

issued by an Accredited Testing Laboratory

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Reference 8P07820-P30-Rev1 Page

SP Testing

Ericsson AB Anders Karlsson BURA DURA RP QRM Torshamnsgatan 21 164 80 Stockholm

Part2 of 8P07820-P30

RISE Research Institutes of Sweden AB Electronics - EMC

Performed by

Examined by

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Field strength of spurious radiation measurements according to CFR 47 §30.203

Date	Temperature	Humidity
2018-12-16	$22 \degree C \pm 3 \degree C$	25 % ± 5 %
2018-12-21	$22 \degree C \pm 3 \degree C$	23 % ± 5 %
2019-01-14	$22 \ ^{\circ}C \pm 3 \ ^{\circ}C$	12 % ± 5 %
2019-01-15	$22 \ ^{\circ}C \pm 3 \ ^{\circ}C$	17 % ± 5 %
2019-01-17	$22 \ ^{\circ}C \pm 3 \ ^{\circ}C$	13 % ± 5 %
2019-01-18	$22 \ ^{\circ}C \pm 3 \ ^{\circ}C$	22 % ± 5 %
2019-01-21	$22 \ ^{\circ}C \pm 3 \ ^{\circ}C$	30 % ± 5 %
2019-01-22	$22 \ ^{\circ}C \pm 3 \ ^{\circ}C$	26 % ± 5 %
2019-01-23	$22 \ ^{\circ}C \pm 3 \ ^{\circ}C$	26 % ± 5 %
2019-01-24	$22 \ ^{\circ}C \pm 3 \ ^{\circ}C$	24 % ± 5 %
2019-01-29	$22 \degree C \pm 3 \degree C$	12 % ± 5 %

The measurements were performed with both horizontal and vertical polarization of the antenna. The measurement was performed with a RBW of 1 MHz. The antenna distance and test object height in the different frequency ranges is descried below.

In the test range from 30 - 1000 MHz and 40 - 200 GHz

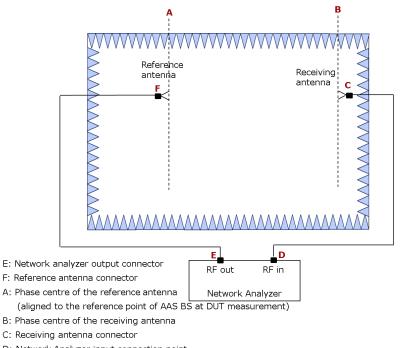
A propagation loss in free space was calculated. The used formula was

 $\gamma = 20 \log \left(\frac{4\pi D}{\lambda}\right)$, γ is the propagation loss and D is the antenna distance.

For 30 MHz – 60 GHz D was 3m, for 60 – 110 GHz D was 1.5m and was for 110 – 200 GHz was 1.0m.



In the test range from 1 - 40 GHz a substitution measurement defined in 3GPP TR 37.842 V13.2.0 (2017-03) chapter 10.3.1.1.2 was used to get the actual correction factor (Transducer factor A-D in the figure 1 below) with a Network analyzer (ZNB 40).



D: Network Analyzer input connection point

(the same as the measurement equipment connection point at DUT measurement)

Figure 1: Indoor Anechoic Chamber calibration system setup for EIRP

Stage 1 - Calibration:

- 1) Connect the reference antenna and the receiving antenna to the measurement RF out port and RF in port of the network analyzer, respectively, as shown in figure 1.
- 2) Install the reference antenna with its *beam peak direction* and the height of its phase centre aligned with the receiving antenna.
- 3) Set the centre frequency of the network analyzer to the carrier centre frequency of the tested signal for EIRP measurement of the EUT and measure $LF_{EIRP, E\rightarrow D}$, which is equivalent to $20\log|S21|$ (dB) obtained by the network analyzer: $LF_{EIRP, E\rightarrow D}$: Pathloss between E and D in figure 1.
- 4) Measure the cable loss, $LF_{EIRP, E \rightarrow F}$ between the reference antenna connector and the network analyzer connector:

 $LF_{EIRP, E \rightarrow F}$: Cable loss between E and F in figure 1.

 5) Calculate the calibration value between A and D with the following formula: L_{EIRP_cal, A→D} = LF_{EIRP, E→D} + G_{REF_ANT_EIRP, A→F} -LF_{EIRP, E→F}. L_{EIRP_cal, A→D}: Calibration value between A and D in figure 1. Was implemented in the spectrum analyzer as a transducer. G_{REF_ANT_EIRP, A→F}: Antenna gain of the reference antenna.

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Stage 2 - Measurement:

- 6) Uninstall the reference antenna and install the EUT with the manufacturer declared coordinate system reference point in the same place as the phase centre of the reference antenna. The manufacturer declared coordinate system orientation of the EUT is set to be aligned with the testing system.
- 7) Measure the mean power, $P_{R_EUT_EIRP, D}$, D in figure 1.
- 8) Calculate the EIRP with the following formula:

 $EIRP = P_{R_EUT_EIRP, D} + L_{EIRP_cal, A \rightarrow D}$

The measurement procedure was as the following:

- 1. A pre-measurement is performed with RMS detector and Max Hold on the spectrum analyzer. The turn table was slowly rotating form 0-360 degrees.
- 2. Spurious radiation on frequencies closer than 10 dB to the limit in the pre-measurement a manual search for maximum response was done.
- 3. If the recorded EIRP value was close or above the TRP limit, a Two Cut TRP measurement or a full sphere was done according to C63.26 mmWave JTG V1.0 chapter 6.6.5. This methods is not included in our scope of accreditation. Overview of the methods.
 - a. Two Cut method
 - i. EUT set in vertical orientation
 - ii. EIRP measurement samples with horizontal and vertical polarization of the measurement antenna. Angular step size based on frequency and dimension of the EUT
 - iii. EUT set in horizontal orientation
 - iv. EIRP measurement samples with horizontal and vertical polarization of the measurement antenna. Angular step size based on frequency and dimension of the EUT.
 - v. TRP = EIRP measurement samples averaged+ Δ TRP. (Δ TRP= Margin factor based on grid selection).
 - b. Full sphere method
 - i. EUT set in horizontal orientation bottom of the EUT to the right.
 - ii. EIRP measurement samples with horizontal and vertical polarization of the measurement antenna. Angular step size of the turn table was 15 degrees from 0 165 degrees and 195 360 degrees. In cone of radiation 165 195 degrees the step size of the turn table was 1 degree.
 - iii. EUT was changed in 15 degrees step from horizontal bottom right to horizontal bottom to the left (twelve steps). Step ii. was repeated for all twelve steps.
 - iv. TRP was calculated according to the formula B1 in C63.26 mmWave JTG V1.0 Appendix B.



