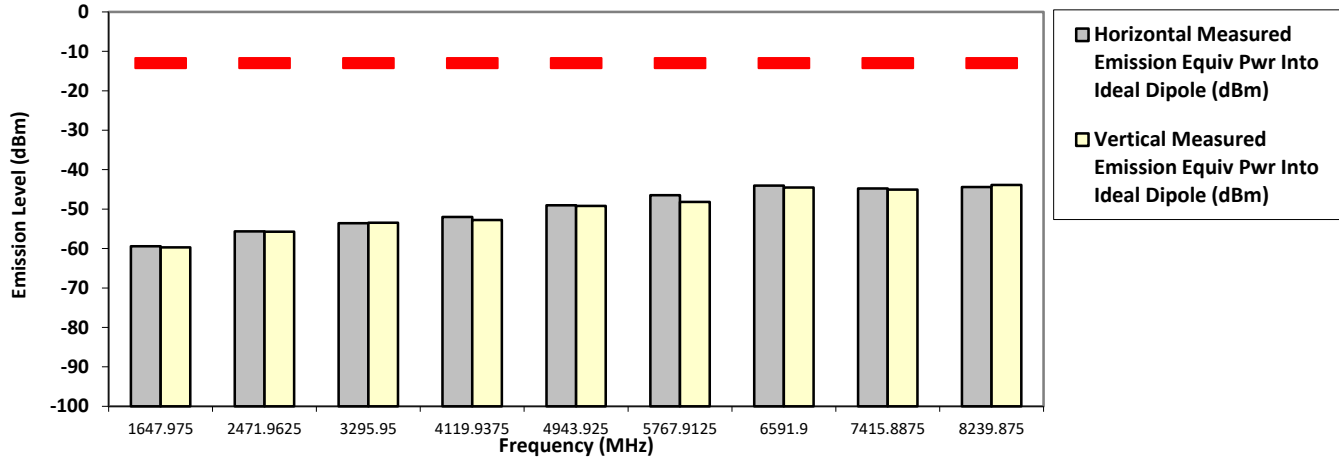
Battery Part No: PMNN4488A Accy Part No: NA

Test Mode: TX PCR Digital 4FSK

823.987500 MHz 12.5 kHz 3.000 Watt(s) /Max Power

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
1647.9750	-13.0000	-59.4150 **	-59.7084 **
2471.9625	-13.0000	-55.6385 **	-55.7205 **
3295.9500	-13.0000	-53.5697 **	-53.4763 **
4119.9375	-13.0000	-52.0053 **	-52.7850 **
4943.9250	-13.0000	-49.0540 **	-49.1909 **
5767.9125	-13.0000	-46.4847 **	-48.1771 **
6591.9000	-13.0000	-44.0393 **	-44.5277 **
7415.8875	-13.0000	-44.7852 **	-45.0761 **
8239.8750	-13.0000	-44.4240 **	-43.8757 **

RADIATED SPURIOUS EMISSIONS



The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 document.

Motorola Penang EMC Lab - Test Performed by: Azil,Faris & Aiman Tue, Mar 26, 2019

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.

***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported**

Temp(Deg): 22.9 Hum(%RH): 69.8

System MU: 4.9 dB

Remarks:

Passed Results	Marginal Results	Failed Results

SAC Transmitter Radiated Emission:

Model Number: AAH56UCN9RB1AN S/N: 126TVD2899 SR:02803-EMC-00055

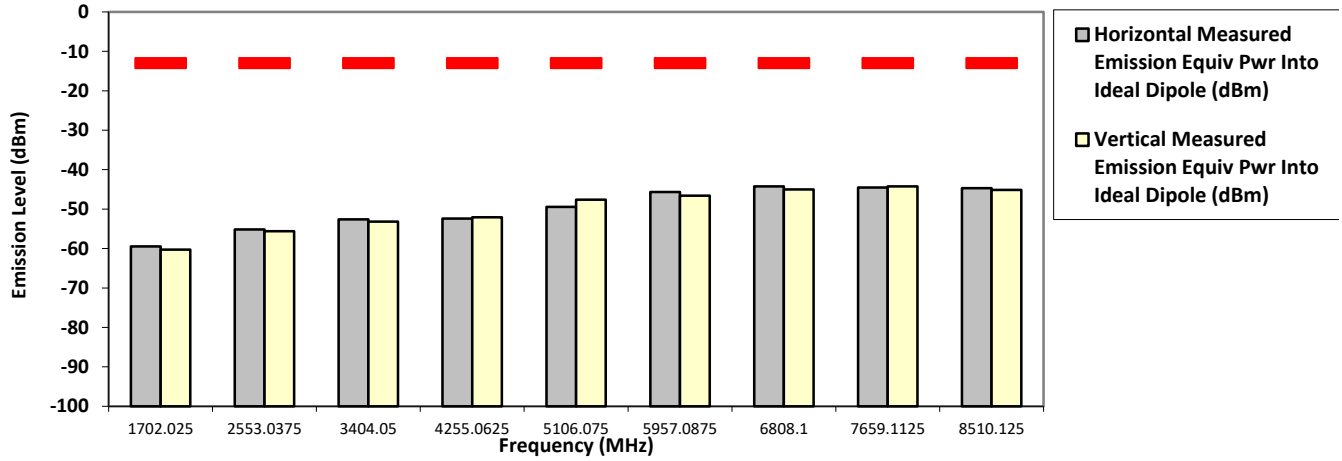
Battery Part No: PMNN4488A Accy Part No: NA

Test Mode: TX PCR Digital 4FSK

851.012500 MHz 12.5 kHz 3.000 Watt(s) /Max Power

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
1702.0250	-13.0000	-59.4805 **	-60.2948 **
2553.0375	-13.0000	-55.1776 **	-55.6188 **
3404.0500	-13.0000	-52.6094 **	-53.1941 **
4255.0625	-13.0000	-52.4114 **	-52.0861 **
5106.0750	-13.0000	-49.4583 **	-47.6331 **
5957.0875	-13.0000	-45.6499 **	-46.5924 **
6808.1000	-13.0000	-44.2318 **	-45.0092 **
7659.1125	-13.0000	-44.5159 **	-44.2524 **
8510.1250	-13.0000	-44.7071 **	-45.1446 **

RADIATED SPURIOUS EMISSIONS



The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 document.

Motorola Penang EMC Lab - Test Performed by: Azil,Faris & Aiman Tue, Mar 26, 2019

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.

