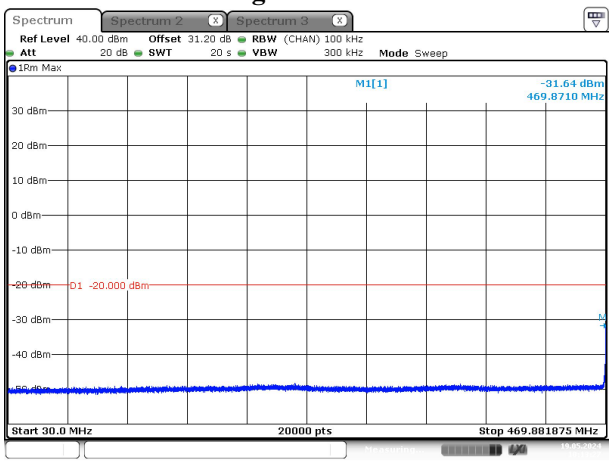
High Channel



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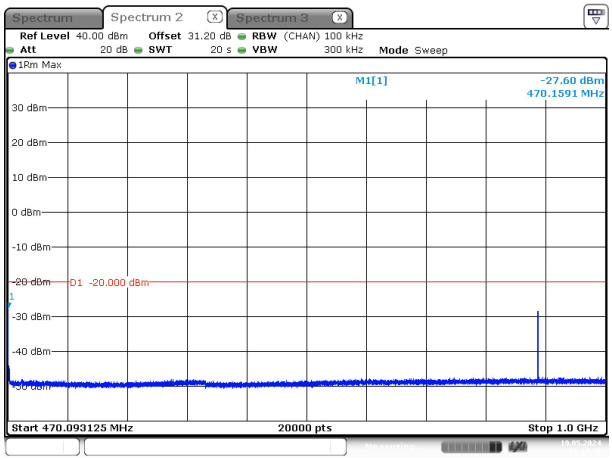

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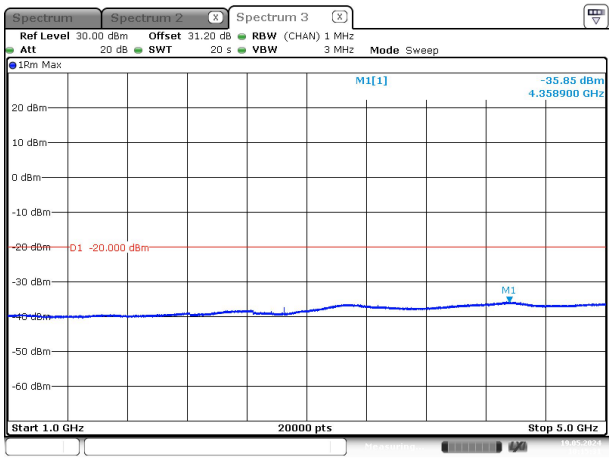

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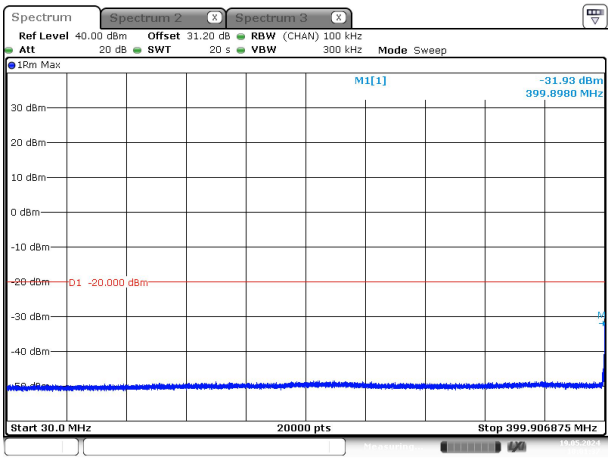
Date: 19.MAY.2024 10:15:31

4FSK, 12.5kHz:

Low Channel



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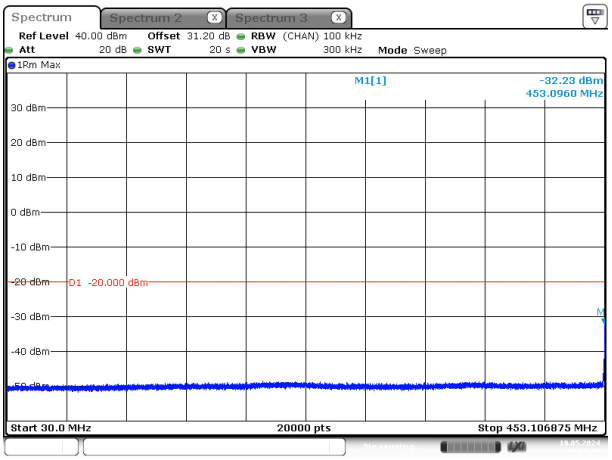
Date: 19.MAY.2024 10:01:37

Middle Channel



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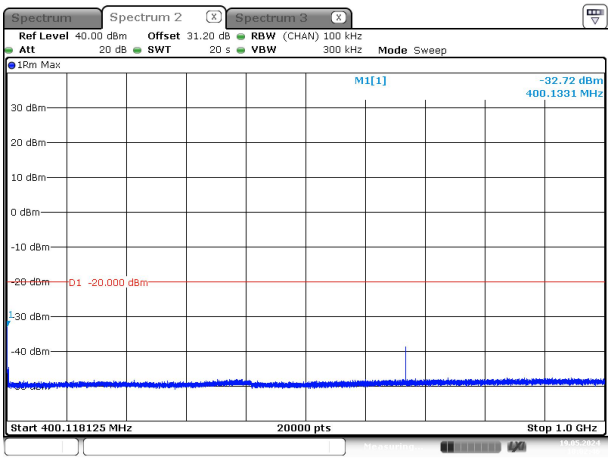

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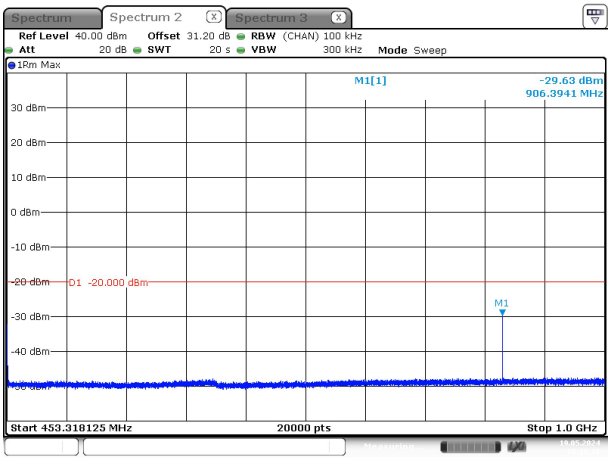