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The test set-up during the spurious radiation measurements is shown in the pictures below:

30 MHz - 60 GHz vertical orientation: the measuring distant was 3 m



30 MHz - 60 GHz horizontal orientation: the measuring distant was 3 m



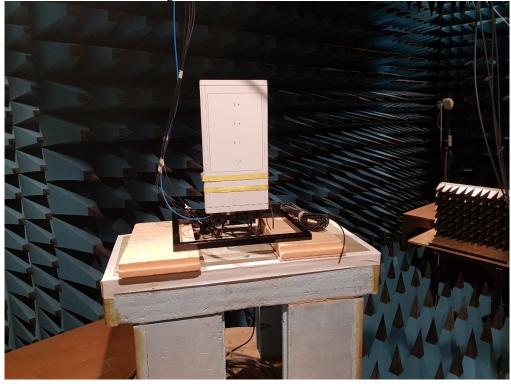
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Date 2019-02-07

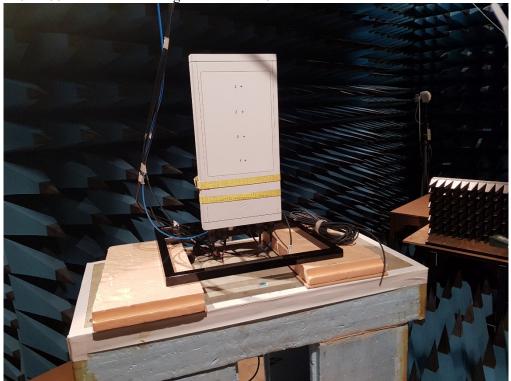
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60 – 110 GHz the measuring distant was 1.5m:



110 – 200 GHz the measuring distant was 1.0m:



Page



Measurement equipment

Measurement equipment	RISE number
Anechoic chamber, Hertz	BX50194
R&S FSW 43	902 073
R&S ESU 26	901 553
R&S ZNB 40	BX50051
EMCO Horn Antenna 3116	503 279
Bilog antenna Schaffner 6143	504 079
Flann STD Gain Horn Antenna 20240-20	503 674
Flann STD Gain Horn Antenna 22240-20	503 674
Flann STD Gain Horn Antenna 24240-20	503 674
Flann STD Gain Horn Antenna 26240-20	503 674
Flann STD Gain Horn Antenna 27240-20	503 674
Flann STD Gain Horn Antenna 29240-20	503 674
Flann STD Gain Horn Antenna 30240-20	503 674
Mixer FS-Z60	100147
Mixer FS-Z90	503 569
Mixer FS-Z110	BX81427
Mizer FS-Z140	BX81428
Mixer FS-Z220	BX81429
Miteq, Low Noise Amplifier	503 278
EMCO Horn Antenna 3115	502 175
EMCO Horn Antenna 3115	501 548
μComp Nordic, Low Noise Amplifier	901 544
Temperature and humidity meter, Testo 615	503 498

Results

Diagram 1 - 70 represents worst case for each test.

Measurement uncertainty: 30-1000 MHz 3.1 dB 1-18 GHz, 3.0 dB 18 – 40 GHz, 3.1 dB 40 - 60 GHz, 2.27 dB 60 – 75 GHz, 2.70 dB 75 - 110 GHz, 4.24 dB110 – 150 GHz, 3.61 dB 150 - 170 GHz, 4.67 dB170 - 200 GHz, 5.10 dB



Limits

CFR 47 §30.203 Emission limits.

(a) The conductive power or the total radiated power of any emission outside a licensee's frequency block shall be -13 dBm/MHz or lower. However, in the bands immediately outside and adjacent to the licensee's frequency block, having a bandwidth equal to 10 percent of the channel bandwidth, the conductive power or the total radiated power of any emission shall be -5 dBm/MHz or lower.

(b)(1) Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater.

(2) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the licensee's frequency block edges as the design permits.

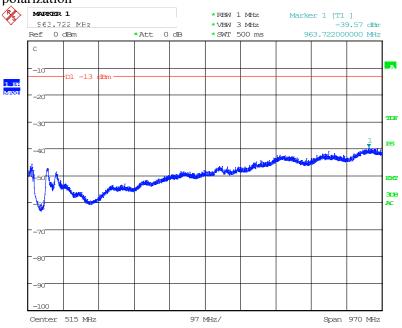
(3) The measurements of emission power can be expressed in peak or average values.

Complies?	Yes
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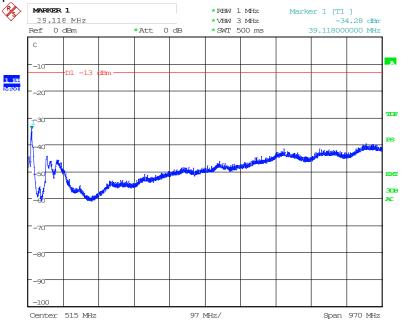
AC KRD 901 079/4

Diagram 1: 30 - 1000 MHz, Modulation QPSK, Symbolic name: BMTL₁₀₀, EIRP Horizontal polarization



Date: 24.JAN.2019 14:56:25

Diagram 2: 30 - 1000 MHz, Modulation QPSK, Symbolic name: BMTL₁₀₀, EIRP Vertical polarization

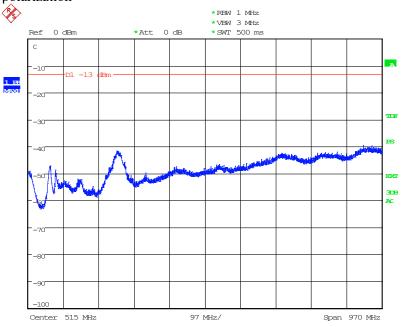


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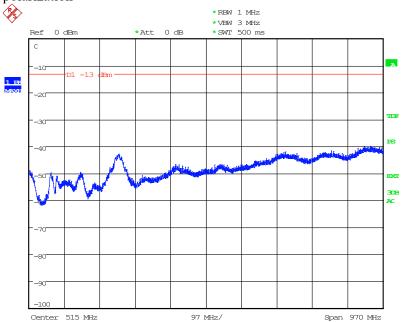


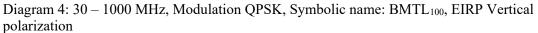
DC KRD 901 079/1

Diagram 3: 30 - 1000 MHz, Modulation QPSK, Symbolic name: BMTL₁₀₀, EIRP Horizontal polarization



Date: 24.JAN.2019 15:41:08

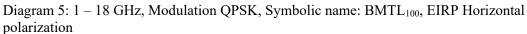




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DC KRD 901 079/1



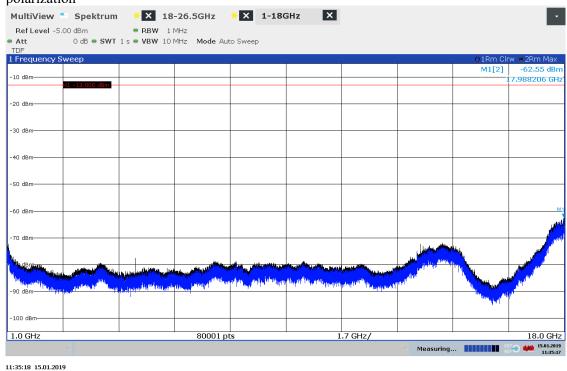
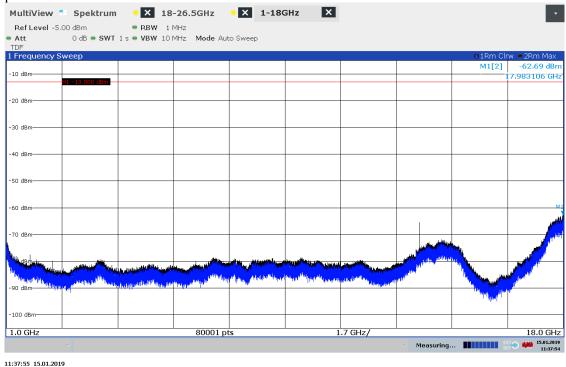
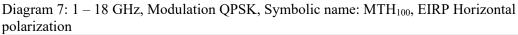


Diagram 6: 1 - 18 GHz, Modulation QPSK, Symbolic name: BMTL₁₀₀, EIRP Vertical polarization



