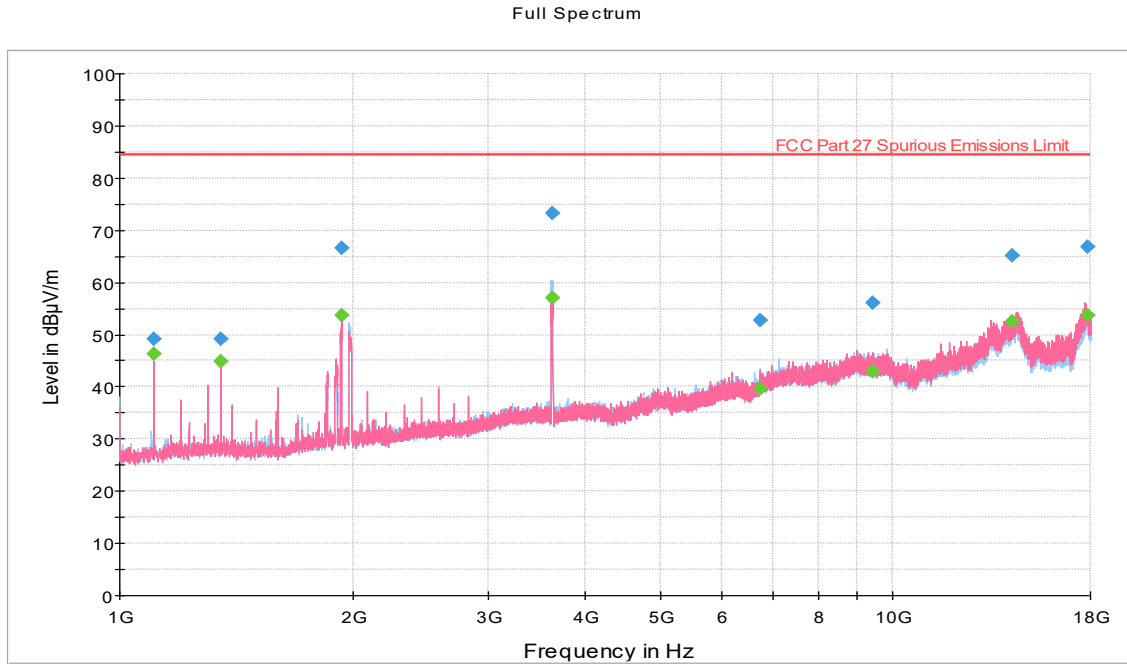




FCC ID: NU: YETQ42-Z1CNU and CU: YETQ41-BXCU
 IC: NU: 9298A-Q42Z1CNU and CU: 9298A-Q41BXCU

2.12.3 Intermodulation Test Results Above 1GHz (2 Bands per port on 4 NU ports Uplink Worst Case Configuration)

WCDMA Band 5 5MHz BW Mid Ch & LTE Band 12 5MHz BW Mid Ch transmit on NU Port 1
 LTE Band 25 10MHz BW Low Ch & LTE Band 4 10MHz BW Mid Ch transmit on NU Port 2
 LTE Modem transmit LTE Band 2 Middle Channel



— Preview Result 1H-PK+ [Preview Result 1H.Result:2] — Preview Result 1V-PK+ [Preview Result 1V.Result:4]
— FCC Part 27 Spurious Emissions Limit [.\EMI Radiated] ◆ Final_Result PK+ [Final_Result.Result:4]
◆ Final_Result AVG [Final_Result.Result:5]

Peak Data

Frequency (MHz)	Max Peak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1106.000000	49.14	84.40	35.26	1000.0	1000.000	255.0	V	62.0	-4
1351.533333	49.06	84.40	35.34	1000.0	1000.000	340.0	V	45.0	-3
1936.633333	66.47	84.40	17.93	1000.0	1000.000	340.0	H	355.0	0
3630.000000	73.28	84.40	11.12	1000.0	1000.000	303.0	H	38.0	4
6739.066667	52.67	84.40	31.73	1000.0	1000.000	335.0	H	330.0	9
9425.333333	56.14	84.40	28.26	1000.0	1000.000	335.0	V	10.0	13
14248.000000	65.15	84.40	19.25	1000.0	1000.000	240.0	V	292.0	21
17835.633333	66.74	84.40	17.66	1000.0	1000.000	172.0	V	14.0	27

