

Report No. 383891-01-R00

# **Test Report**

Product	System Control Unit with NFMI, Bluetooth Basic Rate and Low Energy						
Name and address of the applicant	3M Svenska AB Box 2341, 331 02 Värnamo Sweden						
Name and address of the manufacturer	3M Svenska AB Box 2341, 331 02 Värnamo Sweden						
Model	SCU-300NA						
Rating	3.0V <sub>DC</sub> (2x AAA cells, Alkaline Batteries)						
Trademark	Comtac VII						
Serial number	Radiated Sample: 102 / Conducted Sample: 101						
Additional information	Bluetooth Low Energy						
Tested according to	FCC Part 15.247 Frequency Hopping Transmitters / Digital Transmission Systems Industry Canada RSS-247, Issue 2 Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices						
Order number	383891						
Tested in period	2020-01-22 to 2020-01-24 and 2020-03-12						
Issue date	2020-04-28						
Name and address of the testing laboratory	Instituttveien 6       CAB Number:         FCC: NO0001       ISED: NO0470         TEL: +47 22 96 03 30       FAX: +47 22 96 05 50         An accredited technical test executed under the Norwegian accreditation scheme						
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## 1 INFORMATION

### 1.1 Test Item

Name	Comtac VII
Model/version	SCU-300NA
FCC ID	Y9ZSCU300
ISED ID	4406A-SCU300
Serial number	Conducted Sample: Nr. 101 Radiated Sample: Nr. 103
Hardware identity and/or version	K399Ava05
Software identity and/or version	K399-st-application-0.9.0
Frequency Range	2402 – 2480 MHz
Number of Channels	40
Operating Modes	Bluetooth Low Energy 4.0
Type of Modulation	GFSK
Rated Output Power	0.55 mW
Type of Power Supply	Primary Batteries (2x AAA Alkaline Batteries)
Antenna Connector	None (Integral Antenna)
Number of Antennas	1
Interfaces	Proprietary Connector

#### **Description of Test Item**

The EUT is a System Control Unit (SCU) with integrated NFMI radio and Bluetooth (Basic, EDR and BLE) communications. The NFMI is audio based for using with the headset Comtac VII.

The headset can also be connected to the SCU using cable The Bluetooth is a dual radio chip with one antenna path that allows the user to connect the Comtac VII to a cellular phone or an external radio. The SCU can also be connected to external radio by wires. The SCU is powered by 2 x 1.5V by AAA/LR03 alkaline batteries or rechargeable NiMH batteries. The batteries can not be charged while in the SCU.



#### Normal test condition 1.2

Temperature:	20 - 24 °C
Relative humidity:	20 - 50 %
Normal test voltage:	3.0 $V_{DC}$ (Nominal battery voltage)

The values are the limit registered during the test period.

#### Test Engineer(s) 1.3

Frode Sveinsen

#### 1.4 **Antenna Requirement**

Is the antenna detachable?	🗌 Yes	
If detachable, is the antenna connector non-standard?	🗌 Yes	[
Type of antenna connector: N/A		

Ref. FCC §15.203

#### Worst-Case Configuration and Mode 1.5

The EUT have only one output power, one modulation and one bit-rate in Low Energy mode. Tests were performed at highest, lowest and on a channel in the middle of the band.

#### 1.6 **Comments**

All measurements were done with the EUT powered by new batteries.

🗌 Yes	🛛 No
🗌 Yes	🗌 No



## 2 TEST REPORT SUMMARY

### 2.1 General

All measurements are tracable to national standards.

The tests were conducted for demonstrating compliance with FCC CFR 47 Part 15, paragraph 15.247 and Industry Canada RSS-247 Issue 2 and RSS-GEN Issue 5.

Tests were performed in accordance with ANSI C63.4-2014 and and ANSI C63.10-2013.

Radiated tests were made in a semi-anechoic chamber at measuring distance of 3m.

A description of the test facility is on file with FCC and ISED.

New Submission

Class II Permissive Change

DTS Equipment Code

Production Unit
 Pre-production Unit
 Family Listing



#### THIS TEST REPORT APPLIES ONLY TO THE ITEM(S) AND CONFIGURATIONS TESTED.

Deviations from, additions to, or exclusions from the test specifications are described in "Summary of Test Data".

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### 2.2 Test Summary

Name of test	FCC Part 15 reference	RSS-247 Issue 2, RSS-GEN Issue 5 reference	ANSI C63.10-2013 Reference	Result
Supply Voltage Variations	15.31(e)	6.11 (RSS-GEN)	5.13	N/A
Antenna Requirement	15.203	6.8 (RSS-GEN)	5.8	Complies
Power Line Conducted Emission	15.107(a) 15.207(a)	7.2 / 8.8 (RSS-GEN)	6.2	N/A
Occupied Bandwidth (99% BW)	N/A	6.7 (RSS-GEN)	6.9.3	Complies
DTS Bandwidth	15.247(a)(2)	5.2 (1) (RSS-247)	11.8 Option 2	Complies
Peak Power Output	15.247(b)	5.4 (RSS-247)	11.9.1.1	Complies
Power Spectral Density	15.247(d)	5.2 (2) (RSS-247)	11.10.2 PKPSD (DTS)	Complies
Spurious Emissions (Antenna Conducted)	15.247(c)	5.5 (RSS-247)	6.7 11.11 (DTS)	Complies
Spurious Emissions (Radiated)	15.247(c) 15.109(a) 15.209(a)	5.5 (RSS-247) 7.3 (RSS-GEN) 8.9 (RSS-GEN)	6.3, 6.5, 6.6, 6.10 11.12, 11.13 (DTS)	Complies

EUT is battery operated only



### **3 TEST RESULTS**

## 3.1 Occupied Bandwidth (99% BW)

ISED Canada RSS-GEN Issue 5, Clause 6.7

#### Measurement procedure: ANSI C63.10-2013 Clause 6.9.3 / 7.8.3

Test Results: Complies

#### Measurement Data:

Measured Occupied Bandwidth (99% BW) (MHz)					
2402 MHz 2440 MHz 2480 MHz					
1.02	1.02	1.02			

See attached plots.

#### **Requirements:**

No requirement.





### 99% Bandwidth, 2402 MHz

MultiView -	Spectrum	× Spectrum 2	× Spectrum 3	× Spectrum 4	×		•
Ref Level (	0.00 dBm Offs	et 10.60 dB ● BB	W 30 kHz		_		
<ul> <li>Att</li> </ul>	10 dB SW1	140 us (~7.2 ms) VB	W 100 kHz Mode Auto	FFT			
1 Occupied E	Bandwidth						o1Pk Max
			M1			M1[1] 2	-7.58 dBm 43995000 GHz
-10 dBm							
-20 dBm							
-30 dBm							
-40 dBm						$\square$	$\sim\sim$
-50 dBm							
-60 dBm							
-70 dBm							
-80 dBm							
-90 dBm							
CF 2.44 GHz		· · ·	1001 pts	200.0 kHz,	/	1 	Span 2.0 MHz
2 Marker Ta	ble						
Type         R           M1         T1           T2         T2	ef Trc 1 1 1	X-Value 2.43995 GHz 2.4394466 GHz 2.4404655 GHz	Y-Value -7.58 dBm -22.88 dBm -23.49 dBm	Occ Bw Occ Bw Occ Bw Centroid Occ Bw Freq Offset	on and a second s	Function R <b>1.0189015</b> 2.43995 -43.94920	esult 48 MHz 6051 GHz 14353 kHz
	7				✓ Measuring		22.01.2020 10:05:22

99% Bandwidth, 2440 MHz



MultiView 📑	Spectrur	n	× Spectrur	n 2 🗙	Spectrum 3	× Spectru	um 4 🗙			•
Ref Level 0	.00 dBm	Offset	10.60 c	18 <b>- RBW</b> 30	<hz< td=""><td></td><td></td><td></td><td></td><td></td></hz<>					
<ul> <li>Att</li> </ul>	10 dB	SWT	140 µs (~7.2 m	s) <b>VBW</b> 1001	KHz Mode Auto	> FFT				O I DL. Mov
	andwidth				<u>M1</u>				M1[1]	-4.31 dBm
									2.	47995000 GHz
-10 dBm				$\sim \sim \sim \sim$						
-20 dBm								T2		
-30 dBm									h	
-40 dBm	$\wedge -$								$ \rightarrow $	$\sim \sim$
										$\sim$ $\sim$ $\sim$
-50 dBm										
-60 dBm										
-70 dBm										
-80 dBm										
-90 dBm										
CF 2.48 GHz	·			<u>1001 pt</u>	s	20	0.0 kHz/	·	·	Span 2.0 MHz
2 Marker Tab	ole									
Type Re	et Trc		X-Value 2 47995 6	Hz	Y-Value	Occ Bw	Function		Function Re	ST MHZ
T1 T2	1 1 1		2.47944574 ( 2.48046374 (	GHz GHz	-20.13 dBm -21.01 dBm	Occ Bw Cer Occ Bw Fre	ntroid 9 Offset		2.47995	4742 GHz 2108 kHz
	~						~	Measuring		22.01.2020 10:07:53

99% Bandwidth, 2480 MHz



### 3.2 DTS Bandwidth

FCC Part 15.247 (a)(2)					
ISED Canada RSS-247 Issue 2, C	lause 5.2 (a)				
Measurement procedure:	ANSI C63.10-2013 Clause 11.8				
Test Results:	Complies				

#### **Measurement Data:**

Measured DTS Bandwidth (kHz)					
2402 MHz 2440 MHz 2480 MHz					
704	689	719			

#### **Requirements:**

For Digital Transmission Systems in the 2400-2483.5 MHz band the minimum 6 dB bandwidth shall be at least 500 KHz. No requirements for Frequency Hopping Systems.





MultiView	Spectr	um	× Spectre	um 2	×	Spectrum 3	×	Spectru	um 4	×				•
Ref Level	0.00 dBm	Offset	10.6	o dB 🖷	• RBW 100	) kHz								
<ul> <li>Att</li> </ul>	10 dB	SWT	41.71 µs (~11	ms)	<b>VBW</b> 300	) kHz Mode	Auto FFT							
1 Frequency	/ Sweep			-		1	_						(	D1Pk Max
						M1						M1[1]		-7.17 dBm
-10 dBm			τι							T2			2,401	95950 GHz
			- I I I I I I I I I I I I I I I I I I I							V.				
-20 dBm														
-30 dBm	-													
-40 dBm														
40 0011														
-50 dBm														
-50 ubiii-														
50 ID														
-60 aBm														
-70 dBm														
-80 dBm													_	
-90 dBm	-													
CF 2,402 GF	lz				1001 pt	S		15	50.0 kHz/				Spa	n 1.5 MHz
2 Marker Ta	able													
Type R	Ref Trc		X-Value			Y-Value			Function			Functior	n Result	
M1	1	2	.4019595 0	iHz		-7.17 dBm	nd	В				704 3	6.0 dB	
11 T2	1		2.4016089	GHZ GHz		-13.19 dBm -13.17 dBm		B down Factor	BW			704.3	U KHZ	
	~		2. 1020102	0112		10.17 000	<u> </u>				asuring		<u>, 110, 4</u>	22.01.2020

### DTS Bandwidth, 2402 MHz

MultiView	Spectr	um	× Spectru	m 2	× Spect	rum 3	× Spectr	um 4 🗙			•
Ref Level (	0.00 dBm	Offset	10.60	dB 🗢 RB	<b>W</b> 100 kHz		_		-		
Att	10 dB	SWT	41.71 µs (~11 r	ms) VB	<b>W</b> 300 kHz	Mode Auto	FFT				
1 Frequency	Sweep										o1Pk Max
						M1				M1[1]	-5.51 dBm
			T1					T2		2	43995200 GHz
-10 dBm			L. S.					2			
			1								
-20 dBm											
-30 dBm											
40 dBm											
-40 uBm											
-50 dBm											
-60 dBm											
-70 dBm											
10 dbiii											
-80 dBm											
-90 dBm	-										
05.0.44.00				10							0 1 5 1 1
CF 2.44 GHz				10	JUI PTS		1:	50.0 KHZ/			span 1.5 MHz
2 Marker Ta	of T		V Value			/alua		Function		Function D	a ou dt
M1			2.439952 G	Hz	-5-5	1 dBm	pdB	Function		Function R	) dB
T1	1		2.4395954 0	GHz	-11	.51 dBm	ndB down	BW		689.30 H	Hz
T2	1		2.4402847 0	GHz	-11	.52 dBm	Q Factor			353	39.7
	~							2	Measuring		22.01.2020 10:05:07

DTS Bandwidth, 2440 MHz





MultiView	Spectr	um	× Spectrum	2 <b>X</b> S	pectrum 3	×	Spectrum 4	×			
Ref Level	0.00 dBm	Offset	 10.60 d	B 🖷 RBW 100	Hz						
Att	10 dB	SWT	41.71 µs (~11 ms	s) – <b>VBW</b> 300 k	Hz Mode A	uto FFT					
1 Frequenc	y Sweep		1								o1Pk Max
			T1	<pre></pre>						M1[1]	-3.37 dBm
-10 dBm-			Z I							2.	47996100 GHz
10 0011			F I								
										<u> </u>	
-20 dBm-											
-30 dBm											
-40 dBm											
-50 dBm											
-60 dBm											
-70 dBm											
-80 dBm											
00 0011											
00 40											
-90 UBM											
CF 2.48 GH	z			1001 pts			150.0 kH	z/			Span 1.5 MHz
2 Marker T	able										
Туре І	Ref Trc		X-Value	_	Y-Value		Funct	tion		Function Re	esult
M1 T1	1		2.4/9961 GH	Z •3	5.37 dBm	ndB	down BW			719.30 k	1 dB
T2	1		2.4802997 GH	Z	-9.36 dBm	Q F	actor			344	17.8
	~							~	Measuring		22.01.2020

DTS Bandwidth, 2480 MHz



### 3.3 Peak Power Output

FCC Part 15.247 (b) ISED Canada RSS-247 Issue 2, Clause 5.4 Measurement procedure: ANSI C63.10-2013 Clause 11.9.1.2 Test Results: Complies

#### Measurement Data:

	2402 MHz	2440 MHz	2480 MHz
Conducted Power (dBm)	-6.6	-5.1	-2.6
Conducted Power (Watts)	0.00022	0.00031	0.00055

Output Power reported is Maximum Peak Power.