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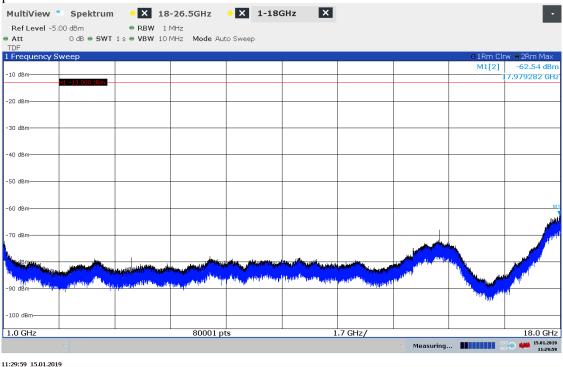
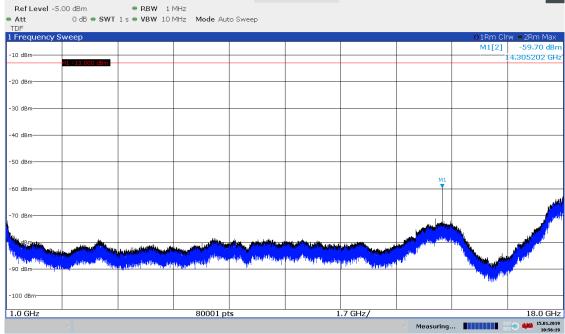


Diagram 8: 1 – 18 GHz, Modulation QPSK, Symbolic name: MTH, EIRP Vertical polarization



10:56:20 15.01.2019



Diagram 9: 18 – 26.5 GHz, Modulation QPSK, Symbolic name: $BMTL_{100}$, EIRP Horizontal polarization

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Diagram 10: 18 – 26.5 GHz, Modulation QPSK, Symbolic name: $BMTL_{100}$, EIRP Vertical polarization

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Diagram 11: 18 – 26.5 GHz, Modulation QPSK, Symbolic name: MTH_{100} , EIRP Horizontal polarization

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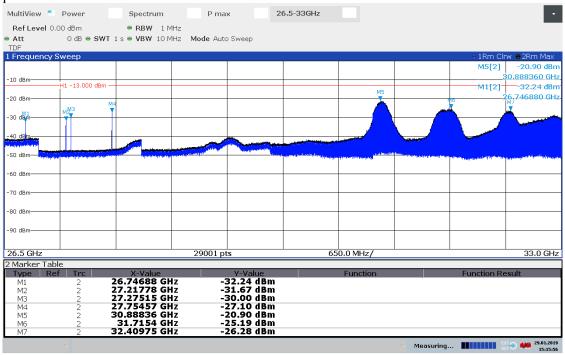
Diagram 12: 18 – 26.5 GHz, Modulation QPSK, Symbolic name: MTH_{100} , EIRP Vertical polarization

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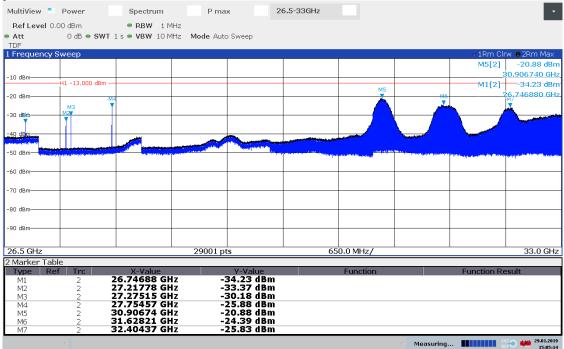


Diagram 13: 26.5 – 33 GHz, Modulation QPSK, Symbolic name: BMTL₁₀₀, EIRP Horizontal polarization



15:15:57 29.01.2019

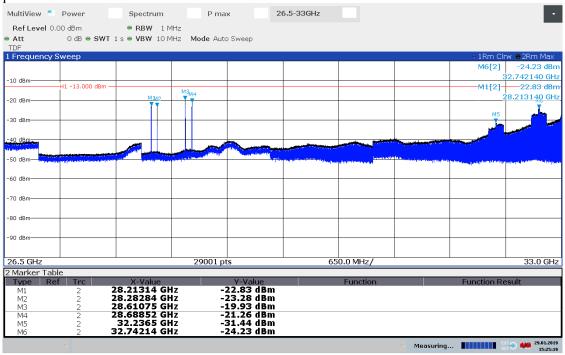
Diagram 14: 26.5 – 33 GHz, Modulation QPSK, Symbolic name: BMTL₁₀₀, EIRP Vertical polarization



15:05:15 29.01.2019

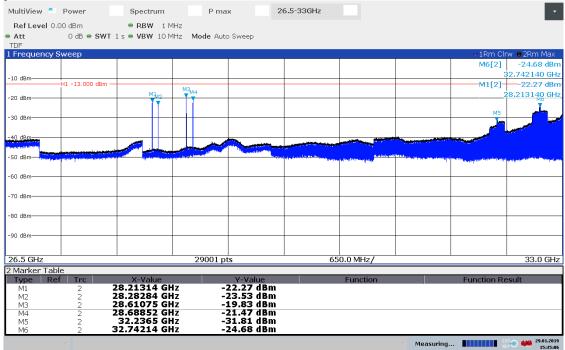


Diagram 15: 26.5 – 33 GHz, Modulation QPSK, Symbolic name: MTH₁₀₀, EIRP Horizontal polarization



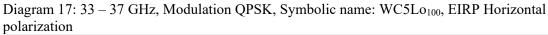
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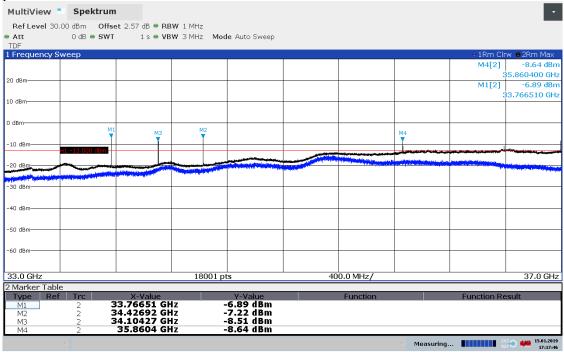
Diagram 16: 26.5 - 33 GHz, Modulation QPSK, Symbolic name: MTH₁₀₀, EIRP Vertical polarization



15:35:07 29.01.2019

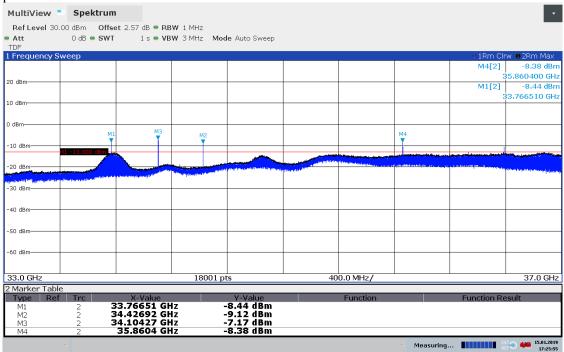






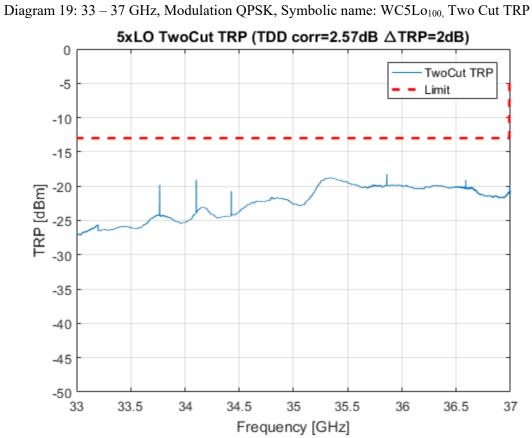
17:17:46 15.01.2019

Diagram 18 33 – 37 GHz, Modulation QPSK, Symbolic name: WC5Lo₁₀₀, EIRP Vertical polarization



