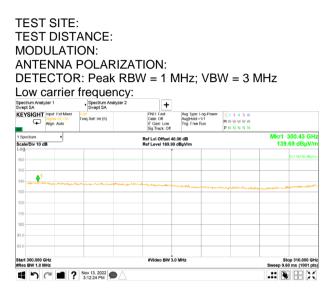


Test specification:	cation: Section 15.258(c)(3), Out of band radiated emissions above 40 GHz up to 370 GHz					
Test procedure:	ANSI C63.10, Sections 9.9, 9.12	ANSI C63.10, Sections 9.9, 9.12				
Test mode:	Compliance	Verdict:	PASS			
Date(s):	31-Oct-22 - 21-Nov-22	verdict.	PASS			
Temperature: 27 °C	Relative Humidity: 50 %	Air Pressure: 1010 hPa	Power: 5 VDC			
Remarks:						

Plot 7.4.38 Spurious emission measurements in 300 - 310 GHz range



Mid carrier frequency:

Spectrum Analy Swept SA		Spectrum Analyze Swept SA		+				
	Input Ext Mixer Signal ID: On Align: Auto	Corr Freq Ref: Int (S)	PNO: Fast Gate: Off IF Gain: L Sig Track	Avg Hok ow Trig: Fre		1 2 3 4 5 6 M W W W W W P N N N N N		
l Spectrum Scale/Div 10 d	r B			set 40.00 dB 69.99 dBµV/m				300.33 GH .58 dBµV/
160								DL1 160.85 dByV
150								
140 130	anatan na anatan sa mana ang sa mana s	Anna mar strate retention of	an a	a star a last or growing	man grande	~ lodent ~ management		lang-age
120								
110								
100 90.0								
80.D								
Start 300.000 (Res BW 1.0 M			#Video E	SW 3.0 MHz				op 310.000 GH 0 ms (1001 pt
1	? 🔳	Nov 13, 2022	7				.:: 🕅	

High carrier frequency:

Spectrum Analys Swept SA	zer 1	Spectrum Analyzer Swept SA		+				
	Input: Ext Mixer Signal ID: On Align: Auto	Corr Freq Ref: Int (S)			Awg Type: Log-Power Awg Hold:>1/1 Trig: Free Run	123456 MWWWWW PNNNNN		
1 Spectrum Scale/Div 10 dB				Offset 40.0 el 169.99 d				300.59 GH .94 dBµV/i
Log	_			Ť				
160								DL1 160.85 dByV
150								
150	1							
140	Indersetter	بيد حد مدير معرفة العديد بي موجد	mangener	1	م المعدام المعدوم المنظ			4
130					and a second	had a start and	مردا فالمصادر ويدرهم	- all application
120								
120								
110								
100								
90.0								
90.0								
80.0								
Start 300.000 G			≢Vid	60 BW 3.0	MHz		Steep 9.6	op 310.000 GH 0 ms (1001 pt
1 50	⊴∎?	Nov 13, 2022					.::	

OATS 0.005 m CW Vertical and Horizontal DETECTOR: Average (RMS) RBW = 1 MHz; VBW = 3MHz 119000 MHz

Spectrum Analyzer 1 Swept SA Spectrum Analyzer 2 Swept SA + Swept SA KEYSIGHT Input: Ext Mixer Signal ID: On Align: Auto IO: Fast ste: Off Corr Freq Ref: Int (S) Avg Type: Avg|Hold Trig: Free ANNNN Gate: Off IF Gain: Low Sig Track: Off LUI 1 Spectrum
Scale/Div 10 dB 1kr1 300.05 GH 132.84 dBµV/n Ref LvI Offset 40.00 dB Ref Level 169.99 dBµV/m 140 130 #Video BW 3.0 MHz* Span 10.00 GHz Sweep 12.4 ms (1001 pts)

121000 MHz

Spectrum Analyzer 1 Swept SA KEYSIGHT Input: Ext Mover Signal ID: On Align: Auto Spectrum Analyzer 2 Swept SA + Corr Freq Ref: Int (S) Avg Type: Pow Avg|Hold>1/1 Trig: Free Run U# • Mkr1 300.30 GH 132.06 dBµV/r 1 Spectrum Scale/Div 10 dB Ref LvI Offset 40.00 dB Ref Level 169.99 dBµV/m ٠ #Video BW 3.0 MHz* Span 10.00 GHz eep 12.4 ms (1001 pts) Center 305.000 GHz #Res BW 1.0 MHz 1 Nov 13, 2022 .:: 🖹 🗄 🔀

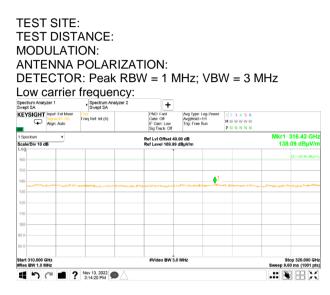
Spectrum Analyzer 1 Swept SA	Spectrum Analyzer 2 Swept SA	• +	
KEYSIGHT Input: Ext Mixer Signal ID: On Align: Auto	Corr Freq Ref: Int (S)	PNC: Fast Awg Type: Power (R Gale: Off Awg[Hold>1/1 IF Gain: Low Trig: Free Run Sig Track: Off	MS) 1 2 3 4 5 6 M W W W W W A N N N N N
1 Spectrum v Scale/Div 10 dB		Ref Lvi Offset 40.00 dB Ref Level 169.99 dBµV/m	Mkr1 300.07 GH 131.97 dBµV/r
160			
150			
140			DL1 140.86 dBy//
130		and a state of the second	والمسيح والروسة المستعملين والمستعربين وأحضيت ليدارا مستحر فيتورد والمع
110			
100			
90.0			
80.0			
Center 305.000 GHz #Res BW 1.0 MHz	1	#Video BW 3.0 MHz*	Span 10.00 GH Sweep 12.4 ms (1001 pts
1) C I 3	Nov 13, 2022		



Test specification:	eation: Section 15.258(c)(3), Out of band radiated emissions above 40 GHz up to 370 GHz					
Test procedure:	ANSI C63.10, Sections 9.9, 9.1	ANSI C63.10, Sections 9.9, 9.12				
Test mode:	Compliance	Verdict:	PASS			
Date(s):	31-Oct-22 - 21-Nov-22	verdict.	PASS			
Temperature: 27 °C	Relative Humidity: 50 %	Air Pressure: 1010 hPa	Power: 5 VDC			
Remarks:						

Plot 7.4.39 Spurious emission measurements in 310 - 320 GHz range

OATS



Mid carrier frequency:

Spectrum Analy Swept SA		Spectrum Analyze Swept SA				
_	Input Ext Mixer Signal ID: On Align: Auto	Corr Freq Ref: Int (S)	PNO: Fast Gate: Off IF Gain: Low Sig Track: Off	Avg Type: Log-Power Avg Hold:>1/1 Trig: Free Run	1 2 3 4 5 6 M W W W W W P N N N N N	
1 Spectrum Scale/Div 10 d	в		Ref Lvi Offset 40 Ref Level 169.99			Mkr1 310.81 GH 137.56 dBµV/r
160						DL1 160.85 dByV/
150						
140	1 -	and the survey of	and the strength of the second	ميغ العربي المرجع التربي ومحاولتين أعاريهم		and water and with the same the set of a first bards
130		all control of the				
120						
110						
0.0						
30.0						
tart 310.000 (Res BW 1.0 h			#Video BW 3.	0 MHz		Stop 320.000 GF Sweep 9.60 ms (1001 pt
4 5	례∎?	Nov 13, 2022	<u></u>			

