

Testing data Out-of-band/out-of-block emissions conducted measurements 935210 D05 Indus Booster Basic Meas v01r04 (3.6.2)

Test data, continued

1 Frequenc	v Sweep								●1Rm Avg
Limit	Che¢k		PA	SS SS				M1[1]	-42.79 dBm
Line V	VLMT-FCC27-GEN-M	ІМО	PA	ss				*	869.000 00 MHz
30 dBm									
20 dBm									
					~~		$\sim\sim\sim$	$\sim$	
10 dBm									
0 dBm									
-10 dBm									
-10 dBm									
WLMT-FCC27-0	GEN-MIMO				1				
-20 dBm									
					1				
-30 dBm									
					1				
-40 dBm				M	1				5 march
				$\sim$					
-50 dBm			<u>~~~</u> ~						
$\sim$	h	ľ							
CF 869.0 M	Hz	-	3900 pts		1	.2 MHz/	-	-	Span 12.0 MHz

Figure 8.5-15: Antenna port 2 single carrier lower block edge with input signal at AGC threshold



Testing data Out-of-band/out-of-block emissions conducted measurements 935210 D05 Indus Booster Basic Meas v01r04 (3.6.2)

Test data, continued

1 Frequency S	weep								o1Rm Avg
Limit Che	¢k		PA	SS SS				M1[1]	-39.78 dBm
Line WLM	T-FCC27-GEN-M	ТМО	PA	SS					869.000 00 MHz
30 dBm									
20 dBm									
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0 dBm									
-10 dBm									
WLMT-FCC27-GEN-	мімо								
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20 0000									
-30 dBm									
30 dbm									
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-40 dBm					-				$\sim$
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			$\sim \sim$						
50.10									
-50 dBm	<u> </u>								
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CF 869.0 MHz			3900 pts		1	.2 MHz/	1	1	Span 12.0 MHz

Figure 8.5-16: Antenna port 2 single carrier lower block edge with input signal at AGC threshold +3 dB

# 8.6 Spurious emissions conducted measurements

## 8.6.1 References, definitions and limits

## FCC §22.917(a)

Out of band emissions. 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  $43 + 10 \log(P) dB$ .

#### RSS-131, Clause 5.2

Industrial Zone Enhancers, including DASs, shall employ a gain control feature and shall comply with all the requirements in the RSS which applies to the equipment with which the zone enhancer is to be used. In addition, the equipment shall comply with the requirements specified in this section.

# RSS-132, Clause 5.5

Transmitter Unwanted Emissions

- (i) In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1, the power of emissions per any 1% of the occupied bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10p (watts).
- (ii) After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any 100 kHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10 p (watts). If the measurement is performed using 1% of the occupied bandwidth, power integration over 100 kHz is required.

## 8.6.2 Test summary

Verdict	Pass		
Tested by	P. Barbieri	Test date	January 28, 2022

## 8.6.3 Observations, settings and special notes

The spectrum was searched from 9 kHz to the 10<sup>th</sup> harmonic.

All measurements were performed using peak detector according to note 4 of 935210 D05 Indus Booster Basic Meas v01r04 paragraph 3.6.3. Limit line (43 + 10  $\log_{10}$  (P) or -13 dBm) was adjusted for MIMO operation by 3 dB\*: -13 dBm - 3 dB = -16 dBm \*MIMO correction factor for 2 antenna ports: 10 ×  $\log_{10}(2)$  = 3.01 dB

Resolution bandwidth:	Reference bandwidth in the applicable rule section for the supported frequency band
Video bandwidth:	VBW ≥ 3 × RBW
Detector mode:	Peak
Trace mode:	Max Hold
Input signal frequency	

Mid channel 881.5 MHz   High channel 891.5 MHz	Low channel	871.5 MHz
High channel 891.5 MHz	Mid channel	881.5 MHz
	High channel	891.5 MHz

## 8.6.4 Test equipment used

Equipment	Manufacturer	Model no.	Asset no.
Spectrum Analyzer	Rohde & Schwarz	FSW43	101767
RF Vector Signal Generator	Rohde & Schwarz	SMBV100A	263254
<b>RF Vector Signal Generator</b>	Rohde & Schwarz	SMBV100A	263397

Notes: NCR - no calibration required, VOU - verify on use



Testing data Spurious emissions conducted measurements 935210 D05 Indus Booster Basic Meas v01r04 (3.6.3)

# 8.6.5 Test data

1 Spurious Emissions							⊖1 Max
Limit Check Line _SPURIOUS_LINE_A		PASS PASS					
Line _SPURIOUS_LINE_A	55_002	P#55					
20 dBm							
10 dBm							
0 dBm							
-10 dBm							
SPURIOUS_LINE_ABS_002							
-20 dBm							
-30 dBm							
-40 dBm							La
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. 1. 16							
a de la casa							
-60xdBm							
9.0 kHz		16000 pts		 )0.0 MHz/			8.0 GHz