17:25:55 15.01.2019





According to ANSI C63.26 mmWave JTG V1.0 chapter 6.6.5.2.1



Diagram 20: 33 – 37 GHz, Modulation QPSK, Symbolic name: $2BEL_{100}$, EIRP Horizontal polarization

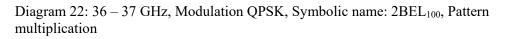
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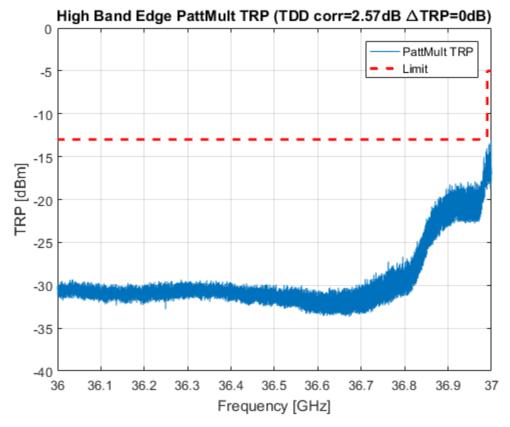
Diagram 21 33 – 37 GHz, Modulation QPSK, Symbolic name: $2BEL_{100}$, EIRP Vertical polarization

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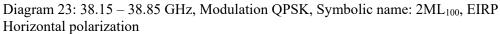






According to ANSI C63.26 mmWave JTG V1.0 chapter 6.6.5.2.2

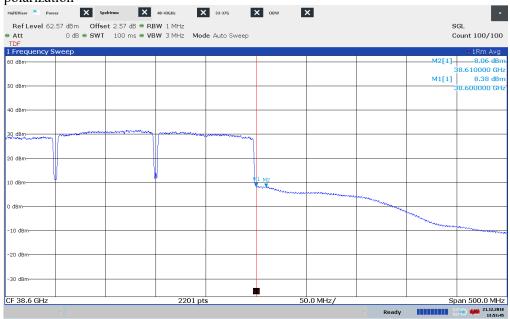




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Diagram 24: 38.15 – 38.85 GHz Modulation QPSK, Symbolic name: 2ML₁₀₀, EIRP Vertical polarization



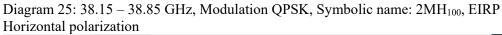
13:53:45 21.12.2018

Note: According to ANSI C63.26 mmWave JTG V1.0 chapter 6.6.5.2.5 The conducted Power value can be calculated:

Power EIRP Be Low Hor/ Ver [dbm]	Power EIRP Be Low - 10MHz[dBm]	Antenna Gain[dBi]	Conducted power (Hor/ Ver) – antenna gain. BE/ Be -10MHz [dBm]
9.40/ 8.38	8.85/ 8.06	28.6	-15.96/ -16.76

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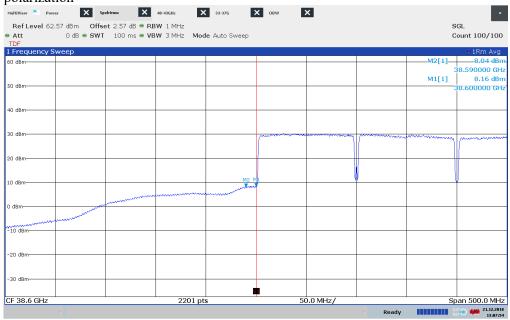




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13:35:35 21.12.2018

Diagram 26: 38.15 – 38.85 GHz Modulation QPSK, Symbolic name: 2MH₁₀₀, EIRP Vertical polarization



13:07:55 21.12.2018

Note: According to ANSI C63.26 mmWave JTG V1.0 chapter 6.6.5.2.5 The conducted Power value can be calculated:

I	Power EIRP Be Low Hor/ Ver [dbm]	Power EIRP Be Low - 10MHz[dBm]	Antenna Gain[dBi]	Conducted power (Hor/ Ver) – antenna gain. BE/ Be -10MHz [dBm]
	9.01/ 8.16	8.97/ 8.04	28.6	-16.42/ -16.49

RISE Research Institutes of Sweden AB



Diagram 27: 40 –43 GHz, Modulation QPSK, Symbolic name: 2BEH₁₀₀, EIRP Horizontal polarization

MultiView Spektrum X P max X Spe	ctrum X		
Ref Level 60.00 dBm Offset 2.57 dB ● RBW 1 MHz Att 0 dB SWT 100 ms • VBW 10 MHz Mode Au	to Succes		SGL Count 100/100
TDF .	w sweep		
Frequency Sweep			e 2Rm Avg
			M2[2] 7.08 dBr 40.010000 GH
0 dBm			M1[2]7.74 dBr
			40.000000 GH
0 dBm-			
0 d9m			
0 dBm			
b dBm			
Service.			
dBm			
0000			
10 dBm			
20 dBm-			
30 dBm			
10.0 GHz	14001 pts	300.0 MHz/	43.0 GH
			Ready 4/40 14.01.201
16:44 14.01.2019			

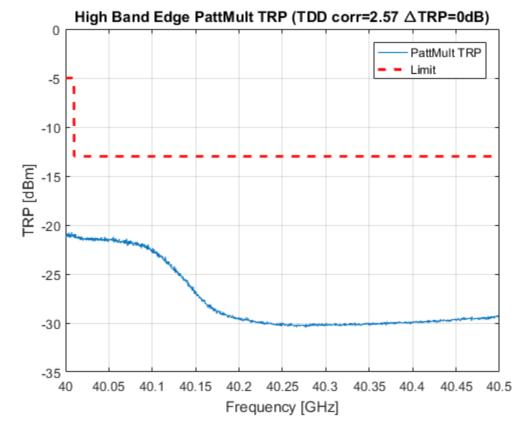
Diagram 28: 40 - 43 GHz Modulation QPSK, Symbolic name: 2BEH₁₀₀, EIRP Vertical polarization

Att 0 dB 👄 :		BW 1 MHz BW 10 MHz Mode Auto	Sweep			Count 1	.00/100
DF							
Frequency Sweep			1				• 2Rm A M2[2] 6.37 (
							40.010000
dBm				 	 		M1[2] 7.09
							40.000000
dBm							
dBm							
1Bm							
dBm-							
sm							
dBm-							
	13.030 dBm			 المليب ويوجد ومعارفة ومعارفه ومعارفه والمعارفة	 		
						-	
dBm							
dBm					 		+

13:00:17 14.01.2019



Diagram 29: 40 – 43 GHz, Modulation QPSK, Symbolic name: $2BEL_{100}$, Pattern multiplication



According to ANSI C63.26 mmWave JTG V1.0 chapter 6.6.5.2.2



Diagram 30: 40 –43 GHz, Modulation QPSK, Symbolic name: WC6Lo₁₀₀, EIRP Horizontal polarization