High carrier frequency:

Spectrum Analy Swept SA	zer 1	Swept SA		+				
	Input: Ext Mixer Signal ID: On Align: Auto	Corr Freq Ref: Int (S)	PND: F Gate: O IF Gain Sig Trai	Low	Avg Type: Log-Power Avg Hold>1/1 Trig: Free Run	1 2 3 4 5 6 M W W W W W P N N N N N		
1 Spectrum	,		Ref Lvi O	ffset 40 0	0 dB		Mkr1	310.43 GH
Scale/Div 10 d	в		Ref Level				137	.95 dBµV/
Log				Ť				
160								DL1 160.86 dBy/V
150								
140	and the part and	and an and a second	maria	and the second	And a	ويحجبه العرور والمالية المراجد الم	-	www.www.
130								
120								
110								
100								
0.0								
30.0								
55.5								
Start 310.000 C			#Video	BW 3.0	MHz			top 320.000 G 50 ms (1001 p
15	a 🖬 🤉	Nov 13, 2022						

0.005 m CW Vertical and Horizontal DETECTOR: Average (RMS) RBW = 1 MHz; VBW = 3MHz 119000 MHz

Spectrum Analyzer 1 Swept SA Spectrum Analyzer 2 Swept SA Swept SA KEYSIGHT Input: Ext Mixer Signal ID: On Align: Auto Corr Freq Ref: Int (S) Avg Type: Pow Avg[Hold>1/1 Trig: Free Run ANNNN Gate: Off IF Gain: Low Sig Track: Off D4 Mkr1 310.35 GHz 130.25 dBµV/m 1 Spectrum Scale/Div 10 dB Ref LvI Offset 40.00 dB Ref Level 169.99 dBµV/m • #Video BW 3.0 MHz* Span 10.00 GHz Sweep 12.4 ms (1001 pts) Center 315.000 GHz #Res BW 1.0 MHz 📲 🕤 (~ 🔳 ? Nov 13, 2022 🗩 🛆

121000 MHz

Swept SA	2.61	Swept SA	· +				
KEYSIGHT	Input: Ext Mixer Signal ID: On Align: Auto	Corr Freq Ref: Int (S)	PNO: Fast Gate: Off IF Gain: Low Sig Track: Off	Avg Type: Power (Avg Hold>1/1 Trig: Free Run	(RMS) 1 2 3 4 5 6 M W W W W W A N N N N N		
1 Spectrum	۲		Ref LvI Offset				315.37 GH
Scale/Div 10 d	в		Ref Level 169.	99 dBµV/m		130	.17 dBµV/r
5							
160							-
150							
140							DL1 140.85 dByV
				≜ 1			
130			a and an are the second the produces		and a second	and a second and a second	and and a server
120							
110							
100							
90.0							
80.0							
Center 315.000 #Res BW 1.0 N			#Video BW 3	.0 MHz*		Sweep 12	Span 10.00 GH .4 ms (1001 pt
15		Nov 13, 2022					
		3:15:08 PM					

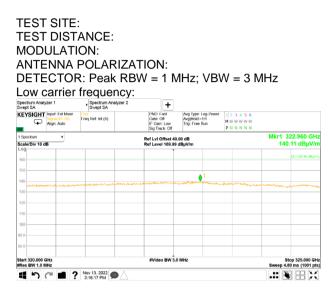
	vept SA		
SIGHT Input: Ext Mixer Corr Signal ID: On Align: Auto Freq Re	ef: Int (S) PNC: Fast Gate: Off IF Gain: Los Sig Track: C		
ectrum v	Ref Lvi Offse Ref Level 16		Mkr1 311.50 GH 130.06 dBµV/r
		I I I I I I I I I I I I I I I I I I I	
			DL1 140.86 dBy//
▲1			
er 315.000 GHz BW 1.0 MHz	#Video BW	3.0 MHz*	Span 10.00 GH Sweep 12.4 ms (1001 pt
් 🔳 ? Nov 13	3, 2022		



Test specification:	cation: Section 15.258(c)(3), Out of band radiated emissions above 40 GHz up to 370 GHz					
Test procedure:	ANSI C63.10, Sections 9.9, 9.12	ANSI C63.10, Sections 9.9, 9.12				
Test mode:	Compliance	Verdict:	PASS			
Date(s):	31-Oct-22 - 21-Nov-22	verdict.	PASS			
Temperature: 27 °C	Relative Humidity: 50 %	Air Pressure: 1010 hPa	Power: 5 VDC			
Remarks:						

Plot 7.4.40 Spurious emission measurements in 320 - 325 GHz range

OATS



Mid carrier frequency:

Spectrum Analy Swept SA		Spectrum Ana Swept SA		+				
	Input Ext Mixer Signal ID: On Align: Auto	Corr Freq Ref: Int (S)	PND: I Gate: 0 IF Gain Sig Tra	off t: Low	Avg Type: Log-Power Avg Hold:>1/1 Trig: Free Run	1 2 3 4 5 6 M W W W W W P N N N N N		
1 Spectrum Scale/Div 10 d	B			Offset 40. I 169.99 (22.845 GH .16 dBµV/r
160 Log				Ĭ				DL1 160.85 dByW
150					<u>_1</u>			
140		196-1967 (1989-1971-1976)	وموقعه ورابعان ويود لوي معود ور	ولحصارب		an a	eren alto angerena	ويعاديه معيديان
120								
110								
100								
90.0 90.0								
Start 320.000 (#Vide	o BW 3.0	MHz			op 325.000 GH
Res BW 1.0 M	(~) 🔳 ?	Nov 13, 2022 3:16:44 PM					Sweep 4.8	0 ms (1001 pts

High carrier frequency:

Spectrum Analyzer 1 Swept SA	 Spectrum Analyzer 2 Swept SA 	+		
KEYSIGHT Input Ext Mixe	er Corr Freq Ref: Int (S)	Gate: Off A	wg Type: Log-Power 1 2 3 4 5 6 wg[Hold:>1/1 M W	v
1 Spectrum		Ref Lvi Offset 40.00 c Ref Level 169.99 dBµ		Mkr1 323.165 GH 140.63 dBµV/r
Log				
160				DL1 160.05 dByV/
150				
140			. ≬ 1	
A month and a start of the second	and the second	and a start of the	and the second sec	und and the fight of the state
130				
120				
110				
100				
100				
90.0				
80.0				
Start 320.000 GHz #Res BW 1.0 MHz		#Video BW 3.0 MH	z	Stop 325.000 GH Sweep 4.80 ms (1001 pt
15CI	? Nov 13, 2022			

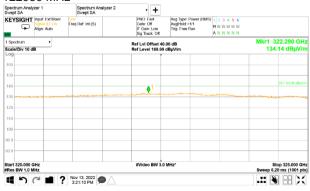
0.005 m CW Vertical and Horizontal DETECTOR: Average (RMS) RBW = 1 MHz; VBW = 3MHz 119000 MHz

Spectrum Analyzer 1 Swept SA Spectrum Analyzer 2 Swept SA + KEYSIGHT Input: Ext Name Signal ID: On Align: Auto PNC: Fast Gate: Off IF Gain: Low Sig Track: Off Corr Freq Ref: Int (S) Avg Type: Pow Avg[Hold>1/1 Trig: Free Run ANNNN U kr1 322.400 GHz 133.81 dBµV/m , Ref LvI Offset 40.00 dB Ref Level 169.99 dBµV/m Scale/Div 10 dB #Video BW 3.0 MHz* Stop 325.000 GHz Sweep 6.20 ms (1001 pts) Start 320.000 GHz #Res BW 1.0 MHz ■ ? Nov 13, 2022 ● /

