

Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure:	ANSI C63.10, Sections 9.9, 9.12			
Test mode:	Compliance	Vordict	DASS	
Date(s):	11-Mar-20	verdict.	FA33	
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC	
Remarks:				

7.4 Out of band radiated emissions above 40 GHz up to 200 GHz

7.4.1 General

This test was performed to measure radiated spurious emissions from the EUT. Specification test limits are given in Table 7.4.1.

Frequency, GHz	Power density at 3 m distance pW/cm ²	Distance, m	Field strength dB(μV/m)*, peak	Field strength dB(μV/m)*, average
40 – 200	90.0	3.0	105.30	85.30
90 - 140	90.0	0.05	140.9**	120.9**
140 - 200	90.0	0.01	154.8**	134.8**

Table 7.4.1 Spurious emission field strength limits

*- The limit is provided in average values.

**- The limit for 1 m and other test distance was calculated using the inverse distance extrapolation factor as follows:

for far field: $\lim_{S_2} = \lim_{S_1} + 20 \log (S_1/S_2)$,

where S_1 – standard defined distance in meters;

S₂ – measurement distance in meters (according to ANSI C63.10)

7.4.2 Test procedure for spurious emission field strength measurements

7.4.2.1 The EUT was set up as shown in Figure 7.4.1, energized and the performance check was conducted.

- **7.4.2.2** The specified frequency range was investigated with antenna connected to spectrum analyzer/ EMI receiver. To find maximum radiation the turntable was rotated 360⁰, the measuring antenna height was changed from 1 to 4 m, its polarization was switched from vertical to horizontal.
- 7.4.2.3 The test results were recorded in Table 7.4.2 and are shown in the associated plots.



Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure:	ANSI C63.10, Sections 9.9, 9.	12		
Test mode:	Compliance	Vordiot	DASS	
Date(s):	11-Mar-20	verdict.	FA33	
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC	
Remarks:				







Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure:	ANSI C63.10, Sections 9.9, 9.12	2		
Test mode:	Compliance	Vordict	DASS	
Date(s):	11-Mar-20	verdict.	FA33	
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC	
Remarks:				

Table 7.4.2 Spurious emission field strength test results

TEST DISTANCE:	0.01 - 3 m
EUT POSITION:	Typical (Vertical)
TRANSMITTER OUTPUT POWER:	Maximum
INVESTIGATED FREQUENCY RANGE:	40 – 200 GHz
RESOLUTION BANDWIDTH:	1000 kHz
VIDEO BANDWIDTH:	≥ Resolution bandwidth
TEST ANTENNA TYPE:	Standard Gain Horn 24 dB (40-60 GHz)
	Standard Gain Horn 24 dB (60-90 GHz)
	Standard Gain Horn 24dB (90-140 GHz)
	Standard Gain Horn 24 dB (140-220 GHz)

MODULATION:

16QAM Peak field strength(VBW=3 MHz) Average field strength(VBW=1 kHz) Antenna Frequency, Azimuth, Verdict Measured, Limit, Margin, Measured, Limit, Margin, Height, MHz Polariz. degrees* dB(µV/m) dB(µV/m) dB** dB(µV/m) dB(µV/m) dB** m Low carrier frequency 58320 MHz Vertical 56999.361 1.0 0 85.45 105.3 -19.85 77.23 85.3 -8.07 Pass Mid carrier frequency 60480 MHz No emissions were found Pass High carrier frequency 64800 MHz 84.75 Vertical -13.15 55806.801 1.0 0 92.15 105.3 85.3 -0.55 Pass

*- EUT front panel refer to 0 degrees position of turntable.

**- Margin = Measured emission – specification limit.

MODULAT	ON:	DN: BPSK								
Frequency	Anter	nna	A =imputh	Peak field strength(VBW=3 MHz)		Average field strength(VBW=1 kHz)				
MHz	Polariz.	Height, m	degrees*	Measured, dB(μV/m)	Limit, dB(µV/m)	Margin, dB**	Measured, dB(μV/m)	Limit, dB(µV/m)	Margin, dB**	Verdict
Low carrier frequency 58320 MHz										
56999.421	Vertical	1.0	0	86.03	105.3	-19.27	77.85	85.3	-7.45	Pass
Mid carrier f	requency 60	0480 MHz								
No emissions were found					Pass					
High carrier frequency 64800 MHz										
55796.122	Vertical	1.0	0	94.42	105.3	-10.88	85.06	85.3	-0.24	Pass

*- EUT front panel refer to 0 degrees position of turntable.

**- Margin = Measured emission – specification limit.

Reference numbers of test equipment used

HL 0747	HL 0770	HL 0771	HL 1300	HL 1303	HL 1312	HL 2909	HL 3235
HL 3290	HL 3329	HL 3433	HL 3434	HL 3536	HL 4023	HL 5376	HL 5380

Full description is given in Appendix A.



Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure:	ANSI C63.10, Sections 9.9, 9.12			
Test mode:	Compliance	Vordict	DASS	
Date(s):	11-Mar-20	verdict.	FA33	
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC	
Remarks:				

Plot 7.4.1 Spurious emission measurements in 40 - 45 GHz range

TEST SITE: TEST DISTANCE: MODULATION: ANTENNA POLARIZATION: Low carrier frequency: OATS 3 m BPSK Vertical and Horizontal 58320 MHz

DETECTOR: Peak * Agilent





Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure:	ANSI C63.10, Sections 9.9, 9.1	2		
Test mode:	Compliance	Vordict	DV66	
Date(s):	11-Mar-20	verdict.	FA33	
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC	
Remarks:				



Plot 7.4.2 Spurious emission measurements in 40 - 45 GHz range



Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure:	ANSI C63.10, Sections 9.9, 9.12			
Test mode:	Compliance	Vordict	DV66	
Date(s):	11-Mar-20	verdict.	FA33	
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC	
Remarks:				

Plot 7.4.3 Spurious emission measurements in 40 - 45 GHz range

TEST SITE: TEST DISTANCE: MODULATION: ANTENNA POLARIZATION: Mid carrier frequency:

OATS 3 m BPSK Vertical and Horizontal 60480 MHz

DETECTOR: Peak 🔆 Agilent





Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure:	ANSI C63.10, Sections 9.9, 9.7	2		
Test mode:	Compliance	Vordict	DV66	
Date(s):	11-Mar-20	veruici.	FA33	
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC	
Remarks:				



Plot 7.4.4 Spurious emission measurements in 40 - 45 GHz range



Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure:	ANSI C63.10, Sections 9.9, 9.12	2		
Test mode:	Compliance	Vordict	DV66	
Date(s):	11-Mar-20	verdict.	FA33	
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC	
Remarks:				

Plot 7.4.5 Spurious emission measurements in 40 – 50 GHz range

TEST SITE: TEST DISTANCE: MODULATION: ANTENNA POLARIZATION: High carrier frequency: OATS 3 m BPSK Vertical and Horizontal 64800 MHz

DETECTOR: Peak * Agilent





Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.	12	
Test mode:	Compliance		
Date(s):	11-Mar-20	verdict.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:	-		



Plot 7.4.6 Spurious emission measurements in 40 – 50 GHz range



Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.12		
Test mode:	Compliance	Vordict	DASS
Date(s):	11-Mar-20	verdict.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.7 Spurious emission measurements in 40 - 45 GHz range

TEST SITE: TEST DISTANCE: MODULATION: ANTENNA POLARIZATION:

Low carrier frequency: DETECTOR: Peak * Agilent



OATS 3 m 16QAM Vertical and Horizontal



Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.12		
Test mode:	Compliance	Verdiet: DASS	
Date(s):	11-Mar-20	verdict.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			



Plot 7.4.8 Spurious emission measurements in 40 - 45 GHz range



Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.12		
Test mode:	Compliance	Verdiet: DASS	
Date(s):	11-Mar-20	verdict.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.9 Spurious emission measurements in 40 – 45 GHz range

TEST SITE: TEST DISTANCE: MODULATION: ANTENNA POLARIZATION: Mid carrier frequency: OATS 3 m 16QAM Vertical and Horizontal 60480 MHz

 $\mathbb{R} = 11 \mathbb{W} + 12; \mathbb{W} = 31 \mathbb{W} + 12;$

DETE





Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.	12	
Test mode:	Compliance	Vordiot	DASS
Date(s):	11-Mar-20	verdict.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			



Plot 7.4.10 Spurious emission measurements in 40 – 45 GHz range



Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.12		
Test mode:	Compliance	Vordict	DASS
Date(s):	11-Mar-20	verdict.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.11 Spurious emission measurements in 40 – 50 GHz range

TEST SITE: TEST DISTANCE: MODULATION: ANTENNA POLARIZATION: High carrier frequency: OATS 3 m 16QAM Vertical and Horizontal 64800 MHz

DETECTOR: Peak * Agilent





Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.12		
Test mode:	Compliance	Vordict	DASS
Date(s):	11-Mar-20	verdict.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			



TEST SITE: TEST DISTANCE: MODULATION: ANTENNA POLARIZATION: High carrier frequency:

DETECTOR: Peak

OATS 3 m 16QAM Vertical and Horizontal 64800 MHz

RBW = 1 MHz; VBW = 10 kHz





Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.12		
Test mode:	Compliance	Vordict	DV66
Date(s):	11-Mar-20	verdict.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.13 Spurious emission measurements in 45 – 55 GHz range

TEST SITE: TEST DISTANCE: MODULATION: ANTENNA POLARIZATION: Low carrier frequency: OATS 3 m BPSK Vertical and Horizontal 58320 MHz

DETECTOR: Peak * Agilent





Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.1	2	
Test mode:	Compliance	Vordict	DV66
Date(s):	11-Mar-20	veruici.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			



Plot 7.4.14 Spurious emission measurements in 45 - 55 GHz range



Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.12		
Test mode:	Compliance	Vordict	DASS
Date(s):	11-Mar-20	verdict.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.15 Spurious emission measurements in 45 – 55 GHz range

TEST SITE: TEST DISTANCE: MODULATION: ANTENNA POLARIZATION: Mid carrier frequency: OATS 3 m BPSK Vertical and Horizontal 60480 MHz

DETECTOR: Peak * Agilent





Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.12		
Test mode:	Compliance	Vordict	DASS
Date(s):	11-Mar-20	verdict.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.16 Spurious emission measurements in 45 – 55 GHz range

TEST SITE: TEST DISTANCE: MODULATION: ANTENNA POLARIZATION: Mid carrier frequency: OATS 3 m BPSK Vertical and Horizontal 60480 MHz

DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz Image suppress Modulated Image suppress CW L L 🔆 Agilent 🔆 Agilent Mkr1 50.225 GHz 88.52 dBµV/m Mkr1 54.825 GHz 74.21 dBµV/m Ref 120 dBµV/m Peak Ext Mix Ref 12<u>0 dBµV/m</u> Ext Mix Peak Log 10 dB/ Offst 25 dB Log 10 Signal Ident On, Amptd Uncal Signal Ident On, Amptd Uncal dB/ 0ffst 25 dB ¢ DI 85.3 dBµV, DI 85.3 dBµV, W1 S2 S3 F3 A AF W1 S2 S3 FS A AA Start 45 GHz #Res BW 1 MHz Stop 55 GHz Sweep 812.5 ms (401 pts) Start 45 GHz #Res BW 1 MHz Stop 55 GHz Sweep 812.5 ms (401 pts) ∎VBW 10 kHz ∎VBW 10 kHz Image shift left Image shift right L 🔆 Agilent 🔆 Agilent L Mkr1 50.225 GHz 88.61 dBµV/m



 Image shift right

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Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.12		
Test mode:	Compliance	Vardiate DASS	
Date(s):	11-Mar-20	verdict.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.17 Spurious emission measurements in 50 – 55 GHz range

TEST SITE: TEST DISTANCE: MODULATION: ANTENNA POLARIZATION: High carrier frequency: OATS 3 m BPSK Vertical and Horizontal 64800 MHz

DETECTOR: Peak * Agilent





Test specification:	FCC Section 15.255(d)(3), R above 40 GHz	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz								
Test procedure:	ANSI C63.10, Sections 9.9, 9.12									
Test mode:	Compliance	Vordict	DASS							
Date(s):	11-Mar-20	verdict.	FA33							
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC							
Remarks:										

Plot 7.4.18 Spurious emission measurements in 50 - 55 GHz range

TEST SITE: TEST DISTANCE: MODULATION: ANTENNA POLARIZATION: High carrier frequency:

≢VBW 10 kHz

DETECTOR: Peak

Г

OATS 3 m **BPSK** Vertical and Horizontal 64800 MHz

RBW = 1 MHz; VBW = 10 kHz



Γ

≢VBW 10 kHz



Test specification:	FCC Section 15.255(d)(3), R above 40 GHz	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz									
Test procedure:	ANSI C63.10, Sections 9.9, 9.12										
Test mode:	Compliance	Vordict	DASS								
Date(s):	11-Mar-20	verdict.	FA33								
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC								
Remarks:											







Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz									
Test procedure:	ANSI C63.10, Sections 9.9, 9.1	2								
Test mode:	Compliance	Vordict	DV66							
Date(s):	11-Mar-20	verdict.	FA33							
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC							
Remarks:										







Test specification:	FCC Section 15.255(d)(3), F above 40 GHz	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz									
Test procedure:	ANSI C63.10, Sections 9.9, 9.12										
Test mode:	Compliance	Verdiet: DACC									
Date(s):	11-Mar-20	verdict.	FA33								
Temperature: 25 °C	Relative Humidity: 43 %Air Pressure: 1015 hPaPower: 55 VDC										
Remarks:											

Plot 7.4.21 Spurious emission measurements in 45 – 55 GHz range

TEST SITE: TEST DISTANCE: MODULATION: ANTENNA POLARIZATION: Mid carrier frequency: OATS 3 m 16QAM Vertical and Horizontal 60480 MHz

DETECTOR: Peak





Test specification:	FCC Section 15.255(d)(3), R above 40 GHz	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz								
Test procedure:	ANSI C63.10, Sections 9.9, 9.12									
Test mode:	Compliance	Vordict	DASS							
Date(s):	11-Mar-20	verdict.	FA33							
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC							
Remarks:										

Plot 7.4.22 Spurious emission measurements in 45 – 55 GHz range

TEST SITE: TEST DISTANCE: MODULATION: ANTENNA POLARIZATION: Mid carrier frequency:

DETECTOR: Peak

OATS 3 m 16QAM Vertical and Horizontal 60480 MHz

RBW = 1 MHz; VBW = 10 kHz





Test specification:	FCC Section 15.255(d)(3), R above 40 GHz	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz									
Test procedure:	ANSI C63.10, Sections 9.9, 9.12										
Test mode:	Compliance	Verdiet: DACC									
Date(s):	11-Mar-20	verdict.	FA33								
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa Power: 55 VDC									
Remarks:											

Plot 7.4.23 Spurious emission measurements in 50 - 55 GHz range

TEST SITE: TEST DISTANCE: MODULATION: ANTENNA POLARIZATION: High carrier frequency: OATS 3 m 16QAM Vertical and Horizontal 64800 MHz

DETECTOR: Peak * Agilent





Test specification:	FCC Section 15.255(d)(3), R above 40 GHz	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz								
Test procedure:	ANSI C63.10, Sections 9.9, 9.12									
Test mode:	Compliance	Vordict	DASS							
Date(s):	11-Mar-20	verdict.	FA33							
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC							
Remarks:										

Plot 7.4.24 Spurious emission measurements in 50 - 55 GHz range

TEST SITE: TEST DISTANCE: MODULATION: ANTENNA POLARIZATION: High carrier frequency:

DETECTOR: Peak

OATS 3 m 16QAM Vertical and Horizontal 64800 MHz

RBW = 1 MHz; VBW = 10 kHz





Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz									
Test procedure:	ANSI C63.10, Sections 9.9, 9.12									
Test mode:	Compliance	Vordict	DASS							
Date(s):	11-Mar-20	verdict.	FA33							
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC							
Remarks:										

Plot 7.4.25 Spurious emission measurements in 55 – 57 GHz range



OATS 3 m BPSK Vertical and Horizontal DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz 58320 MHz

Beetrom Analyzes 1 Sevents 3. KEYSIGHT Pout Ext Max Nor Path Loss One Nor Path Normal PNO Fait Sevents 2. Nor Path Normal PNO Fait Sevents 2. Nor Path Normal PNO Fait Sevents 2. Normal PNO Fait Sevents 2. Normal PNO Fait Normal PNO Fait Normal PNO Fait Sevents 2. Normal PNO Fait Normal PNO Fai

Mid carrier frequency:

KEYSIGHT RL 🖵	Input: Ext Mixer Signal ID: On Align: Auto	Corrections: On Freq Ref: Int (S)	Mixer Path: Normal F	'NO: Fast Sate: Off F Gain: Low Sig Track: Off	Avg Type: Log-Power Avg[Hold.>100/100 Trig: Free Run	1 2 3 4 5 6 M W W W W W P N N N N		
Spectrum	T B		Ref	Lvi Offset 10. Level 130.00	00 dB dBuV/m		Mkr1	56.947 60 GH 85.54 dBuV/r
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tart 55.000 G Res BW 1.0 I	Hz MHz		· · · · ·	Video BW 3.0	MHz		Sweep	Stop 57.000 GH
15	2 🔳 🤈	Mar 12, 2020						

KEYSIGHT	Input: Ext Mixer Signal ID: On Align: Auto	Corrections: On Freq Ref: Int (S)	Mixer Path: Normal	PNO: Fast Gate: Off IF Gain: Low Sig Track: Off	Avg Type: Log-Power Avg Hold:>100/100 Trig: Free Run	1 2 3 4 5 6 M W W W W P N N N N		
Spectrum icale/Div 10 e	1B		R	f Lvi Offset 10 f Level 110.00	.00 dB dBµV/m		Mkr1	56.937 40 GH 76.59 dBµV/n
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0.0								
0.0								
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tart 55.000 G Res BW 1.0 I	Hz MHz			#Video BW 10	kHz		Swee	Stop 57.000 GH p 552 ms (30001 pts



Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz									
Test procedure:	ANSI C63.10, Sections 9.9, 9.12									
Test mode:	Compliance	Vordict	DASS							
Date(s):	11-Mar-20	verdict.	FA33							
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC							
Remarks:										

Plot 7.4.26 Spurious emission measurements in 55 – 57 GHz range

TEST SITE: TEST DISTANCE: MODULATION: ANTENNA POLARIZATION: DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz

OATS 3 m BPSK Vertical and Horizontal DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz

High carrier frequency:

High o	carrier	freque	ncy:							64	800	MHz								
Spectrum Analy Swept SA	zer 1	• +	-							Spect Swep	trum Analyzer It SA	1	• +							
RL C	Input: Ext Mixer Signal ID: On Align: Auto	Corrections: On Freq Ref: Int (S)	Mixer Path: 2x Co	n PNO: Fast Gate: Off IF Gain: Low Sig Track: Off	Avg Type: L Avg[Hold.> Trig: Free F	.og-Power 1 10/10 Run M	2 3 4 5 6 W W W W W N N N N			RL	/SIGHT Inp Alic	ut: Ext Mixer nal ID: On gn: Auto	Corrections: On Freq Ref: Int (S)	Mixer Path: 2x	ConvPNO: Fast Gate: Off IF Gain: Low Sig Track: Off	Avg Type: Avg[Hold: Trig: Free	Log-Power 1 7/10 Run M	2 3 4 5 6 WWWWW NNNN		
1 Spectrum Scale/Div 10 dl			1	Ref Lvi Offset 1 Ref Level 120.00	0.00 dB 0 dBµV/m			Mkr1 55. 93	.694 33 GHz .71 dBµV/m	1 Spe Scale	ectrum e/Div 10 dB	۲			Ref Lvi Offset Ref Level 100.	10.00 dB 00 dBµV/m			Mkr1 55. 84.	715 33 GHz 93 dBµV/m
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										10.0										
00.0										40.0										
50.0										30.0										
40.0										20.0										
30.0		_						_		10.0		-	_							
Start 55.000 GH #Res BW 1.0 M	iz Hz			#Video BW 3.	.0 MHz			Sweep 20.0	Stop 57.000 GHz) ms (30001 pts)	Start #Res	55.000 GHz BW 1.0 MHz				#Video BW	1.0 kHz			S Sweep 5.5	top 57.000 GHz 51 s (30001 pts)
1 5	⊴∎?	Mar 11, 2020 3:37:48 AM								4	50	2	Mar 11, 2020 3:36:49 AM	$\Box \Delta$						



Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz					
Test procedure:	ANSI C63.10, Sections 9.9, 9.1	2				
Test mode:	Compliance	Vordict	DV66			
Date(s):	11-Mar-20	verdict.	FA33			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC			
Remarks:						







Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz					
Test procedure:	ANSI C63.10, Sections 9.9, 9.12					
Test mode:	Compliance	Vordict	DASS			
Date(s):	11-Mar-20	verdict.	FA33			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC			
Remarks:						

Plot 7.4.28 Spurious emission measurements in 55 – 57 GHz range

TEST SITE: TEST DISTANCE: MODULATION: ANTENNA POLARIZATION: DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz

OATS 3 m 16QAM Vertical and Horizontal DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz

High carrier frequency:

High carrier	freque	ency:					64	1800	MHz							
Spectrum Analyzer 1 Swept SA	• +	-					Spec Swep	trum Analyzer ot SA	1	• +						
RL Align: Auto	Corrections: On Freq Ref: Int (S)	Mixer Path: 2x Conv PNO: Fast Gate: Off IF Gain: Low Sig Track: Off	Avg Type: Log-Pow Avg[Hold: 50/100 Trig: Free Run	er 1 2 3 4 5 6 M ₩ ₩ ₩ ₩ ₩ N N N N			RL		ut: Ext Mixer nal ID: On gn: Auto	Corrections: On Freq Ref: Int (S)	Mixer Path: 2x C	Gate: Off Gate: Coff IF Gain: Low Sig Track: Off	Avg Type: Avg Hold: Trig: Free	Log-Power 5/5 Run N N N N N		
1 Spectrum v Scale/Div 10 dB		Ref Lvi Offset 1 Ref Level 120.0	0.00 dB 0 dBµV/m		Mkr1 55.4 93.	429 60 GHz 59 dBµV/m	1 Spo Scale	ectrum e/Div 10 dB	۲			Ref Lvi Offset 1 Ref Level 100.0	0.00 dB 0 dBµV/m		Mkr1 55 84	i.806 73 GHz 4.43 dBµV/m
110							90.0					1				0.115.20.00.00
100	1					CCT NO SE COPYINI	80.0	البردن ان دونام ون	have	والمتوافية الجمدور المحجورية ال	manus	all and the second second second	angles and the same			Dell'es se deprim
90.0	i geológia den	andra Arte Alfred Miller of States (Second		de la sete de sete sete set	ntesimente reali	and the state of the	70.0									
70.0							50.0									
60.0							40.0									
50.0							30.0									
30.0							20.0									
Start 55.000 GHz #Res BW 1.0 MHz		#Video BW 3	I.0 MHz		Sweep 20.0	top 57.000 GHz ms (30001 pts)	Start #Res	55.000 GHz BW 1.0 MHz				#Video BW	I.O KHZ		Sweep 5	Stop 57.000 GHz
	Mar 11, 2020 3:47:16 AM	$\Box \Delta$.:: 💽		4	5	1	Mar 11, 2020 3:49:43 AM	ρA				.:: 9	



Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz					
Test procedure:	ANSI C63.10, Sections 9.9, 9.12	2				
Test mode:	Compliance	Vordict	DV66			
Date(s):	11-Mar-20	verdict.	FA33			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC			
Remarks:						

Plot 7.4.29 Spurious emission measurements in 71 – 80 GHz range



OATS 3 m BPSK Vertical and Horizontal RBW = 1 MHz; VBW = 3 MHz 58320 MHz

Mid carrier frequency:

KEY RL	SIGHT	Input: Ext Mixer Signal ID: On Align: Auto	Corrections: On Freq Ref: Int (S)	Mixer Path: 2x Corr	PNO: Fast Gate: Off IF Gain: Low Sig Track: Off	Avg Type: Log-Power Avg[Hold:>10/10 Trig: Free Run	1 2 3 4 5 6 M W W W W W P N N N N		
1 Spec	ctrum	•		_				Mkr1 7	5.579 7 GHz
Log-	/Div 10 a	в		R	T Level 100.00	aBµv/m		/0	
10.0									DL1 85 30 dByV/m
80.0						∳ 1			
70 0	in inini	Adapta in the second second	antes di Batalan di Kasarti Managina katalapat	a di dalla for a la la da a fin a Nationali a ta	mand an an ann an Arrist	al an beneficie e a fidirela de ante Antenio de antenio de la composición de la composición de la composición de			
30.0									
50.0									
10.0									
30.0									
20.0									
10.0									
Start 7	71.000 GI BW 1.0 N	4z Hz			Video BW 3.0	MHz		Sweep 32.0	Stop 80.000 GHz 0 ms (30001 pts)
4	5	례∎?	Mar 12, 2020 1:06:17 AM						



Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz					
Test procedure:	ANSI C63.10, Sections 9.9, 9.12					
Test mode:	Compliance	Vordict	DASS			
Date(s):	11-Mar-20	verdict.	FA33			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC			
Remarks:						

Plot 7.4.30 Spurious emission measurements in 71 – 80 GHz range

TEST SITE: TEST DISTANCE: MODULATION: ANTENNA POLARIZATION:

DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz High carrier frequency:

Brechtmin Arsger 1
 Seeder Sale
 Se

OATS 3 m BPSK Vertical and Horizontal

DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz

KEYSIGHT	Input: Ext Mixer Signal ID: Off Align: Auto	Corrections: On Freq Ref: Int (S)	Mixer Path: Normal	PNO: Fast Gate: Off IF Gain: Low Sig Track: Off	Avg Type: Log-Power Avg Hold:>10/10 Trig: Free Run	1 2 3 4 5 6 M W W W W W N N N N		
Spectrum	•						Mkr1 7	4.788 7 GHz
Scale/Div 10 d	В		R	of Level 100.00	dBµV/m			3.23 aBhA/w
90.0								DL1 85.30 dByV/m
0.0				<u>1</u>				
0.0								
0.0		_						
0.0								
0.0								
0.0								
.0.0								
10.0								
tart 71.000 Gi Res BW 1.0 N	4z IHz			#Video BW 10) kHz		Sweep ~70	Stop 80.000 GH
ار ک	~ 1 ?	Mar 11, 2020 3:07:51 AM						



Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz					
Test procedure:	ANSI C63.10, Sections 9.9, 9.12					
Test mode:	Compliance	Vordict	DV66			
Date(s):	11-Mar-20	verdict.	FA33			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC			
Remarks:						

Plot 7.4.31 Spurious emission measurements in 71 – 80 GHz range

OATS



3 m 16QAM Vertical DETECTOR: Peak RBW = 1 MHz; VBW = 100 kHz 58320 MHz

Spectrum Analyzer 1 Swept SA KEYSIGHT Input: Ext Mixer RL Align: Auto · + Corrections: On Freq Ref: Int (S) 1 2 3 4 5 6 M W W W W W P N N N N Avg Type: Log-Pi Avg|Hold:>10/10 Trig: Free Run Far Gate: Off IF Gain: Low Sig Track: Of LU , Mkr1 76.034 9 GH 72.01 dBµV/i 1 Spectrum Scale/Div 10 dB Ref Level 100.00 dBµV/m ¢ #Video BW 100 kHz Start 71.000 GHz #Res BW 1.0 MHz Stop 80.000 GH Sweep 250 ms (30001 pts ■ <a> <a>

Mid carrier frequency:

KEYSIGHT RL	Input: Ext Mixer Signal ID: On Align: Auto	Corrections: On Freq Ref: Int (S)	Mixer Path: 2x Com/PNO: Fast Gate: Off IF Gain: Low Sig Track: Off	Avg Type: Log-Power Avg[Hold.>10/10 Trig: Free Run	1 2 3 4 5 6 M W W W W W P N N N N		
1 Spectrum	,					Mkr1 78	3.890 3 GHz
Log	В		Ref Level 100.0	0 dBµV/m			
90.0							
00.0						1	
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60.0							
50.0							
40.0							
20.0							
30.0							
20.0							
10.0							
Start 71.000 G #Res BW 1.0 M	Hz 1Hz		#Video BW 3	.0 MHz		s Sweep ~32.1	atop 80.000 GHz ms (30001 pts)
45	례∎?	Mar 12, 2020 12:55:27 AM					

		r red role. Init (5)	Gate: Off IF Gain: Low Sig Track: Off	Avg Hold >10/10 Trig: Free Run	M W W W W W P N N N N	
Spectrum cale/Div 10 dB	۲		Ref Level 100.	00 dBµV/m		Mkr1 76.947 8 Gi 72.31 dBµV
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0.0					1	
3.0 <u>- 11 - 11 - 11 - 11 - 11 - 11 - 11 - </u>				i i na sensita a na antena a ta		
0.0						
0.0						
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0.0						
lart 71.000 GHz Res BW 1.0 MH:	2		#Video BW	100 kHz		Stop 80.000 G Sweep 250 ms (30001 r



Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz					
Test procedure:	ANSI C63.10, Sections 9.9, 9.12					
Test mode:	Compliance	Vordict	DV66			
Date(s):	11-Mar-20	verdict.	FA33			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC			
Remarks:						

Plot 7.4.32 Spurious emission measurements in 71 - 80 GHz range

TEST SITE: TEST DISTANCE: MODULATION: ANTENNA POLARIZATION: DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz OATS 3 m 16QAM Vertical DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz





Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz					
Test procedure:	ANSI C63.10, Sections 9.9, 9.12	2				
Test mode:	Compliance	Vordict	DV66			
Date(s):	11-Mar-20	verdict.	FA33			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC			
Remarks:						

Plot 7.4.33 Spurious emission measurements in 80 - 90 GHz range



OATS 3 m BPSK Vertical and Horizontal RBW = 1 MHz; VBW = 3 MHz 58320 MHz

Mid carrier frequency:

REYSIGH	T Input: Ext Mixer Signal ID: On Align: Auto	Corrections: On Freq Ref: Int (S)	Mixer Path: 2x Con PNO: Fast Gate: Off IF Gain: Low Sig Track: Off	Avg Type: Log-Power Avg[Hold:>10/10 Trig: Free Run	1 2 3 4 5 6 M W W W W W P N N N N		
1 Spectrum	•					Mkr1 86	8.857 7 GH
Scale/Div 10	dB		Ref Level 100.00	dBµV/m		78	.64 dBµV/n
90.0					A1		DL1 85.30 dByV/n
80.0	teles and all terms of	and control dama	and a state of the second		entire and a star star sour		the balance of the
70.0							
60.0							
50.0							
40.0							
40.0							
30.0							
20.0							-
10.0							
Start 80.000 #Res BW 1.0	GHz MHz		#Video BW 3.	MHz		Sweep 34.(Stop 90.000 GH ms (30001 pts
1 5	C I ?	Mar 12, 2020					


Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure:	ANSI C63.10, Sections 9.9, 9.12			
Test mode:	Compliance	Vordict	DASS	
Date(s):	11-Mar-20	veruict.	FA33	
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC	
Remarks:				

Plot 7.4.34 Spurious emission measurements in 80 – 90 GHz range

OATS

TEST SITE: TEST DISTANCE: MODULATION: ANTENNA POLARIZATION:

DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz High carrier frequency:

RL C	Input: Ext Mixer Signal ID: Off Align: Auto	Corrections: On Freq Ref: Int (S)	Mixer Path: Normal	PNO: Fast Gate: Off IF Gain: Low Sig Track: Off	Avg Type: Log-Power Avg[Hold:>10/10 Trig: Free Run	1 2 3 4 5 6 M W W W W W N N N N	
1 Spectrum Scale/Div 10	dB		R	ef Level 120.00	dBµV/m		Mkr1 86.475 0 G 85.05 dBµ\
Log				ľ			
110							DL1 105.30 dB
00.0					1		
80.0				i alimenta a da		der eine steren kom	
70.0							
60.0							
50.0							
40.0							
30.0							
Start 80.000 (3Hz MHz			#Video BW 3.0) MHz		Stop 90.000 Sweep 10.0 ms (30001

3 m BPSK Vertical and Horizontal

DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz 64800 MHz

Spectrum Analyzer 1

Swept SA		· +						
KEYSIGHT	Input: Ext Mixer Signal ID: Off Align: Auto	Corrections: On Freq Ref: Int (S)	Mixer Path: Normal	PNO: Fast Gate: Off IF Gain: Low Sig Track: Off	Avg Type: Log-Power Avg Hold:>10/10 Trig: Free Run	1 2 3 4 5 6 M W W W W W N N N N		
Spectrum	•						Mkr1 87	.273 7 GHz
cale/Div 10 dl	в		R	of Level 100.00	dBµV/m		74	.20 dBµV/m
.09				Ť				
0.0								DL1 85.30 dByV/m
0.0						1		
0.0								
i0.0								
0.0								
0.0								
tart 80.000 GH Res BW 1.0 M	iz Hz			#Video BW 10	kHz		Sweep 780	itop 90.000 GHz ms (30001 pts)
 	⊴∎?	Mar 11, 2020 3:04:14 AM	DΔ] == 🔀



Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure:	ANSI C63.10, Sections 9.9, 9.12	2		
Test mode:	Compliance	Vordict	DV66	
Date(s):	11-Mar-20	verdict.	FA33	
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC	
Remarks:				

Plot 7.4.35 Spurious emission measurements in 80 - 90 GHz range



OATS 3 m 16QAM Vertical and Horizontal RBW = 1 MHz; VBW = 3 MHz 58320 MHz

Mid carrier frequency:

KEYS RL	GHT	Input: Ext Mixer Signal ID: On Align: Auto	Corrections: On Freq Ref: Int (S)	Mixer Path: 2x Corn	PNO: Fast Gate: Off IF Gain: Low Sig Track: Off	Avg Type: Log-Power Avg[Hold:>10/10 Trig: Free Run	123456 MWWWWW PNNNN		
1 Spect	rum	•						Mkr1 86	.344 3 GH
Scale/I	Div 10 d	в		Re	f Level 100.00	dBµV/m		78.	93 dBµV/i
.09					Ĭ				
90.0									DL1 85 30 dByV
0.0						• • • •			
70.0		entine et a festivit de	N. B. Handelstein		a de la cale			a da di cambiana di Anan Mala sa tringti sa sa M	
0.0									
30.0									
50.0									
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30.0									
20.0									
10.0									
start 8 Res B	0.000 GI	iz IHz			Video BW 3.0	MHz		S Sweep 34.0	top 90.000 GH ms (30001 pt
	5	a 🔳 🤉	Mar 12, 2020						

60480 MHz



Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure:	ANSI C63.10, Sections 9.9, 9.12			
Test mode:	Compliance	Vordict	DASS	
Date(s):	11-Mar-20	verdict.	FA33	
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC	
Remarks:				

Plot 7.4.36 Spurious emission measurements in 80 - 90 GHz range

TEST SITE: TEST DISTANCE: MODULATION: ANTENNA POLARIZATION: DETECTOR: Peak

DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz High carrier frequency:

RL 🖵	Input: Ext Mixer Signal ID: Off Align: Auto	Corrections: On Freq Ref: Int (S)	Mixer Path: Normal	PNO: Fast Gate: Off IF Gain: Low Sig Track: Off	Avg Type: Log-Power Avg[Hold:>10/10 Trig: Free Run	1 2 3 4 5 6 M W W W W W N N N N		
Spectrum	۲						Mkr1 87	7.668 3 GH
Scale/Div 10	dB		R	of Level 120.00	dBµV/m		85	.26 dBµV/m
-09				The second secon				
110								DL1 105.30 dBpV/m
100								
0.0						_1		
	an allowing the base				le , le s ou conditions de	and the second second second	a hard being to	
50.0								
0.0								
30.0								
50.0								
10.0								
30.0								

OATS 3 m 16QAM Vertical and Horizontal RBW = 1 MHz; VBW = 3 MHz

DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz 64800 MHz





Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure:	ANSI C63.10, Sections 9.9, 9.1	2		
Test mode:	Compliance	Vordict	DV66	
Date(s):	11-Mar-20	veruict.	FA33	
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC	
Remarks:				



Plot 7.4.37 Spurious emission measurements in 90 - 100 GHz range



Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure:	ANSI C63.10, Sections 9.9, 9.12			
Test mode:	Compliance	Vordict	DV66	
Date(s):	11-Mar-20	verdict.	FA33	
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC	
Remarks:				

Plot 7.4.38 Spurious emission measurements in 90 - 100 GHz range

TEST SITE: TEST DISTANCE: MODULATION: ANTENNA POLARIZATION: DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz OATS 0.05 m BPSK Vertical and Horizontal DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz





Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure:	ANSI C63.10, Sections 9.9, 9.1	2		
Test mode:	Compliance	Vordict	DV66	
Date(s):	11-Mar-20	verdict.	FA33	
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC	
Remarks:				



Plot 7.4.39 Spurious emission measurements in 90 - 100 GHz range



Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure:	ANSI C63.10, Sections 9.9, 9.12			
Test mode:	Compliance	Vordict	DV66	
Date(s):	11-Mar-20	verdict.	FA33	
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC	
Remarks:				

Plot 7.4.40 Spurious emission measurements in 90 - 100 GHz range

TEST SITE: TEST DISTANCE: MODULATION: ANTENNA POLARIZATION: DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz OATS 0.05 m 16QAM Vertical and Horizontal DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz





Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure:	ANSI C63.10, Sections 9.9, 9.12			
Test mode:	Compliance	Vordict	DASS	
Date(s):	11-Mar-20	verdict.	FA33	
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC	
Remarks:				



Plot 7.4.41 Spurious emission measurements in 100 – 110 GHz range





Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.12		
Test mode:	Compliance	Vardiate	DASS
Date(s):	11-Mar-20	Verdict: PASS	
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.42 Spurious emission measurements in 100 – 110 GHz range

TEST SITE: TEST DISTANCE: MODULATION: ANTENNA POLARIZATION: DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz OATS 0.05 m BPSK Vertical and Horizontal DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz





Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.12		
Test mode:	Compliance	Vardiati	DASS
Date(s):	11-Mar-20	verdict.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			



Plot 7.4.43 Spurious emission measurements in 100 - 110 GHz range



Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.12		
Test mode:	Compliance	Vardiat	DASS
Date(s):	11-Mar-20	verdict.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.44 Spurious emission measurements in 100 – 110 GHz range

TEST SITE: TEST DISTANCE: MODULATION: ANTENNA POLARIZATION: DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz OATS 0.05 m 16QAM Vertical and Horizontal DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz





Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.1	2	
Test mode:	Compliance	Vardiate	DV66
Date(s):	11-Mar-20	veruict.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			



Plot 7.4.45 Spurious emission measurements in 110 – 120 GHz range



Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.12		
Test mode:	Compliance	Vardiate	DASS
Date(s):	11-Mar-20	verdict.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.46 Spurious emission measurements in 110 – 120 GHz range

TEST SITE: TEST DISTANCE: MODULATION: ANTENNA POLARIZATION: DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz OATS 0.05 m BPSK Vertical and Horizontal DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz





Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.1	2	
Test mode:	Compliance	Vardiate	DV66
Date(s):	11-Mar-20	veruici.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			



Plot 7.4.47 Spurious emission measurements in 110 – 120 GHz range



Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.12	2	
Test mode:	Compliance	Vardiat	DV66
Date(s):	11-Mar-20	veruici.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.48 Spurious emission measurements in 110 – 120 GHz range

TEST SITE: TEST DISTANCE: MODULATION: ANTENNA POLARIZATION: DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz Low carrier frequency: OATS 0.05 m 16QAM Vertical and Horizontal DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz 58320 MHz





Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.1	2	
Test mode:	Compliance	Vardiate	DV66
Date(s):	11-Mar-20	veruict.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			



Plot 7.4.49 Spurious emission measurements in 120 – 130 GHz range



Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.12		
Test mode:	Compliance	Vardiate	DASS
Date(s):	11-Mar-20	verdict.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.50 Spurious emission measurements in 120 – 130 GHz range

TEST SITE: TEST DISTANCE: MODULATION: ANTENNA POLARIZATION: DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz OATS 0.05 m BPSK Vertical and Horizontal DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz





Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.1	2	
Test mode:	Compliance	Vardiate	DV66
Date(s):	11-Mar-20	verdict.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			



Plot 7.4.51 Spurious emission measurements in 120 – 130 GHz range



Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.12		
Test mode:	Compliance	Vardiate	DASS
Date(s):	11-Mar-20	verdict.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.52 Spurious emission measurements in 120 – 130 GHz range

TEST SITE: TEST DISTANCE: MODULATION: ANTENNA POLARIZATION: DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz OATS 0.05 m 16QAM Vertical and Horizontal DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz





Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.1	2	
Test mode:	Compliance	Vardiate	DV66
Date(s):	11-Mar-20	verdict.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			







Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.12		
Test mode:	Compliance	Vordict	DASS
Date(s):	11-Mar-20	veruict.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.54 Spurious emission measurements in 130 – 140 GHz range

TEST SITE: TEST DISTANCE: MODULATION: ANTENNA POLARIZATION: DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz OATS 0.05 m BPSK Vertical and Horizontal DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz





Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.1	2	
Test mode:	Compliance	Vardiat: DACC	
Date(s):	11-Mar-20	verdict.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			







Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.12		
Test mode:	Compliance	Vordict	DASS
Date(s):	11-Mar-20	verdict.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.56 Spurious emission measurements in 130 – 140 GHz range

TEST SITE: TEST DISTANCE: MODULATION: ANTENNA POLARIZATION: DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz OATS 0.05 m 16QAM Vertical and Horizontal DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz





Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.1	2	
Test mode:	Compliance	Vordict	DV66
Date(s):	11-Mar-20	veruict.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			



Plot 7.4.57 Spurious emission measurements in 140 – 150 GHz range



Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.12		
Test mode:	Compliance	Verdiet: DASS	
Date(s):	11-Mar-20	veruict.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.58 Spurious emission measurements in 140 – 150 GHz range

TEST SITE: TEST DISTANCE: MODULATION: ANTENNA POLARIZATION: DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz OATS 0.01 m BPSK Vertical and Horizontal DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz





Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.1	2	
Test mode:	Compliance	Verdiet: DASS	
Date(s):	11-Mar-20	verdici.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			



Plot 7.4.59 Spurious emission measurements in 140 – 150 GHz range



Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.12		
Test mode:	Compliance	Verdiet: DASS	
Date(s):	11-Mar-20	veruict.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.60 Spurious emission measurements in 140 – 150 GHz range

TEST SITE: TEST DISTANCE: MODULATION: ANTENNA POLARIZATION: DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz OATS 0.01 m 16QAM Vertical and Horizontal DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz





Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.1	2	
Test mode:	Compliance	Verdiet: DASS	
Date(s):	11-Mar-20	verdici.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			



Plot 7.4.61 Spurious emission measurements in 150 - 160 GHz range



Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.12		
Test mode:	Compliance	Verdiet: DASS	
Date(s):	11-Mar-20	verdict.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.62 Spurious emission measurements in 150 – 160 GHz range

TEST SITE: TEST DISTANCE: MODULATION: ANTENNA POLARIZATION: DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz OATS 0.01 m BPSK Vertical and Horizontal DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz





Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.1	2	
Test mode:	Compliance	Vordict	DV66
Date(s):	11-Mar-20	veruici.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			



Plot 7.4.63 Spurious emission measurements in 150 – 160 GHz range



Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.12		
Test mode:	Compliance	Vordict	DASS
Date(s):	11-Mar-20	verdict.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.64 Spurious emission measurements in 150 – 160 GHz range

TEST SITE: TEST DISTANCE: MODULATION: ANTENNA POLARIZATION: DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz OATS 0.01 m 16QAM Vertical and Horizontal DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz





Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.1	2	
Test mode:	Compliance	Verdiet: DASS	
Date(s):	11-Mar-20	verdici.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			



Plot 7.4.65 Spurious emission measurements in 160 – 170 GHz range



Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.12		
Test mode:	Compliance	Vordiot	PASS
Date(s):	11-Mar-20	verdict.	
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.66 Spurious emission measurements in 160 – 170 GHz range

TEST SITE: TEST DISTANCE: MODULATION: ANTENNA POLARIZATION: DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz OATS 0.01 m BPSK Vertical and Horizontal DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz





Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.1	2	
Test mode:	Compliance	Vordiot	DV66
Date(s):	11-Mar-20	verdict.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			



Plot 7.4.67 Spurious emission measurements in 160 – 170 GHz range



Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.12		
Test mode:	Compliance	Vordiot	PASS
Date(s):	11-Mar-20	verdict.	
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.68 Spurious emission measurements in 160 – 170 GHz range

TEST SITE: TEST DISTANCE: MODULATION: ANTENNA POLARIZATION: DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz OATS 0.01 m 16QAM Vertical and Horizontal DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz





Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.1	2	
Test mode:	Compliance	Vordict	DV66
Date(s):	11-Mar-20	veruict.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			



Plot 7.4.69 Spurious emission measurements in 170 – 180 GHz range


Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.12		
Test mode:	Compliance	Vardiat	DASS
Date(s):	11-Mar-20	verdict.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.70 Spurious emission measurements in 170 – 180 GHz range

TEST SITE: TEST DISTANCE: MODULATION: ANTENNA POLARIZATION: DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz OATS 0.01 m BPSK Vertical and Horizontal DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz





Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.1	2	
Test mode:	Compliance	Vordict	DV66
Date(s):	11-Mar-20	veruict.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			



Plot 7.4.71 Spurious emission measurements in 170 – 180 GHz range



Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.12		
Test mode:	Compliance	Vordict	DV66
Date(s):	11-Mar-20	Verdict: PASS	
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.72 Spurious emission measurements in 170 – 180 GHz range

TEST SITE: TEST DISTANCE: MODULATION: ANTENNA POLARIZATION: DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz OATS 0.01 m 16QAM Vertical and Horizontal DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz





Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.1	2	
Test mode:	Compliance	Vardiate	DV66
Date(s):	11-Mar-20	verdici.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			



Plot 7.4.73 Spurious emission measurements in 180 – 190 GHz range



Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.12		
Test mode:	Compliance	Verdiet: DASS	DV66
Date(s):	11-Mar-20	verdict.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.74 Spurious emission measurements in 180 – 190 GHz range

TEST SITE: TEST DISTANCE: MODULATION: ANTENNA POLARIZATION: DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz OATS 0.01 m BPSK Vertical and Horizontal DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz





Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.1	2	
Test mode:	Compliance	Vardiate	DV66
Date(s):	11-Mar-20	verdici.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			



Plot 7.4.75 Spurious emission measurements in 180 – 190 GHz range



Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.12		
Test mode:	Compliance	Vordict	DASS
Date(s):	11-Mar-20	verdict: PASS	
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.76 Spurious emission measurements in 180 – 190 GHz range

TEST SITE: TEST DISTANCE: MODULATION: ANTENNA POLARIZATION: DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz OATS 0.01 m 16QAM Vertical and Horizontal DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz





Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.1	2	
Test mode:	Compliance	Vardiate	DV66
Date(s):	11-Mar-20	verdici.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			



Plot 7.4.77 Spurious emission measurements in 190 – 200 GHz range



Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.12		
Test mode:	Compliance	Verdiet: DASS	DV66
Date(s):	11-Mar-20	verdict.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.78 Spurious emission measurements in 190 – 200 GHz range

TEST SITE: TEST DISTANCE: MODULATION: ANTENNA POLARIZATION: DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz OATS 0.01 m BPSK Vertical and Horizontal DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz





Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.12		
Test mode:	Compliance	Vardiat	DV66
Date(s):	11-Mar-20	verdict.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			



Plot 7.4.79 Spurious emission measurements in 190 – 200 GHz range



Test specification:	FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz		
Test procedure:	ANSI C63.10, Sections 9.9, 9.12		
Test mode:	Compliance	Vardiat	DASS
Date(s):	11-Mar-20	verdict.	FA33
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.80 Spurious emission measurements in 190 – 200 GHz range





Test specification: FCC Section 15.255(f), RSS-210 section J.6, Frequency stability			
Test procedure:	ANSI C63.10, Section 9.14		
Test mode:	Compliance	Verdict: PASS	
Date(s):	09-Mar-20		
Temperature: 24 °C	Relative Humidity: 47 %	Air Pressure: 1014 hPa	Power: 55 VDC
Remarks:			

7.5 Frequency stability test

7.5.1 General

This test was performed to measure frequency stability of transmitter RF carrier. Specification test limits are given in Table 7.5.1.

Table	7.5.1	Fred	uencv	stability	limits
			ao	otasinty	

Assigned frequency, MHz	Maximum allowed frequency displacement
58320	
60480	NA
64800	

7.5.2 Test procedure

- **7.5.2.1** The EUT was set up as shown in Figure 7.5.1, energized and its proper operation was checked.
- **7.5.2.2** The EUT power was turned off. Temperature within test chamber was set to +30°C and a period of time sufficient to stabilize all of the oscillator circuit components was allowed.
- **7.5.2.3** The EUT was powered on and carrier frequency was measured at start up moment and then every minute until frequency had been stabilized or 10 minutes elapsed whichever reached the last. The EUT was powered off.
- 7.5.2.4 The above procedure was repeated at 0°C and at the lowest test temperature.
- **7.5.2.5** The EUT was powered on and carrier frequency was measured at start up moment and at the end of stabilization period at the rest of test temperatures and voltages. The EUT was powered off.
- 7.5.2.6 Frequency displacement was calculated and compared with the limit as provided in Table 7.5.2.

Figure 7.5.1 Frequency stability test setup





Test specification:	FCC Section 15.255(f), RSS	-210 section J.6, Frequenc	y stability
Test procedure:	ANSI C63.10, Section 9.14		
Test mode:	Compliance	Vardiat	DV66
Date(s):	09-Mar-20	verdict.	FA33
Temperature: 24 °C	Relative Humidity: 47 %	Air Pressure: 1014 hPa	Power: 55 VDC
Remarks:			