***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported**

Temp(Deg): 22.9 Hum(%RH): 69.8

System MU: 4.9 dB

Remarks:

Passed Results	Marginal Results	Failed Results

SAC Transmitter Radiated Emission:

Model Number: AAH56UCN9RB1AN S/N: 126TVD2899 SR:02803-EMC-00055

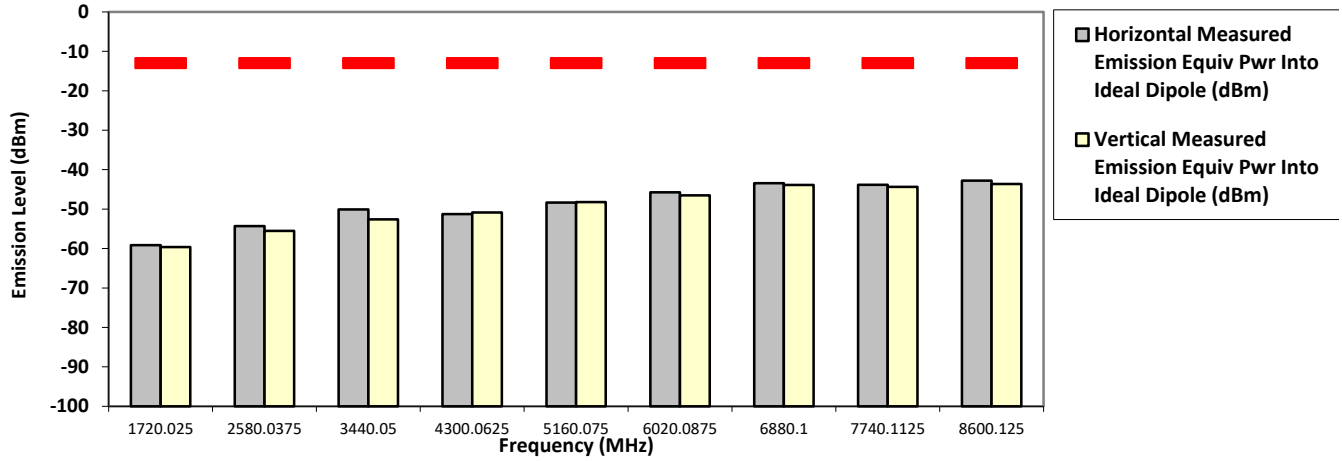
Battery Part No: PMNN4488A Accy Part No: NA

Test Mode: TX PCR Digital 4FSK

860.012500 MHz 12.5 kHz 3.000 Watt(s) /Max Power

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
1720.0250	-13.0000	-59.1587 **	-59.6360 **
2580.0375	-13.0000	-54.3123 **	-55.5123 **
3440.0500	-13.0000	-50.0703 **	-52.5972 **
4300.0625	-13.0000	-51.2736 **	-50.8545 **
5160.0750	-13.0000	-48.3580 **	-48.2206 **
6020.0875	-13.0000	-45.7463 **	-46.5197 **
6880.1000	-13.0000	-43.4270 **	-43.8984 **
7740.1125	-13.0000	-43.8363 **	-44.3605 **
8600.1250	-13.0000	-42.7955 **	-43.6248 **

RADIATED SPURIOUS EMISSIONS



The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 document.

Motorola Penang EMC Lab - Test Performed by: Azil,Faris & Aiman Tue, Mar 26, 2019

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.

***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported**

Temp(Deg): 22.9 Hum(%RH): 69.8

System MU: 4.9 dB

Remarks:

Passed Results	Marginal Results	Failed Results

SAC Transmitter Radiated Emission:

Model Number: AAH56UCN9RB1AN S/N: 126TVD2899 SR:02803-EMC-00055

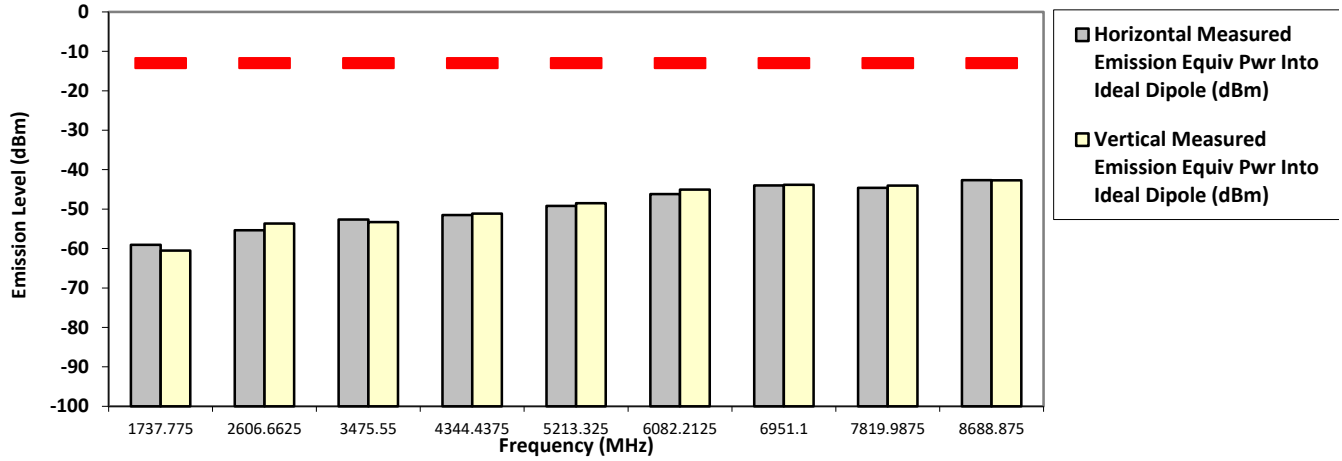
Battery Part No: PMNN4488A Accy Part No: NA

Test Mode: TX PCR Digital 4FSK

868.887500 MHz 12.5 kHz 3.000 Watt(s) /Max Power

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
1737.7750	-13.0000	-59.0442 **	-60.5089 **
2606.6625	-13.0000	-55.3539 **	-53.6706 **
3475.5500	-13.0000	-52.6392 **	-53.2932 **
4344.4375	-13.0000	-51.5210 **	-51.1558 **
5213.3250	-13.0000	-49.2057 **	-48.5098 **
6082.2125	-13.0000	-46.1950 **	-45.0725 **
6951.1000	-13.0000	-44.0206 **	-43.8585 **
7819.9875	-13.0000	-44.5970 **	-44.0517 **
8688.8750	-13.0000	-42.6521 **	-42.7143 **

RADIATED SPURIOUS EMISSIONS



The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 document.

Motorola Penang EMC Lab - Test Performed by: Azil,Faris & Aiman Tue, Mar 26, 2019

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.

***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported**

Temp(Deg): 22.9 Hum(%RH): 69.8

System MU: 4.9 dB

Remarks: Passed Results | **Marginal Results** | **Failed Results**

SAC Transmitter Radiated Emission:

Model Number: AAH56UCN9RB1AN **S/N: 126TVD2899** **SR:02803-EMC-00055**

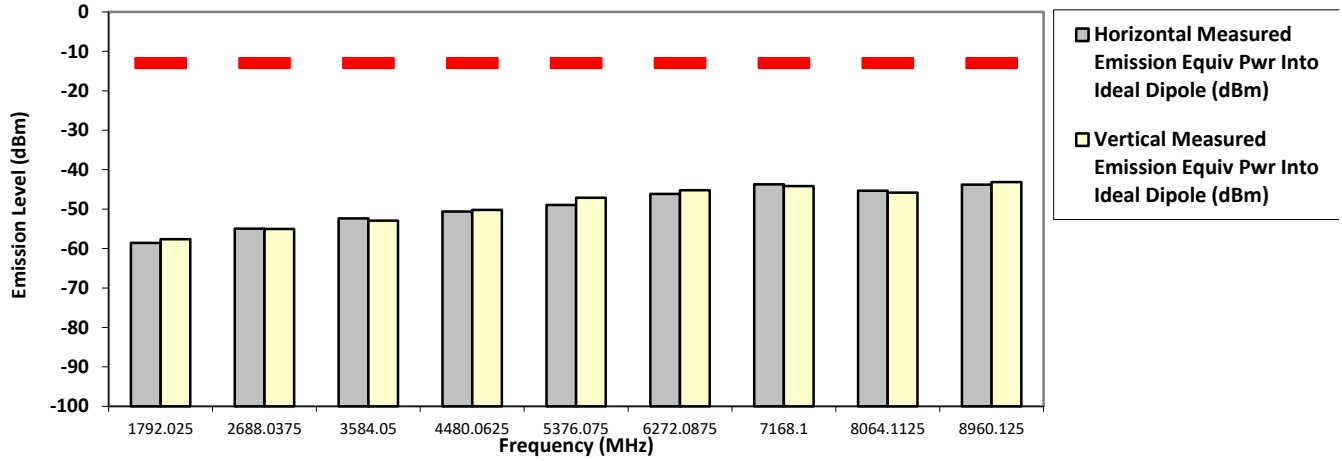
Battery Part No: PMNN4488A **Accy Part No: NA**