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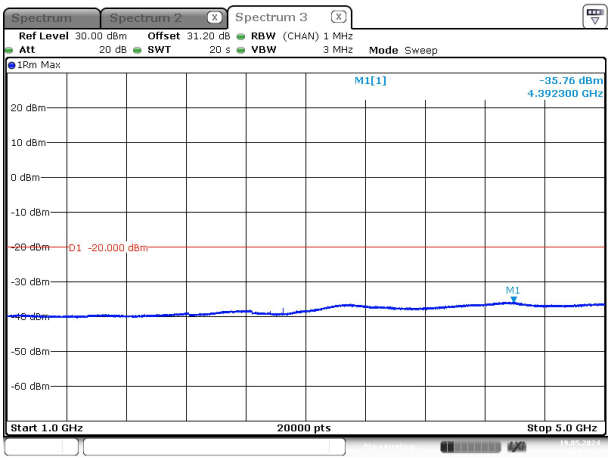

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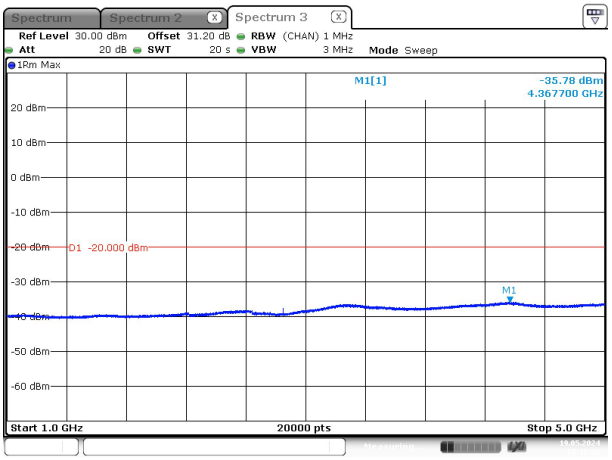

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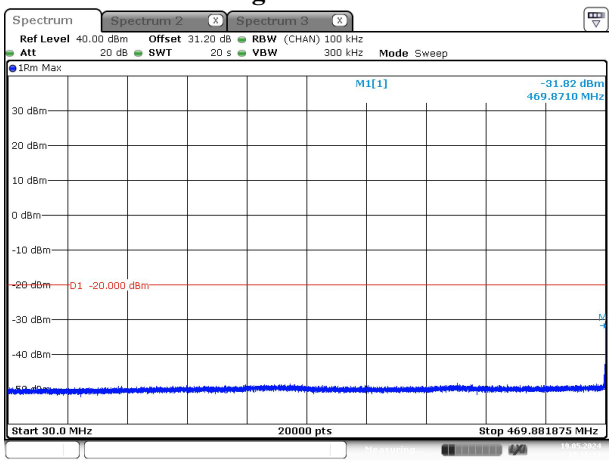
High Channel



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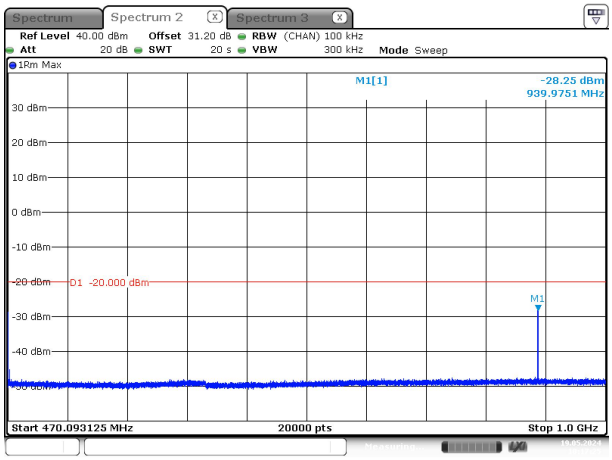

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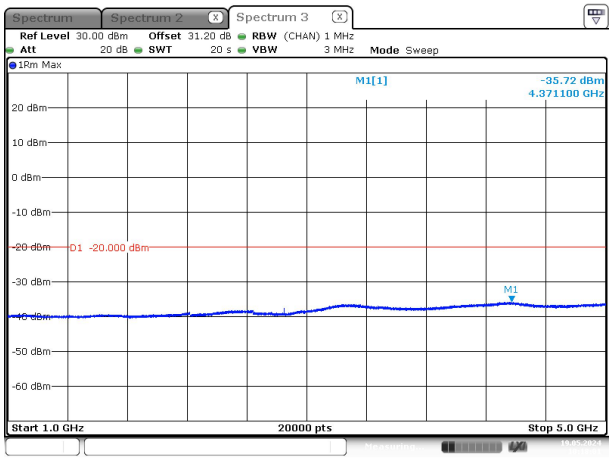


ProjectNo.:2402S45679-RF Tester:Stu Song
Date: 19.MAY.2024 10:18:02

4.5 Transient Frequency Behavior

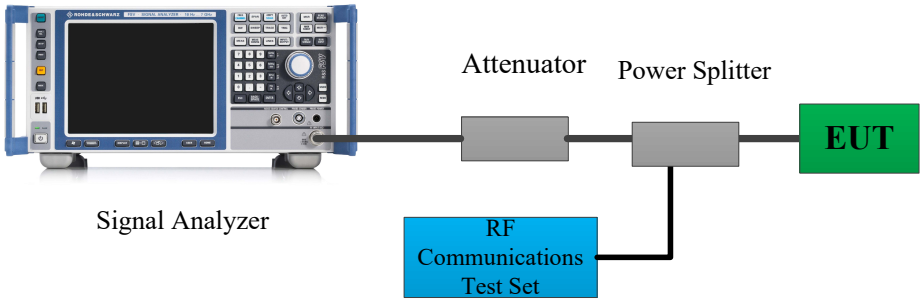
4.5.1 Applicable Standard

FCC §90.214

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 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

4.5.2 EUT Setup Block Diagram



4.5.3 Test Procedure

According to ANSI C63.26-2015 Section 6.5.2.2:

a) Connect the equipment as illustrated.
b) Connect the output of the transmitter to the signal analyzer with modulation domain analyzer function.
c) Set the modulation domain analyzer to trigger on the rising edge of the waveform in order to capture a single-shot turn-on of the transmitter signal.
d) Adjust the display of the modulation domain analyzer for proper viewing of the transmitter transient behavior. Set the timebase reference to the left for observing the transmitter turn-on transient.
e) Key the transmitter.
f) Observe the stored display of the modulation domain analyzer. The signal trace shall be maintained within the allowable limits during the periods t_1 and t_2, and shall also remain within limits following t_2.
g) Adjust the modulation domain analyzer to trigger on the falling edge of the transmitter waveform in order to capture a single-shot turn-off transient of the transmitter signal.
h) Adjust the display of the modulation domain analyzer for proper viewing of the transmitter transient behavior. Set the timebase reference to the right for observing the transmitter turn-off transient.
i) Unkey the transmitter.
j) Observe the stored display of the modulation domain analyzer. The signal trace shall be maintained within the allowable limits during the period t_3.