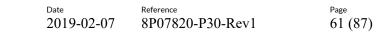
Multi¥iew ■ P m	аж 🗙	Power X 20	0Mhz X	OBW 200Mhz	Х овм	× Spectrum	×		-
Ref Level 50		RBW 1							
Att	0 dB 🖷 S	SWT 1 s 👄 VBW 10	MHz Mode Au	ito Sweep					
TDF Frequency S	Sween							e 1Rm C	rw ⊜2Rm Max
c in equency a	учеер					1		M1[2]	-1.90 dB
									41.429080 GH
0 dBm								M2[2]	-7.77 dB
									41.809840 GH
30 dBm									1
20 dBm									
l0 dBm-									
				M1			M4		
) dBm				Y			Ť		
						M3			
-10 dBm-	H1 -13.000 dB								
	and the second second		يري يو	and a superior of the second se	a la la companya da da ana ana ana ana ana ana ana ana				
Lu abrit			and the second	and the second section of the sound of the second second	and the second	and the second se		a ha dha an ing sa shi she fallin ha bind birayang.	The second second
30 dBm									
40 dBm									
40.0 GHz	1	I	14001 p	ts	30	00.0 MHz/	1	1	43.0 GH
Marker Tab	le					· · · · · · · · · · · · · · · · · · ·			
Type Re		X-Value		Y-Value		Function		Function R	esult
M1	2	41.42908 GH		-1.90 dBm					
M2 M3	2	41.80984 GH 42.02475 GH	12	-7.77 dBm -9.07 dBm					
M4	2	42.22145 GH		-1.70 dBm					
	v						Moacuring		× 16.12.201
							measuring.		09:45:

09:45:03 16.12.2018

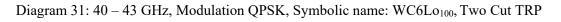
Diagram 30: 40 - 43 GHz, Modulation QPSK, Symbolic name: WC6Lo₁₀₀, EIRP Vertical polarization

ulti¥iew Pm	ак 🗙 Ро	wer 🗙 20	DMhz X	OBW 200Mhz	Х овw	× Spectrum	×		
Ref Level 50		RBW 1							
Att IDF	0 dB 🖷 SW1	1 s 🗢 VBW 10	MHz Mode A	uto Sweep					
Frequency S	weep							0 1Rm Cl	rw ⊜2Rm Ma>
								M1[2]	-2.54 dB
									41.429080 GF
0 dBm								M2[2]	-11.11 dB
									41.809840 GI
0 dBm									
0 dBm									
) dBm									
				M1					
dBm				MI Y		мэ	M4		
				1 1		M2 T			
10 dBm	H1 -13.000 dBm -			1		7			
		-		adama a sa				and the second	and the second sec
Lo abri			an an air air an an Anna an Anna an Anna an Anna	an o Ana Anto, Date & Mile Conde and Mile		and the second	and the second se	and the second of the second	a state state and a province
30 dBm									
40 dBm									
10.0 GHz	I	1	14001 p			300.0 MHz/			43.0 GF
Marker Tab	P		11001			00010 111127			1010 01
Type Re		X-Value		Y-Value		Function		Function R	esult
M1	2	41.42908 GH		-2.54 dBm					
M2	2	41.80984 GH		11.11 dBm					
M3		42.02475 GH 42.22145 GH		-7.24 dBm -4.57 dBm					
M4	'	42.22143 GA	IZ.	-4.37 (DIII					

09:50:39 16.12.2018





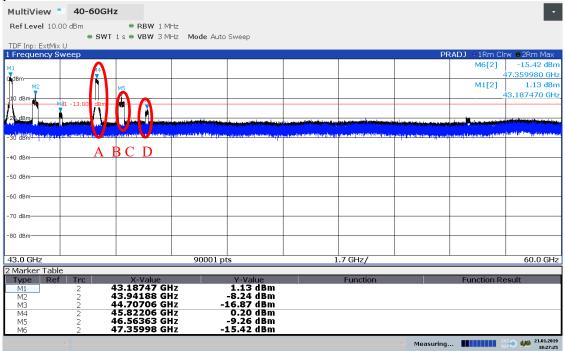


6xLO TwoCut TRP (△TDD=2.57dB △TRP=2dB) 0 TwoCut TRP -5 Limit -10 -15 [mgp] -20 -25 -30 -30 -35 -40 -45 -50 41.5 40 40.5 41 42 42.5 43 Frequency [GHz]

According to ANSI C63.26 mmWave JTG V1.0 chapter 6.6.5.2.1



Diagram 32: 43 – 60 GHz, Modulation QPSK, Symbolic name: $BMTL_{100}$, EIRP Horizontal polarization



18:27:25 21.01.2019

Diagram 33: 43 - 60 GHz, Modulation QPSK, Symbolic name: BMTL₁₀₀, EIRP Vertical polarization