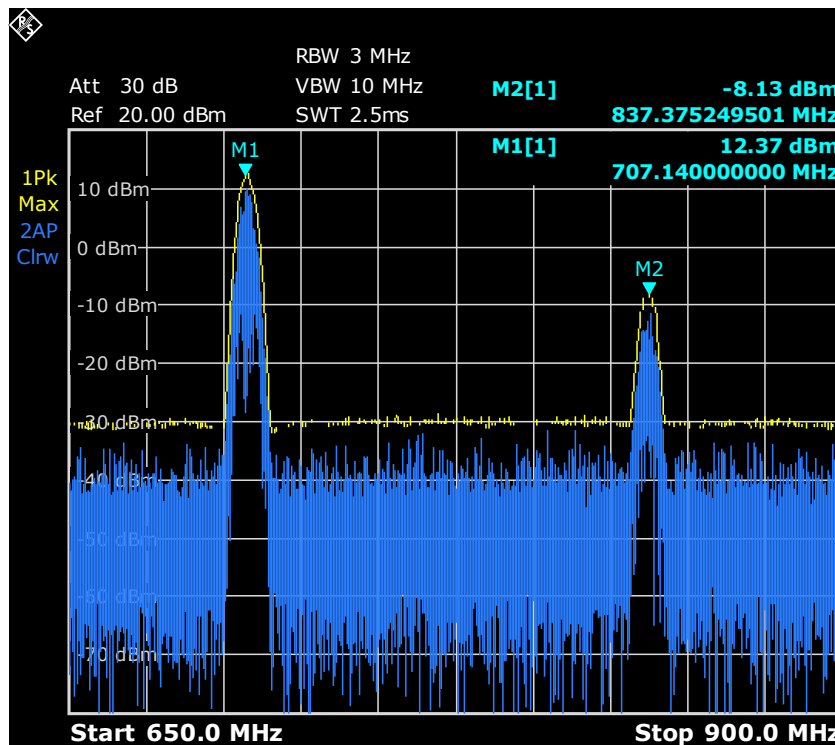


FCC ID: NU: YETQ42-Z1CNU and CU: YETQ41-BXCU
 IC: NU: 9298A-Q42Z1CNU and CU: 9298A-Q41BXCU

Average Data

Frequency (MHz)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1106.000000	46.40	84.40	38.00	1000.0	1000.000	255.0	V	62.0	-4
1351.533333	44.94	84.40	39.46	1000.0	1000.000	340.0	V	45.0	-3
1936.633333	53.62	84.40	30.78	1000.0	1000.000	340.0	H	355.0	0
3630.000000	56.96	84.40	27.44	1000.0	1000.000	303.0	H	38.0	4
6739.066667	39.69	84.40	44.71	1000.0	1000.000	335.0	H	330.0	9
9425.333333	43.04	84.40	41.36	1000.0	1000.000	335.0	V	10.0	13
14248.00000	52.39	84.40	32.01	1000.0	1000.000	240.0	V	292.0	21
17835.63333	53.73	84.40	30.67	1000.0	1000.000	172.0	V	14.0	27

2.12.4 Intermodulation verification plots (antenna port measurements)

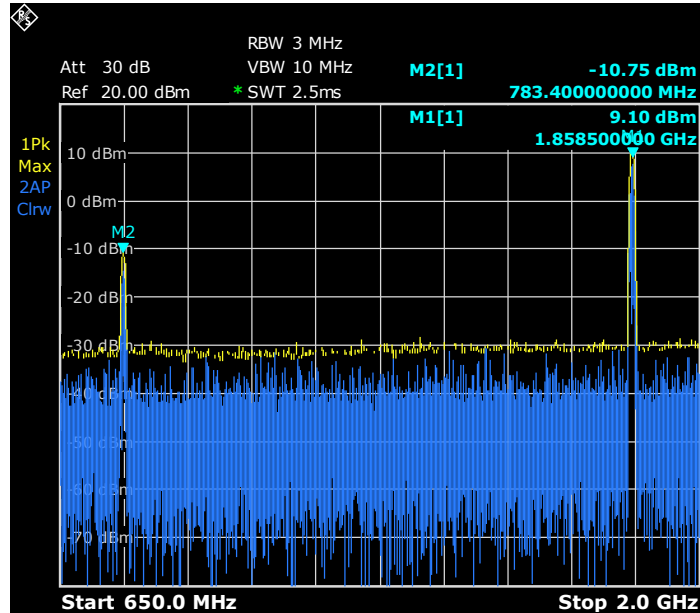


Date: 6.JAN.2023 09:57:44

NU Port 1



FCC ID: NU: YETQ42-Z1CNU and CU: YETQ41-BXCU
IC: NU: 9298A-Q42Z1CNU and CU: 9298A-Q41BXCU



Date: 6.JAN.2023 10:03:54

NU Port 2



FCC ID: NU: YETQ42-Z1CNU and CU: YETQ41-BXCU
IC: NU: 9298A-Q42Z1CNU and CU: 9298A-Q41BXCU

2.13 Out Of Band Gain Limit

2.13.1 Specification Reference

FCC 47 CFR Part 20. Clause 20.21(e)(9)(i)(E)
KDB935210 D04, Clause 7.15

2.13.2 Standard Applicable

FCC 47 CFR Part 20. Clause 20.21(e)(9)(i)(E) Out of Band Gain Limits:

(1) A frequency selective booster shall have the following minimum attenuation referenced to the gain in the center of the pass band of the booster:

- (i) -20 dB at the band edge, where band edge is the end of the licensee's allocated spectrum,
- (ii) -30 dB at 1 MHz offset from band edge,
- (iii) -40 dB at 5 MHz offset from band edge.

(2) A frequency selective booster having maximum gain greater than 80 dB (referenced to the center of the pass band) shall limit the out of band gain to 60 dB at 0.2 MHz offset from the band edge, and 45 dB at 1 MHz offset from the band edge, where band edge is the end of the licensee's allocated spectrum.

2.13.3 Equipment Under Test and Modification State

Serial No: 370920000139 (NU)and 371929000156 (CU) / Test Configuration C and D

2.13.4 Date of Test/Initial of test personnel who performed the test

August 14 to September 06, and October 27, 2019/XYZ

2.13.5 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.13.6 Environmental Conditions

Test performed at TÜV SÜD America Inc. Mira Mesa facility.

Ambient Temperature	25.8 - 26.4°C
Relative Humidity	31.1 - 53.7%
ATM Pressure	98.5 - 99.1kPa

2.13.7 Additional Observations

- This is conducted Test. Test procedure is per Section 7.15 of KDB935210 (D04 Provider Specific Booster Measurements v02r03). Appropriate offset (line losses) applied.
- Downlink was tested according to 7.15.1 of KDB935210. The signal generator was set to transmit a CW signal with output power level set to that as determined in clause 7.2.2 of KDB935210.



FCC ID: NU: YETQ42-Z1CNU and CU: YETQ41-BXCU
 IC: NU: 9298A-Q42Z1CNU and CU: 9298A-Q41BXCU

- Uplink which has narrowband protection function was tested according to 7.15.2 of KDB93521. One signal generator produced a band-limited AWGN signal with an OBW (99%) of 4.1 MHz with output power level set to that as determined in clause 7.2.2 of KDB935210. A second signal generator produced a band-limited AWGN signal with an OBW (99%) of 200 kHz with output power level set to a level that is 20 dB higher than the level determined from 7.2.2 of KDB935210.
- The EUT operated in Test Mode with the gain set to the maximum gain and a minimum bandwidth setting (5MHz).
- Setup the EUT according to Figure 2 or 3 of Section 6.3.3 of KDB935210 D04 as appropriate.
- Evaluations are conducted at CU and NU antenna ports.
- Operational uplink and downlink bands for WCDMA Band 5 and LTE Band 4, 12, 13, 25 were tested.