Test Mode: TX PCR Digital 4FSK

896.012500 MHz **12.5 kHz** **3.000 Watt(s) /Max Power**

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
1792.0250	-13.0000	-58.5831 **	-57.6528 **
2688.0375	-13.0000	-54.9621 **	-55.0486 **
3584.0500	-13.0000	-52.3487 **	-52.9282 **
4480.0625	-13.0000	-50.6334 **	-50.1953 **
5376.0750	-13.0000	-48.9639 **	-47.1291 **
6272.0875	-13.0000	-46.1616 **	-45.2209 **
7168.1000	-13.0000	-43.7370 **	-44.1819 **
8064.1125	-13.0000	-45.3500 **	-45.8395 **
8960.1250	-13.0000	-43.7800 **	-43.1645 **

RADIATED SPURIOUS EMISSIONS



The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 document.

Motorola Penang EMC Lab - Test Performed by: Azil,Faris & Aiman **Tue, Mar 26, 2019**

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.

***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported**

Temp(Deg): 22.9 Hum(%RH): 69.8

System MU: 4.9 dB

Remarks:

Passed Results	Marginal Results	Failed Results

SAC Transmitter Radiated Emission:

Model Number: AAH56UCN9RB1AN **S/N: 126TVD2899** **SR:02803-EMC-00055**

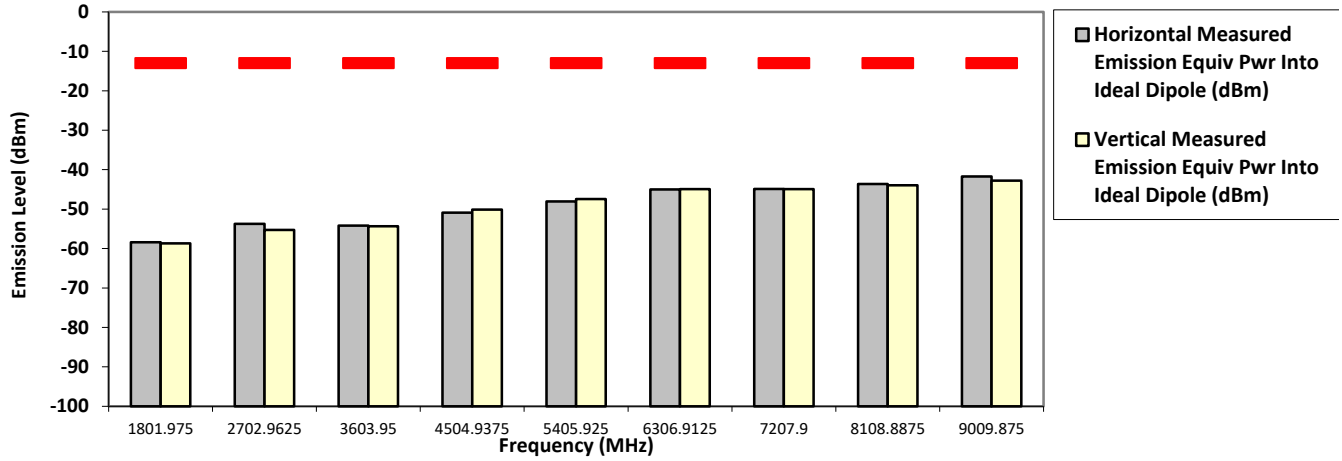
Battery Part No: PMNN4488A **Accy Part No: NA**

Test Mode: TX PCR Digital 4FSK

900.987500 MHz **12.5 kHz** **3.000 Watt(s) /Max Power**

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
1801.9750	-13.0000	-58.4152 **	-58.7118 **
2702.9625	-13.0000	-53.7428 **	-55.2669 **
3603.9500	-13.0000	-54.1728 **	-54.3458 **
4504.9375	-13.0000	-50.9066 **	-50.1400 **
5405.9250	-13.0000	-48.0530 **	-47.4445 **
6306.9125	-13.0000	-45.0145 **	-44.9542 **
7207.9000	-13.0000	-44.9078 **	-44.9333 **
8108.8875	-13.0000	-43.6346 **	-43.9693 **
9009.8750	-13.0000	-41.7225 **	-42.7987 **

RADIATED SPURIOUS EMISSIONS



The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 document.

Motorola Penang EMC Lab - Test Performed by: Azil,Faris & Aiman **Tue, Mar 26, 2019**

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.

***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported**

Temp(Deg): 22.9 Hum(%RH): 69.8

System MU: 4.9 dB

Remarks:

Passed Results	Marginal Results	Failed Results

SAC Transmitter Radiated Emission:

Model Number: AAH56UCN9RB1AN **S/N: 126TVD2899** **SR:02803-EMC-00055**

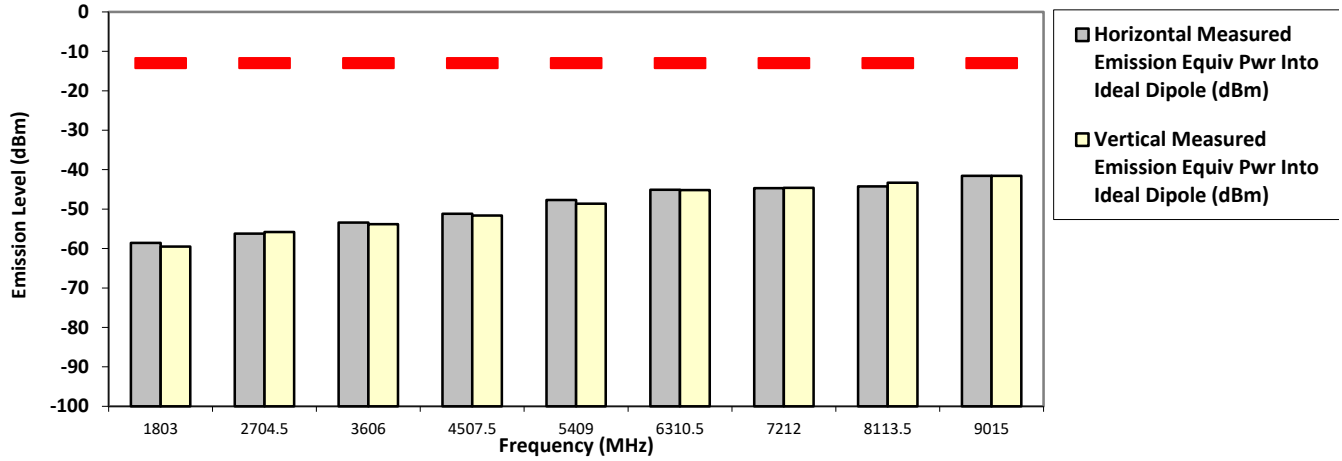
Battery Part No: PMNN4488A **Accy Part No: NA**

Test Mode: TX PCR Digital 4FSK

901.500000 MHz **12.5 kHz** **3.000 Watt(s) /Max Power**

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
1803.0000	-13.0000	-58.5786 **	-59.5111 **
2704.5000	-13.0000	-56.2294 **	-55.7949 **
3606.0000	-13.0000	-53.4372 **	-53.8232 **
4507.5000	-13.0000	-51.1963 **	-51.6125 **
5409.0000	-13.0000	-47.6842 **	-48.6455 **
6310.5000	-13.0000	-45.1012 **	-45.1723 **
7212.0000	-13.0000	-44.6971 **	-44.6068 **
8113.5000	-13.0000	-44.2373 **	-43.3140 **
9015.0000	-13.0000	-41.5792 **	-41.5508 **

RADIATED SPURIOUS EMISSIONS



The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 document.