121000 MHz

Spectrum Analyzer 1 Swept SA KEYSIGHT Input: Ext Mover Signal ID: On Align: Auto Spectrum Analyzer 2 Swept SA + NO: Fast Sate: Off Corr Freq Ref: Int (S) Avg Type: Pow Avg|Hold>1/1 Trig: Free Run 1 2 3 4 5 6 MWWWWW ANNNN 1 Spectrum Scale/Div 10 dB IF Gain: Low Sin Track: Of • Mkr1 322.860 GH 133.89 dBµV/ Ref Lvi Offset 40.00 dB Ref Level 169.99 dBµV/m ٠ #Video BW 3.0 MHz* Start 320.000 GHz #Res BW 1.0 MHz Stop 325.000 GHz eep 6.20 ms (1001 pts) ■ ? Nov 13, 2022 .# 🖲 🗄 🔀

122980 MHz

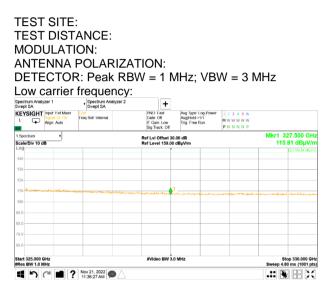


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Test specification:	Section 15.258(c)(3), Out of band radiated emissions above 40 GHz up to 370 GHz							
Test procedure:	ANSI C63.10, Sections 9.9, 9.1	2						
Test mode:	Compliance	Verdict:	PASS					
Date(s):	31-Oct-22 - 21-Nov-22	verdict.	PASS					
Temperature: 27 °C	Relative Humidity: 50 %	Air Pressure: 1010 hPa	Power: 5 VDC					
Remarks:								

Plot 7.4.41 Spurious emission measurements in 325 - 330 GHz range



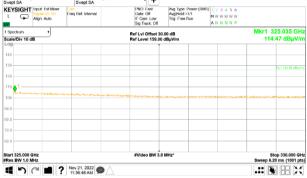
Mid carrier frequency:

Swept			Spectrum Ana Swept SA	iyzer 2	+				
	SIGHT	Input Ext Mixer Signal ID: On	Corr Freg Ref: Internal		PNO: Fast Gate: Off	Avg Type: Log-Power AvgiHold:>1/1	1 2 3 4 5 6		
L	Ģ	Align: Auto	rieq Kei, inieniai		IF Gain: Low	Trig: Free Run	$M \otimes W \otimes W \otimes W$		
м					Sig Track: Off		PNNNP		
1 Spe	ctrum			r	Ref Lyl Offset 30.0	00 dB			7.500 GH
	Div 10 d	8		F	Ref Level 159.00 d	dBμV/m		116.6	65 dBµV/r
Log					Ţ				DL1 154.84 dByV/
149			_						
139									
129									
110	bern and all		and the second second		1				
			and the state of the state of the	And water and the second second	manusa	alexiners/heatres/heatre	ing and a second se	-dimensional	encuencedes
109									
99.0									
00.0									
39.0									
89.0 79.0									
39.0 79.0 -									
89.0 - 79.0 - 69.0 - Start	325.000 G BW 1.0 M				≢Video BW 3.0	MHz			p 330.000 GH ms (1001 pt

High carrier frequency:

Spectrum Analy: Swept SA	zer 1	Spectrum Analyzer 2 Swept SA	+				
L G	Input: Ext Mixer Signal ID: On Align: Auto	Corr Freq Ref: Internal	PNO: Fast Gate: Off IF Gain: Low Sig Track: Off	Awg Type: Log-Power Awg Hold:>1/1 Trig: Free Run	1 2 3 4 5 6 M W W W W W P N N N N P		
1 Spectrum	•		Ref Lvi Offset 30.0				25.685 GH
Scale/Div 10 di	в		Ref Level 159.00 d	BµV/m		120.4	46 dBµV/ı
Log			T				DL1 154.84 dByV
149							
139							
129	▲1						
119 millionational		and the second second second second second second	وروبيه العرور وحالا المالية والمراجع	ann an airte ann an		1. and 10 me allow 11 me and a grant	an a
109							
99.0							
89.0							
79.D							
69.D							
Start 325.000 G #Res BW 1.0 M			#Video BW 3.0 P	MHz		Sto Sweep 4.80	op 330.000 GH 0 ms (1001 pt
1 5	₽.	Nov 21, 2022				.:: 🔖	

OATS 0.01 m CW Vertical and Horizontal DETECTOR: Average (RMS) RBW = 1 MHz; VBW = 3MHz 119000 MHz Sector Analyzer 1 Sector Analyzer 2 +



121000 MHz

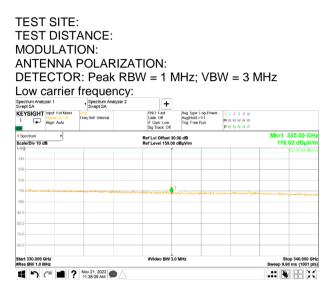
Spectrum Analyzer 1 Swept SA KEYSIGHT Input: Ext Mixer L Signal ID: On Align: Auto Spectrum Analyzer 2 Swept SA Corr Freq Ref: Internal Avg Type: Pow Avg|Hold>1/1 Trig: Free Run 1 2 3 4 5 6 MWWWWW ANNNP 1 Spectrum Scale/Div 10 dB F Gain: Low Sin Track: O • Mkr1 325.095 GH 114.01 dBµV/r Ref LvI Offset 30.00 dB Ref Level 159.00 dBµV/m 139 #Video BW 3.0 MHz* Start 325.000 GHz #Res BW 1.0 MHz Stop 330.000 GHz eep 6.20 ms (1001 pts) 11:34:03 AM .:: 🖹 🗄 🔀

Spectrum Analyzer 1 Swept SA	Spectrum Analyz Swept SA	· I I				
L C Align: Auto	Corr Freq Ref: Internal	PNO: Fast Gate: Off IF Gain: Low Sig Track: Off	Avg Type: Power (R Avg Hold>1/1 Trig: Free Run	MS) 1 2 3 4 5 6 M W W W W W A N N N N P		
1 Spectrum Scale/Div 10 dB		Ref Lvi Offset 30 Ref Level 159.00				25.385 GH 32 dBµV/r
Log		Ĭ				
149						
139						DL1 134.84 dByV
129						
119						
109	strong and the states and a se	material and a state of the second of the second	allatic document of the second	hater and the state of the second states of the second states of the second states of the second states of the s	an a	califyrigersia
99.0						
69.0						
79.0						
69.0						
Start 325.000 GHz #Res BW 1.0 MHz		#Video BW 3.0	MHz'		Sto Sweep 6.20	p 330.000 Gi ms (1001 pt
#bc∎?	Nov 21, 2022					



Test specification:	Section 15.258(c)(3), Out of band radiated emissions above 40 GHz up to 370 GHz							
Test procedure:	ANSI C63.10, Sections 9.9, 9.1	2						
Test mode:	Compliance	Verdict:	PASS					
Date(s):	31-Oct-22 - 21-Nov-22	verdict.	PASS					
Temperature: 27 °C	Relative Humidity: 50 %	Air Pressure: 1010 hPa	Power: 5 VDC					
Remarks:								