2 Result Summary					
Range Low	Range Up	RBW	Frequency	Power Abs	∆Limit
9.000 kHz	150.000 kHz	1.000 kHz	11.467 50 kHz	-65.72 dBm	-49.72 dB
150.000 kHz	30.000 MHz	10.000 kHz	702.22500 kHz	-36.15 dBm	-20.15 dB
30.000 MHz	869.000 MHz	100.000 kHz	868.790 25 MHz	-42.11 dBm	-26.11 dB
869.000 MHz	894.000 MHz	100.000 kHz	871.21875 MHz	15.22 dBm	-34.78 dB
894.000 MHz	1.000 GHz	100.000 kHz	894.026 50 MHz	-48.27 dBm	-32.27 dB
1.000 GHz	8.000 GHz	1.000 MHz	7.966 31 GHz	-39.61 dBm	-23.61 dB

Figure 8.6-1: Conducted spurious emissions of low channel, antenna port 1



Testing data Spurious emissions conducted measurements 935210 D05 Indus Booster Basic Meas v01r04 (3.6.3)

8.6.1 Test data

**1** Spurious Emissions ∋1 Max Limit Check Line \_SPURIOUS\_LINE\_ABS\_002 PASS PASS 20 dBm 10 dBm 0 dBm -10 dBm-SPURIOUS\_LINE\_AB -20 dBm--30 dBm -40 dBm فالتصوله والمصابحة والمتداد ومصار ..... where the A Charles -50 dBm 8.0 GHz 9.0 kHz 16000 pts 800.0 MHz/

2 Result Summary					
Range Low	Range Up	RBW	Frequency	Power Abs	∆Limit
9.000 kHz	150.000 kHz	1.000 kHz	10.339 50 kHz	-66.09 dBm	-50.09 dB
150.000 kHz	30.000 MHz	10.000 kHz	702.22500 kHz	-36.34 dBm	-20.34 dB
30.000 MHz	869.000 MHz	100.000 kHz	868.790 25 MHz	-49.23 dBm	-33.23 dB
869.000 MHz	894.000 MHz	100.000 kHz	882.14375 MHz	15.93 dBm	-34.07 dB
894.000 MHz	1.000 GHz	100.000 kHz	894.026 50 MHz	-48.26 dBm	-32.26 dB
1.000 GHz	8.000 GHz	1.000 MHz	7.982 06 GHz	-40.35 dBm	-24.35 dB

Figure 8.6-2: Conducted spurious emissions of mid channel, antenna port 1



Testing data Spurious emissions conducted measurements 935210 D05 Indus Booster Basic Meas v01r04 (3.6.3)

Test data, continued

1 Spurious Emi	ssions								<b>○</b> 1 Max
1 Spurious Emi	SSIOLIS			00					
Limit Che	tk RIOUS_LINE_A	0.000	P4	SS SS					
Line_SPC	HIOUS_LINE_A	BS_002	PA	55					
20 dBm									
10 dBm									
10 0.011									
0 dBm									
-10 dBm									
_SPURIOUS_LINE_A	35_002								
-20 dBm									
-20 ubm									
-30 dBm									
-40 dBm									
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9.0 kHz			16000 pt	S	80	0.0 MHz/			8.0 GHz

2 Result Summary					
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
9.000 kHz	150.000 kHz	1.000 kHz	9.493 50 kHz	-66.05 dBm	-50.05 dB
150.000 kHz	30.000 MHz	10.000 kHz	702.22500 kHz	-36.45 dBm	-20.45 dB
30.000 MHz	869.000 MHz	100.000 kHz	868.790 25 MHz	-49.66 dBm	-33.66 dB
869.000 MHz	894.000 MHz	100.000 kHz	892.156 25 MHz	16.18 dBm	-33.82 dB
894.000 MHz	1.000 GHz	100.000 kHz	894.185 50 MHz	-40.43 dBm	-24.43 dB
1.000 GHz	8.000 GHz	1.000 MHz	7.863 06 GHz	-40.50 dBm	-24.50 dB

Figure 8.6-3: Conducted spurious emissions of high channel, antenna port 1



Testing data Spurious emissions conducted measurements 935210 D05 Indus Booster Basic Meas v01r04 (3.6.3)

# 8.6.1 Test data

1 Spurious Emissions								oi Max
Limit Check		PA	SS SS					
Line _SPURIOUS_	LINE_ABS_002	PA	55					
20 dBm								
10 dBm								
0 dBm								
-10 dBm								
_SPURIOUS_LINE_ABS_002								
-20 dBm								
-30 dBm								
-40 dBm								
-40 dBm								امل .
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-60 dBm								
9.0 kHz		16000 pt	S	80	0.0 MHz/			8.0 GHz

2 Result Summary					
Range Low	Range Up	RBW	Frequency	Power Abs	∆Limit
9.000 kHz	150.000 kHz	1.000 kHz	11.749 50 kHz	-66.88 dBm	-50.88 dB
150.000 kHz	30.000 MHz	10.000 kHz	702.22500 kHz	-37.08 dBm	-21.08 dB
30.000 MHz	869.000 MHz	100.000 kHz	868.790 25 MHz	-40.89 dBm	-24.89 dB
869.000 MHz	894.000 MHz	100.000 kHz	871.21875 MHz	13.65 dBm	-36.35 dB
894.000 MHz	1.000 GHz	100.000 kHz	894.026 50 MHz	-49.18 dBm	-33.18 dB
1.000 GHz	8.000 GHz	1.000 MHz	7.951 44 GHz	-40.47 dBm	-24.47 dB