Motorola Penang EMC Lab - Test Performed by: Azil,Faris & Aiman **Tue, Mar 26, 2019**

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.

***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported**

Temp(Deg): 22.9 Hum(%RH): 69.8

System MU: 4.9 dB

Remarks:

Passed Results	Marginal Results	Failed Results

SAC Transmitter Radiated Emission:

Model Number: AAH56UCN9RB1AN **S/N: 126TVD2899** **SR:02803-EMC-00055**

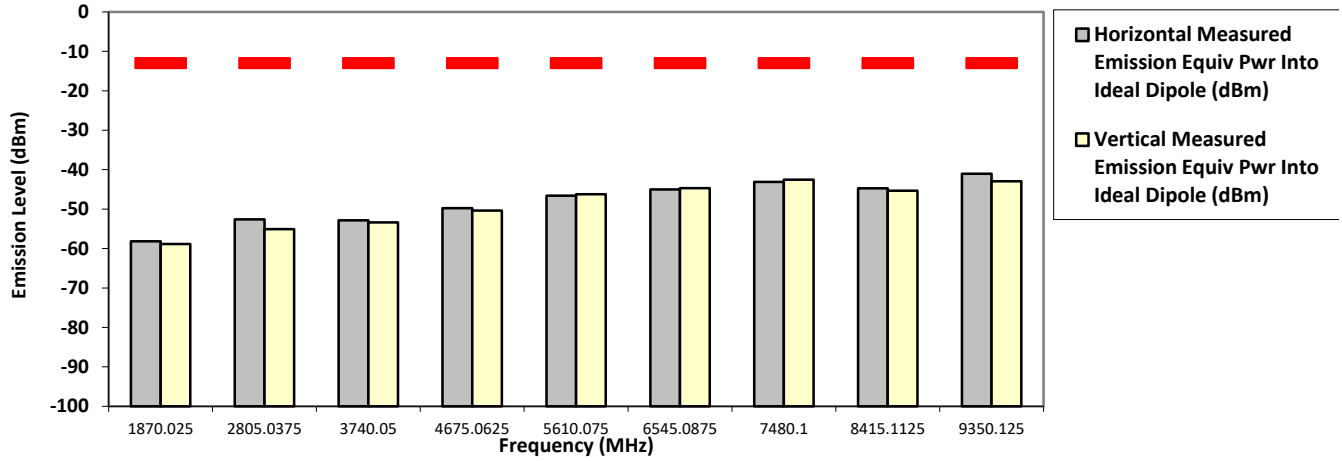
Battery Part No: PMNN4488A **Accy Part No: NA**

Test Mode: TX PCR Digital 4FSK

935.012500 MHz **12.5 kHz** **3.000 Watt(s) /Max Power**

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
1870.0250	-13.0000	-58.1858 **	-58.8762 **
2805.0375	-13.0000	-52.6158 **	-55.0830 **
3740.0500	-13.0000	-52.8581 **	-53.3740 **
4675.0625	-13.0000	-49.7605 **	-50.3831 **
5610.0750	-13.0000	-46.6048 **	-46.2331 **
6545.0875	-13.0000	-44.9997 **	-44.7026 **
7480.1000	-13.0000	-43.1186 **	-42.5359 **
8415.1125	-13.0000	-44.7165 **	-45.3256 **
9350.1250	-13.0000	-41.0495 **	-42.9436 **

RADIATED SPURIOUS EMISSIONS



The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 document.

Motorola Penang EMC Lab - Test Performed by: Azil,Faris & Aiman **Tue, Mar 26, 2019**

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.

***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported**

Temp(Deg): 22.9 Hum(%RH): 69.8

System MU: 4.9 dB

Remarks:

Passed Results	Marginal Results	Failed Results

SAC Transmitter Radiated Emission:

Model Number: AAH56UCN9RB1AN **S/N: 126TVD2899** **SR:02803-EMC-00055**

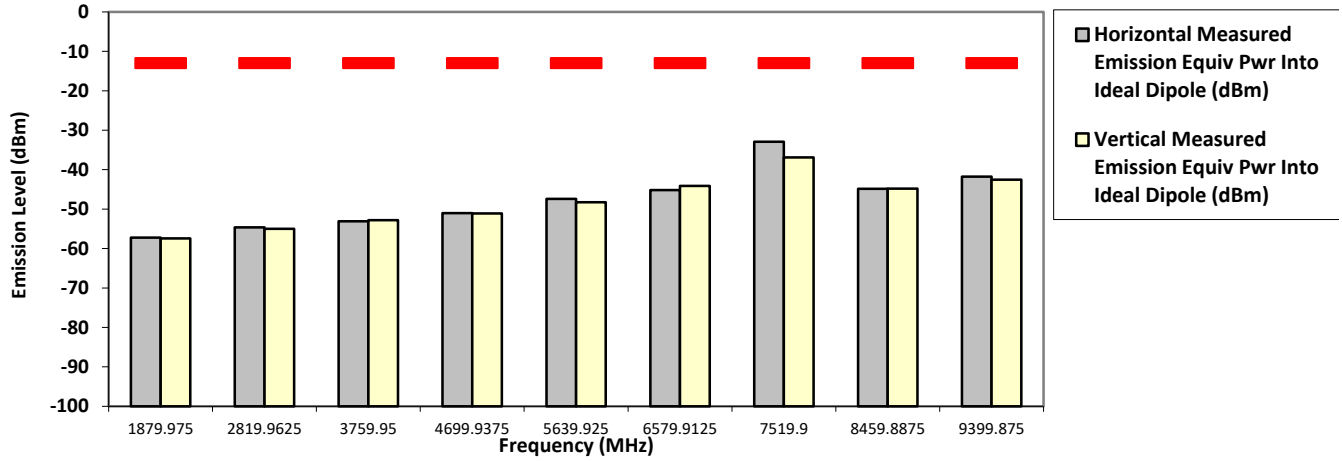
Battery Part No: PMNN4488A **Accy Part No: NA**

Test Mode: TX PCR Digital 4FSK

939.987500 MHz **12.5 kHz** **3.000 Watt(s) /Max Power**

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
1879.9750	-13.0000	-57.2295 **	-57.4344 **
2819.9625	-13.0000	-54.6479 **	-55.0084 **
3759.9500	-13.0000	-53.1119 **	-52.8222 **
4699.9375	-13.0000	-51.0252 **	-51.1164 **
5639.9250	-13.0000	-47.3938 **	-48.2657 **
6579.9125	-13.0000	-45.1955 **	-44.1110 **
7519.9000	-13.0000	-32.9200	-36.9000 *
8459.8875	-13.0000	-44.8691 **	-44.8268 **
9399.8750	-13.0000	-41.7797 **	-42.5278 **

RADIATED SPURIOUS EMISSIONS



The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 document.