Plot 7.4.42 Spurious emission measurements in 330 - 340 GHz range



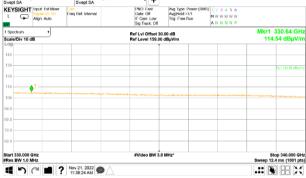
Mid carrier frequency:

Swept			Spectrum Anal Swept SA				
		Input Ext Mixer Signal ID: On	Corr Freq Ref: Internal	PNO: Fast Gate: Off	Avg Type: Log-Power AvgiHold:>1/1	1 2 3 4 5 6	
L	Ģ	Align: Auto	rioq roci, inicina	IF Gain: Low	Trig: Free Run	MWWWWW	
м				Sig Track: Off		PNNNP	
1 Spei	ctrum	•		Ref Lvi Offset 3	0.00 dB		Mkr1 335.00 GH
	/Div 10 d	8		Ref Level 159.0	0 dBµV/m		116.57 dBµV/n
Log				T			DL1 154.84 dByV/r
149						-	
139							
129							
119				And a start of the	1		
				and the state of the state of the	tortastra Rod The should be be be	enserations and the second	Sectors and the second second in gravities
109 -							
99.D							
39.0							
79.0							
59.D							
	330.000 G BW 1.0 N			#Video BW 3	.0 MHz		Stop 340.000 GH Sweep 9.60 ms (1001 pts

High carrier frequency:

Spect Swep	rum Analy t SA	zer 1	Spectrum Analy Swept SA	/zer 2	+				
L	-	Input Ext Mixer Signal ID: On Align: Auto	Corr Freq Ref: Internal	0	PNO: Fast Sate: Off F Gain: Low Sig Track: Off	Avg Type: Log-Power Avg Hold:>1/1 Trig: Free Run	1 2 3 4 5 6 M W W W W W P N N N N P		
Scale	ctrum /Div 10 d	B			f Lvi Offset 30.0 f Level 159.00 d				333.69 GH 09 dBµV/
Log					Ţ				DL1 154.84 dBuV
149									
139									
129									
119	ورمليومراء	mananteriordates	and the state of the	معدر بالمجلوبة	والمستحد المالي معادية	here and a start of the start o			
109								alan 200 finiti d	an Arton
99.0									
39.0									
79.0									
69.0									
	330.000 C BW 1.0 N				≢Video BW 3.0 I	MHz			op 340.000 G 0 ms (1001 p
1	5	? 🖿	Nov 21, 2022	\square				.:: 🖲	

OATS 0.01 m CW Vertical and Horizontal DETECTOR: Average (RMS) RBW = 1 MHz; VBW = 3MHz 119000 MHz Beetrom Analyzer 1 Beetrom Analyzer 2 +



121000 MHz

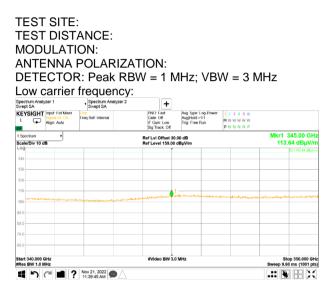
Spectrum Analyzer 1 Swept SA KEYSIGHT Input: Ext Mixer L Signal ID: On Align: Auto Spectrum Analyzer 2 Swept SA + Corr Freq Ref: Internal Avg Type: Pow Avg|Hold>1/1 Trig: Free Run 1 2 3 4 5 6 MWWWWW ANNNF 1 Spectrum Scale/Div 10 dB IF Gain: Low Sin Track: O • Mkr1 330.00 GH Ref LvI Offset 30.00 dB Ref Level 159.00 dBµV/m 139 119 #Video BW 3.0 MHz* Start 330.000 GHz #Res BW 1.0 MHz Stop 340.000 GHz eep 12.4 ms (1001 pts) 11:32:17 AM .:: 🖹 🗄 🔀

Spect Swep	trum Analı It SA	yzer 1		Spectrum Ana Swept SA	alyzer 2	,	+				
L	(Sight	Input: Ext Mixer Signal ID: On Align: Auto	Corr Freq	Ref: Internal				Avg Type: Powe Avg[Hold>1/1 Trig: Free Run	м	2 3 4 5 6 WWWWW NNNNP	
Scale	xtrum e/Div 10 d	iB T					Offset 30 el 159.00				330.45 GH .50 dBµV/r
Log							ľ				
149			-				-				
139			_								DL1 134.84 dByV/
129											
119	•1		_								
109									Christ Labor		
99.D											
89.0											
79.0											
69.D			_								
	330.000 (BW 1.0 N					#Vide	o BW 3.0	MHz*			top 340.000 GH .4 ms (1001 pt
1	5	a 🔳 ?	No	v 21, 2022							



Test specification:	Section 15.258(c)(3), Out of band radiated emissions above 40 GHz up to 370 GHz							
Test procedure:	ANSI C63.10, Sections 9.9, 9.1	2						
Test mode:	Compliance	Verdict:	PASS					
Date(s):	31-Oct-22 - 21-Nov-22	verdict.	PASS					
Temperature: 27 °C	Relative Humidity: 50 %	Air Pressure: 1010 hPa	Power: 5 VDC					
Remarks:								

Plot 7.4.43 Spurious emission measurements in 340 - 350 GHz range



Mid carrier frequency:

Swept			Spectrum Ana Swept SA	ilyzer 2	+				
KEYS		Input Ext Mixer Signal ID: On Align: Auto	Corr Freq Ref: Internal		PNO: Fast Gate: Off IF Gain: Low	Avg Type: Log-Powe Avg Hold>1/1 Trig: Free Run	1 2 3 4 5 6 MWWWWW		
UN	Ŧ	Align: Auto			Sig Track: Off	ing: Free Kun	PNNNP		
	trum Div 10 d	r B			ef Lvi Offset 3 ef Level 159.0				345.00 GH 19 dBµV/r
Log					Ţ				DL1 154.84 dBy//
149			_						
139 -									
129									
119						1			
109		entergraderies and		والم المنصورة المناطقة المراجع	and with more thank	איזיני אלא פרייניע אפריינער אייייינייע. אוזיני אייניייייייי	minuthermore	enen seeren	
0.0			_						
39.0									
79.0									
69.0			_						
	40.000 (BW 1.0 N				#Video BW 3	.0 MHz			op 350.000 GH 0 ms (1001 pt
4	5	례∎?	Nov 21, 2022					.:: 🖎	

High carrier frequency:

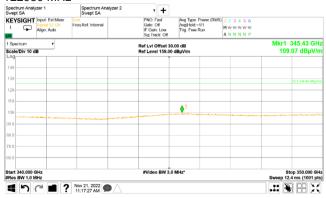
Spectr Swept	um Analy SA	zer 1	Spectrum And Swept SA	alyzer 2	+				
L	0	Input: Ext Mixer Signal ID: On Align: Auto	Corr Freq Ref: Internal	G	NC: Fast ate: Off Gain: Low g Track: Off	Avg Type: Log-Power Avg[Hold:>1/1 Trig: Free Run	1 2 3 4 5 6 M W W W W W P N N N N P		
	trum 'Div 10 d	B		Ref	Lvi Offset 30.0 Level 159.00 d				345.00 GH 99 dBµV/r
.og					Ť				DL1 154.84 dByV/r
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139									
129									
119					1				
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9.0									
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79.0									
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Start 1	40.000 0	247			Video BW 3.0			St/	p 350.000 GH
	BW 1.0 N			-	1000 244 3.0	1411 M.		Sweep 9.60) ms (1001 pts
4	5	? 🔳 🗠	Nov 21, 2022 11:17:05 AM					.:: 🖎	