4.5.4 Test Data And Result

Serial Number:	2JLO-2	Test Date:	2024/5/18
Test Site:	RF	Test Mode:	Transmitting
Tester:	Stu Song	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	23.4	Relative Humidity: (%)	47	ATM Pressure: (kPa)	100.4

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Signal Analyzer	FSIQ26	831929/005	2023/11/18	2024/11/17
E-Microwave	Coaxial DC Block	EMDCB-00033	OE01203218	2024/3/1	2025/3/1
Unknown	Coaxial Cable	C-NJNJ-50	C-0200-03	2023/9/2	2024/9/1
Huaxiang	Coaxial Attenuator	DTS250-30	11022109	2024/3/1	2025/3/1
HP	RF Communications Test Set	8920A	3438A05201	2023/10/18	2024/10/17

** Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

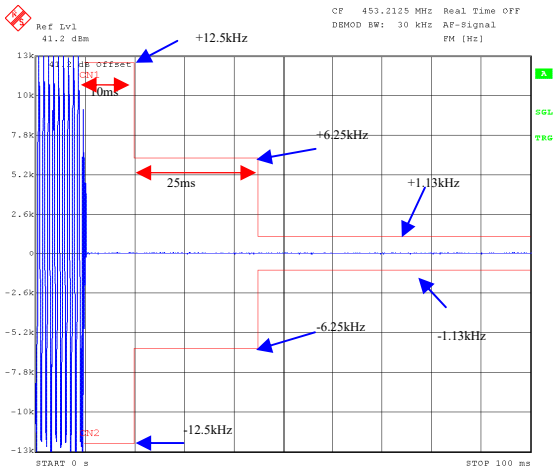
Test Data:

Note: Test only was performed at high power level.

Channel Spacing (kHz)	Transient Period (ms)	Transient Frequency	Result
12.5	10(t_1)	±12.5 kHz	Pass
	25(t_2)	±6.25 kHz	
	10(t_3)	±12.5 kHz	

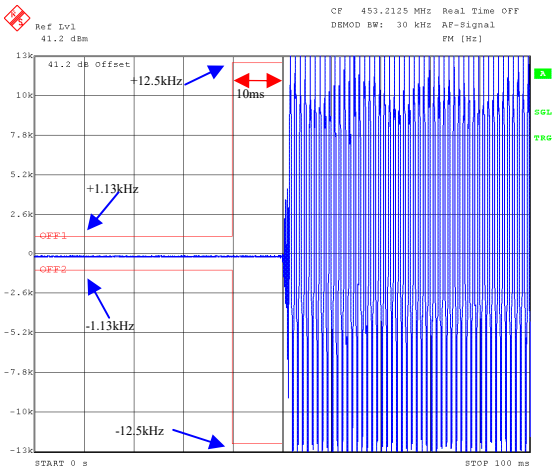
Note: During the time from the end of t2 to the beginning of t3, the frequency difference must not exceed the limits specified in§90.213:
For 453.2125 MHz 12.5kHz mode, limit is: 453.2125 MHz* 2.5ppm = 1.13kHz

Tune ON



Comment A: ProjectNo.:2402S45679-RF Tester:Stu Song
Date: 18.MAY.2024 01:01:52

Tune OFF



Comment A: ProjectNo.:2402S45679-RF Tester:Stu Song
Date: 18.MAY.2024 01:03:27

4.6 Modulation characteristics.

4.6.1 Applicable Standard

FCC §2.1047

(a) Voice modulated communication equipment. A curve or equivalent data showing the frequency response of the audio modulating circuit over a range of 100 to 5000 Hz shall be submitted. For equipment required to have an audio low-pass filter, a curve showing the frequency response of the filter, or of all circuitry installed between the modulation limiter and the modulated stage shall be submitted.
(b) Equipment which employs modulation limiting. A curve or family of curves showing the percentage of modulation versus the modulation input voltage shall be supplied. The information submitted shall be sufficient to show modulation limiting capability throughout the range of modulating frequencies and input modulating signal levels employed.
(c) Single sideband and independent sideband radiotelephone transmitters which employ a device or circuit to limit peak envelope power. A curve showing the peak envelope power output versus the modulation input voltage shall be supplied. The modulating signals shall be the same in frequency as specified in paragraph (c) of §2.1049 for the occupied bandwidth tests.
(d) Other types of equipment. A curve or equivalent data which shows that the equipment will meet the modulation requirements of the rules under which the equipment is to be licensed.

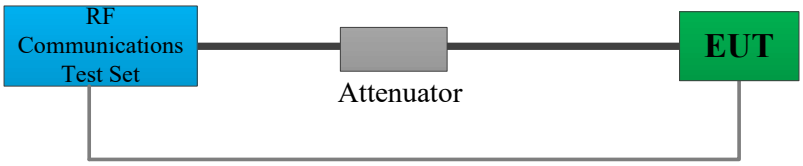
4.6.2 Test Procedure

According to ANSI C63.26-2015 Section 5.3.2:

Modulation limiting test methodology

Modulation limiting is the ability of a transmitter circuit to limit the transmitter from producing deviations in excess of a rated system deviation.

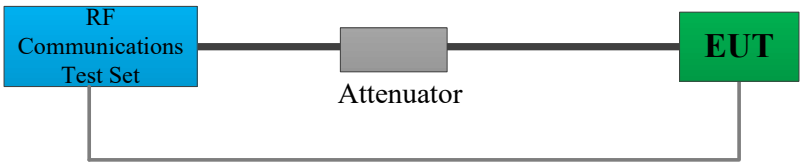
a) Connect the equipment as illustrated in Figure 1.
b) Adjust the transmitter per the manufacturer's procedure for full rated system deviation.
c) Set the test receiver to measure peak positive deviation. Set the audio bandwidth for ≤0.25 Hz to ≥15000 Hz. Turn the de-emphasis function off.
d) Apply a 1000 Hz modulating signal to the transmitter from the audio frequency generator, and adjust the level to obtain 60% of full rated system deviation. This is the 0 dB reference level.
e) Increase the level from the audio generator by 20 dB in 5 dB increments recording the deviation as measured from the test receiver in each step. Verify that the audio level used to make the OBW measurement is included in the sweep.
f) Repeat for step e) at 300 Hz, 2500 Hz and 3000 Hz at a minimum using the 0 dB reference level obtained in step d).
g) Set the test receiver to measure peak negative deviation and repeat step d) through step f).
h) The values recorded in step f) and step g) are the modulation limiting.
i) Plot the data set as a percentage of deviation relative to the 0 dB reference point versus input voltage.