Motorola Penang EMC Lab - Test Performed by: Azil,Faris & Aiman **Tue, Mar 26, 2019**

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.

***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported**

Temp(Deg): 22.9 Hum(%RH): 69.8

System MU: 4.9 dB

Remarks:

Passed Results	Marginal Results	Failed Results

SAC Transmitter Radiated Emission:

Model Number: AAH56UCN9RB1AN S/N: 126TVD2899 SR:02803-EMC-00055

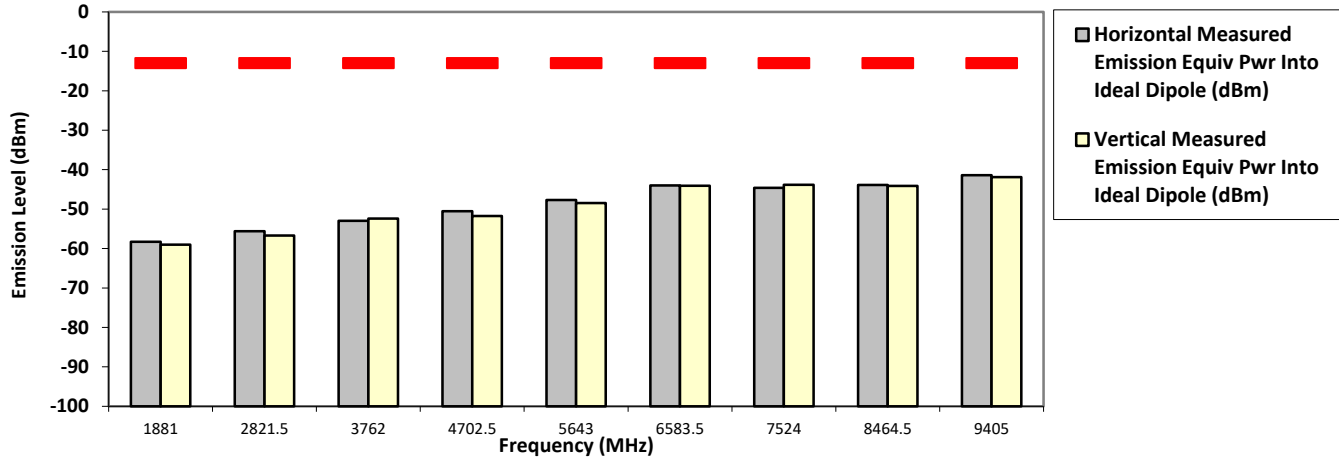
Battery Part No: PMNN4488A Accy Part No: NA

Test Mode: TX PCR Digital 4FSK

940.500000 MHz 12.5 kHz 3.000 Watt(s) /Max Power

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
1881.0000	-13.0000	-58.2861 **	-59.0109 **
2821.5000	-13.0000	-55.6093 **	-56.6858 **
3762.0000	-13.0000	-52.9793 **	-52.3922 **
4702.5000	-13.0000	-50.5161 **	-51.7704 **
5643.0000	-13.0000	-47.7124 **	-48.4727 **
6583.5000	-13.0000	-44.0186 **	-44.0949 **
7524.0000	-13.0000	-44.6101 **	-43.8544 **
8464.5000	-13.0000	-43.8609 **	-44.1349 **
9405.0000	-13.0000	-41.3985 **	-41.8959 **

RADIATED SPURIOUS EMISSIONS



The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 document.

Motorola Penang EMC Lab - Test Performed by: Azil,Faris & Aiman Tue, Mar 26, 2019

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.

***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported**

Temp(Deg): 22.9 Hum(%RH): 69.8

System MU: 4.9 dB

Remarks:

Passed Results	Marginal Results	Failed Results

6.11.2. Test Result (Digital IC)

SAC Transmitter Radiated Emission:

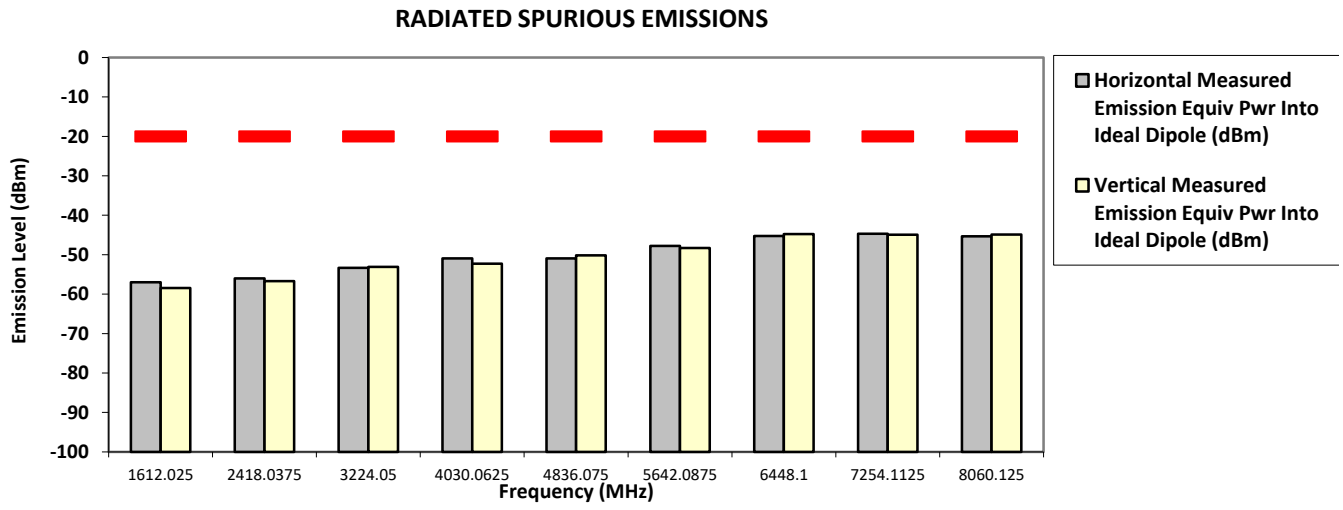
Model Number: AAH56UCN9RB1AN **S/N: 126TVD2899** **SR:02803-EMC-00055**

Battery Part No: PMNN4488A **Accy Part No: NA**

Test Mode: TX PCR Digital 4FSK

806.012500 MHz **12.5 kHz** **3.000 Watt(s) /Max Power**

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
1612.0250	-20.0000	-56.9818 **	-58.4456 **
2418.0375	-20.0000	-56.0140 **	-56.6901 **
3224.0500	-20.0000	-53.3174 **	-53.1100 **
4030.0625	-20.0000	-50.9343 **	-52.2812 **
4836.0750	-20.0000	-50.9418 **	-50.1717 **
5642.0875	-20.0000	-47.7732 **	-48.3146 **
6448.1000	-20.0000	-45.2746 **	-44.7789 **
7254.1125	-20.0000	-44.7086 **	-44.9345 **
8060.1250	-20.0000	-45.3212 **	-44.9053 **



The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 document.

Motorola Penang EMC Lab - Test Performed by: Azil,Faris & Aiman **Tue, Mar 26, 2019**

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.