2.13.8 Test Results

Out of Band Gain Limit – WCDMA Band 5 Downlink (869 – 894 MHz)				
Offset (MHz)	Input Power (dBm)	Output Power (dBm)	Gain (dB)	Gain Limit (dB)
Centre Frequency	-82.16	10.45	92.61	-
0 (Low Band Edge)	-82.40	-65.03	17.37	72.61
-0.2	-82.52	-64.58	17.94	60
-1	-82.11	-64.27	17.84	45
-5	-82.25	-62.98	19.27	52.61
0 (High Band Edge)	-82.47	-65.53	16.94	72.61
+0.2	-82.04	-64.68	17.36	60
+1	-82.39	-64.32	18.07	45
+5	-82.17	-65.48	16.69	52.61



FCC ID: NU: YETQ42-Z1CNU and CU: YETQ41-BXCU
 IC: NU: 9298A-Q42Z1CNU and CU: 9298A-Q41BXCU

Out of Band Gain Limit - WCDMA Band 5 Uplink (824 – 849 MHz)				
Offset (MHz)	Input Power (dBm)	Output Power (dBm)	Gain (dB)	Gain Limit (dB)
Centre Frequency	-76.69	17.01	93.70	-
0 (Low Band Edge)	-72.16	-64.02	8.14	73.70
-0.2	-71.52	-64.66	6.86	60
-1	-70.76	-66.21	4.55	45
-5	-71.93	-64.56	7.37	53.70
0 (High Band Edge)	-70.62	-65.73	4.89	73.70
+0.2	-70.92	-65.80	5.12	60
+1	-70.59	-65.04	5.55	45
+5	-69.37	-63.25	6.12	53.70

Out of Band Gain Limit – LTE Band 4 Downlink (2110 – 2155 MHz)				
Offset (MHz)	Input Power (dBm)	Output Power (dBm)	Gain (dB)	Gain Limit (dB)
Centre Frequency	-85.30	10.87	96.17	-
0 (Low Band Edge)	-85.71	-46.81	38.90	76.17
-0.2	-84.72	-72.23	12.49	60
-1	-85.24	-70.78	14.46	45
-5	-85.74	-70.71	15.03	56.17
0 (High Band Edge)	-85.78	-70.13	15.65	76.17
+0.2	-85.62	-71.91	13.71	60
+1	-86.16	-71.81	14.35	45
+5	-85.39	-71.15	14.24	56.17



FCC ID: NU: YETQ42-Z1CNU and CU: YETQ41-BXCU
 IC: NU: 9298A-Q42Z1CNU and CU: 9298A-Q41BXCU

Out of Band Gain Limit - LTE Band 4 Uplink (1710 – 1755 MHz)				
Offset (MHz)	Input Power (dBm)	Output Power (dBm)	Gain (dB)	Gain Limit (dB)
Centre Frequency	-75.09	19.04	94.13	-
0 (Low Band Edge)	-69.63	-65.17	4.46	74.13
-0.2	-69.22	-65.53	3.69	60
-1	-69.88	-63.44	6.44	45
-5	-68.76	-65.53	3.23	54.13
0 (High Band Edge)	-69.24	-64.95	4.29	74.13
+0.2	-69.54	-65.35	4.19	60
+1	-69.23	-64.61	4.62	45
+5	-68.36	-64.01	4.35	74.13

Out of Band Gain Limit – LTE Band 12 Downlink (729 – 746MHz)				
Offset (MHz)	Input Power (dBm)	Output Power (dBm)	Gain (dB)	Gain Limit (dB)
Centre Frequency	-82.47	7.56	90.03	-
0 (Low Band Edge)	-82.75	-69.45	13.30	70.03
-0.2	-82.27	-68.46	13.81	60
-1	-82.66	-69.35	13.31	45
-5	-83.26	-69.58	13.68	50.03
0 (High Band Edge)	-82.91	-68.27	14.64	70.03
+0.2	-83.22	-69.79	13.43	60
+1	-82.77	-60.55	22.22	45
+5	-82.66	-60.34	22.32	50.03



FCC ID: NU: YETQ42-Z1CNU and CU: YETQ41-BXCU
 IC: NU: 9298A-Q42Z1CNU and CU: 9298A-Q41BXCU

Out of Band Gain Limit - LTE Band 12 Uplink (699 – 716MHz)				
Offset (MHz)	Input Power (dBm)	Output Power (dBm)	Gain (dB)	Gain Limit (dB)
Centre Frequency	-74.81	19.38	90.98	-
0 (Low Band Edge)	-72.37	-70.58	7.2	70.98
-0.2	-72.41	-68.72	6.88	60
-1	-72.15	-70.25	8.71	45
-5	-71.86	-70.46	6.33	50.98
0 (High Band Edge)	-72.89	-70.23	7.94	70.98
+0.2	-72.52	-70.50	7.17	60
+1	-72.10	-70.36	7.49	45
+5	-72.11	-69.87	8.1	50.98

Out of Band Gain Limit – LTE Band 13 Downlink (746 – 756MHz)				
Offset (MHz)	Input Power (dBm)	Output Power (dBm)	Gain (dB)	Gain Limit (dB)
Centre Frequency	-82.20	10.28	92.48	-
0 (Low Band Edge)	-82.47	-55.59	26.88	72.48
-0.2	-82.23	-57.36	24.87	60
-1	-82.19	-60.32	21.87	45
-5	-82.01	-71.79	10.22	52.48
0 (High Band Edge)	-81.95	-59.67	22.28	72.48
+0.2	-82.34	-58.89	23.45	60
+1	-82.78	-62.81	19.97	45
+5	-82.25	-74.60	7.65	52.48



FCC ID: NU: YETQ42-Z1CNU and CU: YETQ41-BXCU
 IC: NU: 9298A-Q42Z1CNU and CU: 9298A-Q41BXCU

Out of Band Gain Limit – LTE Band 13 Uplink (777 – 787 MHz)				
Offset (MHz)	Input Power (dBm)	Output Power (dBm)	Gain (dB)	Gain Limit (dB)
Centre Frequency	-73.65	13.61	87.26	-
0 (Low Band Edge)	-71.27	-65.59	5.68	67.26
-0.2	-69.64	-64.42	5.22	60
-1	-70.03	-66.67	3.36	45
-5	-71.08	-65.53	5.55	47.26
0 (High Band Edge)	-70.59	-65.50	5.09	67.26
+0.2	-69.89	-64.72	5.17	60
+1	-70.17	-64.96	5.21	45
+5	-70.95	-65.12	5.83	47.26