Figure 8.6-4: Conducted spurious emissions of low channel, antenna port 2



Testing data Spurious emissions conducted measurements 935210 D05 Indus Booster Basic Meas v01r04 (3.6.3)

# 8.6.1 Test data

1 Spurious Emissions				o1 Max
Limit Check	PA	SS SS		
Line _SPURIOUS_LINE_AB	3S_002 PA	SS		
20 dBm				
10 dBm				
0 dBm				
-10 dBm				
_SPURIOUS_LINE_ABS_002				
-20 dBm				
-20 dBm				
-30 dBm				
-40 dBm				
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-50 dBm	The state of the second s		a section of the sect	
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-60 dBm - A. Martin				+
ALC: NOT THE REPORT OF THE REPORT				
9.0 kHz	16000 pt	IS I	800.0 MHz/	8.0 GHz

2 Result Summary					
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
9.000 kHz	150.000 kHz	1.000 kHz	10.621 50 kHz	-64.94 dBm	-48.94 dB
150.000 kHz	30.000 MHz	10.000 kHz	702.225 00 kHz	-36.93 dBm	-20.93 dB
30.000 MHz	869.000 MHz	100.000 kHz	864.17575 MHz	-50.84 dBm	-34.84 dB
869.000 MHz	894.000 MHz	100.000 kHz	882.14375 MHz	14.16 dBm	-35.84 dB
894.000 MHz	1.000 GHz	100.000 kHz	894.079 50 MHz	-49.61 dBm	-33.61 dB
1.000 GHz	8.000 GHz	1.000 MHz	7.965 44 GHz	-41.27 dBm	-25.27 dB

Figure 8.6-5: Conducted spurious emissions of mid channel, antenna port 2



Testing data Spurious emissions conducted measurements 935210 D05 Indus Booster Basic Meas v01r04 (3.6.3)

Test data, continued

1 Spurious Emi	ssions								⊖1 Max
Limit Che	k		PA	ss					OI MOX
Line SPI	RIOUS_LINE_A	RS 002	PA	SS SS					
20 dBm									
20 uBm									
10 dBm									
10 0.011									
0 dBm									
-10 dBm									
SPURIOUS_LINE_A									
_SPORIOUS_LINE_A	35_002								
-20 dBm									
-30 dBm									
-40 dBm									
									L. L
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	14 - 17 - 18 - 18 - 18 - 18 - 18 - 18 - 18								
-60 dBm									
A BAR DELLA									
9.0 kHz			16000 pt	S	80	0.0 MHz/			8.0 GHz

2 Result Summary					
Range Low	Range Up	RBW	Frequency	Power Abs	∆Limit
9.000 kHz	150.000 kHz	1.000 kHz	13.723 50 kHz	-65.45 dBm	-49.45 dB
150.000 kHz	30.000 MHz	10.000 kHz	702.22500 kHz	-37.05 dBm	-21.05 dB
30.000 MHz	869.000 MHz	100.000 kHz	868.790 25 MHz	-50.49 dBm	-34.49 dB
869.000 MHz	894.000 MHz	100.000 kHz	892.131 25 MHz	15.00 dBm	-35.00 dB
894.000 MHz	1.000 GHz	100.000 kHz	894.185 50 MHz	-28.11 dBm	-12.11 dB
1.000 GHz	8.000 GHz	1.000 MHz	7.978 56 GHz	-40.87 dBm	-24.87 dB

Figure 8.6-6: Conducted spurious emissions of high channel, antenna port 2

# 8.7 Spurious emissions radiated measurements

## 8.7.1 References, definitions and limits

#### FCC §22.917(a)

Out of band emissions. 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  $43 + 10 \log(P) dB$ .

#### RSS-131, Clause 5.2

Industrial Zone Enhancers, including DASs, shall employ a gain control feature and shall comply with all the requirements in the RSS which applies to the equipment with which the zone enhancer is to be used. In addition, the equipment shall comply with the requirements specified in this section.

# RSS-132, Clause 5.5

Transmitter Unwanted Emissions

- (i) In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1, the power of emissions per any 1% of the occupied bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10p (watts).
- (ii) After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any 100 kHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10 p (watts). If the measurement is performed using 1% of the occupied bandwidth, power integration over 100 kHz is required.

## 8.7.2 Test summary

Verdict	Pass		
Tested by	P. Barbieri	Test date	January 28, 2022

## 8.7.3 Observations, settings and special notes

The spectrum was searched from 30 MHz to the 10th harmonic.

All measurements were performed using peak detector according to note 4 of 935210 D05 Indus Booster Basic Meas v01r04 paragraph 3.6.3. Testing was performed with RF ports terminated with 50 Ohm load.

In the graphics below, no radiated spurious emission found and the limit is exceeded only by the carrier.