***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported**

Temp(Deg): 22.9 Hum(%RH): 69.8

System MU: 4.9 dB

Remarks:

Passed Results	Marginal Results	Failed Results

SAC Transmitter Radiated Emission:

Model Number: AAH56UCN9RB1AN **S/N: 126TVD2899** **SR:02803-EMC-00055**

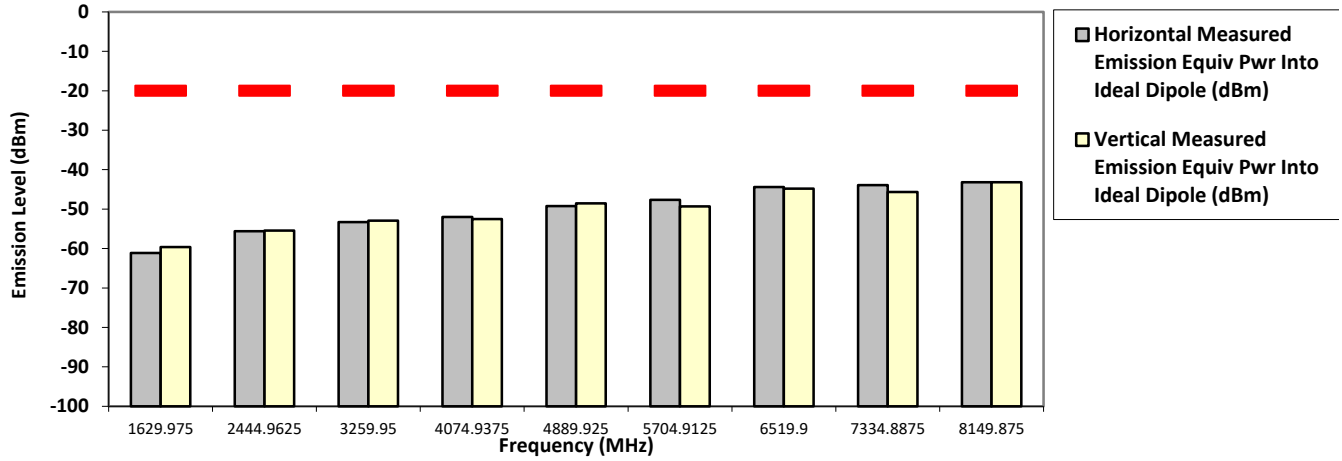
Battery Part No: PMNN4488A **Accy Part No: NA**

Test Mode: TX PCR Digital 4FSK

814.987500 MHz **12.5 kHz** **3.000 Watt(s) /Max Power**

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
1629.9750	-20.0000	-61.1415 **	-59.6406 **
2444.9625	-20.0000	-55.6190 **	-55.4290 **
3259.9500	-20.0000	-53.3149 **	-52.9462 **
4074.9375	-20.0000	-52.0052 **	-52.5195 **
4889.9250	-20.0000	-49.2400 **	-48.5289 **
5704.9125	-20.0000	-47.6672 **	-49.3141 **
6519.9000	-20.0000	-44.4005 **	-44.8013 **
7334.8875	-20.0000	-43.9170 **	-45.6761 **
8149.8750	-20.0000	-43.2051 **	-43.2008 **

RADIATED SPURIOUS EMISSIONS



The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 document.

Motorola Penang EMC Lab - Test Performed by: Azil,Faris & Aiman **Tue, Mar 26, 2019**

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.

***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported**

Temp(Deg): 22.9 Hum(%RH): 69.8

System MU: 4.9 dB

Remarks:

Passed Results	Marginal Results	Failed Results

SAC Transmitter Radiated Emission:

Model Number: AAH56UCN9RB1AN **S/N: 126TVD2899** **SR:02803-EMC-00055**

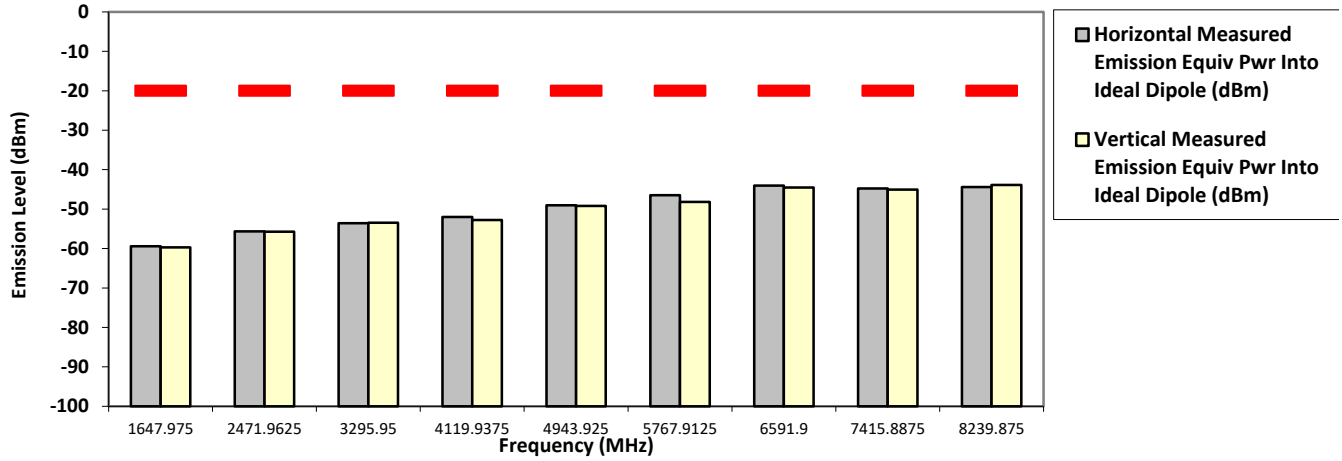
Battery Part No: PMNN4488A **Accy Part No: NA**

Test Mode: TX PCR Digital 4FSK

823.987500 MHz **12.5 kHz** **3.000 Watt(s) /Max Power**

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
1647.9750	-20.0000	-59.4150 **	-59.7084 **
2471.9625	-20.0000	-55.6385 **	-55.7205 **
3295.9500	-20.0000	-53.5697 **	-53.4763 **
4119.9375	-20.0000	-52.0053 **	-52.7850 **
4943.9250	-20.0000	-49.0540 **	-49.1909 **
5767.9125	-20.0000	-46.4847 **	-48.1771 **
6591.9000	-20.0000	-44.0393 **	-44.5277 **
7415.8875	-20.0000	-44.7852 **	-45.0761 **
8239.8750	-20.0000	-44.4240 **	-43.8757 **

RADIATED SPURIOUS EMISSIONS



The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 document.

Motorola Penang EMC Lab - Test Performed by: Azil,Faris & Aiman **Tue, Mar 26, 2019**

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.