Table 7.5.2 Frequency stability test results

	Table 7.5.2 Frequency stability test results									
ASSIGNED FREQUENCY RANGE:57000 – 66000 MHzNOMINAL POWER VOLTAGE:48 VTEMPERATURE STABILIZATION PERIOD:20 minPOWER DURING TEMPERATURE TRANSITION:Off										
SPEC RESO VIDEC	TRUM ANALY LUTION BANI) BANDWIDTH	ZER MODE DWIDTH: I:	Ξ:			Counter 3 kHz 10 kHz				
MODL	JLATION:					Unmodulate	d			
т, ℃	Voltage, V			F	requency, M	Hz			Max frequen	cy drift, kHz
		Start up	1 st min	2 nd min	3 rd min	4 th min	5 th min	10 th min	Posit	Negative
Low fi	requency 58.3	2 GHz								
-30	nominal	58320.010	NA	NA	NA	NA	NA	58320.011	11.0	NA
-20	nominal	58320.009	58320.008	58320.008	58320.008	58320.008	58320.008	58320.008	9.0	NA
-10	nominal	58320.003	NA	NA	NA	NA	NA	58320.009	9.0	NA
0	nominal	58320.007	58320.007	58320.008	58320.008	58320.008	58320.008	58320.009	9.0	NA
10	nominal	58320.008	NA	NA	NA	NA	NA	58320.012	12.0	NA
20	+15%	58320.016	NA	NA	NA	NA	NA	58320.017	17.0	NA
20	nominal	58320.016	NA	NA	NA	NA	NA	58320.017	17.0	NA
20	-15%	58320.016	NA	NA	NA	NA	NA	58320.017	17.0	NA
30	nominal	58320.017	58320.016	58320.018	58320.018	58320.019	58320.019	58320.019	19.0	NA
40	nominal	58320.019	NA	NA	NA	NA	NA	58320.019	19.0	NA
50	nominal	58320.023	NA	NA	NA	NA	NA	58320.026	26.0	NA
60	nominal	58320.027	NA	NA	NA	NA	NA	58320.022	27.0	NA
Mid fr	Mid frequency 60.48GHz									
-30	nominal	60480.011	NA	NA	NA	NA	NA	60480.011	11.0	NA
-20	nominal	60480.007	60480.009	60480.009	60480.009	60480.009	60480.009	60480.010	10.0	NA
-10	nominal	60480.006	NA	NA	NA	NA	NA	60480.010	10.0	NA
10	nominal	60480.009	60480.010	60480.010	60480.011	60480.011	60480.011	60480.011	11.0	NA
10		60480.013	NA	NA	NA	NA	NA	60480.014	14.0	NA NA
20	+15%	60480.012	NA	NA	NA	NA	NA	60480.013	13.0	NA NA
20	_15%	60480.012	NA	NA	NA	NA	NA	60480.013	13.0	NA
20	nominal	60480.012	NA	NA	NA	NA	NA	60480.013	13.0	NA
40	nominal	60480.010	00480.017	00460.017	00480.017	00480.017	00460.017	60480.018	18.0	NA
50	nominal	60480.023	NA	NA	NA	NA	NA	60480.025	25.0	NA
60	nominal	60480.023	NA	NA	NA	NA	NA	60480.020	20.0	NA
Hiah f	requency 64.8	30 GHz	10.1		107	107	107	00400.020	24.0	
-30	nominal	64800.012	NA	NA	NA	NA	NA	64800.012	12.0	NA
-20	nominal	64800.007	64800.008	64800.009	64800.009	64800.009	64800.009	64800.012	10.0	NA
-10	nominal	64800.004	NA	NA	NA	NA	NA	64800.010	10.0	NA
0	nominal	64800.009	64800.009	64800.009	64800.009	64800.009	64800.010	64800.011	11.0	NA
10	nominal	64800.010	NA	NA	NA	NA	NA	64800.015	15.0	NA
20	+15%	64800.018	NA	NA	NA	NA	NA	64800.020	20.0	NA
20	nominal	64800.017	NA	NA	NA	NA	NA	64800.020	20.0	NA
20	-15%	64800.017	NA	NA	NA	NA	NA	64800.020	20.0	NA
30	nominal	64800.019	64800.020	64800.021	64800.021	64800.021	64800.021	64800.021	21.0	NA
40	nominal	64800.019	NA	NA	NA	NA	NA	64800.025	25.0	NA
50	nominal	64800.028	NA	NA	NA	NA	NA	64800.027	28.0	NA
60	nominal	64800.026	NA	NA	NA	NA	NA	64800.022	26.0	NA

* - Reference frequency

Reference numbers of test equipment used

HL 0493	HL 0771	HL 2171	HL 5376	HL 5380		

Full description is given in Appendix A.



Test specification:	FCC Section 15.207(a)/RSS	Gen 8.8, Conducted emiss	ion
Test procedure:	ANSI C63.4, Section 13.1.3		
Test mode:	Compliance	Vordiot	DV66
Date(s):	21-Feb-20	verdict.	FA33
Temperature: 23 °C	Relative Humidity: 55 %	Air Pressure: 1009 hPa	Power: 120 VAC, 60 Hz
Remarks:			

7.6 Conducted emissions

7.6.1 General

This test was performed to measure common mode conducted emissions at the power port. Specification test limits are given in Table 7.6.1.

Table 7.6.1 Limits for conducted emissions

Frequency,	Class B lir	nit, dB(μV)
MHz	QP	AVRG
0.15 - 0.5	66 - 56*	56 - 46*
0.5 - 5.0	56	46
5.0 - 30	60	50

* The limit decreases linearly with the logarithm of frequency.

7.6.2 Test procedure

- **7.6.2.1** The EUT was set up as shown in Figure 7.6.1 and associated photographs, energized and the performance check was conducted.
- **7.6.2.2** The measurements were performed at power terminals with the LISN, connected to a spectrum analyzer in the frequency range referred to in Table 7.6.2. Unused coaxial connector of the LISN was terminated with 50 Ohm. Quasi-peak and average detectors were used throughout the testing.
- 7.6.2.3 The position of the device cables was varied to determine maximum emission level.
- 7.6.2.4 The worst test results (the lowest margins) were recorded in Table 7.6.2 and shown in the associated plots.

Figure 7.6.1 Setup for conducted emission measurements, table-top equipment





Test specification:	FCC Section 15.207(a)/RSS	-Gen 8.8, Conducted emiss	ion		
Test procedure:	ANSI C63.4, Section 13.1.3				
Test mode:	Compliance	Vordict	DV66		
Date(s):	21-Feb-20	- verdict: PASS			
Temperature: 23 °C	Relative Humidity: 55 %	Air Pressure: 1009 hPa	Power: 120 VAC, 60 Hz		
Remarks:					

Table 7.6.2 Conducted emission test results

LINE: EUT OPERATIN EUT SET UP: TEST SITE: DETECTORS L FREQUENCY F RESOLUTION I	NG MODE: JSED: RANGE: BANDWIDTH:			4 1 1 5 5 7 1 9	AC mains Fransmit FABLE-TOP SHIELDED RC PEAK / QUAS 50 kHz - 30 M 9 kHz	DOM I-PEAK / A /IHz	VERAGE		
	Poak	Q	uasi-peak			Average			
Frequency, MHz	emission, dB(μV)	Measured emission, dB(μV)	Limit, dB(μV)	Margin, dB*	Measured emission, dB(μV)	Limit, dB(μV)	Margin, dB*	Line ID	Verdict
0.152	55.7	51.8	65.9	-14.1	37.3	55.9	-18.6		
0.400	48.6	46.9	57.9	-11.0	35.7	47.9	-12.2		
0.580	49.5	46.6	56.0	-9.4	33.6	46.0	-12.4	1.1	Pass
1.317	46.7	43.6	56.0	-12.4	29.9	46.0	-16.1	L I	Pass
7.480	55.5	50.0	60.0	-10.0	42.0	50.0	-8.0		
9.730	52.3	47.5	60.0	-12.5	40.6	50.0	-9.4		
0.153	55.7	52.6	65.9	-13.3	37.4	55.9	-18.5		
0.420	47.9	45.8	57.5	-11.7	33.3	47.5	-14.2		
0.580	48.1	45.3	56.0	-10.7	32.3	46.0	-13.7	12	Pass
7.480	54.2	48.8	60.0	-11.2	41.0	50.0	-9.0	LZ	1 855
10.74	52.1	48.1	60.0	-11.9	42.1	50.0	-7.9		
26.42	45.7	44.9	60.0	-15.1	40.0	50.0	-10.0		

*- Margin = Measured emission - specification limit.

Reference numbers of test equipment used

HL 447	HL 787	HL 4778	HL 5476			
					•	

Full description is given in Appendix A.



Test specification:	FCC Section 15.207(a)/RSS-Gen 8.8, Conducted emission				
Test procedure:	ANSI C63.4, Section 13.1.3				
Test mode:	Compliance	Vordiot	DASS		
Date(s):	21-Feb-20	verdict: PASS			
Temperature: 23 °C	Relative Humidity: 55 %	Air Pressure: 1009 hPa	Power: 120 VAC, 60 Hz		
Remarks:					

Plot 7.6.1 Conducted emission measurements





LINE: EUT OPERATING MODE: LIMIT: DETECTOR:	L2 Transmit QUASI-PEAK, AVERAGE PEAK
G	
	OCTU DEL, REOM

ACTV DET: PEAK Mers det: Peak op avc NKR 7.40 MHz 53.46 dBµV





Test specification:	Section 15.203, Antenna requirement		
Test procedure:	Visual inspection / supplier declaration		
Test mode:	Compliance	Verdict: PASS	
Date(s):	17-Mar-20		
Temperature: 24 °C	Relative Humidity: 49 %	Air Pressure: 1013 hPa	Power: 55 VDC
Remarks:			

7.7 Antenna requirements

The EUT was verified for compliance with antenna requirements. A transmitter shall be designed to ensure that no antenna other than that furnished by the responsible party will be used with the device. It may be either permanently attached or employs a unique antenna connector for every antenna proposed for use with the EUT. This requirement does not apply to professionally installed transmitters. The rationale for compliance with the above requirements was either visual inspection results or supplier

declaration. The summary of results is provided in Table 7.7.1.

Table 7.7.1 Antenna requirements

Requirement	Rationale	Verdict
The transmitter antenna is permanently attached	Visual inspection	
The transmitter employs a unique antenna connector	NA	Comply
The transmitter requires professional installation	NA	