SWI 1 s * VBW 3 MHz Mode Auto Sweep PRAD * 1Rm Cirv * 2Rm Max Mage: ************************************	polarization					
SWI 1 s * VBW 3 MHz Mode Auto Sweep PRAD * 1Rm Cirv * 2Rm Max Mage: ************************************	MultiView 5 40-60G	Hz				•
DF Inp: ExtNix U Frequency Sweep Freque	RefLevel 10.00 dBm	RBW 1 MH:	z			
PRADJ a 18m Clrw (22m Max dBm M6[2] -17.10 dBr dBm M1[2] 0.00 dBr dBm M2[2] 0.00 dBr dBm M2[2] 0.00 dBr dBm M2[2] 0.00 dBr dBm M2[2] 43.15007 GHz 60.0 dBr dD dBr M2[2] 43.15007 GHz 60.0 dBr M2[2] 43.15007 GHz <		Т 1 s 👄 VBW З МН:	z Mode Auto Sweep			
dBm M6[2] -17.10 dBr dBm M6[2] -17.10 dBr dBm M1[2] 0.00 dBr dBm M1 0.00 dBr M3 2 45.7807 GHz A 9.000 dBr -0.00 dBr M4 2 45.7807 GHz M4 2 45.7807 G	TDF Inp: ExtMix U				DD4D1 010	
dem 47.347140 GH M2 M1[2] 0 dem M1[2] 0 dem M2 10 dem M2	1 Frequency Sweep				1	
Main M1[2] 0.00 dBr 0 dBr <td< td=""><td>M1 🗛</td><td></td><td></td><td></td><td>MOL</td><td>-</td></td<>	M1 🗛				MOL	-
0 dBm 43.150070 GH 0 dBm A B C D	ddBm				M1[
0 08m 13.0 0 02m 1.2 00 02m		M5				-
0 definition of the second	-10 dBm					
0 definition of the second						
0 dBm A B C D - <td< td=""><td>and the second provide the second second</td><td>een h</td><td>in a faith and the faith in the leading of a last and in a faith of the second in this second in the second sec</td><td></td><td>in the standard and the second of the standard and the second second second second second second second second</td><td>a a fa fa she a fa a she a fa a fa fa</td></td<>	and the second provide the second	een h	in a faith and the faith in the leading of a last and in a faith of the second in this second in the second sec		in the standard and the second of the standard and the second second second second second second second second	a a fa fa she a fa a she a fa a fa
0 dBm 0 dBm <td< td=""><td>-30 dBm</td><td>and an experience of the second s</td><td>elead lander, deitheaddh, said airlifear ar the arrival sector starbillt airlin lanar receiv</td><td>وتور المحافظة المتلفظة والمتعادية والمتعادية والمتعادية المتعادية والمتعادية والمتعادية والمتعادية والمتعادية</td><td>li phi phi pada ata a banda ya sa pa a bank mi piperkeren sa di</td><td>ang isan til bit bit bit step a fordersom</td></td<>	-30 dBm	and an experience of the second s	elead lander, deitheaddh, said airlifear ar the arrival sector starbillt airlin lanar receiv	وتور المحافظة المتلفظة والمتعادية والمتعادية والمتعادية المتعادية والمتعادية والمتعادية والمتعادية والمتعادية	li phi phi pada ata a banda ya sa pa a bank mi piperkeren sa di	ang isan til bit bit bit step a fordersom
0 dBm 0 dBm <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td></td<>						
0 dBm Image: Constraint of the second seco	-40 dBm A	BCD				
0 dBm Image: Constraint of the second seco						
0 dBm	-50 dBm					
0 dBm	co.dom					
Image: Non-State in the state in the sta	-60 dBm					
Image: Non-State in the state in the sta	-70 dBm					
3.0 GHz 90001 pts 1.7 GHz/ 60.0 GHz Marker Table Trpe Ref Trc X-Value Y-Value Function M1 2 43.15007 GHz 0.00 dBm Function Result MI M2 2 43.93546 GHz -9.18 dBm Function M4 2 45.7807 GHz -0.97 dBm M5 2 46.57629 GHz -10.02 dBm M6 2 47.34714 GHz -17.10 dBm						
Marker Table Type Ref Trc X-Value Function Function Result M1 2 43.15007 GHz 0.00 dBm Function Result Function Result M2 2 43.93546 GHz -9.18 dBm Function Result Function Result M3 2 44.68761 GHz -17.28 dBm Function Result Function Result M4 2 45.7807 GHz -0.97 dBm Function Result Function Result M5 2 46.57629 GHz -10.02 dBm Function Result Function Result M6 2 47.34714 GHz -17.10 dBm Function Result Function Result	-80 dBm					
Marker Table Type Ref Trc X-Value Function Function Result M1 2 43.15007 GHz 0.00 dBm Function Result Function Result M2 2 43.93546 GHz -9.18 dBm Function Result Function Result M3 2 44.68761 GHz -17.28 dBm Function Result Function Result M4 2 45.7807 GHz -0.97 dBm Function Result Function Result M5 2 46.57629 GHz -10.02 dBm Function Result Function Result M6 2 47.34714 GHz -17.10 dBm Function Result Function Result						
Marker Table Type Ref Trc X-Value Function Function Result M1 2 43.15007 GHz 0.00 dBm Function Result Function Result M2 2 43.93546 GHz -9.18 dBm Function Result Function Result M3 2 44.68761 GHz -17.28 dBm Function Result Function Result M4 2 45.7807 GHz -0.97 dBm Function Result Function Result M5 2 46.57629 GHz -10.02 dBm Function Result Function Result M6 2 47.34714 GHz -17.10 dBm Function Result Function Result	43.0 GHz		90001 pts	1.7 GHz/		60.0 GH:
Type Ref Trc X-Value Y-Value Function Function Result M1 2 43.15007 GHz -0.00 dBm -			50001 pts	In one,		0010 011
M1 2 43.15007 GHz 0.00 dBm M2 2 43.93546 GHz -9.18 dBm M3 2 44.68761 GHz -17.28 dBm M4 2 45.7807 GHz -0.97 dBm M5 2 46.57629 GHz -10.02 dBm M6 2 47.34714 GHz -17.10 dBm		X-Value		Function	Functio	n Result
M3 2 44.68761 GHz -17.28 dBm M4 2 45.7807 GHz -0.97 dBm M5 2 46.57629 GHz -10.02 dBm M6 2 47.34714 GHz -17.10 dBm	M1 2					
M4 2 45.7807 GHz -0.97 dBm M5 2 46.57629 GHz -10.02 dBm M6 2 47.34714 GHz -17.10 dBm						
M5 2 46.57629 GHz -10.02 dBm M6 2 47.34714 GHz -17.10 dBm		45.7807 GHz	z -0.97 dBm			
	M5 2	46.57629 GHz	z -10.02 dBm			
	M6 2	47.34714 GHz	z -17.10 dBm			
Measuring Measuring					Measuring	

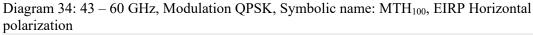
18:21:46 21.01.2019



"False signals" originating from unwanted mixer products between LO signal generated by the spectrum analyzer and the strong out of measurement band RF-signal (EUT carrier frequencies) are marked with red circles. The frequency of the "false signals" can be calculated and are show in the table below.

		Mixing	indicies		
Plot label	F EUT n		m	"False F"	
	[GHz]	[-]	[-]	[GHz]	
А	37.05	4	-1	45.85	
В	37.75	4	-1	46.55	
С	37.85	4	-1	46.65	
D	38.55	4	-1	47.35	

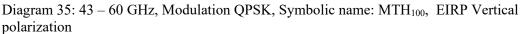


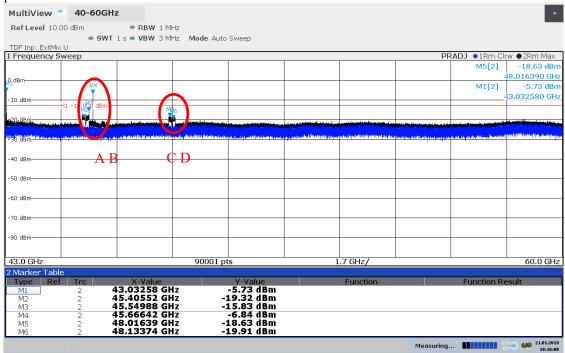


MultiView 40-600	GHz				•
RefLevel 10.00 dBm	• RBW 1 MHz				_
	WT1s 🖷 VBW 3 MHz Mo	de Auto Sweep			
TDF Inp: ExtMix U 1 Frequency Sweep					n Clrw ⊜2Rm Max
I Frequency Sweep				M1[
				witt	43.032390 GH
) dBm				M2[
11 🔪					45,492830 GH
-10 dBm	m				
	" 1				
20. dBm	Union descentions from the Lower Miller	in the first of the second state of the second state of the second state of the second state of the second stat	and the state of the	in the state of the second	
in ala di kini kini kana ana ana ana ana ana ana ana ana an	n an an tha an the antipological design and the second secon	ditable and a track of the second	والمحافظ والأفاف والمتعافر والمحمد والمحافظ والمعاد أفأت والمحافر والم	a barana wata dan kata wa wata wa wa wa wa ka waka si waka kata waka kata waka kata	
30 dBm				of the second	
-40 dBm					
50 dow					
-50 dBm					
-60 dBm					
-oo usin					
-70 dBm					
70 ubiii					
-80 dBm					
43.0 GHz	9	0001 pts	1.7 GHz/		60.0 GH
2 Marker Table Type Ref Trc	X-Value	Y-Value	Function	Functio	n Result
Type Ref Trc M1 2	43.03239 GHz	-10.88 dBm	Function	Funcuo	TRESUL
M2 2	45.49283 GHz	-16.19 dBm			
M3 2 M4 2	45.6668 GHz 48.13272 GHz	-10.24 dBm -16.52 dBm			
M4 2	40.132/2 GHZ	-10.52 aBM			
				🛛 Measuring	18:33:04 18:33:04

18:33:05 21.01.2019

Note: Marker 1 is a 6 LO frequency worst case tested in other configuration.





18:16:08 21.01.2019

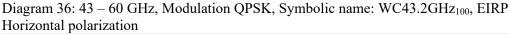
Note: Marker 1 is a 6 LO frequency worst case tested in other configuration.