***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported**

Temp(Deg): 22.9 Hum(%RH): 69.8

System MU: 4.9 dB

Remarks:

Passed Results	Marginal Results	Failed Results

SAC Transmitter Radiated Emission:

Model Number: AAH56UCN9RB1AN **S/N: 126TVD2899** **SR:02803-EMC-00055**

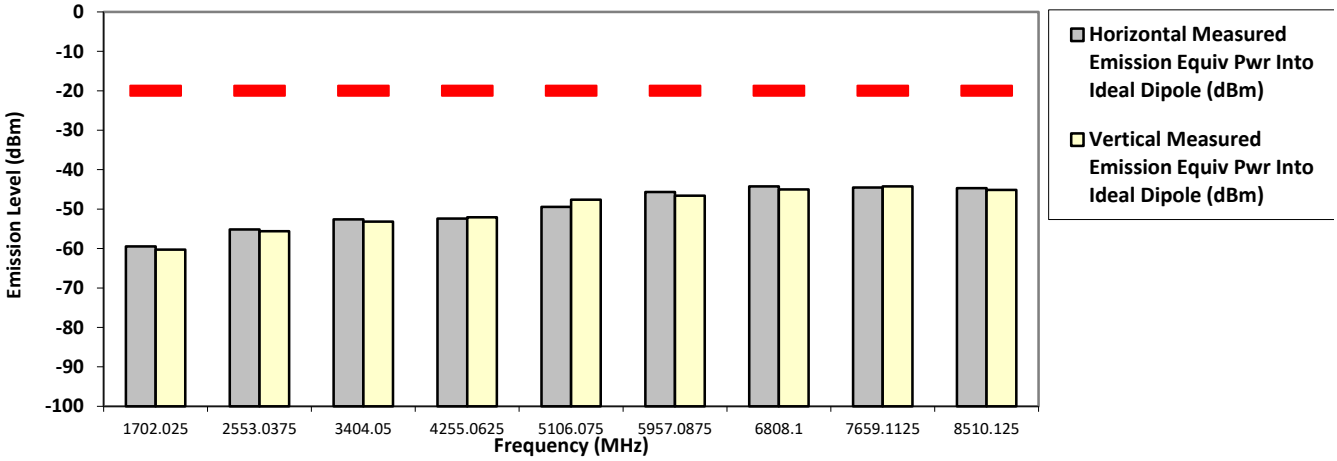
Battery Part No: PMNN4488A **Accy Part No: NA**

Test Mode: TX PCR Digital 4FSK

851.012500 MHz **12.5 kHz** **3.000 Watt(s) /Max Power**

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
1702.0250	-20.0000	-59.4805 **	-60.2948 **
2553.0375	-20.0000	-55.1776 **	-55.6188 **
3404.0500	-20.0000	-52.6094 **	-53.1941 **
4255.0625	-20.0000	-52.4114 **	-52.0861 **
5106.0750	-20.0000	-49.4583 **	-47.6331 **
5957.0875	-20.0000	-45.6499 **	-46.5924 **
6808.1000	-20.0000	-44.2318 **	-45.0092 **
7659.1125	-20.0000	-44.5159 **	-44.2524 **
8510.1250	-20.0000	-44.7071 **	-45.1446 **

RADIATED SPURIOUS EMISSIONS



The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 document.

Motorola Penang EMC Lab - Test Performed by: Azil,Faris & Aiman **Tue, Mar 26, 2019**

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.

***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported**

Temp(Deg): 22.9 Hum(%RH): 69.8

System MU: 4.9 dB

Remarks:

Passed Results	**Marginal Results**	**Failed Results**

SAC Transmitter Radiated Emission:

Model Number: AAH56UCN9RB1AN **S/N: 126TVD2899** **SR:02803-EMC-00055**

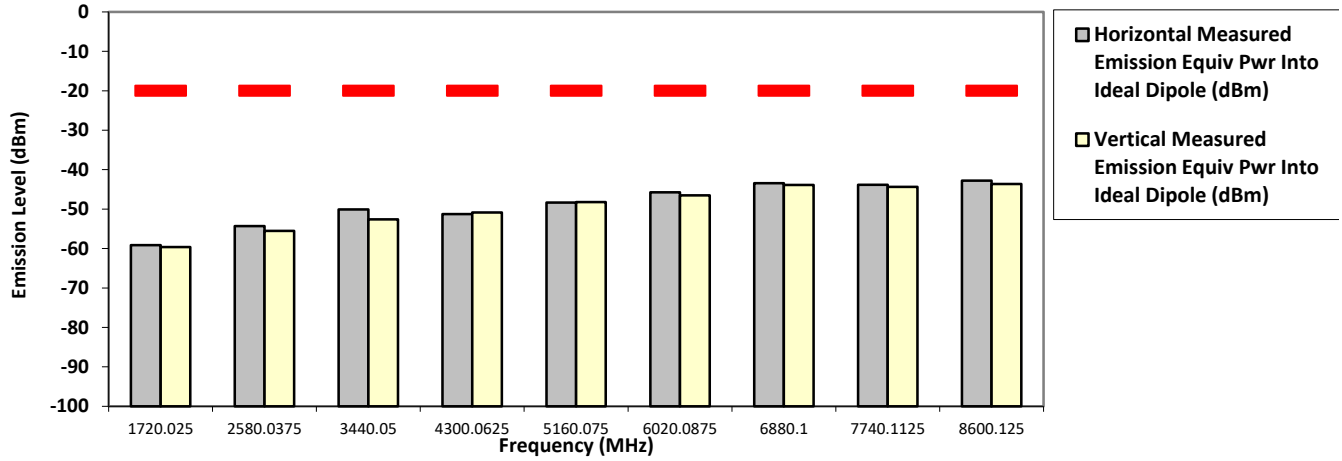
Battery Part No: PMNN4488A **Accy Part No: NA**

Test Mode: TX PCR Digital 4FSK

860.012500 MHz **12.5 kHz** **3.000 Watt(s) /Max Power**

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
1720.0250	-20.0000	-59.1587 **	-59.6360 **
2580.0375	-20.0000	-54.3123 **	-55.5123 **
3440.0500	-20.0000	-50.0703 **	-52.5972 **
4300.0625	-20.0000	-51.2736 **	-50.8545 **
5160.0750	-20.0000	-48.3580 **	-48.2206 **
6020.0875	-20.0000	-45.7463 **	-46.5197 **
6880.1000	-20.0000	-43.4270 **	-43.8984 **
7740.1125	-20.0000	-43.8363 **	-44.3605 **
8600.1250	-20.0000	-42.7955 **	-43.6248 **

RADIATED SPURIOUS EMISSIONS



The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 document.

Motorola Penang EMC Lab - Test Performed by: Azil,Faris & Aiman **Tue, Mar 26, 2019**

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.

***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported**

Temp(Deg): 22.9 Hum(%RH): 69.8

System MU: 4.9 dB

Remarks:

Passed Results	**Marginal Results**	**Failed Results**

SAC Transmitter Radiated Emission:

Model Number: AAH56UCN9RB1AN **S/N: 126TVD2899** **SR:02803-EMC-00055**

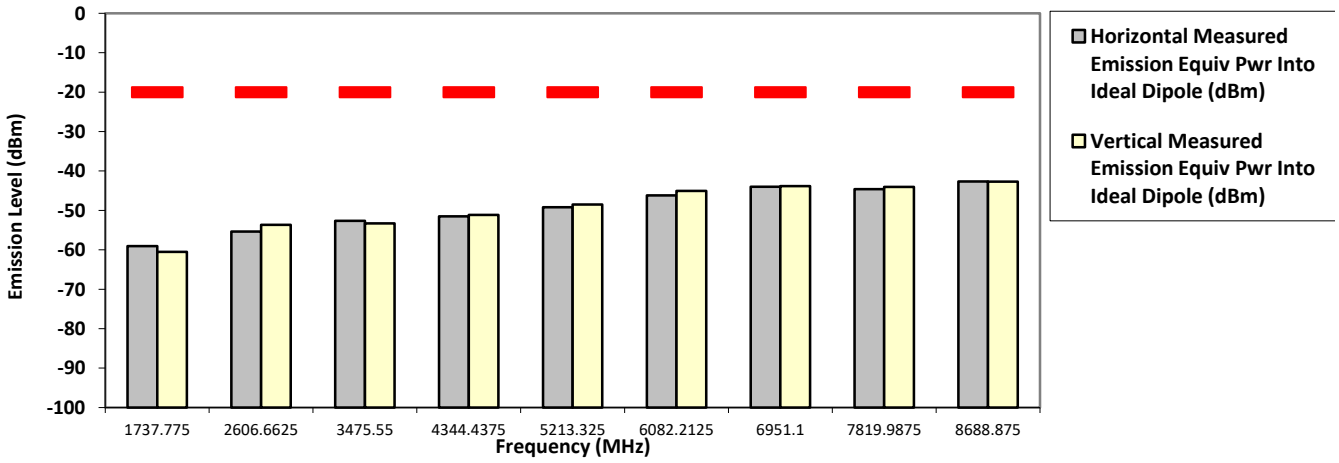
Battery Part No: PMNN4488A **Accy Part No: NA**