According to ANSI C63.26-2015 Section 5.3.3:

Audio frequency response test methodology—Constant Input

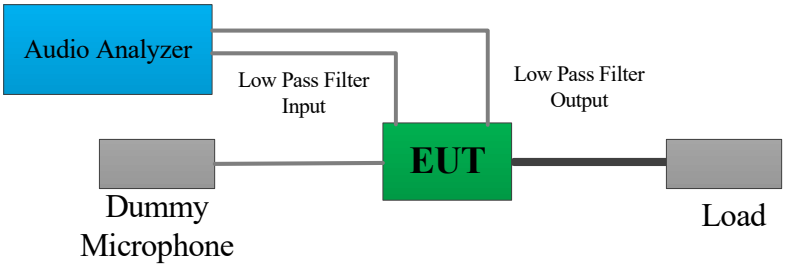
a) Connect the equipment as illustrated in Figure 3.
b) Set the test receiver to measure peak positive deviation. Set the audio bandwidth for ≤50 Hz to ≥15 000 Hz. Turn the de-emphasis function off.
c) Adjust the transmitter per the manufacturer's procedure for full rated system deviation.
d) Apply a 1000 Hz tone and adjust the audio frequency generator to produce 20% of the rated system deviation.
e) Set the test receiver to measure rms deviation and record the deviation reading as DEVREF.
f) Set the audio frequency generator to the desired test frequency between 300 Hz and 3000 Hz.



According to ANSI/TIA 603-E-2016 Section 2.2.15:

Audio Low Pass Filter Response

a) Connect the equipment as illustrated.
b) Connect the Audio Generator as close as possible the input of the post limiter low pass filter within the transmitter under test.
c) Connect the RF Communications Test Set to the output of the post limiter low pass filter within the transmitter under test.
d) Apply a 1000 Hz tone from the audio frequency generator and adjust the level per manufacturer's specifications.
e) Record the dB level of the 1000 Hz spectral line on the RF Communications Test Set as LEV_{REF}.
f) Set the audio frequency generator to the desired test frequency between 3000 Hz and the upper low pass filter limit.
g) Record RF Communications Test Set levels, at the test frequency in step f).
h) Record the dB level on the RF Communications Test Set as LEV_{FREQ}.



4.6.3 Test Data And Result

Serial Number:	2JLO-2	Test Date:	2024/5/19
Test Site:	RF	Test Mode:	Transmitting
Tester:	Stu Song	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	25.5	Relative Humidity: (%)	56	ATM Pressure: (kPa)	100.8

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101947	2023/10/18	2024/10/17
Unknown	Coaxial Cable	C-NJNJ-50	C-0200-03	2023/9/2	2024/9/1
Huaxiang	Coaxial Attenuator	DTS250-30	11022109	2024/3/1	2025/3/1
HP	RF Communications Test Set	8920A	3438A05201	2023/10/18	2024/10/17
R&S	Audio Analyzer	UPV	103447	2023/10/18	2024/10/17

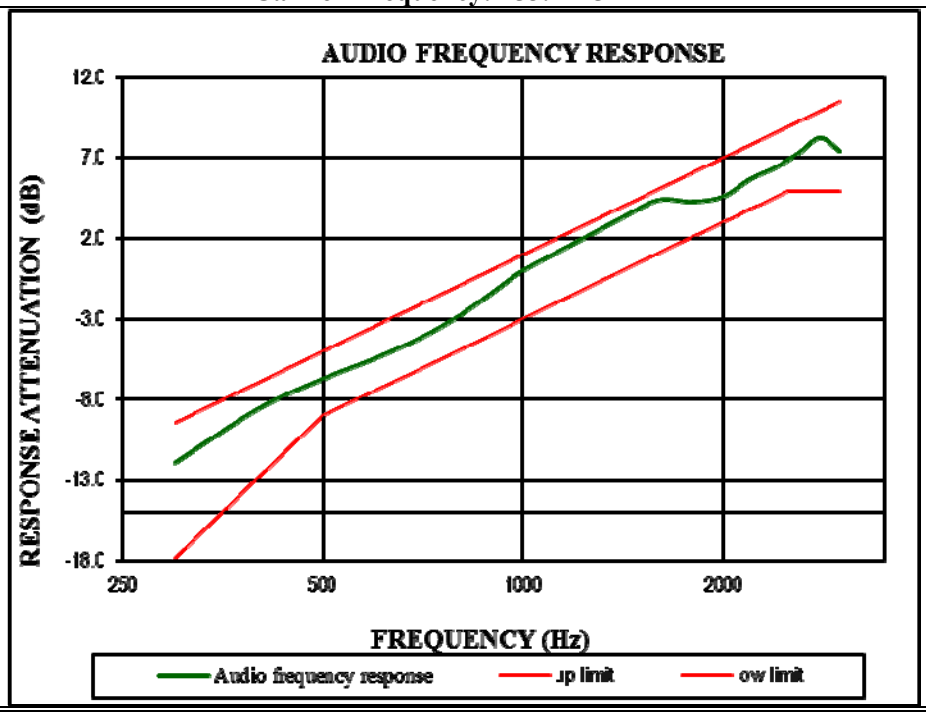
** Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Test Data:

Audio Frequency Response – High Power

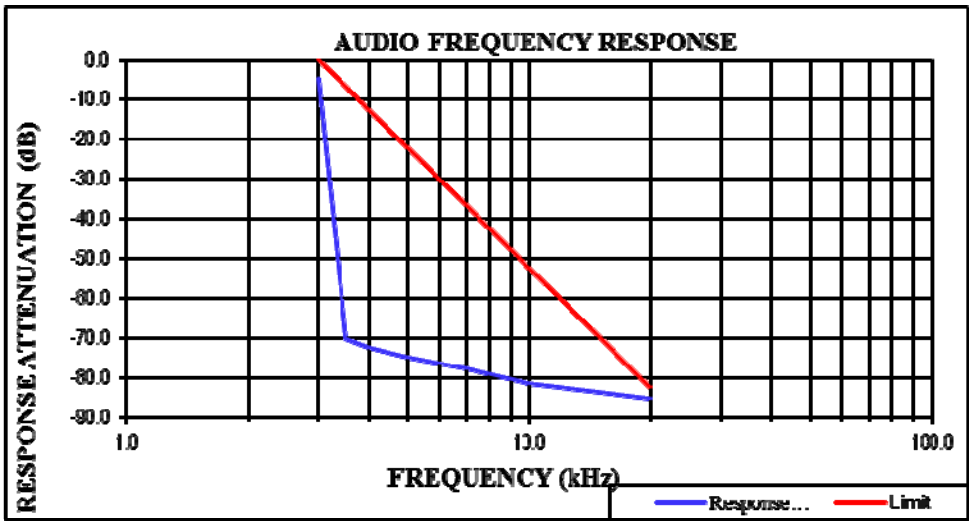
Channel Spacing: 12.5kHz	
Modulation Frequency (Hz)	**Response data (dB)**
300	-11.91
400	-8.56
500	-6.71
600	-5.43
700	-4.18
800	-2.83
900	-1.35
1000	0.00
1200	1.75
1400	3.22
1600	4.39
1800	4.29
2000	4.59
2200	5.70
2400	6.41
2600	7.30
2800	8.26
3000	7.43