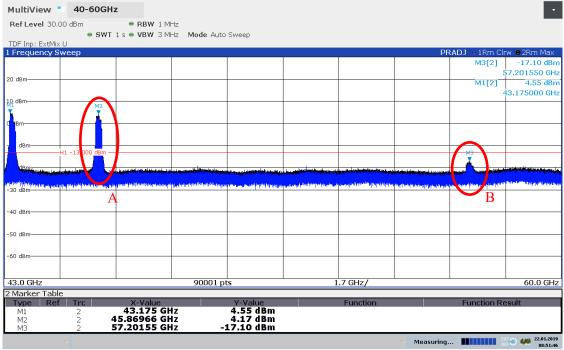


"False signals" originating from unwanted mixer products between LO signal generated by the spectrum analyzer and the strong out of measurement band RF-signal (EUT carrier frequencies) are marked with red circles. The frequency of the "false signals" can be calculated and are show in the table below.

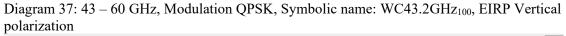
		Mixing	indicies		
Plot label	F EUT	n	m	"False F"	
	[GHz]	[-]	[-]	[GHz]	
А	39.85	4	-1	45.56	
В	39.95	4	-1	45.66	
С	39.25	4	-1	48.05	
D	39.35	4	-1	48.15	

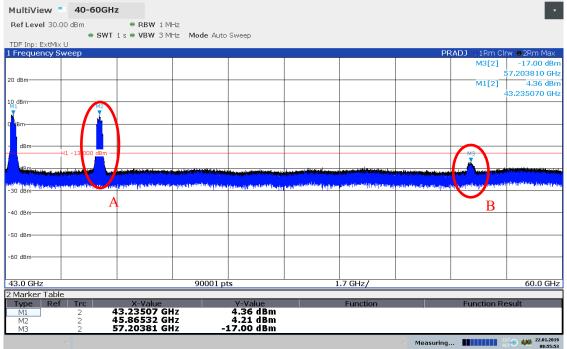






08:51:46 22.01.2019



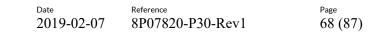


08:55:54 22.01.2019

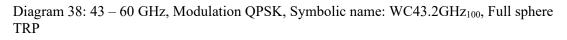


"False signals" originating from unwanted mixer products between LO signal generated by the spectrum analyzer and the strong out of measurement band RF-signal (EUT carrier frequencies) are marked with red circles. The frequency of the "false signals" can be calculated and are show in the table below.

		Mixing	indicies		
Plot label	F EUT	n	m	"False F"	
	[GHz]	[-]	[-]	[GHz]	
А	37.05	4	1	45.85	
В	37.05	-3	1	57.20	







Segmented Fullsphere TRP, TDD correction= 2.57 dB \triangle TRP= 2 dB -10 -12 -14 Segmented TRP [dBm] -16 -20 -27 -57 -26 -28 -30 43 43.05 43.1 43.15 43.2 43.25 43.3 43.35 43.4 43.45 43.5 Frequency [GHz]

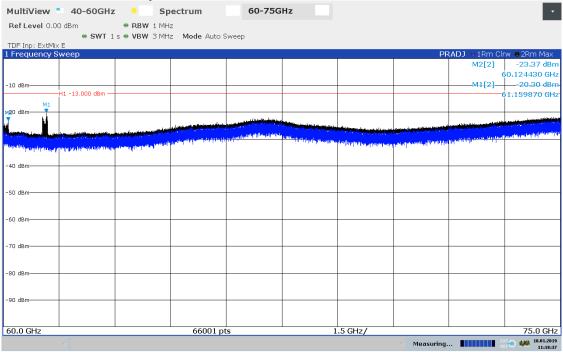
According to ANSI C63.26 mmWave JTG V1.0 chapter 6.6.5.2.3



Diagram 39: 60 - 75 GHz, Modulation QPSK, Symbolic name: BMTL₁₀₀, antenna aligned to PAAM 0, EIRP Horizontal polarization

Ref Level 0.00 dBr	n 🖷 Ri	3W 1 MHz						_
	● SWT 1 s ● VI	3W 3 MHz Mode Aut	o Sweep					
DF Inp: ExtMix E								
Frequency Swee	p					PF	ADJ 01Rm Cl	1
							M2[2]	-23.81 di
								61.182140 G
0 dBm							M1[2]	
H1 -1	13.000 dBm							60.012390 G
0 dBm								
D dBm M2			المحافظة فقلت بيتني والم	mu.l.				وأوالا والمعاونة والمعالمة والمسار
	- 1 10 - 10 - 40 - 10 - 14 - 16 - 16 - 16 - 16 - 16 - 16 - 16	and the subscription of the second			antin and a surface of the surface of the	na na ana ana ang ang ang ang ang ang an	No. of the local distance	and the second
		and the second second second second second	Speller Strengton and a second	Constant of the Party of the Later	interfection of the second	and a second second second title of the	and the state of the	Contracting Environment of Contraction
and any second	ութունունըներերերինություն	an ¹ an I an I an I an I a I a I a I a I a I			a a a a a a a a a a a a a a a a a a a	and Maria and Colored and Colored and		
0 dBm								
0 dBm								
0 dBm								-
0 dBm								
0 dBm								
0 dBm								
		66001	nte	1	5 GHz/			75.0 G
).0 GHz		10000	pta	1				75.0 G

Diagram 40: 60 – 75 GHz, Modulation QPSK, Symbolic name: BMTL₁₀₀, antenna aligned to PAAM 3, EIRP Vertical polarization



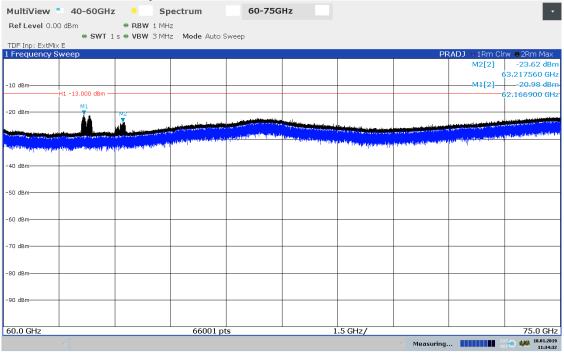
11:18:38 18.01.2019



Diagram 41: 60 - 75 GHz, Modulation QPSK, Symbolic name: MTH₁₀₀, antenna aligned to PAAM 0, EIRP Horizontal polarization

Ref Level 0.00 dBm	● RBW	1 MHz						_
		3 MHz Mode Auto	Sweep					
DF Inp: ExtMix E								
Frequency Sweep					1	PF	ADJ 01Rm Cl	
							M2[2]	-25.80 dE 63.148480 G
0 dBm								-22,87 dE
H1 -13.00	00 dBm							62.331900 G
								1.001.000
0 dBm	M1 MO							
_	M2	In the second section of section of the second seco	No with the state of the state	Contraction of the second second	fin in Southern and	in the state of the	A DESCRIPTION OF THE OWNER.	In the second
William and the second s	and the second	President and a second second second	and the second distribution in the second	(Klopen of the state		beliefen bieten Ansterie ernerfenne erner.	لطر ساهم بعري إيرا عار المراجع الم	a has been as a standard of the state of
and file and the file of the state of the st	lepton house and a plant start to the start of the	Professional and the second second		a second second	and have been a set of the owner of the	al ^b arpaterial hiling a particular	a distriction of the	
0 dBm-								+
0 dBm								
0 dBm								
0 dBm								+
0 dBm								
0 dBm								1
0.0 GHz		66001 μ		1	5 GHz/			75.0 G
		00001	715	1				75.0 G