Spectrum analyser settings:

Resolution bandwidth:	100 kHz and 1 MHz
Video bandwidth:	VBW ≥ 3 × RBW
Detector mode:	Peak
Trace mode:	Max Hold

Input signal frequency	
Low channel	871.5 MHz
Middle channel	881.5 MHz
High channel	891.5 MHz



Testing data Spurious emissions radiated measurements 935210 D05 Indus Booster Basic Meas v01r04 (3.8)

# 8.7.4 Test equipment used

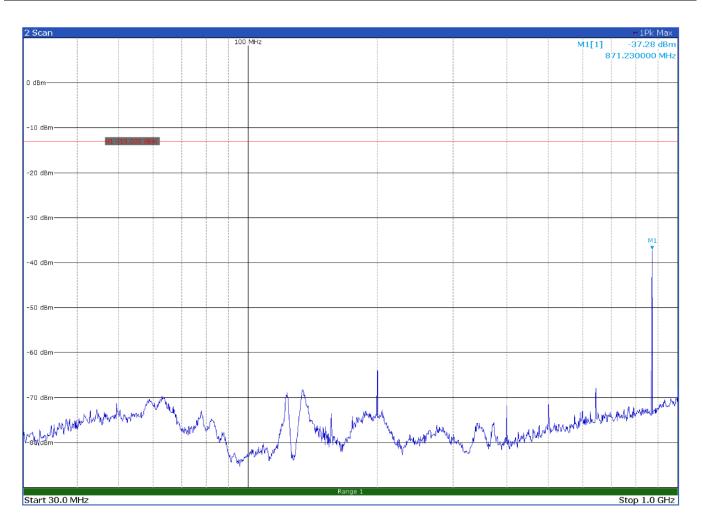
Equipment	Manufacturer	Model no.	Asset no.
Spectrum Analyzer	Rohde & Schwarz	FSW43	101767
EMI Receiver	Rohde & Schwarz	ESW44	101620
RF Vector Signal Generator	Rohde & Schwarz	SMBV100A	263254
RF Vector Signal Generator	Rohde & Schwarz	SMBV100A	263397
Antenna Trilog 25MHz - 8GHz	Schwarzbeck Mess-Elektronik	VULB9162	9162-025
Antenna 1 - 18 GHz	Schwarzbeck Mess-Elektronik	STLP9148	STLP 9148-152
Double Ridge Horn Antenna	RFSpin	DRH40	061106A40
Broadband Amplifier	Schwarzbeck Mess-Elektronik	BBV9718C	00121
Broadband Bench Top Amplifier	Sage	STB-1834034030-KFKF-L1	18490-01
Controller	Maturo	FCU3.0	10041
Tilt antenna mast	Maturo	TAM4.0-E	10042
Turntable	Maturo	TT4.0-5T	2.527
Semi-anechoic chamber	Nemko S.p.a.	10m semi-anechoic chamber	530

Notes: NCR - no calibration required, VOU - verify on use



Testing data Spurious emissions radiated measurements 935210 D05 Indus Booster Basic Meas v01r04 (3.8)

# 8.7.5 Test data



# Figure 8.7-1: Radiated spurious emissions below 1 GHz, low channel with antenna in horizontal polarization



Testing data Spurious emissions radiated measurements 935210 D05 Indus Booster Basic Meas v01r04 (3.8)

Test data, continued

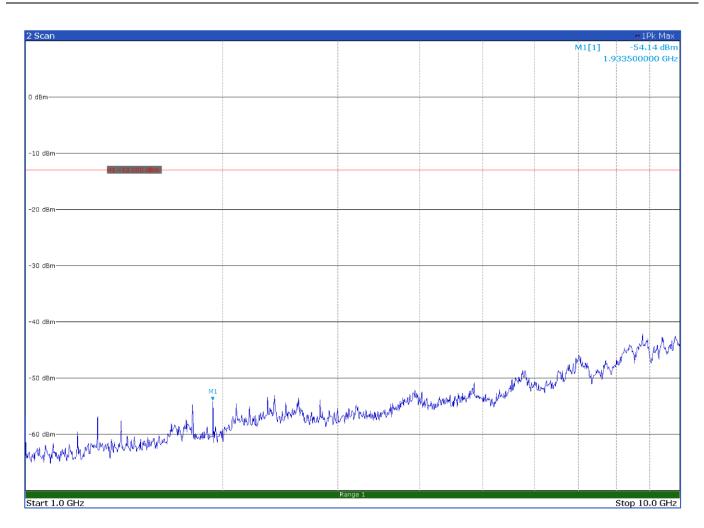


Figure 8.7-2: Radiated spurious emissions from 1 GHz to 10 GHz, low channel with antenna in horizontal polarization



Testing data Spurious emissions radiated measurements 935210 D05 Indus Booster Basic Meas v01r04 (3.8)

Test data, continued

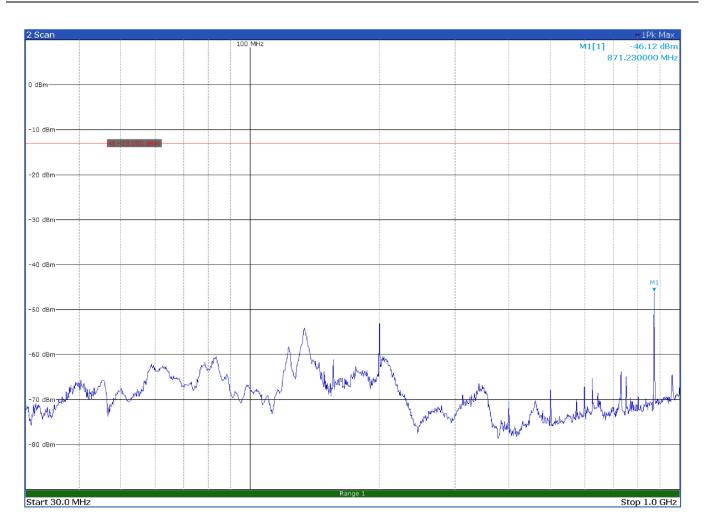


Figure 8.7-3: Radiated spurious emissions below 1 GHz, low channel with antenna in vertical polarization