Out of Band Gain Limit – LTE Band 25 Downlink (1930 – 1995 MHz)				
Offset (MHz)	Input Power (dBm)	Output Power (dBm)	Gain (dB)	Gain Limit (dB)
Centre Frequency	-86.59	7.62	94.21	-
0 (Low Band Edge)	-86.69	-64.25	22.44	74.21
-0.2	-86.48	-63.40	23.08	60
-1	-86.61	-63.30	23.31	45
-5	-86.65	-64.52	22.13	54.21
0 (High Band Edge)	-87.02	-64.61	22.41	74.21
+0.2	-86.96	-62.46	24.50	60
+1	-87.28	-63.93	23.35	45
+5	-87.06	-64.18	22.88	54.21



FCC ID: NU: YETQ42-Z1CNU and CU: YETQ41-BXCU
 IC: NU: 9298A-Q42Z1CNU and CU: 9298A-Q41BXCU

Out of Band Gain Limit - LTE Band 25 Uplink (1850 – 1915 MHz)				
Offset (MHz)	Input Power (dBm)	Output Power (dBm)	Gain (dB)	Gain Limit (dB)
Centre Frequency	-71.38	19.08	90.46	-
0 (Low Band Edge)	-69.36	-65.33	4.03	70.46
-0.2	-69.13	-62.43	6.7	60
-1	-69.89	-63.39	6.5	45
-5	-69.12	-63.05	6.07	50.46
0 (High Band Edge)	-69.22	-65.58	3.64	70.46
+0.2	-69.94	-64.37	5.57	60
+1	-70.15	-65.32	4.83	45
+5	-69.93	-64.96	4.97	50.46



FCC ID: NU: YETQ42-Z1CNU and CU: YETQ41-BXCU
 IC: NU: 9298A-Q42Z1CNU and CU: 9298A-Q41BXCU

2.14 Frequency Stability

2.14.1 Specification Reference

- FCC 47 CFR Part 2, Clause 2.1055
- FCC 47 CFR Part 22, Clause 22.355
- FCC 47 CFR Part 24, Clause 24.235
- RSS-132, Clause 5.3
- RSS-133, Clause 6.3
- FCC 47 CFR Part 27, Clause 27.54
- RSS-139, Clause 6.4
- RSS-130, Clause 4.5
- RSS-195, Clause 5.4

2.14.2 Standard Applicable

FCC Part 22.355:

The carrier frequency of each transmitter in the Public Mobile Services must be maintained within the tolerances given in Table C–1 of this section.

Table C-1 Frequency Tolerance for Transmitters in the Public Mobile Services			
Frequency Range (MHz)	Base, fixed (ppm)	Mobile >3 watts (ppm)	Mobile ≤3 watts (ppm)
25 to 50	20.0	20.0	50.0
50 to 450	5.0	5.0	50.0
450 to 512	2.5	5.0	5.0
821 to 896	1.5	2.5	2.5
928 to 929	5.0	N/A	N/A
929 to 960	1.5	N/A	N/A
2110 to 2220	10.0	N/A	N/A

FCC Part 24.235:

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

RSS-132:

The carrier frequency shall not depart from the reference frequency in excess of ±2.5 ppm for mobile stations and ±1.5 ppm for base stations.

RSS-133

The carrier frequency shall not depart from the reference frequency, in excess of ±2.5 ppm for mobile stations and ±1.0 ppm for base stations.

FCC 47 CFR Part 27, Clause 27.54:

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

RSS-139, Clause 6.4, RSS-130, Clause 4.5 and RSS-195, Clause 5.4:

The frequency stability shall be sufficient to ensure that the occupied bandwidth stays within the operating frequency block when tested to the temperature and supply voltage variations specified in RSS-Gen.



FCC ID: NU: YETQ42-Z1CNU and CU: YETQ41-BXCU
IC: NU: 9298A-Q42Z1CNU and CU: 9298A-Q41BXCU

2.14.3 Equipment Under Test and Modification State

Serial No: N/A and N/A / Test Configuration A and B

2.14.4 Date of Test/Initial of test personnel who performed the test

December 03 and December 04, 2022 / FSC

2.14.5 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.14.6 Environmental Conditions

Test performed at TÜV SÜD America Inc. Mira Mesa facility.

Ambient Temperature	22.4 °C	22.5 °C
Relative Humidity	42.7 %	44.2 %
ATM Pressure	100.7 kPa	100.8 kPa

2.14.7 Additional Observations

- This is a conducted test.
- The EUT was operated at 120 VAC nominal voltage and was placed in the temperature chamber for the series of temperature variation evaluations performed starting at ambient (20°C) temperature. Voltage variation is performed at 85% and 115% of the nominal voltage at 20 °C only.
- The Temperature is then set to 50°C and allowed to sit for 1 hour to allow the equipment and chamber temperature to stabilize. The measurements on both downlink and uplink were then performed. The temperature was then decreased by 10°C steps and allowed to settle before taking the next set of measurements.
- EUT was injected a CW signal from a Signal Generator and maximum frequency error was monitored using the spectrum analyser.
- 5MHz bandwidth Middle Channel was tested as the representative configuration.