The Integrated Band Power Method was used to measure Output Power

Radiated Power was calculated from measured Field Strength using the method described in FCC KDB 412172 D01.

See attached plots.

#### **Requirements:**

The maximum peak output power shall not exceed the following limits:

For Digital Transmission Systems in the 2400 - 2483.5 MHz band: 1 Watt

If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power from the intentional radiator shall be reduced below the stated value above by the amount in dB that the directional gain of the antenna exceeds 6 dBi.



MultiView	Spectru	n	× Spe	ectrum	n 2	×	Spectrum 3	× Spect	rum 4	٢		-
Ref Level 0	.00 dBm	Offset	10.60 dB 🕚	■ RB¥	V 3 MHz							
<ul> <li>Att</li> </ul>	10 dB	SWT	1.01 ms	VBW	/ 10 MHz	Mod	le Auto Sweep					
1 Frequency	Sweep	1										o1Pk Max
								M1			M1[1]	-6.63 dBm 2.4022000 GHz
-10 dBm———												
-20 dBm					/							
-30 dBm			/									
-40 dBm												
-50 dBm												
uniquilite procession	manhow										Mullensen	Montennesser
-60 dBm												
-70 dBm												
-80 dBm												
-90 dBm												
05 0 400 OL					100							
UF 2,402 GHz	2				100	or pts	<u> </u>		Z.U MHZ/		5	22 01 2020

#### Output Power, 2402 MHz

MultiView 📑	Spectrum	1	X Spectru	m 2 X	Spectrum 3	× Spectru	um 4 🗙			•
Ref Level 0.0	0 dBm 0	ffset : wт	101 ms VB	W 3 MHz	nde Auto Sween					
1 Frequency S	weep									●1Pk Max
					M1				M1[1]	-5.09 dBm 2.4397600 GHz
-10 dBm										
-20 dBm			/							
-30 dBm										
-40 dBm			/							
-50 dBm		and a second								
-60 dBm	um								~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	munhamman
-70 dBm										
-80 dBm										
-90 dBm										
CF 2.44 GHz				1001 p	ts	2	.0 MHz/		5	Span 20.0 MHz
	7						~	Measuring		22.01.2020 10:06:11

Output Power, 2440 MHz



MultiView -	Spectr	um	× Spe	ectrun	n 2	×	Spectrum 3	× Spectru	um 4 🛛 🗙			-
Ref Level 0	).00 dBm	Offset	10.60 dB	■ RBV	V 3 MHz							
<ul> <li>Att</li> </ul>	10 dB	SWT	1.01 ms	VBV	/ 10 MHz	Mod	<b>le</b> Auto Sweep					
1 Frequency	Sweep										I	●1Pk Max
							N.				M1[1]	-2.61 dBm 2.4797600 GHz
-10 dBm												
-20 dBm	_											
-30 dBm												
-40 dBm												
		and the second									Mar and	
-su asm-	montured	W. C. C.									Mutanes	ushartunana
-60 dBm												
-70 dBm												
10 dbm												
-80 dBm												
-90 dBm												
CF 2.48 GHz					100	)1 pt	S	2	0 MHz/	1		pan 20.0 MHz
										Measuring		22.01.2020

Output Power, 2480 MHz



### 3.4 Conducted Emissions at Antenna Connector

FCC Part 15.247 (d)

ISED Canada RSS-247 Issue 2, Clause 5.5

#### Measurement procedure: ANSI C63.10-2013 Clause 11.11

Test Results: Complies

#### Measurement Data:

Carrier Frequency	Highest Value (dBc)	Margin (dB)	Verdict
2402 MHz	> 40	> 20	Pass
2440 MHz	> 40	> 20	Pass
2480 MHz	> 40	> 20	Pass

Measured with Peak Detector

RF conducted power to 25 GHz: see attached plots.

#### Limit

Peak measurement	RMS averaging
20 dBc or more in 100 kHz bandwidth	30 dBc or more in 100 kHz bandwidth

Detector type shall be the same as used for measuring Output Power.

Attenuation below the general limits specified in part 15.209(a) is not required.



MultiView	Spectr	um ×	Spectrum	2 ×	Spectr	um 3	×			•
Ref Level -7	.00 dBm 01	f <b>set</b> 10.60 d	B 🖷 RBW 100 kH							
<ul> <li>Att</li> </ul>	10 dB S\	<b>∀T</b> 23.5 m	s <b>VBW</b> 300 kH	Hz Mode	Auto Sweep					
1 Frequency S	weep	1		D 4 00			T	1		O1Pk Max
-10 dBm	CK			PASS					M1[1]	59.85 dBm
Line FGG.	15 247 2000	D PEAK		PASS						11.60 MHz
-20 dBm										
FCC15 247 20DB P	EAK									
-50 0811										
-40 dBm										
-50 dBm										
M1										
-60 dBm										
		A. Martin	1							
+ Hander Marine	howard	www.annarva.	mangaretterner Jack	Warman						
					mannan	manaphraph	which when where	Mangaman water with	An work hallow	an the man war war
γų										
-80 dBm										
-90 dBm										
-100 dBm										
-100 0BW										
1.0 MHz			10	01 pts		23	34.9 MHz/			2.35 GHz
								Measuring		22.01.2020

#### Spurious Emissions, Conducted 1 -2350MHz, 2402MHz

MultiViev	v Spectr	um						•
Ref Level	I -7.00 dBm Of	ffset 10.60 dB 🖷 RE	3W 100 kHz					_
<ul> <li>Att</li> </ul>	10 dB 🕏 🛛	NT 2 ms VB	W 300 kHz Mode Auto	Sweep				
1 Frequence	cy Sweep	- Déci	D. CO					●1Pk Max
-10 dBmmit	CC15 247 20DF		PASS				M1[1]	-7.19 dBm
Line	0010 2 17 2001						MOLI	2.401850 GHz
-20 dBm							MZ[1]	-53.75 dBm
								2.531920 GH2
F <u>CG15847 201</u>	DB PEAK							
-40 dBm								
-50 dBm								MO
50 abiii						MB		Y
		N 4				l 🚶		16
-60 dBm								
		N N		A A A A				
vrRQvd&m <del>rvvtv</del>	antan market when a com	with the way when the w		the for the state of the state	hyperthese the second states to the transfer that the case	nang ng tang tang tang tang tang tang ta	althe age and the second	H william and with a line
-80 dBm								
-90 dBm								
-100 dBm								
2.35 GHz			1001 pts	2	0.0 MHz/			2.55 GHz
2 Marker T	able				· · · · · · · · · · · · · · · · · · ·			
Туре	Ref Trc	X-Value	Y-Valu	e	Function		Function Re	esult
M1	1	2.40185 GH	z -7.19 d	Bm				
M2 M3	1	2.53192 GH 2.50594 GH	∠ -53./50 7 -55.73 d	Bm				
LIND	1							22 01 2020
						Measuring		10:18:39

Spurious Emissions, Conducted 2350 -2550MHz, 2402MHz



MultiView 🗉 Spectrum 🛛 🗙 🤮	Spectrum 2 × Spec	trum 3 🗙		•
Ref Level -7.00 dBm Offset 10.60 dB •	RBW 100 kHz			
Att 10 dB SWT 74.5 ms	VBW 300 kHz Mode Auto Swee	p		
1 Frequency Sweep	PASS		MILI	O 1Pk Max
-10 dBm Line FCC15 247 20DB PEAK	PASS		MILL	2.56120 GHz
			D2[1]	-3.27 dB
-20 dBm				-7.33090 GHz
FCC15 247 20DB PEAK -30 dBm				
-40 dBm				
50 dBm				
MPO dom				
				D2
-60 dBm				
Mondamet will and and any month with and		a manufactor the manufactures	when we want when the work on which	monthly
	hunderunderbrychennen	under the second s	LAA. IN MALE	
-80 dBm				
-90 dBm				
-100 dBm				
100 000				
2.55 GHz	1001 pts			10.0 GHz
	1001 500	. 1010 11112/	Measuring	22.01.2020

Spurious Emissions, Conducted 2550 -10000MHz, 2402MHz

MultiView -	Spectrun	n	X Sp	ectrum	2	< Spec	trum 3	× Spect	rum 4 🗙			•
Ref Level -	7.00 dBm	Offset	1.00 dB (	RBW	100 kHz					-		
<ul> <li>Att</li> </ul>	10 dB	SWT	160 ms	VBW	300 kHz	Mode A	uto Sweep					
1 Frequency	Sweep											●1Pk Max
-10 dBm	ieck					PASS					M1[1	]71.78 dBm
Line FC	015 247 20	DB PE	AK			PASS						19.2150 GHz
-20 dBm												
ECC15 247 20DB	PFAK											
-30 dBm												
-40 dBm												
-50 dBm												
-60 dBm												
-70 dBm								M1				
					a	w. a. and	Manang	angwormaliting	warman when me	warmen warmen warmen	Manna	when when when when
1-901dBm thank	-	www.	- Andre and	- <sup>Chen</sup> styles <sup>te</sup> st	to the other states.							
-90 dBm												
-100 dBm												
10.0 CH-					100	1 nte						26.0.0
10.0 GHZ					100.	ւրտ						20.0 GHZ
										Measuring		10:23:45

Spurious Emissions, Conducted 10000 -26000MHz, 2402MHz



MultiView	- Spectru	um	× Spe	ectrum 2	×	Spectrum 3	× Spectr	rum 4 🗙			-
Ref Leve	l -5.50 dBm	Offset	t 10.60 dB	• RBW 10	00 kHz						
Att	10 dB	SWT	23.5 ms	VBW 30	0 kHz 🛛 🛛	lode Auto Swee	ep				
1 Frequen	cy Sweep										o1Pk Max
Limit	Check				P/	SS				M2[1	] -62.67 dBm
- TO OBUILDE	-0015 247 2	2008 PE	AR			188					2.30890 GHz
										M1[1	] -60.08 dBm
-20 dBm											11.60 MHz
FCC15 247 20	IDB PEAK										
-30 dBm											
1.0.10											
-40 dBm											
-50 dBm											
М1											
760 dBm											M2
li -											1
II	des alus, march	de Mr.	manum	upa martin	Ne manne	March					
-79\dBm4c4A	and the second second			· · · · · · · · · · · · · · · · · · ·	1000	hoursen	Mon month m	Muchanakapura	a hour hours	howman and	mannallalle
W									1		
-80 dBm											
00 0011											
-90 dBm											
-100 dBm—											
					1001						
1.0 MHz		_			1001 pt	S		34.9 MHZ/			2.35 GHz
									Measuring		22.01.2020