Photograph 7.7.1 Antenna assembly





8 APPENDIX A Test equipment and ancillaries used for tests

HL No	Description	Manufacturer	Model	Ser. No.	Last Cal./ Check	Due Cal./ Check
0446	Antenna, Loop, Active, 10 (9) kHz - 30 MHz	EMCO	6502	2857	24-Feb-20	24-Feb-21
0447	LISN, 16/2, 300V RMS, 50 Ohm/50 uH + 5 Ohm, STD CISPR 16-1	Hermon Laboratories	LISN 16 - 1	066	03-Nov-19	03-Nov-20
0493	Temperature Chamber -45175 deg C	Thermotron	S-1.2 Mini-Max	14016	19-Jun-19	19-Jun-20
0747	Mixer, Millimeter Wave Harmonic 90 - 140 GHZ	Oleson Microwave Labs	M08HW	F80429-1	03-Mar-20	03-Mar-21
0770	Antenna Standard Gain Horn, 40-60 GHz WR-19, U-band, 24 dB mid-band gain	Quinstar Technology	QWH- 1900-AA	118	05-Aug-19	05-Aug-20
0771	Antenna Standard Gain Horn, 60-90 GHz, WR-12, 24 dB mid-band gain	Quinstar Technology	QWH- 1200-AA	111	05-Aug-19	05-Aug-20
0787	Transient Limiter 9 kHz-200 MHz	Hewlett Packard	11947A	3107A018 77	08-Oct-19	08-Oct-20
1300	Transition waveguide ET28S -19R	Custom Microwave	ET28S - 19R	1300	18-Nov-18	18-Nov-20
1303	Transition waveguide ET28S -12R	Custom Microwave	ET28S - 12R	S0951	18-Nov-18	18-Nov-20
1312	Mixer Millimeter Wave Harmonic 140-220 GHz	Oleson Microwave Labs	M05HWD	G91112-1	03-Mar-20	03-Mar-21
2171	Multimeter	Fluke	177	79960418	21-Jul-19	21-Jul-20
2909	Spectrum analyzer, ESA-E, 100 Hz to 26.5 GHz	Agilent Technologies	E4407B	MY414447 62	05-Apr-20	05-Apr-21
3235	Harmonic mixer 40 to 60 GHz	Agilent Technologies	11970U	MY300301 82	30-Jan-20	30-Jan-23
3290	Attenuator, direct reading, 40 to 60 GHz, 0.4 W	Quinstar Technology	QAD- U00000	10381008	24-Sep-19	24-Sep-21
3329	Antenna Standard Gain Horn, 140-220 GHz, WR-5, 24 dB mid-band gain	Quinstar Technology	NA	3329	19-Aug-19	19-Aug-20
3433	Test Cable , DC-18 GHz, 1.5 m, SMA - SMA	Mini-Circuits	CBL-5FT- SMSM+	25679	13-Apr-20	13-Apr-21
3434	Test Cable , DC-18 GHz, 1.5 m, SMA - SMA	Mini-Circuits	CBL-5FT- SMSM+	25683	13-Apr-20	13-Apr-21
3536	Antenna Standard Gain Horn, 90-140 GHz, WR-8, 24 dB mid-band gain	Quinstar Technology	QWH- FPRR00	111590040 01	26-Jun-19	26-Jun-20
3903	Microwave Cable Assembly, 40.0 GHz, 1.5 m, SMA/SMA	Huber-Suhner	SUCOFLE X 102A	1226/2A	06-Apr-20	06-Apr-21
4023	Diplexer for use OML mixers with Agilent spectrum analyzer	Oleson Microwave Labs	DPL.26	NA	01-Apr-20	01-Apr-21
4360	EMI Test Receiver, 20 Hz to 40 GHz.	Rohde & Schwarz	ESU40	100322	20-Jan-20	20-Jan-21





HL No	Description	Manufacturer	Model	Ser. No.	Last Cal./ Check	Due Cal./ Check
4778	EMI Receiver, 9 kHz - 2.9 GHz, System: HL1431, HL4777	Hewlett Packard	8542E	30807A00 262, 3427A001 23	04-Nov-19	04-Nov-20
4933	Active Horn Antenna, 1 GHz to 18 GHz	COM-POWER CORPORATIO N	AHA-118	701046	06-Jan-20	06-Jan-21
4956	Active horn antenna, 18 to 40 GHz	COM-POWER CORPORATIO N	AHA-840	105004	29-Jan-20	29-Jan-21
5288	Trilog Antenna, 25 MHz - 8 GHz, 100W	Frankonia	ALX- 8000E	00809	08-Feb-19	08-Feb-22
5376	EXA Signal Analyzer, 10 Hz - 32 GHz	Keysight Technologies	N9010B	MY574704 04	18-Mar-20	18-Mar-21
5380	Wavequide Harmonic Mixer 55-90G Hz	Keysight Technologies	M1971E	MY561302 39	01-Jun-18	01-Jun-20
5404	RF cable, 18 GHz, N-N, 6 m	Huber-Suhner	SF118/11 N(x2)	500024/18	11-Aug-19	11-Aug-20
5476	Cable, BNC/BNC, 10.5 m	Western wire	MIL-C- 17G	NA	30-Jan-20	30-Jan-21



9 APPENDIX B Measurement uncertainties

Test description	Expanded uncertainty
Conducted emissions with LISN	9 kHz to 150 kHz: ± 3.9 dB
	150 kHz to 30 MHz: ± 3.8 dB
Radiated emissions at 10 m measuring distance	
Horizontal polarization	Biconilog antenna: ± 5.0 dB
	Biconical antenna: ± 5.0 dB
	Log periodic antenna: ± 5.1 dB
Vertical polorization	Double ridged horn antenna: ± 5.3 dB
vertical polarization	Biconilog antenna: ± 5.5 dB
	Biconical antenna: ± 5.5 dB
	Log periodic antenna: \pm 5.6 dB
	Double ridged horn antenna: ± 5.8 dB
Radiated emissions at 3 m measuring distance	
Horizontal polarization	Biconilog antenna: ± 5.3 dB
	Biconical antenna: ± 5.0 dB
	Log periodic antenna: \pm 5.3 dB
Vertical polorization	Double ridged horn antenna: \pm 5.3 dB
vertical polarization	Biconilog antenna: ± 6.0 dB
	Biconical antenna: ± 5.7 dB
	Log periodic antenna: \pm 6.0 dB
	Double ridged horn antenna: \pm 6.0 dB
Conducted emissions at RF antenna connector	9 kHz to 2.9 GHz: ± 2.6 dB
	2.9 GHz to 6.46 GHz: ± 3.5 dB
	6.46 GHz to 13.2 GHz: ± 4.3 dB
	13.2 GHz to 22.0 GHz: ± 5.0 dB
	22.0 GHz to 26.8 GHz: ± 5.5 dB
	26.8 GHz to 40.0 GHz: ± 4.8 dB

Expanded uncertainty at 95% confidence in Hermon Labs EMC measurements

Hermon Laboratories is accredited by A2LA for calibration according to present requirements of ISO/IEC 17025 and NCSL Z540-1. The accreditation is granted to perform calibration of parameters that are listed in the Scope of Hermon Laboratories Accreditation.

Hermon Laboratories calibrates its reference and transfer standards by calibration laboratories accredited to ISO/IEC 17025 by a mutually recognized Accreditation Body or by a recognized national metrology institute. All reference and transfer standards used in the calibration system are traceable to national or international standards.

In-house calibration of all test and measurement equipment is performed on a regular basis according to Hermon Laboratories calibration procedures, manufacturer calibration/verification procedures or procedures defined in the relevant standards. The Hermon Laboratories test and measurement equipment is calibrated within the tolerances specified by the manufacturers and/or by the relevant standards.



10 APPENDIX C Test facility description

Tests were performed at Hermon Laboratories Ltd., which is a fully independent, private, EMC, Radio, Safety, Environmental and Telecommunication testing facility.

Hermon Laboratories is recognized and accredited by the Federal Communications Commission (USA) for relevant parts of Code of Federal Regulations 47 (CFR 47), Test Firm Registration Number is 927748, Designation Number is IL1001; Recognized by Innovation, Science and Economic Development Canada for wireless and terminal testing (ISED), ISED #2186A, CAB identifier is IL1001; Certified by VCCI, Japan (the registration numbers are R-10808 for OATS, R-11082 for anechoic chamber, G-10869 for RE measurements above 1 GHz, C-10845 for conducted emissions site and T-11606 for conducted emissions at telecommunication ports).

The laboratory is accredited by American Association for Laboratory Accreditation (USA) according to ISO/IEC 17025 for electromagnetic compatibility, product safety, telecommunications testing, environmental simulation and calibration (for exact scope please refer to Certificate No. 839.01, 839.03 and 839.04).

Address:	P.O. Box 23, Binyamina 3055001, Israel.
Telephone:	+972 4628 8001
Fax:	+972 4628 8277
e-mail:	mail@hermonlabs.com
website:	www.hermonlabs.com

Person for contact: Mr. Michael Nikishin, EMC&Radio group manager

11 APPENDIX D Specification references

47CFR part 15: 2019	Radio Frequency Devices.
ANSI C63.2: 1996	American National Standard for Instrumentation-Electromagnetic Noise and Field Strength, 10 kHz to 40 GHz-Specifications.
ANSI C63.10: 2013	American National Standard of Procedures for Compliance Testing of Unlicemsed Wireless Devices
RSS-210 Issue 10 [,] 2019	Licence-Exempt Radio Apparatus:Category I Equipment
RSS-Gen Issue 5 with Am.1: 2019	General Requirements for Compliance of Radio Apparatus





12 Test equipment correction factors

Antenna factor Active loop antenna Model 6502, S/N 2857, HL 0446

Frequency, MHz	Magnetic antenna factor, dB	Electric antenna factor, dB
0.009	-32.8	18.7
0.010	-33.8	17.7
0.020	-38.3	13.2
0.050	-41.1	10.4
0.075	-41.3	10.2
0.100	-41.6	9.9
0.150	-41.7	9.8
0.250	-41.6	9.9
0.500	-41.8	9.8
0.750	-41.9	9.7
1.000	-41.4	10.1
2.000	-41.5	10.0
3.000	-41.4	10.2
4.000	-41.4	10.1
5.000	-41.5	10.1
10.000	-41.9	9.6
15.000	-41.9	9.6
20.000	-42.2	9.3
25.000	-42.8	8.7
30.000	-44.0	7.5

Antenna factor in dB(1/m) is to be added to receiver meter reading in dB(μ V) to convert it into field strength in dB(μ V/m).

Antenna factor Standard gain horn antenna Quinstar Technology Model QWH Ser.No.112, HL 0768, 0769, 0770, 0771, 0772

Frequency min, GHz	Frequency max, GHz	Antenna factor, dB(1/m)
18.000	26.500	32.01
26.500	40.000	35.48
40.000	60.000	39.03
60.000	90.000	42.55
90.000	140.000	46.23
140.000	220.000	50.11

Antenna factor in dB(1/m) is to be added to receiver meter reading in dB(μ V) to convert it into field intensity in dB(μ V/m).



	Antenna factor, dB/m			
Frequency, MHZ	Vert Up	Vert Down	Delta	
30	-51.19	-51.28	0.09	
35	-44.03	-44.12	0.09	
40	-43.07	-43.12	0.05	
45	-39.61	-39.79	0.18	
50	-37.84	-38.14	0.3	
60	-34.93	-34.9	0.03	
70	-29.76	-29.66	0.1	
80	-27.69	-27.82	0.13	
90	-29.05	-29.07	0.02	
100	-31.19	-31.19	0	
120	-31.61	-31.6	0.01	
140	-28.13	-28.06	0.07	
160	-27.71	-27.75	0.04	
180	-26.19	-26.15	0.04	
200	-28.2	-28.15	0.05	
250	-27.45	-27.47	0.02	
300	-29.61	-29.63	0.02	
400	-31.77	-31.78	0.01	
500	-32.81	-32.81	0	
600	-33.64	-33.61	0.03	
700	-34.21	-34.21	0	
800	-35.66	-35.66	0	
900	-36.99	-36.91	0.08	
1000	-38	-37.91	0.09	

Antenna factor Trilog antenna Model ALX-8000E, Frankonia, S/N 00809, HL 5288, 30-1000 MHz

Antenna factor in dB(1/m) is to be added to receiver meter reading in dB(μ V) to convert it into field intensity in dB(μ V/m).