Carrier Frequency: 453.2125 MHz



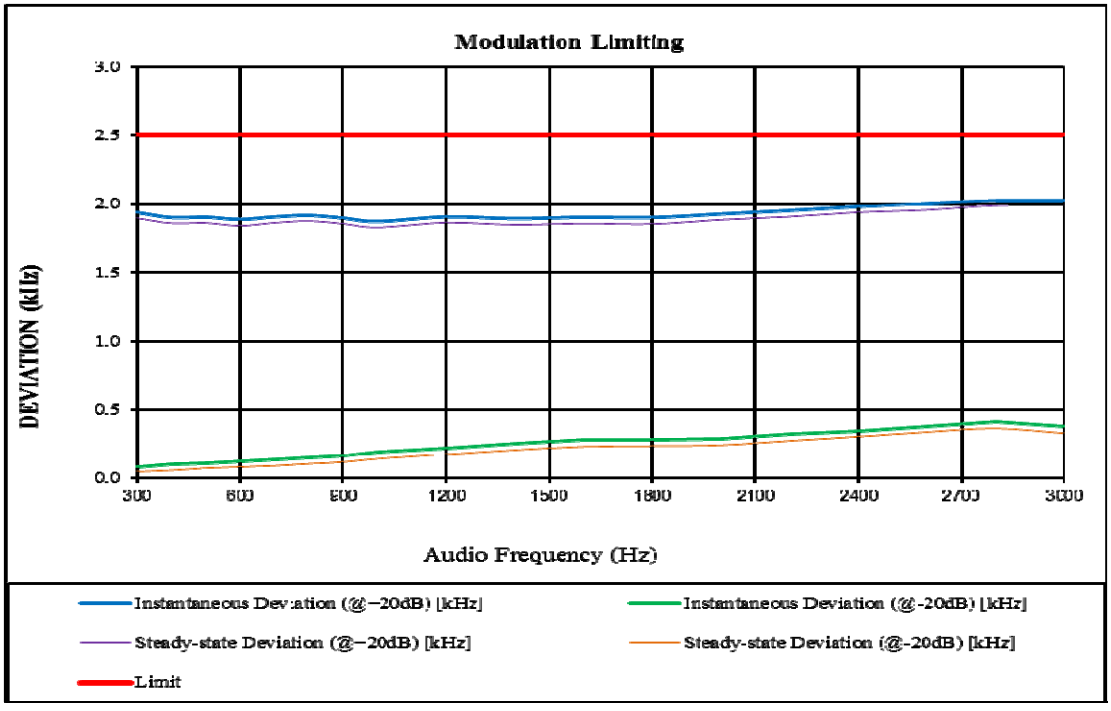
Audio Frequency Low Pass Filter Response – High Power

Channel Spacing: 12.5kHz		
Carrier Frequency: 453.2125 MHz		
Audio Frequency (kHz)	**Response Attenuation (dB)**	**Limit (dB)**
3.0	-4.7	0.0
3.5	-70.2	-6.7
4.0	-72.5	-12.5
5.0	-74.8	-22.2
7.0	-77.9	-36.8
10.0	-81.4	-52.3
15.0	-83.6	-69.9
20.0	-85.3	-82.5



Modulation Limiting – High Power

Channel Spacing: 12.5kHz	Carrier Frequency: 453.2125 MHz				
Audio Frequency (Hz)	Instantaneous		Steady-state		Limit [kHz]
	Deviation (@+20dB) [kHz]	Deviation (@-20dB) [kHz]	Deviation (@+20dB) [kHz]	Deviation (@-20dB) [kHz]	
300	1.936	0.081	1.894	0.046	2.5
400	1.900	0.096	1.859	0.055	2.5
500	1.903	0.107	1.861	0.071	2.5
600	1.886	0.118	1.840	0.079	2.5
700	1.905	0.130	1.862	0.088	2.5
800	1.915	0.145	1.874	0.102	2.5
900	1.896	0.163	1.855	0.115	2.5
1000	1.871	0.184	1.829	0.138	2.5
1200	1.905	0.218	1.863	0.171	2.5
1400	1.892	0.251	1.848	0.202	2.5
1600	1.902	0.279	1.857	0.227	2.5
1800	1.900	0.278	1.853	0.232	2.5
2000	1.926	0.285	1.884	0.238	2.5
2200	1.951	0.316	1.906	0.269	2.5
2400	1.979	0.340	1.938	0.299	2.5
2600	2.004	0.369	1.955	0.332	2.5
2800	2.023	0.409	1.987	0.358	2.5
3000	2.024	0.375	1.989	0.323	2.5



4.7 Transmitter Unwanted Emissions(Radiated)

4.7.1 Applicable Standard

FCC §90.210

Emission Mask D—12.5 kHz channel bandwidth equipment. For transmitters designed to operate with a 12.5 kHz channel bandwidth, any emission must be attenuated below the power (P) of the highest emission contained within the authorized bandwidth as follows:

(1) On any frequency from the center of the authorized bandwidth f0 to 5.625 kHz removed from f0: Zero dB.

(2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in kHz) of more than 5.625 kHz but no more than 12.5 kHz: At least 7.27(fd−2.88 kHz) dB.

(3) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in kHz) of more than 12.5 kHz: At least 50 + 10 log (P) dB or 70 dB, whichever is the lesser attenuation.

(4) The reference level for showing compliance with the emission mask shall be established using a resolution bandwidth sufficiently wide (usually two or three times the channel bandwidth) to capture the true peak emission of the equipment under test. In order to show compliance with the emission mask up to and including 50 kHz removed from the edge of the authorized bandwidth, adjust the resolution bandwidth to 100 Hz with the measuring instrument in a peak hold mode. A sufficient number of sweeps must be measured to insure that the emission profile is developed. If video filtering is used, its bandwidth must not be less than the instrumentresolution bandwidth. For emissions beyond 50 kHz from the edge of the authorized bandwidth, see paragraph (o) of this section. If it can be shown that use of the above instrumentation settings do not accurately represent the true interference potential of the equipment under test, an alternate procedure may be used provided prior Commission approval is obtained.