#### Spurious Emissions, Conducted 1 -2350MHz, 2440MHz



Spurious Emissions, Conducted 2350 -2550MHz, 2440MHz



MultiView	Spectr	um	× sp	pectrum 2	2 X	Spectrum 3	× Spectru	um 4 🗙			-
Ref Leve	l -5.50 dBm	Offse	t 10.60 dE	3 <b>- RBW</b>	100 kHz						
Att	10 dB	SWT	74.5 m	s VBW	300 kHz 🛛 🛛	lode Auto Sweep	1				
1 Frequen	cy Sweep					•		•			o1Pk Max
Limit	Check				P4	SS				M1[1	] -55.10 dBm
-10 dBmme	-cc15 247	20DB PE	AK		P/	35					2.56860 GHz
										M2[1	] -56.81 dBm
-20 d9m											9.88460 GHz
-20 ubiii-											
ECC15 247 20											
-30 dBm	DD FEAK										
-40 dBm											
-50 dBm M1											
7											M2
1.00 10											l i i
+60 dBm											
				11							
70. dBm-u											
In all and the for	manner	Mouth	Mar and	A CAMPAGE		we all a distance	menningunum	moly many white	monthemant	www.www.www.www.	mansmille
					and PSP-Mpre-Array	ALL RADING CARDING CO	ſ				
-80 dBm											
-90 dBm											
-100 dBm											
					1001	1					10.0.01
2.55 GHZ					1001 pt	S	/4	ISIU MHZ/			10.0 GHz
									Measuring		22.01.2020

#### Spurious Emissions, Conducted 2550 -10000MHz, 2440MHz

MultiView 📲	Spectrum	× Spectru	m 2 🗙	Spectrum 3	× Spectr	um 4 🗙			•
Ref Level -5	5.50 dBm Offse	t 1.00 dB • RB	<b>W</b> 100 kHz		_				
Att 1 Executoped (		160 ms VB	NY 300 KHZ MIO	de Auto Sweep					O I Dk Mov
Limit Che	eck		PA	SS				M1[1	1 -71.02 dBm
-10 dB <mark>mirre FCC</mark>	15 247 20DB PE	AK	PA	<del>55</del>					19.5180 GHz
-20 dBm									
FCC15 247 2008 F	PFAK								
-30 dBm									
40 d0m									
-40 UBM									
-50 dBm									
-60 dBm									
					M:				
-70 dBm									
					hu an	a saabat waa saa	an order an	1 . And	when when have
-80,dBm	Mary Mary	week which have a set of the set	and the service of th	wall walk and the second	wand want wind	and the work of the red	N MARKANNA	and the second second	
N1									
00.40.0									
-90 dBm									
-100 dBm									
			1001						
10.0 GHz			1001 pt	s	1	.6 GHz/			26.0 GHz
							Measuring		10:32:45

Spurious Emissions, Conducted 10000 -26000MHz, 2440MHz



MultiView	Spectrum	Spectru	m 2 🛛 🗙	Spectrum 3	× Spectru	um 4 🛛 🗙			-
Ref Level -	3.00 dBm	Offset 10.60 dB 🖷 RB	W 100 kHz						
<ul> <li>Att</li> </ul>	10 dB	SWT 23.5 ms VB	<b>W</b> 300 kHz M	ode Auto Sweep					
1 Frequency	Sweep leck		PA	ss				MILL	01Pk Max
-10 dBmine FC	C15 247 20	DB PEAK	PA	SS				MILI.	-39.33 uBm 
10 000								M2[1]	-59.66 dBm
-20 dBm									2.32300 GHz
FCC15 247 20DB	PEAK								
-30 dBm									
-40 dBm	_								
-50 dBm									
М1									Mæs
-60 dBm									¥
II		and when the second							
-70 demand	Marinnen	man a man for the second	antoman	how we have a strate of the second states of the se	mouthwhite	Manumbanka	where mary Matheway	winderman	marking marked by
~U									
-80 dBm									
-90 dBm									
-100 dBm									
1.0 MHz			1001 pt	S	23	4.9 MHz/			2.35 GHz
2 Marker Ta	ole of Tro	V Valua		V Valua		Eurotion		Eupstion Do	oult
M1	1	11.6 MHz	-	59.53 dBm		runction		TUNCTON RE	suit
M2	1	2.323 GHz	-	59.66 dBm					
L 1M13	1	2.3400 082		00.04 ubili				_	22.01.2020
							Measuring		10:35:51

#### Spurious Emissions, Conducted 1 -2350MHz, 2480MHz



Spurious Emissions, Conducted 2350 -2550MHz, 2480MHz



MultiView	Spectru	um	× Spe	ctrum 2	×	Spectrum 3	× Spectr	rum 4 💙	٢		-
Ref Leve	<b>i -</b> 3.00 dBm	Offset	10.60 dB	• RBW 100	0 kHz						
Att	10 dB	SWT	74.5 ms	VBW 300	0 kHz M	ode Auto Sweep					
1 Frequen	cy Sweep					80					o1Pk Max
	ECC15 247 2	20DB PE	AK		PA PA	SS				M1[1]	-57.07 dBm
-10 dBm										M2[1]	-9.90700 GH2
										WZ[1	2 61330 GHz
-20 dBm											
FCC15 247 20	IDB PEAK										
-30 dBm											
-40 dBm											
-50 dBm											541
<b>X</b>											
-60 dBm				1							6046
Mi.											
1470JdBm	have and and	white	for the second second	washing				Maryangeland	have the warmen we	bouch margine sources	man and the filler
		-			an a	www.www.www.www.					
-80 dBm											
-90 dBm											
-100 dBm—									_		
2.55 GHz					1001 pt	s	7.	45.0 MHz/			10.0 GHz
2 Marker	Table										
Туре	Ref Trc		X-Valu			Y-Value		Function		Function Re	sult
M2	1		2.6133	GHz	-	56.28 dBm					
M3	1		2.5835	GHz	-	57.21 dBm					
											22.01.2020

#### Spurious Emissions, Conducted 2550 -10000MHz, 2480MHz

Ref Level -3.00 dBm       Offset 1.00 dB * RBW 100 kHz       Mode Auto Sweep         10 dB SVT       10 dB SVT       VBW 300 kHz       Mode Auto Sweep         Line FCC IS 247 200B PEAK       PASS       M1[1]       -73.34 dBm         -10 dBm	MultiView -	Spectrun	n	× Spe	ectrum	2	< s	pectrum 3	× Spectru	um 4 🗙			•
Att       Dode SW1       Note Allo Sweep       01Pk/Max         IFrequency Sweep       01Pk/Max       PASS       M1[1]       -73.34 dBm         Line FCC1S 247 200B PEAK       PASS       25.8960 GHz       25.8960 GHz         -20 dBm	Ref Level -	3.00 dBm	Offset	1.00 dB •		100 kHz		- 0t. C					
Line FCC15 247 200B PEAK       PASS       MILIT -73.34 dBm         -20 dBm       -25.8960 GHz       -25.8960 GHz         -20 dBm       -20 dBm       -20 dBm       -20 dBm         -20 dBm       -20 dBm       -20 dBm       -20 dBm         -30 dBm       -20 dBm       -20 dBm       -20 dBm       -20 dBm         -40 dBm       -20 dBm       -20 dBm       -20 dBm       -20 dBm         -40 dBm       -20 dBm       -20 dBm       -20 dBm       -20 dBm         -40 dBm       -20 dBm       -20 dBm       -20 dBm       -20 dBm         -50 dBm       -20 dBm       -20 dBm       -20 dBm       -20 dBm         -50 dBm       -20 dBm       -20 dBm       -20 dBm       -20 dBm       -20 dBm         -50 dBm       -20 dBm <t< td=""><td>Att 1 Erecuency</td><td>IU db</td><td>5111</td><td>160 ms</td><td>VBW</td><td>300 KHZ</td><td>Mode</td><td>e Auto Sweep</td><td></td><td></td><td></td><td></td><td>o 1 Dk May</td></t<>	Att 1 Erecuency	IU db	5111	160 ms	VBW	300 KHZ	Mode	e Auto Sweep					o 1 Dk May
Line FCC1 5 247 200B PEAK       PASS       25.8960 GHz         -20 d8m       -25.8960 GHz       -25.8960 GHz         -20 d8m       -20 d8m       -20 d8m       -20 d8m         -30 d8m       -20 d8m       -20 d8m       -20 d8m         -30 d8m       -20 d8m       -20 d8m       -20 d8m         -40 d8m       -20 d8m       -20 d8m       -20 d8m         -40 d8m       -20 d8m       -20 d8m       -20 d8m         -50 d8m       -20 d8m       -20 d8m       -20 d8m         -50 d8m       -20 d8m       -20 d8m       -20 d8m         -50 d8m       -20 d8m       -20 d8m       -20 d8m         -70 d8m       -20 d8m       -20 d8m       -20 d8m         -70 d8m       -20 d8m       -20 d8m       -20 d8m         -100 d8m       -20 d8m       -20 d8m       -20 d8m         -20 d8m       -20 d8m <td>Limit Ch</td> <td>eck</td> <td></td> <td></td> <td></td> <td></td> <td>PAS</td> <td>S</td> <td></td> <td></td> <td></td> <td>M1[1</td> <td>1 -73 34 dBm</td>	Limit Ch	eck					PAS	S				M1[1	1 -73 34 dBm
-10 dBm -20 dBm -20 dBm -20 dBm -30 dBm -40 dBm -40 dBm -50 dBm -50 dBm -50 dBm -50 dBm -10	Line FC0	015 247 20	DB PE	AK			PAS	S					25.8960 GHz
-20 dbm FCLS 247 2008 PEAK -30 dbm -40 dbm -50 dbm -50 dbm -60 dbm -70 dbm -70 dbm -100	-10 dBm												
-20 dBm													
FCC15 247 2008 P&AK -30 dBm -40 dBm -50 dBm -50 dBm -60 dBm -70 dBm -7	-20 dBm												
-30 dBm	ECC15 247 2008	PFAK											
-30 dBm -40 dBm -50 dBm -60 dBm -70	0010 2 11 2000												
-40 dBm	-30 dBm	-											
-40 dBm													
-50 dBm -60 dBm -70 dBm -70 dBm -90 dBm -100 dBm -	-40 dBm												
-50 dBm	10 dbm												
-50 dBm -60 dBm -70 dBm -70 dBm -90 dBm -90 dBm -100 dBm -1													
-60 dBm -70 dBm -70 dBm -90 dBm -100 dBm	-50 dBm	_											
-60 dBm													
-70 dBm -70 dBm -90 dBm -100 dBm -100 dBm -100 dBm -100 dBm -22.01.2020													
-70 dBm	-60 dBm												
-70 dBm													
-90 dBm -90 dBm -100 dBm -100 GHz 1001 pts 1.6 GHz/ 22.01.2020	-70 dBm	_											Mt
-90 dBm -90 dBm -100 dBm -100 GHz 1001 pts 1.6 GHz/ 22.01.2020													and the back
-90 dBm -90 dBm -100 dBm -100 GHz 1001 pts 1.6 GHz/ 22.01.2020				1.404.4				have a when	at maintine	Mounter	and admitter and	when maker hard	Month and and and the
-90 dBm	-80 dBm	Mar Marin	my when	AN A ALAN CONTRACT	and the second	which we are a second	way	in adversed on	er way en er			an diate a constant	
-90 dBm	ſ												
-100 dBm         1001 pts         1.6 GHz/         26.0 GHz           22.01.2020         22.01.2020	-90 dBm												
-100 dBm - 100 1 pts 1.6 GHz/ 22.01.2020	55 000				T								
-100 dBm 1001 pts 1.6 GHz/ 22.01.2020													
10.0 GHz 1001 pts 1.6 GHz/ 26.0 GHz	-100 dBm												
	10.0 GHz					1001	. pts		1	.6 GHz/	I	1	26.0 GHz
										~	Measuring		22.01.2020

Spurious Emissions, Conducted 10000 -26000MHz, 2480MHz



### 3.5 Restricted Bands of operation

Restricted Bands of operation for FCC and ISED are defined in FCC Part 15.205 and ISED RSS-GEN, Issue 5 clause 8.10.

Generally, no fundamentals are allowed in the restricted bands and all emissions must comply with the limits in FCC 15.209 or RSS-GEN, Issue 5, clause 8.9.