Antenna factor Active Horn Antenna, Com-Power Corporation, model: AHA-118, s/n 701046, HL 4933

Frequency, MHz	Measured antenna factor (with preamplifier), dB/m
1000	-16.1
1500	-15.1
2000	-10.9
2500	-11.9
3000	-11.1
3500	-10.6
4000	-8.6
4500	-8.3
5000	-5.9
5500	-5.7
6000	-3.3
6500	-4.0
7000	-2.2
7500	-1.7
8000	1.1
8500	-0.8
9000	-1.5
9500	-0.2

Frequency, MHz	Measured antenna factor (with preamplifier), dB/m
10000	1.8
10500	1.0
11000	0.3
11500	-0.5
12000	3.1
12500	1.4
13000	-0.3
13500	-0.4
14000	2.5
14500	2.2
15000	1.9
15500	0.5
16000	2.1
16500	1.2
17000	0.6
17500	3.1
18000	4.2

The antenna factor shall be added to receiver reading in $dB\mu V$ to obtain field strength in $dB\mu V/m$.



Antenna factor
Active Horn Antenna,
Com-Power Corporation, model: AHA-840, s/n 105004, HL 4956

Frequency, MHz	Measured antenna factor (with preamplifier), dB/m
18000	2.5
18500	0.5
19000	-1.0
19500	-2.4
20000	-2.5
20500	-2.2
21000	-2.0
21500	-2.7
22000	-3.7
22500	-3.8
23000	-3.7
23500	-5.0
24000	-4.5
24500	-5.0
25000	-4.7
25500	-4.4
26000	-4.3
26500	-5.6
27000	-4.3
27500	-4.9
28000	-5.2
28500	-4.4

Frequency, MHz	Measured antenna factor (with preamplifier), dB/m
29000	-2.7
29500	-2.6
30000	-1.4
30500	-1.5
31000	-1.0
31500	-2.6
32000	-3.3
32500	-3.3
33000	-5.1
33500	-5.2
34000	-1.5
34500	-5.4
35000	-3.3
35500	-4.2
36000	-2.8
36500	-2.6
37000	-1.0
38000	1.8
38500	2.8
39000	1.3
39500	1.3
40000	0.3

The antenna factor shall be added to receiver reading in $dB\mu V$ to obtain field strength in $dB\mu V/m$.



	Cable lo	SS			
Test Cable, Mini-Circuits,	CBL-5FT-SMSM+	, SMA-SMA,	18 GHz,	1.5 m, S/N	25679
	Mini-Circuits,	HL 3433		-	

Frequency, MHz	Cable loss, dB	Frequency, MHz	Cable loss, dB
10.0	0.06	9000	2.01
100	0.17	9500	2.06
500	0.41	10000	2.05
1000	0.58	10500	2.18
1500	0.72	11000	2.26
2000	0.86	11500	2.28
2500	0.96	12000	2.43
3000	1.04	12500	2.53
3500	1.13	13000	2.52
4000	1.23	13500	2.56
4500	1.31	14000	2.60
5000	1.41	14500	2.59
5500	1.49	15000	2.67
6000	1.55	15500	2.76
6500	1.63	16000	2.86
7000	1.71	16500	2.91
7500	1.78	17000	2.95
8000	1.86	17500	3.02
8500	1.92	18000	3.07



Frequency, MHz	Cable loss, dB	Frequency, MHz	Cable loss, dB
10.0	0.06	9000	1.96
100	0.16	9500	2.01
500	0.40	10000	2.01
1000	0.57	10500	2.14
1500	0.72	11000	2.21
2000	0.85	11500	2.24
2500	0.95	12000	2.36
3000	1.03	12500	2.47
3500	1.11	13000	2.46
4000	1.21	13500	2.50
4500	1.29	14000	2.53
5000	1.39	14500	2.53
5500	1.46	15000	2.62
6000	1.52	15500	2.70
6500	1.60	16000	2.80
7000	1.68	16500	2.86
7500	1.75	17000	2.88
8000	1.83	17500	2.94
8500	1.88	18000	3.00



Cable loss Microwave Cable Assembly, Huber-Suhner, 40 GHz, 1.5 m, SMA-SMA, S/N 1226/2A HL 3903

Frequency, MHz	Cable loss, dB	Frequency, MHz	Cable loss, dB	Frequency, MHz	Cable loss, dB
10	-0.02	9500	1.84	21000	2.98
100	0.15	10000	1.86	22000	3.07
500	0.38	10500	1.93	23000	3.13
1000	0.56	11000	1.99	24000	3.21
1500	0.69	11500	2.04	25000	3.26
2000	0.82	12000	2.10	26000	3.48
2500	0.90	12500	2.15	27000	3.44
3000	0.98	13000	2.21	28000	3.53
3500	1.06	13500	2.25	29000	3.59
4000	1.11	14000	2.29	30000	3.66
4500	1.17	14500	2.34	31000	3.70
5000	1.24	15000	2.36	32000	3.79
5500	1.32	15500	2.40	33000	3.88
6000	1.40	16000	2.45	34000	3.94
6500	1.50	16500	2.48	35000	3.91
7000	1.56	17000	2.56	36000	4.05
7500	1.62	17500	2.58	37000	4.22
8000	1.68	18000	2.60	38000	4.25
8500	1.74	19000	2.84	39000	4.27
9000	1.78	20000	2.88	40000	4.33



Cable loss RF Cable, Huber-Suhner, 18 GHz, 6 m, SF118/11N(x2), S/N 500024/18 HL 5404

Frequency, MHz	Cable loss, dB	Frequency, MHz	Cable loss, dB
0.1	0.02	5500	3.62
50	0.23	6000	3.73
100	0.32	6500	3.83
200	0.46	7000	3.92
300	0.56	7500	4.04
400	0.64	8000	4.11
500	0.72	8500	4.19
600	0.79	9000	4.28
700	0.86	9500	4.37
800	0.92	10000	4.46
900	0.97	10500	3.62
1000	1.03	11000	3.73
1100	1.08	11500	3.83
1200	1.14	12000	3.92
1300	1.17	12500	4.04
1400	1.22	13000	4.11
1500	1.27	13500	4.19
1600	1.31	14000	4.28
1700	1.35	14500	4.37
1800	1.39	15000	4.46
1900	1.43	15500	4.54
2000	1.48	16000	4.60
2500	1.66	16500	4.70
3000	1.82	17000	4.80
3500	1.98	17500	4.87
4000	2.12	18000	4.93
4500	2.26		
5000	2.40		



Cable loss Cable, BNC/BNC, 10.5 m MIL-C-17G Western wire, HL 5476

Frequency, MHz	Cable loss, dB	Frequency, MHz	Cable loss, dB
0.01	0.12	270	3.07
10	0.56	280	3.13
20	0.79	290	3.19
30	0.97	300	3.26
40	1.11	310	3.32
50	1.25	320	3.40
60	1.37	330	3.46
70	1.48	340	3.52
80	1.58	350	3.58
90	1.68	360	3.62
100	1.79	370	3.70
110	1.88	380	3.75
120	1.96	390	3.82
130	2.05	400	3.87
140	2.12	410	3.93
150	2.20	420	3.98
160	2.29	430	4.06
170	2.37	440	4.11
180	2.44	450	4.18
190	2.51	460	4.22
200	2.58	470	4.27
210	2.66	480	4.35
220	2.74	490	4.39
230	2.80	500	4.45
240	2.87		
250	2.93		
260	3.01		



13 APPENDIX E Abbreviations and acronyms

Δ	amnere
AC.	alternating current
A/m	ampere per meter
AM	amplitude modulation
AVRG	average (detector)
BB	broad band
cm	centimeter
dB	decibel
dBm	decibel referred to one milliwatt
dB(uV)	decibel referred to one microvolt
dB(uV/n	a) decibel referred to one microvolt per meter
dB(μΔ)	decibel referred to one microampere
dB(µ, t)	decibel referred to one Ohm
	direct current
FIRP	equivalent isotropically radiated power
FRP	effective radiated power
FUT	equipment under test
F	frequency
GHz	gigahertz
GND	around
Н	height
HL	Hermon laboratories
Hz	hertz
ITE	information technology equipment
k	kilo
kHz	kilohertz
LISN	line impedance stabilization network
LO	local oscillator
m	meter
MHz	megahertz
min	minute
mm	millimeter
ms	millisecond
μS	microsecond
NA	not applicable
NB	narrow band
NI	not tested
OATS	open area test site
Ω	Unm Sussi a sala
QP	quasi-peak
PIN	pulse modulation
	power suppry
	radia fragueney
ГГ rme	root mean square
Ry	receive
S	second
T	temperature
Tx	transmit
V	volt
VA	volt-ampere

END OF TEST REPORT

14 APPENDIX F Manufacturer's declaration

Note: The following data in this clause is provided by the customer and represents his sole responsibility.



DECLARATION OF IDENTITY

RADWIN 6000 TerraWIN™ 625G

The model RADWIN 6000 TerraWINTM 601G is a variant of the model RADWIN 6000 TerraWINTM 625G and is electronically / electrically / mechanically identical.

The RADWIN 6000 TerraWINTM 625G and RADWIN 6000 TerraWINTM 601G are model names for an outdoor radio transceiver operating in 60 GHz frequency band that come in two different software configurations depending on installation purpose.

The RADWIN 6000 TerraWIN™ 625G (named as DN - Distribution Node) :

Is a Point to Point or/and MultiPoint radio distribution unit operating in a wireless mesh network architecture.

Is installed in point of presents sites (POP) or in mesh sites as inter connecting wireless nodes to extent coverage and service availability.

Provides aggregate capacity up to 3.9 Gbps while guarantying minimum level of capacity in case of traffic overload over the air.

The RADWIN 6000 TerraWINTM 601G (named as CN - Customer Node)

Is a Point to Point and/or MultiPoint customer premises distribution unit, installed either in enterprises or residential customer's sites.

Both radio models can provide aggregate capacity up to 3.9 Gbps while guarantying minimum level of capacity in case of traffic overload over the air, operating in 57-66 GHz frequency band and @2.16 GHz channel bandwidth, using a beamforming single polarized antenna.

Shlomo Weiss Standardization Officer, RADWIN Ltd.

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