OATS 0.01 m CW Vertical and Horizontal DETECTOR: Average (RMS) RBW = 1 MHz; VBW = 3MHz 119000 MHz Sector Analyzer 1 Sector Analyzer 2 +



121000 MHz

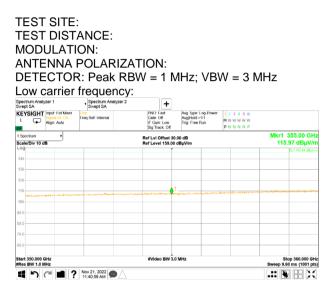
Spectrum Analyzer 1 Swept SA KEYSIGHT Input: Ext Mover L Signal ID: On Align: Auto Spectrum Analyzer 2 Swept SA + IO: Fast ste: Off Avg Type: Pow Avg|Hold>1/1 Trig: Free Run Corr Freq Ref: Internal 1 2 3 4 5 6 MWWWWW ANNNN 1 Spectrum Scale/Div 10 dB IF Gain: Low Sin Track: Of • Mkr1 345.37 GH 108.72 dBµV/n Ref LvI Offset 30.00 dB Ref Level 159.00 dBµV/m 139 ١ #Video BW 3.0 MHz* Start 340.000 GHz #Res BW 1.0 MHz Stop 350.000 GHz sep 12.4 ms (1001 pts) ■ ? Nov 21, 2022 .# 🖲 🗄 🔀





Test specification:	Section 15.258(c)(3), Out of band radiated emissions above 40 GHz up to 370 GHz							
Test procedure:	ANSI C63.10, Sections 9.9, 9.12	2						
Test mode:	Compliance	Verdict:	PASS					
Date(s):	31-Oct-22 - 21-Nov-22	verdict.	PASS					
Temperature: 27 °C	Relative Humidity: 50 %	Air Pressure: 1010 hPa	Power: 5 VDC					
Remarks:								

Plot 7.4.44 Spurious emission measurements in 350 - 360 GHz range



Mid carrier frequency:

Swept			Spectrum Analyze Swept SA				
L	-	Input: Ext Mixer Signal ID: On Align: Auto	Corr Freq Ref: Internal	PNO: Fast Gate: Off IF Gain: Low Sig Track: Off	Avg Type: Log-Power Avg[Hold:>1/1 Trig: Free Run	1 2 3 4 5 6 M W W W W W P N N N N P	
Scale	ctrum J/Div 10 d	- -		Ref LvI Offset 30 Ref Level 159.00			Mkr1 355.00 GH 116.17 dBµV/r
Log							DL1 154.84 dByV
149							
139							
129							
119		المرجعة والمحافظة والمحاف	an and a state of the second	and the second	and the second	والمتلكمة ومراجع والمعر والمعرف والمعاول والمع	Contraction of the contraction
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69.D							
	350.000 C BW 1.0 N			#Video BW 3.0	MHz		Stop 360.000 GH Sweep 9.60 ms (1001 pt
-	5	< ∎ ?	Nov 21, 2022				

High carrier frequency:

Spect	rum Analy t SA	zer 1	 Spectrum Ana Swept SA 	lyzer 2		+				
L	-	Input: Ext Mixer Signal ID: On Align: Auto	Corr Freq Ref: Internal		PNO: F Gate: C IF Gain Sig Tra	Low	Avg Type: Log-Power Avg[Hold>1/1 Trig: Free Run	1 2 3 4 5 6 M W W W W W P N N N N P		
	ctrum #/Div 10 d	, B				offset 30 I 159.00	.00 dB dBµV/m			355.00 GH .11 dBµV/
Log						Ţ				DL1 154.84 dBy/
149										
139										
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119							I		and the second se	
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99.0										
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69.0										
	350.000 C BW 1.0 N				#Vide	5 BW 3.0	MHZ			op 360.000 GH 0 ms (1001 pt
4	5	ി 🔳 ?	Nov 21, 2022							

OATS 0.01 m CW Vertical and Horizontal DETECTOR: Average (RMS) RBW = 1 MHz; VBW = 3MHz 119000 MHz · +

Swept SA		Swept SA	.,	· • •					
Keysight L GD	Input: Ext Mixer Signal ID: On Align: Auto	Corr Freq Ref: Internal	0	PNO: Fast Gate: Off F Gain: Lov Sig Track: C	Avg Hold> Trig: Free F	tun M	2 3 4 5 6 W W W W W N N N N P		
1 Spectrum	•				t 30.00 dB				359.81 GH
Scale/Div 10 d	В		Rel	f Level 15	0.00 dBµV/m			112	12 dBµV/r
149									
139									DL1 134.84 dByV/
129									
119									
109	محودين ويوجدونه							مرسميونيون	
99.0									
89.0	_								
79.0							-		+
69.D									
Start 350.000 (Res BW 1.0 M				Video BV	3.0 MHz*				op 360.000 GH 4 ms (1001 pt
1	? 🔳	Nov 21, 2022							

121000 MHz

Swept SA	(2)81	Swept SA	• +				
KEYSIGHT	Input: Ext Mixer Signal ID: On Align: Auto	Corr Freq Ref: Internal	PNO: Fast Gate: Off IF Gain: Low Sig Track: Off	Avg Type: Power (Avg Hold>1/1 Trig: Free Run	RMS) 1 2 3 4 5 6 M W W W W W A N N N N P		
1 Spectrum			Ref Lvi Offset 30	.00 dB			359.93 GH
Scale/Div 10 d	в		Ref Level 159.00			112	.48 dBµV/
Log			Ť			1	
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139							DL1 134.84 dBu/
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119							
109							
99.0							
69.0							
79.0							
69.D							
Start 350.000 C #Res BW 1.0 N			#Video BW 3.0	MHz"			top 360.000 G
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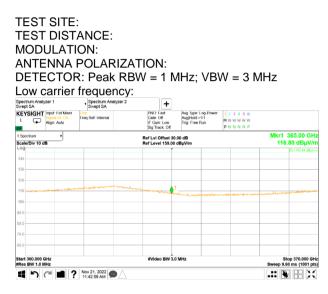
Spectrum Analyzer 1 Swept SA	Spectrum Analyzer 2 Swept SA	• +		
KEYSIGHT Input: Ext Mixer L Signal ID: On Align: Auto	eq Ref: Internal Gate		1 2 3 4 5 6 M W W W W W A N N N N P	
1 Spectrum v Scale/Div 10 dB		Offset 30.00 dB el 159.00 dBµV/m		r1 358.90 GH 112.43 dBµV/n
Log		T		
149				
139				DL1 134,84 dByV/
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69.D				
Start 350.000 GHz Res BW 1.0 MHz	#Vid	o BW 3.0 MHz*	Sweet	Stop 360.000 GH
4 5 C 1 ? 1	ov 21, 2022 👝 🛆			



Test specification:	Section 15.258(c)(3), Out of band radiated emissions above 40 GHz up to 370 GHz						
Test procedure:	ANSI C63.10, Sections 9.9, 9.12						
Test mode:	Compliance	Verdict:	PASS				
Date(s):	31-Oct-22 - 21-Nov-22	verdict.	PASS				
Temperature: 27 °C	Relative Humidity: 50 %	Air Pressure: 1010 hPa	Power: 5 VDC				
Remarks:							