FCC (MHz)	ISED (MHz)	FCC (GHz)	ISED (GHz)
0.090-0.110		0.96-1.24 1.3-1.427	0.96-1.427
0.495-0.505		1.435-1.6265	
2.1735-2.1905		1.6455-1.6465	
	3.020-3.026	1.660-1.710	
4.125-4.128		1.7188-1.7222	
4.17725-4.17775		2.2-2.3	
4.20725-4.20775		2.31-2.39	
	5.677-5.683	2.4835-2.5	
6.215-6.218		2.69-2.9	2.655-2.9
6.26775-6.26825		3.26-3.267	
6.31175-6.31225		3.332-3.339	
8.291-8.294		3.3458-3.358	
8.362-8.366		3.6-4.4	3.5-4.4
8.37625-8.38675		4.5-5.15	
8.41425-8.41475		5.35-5.46	
12.29-12.293		7.25-7.75	
12.51975-12.52025		8.025-8.5	
12.57675-12.57725		9.0-9.2	
13.36-13.41		9.3-9.5	
16.42-16.423		10.6-12.7	
16.69475-16.69525		13.25-13.4	
16.80425-16.80475		14.47-14.5	
25.5-25.67		15.35-16.2	
37.5-38.25		17.7-21.4	
73-74.6		22.01-23.12	
74.8-75.2		23.6-24.0	
108-121.94 123-138	108-138	31.2-31.8	
149.9-150.05		36.43-36.5	
156.52475-156.52525		Above 38.6	
156.7-156.9			
162.0125-167.17			
167.72-173.2			
240-285			
322-335.4			
399.9-410			
608-614			

Frequencies in Bold text are specific for FCC or ISED, all other frequencies are common.



### 3.6 Radiated Emissions, Band Edge

FCC Part 15.209 (a) ISED Canada RSS-GEN Issue 5, Clause 7.3 / 8.9 Measurement procedure: ANSI C63.10-2013 Clause 11.12 Test Results: Complies

Measurement Data:

	Measured field str	Limit	Margin		
	2390 MHz	2483.5 MHz	dBµV/m	d	В
Peak Detector	41.7	46.0	74	32.3	28.0

Peak values are below the Average Limit.

See attached plots.



MultiView	Spectrum	×	Spectrum 2	×					-
Ref Level 10 Att TDF "3115ECC"	7.00 dBµV/m 10 dB <b>£</b> '	GWT 1.01 ms	<ul> <li>RBW 1 MHz</li> <li>VBW 3 MHz</li> </ul>	<b>1ode</b> Auto Sweep	•				
1 Frequency S	weep								o1Pk Max
100 dBuV/m								D2[1]	-46.39 dB -12.6870 MHz
100 dbp1/m								M1[1]	88.12 dBµV/m 2.4022880 GHz
90 dBµV/m							M1		
80 dBµ∨/m							/		
70 dBuV/m									
60 dBµV/m									
50 dBµ∨/m							<u> </u>		
*48*8607m41	Manahanna	winning	manunan	D2		ummond		Managanana	mannana
30 dBµV/m									
20 dBµV/m									
10 dBµV/m									
CF 2.39 GHz	1	I	1001 pt	s	5	.0 MHz/	<u> </u>	1	⊥ Span 50.0 MHz
	~						Measuring		24.01.2020

### Band Edge, 2402 MHz, Peak

MultiView = Spectru	m × Spectrum 2	×					•
Ref Level 107.00 dBµV/m           ● Att         10 dB	RBW 1 MHz SWT 1.01 ms VBW 3 MHz	lode Auto Sweep					
TDF "3115FCC" 1 Frequency Sweep							o1Pk Max
100 -00-11/m						M2[1]	46.04 dBµV/m 48355000 GHz
M1						M1[1]	93.41 dBµV/m 47974400 GHz
90 dBµV/m							
80 dBµV/m							
70 dBµV/m							
60 dBµ∀/m							
20 aBhA/w	v	mound	Manna Mulas ha	st. As he was			
40 dBµ∨/m			. attended	and an	and the second	muliikun ikun madalaa	and the second second
30 dBµV/m							
20 dBµV/m							
10 dBµV/m							
CF 2.4835 GHz		s s	1	.0 MHz/		5	j Span 10.0 MHz
~				~	Measuring		24.01.2020 11:10:24

### Band Edge, 2480 MHz, Peak



### 3.7 Radiated Emission, 30 – 1000 MHz

FCC Part 15.209 (a) ISED Canada RSS-GEN Issue 5, Clause 7.3/8.9 Measurement procedure: ANSI C63.10-2013 Clause 11.12 Test Results: Complies

#### Measurement Data:

Detector: Peak Measuring distance 3m

Frequency MHz	Dist. corr. Factor dB	Field strength @3m QP Det., dBµV/m	Limit dBµV/m	Margin dB
30 - 88	0	< 20	40	> 20
88 – 216	0	< 20	43.5	> 23.5
216 – 960	0	< 30	46	> 16
960 - 1000	0	< 36	54	> 18

See attached plots

#### Requirements/Limit

FCC	Part 15.209 @ frequencies defined in §15.205						
ISED	RSS-GEN Issue 5, Clause 8.9 @ frequence	ies defined in clause 8.10					
Frequency	Radiated emission limit @3 meters						
30 – 88 MHz	100 μV/m	40.0 dBµV/m					
88 – 216 MHz	150 μV/m	43.5 dBµV/m					
216 – 960 MHz	200 μV/m	46.0 dBµV/m					
960 – 1000 MHz	500 μV/m	54.0 dBµV/m					
	Limits above are with Quasi Peak Detector						



MultiView = Spectrum 😽 🗙 S	pectrum 2 ×			•
Ref Level 80.00 dBµV/m	<b>BW</b> 100 kHz			
● Att 10 dB SWT 9.7 ms VI	BW 300 kHz Mode Auto Sweep			
TDF "JB3FCC" 1 Erecuency Sween				o 1 Dk May
			M1[1	129.25 dBµV/m
				987.980 MHz
70 dBµv/m				
60 dBuV/m				
50 dBµV/m				
40-dBμ97m				
				M1
30 dBµV/m				
	and a second			he have been a de
20 dBuV/m	water and	My hardely hardely	Margar Mum Mar	and Challen and a second
	and the wheel where the	and the second with the second second second		
he with a shere a subscription	na and a start of the start of			
10,dBµV/m				
When when				
30.0 MHz	1251 pts	97.0 MHz/		1.0 GHz
			Measuring	24.01.2020 17:12:59

Radiated Emissions, 30 -1000 MHz, EUT V, HP



Radiated Emissions, 30 -1000 MHz, EUT V, VP



### 3.8 Radiated Emissions, 1 – 26 GHz

FCC Part 15.209 (a)

ISED Canada RSS-GEN Issue 5, Clause 7.3/8.9

Measurement procedure: ANSI C63.10-2013 Clause 11.12

**Test Results: Complies** 

#### Measurement Data:

Measuring distance: 3m(1 - 18 GHz)

A pre-scan was performed above 18 GHz and no spurious emissions were detected.

#### **Peak Detector:**

Frequency	RF channel	Dist. corr. factor	Field strength, Peak Detector, 3m	Duty cycle corr. factor	Limit	Margin
MHz		dB	dBµV/m	dB	dBµV/m	dB
4804	00	0	50.0	20	74	24.0
4880	19	0	51.7	20	74	22.3
4960	39	0	49.5	20	74	24.5
Other freqs	all	0	None detected	20	74	>20

Peak values are below the Average Limit.

A High Pass Filter was used from 3 GHz to 18 GHz.

Antenna factor, amplifier gain and cable loss are included in spectrum analyzer "Transducer factor".

See plots.

#### **Requirements/Limit**

FCC	Part 15.209 @ frequencies defined in §15.205							
ISED	RSS-GEN Issue 5, clause 8.9 @ frequenci	RSS-GEN Issue 5, clause 8.9 @ frequencies defined in clause 8.10						
	Radiated emission limit @3 meters							
Frequency	Average Detector	Peak Detector						
1 – 26 GHz	54.0 dBμV/m	74.0 dBμV/m						



MultiView	Spectrum	<b>★</b> × ∶	Spectrum 2	×						•
Ref Level 97 Att TDE "3115ECC"	.00 dBµV/m 10 dB <b>S\</b> "	● RI WT3ms VI	BW 1 MHz BW 3 MHz Mode	Auto Swee	p					
1 Frequency S	weep								●1Pk M	ax e 2Rm Max
90 dBµV/m									M1[1]	81.32 dBµV/m 2.40170 GHz
80 dBµV/m					41 V					
70 dBuV/m										
60 dBuV/m										
FCC 15 209 QP AV 50 dBµV/m										
40 dBuV/m				as off many that he		www.dlm.dlm.dlm.dlm.gla	www.uninadore	and manufer mound	welling well and the second	and when the tert
WWWWWWWWWW	multiprocenter	ym the and the work where	water warden when	and the many	luhm	pecologicalization	Maryal Will all an and a long to the set of	ale all and a second		
₩₩₩₩₩₩₩₩₩₩ 30 dBµV/m———	www.hunderware	And an an and a second								
20 dBµV/m——										
10 dBµ∨/m										
0 dBµV/m										
1.0 GHz	1	1		s		30	0.0 MHz/	1	1	4.0 GHz
	~						~	Measuring		24.01.2020

Radiated Emissions, 1000 -4000 MHz, 2402MHz, EUT V, HP

MultiView 📮 Spectru	m 🔆 🗙 Spectrur	n 2 🗙					•
Ref Level 97.00 dBµV/m	RBW 1 MHz						
• Att 10 dB	SWT 3 ms VBW 3 MHz	Mode Auto Sweep					
TDF "3115FCC"						o 1 Pk Ma	ax e 28m Max
						M1[1]	82.71 dBuV/m
00 dbuV/m							2.40170 GHz
90 06H4/10		141					
		The second se					
80 dBµV/m							
70 dBuV/m							
10 dbp v/m							
60 dBµV/m							
FCC 15 209 QP AV							
30 dbp v/m							
			have been and the Assessment	munderadingusting	Munnan marker	way way when the second with	able 44 production of the second
Ag dBuy/m	and the manufacture of the state of the stat	and the second process of the second second	And the second s	himbert stranger Wherperson	homentiment	www.weinterstanderstand	- Andrew Marine
MALL MARKAGE LINE RANGE AND A MARKAGE AND A	and margh man mark the marked	Annan Manakan and Ballanda	a way way a way and a way				
an den v/m	derald when the second s						
20 dBµV/m							
10 dBuV/m							
0 dBµV/m							
1.0 GHz		251 pts	. 30	0.0 MHz/			4.0 GHz
					Measuring		24.01.2020 13:14:14

Radiated Emissions, 1000 -4000 MHz, 2402MHz, EUT V, VP



MultiView	Spectrum	1 🔸 🗙	Spectrum 2	2 ×						•
Ref Level 97 Att TDE "3115ECC	.00 dBµV/m 10 dB <b>S</b> ''	WT 3 ms	RBW 1 MHz VBW 3 MHz N	<b>1ode</b> Auto Sw	еер					
1 Frequency S	weep								O1Pk M	ax e 2Rm Max
90 dBµV/m					M1				M1[1]	85.90 dBµV/m _2.44000 GHz
80 dBµV/m										
70 dBµV/m										
60 dBµV/m										
FCC 15 209 QP AV 50 dBµV/m										
40 dBμV/m		2 60 200		an and a start been	male	and the second states	Amount more have	and an and the second and	maria maria	and and an and an and
MUMWWWWWWWWW WWWWWWWWWWW 30 dBUV/m	and many and the second	hallon and a strand and a strand and a strand and a strand a strand a strand a strand and a strand and a strand	non an	personanteral	harm he	denought from the works	(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	and and white the second		
20 d0.00/m										
20 uppy/m										
10 αβμν/m										
0 dBµV/m										
1.0 GHz			125	51 pts		30	00.0 MHz/			4.0 GHz
								Measuring		44.01.2020 13:39:23

Radiated Emissions, 1000 -4000 MHz, 2440MHz, EUT V, HP

MultiView = Sp	ectrum 🔸 🗙 S	pectrum 2	×						
Beflevel 97 00 dBu	V/m • BB	W 1 MHz							
<ul> <li>Att 10</li> </ul>	odB SWT3ms VB	W 3 MHz Mode	Auto Sweep						
TDF "3115FCC"			nano ontoop						
1 Frequency Sweep						1		●1Pk Ma	ax 🛛 2Rm Max
								M1[1]	85.01 dBµV/m
90 dBµV/m									_2.44000 GHz
				Ż.					
80 aBhA/w									
70 dBµV/m									
co. double									
60 dBµV/m									
500 15 000 OD AV				ļЦ					
50 dBµV/m									
									and around the
		here with	المرتجع والمرابع		re a dente man Maria	New yologe vor the day again and	nontendenderskellende	WWW.L. MANNALARM	Have marger by highly
40 dBµV/m	and water when the the the the the	Walter and the second	a talah ka ang ta	Lund	he shall much bet	alunan months and the	-hiteldensetytyrmi	an and a start and the second and a start and	
Williamanal	who would my where the proved	al and the second states of th	Mri h. edia Materia dei di						
30 dBµV/m				_					
20 dBµV/m									
10 dBµV/m									
0 dBµV/m									
1.0 GHz		1251 pt	5		30	0.0 MHz/			4.0 GHz
							Measuring		<b>44.01.2020</b> 13:37:25