FCC ID: NU: YETQ42-Z1CNU and CU: YETQ41-BXCU
 IC: NU: 9298A-Q42Z1CNU and CU: 9298A-Q41BXCU

2.14.8 Test Results Summary

WCDMA Band 5 Downlink			
<i>Voltage (VAC)</i>	<i>Temperature (°C)</i>	<i>Frequency Deviation (ppm)</i>	<i>Limit (ppm)</i>
120	-30	-0.01	1.5
	-20	-0.01	1.5
	-10	-0.01	1.5
	0	-0.01	1.5
	+10	-0.01	1.5
	+20	-0.01	1.5
	+30	-0.01	1.5
	+40	-0.01	1.5
	+50	-0.01	1.5

WCDMA Band 5 Downlink			
<i>Temperature (°C)</i>	<i>Voltage (VAC)</i>	<i>Frequency Deviation (ppm)</i>	<i>Limit (ppm)</i>
20	102	-0.01	1.5
	138	-0.01	1.5



FCC ID: NU: YETQ42-Z1CNU and CU: YETQ41-BXCU
 IC: NU: 9298A-Q42Z1CNU and CU: 9298A-Q41BXCU

WCDMA Band 5 Uplink			
Voltage (VAC)	Temperature (°C)	Frequency Deviation (ppm)	Limit (ppm)
120	-30	-0.01	1.5
	-20	-0.01	1.5
	-10	-0.01	1.5
	0	-0.01	1.5
	+10	-0.01	1.5
	+20	-0.01	1.5
	+30	-0.01	1.5
	+40	-0.01	1.5
	+50	-0.01	1.5

WCDMA Band 5 Uplink			
Temperature (°C)	Voltage (VAC)	Frequency Deviation (ppm)	Limit (ppm)
20	102	-0.01	1.5
	138	-0.01	1.5



FCC ID: NU: YETQ42-Z1CNU and CU: YETQ41-BXCU
 IC: NU: 9298A-Q42Z1CNU and CU: 9298A-Q41BXCU

LTE Band 25 Downlink			
Voltage (VAC)	Temperature (°C)	Frequency Deviation (ppm)	Limit (ppm)
120	-30	-0.01	1.0
	-20	-0.01	1.0
	-10	-0.01	1.0
	0	-0.01	1.0
	+10	-0.01	1.0
	+20	-0.01	1.0
	+30	-0.01	1.0
	+40	-0.01	1.0
	+50	-0.01	1.0

LTE Band 25 Downlink			
Temperature (°C)	Voltage (VAC)	Frequency Deviation (ppm)	Limit (ppm)
20	102	-0.01	1.0
	138	-0.01	1.0



FCC ID: NU: YETQ42-Z1CNU and CU: YETQ41-BXCU
 IC: NU: 9298A-Q42Z1CNU and CU: 9298A-Q41BXCU

LTE Band 25 Uplink			
Voltage (VAC)	Temperature (°C)	Frequency Deviation (ppm)	Limit (ppm)
120	-30	-0.01	1.0
	-20	-0.01	1.0
	-10	-0.01	1.0
	0	-0.01	1.0
	+10	-0.01	1.0
	+20	-0.01	1.0
	+30	-0.01	1.0
	+40	-0.01	1.0
	+50	-0.01	1.0

LTE Band 25 Uplink			
Temperature (°C)	Voltage (VAC)	Frequency Deviation (ppm)	Limit (ppm)
20	102	-0.01	1.0
	138	-0.01	1.0



FCC ID: NU: YETQ42-Z1CNU and CU: YETQ41-BXCU
 IC: NU: 9298A-Q42Z1CNU and CU: 9298A-Q41BXCU

LTE B4 Downlink – 5 MHz BW Middle Channel 2132.5 MHz			
Voltage (VAC)	Temperature (°C)	Frequency Deviation (ppm)	Limit (ppm)
120	-30	-0.01	-
	-20	-0.01	-
	-10	-0.01	-
	0	-0.01	-
	+10	-0.01	-
	+20	-0.01	-
	+30	-0.01	-
	+40	-0.01	-
102	+20	-0.01	-
138		-0.01	-

LTE B4 Downlink Frequency Range – 5 MHz BW					
Channel	Temperature (°C)	Voltage (VAC)	F _L (MHz)	F _H (MHz)	Limit (MHz)
Low Channel	-30	120	2110.1880	-	>2110
	+20	102	2110.1872	-	
		120	2110.1874	-	
		138	2110.1874	-	
	+50	120	2110.1872	-	
High Channel	-30	120	-	2154.8158	<2155
	+20	102	-	2154.8150	
		120	-	2154.8152	
		138	-	2154.8150	
	+50	120	-	2154.8152	

The frequency stability of the EUT is sufficient to keep it within the authorized frequency ranges at any temperature interval and voltage variations across the measured range.



FCC ID: NU: YETQ42-Z1CNU and CU: YETQ41-BXCU
 IC: NU: 9298A-Q42Z1CNU and CU: 9298A-Q41BXCU

LTE B4 Uplink – 5 MHz BW Middle Channel 1732.5 MHz			
Voltage (VAC)	Temperature (°C)	Frequency Deviation (ppm)	Limit (ppm)
120	-30	-0.01	-
	-20	-0.01	-
	-10	-0.01	-
	0	-0.01	-
	+10	-0.01	-
	+20	-0.01	-
	+30	-0.01	-
	+40	-0.01	-
	+50	-0.01	-
102	+20	-0.01	-
138		-0.01	-

LTE B4 Uplink Frequency Range – 5 MHz BW					
Channel	Temperature (°C)	Voltage (VAC)	F _L (MHz)	F _H (MHz)	Limit (MHz)
Low Channel	-30	120	1710.1855	-	>1710
	+20	102	1710.1852	-	
		120	1710.1850	-	
		138	1710.1855	-	
	+50	120	1710.1852	-	
High Channel	-30	120	-	1754.8084	<1755
	+20	102	-	1754.8087	
		120	-	1754.8087	
		138	-	1754.8085	
	+50	120	-	1754.8085	

The frequency stability of the EUT is sufficient to keep it within the authorized frequency ranges at any temperature interval and voltage variations across the measured range.