Test Mode: TX PCR Digital 4FSK

868.887500 MHz **12.5 kHz** **3.000 Watt(s) /Max Power**

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
1737.7750	-20.0000	-59.0442 **	-60.5089 **
2606.6625	-20.0000	-55.3539 **	-53.6706 **
3475.5500	-20.0000	-52.6392 **	-53.2932 **
4344.4375	-20.0000	-51.5210 **	-51.1558 **
5213.3250	-20.0000	-49.2057 **	-48.5098 **
6082.2125	-20.0000	-46.1950 **	-45.0725 **
6951.1000	-20.0000	-44.0206 **	-43.8585 **
7819.9875	-20.0000	-44.5970 **	-44.0517 **
8688.8750	-20.0000	-42.6521 **	-42.7143 **

RADIATED SPURIOUS EMISSIONS



The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 document.

Motorola Penang EMC Lab - Test Performed by: Azil,Faris & Aiman **Tue, Mar 26, 2019**

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.

***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported**

Temp(Deg): 22.9 Hum(%RH): 69.8

System MU: 4.9 dB

Remarks:

Passed Results	Marginal Results	Failed Results

6.11.3. Test Limit

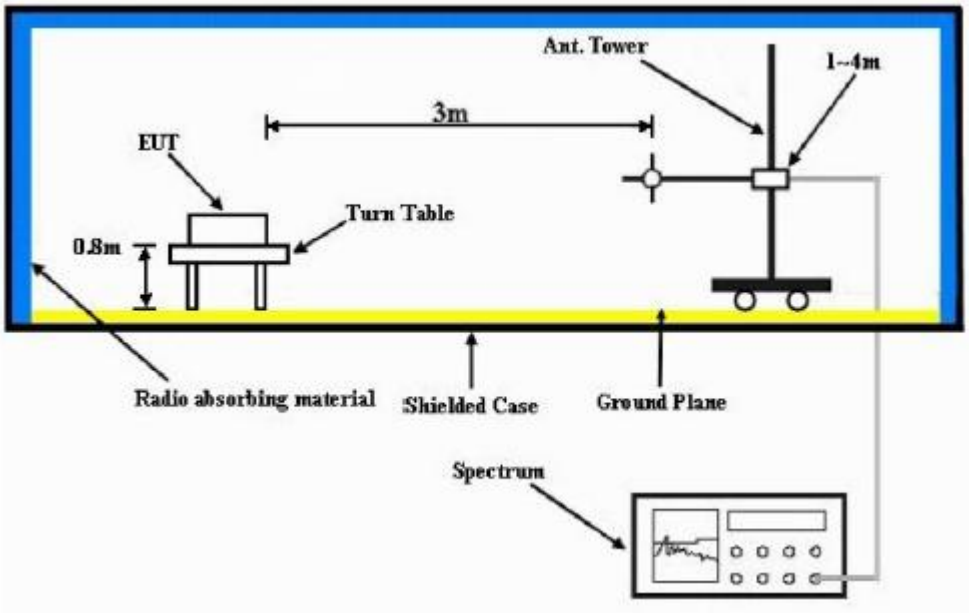
Table below summarized the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least

Channel Spacing	Part 22	Part 24D	Part 74	Part 80	Part 90 (UHF, VHF, 800, 900)	Part 90 (700)
12.5kHz	43 + log10(P) (-13 dBm)	43 + log10(P) (-13 dBm)	43 + log10(P) (-13 dBm)	Not Applicable	50 + log10(P) (-20 dBm)	43 + log10(P) (-13 dBm)
25kHz		Not Applicable		43 + log10(P) (-13 dBm)	43 + log10(P) (-13 dBm)	43 + log10(P) (-13 dBm)

Channel Spacing	RSS 134	RSS 182	RSS 119 (UHF, VHF, 800, 900)	RSS 119 (700)
12.5kHz	43 + log10(P) (-13 dBm)	Not Applicable	50 + log10(P) (-20 dBm)	43 + log10(P) (-13 dBm)
25kHz	Not Applicable	43 + log10(P) (-13 dBm)	43 + log10(P) (-13 dBm)	43 + log10(P) (-13 dBm)

6.12. Effective Radiated Power (ERP)

6.12.1. 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 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.

6.12.2. Test Result

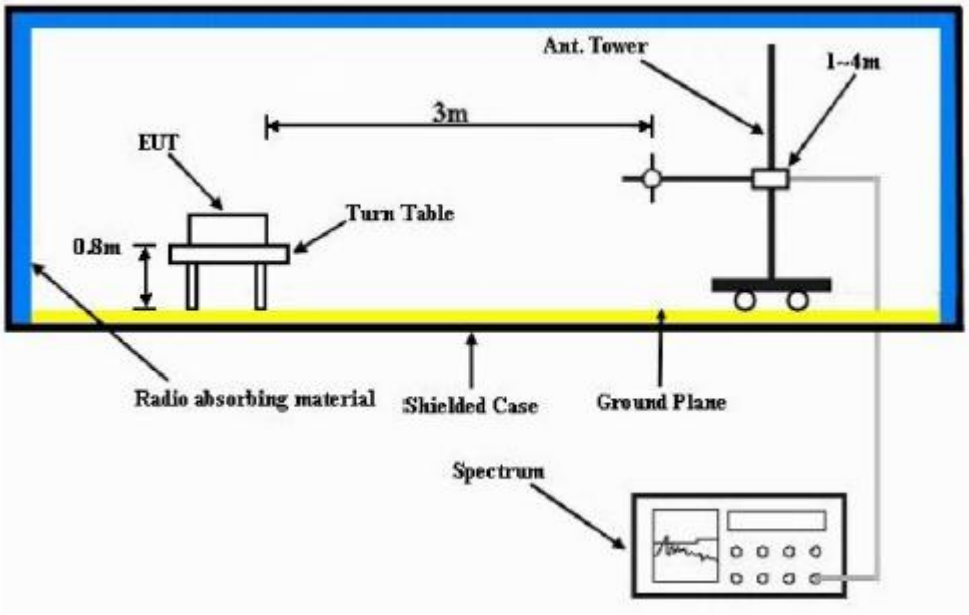
NA → Not Applicable

6.12.3. Test Limit

The maximum output power of the transmitter for mobile stations is 100 watts (20 dB). Power is given in terms of effective radiated power (ERP).

6.13. GNSS (EIRP for 1559 - 1610MHz)

6.13.1. 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 = “Read Value” + Measured substitution value + 2.15.

6.13.1. Test Result

NA → Not Applicable

6.13.2. 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 Report ~