Radiated Emissions, 1000 -4000 MHz, 2440MHz, EUT V, VP



MultiView = S	pectrum	🔆 🗙 Sp	ectrum 2	×						-
Ref Level 97.00 db Att TDE "3115ECC"	BµV/m 10 dB <b>SWT</b>	● RBW 3 ms VBW	1 MHz 3 MHz Mode	Auto Swee	р					
1 Frequency Sweet	D								O1Pk M	ax e 2Rm Max
90 dBµV/m					M	1			M1[1]	89.00 dBµV/m 2.48080 GHz
80 dBµV/m					_					
70 dBµ∨/m										
60 dBµ∨/m					_					
FCC 15 209 QP AV 50 dBµV/m										
.4D dB⊔V/m		han a the set of the	and the second diversion of the second	James	war	anythe way	marker when have be	Mayland - Analy and the state of the second	mp war har show a	approvable and and
When Milling and March March 1994	yernohr bout min	hundren haven	ween work war	n.elvelanonis-liteit	kunyouth	Langer and the second and the second and the second s	And an and a second			
20 aBµv/m										
10 dBµV/m										
0 dBµV/m										
1.0 GHz			1251 pt	S		30	0.0 MHz/	I	I	4.0 GHz
~							~	Measuring		24.01.2020 13:22:31

Radiated Emissions, 1000 -4000 MHz, 2480MHz, EUT V, HP

MultiView 📑 Spectru	m 🔆 🗙 Spectr	um 2 🗙						-
Ref Level 97.00 dBµV/m	• RBW 1 M	-Iz						
Att 10 dB	SWT 3 ms VBW 3 M	Hz Mode Auto Sw	reep					
TDF "3115FCC"								
1 Frequency Sweep			- T - TT				O 1Pk Ma	ax ●2Rm Max
							M1[1]	86.77 dBµV/m
90 dBµV/m			M1					_2.48080 GHz
			I II					
70 dBµ∨/m								
60 dBuV/m								
FCC 15 209 OP AV			_ ┣					
50 dBµV/m								
							المحمد المراجع	and when the second when the
AD doubles		and and the second have been and the second	manne	monoralistication	when a when a low of the	www.annanana		- mother services where
WWWWWWWWWWWWWWWWWWWW	and the second	as here a serie where where where	nteriorna	Happy and the stand of the second	hand a start and the start and t	Addreastic water and a second	Condition of the second se	
MMM worth mark mark more more more more more and the second secon	www.walacharaged.ward	White designed and the second s						
30 dBµV/m								
20 UBpV/m								
10 dBµV/m								
0 dBµV/m								
1.0 GHz		1251 pts		30	0.0 MHz/			4.0 GHz
						Measuring		24.01.2020 13·20·33

Radiated Emissions, 1000 -4000 MHz, 2480MHz, EUT V, VP



Ref Level 97.00 dBµV/m       RBW 1 MHz         Att       10 dB       SWT 3 ms       VBW 3 MHz       Mode Auto Sweep         TDF "3115FCC"         O 1Pk Max @ 2Rm Max         Max @ 2Rm Max         MIL1]       S2.38 dBµV/m         90 dBµV/m       0
Att     10 dB     SWT 3 ms     VBW 3 MHz     Mode Auto Sweep       TDF "311SFCC"     Image: Contract of the second
TDF '311SFCC''         0 1Pk Max @ 2Rm Max         90 dBµV/m       M1[1]       82.38 dBµV/m       2.40170 GHz         80 dBµV/m       1       1       1       2.40170 GHz         70 dBµV/m       1       1       1       1       1         60 dBµV/m       1       1       1       1       1       1         60 dBµV/m       1       1       1       1       1       1       1         60 dBµV/m       1
I Frequency Sweep       O IPK Max @ 2km Max         90 dBµV/m       Image: Sweep       Image: Sweep <td< td=""></td<>
90 dBµV/m     2.40170 GHz       80 dBµV/m     1       70 dBµV/m     1       60 dBµV/m     1       60 dBµV/m     1       60 dBµV/m       1
90 dBµV/m 80 dBµV/m 70 dBµV/m 60 dBµV/m 
80 dBµV/m     Image: Book of the second
80 dBµV/m     Image: Book of the second
60 dbµ/m     60 db
70 dBµV/m     Image: Sector Sect
70 dBµV/m
60 dBµV/m [ ] ] [ ] [ ] [ ] [ ] [ ] [ ] [
60 dBµV/m [A A A A A A A A A A A A A A A A
60 dBµV/m = CC 15 209 QP AV 50 dBµV/m
SO dBuy/m
FCC15 209 QP AV
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49. Buy more than a second with a second wit
100 million and a second s
The definition of the second se
30 UBHV/III
20 dBµV/m
10 dBµV/m-
D dBuV/m

Radiated Emissions, 1000 -4000 MHz, 2402MHz, EUT H1, HP

MultiView Spectru	ım 🔆 🗙 Sp	ectrum 2	×						•
<b>Ref Level</b> 97.00 dBµV/m	• RBW	1 MHz							
● Att 10 dB	SWT 3 ms VBW	3 MHz Mode	Auto Sweep	)					
1 Frequency Sweep								o1Pk Ma	ax e 2Rm Max
								M1[1]	84.15 dBµV/m
90 dBµV/m									2.40170 GHz
			M1 ▼	L					
80 dBuV/m									
70 dBub/m									
70 UBpv/m									
60 dBµV/m									
FCC 15 209 OP AV			I	Ц					
50 dBµV/m									
							-	when her and the south	malminduling
(40 dBµV/m		man mar after our alland	a share wanted	with	harrest and the second and the second s	white marked and	with my production of the second	www.www.water	Ine day with more thank
ann	and the state of the second of the second	en sugar an and the share	www.uwww.www.	whe	www.www.www.w.w.				
30 gBhA/w	400 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -								
20 dBuV/m									
тп авћл/ш									
0 dBµV/m									
1.0 GHz	_	1251 pt	5		30	0.0 MHz/			4.0 GHz
							Measuring		24.01.2020 13:08:38

Radiated Emissions, 1000 -4000 MHz, 2402MHz, EUT H1, VP



MultiView	Spectrum	1 🔸 🗙	Spectrum 2	2 ×	:						-
Ref Level 97 Att TDE "3115ECC"	.00 dBµV/m 10 dB <b>S</b> "	WT 3 ms	RBW 1 MHz VBW 3 MHz N	<b>Iode</b> Auto	Sweep						
1 Frequency S	weep									●1Pk Ma	ax e 2Rm Max
90 dBµV/m					ol	91 V				M1[1]	86.28 dBµV/m _2.44000 GHz
80 dBµV/m											
70 dBµ∨/m											
60 dBµV/m−−−−											
FCC 15 209 QP AV 50 dBµV/m								, washing the second	montematical	-	and the second
HO dBUV/m MMMMMMMmmmm MMMMMMmmmmm 20 dBuV/m	annon han an hair an an hair a	verseland and	annot an annother	and and a start	han marine	NAN-	and with the for a strategic of the second strategic o	and the second second second second second second	www.alec	eroretyself versedaty generality	a de reported fast with a provinsion of the second states of the second s
20 dBµV/m											
10 dBµV/m											
0 dBµV/m				-1							4.0.01
1.0 GHZ			12:	or pts			30	JU.U MHZ/	Moscuring		4.0 GHZ
									measuring		12.44.20

Radiated Emissions, 1000 -4000 MHz, 2440MHz, EUT H1, HP

MultiView	Spectrum	🔆 🗙 Sj	ectrum 2	×						•
Ref Level 97.00	dBµV/m	■ RB¥	/ 1 MHz	_						
<ul> <li>Att</li> </ul>	10 dB 🛚 SV	VT3ms VBV	/ 3 MHz Mode	Auto Sweep	р					
TDF "3115FCC"	en								o tPk M	ax e 28m Max
	-OP								M1[1]	88.60 dBuV/m
					M1					2.44000 GHz
90 dbp 9/m					T.					
80 dBµV/m───					+					
70 dBµV/m					_					
60 dBµV/m										
500 15 000 00 AU						L				
50 dBµV/m										
									1	and and a how when
				محمد معالم	ي ا	warm Mohal Harehander Month	Mun many here and	manthealthousen	Mr. Margarel M. Commer Calific de Martino	added and which have been
40 dBµV/m	matrix	mpmular manager	and the stand of t			and the buddente	We when the all the man and the set	where and where we are a set of the second	Hills Acares	AND AND A THE AND A T
Millimboldurrenamen	workely mention	Mybrid Made Marker the	war walker with the second	trong and the second						
30 dBµV/m										
00 ID 11/										
20 dBµV/m										
10 dBµV/m										
U авµv/m										1.0.5
1.0 GHz			1251 pt	5		30	0.0 MHz/			4.0 GHz
								Measuring		24.01.2020 13:42:31

Radiated Emissions, 1000 -4000 MHz, 2440MHz, EUT H1, VP



MultiView	Spectrum	× Sp	ectrum 2	×						
RefLevel 107	7.00 dBµV/m	• RB	W 1 MHz							
Att	10 dB 🛚 S	WT3ms VBV	🗱 3 MHz 🛛 Mode	e Auto Sweej	р					
TDF "3115FCC"	woop								o t Dk M	av <b>A</b> 2 <b>Pm</b> May
I Frequency St	weep								0 IPK M	89.10 dBuV/m
100 10 11/1									(int[1]	2.47840 GHz
100 авµv/m										
					M					
90 dBµV/m					-1					
80 dBuV/m										
70 dBµV/m										
60 dBµV/m					-					
FCC 15 209 QP AV										
50 dBuV/m										
30 dbp v/m										and an another
						mannehalter	Amora hour have all	habertownowwhen	and the second second second	the mandalachilder
4D dBµY/m		multimenoution	and the second states and the second states and the second s	Ladian when the second		and the application of the stand of the	Munnow Hilling govern	Kanger Barry Brown Brown W	here where the second	and a long the state of the state
Marhendlylinkarson	hinde-to-tolkash-wante-tol/w	mallestration-stration	alayawa Minglawahaha	enter al a second contraction and a second secon	(1944) ·					
30 dBµV/m	and the second									
00.40.416.										
20 dBµv/m										
10 dBµ∨/m										
1.0 GHz		1	1251 pts	5		30	0.0 MHz/	1	1	4.0 GHz
								Measuring		<b>24.01.2020</b> 11:17:01

Radiated Emissions, 1000 -4000 MHz, 2480MHz, EUT H1, HP

MultiView	Spectrum	× sp	ectrum 2	×						•
Ref Level 107.	00 dBµV/m	• RE	W 1 MHz							
<ul> <li>Att TDE "3115ECC"</li> </ul>	10 dB <b>S</b>	WT3ms VB	WF3 MHz Mode	e Auto Swee	ep					
1 Frequency Sw	/eep								o 1Pk M	ax 🛛 2Rm Max
									M1[1]	89.97 dBµV/m
100 dBµV/m───										_2.47840 GHz
					м	L				
90 dBµV/m					-1					
80 dBµV/m					_					
70 dBµV/m					_					
60 dBuV/m										
FCC 15 209 OP AV										
50 dBuV/m										
30 ubpv/m										
			والمستعد فالالتدارية	- an in march	when	aproved low more the	wownwarden warmhe	where and the first and the	when all when the second and	adrahuman white
AU abuv/m	multimeter	www.www.www.whicher.whicher	Lassimultipulation	manufactor	الريدر	gor- der to report whether	w Mypersent Marth Bater and	uhaan ahii waxaa ahii waxaa ka k	AD APPACATION OF A COLOR	
MMMMMmmmmm	mandulumeteerspan	where the stand of the second stand stand of the second stand st	Web Mercelet							
30 dBµV/m───										
20 dBµV/m										
10 dBµV/m										
1.0 GHz		-	1251 pt	s		30	0.0 MHz/			4.0 GHz
								Measuring		24.01.2020 11:15:03