FCC ID: NU: YETQ42-Z1CNU and CU: YETQ41-BXCU
 IC: NU: 9298A-Q42Z1CNU and CU: 9298A-Q41BXCU

LTE B12 Downlink – 5 MHz BW Middle Channel 737.5 MHz			
Voltage (VAC)	Temperature (°C)	Frequency Deviation (ppm)	Limit (ppm)
120	-30	-0.01	-
	-20	-0.01	-
	-10	-0.01	-
	0	-0.01	-
	+10	-0.01	-
	+20	-0.01	-
	+30	-0.01	-
	+40	-0.01	-
	+50	-0.01	-
102	+20	-0.01	-
138		-0.01	-

LTE B12 Downlink Frequency Range – 5 MHz BW					
Channel	Temperature (°C)	Voltage (VAC)	F _L (MHz)	F _H (MHz)	Limit (MHz)
Low Channel	-30	120	729.2050	-	>729
	+20	102	729.2047	-	
		120	729.2046	-	
		138	729.2046	-	
	+50	120	729.2048	-	
High Channel	-30	120	-	745.8251	<746
	+20	102	-	745.8245	
		120	-	745.8245	
		138	-	745.8245	
	+50	120	-	745.8247	

The frequency stability of the EUT is sufficient to keep it within the authorized frequency ranges at any temperature interval and voltage variations across the measured range.



FCC ID: NU: YETQ42-Z1CNU and CU: YETQ41-BXCU
 IC: NU: 9298A-Q42Z1CNU and CU: 9298A-Q41BXCU

LTE B12 Uplink – 5 MHz BW Middle Channel 707.5 MHz			
Voltage (VAC)	Temperature (°C)	Frequency Deviation (ppm)	Limit (ppm)
120	-30	-0.01	-
	-20	-0.01	-
	-10	-0.01	-
	0	-0.01	-
	+10	-0.01	-
	+20	-0.01	-
	+30	-0.01	-
	+40	-0.01	-
102	+20	-0.01	-
		138	-0.01

LTE B12 Uplink Frequency Range – 5 MHz BW					
Channel	Temperature (°C)	Voltage (VAC)	F _L (MHz)	F _H (MHz)	Limit (MHz)
Low Channel	-30	120	699.1944	-	>699
	+20	102	699.1944	-	
		120	699.1943	-	
		138	699.1943	-	
	+50	120	699.1945	-	
High Channel	-30	120	-	715.8148	<716
	+20	102	-	715.8153	
		120	-	715.8153	
		138	-	715.8153	
	+50	120	-	715.8155	

The frequency stability of the EUT is sufficient to keep it within the authorized frequency ranges at any temperature interval and voltage variations across the measured range.



FCC ID: NU: YETQ42-Z1CNU and CU: YETQ41-BXCU
 IC: NU: 9298A-Q42Z1CNU and CU: 9298A-Q41BXCU

LTE B13 Downlink – 5 MHz BW Middle Channel 751 MHz			
Voltage (VAC)	Temperature (°C)	Frequency Deviation (ppm)	Limit (ppm)
120	-30	-0.01	-
	-20	-0.01	-
	-10	-0.01	-
	0	-0.01	-
	+10	-0.01	-
	+20	-0.01	-
	+30	-0.01	-
	+40	-0.01	-
	+50	-0.01	-
102	+20	-0.01	-
138		-0.01	-

LTE B13 Downlink Frequency Range – 5 MHz BW					
Channel	Temperature (°C)	Voltage (VAC)	F _L (MHz)	F _H (MHz)	Limit (MHz)
Low Channel	-30	120	746.1542	-	>746
	+20	102	746.1545	-	
		120	746.1544	-	
		138	746.1545	-	
	+50	120	746.1543	-	
High Channel	-30	120	-	755.8480	<756
	+20	102	-	755.8482	
		120	-	755.8482	
		138	-	755.8480	
	+50	120	-	755.8483	

The frequency stability of the EUT is sufficient to keep it within the authorized frequency ranges at any temperature interval and voltage variations across the measured range.



FCC ID: NU: YETQ42-Z1CNU and CU: YETQ41-BXCU
 IC: NU: 9298A-Q42Z1CNU and CU: 9298A-Q41BXCU

LTE B13 Uplink – 5 MHz BW Middle Channel 782 MHz				
Voltage (VAC)	Temperature (°C)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
120	-30	4.8	-0.01	-
	-20	4.8	-0.01	-
	-10	4.7	-0.01	-
	0	5.0	-0.01	-
	+10	5.0	-0.01	-
	+20	5.0	-0.01	-
	+30	5.0	-0.01	-
	+40	7.0	-0.01	-
	+50	4.0	-0.01	-
102	+20	5.0	-0.01	-
138		5.2	-0.01	-

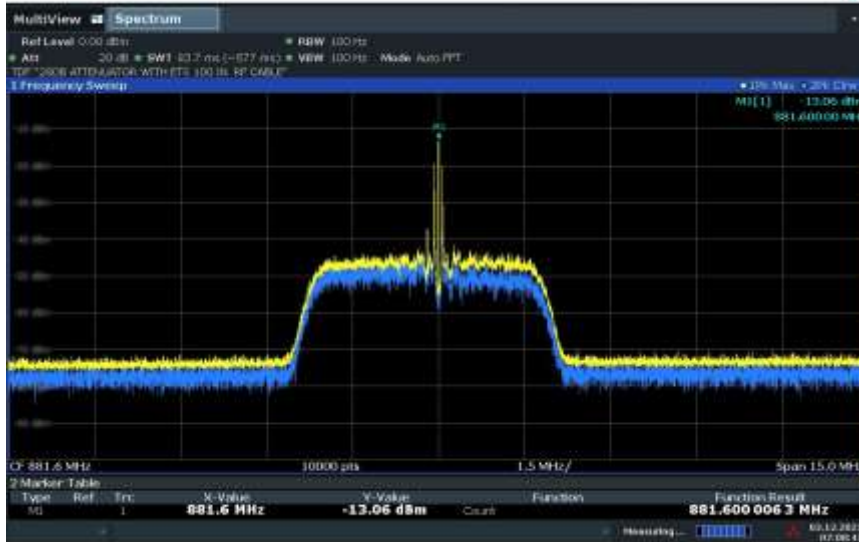
LTE B13 Uplink Frequency Range – 5 MHz BW					
Channel	Temperature (°C)	Voltage (VAC)	F _L (MHz)	F _H (MHz)	Limit (MHz)
Low Channel	-30	120	777.1902	-	>777
	+20	102	777.1904	-	
		120	777.1905	-	
		138	777.1906	-	
	+50	120	777.1903	-	
High Channel	-30	120	-	786.8164	<787
	+20	102	-	786.8172	
		120	-	786.8162	
		138	-	786.8160	
	+50	120	-	786.8168	

The frequency stability of the EUT is sufficient to keep it within the authorized frequency ranges at any temperature interval and voltage variations across the measured range.