Testing data Spurious emissions radiated measurements 935210 D05 Indus Booster Basic Meas v01r04 (3.8)

Test data, continued

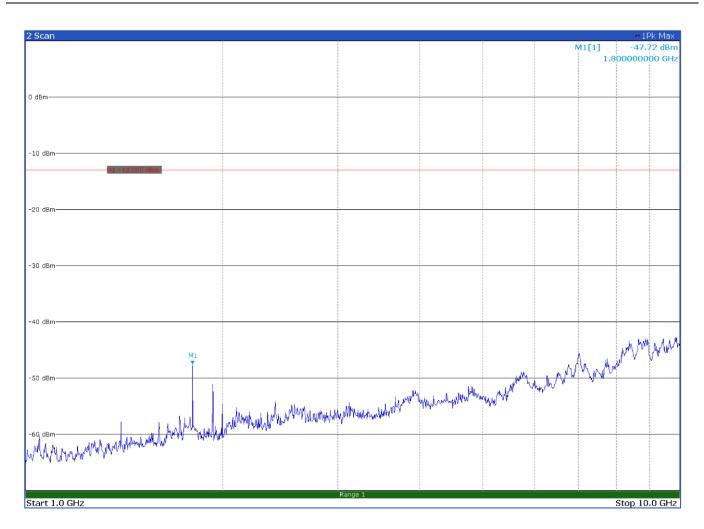


Figure 8.7-4: Radiated spurious emissions from 1 GHz to 10 GHz, low channel with antenna in vertical polarization



Testing data Spurious emissions radiated measurements 935210 D05 Indus Booster Basic Meas v01r04 (3.8)

Test data, continued

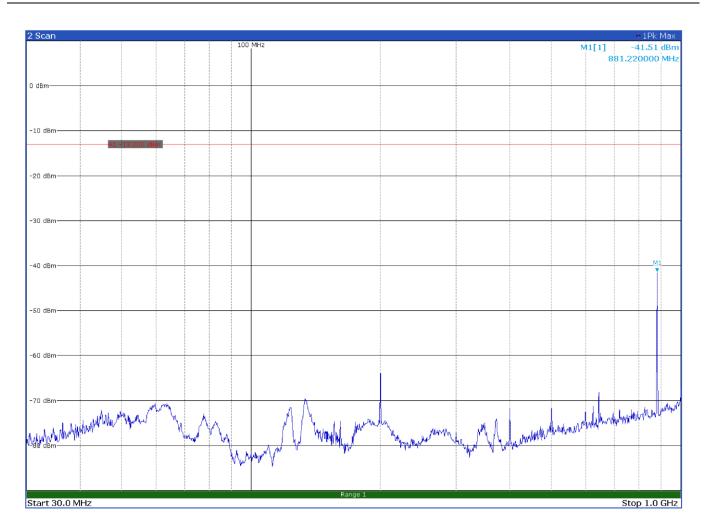


Figure 8.7-5: Radiated spurious emissions below 1 GHz, mid channel with antenna in horizontal polarization



Testing data Spurious emissions radiated measurements 935210 D05 Indus Booster Basic Meas v01r04 (3.8)

Test data, continued

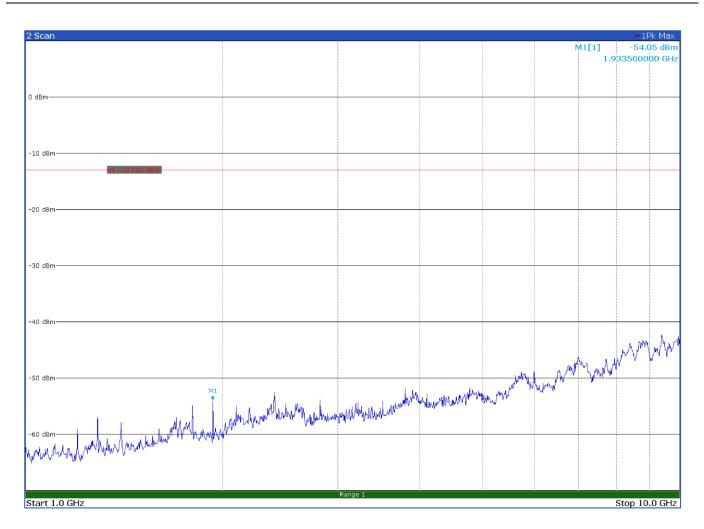


Figure 8.7-6: Radiated spurious emissions from 1 GHz to 10 GHz, mid channel with antenna in horizontal polarization



Testing data Spurious emissions radiated measurements 935210 D05 Indus Booster Basic Meas v01r04 (3.8)