Radiated Emissions, 1000 -4000 MHz, 2480MHz, EUT H1, VP



MultiView	Spectrum	🔆 🗙 🛛 SI	pectrum 2	×						-
Ref Level 10 Att TDE "3115ECC	17.00 dBµV/m 10 dB <b>5</b> "	● RB SWT3 ms VB	WIMHZ WI3MHZ Mode	e Auto Swe	еер					
1 Frequency S	Sweep								●1Pk M	ax 🛛 2Rm Max
100 dBµV/m									M1[1]	72.46 dBµV/m 2.40170 GHz
90 dBµV/m										
80 dBµV/m					W 1					
70 dBµV/m−−−−					Y					
60 dBµV/m										
FCC 15 209 QP AV										
50 dBµV/m									a la a contra construction	a lada for the second
40 dBµV/m Muhamanani	What maken Annan W	yn verniger wetriger	mound and and a server	med <u>missional</u>	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	an war and the second	www.committle.com	and the second state of th	and a strange of the second	northermonia and the second second
<b>՝՝∜</b> Անիանինինինինինին 30 dBµ∨/m———	Uppethologia and the	-(WAR where also a the second								
20 dBµV/m										
10 dBµV/m−−−−										
1.0 GHz		•	1251 pt	S		30	0.0 MHz/			4.0 GHz
								Measuring		24.01.2020 12:00:42

#### Radiated Emissions, 1000 -4000 MHz, 2402MHz, EUT H2, HP

MultiView	- Spectrum	关 🗙 Sp	ectrum 2	×						
RefLevel 10	7.00 dBµV/m	• RB	N 1 MHz							
• Att	10 dB 5	SWT 3 ms VBV	VI 3 MHz Mode	e Auto Swe	еер					
1 Frequency S	weep								o1Pk Ma	ax e 2Rm Max
									M1[1]	87.31 dBµV/m
100 dBµV/m										2.40170 GHz
00 dBuV/m					41					
50 abp 1/11					Y					
80 dBµV/m										
70 dBµV/m										
60 dBµV/m										
FCC 15 209 QP AV										
50 dBµV/m										
								all and the second	un prince del tra	mound
40. dBuV/m			Marken Margar and when the	mednummen	maty	and the second second	www.www.www.	and a second	wind which a subscription	paret here the state of the second
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WWWWWWWWWWWW	handraften marken	WARDWAP ST								
so uspaym										
20 dBµV/m										
10 dBµV/m—										
1.0 GHz			1251 pt	5		30	0.0 MHz/			4.0 GHz
								Measuring		24.01.2020 12:58:46

### Radiated Emissions, 1000 -4000 MHz, 2402MHz, EUT H2, VP



MultiView	Spectrum	<b>★</b> × ∶	Spectrum 2	×						•
Ref Level 97. Att TDF "3115ECC"	00 dBµV/m 10 dB <b>S</b> V	● RI WT3ms VI	BW 1 MHz BW 3 MHz Mode	Auto Swee	р					
1 Frequency S	weep								●1Pk M	ax 🛛 2Rm Max
90 dBµV/m									M1[1]	76.96 dBµV/m 2.44000 GHz
80 dBµV/m					<u>м1</u> Т					
70 dBµV/m										
60 dBµV/m										
FCC 15 209 QP AV 50 dBµV/m					I.M. I.M.	an warman and a stranger	mounder	unanallanananany	homemore	agetungenfronnulle
40 080/0/m WWW/WW/whenwer WWW/WW/whenwer 30 dBµV/m	an and the and a second	an some the section	hand the provident of the second	ndathinadeed	villiere	and the second second second	with with a start of the start of the	and and a france way and a frank of the fran	an ar fair an	
20 dBµV/m										
10 dBµV/m										
0 dBµV/m										
1.0 GHz			1251 pt	s		30	JU.U MHZ/			4.0 GHz
								Measuring		13:51:02

Radiated Emissions, 1000 -4000 MHz, 2440MHz, EUT H2, HP

MultiView = Spectrum	💥 🗙 Spectrum 2	×					•
Ref Level 97.00 dBµV/m	• RBW 1 MHz						
• Att 10 dB SW	WT3ms VBW3MHz Mode	Auto Sweep					
TDF "3115FCC"							
I Frequency Sweep				1			ax ⊜ 2Rm Max
		M1				MILI	2 44000 GHz
90 dBµV/m							2.44000 0112
80 dBµV/m							
20 dBuV/m							
60 dBµV/m							
FCC 15 209 QP AV 50 dBuV/m							
							1. Alice manufacture
	A 10	In a startman and	and a still warmen www.	affronce and the seas	with month march	matter	- Allen Martine Martine
40 dBUY/m-	What and marked and and the second	and and a sub-state and	ball barrow Marson	and when a the second and a second and the second a	appendent and a start of the	Jonara Casalya Manara antara	and a company of the
WWWWWWWWWWWWWWWWWWWWWWWW	and many marked and and and and and and and and and an	Note: a state of the second second second					
30 dBµV/m							
20 dBuV/m							
10 dBµV/m							
0 dвµV/m							
1.0 GHz	1251 pt	S S	30	0.0 MHz/	I	1	4.0 GHz
~				~	Measuring		24.01.2020

Radiated Emissions, 1000 -4000 MHz, 2440MHz, EUT H2, VP



MultiView	Spectrum	🔸 🗙 S	pectrum 2	×						•
Ref Level 97 <ul> <li>Att</li> <li>TDE "3115ECC"</li> </ul>	.00 dBµV/m 10 dB <b>S\</b> "	● RBV WT3ms VBV	V/1 MHz V/3 MHz Mode	Auto Swee	:P					
1 Frequency S	weep								O1Pk M	ax 🛛 2Rm Max
90 dBµV/m									M1[1]	78.26 dBµV/m _2.47840 GHz
80 dBµV/m					M	1				
70 dBµV/m										
60 dBµV/m										
FCC 15 209 QP AV 50 dBµV/m										
40 dBµV/m		1 AND THE REAL PROPERTY OF		exaministration	mm	Unwinderation	a production the second	manna an para an an	mar mar marken	a hater a sprate and
YMMMMMMMMMMM WWWWMMMMMMMMM 30 dBuY/m	an ann an ann ann ann ann ann ann ann a	human and the	when million added and	www.analy	الوريهم	Wennesserver	Walke Man a stress of the state			
20. dBuV/m										
10 dBuV/m-										
о ивµv/m										
1.0 GHz			1251 pt	5	_	30	0.0 MHz/			4.0 GHz
								Measuring		24.01.2020 13:29:55

Radiated Emissions, 1000 -4000 MHz, 2480MHz, EUT H2, HP

MultiView = Spectru	m 🕂 🗙 Spectrur	n 2 🗙					•
Ref Level 97.00 dBµV/m	RBW 1 MHz						_
● Att 10 dB :	SWT 3 ms VBW 3 MHz	Mode Auto Sweep					
TDF "3115FCC"							av e 28m Mav
		1	41			M1[1]	92.38 dBuV/m
			Ť				2,48080 GHz
90 dBp 7///							
80 dBµV/m							
70 dBµV/m							
60 dBuV/m							
FCC 15 209 QP AV							
50 dBµV/m							
				when the all with my ment	werther who was with	www.www.whend	his full hit and a service and and
,40 dBµV/m	Marchard and more with the state of the former	Al gladder and a set of a star water and a second	Le un the how with the	hadron and a star warden	have been when the set	لاتها فهتهمين فتسقط ومعروفهم	all ments for the work of the second
Whether margines and a some a show the method	muniputerinterenter marchidow	annallandrand alternation and a statistical and	Peterlanon warmen .				
30 dBµV/m							
20 dBuV/m							
10 dBµV/m							
0 dBµV/m							
1.0 GHz	· · · · · ·	251 pts	30	0.0 MHz/			4.0 GHz
					Measuring		<b>44.01.2020</b> 13:27:58

Radiated Emissions, 1000 -4000 MHz, 2480MHz, EUT H2, VP



MultiView	Spectrum	×s	pectrum 2	<mark>★</mark> ×					-
Ref Level 80.0	)0 dBµV/m	- R	BW 1 MHz						
Att	10 dB 😽	VT60ms V	BW 3 MHz Mode	e Auto Sweep					
PA TDF "3117FC	C"							O I DL M	ev e ODee Mev
1 Frequency Sw	veep								ax UZRITI Max
								MILIJ	17 52520 GUz
7E dBuV/m									17.55520 012
/5 UBH V/III									
70 dBµV/m									
65 dBµV/m									
60 dBµV/m			_						
F&& \$\$H\$000									M1
									In the second
50 dBµV/m									AN AN THE
							الد الدير	المليه الملالي المله	N # 1
						a second to be	. And and All And	and the state of the	l V
45 dBµV/m		مدأهانا الدرر حدارين	when the matching of the state	HUK A AULA A MA	Mitt West Allerad Mill	A MARKAN AND A MARKA			<b>7</b>
1. March March 1	had an all the part of the part	Madda and the sec	Anada Manda in Mile, si Me.	canto contra acta a	a ward adaut	1 1 1 <b>1</b>			A MARY
40 dBuV/m	udarina da interneti da							i sta	W Y MW
							1. Alway	Mar My Marine	IV
	1			المحمد والمحور بالرز المعلم	hallen an	رياور بالالاليص لاجمليواليس الملا	Ward were wird t	<b>"</b> `↓	L R
35 dBµV/m	King and Mary ANTA MAR	1. MAY 4. 14 1 10 100 100 100 100	Martin and the second second	which and which	war hor for the	- · · · · · · · · · · · · · · · · · · ·			
Ward and the state of the state	Matauthous and h M.								
						<u> </u>			
3.0 GHz	-		2501 pt	s		1.5 GHz/			18.0 GHz
							Measuring		24.01.2020 15:28:45

Radiated Emissions, 3000 -18000 MHz, 2402MHz, EUT V, HP



Radiated Emissions, 3000 -18000 MHz, 2402MHz, EUT V, VP



MultiView = Spectro	um 🔸 🗙 Spectrum 2	×					•
Ref Level 80.00 dBµV/m	• RBW 1 MHz	Auto Swoop					_
PA TDF "3117FCC"	SWI COTIS VEW STRINZ MODE	: Auto Sweep					
1 Frequency Sweep						o1Pk M	ax 🛛 2Rm Max
						M1[1]	53.69 dBµV/m
75 dBµV/m							17.69710 GHz
70 dBµV/m							
65 dBuV/m							
60 dBµV/m							
F&5: \$\$120m							MI
50 dBuV/m							March March
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45 dBµV/m	to barren approximate and a decontract of the de both	M.N. / WWW / WWW / WWW	white half and have have the				10414.
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25 dBuV/m	a construction on the	men when he are	11 Jan and the second	www.www.www.	and a second and the second	white ways a second	V.
where a stranger and the states and the	Windowsking and an and a second s	™ W T U		v			
3.0 GHz		i	1	.5 GHz/	I		18.0 GHz
~					Measuring		24.01.2020 14:15:00

Radiated Emissions, 3000 -18000 MHz, 2440MHz, EUT V, HP



Radiated Emissions, 3000 -18000 MHz, 2440MHz, EUT V, VP



MultiView	Spectrum	🔆 🗙 Sp	ectrum 2	×					
Ref Level 80	.00 dBµV/m	RB <sup>1</sup>	🕊 1 MHz						
Att DA TOF "3117F	10 dB <b>SV</b>	VT 60 ms VB	N/3 MHz Mod	e Auto Sweep					
1 Frequency S	weep							o1Pk Ma	ax e 2Rm Max
								M1[1]	53.26 dBµV/m
									17.72110 GHz
75 dBµ∨/m									
70 dBµ∨/m									
65 dBuV/m									
00 000000									
60 dBµV/m									
F&& \$\$H\$20/97									M1
									line i m
50 dBµ∨/m									hand the second second
								الفعلا الوريساني المراجع	
						while we are a second	And a how the start of	Martin Martine	V V
45 UBµV/m	e la castera	L dament that the state	we statight with the	Mar Marken	What was a straight was	Carden Mar Martines Pract		r	مر بر <b>ا</b> لم
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40 dBµ∨/m	,						ا الله الله	h. Mart	
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35 dBµ∨/m	المعالين الم	المراجع والمراجع والمراجع والمراجع والمراجع	A LAND AND A LAND	man and a part	and a state of the second state and the		Y	чи 	
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3.0 GHz	-		2501 pt	s	1	L.5 GHz/			18.0 GHz
							Measuring		24.01.2020 16:31:31