Plot 7.4.45 Spurious emission measurements in 360 - 370 GHz range

OATS



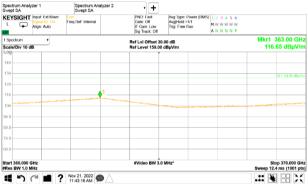
Mid carrier frequency:

Swep			Spectrum And Swept SA	alyzer 2	+				
L	-	Input: Ext Mixer Signal ID: On Align: Auto	Corr Freq Ref: Internal		PNO: Fast Gate: Off IF Gain: Low Sig Track: Off	Avg Type: Log-Power Avg Hold:>1/1 Trig: Free Run	1 2 3 4 5 6 M W W W W W P N N N N P		
	ctrum /Div 10 d	, B			Ref Lvi Offset 30. Ref Level 159.00		PRANAP		365.00 GH 71 dBµV/r
Log		_			Ť				DL1 154.84 dByV
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139									
129 119	ومعتوه مراسوم	nana), ayanda (i Marti	الماد معرف فيرويون _{الا} رون ال	n an amh a dhan bhair bha	the new methods	anghalanga kalanan ke	f.seconomeron deserve	gran and	الموالية المحاجرين
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69.D									
	360.000 C BW 1.0 N				#Video BW 3.0	MHz		Sto Sweep 9.66	op 370.000 GH 0 ms (1001 pt
	5	? 🔳	Nov 21, 2022 11:26:19 AM						

High carrier frequency:

Spect	trum Analy t SA	zer 1	Spectrum Analyzo Swept SA	er 2	+				
	0	Input: Ext Mixer Signal ID: On Align: Auto	Corr Freq Ref: Internal	PNO: Gate: IF Gai Sig Tra	Off	Avg Type: Log-Power Avg Hold:>1/1 Trig: Free Run	123456 MWWWWW PNNNNP		
Scale	sctrum e/Div 10 d	8			Offset 30.0 el 159.00 d				365.00 GH .43 dBµV/
Log					Ť				DL1 154.84 dBu
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	360.000 C BW 1.0 N			≇Vide	o BW 3.0 f	MHz			op 370.000 G 50 ms (1001 p
1	5	? 🖿	Nov 21, 2022	Δ				.::	

0.01 m CW Vertical and Horizontal DETECTOR: Average (RMS) RBW = 1 MHz; VBW = 3MHz 119000 MHz



121000 MHz

Spectrum Analyzer 1 Swept SA KEYSIGHT Input: Ext Mixer L Signal ID: On Align: Auto Spectrum Analyzer 2 Swept SA + O: Fast te: Off Corr Freq Ref: Internal Avg Type: Pow Avg|Hold>1/1 Trig: Free Run 1 2 3 4 5 6 MWWWWW ANNNP 1 Spectrum Scale/Div 10 dB IF Gain: Low Sin Track: Of • Mkr1 363.16 GH Ref LvI Offset 30.00 dB Ref Level 159.00 dBµV/m 139 129 ♦1 #Video BW 3.0 MHz* Start 360.000 GHz #Res BW 1.0 MHz Stop 370.000 GHz eep 12.4 ms (1001 pts) 11:27:00 AM .:: 🖹 🗄 🔀

Spectrur Swept S	m Analy SA	zer 1		Spectrum Ana Swept SA	alyzer 2	•	+					
L	0	Input: Ext Mixer Signal ID: On Align: Auto	Freq	Ref: Internal		PNO: F Gate: 0 IF Gair Sig Tra	off : Low	Avg Type: F Avg Hold> Trig: Free F	1/1	1 2 3 4 5 6 M W W W W W A N N N N P		
1 Spectri Scale/D		- -					Offset 30. 1 159.00					362.85 GH .32 dBµV/r
Log							Ĭ					
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139												DL1 134.84 dByV
129				A1								
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Center 3 #Res B\						#Video	BW 3.0	MHz'			Sweep 12	Span 10.00 GH 2.4 ms (1001 pt
	5		a Mar	/ 21, 2022 23:03 AM							.:: 3	



Test specification:	Section 15.258(d), Frequency stability						
Test procedure:	ANSI C63.4, Section 13.1.4						
Test mode:	Compliance	Verdict:	PASS				
Date(s):	17-Nov-22 - 27-Nov-22	verdict:	PA33				
Temperature: 25 °C	Relative Humidity: 51 %	Air Pressure: 1010 hPa	Power: 5 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.

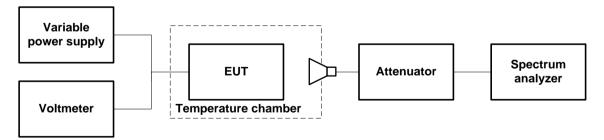
Table 7.5.1 Frequency stability limits

Assigned frequency, MHz	Maximum allowed frequency displacement
119000	
121000	NA
122980	

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:	Section 15.258(d), Frequency stability						
Test procedure:	ANSI C63.4, Section 13.1.4						
Test mode:	Compliance	Verdict:	PASS				
Date(s):	17-Nov-22 - 27-Nov-22	verdict.	FA33				
Temperature: 25 °C	Relative Humidity: 51 %	Air Pressure: 1010 hPa	Power: 5 VDC				
Remarks:							

Table 7.5.2 Frequency stability test results

OPERATING FREQUENCY: NOMINAL POWER VOLTAGE: TEMPERATURE STABILIZATION PERIOD: POWER DURING TEMPERATURE TRANSITION: SPECTRUM ANALYZER MODE: RESOLUTION BANDWIDTH: VIDEO BANDWIDTH: MODULATION:				116000 – 5 V 20 min Off Counter 3 kHz 10 kHz Unmodula	123000 M⊦ ated	lz					
т, ⁰С	Voltage, V			F	requency, M	Hz			Max frequen	Max frequency drift, kHz	
	v	Start up	1 st min	2 nd min	3 rd min	4 th min	5 th min	10 th min	Positive	Negative	
Low f	requency 119										
-20	nominal	118998.895	118998.898	11998.901	118998.903	118.998.905	118998.907	118998.913	0.748	0.000	
-10	nominal	118998.732	NA	NA	NA	NA	NA	118998.762	0.597	0.000	
0	nominal	118998.472	118998.480	118998.484	118998.486	118998.488	118.998.491	118998.499	0.334	0.000	
10	nominal	118998.266	NA	NA	NA	NA	NA	118998.303	0.138	0.000	
20	+15%	118998.156	NA	NA	NA	NA	NA	118998.165	0.000	-0.009	
20	nominal	118998.156	NA	NA	NA	NA	NA	118998.165	0.000	-0.009	
20	-15%	118998.157	NA	NA	NA	NA	NA	118998.164	0.000	-0.008	
30	nominal	118998.184	118998.184	118998.184	118998.184	118998.184	118998.184	118998.185	0.020	0.000	
40	nominal	119998.287	NA	NA	NA	NA	NA	119998.339	0.174	0.000	
50	nominal	118998.654	NA	NA	NA	NA	NA	118998.777	0.612	0.000	
Mid fr	equency 121	.000 GHz			-		-			-	
-20	nominal	121000.004	121000.002	121000.001	121000.000	121000.000	121000.000	121000.005	0.337	0.000	
-10	nominal	120999.757	NA	NA	NA	NA	NA	121000.000	0.332	0.000	
0	nominal	120999.713	120999.719	120999.729	120999.690	120999.736	120999.723	120999.660	0.068	-0.008	
10	nominal	120999.699	NA	NA	NA	NA	NA	120999.755	0.087	0.000	
20	+15%	120999.673	NA	NA	NA	NA	NA	120999.668	0.005	0.000	
20	nominal	120999.674	NA	NA	NA	NA	NA	120999.668	0.006	0.000	
20	-15%	120999.673	NA	NA	NA	NA	NA	120999.669	0.005	0.000	
30	nominal	120999.609	120999.609	120999.609	120999.609	120999.608	120999.608	120999.608	0.000	-0.060	
40	nominal	120999.624	NA	NA	NA	NA	NA	120999.691	0.023	-0.044	
50	nominal	120999.870	NA	NA	NA	NA	NA	121000.022	0.354	0.000	
	High frequency 122.980 GHz										
-20	nominal	122979.518	122979.514	122979.510	122979.508	122979.506	122979.505	122979.508	0.412	0.000	
-10	nominal	122979.442	NA	NA	NA	NA	NA	122979.515	0.409	0.000	
0	nominal	122979.262	122979.284	122979.303	122979.320	122979.332	122979.344	122979.382	0.276	0.000	
10	nominal	122979.145	NA	NA	NA	NA	NA	122979.214	0.108	0.000	
20	+15%	122979.106	NA	NA	NA	NA	NA	122979.104	0.000	-0.002	
20	nominal	122979.108	NA	NA	NA	NA	NA	122979.106	0.002	0.000	
20	-15%	122979.104	NA	NA	NA	NA	NA	122979.104	0.000	-0.002	
30	nominal	122979.297	122979.222	122979.174	122979.134	122979.110	122979.098	122979.058	0.191	-0.048	
40	nominal	122979.060	NA	NA	NA	NA	NA	122979.116	0.010	-0.046	
50	nominal	122979.135	NA	NA	NA	NA	NA	122979.344	0.238	0.000	