Test data, continued

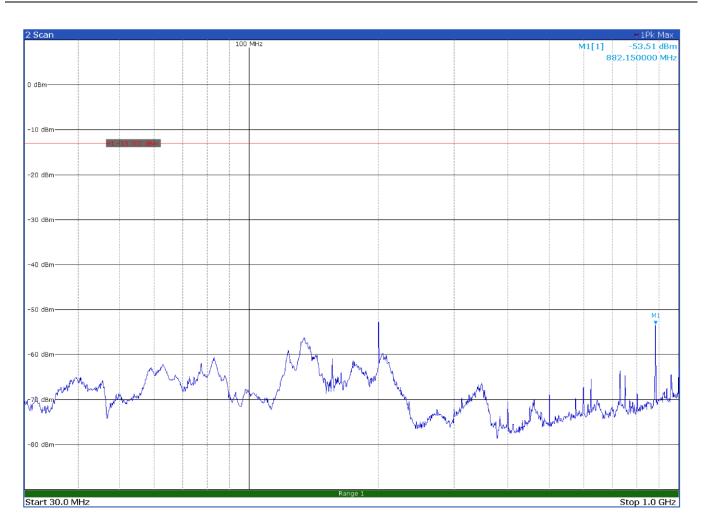


Figure 8.7-7: Radiated spurious emissions below 1 GHz, mid channel with antenna in vertical polarization



Testing data Spurious emissions radiated measurements 935210 D05 Indus Booster Basic Meas v01r04 (3.8)

Test data, continued

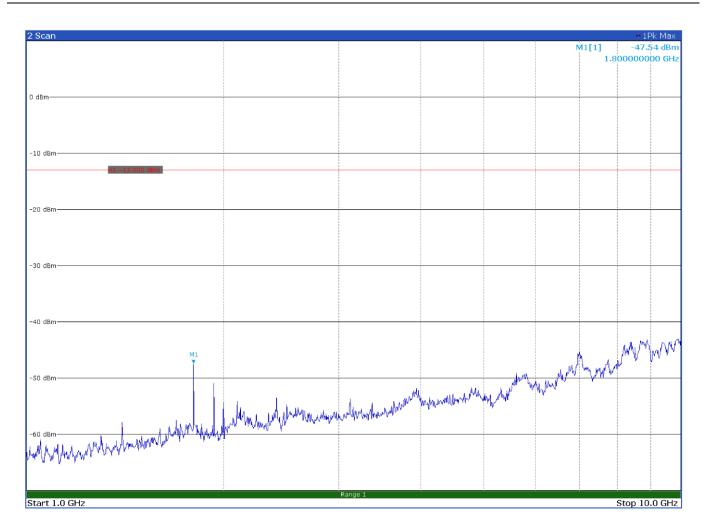


Figure 8.7-8: Radiated spurious emissions from 1 GHz to 10 GHz, mid channel with antenna in vertical polarization



Testing data Spurious emissions radiated measurements 935210 D05 Indus Booster Basic Meas v01r04 (3.8)

Test data, continued

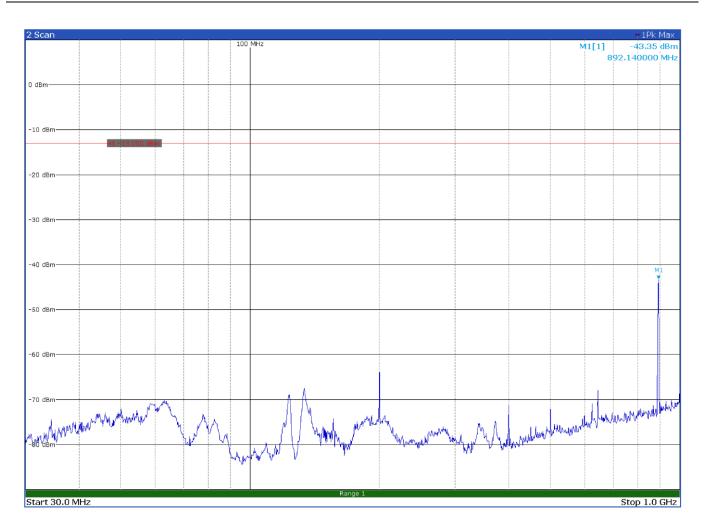


Figure 8.7-9: Radiated spurious emissions below 1 GHz, high channel with antenna in horizontal polarization



Testing data Spurious emissions radiated measurements 935210 D05 Indus Booster Basic Meas v01r04 (3.8)