Radiated Emissions, 3000 -18000 MHz, 2480MHz, EUT V, HP



Radiated Emissions, 3000 -18000 MHz, 2480MHz, EUT V, VP



MultiView	Spectrum	×s	pectrum 2	<mark>★</mark> ×					-
Ref Level 80.0	)0 dBµV/m	- R	3W 1 MHz						
Att	10 dB 🛚 SV	VT 60 ms VI	3W 3 MHz Mod	e Auto Sweep					
PA TDF "3117FC	C"								
1 Frequency Sw	veep			1	1		1	O I PK M	ax ⊜2Rm Max
								MILI	53.40 dBµV/m
									17.90100 GHz
75 dBµV/m									
70 dBuV/m									
65 dBµV/m									
60 dBµV/m									
c£5c dBi dom									M
0013/205									1.1
									1 July Make
50 dBµV/m								11 . AL 4	
							Also withild	ALL AND A	17. 🎢 🐪 👘
4E dBuV/m				يلل الم الم		the all of all in a	detailing they we		l ¥
45 dop v/m	ali ta aca	Later the William	Mar Miller Aller of the for	MMU AWYYUMAY (1,1074	him and him was	ana alan Antra Antra An		1	ي الله ال
hum bulk A Ward W	HIN WAR AND A CAL	A hand the second states are	a hadda a safa film da afar	- M - 1 - M	1.00	· · · · · · · · · · · · · · · · · · ·			۳۳٬۳۳۲ العربي ا
40 dBµV/m	1 J - 1							4 Mar M	
							. Muhmuk	WMAN WANT - TT	[M]
	1			he water to an	للعقديد بمحطقها	Man With Hautiness.	A A A A A A A A A A A A A A A A A A A	r ∿r	
35 dBµV/m	and a have a set of a set	When they something	-setting and the set of the set o	MAN AN AN.	ALL AND ADARDY				
water and the south of the south	WWW. WWW WWWW	[ <b>'</b> ' ' ' '							
3.0 GHz	-		2501 pt	s	1	L5 GHz/			18.0 GHz
							Measuring		24.01.2020 15:22:40

Radiated Emissions, 3000 -18000 MHz, 2402MHz, EUT H1, HP



Radiated Emissions, 3000 -18000 MHz, 2402MHz, EUT H1, VP



MultiView	Spectrum	🔆 🗙 Sj	ectrum 2	×					
Ref Level 80	.00 dBµV/m	= RB	W 1 MHz						
Att	10 dB 😽	VT 60 ms VB	W 3 MHz Mod	e Auto Sweep					
PA TDF "3117F	CC"								
1 Frequency S	weep	1						O1Pk M	ax ⊜2Rm Max
								M1[1]	52.53 dBµV/m
									17.58920 GHz
75 dBµV/m									
70 dBµV/m									
65 dBuV/m									
05 000 17/11									
60 dBuV/m									
F&& dBH20/90									
									<b>V</b>
50 dBuV/m									All ANY WY
							<b>1</b> . 1	ALL AND A	n with it
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45 dBµV/m			1	the contraction of the	tall had been with	MAN AND A LINE A	HAMPIN THUS T	and all the second s	,
and the second second	have an ideal of the bo	a developed a property of the	en an	A MAN WAR AND A M.C.	ALL MINAMA MANA	A file the second file	ľ.		. Atread
hally advisition of	AMAM AND AND AND AND	and the second s	1.4						L MUN 1
40 d̀Bµ∨/m							140.	N. MANN	
							the well and the well of the state of the st	where it was	V
		1. 1. Mar		the alteration of a case	فيتحصبهم والملاح والمراجب والمراجب المتحالية	Martin Martin Martin		Ж,	
35 08µV/m	kursk when the	a Www. Aller a way a ware and	Contract of the state	******	And Address				
ANT AND AN AND AN AND AND AND AND AND AND A	THE OWNER AND A					1			
3.0 GHz			2501 pt	s	1	L.5 GHz/			18.0 GHz
							Measuring		24.01.2020 14:07:33

Radiated Emissions, 3000 -18000 MHz, 2440MHz, EUT H1, HP

MultiView = 5	Spectrum	🔆 🗙 Sp	ectrum 2	×					•
Ref Level 80.00 c Att PA TDF "3117FCC"	dBµV/m 10 dB <b>SW</b> `	● RBV T 60 ms VBV	¥IMHz ¥3MHz Mode	e Auto Sweep					
1 Frequency Swee	ер							o1Pk Ma	ax 🛛 2Rm Max
								M1[1]	53.90 dBµV/m 17.64910 GHz
75 dBµV/m									1710 1510 0112
70 dBuV/m									
65 dBµ∨/m									
60 dBµV/m									
F&5: \$\$ #\$ #20/\$m									M1
									1 hourself file
50 авµv/m								haller white white	V
45 dBµV/m		1 1 44	an a litter an a Marcal	the set to a when a set to a set of	al Hills in a sail show	How Martin His List in	ANALY AND AND	Malacal Why.	V
and remergineral provides have	hypertransitive	and the states and	htere and the second	wather and	andra Hallan Mahanalahan .	r - minimum y		نى د	a providently
40 α8μV/m			i, and the New Y	Mr. M. M. March	utivet draw base see bleve	erbert and added to a	warmen warman	where we get the set of the set	$\mathcal{V}$
Warth Martin Martin	how was at the start	No. A contraction (International Contraction of the	www.www.www.	+W+		w			
3.0 GHz			2501 pts	6	1	.5 GHz/			18.0 GHz
~						···,	Measuring		<b>24.01.2020</b>

Radiated Emissions, 3000 -18000 MHz, 2440MHz, EUT H1, VP



MultiView	Spectrum 😽	× Spectrum 2	×					
Ref Level 80.00	) dBµV/m	• RBW 1 MHz						
<ul> <li>Att</li> <li>DA TDE "3117ECC"</li> </ul>	10 dB <b>SWT</b> 60 m	s VBW 3 MHz Mode	e Auto Sweep					
1 Frequency Swe	еер						o1Pk Ma	ax e 2Rm Max
							M1[1]	53.84 dBµV/m 17.60120 GHz
75 dBµV/m								
70 dBµV/m								
65 dBµ∨/m								
60 dBµV/m								
F&E \$\$12000								M1
50 dBµ∨/m							in Antonia	N. AMARYMAN
45 dBuV/m			har I ili anno del ne calla		and an in the second	where Man while	Jowik yn mwyr a mi'r	¥
Alexander of the and the	photo wild an an draw and a sub-	Myleversed an golder and all the second	a Malada a Maria	arrightydd yn arafar y	an sa ang saka sakangkangkangkangkangkangkangkangkangkan	pr 1		a water water water
25 dBuV/m		a transformed a straight of the	un nameda solo	home another her	All and the second second second	pan way and you with the	why Municipality	V
with hour and the second of th	Northern and he was a second	the second state and second and the supplet.	*w• • • • •		v			
3.0 GHz	1	2501 pts	;		1.5 GHz/		1	18.0 GHz
						Measuring		24.01.2020 16:25:36

Radiated Emissions, 3000 -18000 MHz, 2480MHz, EUT H1, HP

MultiView 🎫 Spectrum	n 😤 🗙 Spectrum 2	×					•
Ref Level 80.00 dBµV/m	● RB₩ 1 MHz						_
Att 10 dB 5 PA TDF "3117FCC"	SWT 60 ms VBW 3 MHz Mode	e Auto Sweep					
1 Frequency Sweep						o1Pk Ma	ax 🛛 2Rm Max
						M1[1]	52.61 dBµV/m 17.62510 GHz
75 dBµV/m							
70 d0U/m							
65 dBµV/m							
60 dBµV/m							
F&5: gBH20/gm							M1
50 dBµ∨/m							AND
				na Bheilean an s	What when the states	When when it had	V T
	MANNENSER Marked makering ber him to be a the strategict	MAN MANY MANY	hinten hjelligt de herte de	anandan (ariyan) (a			a way way
		the who who was	and the second distance	Martin Martin Martin Martin	man who wanted	with the second s	V
uphrater and a contraction of the second and the se	with manager and a set of a set of the set of the set of the set	We way					
3.0 GHz	2501 pt	S	1	.5 GHz/			18.0 GHz
7				~	Measuring		44.01.2020 16:23:39

Radiated Emissions, 3000 -18000 MHz, 2480MHz, EUT H1, VP



MultiView	Spectrum	×s	pectrum 2	<mark>∗</mark> ×					-
Ref Level 80.0	00 dBµV/m	• R	BW 1 MHz						
Att	10 dB SV	VT 60 ms V	BW 3 MHz Mod	e Auto Sweep					
PA TDF "3117FC	:C"								
1 Frequency Sv	veep				1	1		O IPK M	
								MILI	53.20 dBµV/m
									17.62510 GHz
75 dBµV/m									
70 d0.00/m									
70 ubµv/m									
65 dBu∀/m									
60 dBµV/m									
F&& 48H20/gn									Mi
									L. WWW
								1 . 1. 144. 14	ML DU MAR
							L. A. L. M. Walker Mark	with a prover we	117
45 dBµ∨/m		1.1.11	a hore alle a	Add to a franchil of water	A Land I and with	What the has been a	The state of the second se	the state of the s	Y
	L. Hall I. L. March H. M.	Latit Martin Maria	had a land that all the	MATCH MAR. AM	A LEAR WANTER AND A LEAR	an in the standard $\Lambda$	ſ		. Market
May An And Markey Print	Hitelahid Hitelahara Alan, a Al. 1	Accessed							L MANNY
40 dBμV/m							ينابذ تدتم	11 Mar 1 Mar 10	ſ\ <i>M</i>
							had been when the	WANNA PART	I V
25 dBuV/m	1	I S A S MASS		May AMALANA MA	Harrison and a second stand	1. Martin Walt & Carlon 147 1 1	And the second s	Ŷ	
so uppym	خدوا والمناجر والمراجر والمراجع والمراجع	White days a front of	wall the wall of the wall	, V ,		V			
**************************************									
					<u> </u>				10.0.611
3.0 GHZ			2501 pt	S	]	LIS GHZ/			18.0 GHz
							Measuring		24.01.2020 15:25:22

#### Radiated Emissions, 3000 -18000 MHz, 2402MHz, EUT H2, HP



Radiated Emissions, 3000 -18000 MHz, 2402MHz, EUT H2, VP



MultiView	Spectrum	🔆 🗙 Sp	ectrum 2	×					-
Ref Level 80.	00 dBµV/m	RB	W 1 MHz	Auto Curren					
PA TDE "3117EC	10 db 54	VIOUMS VB		e Auto Sweep					
1 Frequency Sv	weep							o1Pk M	ax 🛛 2Rm Max
								M1[1]	52.87 dBµV/m
									17.94900 GHz
75 dBµ∨/m									
70.10.11/									
70 авµ∨/m									
65 dBµ∨/m									
60 dBµV/m									
c&5c dBudofm									
rec 98/209/									M1
									in Manual
50 dBµ∨/m								فبرا فبرر	AL AN PROPERTY 1
							والمطلبين ليكلفون الم	made White Manual P	A MARINE CONTRACT
45 dBuV/m				Least to be the last to a state	and the last has the	meter iller to t	AND A WAY AND		Y
	Like and Alar	and Anna and the south the south	Haller Haller and March	WWWW YW	and the first of the state of t	Arder And and Article and			Alman was
N. M. Martin W. M. Martin M. M.	Aabudd Malaalik Mar, sa Nar,	adhar allamik in dh' i t	ands i the stands.						man 1
40 dBµ∨/m								W. WAY	
							ياليكم معجم الاستان المجاهر	and the second second	I V
25 dBuV/m	1		I COMP. WAR &	HAN WALKER & MARK	the of light with other or Martin	a and the second and the	ANA CALL	v	
a shi matata Winter	realistic porting of the first	and the state of the state of the second second	When a way	· · · · · · · · · · · · · · · · · · ·					
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3.0.6Hz			2501 pt/		1	5 GHz/			18.0.64-
5.0 012			2501 pt	3					24.01.2020
							Measuring		14:02:20