Reference numbers of test equipment used

	HL 0495	HL 5373	HL 3286	HL 3536	HL 5376			
_	di des substants la site si a Aserandia A							

Full description is given in Appendix A.



Test specification:	Section 15.203, Antenna requirement				
Test procedure:	Visual inspection / supplier declaration				
Test mode:	Compliance	Vardiet: DACC			
Date(s):	24-Nov-22	- Verdict: PASS			
Temperature: 25 °C	Relative Humidity: 50 %	Air Pressure: 1008 hPa	Power: 5 VDC		
Remarks:					

7.6 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 7.6.1.

Table 7.6.1 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	



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	28-Feb-22	28-Feb-23
0495	Autotransformer 0-255V, 10A	Variac	EMPL01	495	10-May-22	10-May-23
0770	Antenna Standard Gain Horn, 40-60 GHz WR-19, U-band, 24 dB mid-band gain	Quinstar Technology	QWH- 1900-AA	118	11-Nov-21	11-Nov-22
0771	Antenna Standard Gain Horn, 60-90 GHz, WR-12, 24 dB mid-band gain	Quinstar Technology	QWH- 1200-AA	111	15-Aug-22	15-Aug-23
1312	Mixer Millimeter Wave Harmonic 140- 220 GHz	Oleson Microwave Labs	M05HWD	G91112-1	19-May-20	19-May-23
3235	Harmonic mixer 40 to 60 GHz	Agilent Technologies	11970U	MY300301 82	30-Jan-20	30-Jan-23
3286	Temperature Chamber, (-50 to +170) °C	Thermotron	EL-8-CH- 1-1-CO2	21-9048	12-Dec-21	12-Dec-22
3329	Antenna Standard Gain Horn, 140-220 GHz, WR-5, 24 dB mid-band gain	Quinstar Technology			11-Nov-21	11-Nov-22
3536	Antenna Standard Gain Horn, 90-140 GHz, WR-8, 24 dB mid-band gain	Quinstar Technology	QWH- FPRR00	11159004 001	11-Nov-21	11-Nov-22
3903	Microwave Cable Assembly, 40.0 GHz, 1.5 m, SMA/SMA	Huber-Suhner	SUCOFL EX 102A	1226/2A	07-Apr-22	07-Apr-23
4023	Diplexer for use OML mixers with Agilent spectrum analyzer	Oleson Microwave Labs	DPL.26	NA	28-Apr-22	28-Apr-23
4933	Active Horn Antenna, 1 GHz to 18 GHz	COM-POWER CORPORATI ON	AHA-118	701046	13-Jan-22	13-Jan-23
4956	Active horn antenna, 18 to 40 GHz	COM-POWER CORPORATI ON	AHA-840	105004	07-Mar-22	07-Mar-23
5112	RF cable, 40 GHz, 5.5 m, K-type	Huber-Suhner	SF102EA/ 11SK/11S K/5500M M	502494/2E A	25-Apr-22	25-Apr-23
5286	Band Pass Filter, 50 Ohm, 4.4 to 18 GHz, SMA/M-SMA/F	A-INFOMW	WBLB-T- HP-4.4- 18-S	J10800000 305	15-Jun-21	15-Jun-23
5288	Trilog Antenna, 25 MHz - 8 GHz, 100W	Frankonia	ALX- 8000E	00809	24-Mar-22	24-Apr-25
5369	Digital storage oscilloscope, 350 MHz	Keysight Technologies	DSOX30 34T	MY58032 630	12-Oct-22	12-Oct-23
5371	EXG Analog Signal Generator, 9 kHz - 40 GHz	Keysight Technologies	N5173B	MY572805 40	28-Oct-21	28-Dec-22
5372	MXE EMI receiver, 3 Hz to 44 GHz	Keysight Technologies	N9038A	MY572901 55	16-Mar-22	16-Mar-23

8 APPENDIX A Test equipment and ancillaries used for tests



HL No	Description	Manufacturer	Model	Ser. No.	Last Cal./ Check	Due Cal./ Check
5373	Millimeter-wave Signal Generator E8257DV08 WR8.0SGX ATO64975 90-140GHz	Keysight Technologies	E8257D V08	US53250 008	01-Jan-22	01-Jan-23
5376	EXA Signal Analyzer, 10 Hz - 32 GHz	Keysight Technologies	N9010B	MY574704 04	01-Nov-21	01-Jan-23
5377	USB Thermocouple Power Sensor, DC-120 GHz	Keysight Technologies	U8489A	US56430 158	19-Oct-22	19-Oct-23
5378	Adapter, E-Band Waveguide to Coax Panel Mount , WR-12 End Launch	SaGE Millimeter, Incdan - Insurance agency	SWC- 121F-E1- KS	14427-09	30-May-22	30-May-23
5979	Harmonic Mixer 220-325 GHz	OML Inc.	M03HWD	210216-1	16-Feb-21	16-Feb-24
5980	Standard Horn Antenna 220-325 GHz, WR-03, 24.5 dB mid-band gain	Radar Systems Technology	HO3R WR-03	01	07-Mar-21	07-Mar-23
5981	RF detector 90 – 140 GHz.	Pacific Millimeter Products, Inc	FD	155	25-Jan-21	25-Jan-23
6038	Harmonic mixer 325 - 500 GHz, WR- 2.2	Farran Technology Ltd	WHMB- 2.2-0001	FTL13699	11-May-21	11-May-23
6039	Standard Gain Horn antenna, 325-500 GHz, WR-2.2, 25 dB mid-band gain	Farran Technology Ltd	SGH-2.2- 25	FTL5631B	11-Nov-21	11-Nov-22
7585	EMI Test Receiver, 1 Hz to 44 GHz	Rohde & Schwarz	ESW44	103130	19-May-22	19-May-23



9 APPENDIX B Test equipment correction factors

Frequency,	Measured antenna factor, dBS/m	Measurement uncertainty, dB
10	-33.4	±1.0
20	-37.8	±1.0
50	-40.5	±1.0
75	-41.0	±1.0
100	-41.2	±1.0
150	-41.2	±1.0
250	-41.1	±1.0
500	-41.2	±1.0
750	-41.3	±1.0
1000	-41.3	±1.0

Frequency,	Measured antenna factor, dBS/m	Measurement uncertainty, dB
2000	-41.4	±1.0
3000	-41.4	±1.0
4000	-41.5	±1.0
5000	-41.5	±1.0
10000	-41.7	±1.0
15000	-42.1	±1.0
20000	-42.7	±1.0
25000	-44.2	±1.0
30000	-45.8	±1.0

HL 0446: Active Loop Antenna EMCO, model: 6502, s/n 2857

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



HL 4933: Active Horn Antenna COM-POWER CORPORATION, model: AHA-118, s/n 701046

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_{μ}V to obtain field strength in dB_{μ}V/m.