Test data, continued

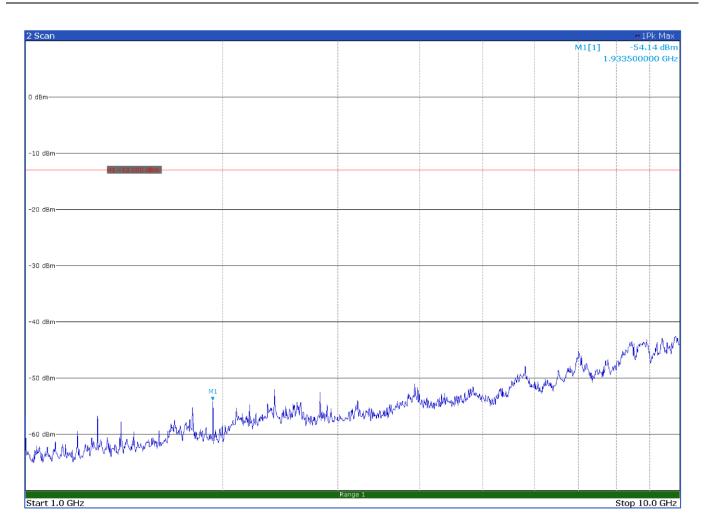


Figure 8.7-10: Radiated spurious emissions from 1 GHz to 10 GHz, high channel with antenna in horizontal polarization



Testing data Spurious emissions radiated measurements 935210 D05 Indus Booster Basic Meas v01r04 (3.8)

Test data, continued

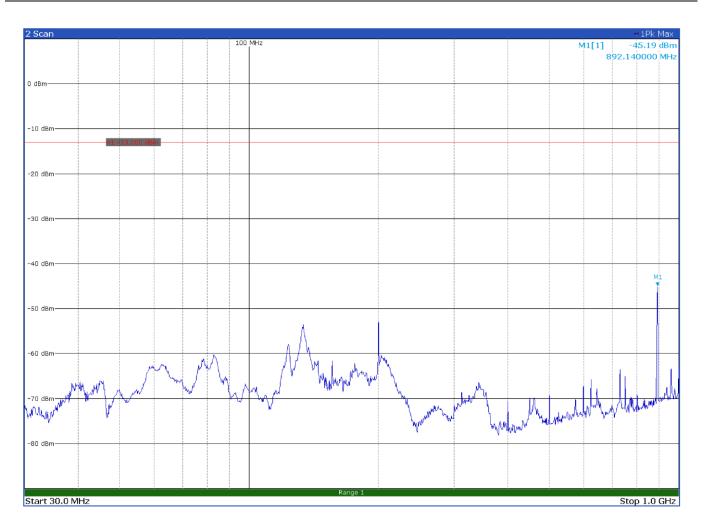


Figure 8.7-11: Radiated spurious emissions below 1 GHz, high channel with antenna in vertical polarization



Testing data Spurious emissions radiated measurements 935210 D05 Indus Booster Basic Meas v01r04 (3.8)

Test data, continued

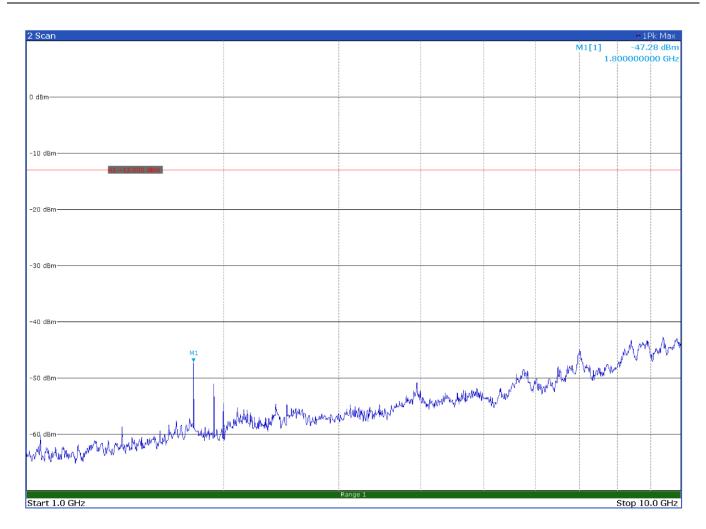


Figure 8.7-12: Radiated spurious emissions from 1 GHz to 10 GHz, high channel with antenna in vertical polarization

# 8.8 Frequency stability measurements

#### 8.8.1 References, definitions and limits

#### FCC § 22.355

Except as otherwise provided in this part, 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

#### RSS-131, Clause 5.2.4

Industrial zone enhancers shall comply with the frequency stability given in the RSS that applies to the equipment with which the zone enhancer is to be used. In cases where the frequency stability limit is not given in the applicable RSS, the equipment shall comply with a frequency stability of  $\pm$  1.5 ppm. For zone enhancers with no input signal processing capability, the frequency stability measurement in this section is not required.

#### RSS-132, Clause 5.3

The carrier frequency shall not depart from the reference frequency in excess of  $\pm 2.5$  ppm for mobile stations and  $\pm 1.5$  ppm for base stations. In lieu of meeting the above stability values, the test report may show that the frequency stability is sufficient to ensure that the occupied bandwidth stays within each of the sub-bands (see Section 5.1) when tested to the temperature and supply voltage variations specified in RSS-Gen.

## RSS-Gen, Clause 6.11

Transmitter frequency stability

Frequency stability is a measure of frequency drift due to temperature and supply voltage variations, with reference to the frequency measured at an appropriate reference temperature and the rated supply voltage.