4.7.2 Test setup:

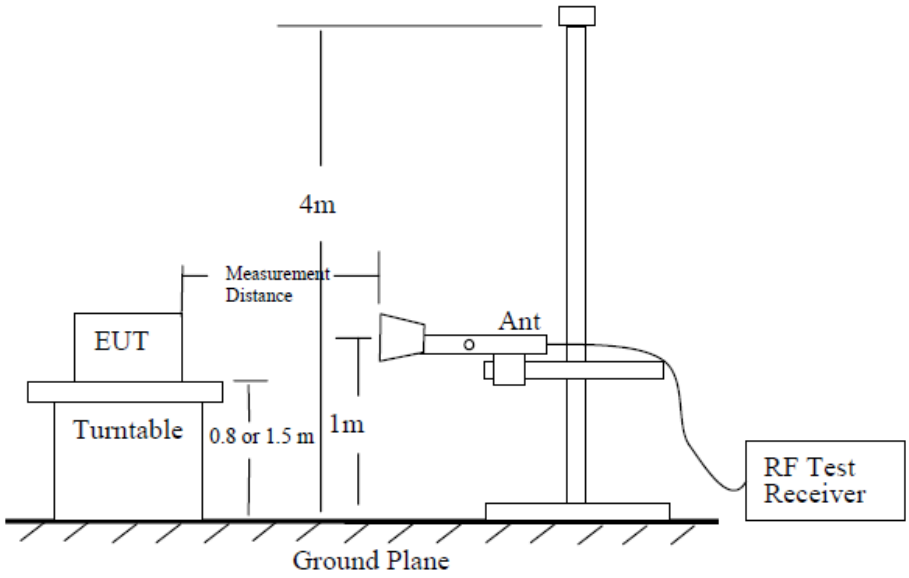


Figure 6—Test site-up for radiated ERP and/or EIRP measurements

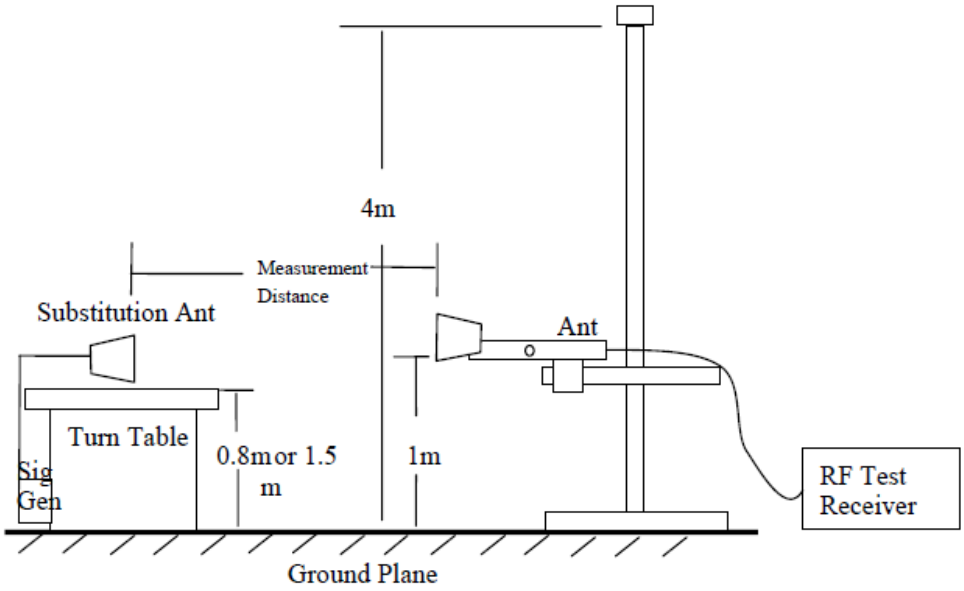


Figure 7—Substitution method set-up for radiated emission

4.7.3 Test Procedure:

a) Place the EUT in the center of the turntable. The EUT shall be configured to transmit into the standard non-radiating load (for measuring radiated spurious emissions), connected with cables of minimal length unless specified otherwise. If the EUT uses an adjustable antenna, the antenna shall be positioned to the length that produces the worst case emission at the fundamental operating frequency.

b) Each emission under consideration shall be evaluated:

1) Raise and lower the measurement antenna in accordance 5.5.2, as necessary to enable detection of the maximum emission amplitude relative to measurement antenna height.

2) Rotate the EUT through 360° to determine the maximum emission level relative to the axial position.

3) Return the turntable to the azimuth where the highest emission amplitude level was observed.

4) Vary the measurement antenna height again through 1 m to 4 m again to find the height associated with the maximum emission amplitude.

5) Record the measured emission amplitude level and frequency using the appropriate RBW.

c) Repeat step b) for each emission frequency with the measurement antenna oriented in both the horizontal and vertical polarizations to determine the orientation that gives the maximum emissions amplitude.

d) Set-up the substitution measurement with the reference point of the substitution antenna located as near as possible to where the center of the EUT radiating element was located during the initial EUT measurement.

e) Maintain the previous measurement instrument settings and test set-up, with the exception that the EUT is removed and replaced by the substitution antenna.

f) Connect a signal generator to the substitution antenna; locate the signal generator so as to minimize any potential influences on the measurement results. Set the signal generator to the frequency where emissions are detected, and set an output power level such that the radiated signal can be detected by the measurement instrument, with sufficient dynamic range relative to the noise floor.

g) For each emission that was detected and measured in the initial test [i.e., in step b) and step c)]:

1) Vary the measurement antenna height between 1 m to 4 m to maximize the received (measured) signal amplitude.

2) Adjust the signal generator output power level until the amplitude detected by the measurement instrument equals the amplitude level of the emission previously measured directly in step b) and step c).

3) Record the output power level of the signal generator when equivalence is achieved in step 2).

h) Repeat step e) through step g) with the measurement antenna oriented in the opposite polarization.

i) Calculate the emission power in dBm referenced to a half-wave dipole using the following equation:

$$Pe = Ps(dBm) - \text{cable loss (dB)} + \text{antenna gain (dBd)}$$

where

Pe = equivalent emission power in dBm
Ps = source (signal generator) power in dBm

NOTE—dBd refers to the measured antenna gain in decibels relative to a half-wave dipole.

j) Correct the antenna gain of the substitution antenna if necessary to reference the emission power to a half-wave dipole. When using measurement antennas with the gain specified in dBi, the equivalent dipole-referenced gain can be determined from: gain (dBd) = gain (dBi) − 2.15 dB. If necessary, the antenna gain can be calculated from calibrated antenna factor information

k) Provide the complete measurement results as a part of the test report.