FCC ID: NU: YETQ42-Z1CNU and CU: YETQ41-BXCU
IC: NU: 9298A-Q42Z1CNU and CU: 9298A-Q41BXCU

2.14.9 Sample Test Plots



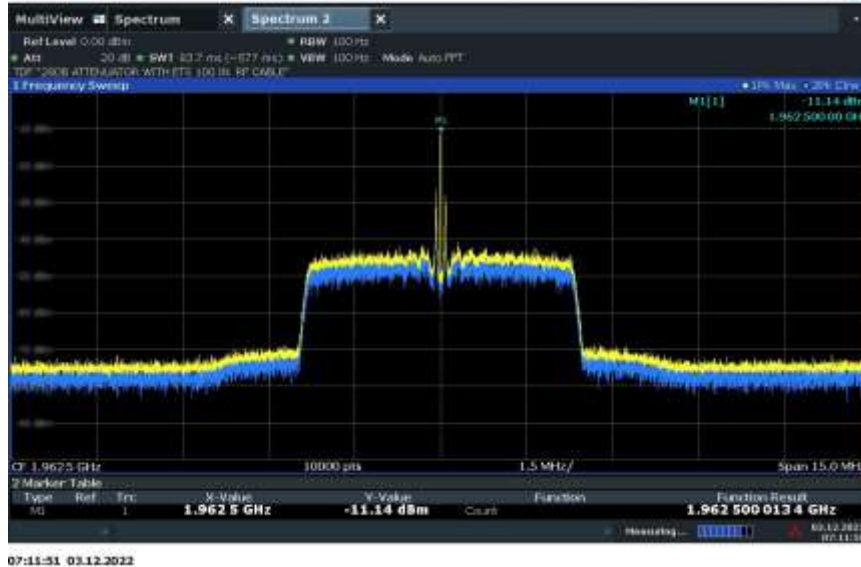
WCDMA B5 Downlink Middle Channel 120VAC @ 20°C



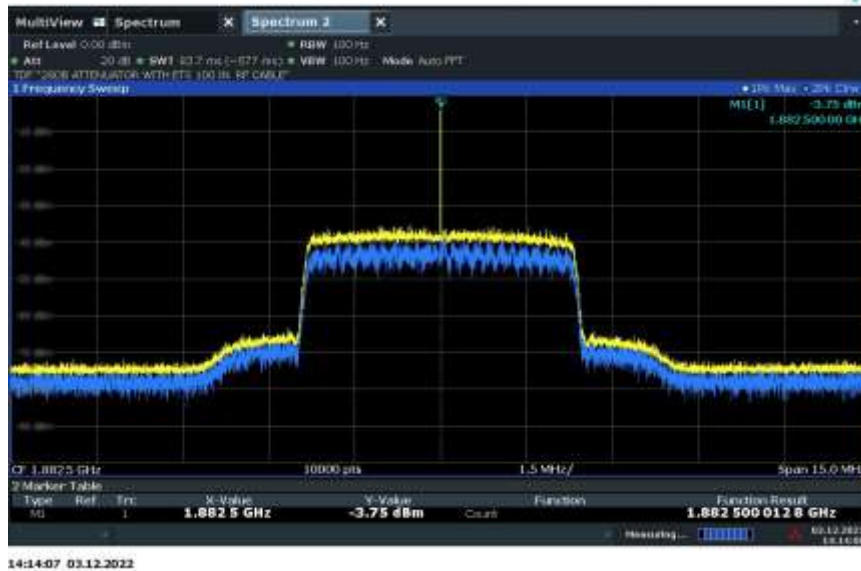
WCDMA B5 Uplink Middle Channel 120VAC @ -30°C



FCC ID: NU: YETQ42-Z1CNU and CU: YETQ41-BXCU
IC: NU: 9298A-Q42Z1CNU and CU: 9298A-Q41BXCU



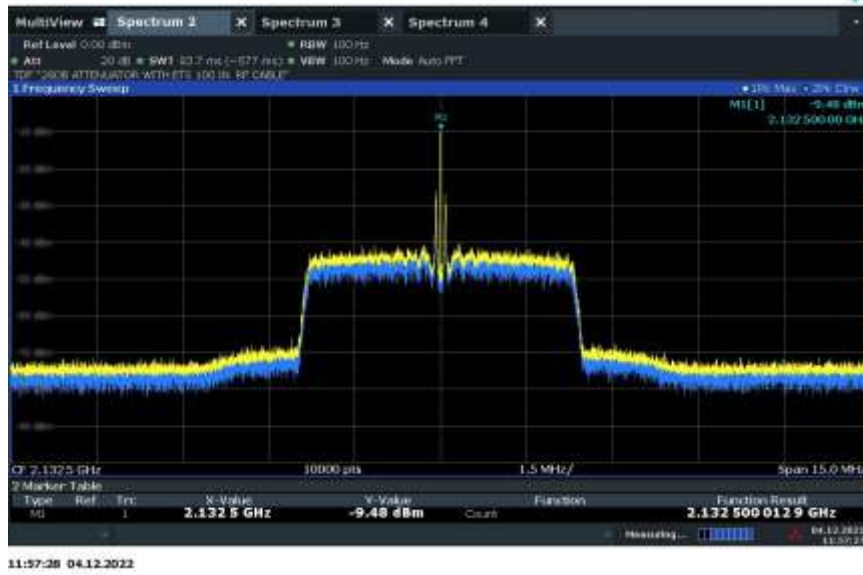
LTE B25 Downlink Middle Channel 120VAC @ 20°C