When the measurement method of transmitter frequency stability is not stated in the applicable RSS or reference standards, the following conditions apply:

- a. The reference temperature for radio transmitters is +20°C (+68°F).
- b. A hand-held device that is only capable of operating using internal batteries shall be tested at the battery's nominal voltage, and again at the battery's operating end-point voltage, which shall be specified by the equipment manufacturer. For this test, either a battery or an external power supply can be used.
- c. The operating carrier frequency shall be set up in accordance with the manufacturer's published operation and instruction manual prior to the commencement of these tests. No adjustment of any frequency-determining circuit element shall be made subsequent to this initial set-up. With the transmitter installed in an environmental test chamber, the unmodulated carrier frequency and frequency stability shall be measured under the conditions specified below for licensed and licence-exempt devices, unless specified otherwise in the applicable RSS. A sufficient stabilization period at each temperature shall be used prior to each frequency measurement. For licensed devices, the following measurement conditions apply:
- a. at the temperatures of -30°C (-22°F), +20°C (+68°F) and +50°C (+122°F), and at the manufacturer's rated supply voltage
- b. at the temperature of +20°C (+68°F) and at ±15% of the manufacturer's rated supply voltage



Section 8Testing dataTest nameFrequency stability measurementsSpecification935210 D05 Indus Booster Basic Meas v01r04 (3.7)

# 8.8.2 Test summary

Verdict	Pass		
Tested by	P. Barbieri	Test date	February 8, 2022

# 8.8.3 Observations, settings and special notes

Testing was performed per ANSI C63.26 Paragraphs 5.6.3, 5.6.4 and 5.6.5 methods.

# 8.8.4 Test equipment used

Equipment	Manufacturer	Model no.	Asset no.
EMI Receiver	Rohde & Schwarz	ESU8	100202
RF Vector Signal Generator	Rohde & Schwarz	SMBV100A	263254
RF Vector Signal Generator	Rohde & Schwarz	SMBV100A	263397
Climatic Chamber	MSL	EC500DA	15022

Notes: NCR - no calibration required, VOU - verify on use

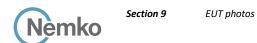
#### 8.8.5 Test data

# Table 8.8-1: Transmitter frequency stability results for antenna port 1

Test conditions	Frequency, Hz	Drift, Hz	Drift, ppm	Limit ±ppm	Margin, ±ppm
+50 °C, Nominal	881499798.8	20.6	0.02337	1.5	1.48
+40 °C, Nominal	881499795.8	17.6	0.01997	1.5	1.48
+30 °C, Nominal	881499791.7	13.5	0.01531	1.5	1.48
+20 °C, -15% voltage	881499780.8	2.6	0.00295	1.5	1.50
+20 °C, Nominal	881499778.2	Reference	Reference	Reference	Reference
+20 °C, +15% voltage	881499775.3	-2.9	-0.00329	1.5	1.50
+10 °C, Nominal	881499757.6	-20.6	-0.02337	1.5	1.48
0 °C, Nominal	881499745.8	-32.4	-0.03676	1.5	1.46
–10 °C, Nominal	881499722.5	-55.7	-0.06319	1.5	1.44
–20 °C, Nominal	881499715.9	-62.3	-0.07068	1.5	1.43
–30 °C, Nominal	881499647.7	-130.5	-0.14804	1.5	1.35

#### Table 8.8-2: Transmitter frequency stability results for antenna port 2

Test conditions	Frequency, Hz	Drift, Hz	Drift, ppm	Limit ±ppm	Margin, ±ppm
+50 °C, Nominal	881499796.9	20.4	0.02314	1.5	1.48
+40 °C, Nominal	881499794.4	17.9	0.02031	1.5	1.48
+30 °C, Nominal	881499790.4	13.9	0.01577	1.5	1.48
+20 °C, -15% voltage	881499779.4	2.9	0.00329	1.5	1.50
+20 °C, Nominal	881499776.5	Reference	Reference	Reference	Reference
+20 °C, +15% voltage	881499773.5	-3.0	-0.00340	1.5	1.50
+10 °C, Nominal	881499755.6	-20.9	-0.02371	1.5	1.48
0 °C, Nominal	881499743.8	-32.7	-0.03710	1.5	1.46
–10 °C, Nominal	881499721.6	-54.9	-0.06228	1.5	1.44
–20 °C, Nominal	881499713.4	-63.1	-0.07158	1.5	1.43
–30 °C, Nominal	881499646.7	-129.8	-0.14725	1.5	1.35



# Section 9 EUT photos

# 9.1 Set-up photos



Figure 9.1-1: Antenna port testing set-up



Figure 9.1-2: Antenna port testing set-up in climatic chamber

# Section 9 EUT photos



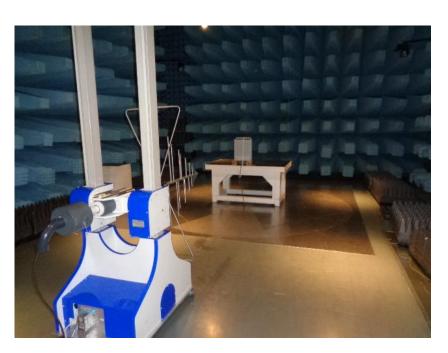


Figure 9.1-3: Radiated emissions set-up for frequencies below 1 GHz



Figure 9.1-4: Radiated emissions set-up for frequencies above 1 GHz



# 9.2 External photos

Figure 9.2-1: EUT photo

End of the test report