4.7.4 Test Data And Result

Serial Number:	2JLO-2	Test Date:	Below 1GHz:2024/4/24 Above 1GHz :2024/4/30
Test Site:	Chamber A	Test Mode:	Transmitting
Tester:	Joe Li	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	25.2~25.3	Relative Humidity: (%)	54~64	ATM Pressure: (kPa)	100.2

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Below 1GHz					
Sunol Sciences	Hybrid Antenna	JB3	A060611-3	2024/1/12	2027/1/11
Wilson	Attenuator	859936	F-08-EM014	2023/7/1	2024/6/30
Unknown	Coaxial Cable	C-NJNJ-50	C-0075-01	2023/7/1	2024/6/30
Unknown	Coaxial Cable	C-NJNJ-50	C-0400-01	2023/7/1	2024/6/30
Unknown	Coaxial Cable	C-NJNJ-50	C-1400-01	2023/7/1	2024/6/30
Sonoma	Amplifier	310N	372193	2023/7/1	2024/6/30
R&S	EMI Test Receiver	ESR3	102453	2023/8/18	2024/8/17
EMCO	Adjustable Dipole Antenna	3121C	9109-753	N/A	N/A
Unknown	Coaxial Cable	C-NJNJ-50	C-0200-02	2023/9/4	2024/9/3
Agilent	Signal Generator	E8247C	MY43321350	2023/10/18	2024/10/17
Above 1GHz					
AH	Horn Antenna	SAS-571	1177	2023/2/22	2026/2/21
ETS-Lindgren	Horn Antenna	3115	000 527 35	2023/9/7	2026/9/6
HUBER+SUHNER	Coaxial Cable	SUCOFLEX 126EA	MY369/26/26EA	2023/9/6	2024/9/5
Micro-Coax	Coaxial Cable	UFA210B	99G1448	2023/9/9	2024/9/8
Mini-Circuits	Preamplifier	ZVZ-183-S+	5696001267	2024/3/2	2025/3/1
Agilent	Spectrum Analyzer	E4440A	MY44303352	2023/10/18	2024/10/17
Agilent	Signal Generator	E8247C	MY43321350	2023/10/18	2024/10/17

** Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Test Data:

Please refer to the below table.
Test only was performed at high power level.
After pre-scan in the X, Y and Z axes of orientation, the worst case is below:

30MHz - 5GHz:

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Part 90	
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)		Limit (dBm)	Margin (dB)
FM mode, Channel Spacing:12.5 kHz, operation frequency: 400.0125 MHz								
800.03	H	46.09	-57.94	0.00	0.36	-58.30	-20.00	38.30
800.03	V	52.64	-55.15	0.00	0.36	-55.51	-20.00	35.51
1200.04	H	43.35	-57.59	8.74	0.98	-49.83	-20.00	29.83
1200.04	V	44.03	-57.15	8.74	0.98	-49.39	-20.00	29.39
1600.05	H	44.42	-56.91	10.30	1.31	-47.92	-20.00	27.92
1600.05	V	41.75	-59.51	10.30	1.31	-50.52	-20.00	30.52
2000.06	H	44.66	-53.39	11.50	1.13	-43.02	-20.00	23.02
2000.06	V	43.74	-55.94	11.50	1.13	-45.57	-20.00	25.57
2400.08	H	48.53	-50.13	12.06	1.22	-39.29	-20.00	19.29
2400.08	V	46.38	-51.17	12.06	1.22	-40.33	-20.00	20.33
2800.09	H	42.71	-56.12	12.32	1.40	-45.20	-20.00	25.20
2800.09	V	41.89	-55.22	12.32	1.40	-44.30	-20.00	24.30
3200.10	H	42.09	-56.19	12.32	1.54	-45.41	-20.00	25.41
3200.10	V	41.88	-54.59	12.32	1.54	-43.81	-20.00	23.81
3600.11	H	41.39	-55.49	12.22	1.58	-44.85	-20.00	24.85
3600.11	V	40.87	-53.98	12.22	1.58	-43.34	-20.00	23.34
4000.13	H	41.23	-53.45	12.30	1.45	-42.60	-20.00	22.60
4000.13	V	41.82	-50.76	12.30	1.45	-39.91	-20.00	19.91
4FSK mode, Channel Spacing: 12.5 kHz, operation frequency: 400.0125MHz								
800.03	H	47.89	-56.14	0.00	0.36	-56.50	-20.00	36.50
800.03	V	53.12	-54.67	0.00	0.36	-55.03	-20.00	35.03
1200.04	H	42.40	-58.54	8.74	0.98	-50.78	-20.00	30.78
1200.04	V	45.49	-55.69	8.74	0.98	-47.93	-20.00	27.93
1600.05	H	44.57	-56.76	10.30	1.31	-47.77	-20.00	27.77
1600.05	V	43.33	-57.93	10.30	1.31	-48.94	-20.00	28.94
2000.06	H	43.45	-54.60	11.50	1.13	-44.23	-20.00	24.23
2000.06	V	43.36	-56.32	11.50	1.13	-45.95	-20.00	25.95
2400.08	H	49.01	-49.65	12.06	1.22	-38.81	-20.00	18.81
2400.08	V	45.45	-52.10	12.06	1.22	-41.26	-20.00	21.26
2800.09	H	42.86	-55.97	12.32	1.40	-45.05	-20.00	25.05
2800.09	V	42.72	-54.39	12.32	1.40	-43.47	-20.00	23.47
3200.10	H	42.38	-55.90	12.32	1.54	-45.12	-20.00	25.12
3200.10	V	41.57	-54.90	12.32	1.54	-44.12	-20.00	24.12
3600.11	H	42.93	-53.95	12.22	1.58	-43.31	-20.00	23.31
3600.11	V	41.46	-53.39	12.22	1.58	-42.75	-20.00	22.75
4000.13	H	41.97	-52.71	12.30	1.45	-41.86	-20.00	21.86
4000.13	V	41.74	-50.84	12.30	1.45	-39.99	-20.00	19.99