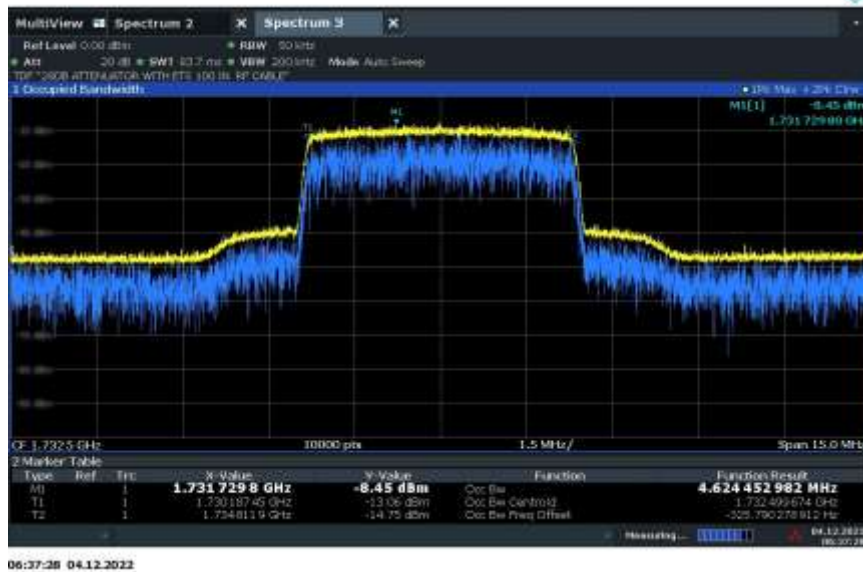
LTE B25 Uplink Middle Channel 120VAC @ -30°C



FCC ID: NU: YETQ42-Z1CNU and CU: YETQ41-BXCU
 IC: NU: 9298A-Q42Z1CNU and CU: 9298A-Q41BXCU



LTE Band 4 Downlink Middle Channel 120VAC @ 30°C



LTE Band 4 Uplink Middle Channel OBW 120VAC @ 20°C



FCC ID: NU: YETQ42-Z1CNU and CU: YETQ41-BXCU
 IC: NU: 9298A-Q42Z1CNU and CU: 9298A-Q41BXCU



LTE B13 Downlink Low Channel OBW @ 30°C Nominal Voltage



LTE B12 Uplink High Channel OBW @ 20°C Nominal Voltage



FCC ID: NU: YETQ42-Z1CNU and CU: YETQ41-BXCU
 IC: NU: 9298A-Q42Z1CNU and CU: 9298A-Q41BXCU

3 Test Equipment Used

3.1 List of absolute measuring and other principal items of test equipment

Asset ID Number	Test Equipment	Type	Serial Number	Manufacturer	Cal Due Date
Antenna Conducted Port Setup					
0618	ESG Vector Signal Generator	E4438C	MY49070886	Agilent	06/22/24
7611	Signal & Spectrum Analyzer	FSW26	102017	Rohde & Schwarz	02/09/23
6891	P-Series Power Meter	N1911A	MY45100905	Agilent	04/07/23
6892	50MHz Wideband Power Sensor	N1921A	SG45240281	Agilent	04/08/23
41493	4ft True Blue coax cable	R90-077-060	16-07-201	Teledyne	Verified by 0618 and 7611
8825	20dB Attenuator	46-20-34	BK5773	Weinschel Corp.	Verified by 0618 and 7611
Radiated Test Setup					
1002	Bilog Antenna	3142C	00058717	ETS-Lindgren	10/21/23
1051	Double-ridged waveguide horn antenna	3115	9408-4329	EMCO	09/12/24
7611	Signal & Spectrum Analyzer	FSW26	102017	Rohde & Schwarz	02/09/23
1049	EMI Test Receiver	ESU40	100133	Rohde & Schwarz	09/21/23
46797	Preamplifier	PS-122	181925	Com Power	12/03/24
7619	Barometer/ Temperature/Humidity Transmitter	iBTHX-W	15250268	Omega	05/27/23
Conducted Emissions					
SDRB1049	EMI Test Receiver	ESU40	100133	Rohde & Schwarz	09/21/23
SDGE07567	LISN	FCC-LISN-50-25-2-10	120304	Fischer Custom Comm.	03/28/23
SDGE08870	Bi-Directional Attenuator	34-20-34	BP8030	MCE / Weinschel	02/28/23
Miscellaneous					
47045	True RMS Multimeter	87V	18290478	Fluke	03/29/23
6610	Environmental Chamber	SH27	09963481-S	Envirotronics	01/12/23
SDGE07619	Barometer/ Temperature/Humidity Transmitter	iBTHX-W	15250268	Omega	05/27/23
	Test Software	EMC32	V10.60.20	Rhode & Schwarz	N/A



FCC ID: NU: YETQ42-Z1CNU and CU: YETQ41-BXCU
 IC: NU: 9298A-Q42Z1CNU and CU: 9298A-Q41BXCU

4 Measurement Uncertainty

For a 95% confidence level, the measurement uncertainties for defined systems are:

4.1 Conducted Antenna Port Measurement

	Input Quantity (Contribution) X_i	Value	Prob. Dist.	Divisor	$u_i(x)$	$u_i(x)^2$
1	Receiver reading	0.10 dB	Normal, k=1	1.000	0.10	0.01
2	Cable attenuation	1.00 dB	Normal, k=2	2.000	0.50	0.25
3	Receiver sinewave accuracy	0.08 dB	Normal, k=2	2.000	0.04	0.00
4	Receiver pulse amplitude	0.00 dB	Rectangular	1.732	0.00	0.00
5	Receiver pulse repetition rate	0.00 dB	Rectangular	1.732	0.00	0.00
6	Noise floor proximity	0.00 dB	Rectangular	1.732	0.00	0.00
7	Frequency interpolation	0.10 dB	Rectangular	1.732	0.06	0.00
8	Mismatch	0.07 dB	U-shaped	1.414	0.05	0.00
Combined standard uncertainty				Normal	0.52 dB	
Expanded uncertainty				Normal, k=2	1.03 dB	



FCC ID: NU: YETQ42-Z1CNU and CU: YETQ41-BXCU
IC: NU: 9298A-Q42Z1CNU and CU: 9298A-Q41BXCU

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