		1000EL ALIA-040, S/11 103004	
Frequency, MHz	Measured antenna factor, dB/m	Frequency, MHz	Measured antenna factor, dB/m
18000	5.1	29500	1.4
18500	3.6	30000	2.9
19000	2.2	30500	2.9
19500	0.7	31000	2.9
20000	0.7	31500	1.2
20500	0.8	32000	0.7
21000	0.5	32500	0.2
21500	-1.3	33000	-1.7
22000	-2.1	33500	-2.2
22500	-2.0	34000	2.3
23000	-1.6	34500	-1.1
23500	-2.9	35000	0.7
24000	-2.3	35500	-1.1
24500	-2.6	36000	0.1
25000	-1.8	36500	1.4
25500	-1.2	37000	3.7
26000	-0.5	37500	5.8
26500	-1.2	38000	6.6
27000	-0.1	38500	7.3
27500	-1.0	39000	6.5
28000	-0.7	39500	7.3
28500	0.5	40000	7.1

HL 4956: Active horn antenna COM-POWER Corp., model: AHA-840, s/n 105004

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



HL 5288: Trilog Antenna Frankonia, model: ALX-8000E, s/n: 00809 30-1000 MHz

Frequency, MHz	Antenna factor, dB/m
30	14.96
35	15.33
40	16.37
45	17.56
50	17.95
60	16.87
70	13.22
80	10.56
90	13.61
100	15.46
120	14.03
140	12.23

Frequency, MHz	Antenna factor, dB/m	
160	12.67	
180	13.34	
200	15.40	
250	16.42	
300	17.28	
400	19.98	
500	21.11	
600	22.90	
700	24.13	
800	25.25	
900	26.35	
1000	27.18	

The antenna factor shall be added to receiver reading in $dB_{\mu}V$ to obtain field strength in $dB_{\mu}V/m$. **above 1000** MHz

abo		
Frequency, MHz	Antenna factor, dB/m	
1000	26.9	
1100	28.1	
1200	28.4	
1300	29.6	
1400	29.1	
1500	30.4	
1600	30.7	
1700	31.5	
1800	32.3	
1900	32.6	
2000	32.5	
2100	32.9	
2200	33.5	
2300	33.2	
2400	33.7	
2500	34.6	
2600	34.7	
2700	34.6	
2800	35.0	
2900	35.5	
3000	36.2	
3100	36.8	
3200	36.8	
3300	37.0	
3400	37.5	
3500	38.2	
3300	30.Z	

Frequency, MHz	Antenna factor, dB/m
3600	38.9
3700	39.4
3800	39.4
3900	39.6
4000	39.7
4100	39.8
4200	40.5
4300	40.9
4400	41.1
4500	41.4
4600	41.3
4700	41.6
4800	41.9
4900	42.3
5000	42.7
5100	43.0
5200	42.9
5300	43.5
5400	43.6
5500	44.3
5600	44.7
5700	45.0
5800	45.0
5900	45.3
6000	45.9

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



10 APPENDIX C 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
	Double ridged horn antenna: \pm 5.3 dB
Vertical polarization	Biconilog antenna: ± 5.5 dB
	Biconical antenna: ± 5.5 dB
	Log periodic antenna: ± 5.6 dB
	Double ridged horn antenna: ± 5.8 dB
Radiated emissions at 3 m measuring distance	
Horizontal polarization	Biconilog antenna: ± 5.3 dB
Vertical polarization	Biconical antenna: ± 5.0 dB
	Log periodic antenna: \pm 5.3 dB
	Double ridged horn antenna: ± 5.3 dB
	Biconilog antenna: ± 6.0 dB
	Biconical antenna: ± 5.7 dB
	Log periodic antenna: ± 6.0 dB
	Double ridged horn antenna: ± 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.



11 APPENDIX D Test laboratory 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 for OATS are R-10808 for RE measurements below 1 GHz, G-20112 for RE measurements above 1 GHz, R-11082 for anechoic chamber for RE measurements below 1 GHz, 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

12 APPENDIX E Specification references

FCC 47CFR part 15: 2020Radio Frequency DevicesANSI C63.10: 2013American National Standard of Procedures for Compliance Testing of Unlicemsed
Wireless Devices



13 APPENDIX F Abbreviations and acronyms

А	ampere
AC	alternating current
A/m	ampere per meter
AM	amplitude modulation
AVRG	average (detector)
cm	centimeter
dB	decibel
dBm	decibel referred to one milliwatt
dB(μV)	decibel referred to one microvolt
dB(μV/m)	decibel referred to one microvolt per meter
dB(μA)	decibel referred to one microampere
DC	direct current
EIRP	equivalent isotropically radiated power
ERP	effective radiated power
EUT	equipment under test
F	frequency
GHz	gigahertz
GND	ground
Н	height
HL	Hermon laboratories
Hz	hertz
k	kilo
kHz	kilohertz
LO	local oscillator
m	meter
MHz	megahertz
min	minute
mm	millimeter
ms	millisecond
μS	microsecond
NA	not applicable
NB	narrow band
OATS Ω	open area test site
PM	Ohm pulse modulation
PS	power supply
ppm	part per million (10 ⁻⁶)
QP	quasi-peak
RE	radiated emission
RF	radio frequency
rms	root mean square
Rx	receive
S	second
T	temperature
Tx	transmit
V	volt
WB	wideband



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APPENDIX F Manufacturer's declaration



Declaration of identity between models: Neteera 130H-Plus/Neteera 131H-Plus

The Neteera devices, models 130H-Plus and 131H-Plus, are identical in components, assembly, technical specifications and performance operation principles, except the following distinctions:

1. Neteera 130H-Plus – uses a USB cable connected to a power supply and communicates witthe data display monitor via Wi-Fi

2. Neteera 131H-Plus - uses a USB cable connects to display monitor and communicates witthe data display monitor via wire connection

All the models can be powered by an AC/DC class II adapter (mode 1) or by connecting via USB connector (mode 2) to display monitor by receiving 5 VDC.

Reviewed and Confirmed By				
Name	Position	Date	Signature	
Shahar Yaron	VP Product	20-Dec-2022	Sold Sold Sold Sold Sold Sold Sold Sold	
Rakefet Shohat	VP QQ/RA	20-Dec-2022	-101	
Shimon Steinberger	CTO	20-Dec-2022	- James -	

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Neteera Confidential

END OF DOCUMENT

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