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Part 90	
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)		Limit (dBm)	Margin (dB)
FM mode, Channel Spacing: 12.5kHz, operation frequency: 453.2125MHz								
906.43	H	47.53	-54.51	0.00	0.38	-54.89	-20.00	34.89
906.43	V	53.64	-50.36	0.00	0.38	-50.74	-20.00	30.74
1359.64	H	43.85	-57.74	9.41	1.18	-49.51	-20.00	29.51
1359.64	V	46.42	-55.01	9.41	1.18	-46.78	-20.00	26.78
1812.85	H	43.74	-55.85	10.94	1.21	-46.12	-20.00	26.12
1812.85	V	43.22	-57.20	10.94	1.21	-47.47	-20.00	27.47
2266.06	H	46.51	-51.95	11.87	1.19	-41.27	-20.00	21.27
2266.06	V	46.30	-51.97	11.87	1.19	-41.29	-20.00	21.29
2719.28	H	45.40	-53.43	12.29	1.35	-42.49	-20.00	22.49
2719.28	V	44.65	-52.44	12.29	1.35	-41.50	-20.00	21.50
3172.49	H	48.70	-49.66	12.33	1.54	-38.87	-20.00	18.87
3172.49	V	44.71	-51.85	12.33	1.54	-41.06	-20.00	21.06
3625.70	H	41.70	-55.04	12.23	1.57	-44.38	-20.00	24.38
3625.70	V	41.97	-52.74	12.23	1.57	-42.08	-20.00	22.08
4078.91	H	41.74	-53.36	12.47	1.46	-42.35	-20.00	22.35
4078.91	V	42.06	-50.89	12.47	1.46	-39.88	-20.00	19.88
4532.13	H	41.63	-55.43	13.37	1.53	-43.59	-20.00	23.59
4532.13	V	42.50	-52.15	13.37	1.53	-40.31	-20.00	20.31
4FSK mode, Channel Spacing:12.5 kHz, operation frequency: 453.2125 MHz								
906.43	H	46.92	-55.12	0.00	0.38	-55.50	-20.00	35.50
906.43	V	52.87	-51.13	0.00	0.38	-51.51	-20.00	31.51
1359.64	H	43.27	-58.32	9.41	1.18	-50.09	-20.00	30.09
1359.64	V	45.74	-55.69	9.41	1.18	-47.46	-20.00	27.46
1812.85	H	43.26	-56.33	10.94	1.21	-46.60	-20.00	26.60
1812.85	V	43.18	-57.24	10.94	1.21	-47.51	-20.00	27.51
2266.06	H	46.56	-51.90	11.87	1.19	-41.22	-20.00	21.22
2266.06	V	45.75	-52.52	11.87	1.19	-41.84	-20.00	21.84
2719.28	H	45.24	-53.59	12.29	1.35	-42.65	-20.00	22.65
2719.28	V	41.28	-55.81	12.29	1.35	-44.87	-20.00	24.87
3172.49	H	46.81	-51.55	12.33	1.54	-40.76	-20.00	20.76
3172.49	V	44.32	-52.24	12.33	1.54	-41.45	-20.00	21.45
3625.70	H	41.36	-55.38	12.23	1.57	-44.72	-20.00	24.72
3625.70	V	41.29	-53.42	12.23	1.57	-42.76	-20.00	22.76
4078.91	H	41.12	-53.98	12.47	1.46	-42.97	-20.00	22.97
4078.91	V	40.92	-52.03	12.47	1.46	-41.02	-20.00	21.02
4532.13	H	41.79	-55.27	13.37	1.53	-43.43	-20.00	23.43
4532.13	V	41.74	-52.91	13.37	1.53	-41.07	-20.00	21.07

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	RSS-119	
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)		Limit (dBm)	Margin (dB)
FM mode, Channel Spacing: 12.5 kHz, operation frequency: 469.9875MHz								
939.98	H	42.24	-58.31	0.00	0.51	-58.82	-20.00	38.82
939.98	V	48.23	-54.05	0.00	0.51	-54.56	-20.00	34.56
1409.96	H	44.16	-57.63	9.62	1.24	-49.25	-20.00	29.25
1409.96	V	48.38	-53.13	9.62	1.24	-44.75	-20.00	24.75
1879.95	H	43.10	-55.94	11.14	1.18	-45.98	-20.00	25.98
1879.95	V	43.20	-56.96	11.14	1.18	-47.00	-20.00	27.00
2349.94	H	51.00	-47.59	11.99	1.21	-36.81	-20.00	16.81
2349.94	V	49.77	-48.05	11.99	1.21	-37.27	-20.00	17.27
2819.93	H	42.86	-55.97	12.33	1.41	-45.05	-20.00	25.05
2819.93	V	42.85	-54.26	12.33	1.41	-43.34	-20.00	23.34
3289.91	H	55.11	-42.92	12.28	1.56	-32.20	-20.00	12.20
3289.91	V	49.79	-46.36	12.28	1.56	-35.64	-20.00	15.64
3759.90	H	41.14	-54.86	12.25	1.53	-44.14	-20.00	24.14
3759.90	V	41.56	-52.38	12.25	1.53	-41.66	-20.00	21.66
4229.89	H	42.22	-53.69	12.81	1.49	-42.37	-20.00	22.37
4229.89	V	41.12	-52.56	12.81	1.49	-41.24	-20.00	21.24
4699.88	H	41.77	-53.77	13.24	1.50	-42.03	-20.00	22.03
4699.88	V	41.07	-51.91	13.24	1.50	-40.17	-20.00	20.17
4FSK mode, Channel Spacing: 12.5 kHz, operation frequency: 469.9875MHz								
939.98	H	43.38	-57.17	0.00	0.51	-57.68	-20.00	37.68
939.98	V	48.41	-53.87	0.00	0.51	-54.38	-20.00	34.38
1409.96	H	46.41	-55.38	9.62	1.24	-47.00	-20.00	27.00
1409.96	V	42.52	-58.99	9.62	1.24	-50.61	-20.00	30.61
1879.95	H	45.88	-53.16	11.14	1.18	-43.20	-20.00	23.20
1879.95	V	43.47	-56.69	11.14	1.18	-46.73	-20.00	26.73
2349.94	H	48.58	-50.01	11.99	1.21	-39.23	-20.00	19.23
2349.94	V	51.85	-45.97	11.99	1.21	-35.19	-20.00	15.19
2819.93	H	43.78	-55.05	12.33	1.41	-44.13	-20.00	24.13
2819.93	V	42.46	-54.65	12.33	1.41	-43.73	-20.00	23.73
3289.91	H	53.13	-44.90	12.28	1.56	-34.18	-20.00	14.18
3289.91	V	48.15	-48.00	12.28	1.56	-37.28	-20.00	17.28
3759.90	H	41.35	-54.65	12.25	1.53	-43.93	-20.00	23.93
3759.90	V	40.91	-53.03	12.25	1.53	-42.31	-20.00	22.31
4229.89	H	42.42	-53.49	12.81	1.49	-42.17	-20.00	22.17
4229.89	V	41.73	-51.95	12.81	1.49	-40.63	-20.00	20.63
4699.88	H	41.50	-54.04	13.24	1.50	-42.30	-20.00	22.30
4699.88	V	41.32	-51.66	13.24	1.50	-39.92	-20.00	19.92

Note 1:The unit of antenna gain is dBd for frequency below 1GHz and is dBi for frequency above 1GHz.
Note 2:
Absolute Level = Substituted Level - Cable loss + Antenna Gain
Margin = Limit- Absolute Level

APPENDIX A - EUT PHOTOGRAPHS

Please refer to the attachment 2402S45679-RF-EXP EUT EXTERNAL PHOTOGRAPHS and 2402S45679-RF-INP EUT INTERNAL PHOTOGRAPHS.

APPENDIX B - TEST SETUP PHOTOGRAPHS

Please refer to the attachment 2402S45679-RF-08A-TSP TEST SETUP PHOTOGRAPHS.

******* END OF REPORT *******