Radiated Emissions, 3000 -18000 MHz, 2440MHz, EUT H2, HP

MultiView 📑 Spectrum	n <mark>→ X</mark> Spectrum 2	×			
Ref Level 80.00 dBµV/m	• RBW 1 MHz	_			
Att 10 dB S     PA TDE "3117ECC"	WT 60 ms VBW 3 MHz Mode A	uto Sweep			
1 Frequency Sweep				O1Pk M	lax 🛛 2Rm Max
				M1[1]	52.82 dBµV/m
75 dBµV/m					17.82310 GHz
70 dBµV/m					
65 dBµV/m					
60 dBµV/m					
F&& \$\$BH2000					M1
50 dBuV/m					WHAT WANT
				me were un marcher the	AN A THINK .
45 dBµV/m	have started	the Added Martin and the second and	Miller Annield A Land	Mar. Manual Manual L	ÿ
han had a state of the state of	nte standarde fan te flander de tekningerekker ander en flander fan de flander fan de flander fan de flander f	AN LUN WAL	and the second secon		in any man
40 dBµV/m				and the second and the second and a second a s	
35 dBµV/m	the second star and the second star with the second star and the	Ward and the print from the program war and	mulling and way and a fait -	TV:	
managed a principal and the second of the	when the set of the se	T T T			
3.0 GHz	2501 pts	1	.5 GHz/		18.0 GHz
7				leasuring	24.01.2020 14:00:23

Radiated Emissions, 3000 -18000 MHz, 2440MHz, EUT H2, VP



MultiView	Spectrum	🔆 🗙 🛛 Sp	ectrum 2	×					
Ref Level 80	.00 dBµV/m	RB	W 1 MHz						
<ul> <li>Att</li> </ul>	10 dB 🛭 SV	VT 60 ms VB	W 3 MHz Mod	e Auto Sweep					
PA TDF "3117F	CC"								av e 2Pm Mav
I frequency a	меер							M1[1]	52.79 dBuV/m
									17.81710 GHz
75 dBµV/m									
70 d0.00/m									
70 dbµv/m									
65 dBµV/m									
60 dBµV/m									
₣€£ ⊈₿µዸዕ⁄መ									M1
									. MAN IN
50 dBµ∨/m								line of	
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45 dBµV/m		ووالتعاور ويتبار المرادية	an in the last the second	MA MANDAL MA	WAR while adams with the Mar	A WAR A REAL AND A REAL		<u> </u>	
A MANAMANA AND	and an and the providence	A WARMAN AND A STORE	naetharan , tattar a bh	and the second of	1. a the dist.				h munit
40 аврулл				المراجع المراجع		العادية الالالمحفو والمحادث والمع	and and the start and and the start and the	war war war	V.
35 dBµV/m	المريكة الالتان	يعدينا والمتحم والأواس ومداري فرالل	مورد المراكمين <u>الأرطالية المحمور</u> ية	MAN AN AN AND AND AND AND AND AND AND AND	Martin Carenty are all and the second	a the second	•		
the perty materia and the area forth	www.www.www.www.		, w						
3.0 GHz	1	1		s	1	.5 GHz/	I	I	18.0 GHz
							Measuring		24.01.2020 16:36:40

Radiated Emissions, 3000 -18000 MHz, 2480MHz, EUT H2, HP



Radiated Emissions, 3000 -18000 MHz, 2480MHz, EUT H2, VP



MultiView	Spectrum	ı							•
Ref Level 87.0 Att TDF "638FCC"	00 dBµV/m Of 10 dB SV	f <b>set</b> -20.00 dB ₩T 32 ms	RBW 1 MHz VBW 3 MHz	Mode Sweep					_
1 Frequency Sv	weep								o1Pk Max
80 dBµV/m							MI	[1]	38.64 dBµV/m 25.59640 GHz
70 dBµV/m									
60 dBuV/m									
50 dBuV/m									
									M1
Mummulante	Mannarethness	Muserence	nanderitente	www.whenever	white management	yan watar watar watar	alternation	Muhawaha	monduration
30 авруут-									
20 авµ∨/т									
10 dBµV/m									
0 dBµ∨/m									
-10 dBµV/m									
18.0 GHz		1		s	80	0.0 MHz/	1	1	
	~					~	Measuring		12.03.2020 14:52:34

Pre-scan, 18 -26 GHz, 2440MHz @30cm



MultiView	Spectrum	× s	Spectrum 2	×					*
Ref Level 67. Att PA TDF "3117F0"	00 dBµV/m 10 dB <b>S</b> N	WT 1.01 ms	RBW 1 MHz VBW 3 MHz M	ode Auto Sweep					
1 Frequency Sv	weep								o1Pk Max
								M1[1]	49.99 dBµV/m
65 dBµV/m								4.	80444000 GHz
60 dbuV/m									
оо авру/ш									
55 dBuV/m									
					M1				
50 dBµV/m				SUN LEVE	a wanter the				
				And the second second second second	Lower work	-A.0			
			WMW W			wy ma			
45 dBµV/m			n.N.			w.			
In Amount in the hold	lumphole walking	1 Bear Ash de Born	rullion			mm	H.M. Jan M. Managara at	Mary Mary Mary	Ammerillard
40 dbuV/m	and be a substitution for the	A Montha a Mar and	61 T- 00				Les mart fritter	war yo the other of a	and a fear of the second
40 uвµv/m									
35 dBuV/m									
30 dBµV/m									
25 dBµV/m									
00 d0.42/m									
20 uoµ*/m									
		1	1001	1	<b>1</b>			L	
UF 4.804 GHZ			1001 pt	.5	1	.iu MHZ/			span 10.0 MHZ
							Measuring		24.01.2020

#### Radiated Emissions, 4804 MHz, 2402MHz, HP

MultiView	Spectrum	1 X Spe	ectrum 2	×					-
Reflevel 67	- 00.dBuV/m	• R	RW 1 MHz						
<ul> <li>Att</li> </ul>	10 dB <b>S</b>	WT 1.01 ms V	BW 3 MHz Mo	de Auto Sween					
PA TDF "3117F	CC"								
1 Frequency S	weep								o1Pk Max
65 dBuV/m								M1[1]	51.68 dBµV/m
								4.	87963000 GHz
60 dBµV/m									
55 dBµ∨/m									
				M1					
				mountering	momente				
50 dBµV/m			N <sup>ext</sup>	r***	and the	J.			
			Mart			"Who			
45 dBµV/m			al when			V MA			
weeks he weeks was a	Land Margaretter	March 10 miles	work			MAR HAR	Appendia to	. the ward as	ent ratelly really
Non-DR WANNER WILLA	han and and a the other	ante da . Ante A . MANA ante	r N				n hatuantaso da A.C	An Alisani di malayan sa	And A MAILER wood
40 ubpv/m									
35 dBµ∨/m									
20. dBuV/m									
50 dbp v/m									
25 dBµ∨/m									
20 dBuV/m									
Co 30p./									
CF 4.88 GHz	1	1	1001 pts	5 5	1	.0 MHz/	1	S	pan 10.0 MHz
	~						Measuring		24.01.2020
									14:26:46

Radiated Emissions, 4880 MHz, 2440MHz, HP



MultiView	Spectrum	×	Spectrum 2	×					<b>.</b>
Ref Level 67.00	) dBµV/m		• RBW 1 MHz						
• Att	10 dB <b>SV</b>	<b>VT</b> 1.01 ms	VBW 3 MHz N	Node Auto Sweep					
PA TDF "3117FCC	"eep								o 1 Dk May
1 requency Swe	сер					1		M1[1]	49 49 dBuV/m
65 dBµV/m								4.	95955000 GHz
60. dBuV/m									
55 dBµV/m									
50 dBuV/m				M1					
				whom makers	mound				
				N	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	140 <sub>00</sub>			
45 dBµV/m			Mar			My .			
n Wahamad mark	Mushamara	Mannhouse	MAMMANN			"May have	moundar	month which the	Mr. Marman
40 dBµV/m	1.1. 1.4								
35 dBµV/m									
30 dBµV/m									
or double									
25 dBµV/m									
20 dBµV/m									
CF 4.96 GHz	_		1001	ots	1	.0 MHz/		5	Span 10.0 MHz
~							Measuring		24.01.2020 16:49:10

Radiated Emissions, 4960 MHz, 2480MHz, VP



### 3.9 Power Spectral Density (PSD)

FCC part 15.247(d) ISED Canada RSS-247 Issue 2, Clause 5.2 (2) Measurement procedure: ANSI C63.10-2013 Clause 11.10 Test Results: Complies

#### Measurement Data:

The measurement procedure PKPSD described in ANSI C63.10-2013 was used.

Carrier Frequency	Measured Power Spectral Density (dBm/3kHz)
2402 MHz	-20.1
2440 MHz	-18.6
2480 MHz	-16.2

The measured values with 10kHz RBW are corrected by a Bandwidth Correction Factor of -5.2 dB.

#### **Requirements:**

The Power Spectral Density of a Digital Transmission System shall be no greater than +8 dBm in any 3 kHz band No requirements for Frequency Hopping Systems.





#### PSD, 2402 MHz

MultiView - Spectrum	X Spectrum 2 X	Spectrum 3 X Spectr	rum 4 🗙	•
Ref Level -10.00 dBm	Offset 10.60 dB ● RBW 10	kHz	_	
Att 10 dB	SWT 419 µs (~7.9 ms) VBW 30	kHz Mode Auto FFT		
1 Frequency Sweep		M1		●1Pk Max
		. 🗶 🗌		M1[1] -13.41 dBm
		$\lambda \sim \lambda$		2.43994760 GHz
-20 dBm-		A. ALVIN		
-30 dBm	V · ·			
$\sim$				m
-40 dBm				
750 dBm				
-60 dBm				VV.
-70 dBm				
-80 dBm				
00 d0m				
-90 upm-				
-100 dBm				
	1001			
UF 2.44 GHZ	1001 pt	<u>s 1</u> :	50.0 KHZ/	Span 1.5 MHz
			✓ Measuring…	10:05:53

#### PSD, 2440 MHz





PSD, 2480 MHz



## 4 Measurement Uncertainty

Measurement Uncertainty Values				
Test Item	Uncertainty			
Output Power	±0.5 dB			
Power Spectral Density	±0.5 dB			
Out of Band Emissions, Conducted	< 3.6 GHz	±0.6 dB		
	> 3.6 GHz	±0.9 dB		
Spurious Emissions, Radiated	< 1 GHz	±2.5 dB		
	> 1 GHz	±2.2 dB		
Emission Bandwidth		±4 %		
Power Line Conducted Emissions		+2.9 / -4.1 dB		
Spectrum Mask Measurements	Frequency	±5 %		
	Amplitude	±1.0 dB		
Frequency Error		±0.6 ppm		
Temperature Uncertainty		±1 °C		

All uncertainty values are expanded standard uncertainty to give a confidence level of 95%, based on coverage factor k=2



## 5 LIST OF TEST EQUIPMENT

To facilitate inclusion on each page of the test equipment used for related tests, each item of test equipment and ancillaries are identified (numbered) by the Test Laboratory.

No.	Model number	Description	Manufacturer	Ref. no.	Cal. date	Cal. Due
1	FSW43	Spectrum Analyzer	Rohde & Schwarz	LR 1690	2020.01	2021.01
2	6810.17B	Attenuator	Suhner	LR 1669	2019-07	2020-07
3	6HC3000/18000	Highpass Filter	Trilithic	LR 1614	2019-07	2020-07
4	VULB9163	BiLog Antenna	Schwarzbech	LR 1616	2020-01	2023-01
5	Model 317	PreAmplifier	Sonoma	LR 1687	2019-07	2020-07
6	3117-PA	Horn Antenna with PreAmp	EMCO	LR 1717	2017-12	2020-12
7	3115	Horn Antenna	EMCO	LR 1330	2016-10	2021-10
8	8449A	Pre-amplifier	Hewlett Packard	LR 1322	2019-07	2020-07
9	638	Antenna Horn	Narda	LR 1480	2010-06	2020-06
10	ST 8/SMAm/Nm/36	RF Cable	Suhner	LR 1630	COU	

The software listed below has been used for one or more tests.

No.	Manufacturer	Name	Version	Comment
1	Rohde & Schwarz	EMC32	10.50.10	Radiated Emissions test software
2	Rohde & Schwarz	GPIBShot	2.7	Screenshots from R&S Spectrum Analyzers

### **Revision history**

Revision	Date	Comment	Sign
00	2020-04-28	First edition	FS



## 6 BLOCK DIAGRAM

### 6.1 Power Line Conducted Emission



### 6.2 Test Site Radiated Emission



This test setup is used for all radiated emissions tests. For frequencies below 30 MHz the measuring distance is 10m, for all other frequencies it is 3m or 1m. Emissions above 1 GHz are measured with a Spectrum Analyzer and Horn Antenna. For measurements above 18 GHz the test receiver is moved inside the anechoic chamber and located next to the antenna to minimize the cable loss. All measurements at 1GHz and above were performed with turntable height 1.5m and with the ground plane covered by absorbers. A pre-amplifier is used for all measurements above 30 MHz, and High-Pass or Band-Pass filter is used for all harmonics.