Diagram 42: 60 - 75 GHz, Modulation QPSK, Symbolic name: MTH₁₀₀, antenna aligned to PAAM 3, EIRP Vertical polarization



11:34:34 18.01.2019



Diagram 43: 75 – 90 GHz, Modulation QPSK, Symbolic name: $BMTL_{100}$, antenna aligned to PAAM 0, EIRP Horizontal polarization

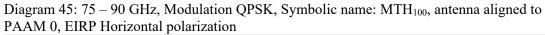
Defi and or	75-90GH		_						
Ref Level 0.0		. s = VBW ЗМН		ween					
TDF Inp: ExtM			2 Mode Auto (Sweep					
Frequency						1			rw 😑 2Rm Ma
								M1[2]	-28.20 dB
								8	37.620830 GI
10 dBm	-H1 -13.000 dBm								
20 dBm									
								M1	
88. dêro-weiterrite	in the state of the state of the second		an a		andura	الموجد والمتعلقات أرعري	and an international states of the second states of the	NEWS CONTRACTOR OF THE OWNER OF T	and the state of the
teres and a constant of the	A have been a lot been	فتطلقها فأشراءهم بلدر شريف فبالممالة	fe Blob all and blick work the se	an a	ana maniny italahan dahahan	A REAL PROPERTY AND A REAL PROPERTY OF	والمراجع الألبا وتحارطه ويعارج والمراجع	and the second secon	International processory
40 dBm		Charlen Contractor	and him	and a subsection probability	and Manalder Device Andread Speeds	over the state of the state of the state	Part of the second		
io abiii									
50 dBm									
50 dBm									
70 dBm									
30 dBm									
90 dBm									
'5.0 GHz	1	1	66001 pt	ts	1	.5 GHz/			90.0 Gł
	v					·	Measuring		17:03
								R	17:03

Diagram 44: 75 – 90 GHz, Modulation QPSK, Symbolic name: BMTL₁₀₀, antenna aligned to PAAM 0, EIRP Vertical polarization

	0 dBm		z Mode Auto S	ween					
TDF Inp: ExtMi		S - OBH SMIT	2 Mode Auto t	weep					
Frequency S	Sweep							o1Rm Cl	rw. ●2Rm Ma>
								M1[2]	-28.08 dB
									79.539820 G
LO dBm									
	-H1 -13.000 dBm								
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		l i	11						
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/o ubin									
							1		
30 dBm									
90 dBm									
30 dBm									

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		Ls ●VBW 3 MH	Iz Mode Auto	Sweep					
TDF Inp: Ext	Mix W								
Frequency	/ Sweep	1		1		 			w ●2Rm Max
								M1[2]	-27.73 dB
10 dBm									58.004090 G
10 0000	—H1 -13.000 dBm —								
20 dBm-									
								M1	
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50 dBm									
70 dBm									
30 dBm									
0 dBm									
5.0 GHz			66001 p	te	1	.5 GHz/			90.0 Gł

Diagram 46: 75 – 90 GHz, Modulation QPSK, Symbolic name: MTH₁₀₀, antenna aligned to PAAM 0, EIRP Vertical polarization

Ref Level 0	00 dBm	• RBW 1 MH	7						
Itel Level 0.		s = VBW 3MH		Sween					
TDF Inp: ExtM	lix W	0 - 000 01.11	2 11040 1 800 0						
Frequency	Sweep		1						rw 😑 2Rm Max
								M1[2]	-28.08 dB
									79.539820 GH
10 dBm									
	—H1 -13.000 dBm —								
20 dBm									
		· · · · ·							
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oo abiii									
70 dBm									
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55 abin -									
90 dBm	+								
			66001 pt			5 GHz/			90.0 GF
75.0 GHz	-								

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Diagram 47: 90 – 110 GHz, Modulation QPSK, Symbolic name: BMTL₁₀₀, antenna aligned to PAAM 0, EIRP Horizontal polarization

AultiView 📑 75-		90-110GHz						
Ref Level 0.00 dBm								
	• SWT 1 s ● VBW 31	MHz Mode Auto S	Sweep					
TDF Inp: ExtMix W							0 1 D Oli	
Frequency Sweep								w ●2Rm Ma) -22.22 dB
							M1[2]	-22.22 de
10 dBm								13.333730 G
H1 -13.0	00 dBm							
20 dBm						M1		
			1	and the second states a	والعيرية فالمعادية ومحادث			1
			A DESCRIPTION OF THE PARTY OF		engeløberer og de bere er en er			
30 dBm Historica dan atalihi dan atalihi 40 labri alara persena dan barati			and a start of the	proving a stability of the	Antheory of the second s	hour shall be been all be	and the strength to the	initial and in a second
and have been a set of the set of	and testing and a second second second	ngun geränge Beren gilt die gerächten Bereige	and the second s					a second s
the literated whether and the literated	contracted and an an an an an							
50 dBm								
50 dBm								
70 dBm								
30 dBm								
90 dBm								
0.0 GHz	1	87001 pt	ts	2	2.0 GHz/		1	110.0 GF
~						Measuring	.	
						measuring.	•• RI	16:05

Diagram 48: 90 - 110 GHz, Modulation QPSK, Symbolic name: BMTL₁₀₀, antenna aligned to PAAM 0, EIRP Vertical polarization

The last et al		ls ●VBW 3MH	z Mode Auto	Sweep					
IDF Inp: ExtN Frequency								o 1Rm Cli	rw 😑 2Rm Ma>
								M1[2]	1
									5.270284 G
.0 dBm									
	—H1 -13.000 dBm —								
0 dBm							M1		
					وموجول الطابقة فتقار وترتب تقاربوهما	and the state of the	a the set work and a set of the set of the set of the set	Contraction of the second s	understand and a second second
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		AND ALL ADDING STORE AND A DOLLAR OF	a alla dari a talli vitro di arti i com		And the second	Tologoan and the set of the	nder i	a dama a serie (serie (serie) serie (and the second second
	and the second state of the second	add the proversion of the second of the	anthouse producer of produced	and the second					
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ou aem									
50 dBm									<u> </u>
70 dBm-									
30 dBm									
0 dBm									+
0.0 GHz			87001 p	ts	2	.0 GHz/			110.0 G

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Diagram 49: 90 - 110 GHz, Modulation QPSK, Symbolic name: MTH₁₀₀, antenna aligned to PAAM 0, EIRP Horizontal polarization

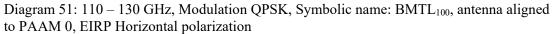
Ref Level C).00 dBm	■ RBW 1 MH	Iz						_
			iz Mode Auto (Sween					
DF Inp: Ext									
Frequency								o1Rm Clr	rw ⊜2Rm Ma:
								M1[2]	-22.29 dE
								10	5.430740 G
l0 dBm									
	——H1 -13.000 dBm —								
20 dBm							M1		
				internet in the second s		A CONTRACTOR OF STREET,			a data la statutione de la
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			al din marine la companya di seconda di second		distants in a grant physical of the	and the second	and the second	a second seco	and a film who had a su
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le dem liter h	Barberre I is a c	1.1.1							
50 dBm									
50 dBm									
70 dBm									
30 dBm									
90 dBm									
			87001 p	ts	- 7	2.0 GHz/			110.0 Gł
0.0 GHz									

Diagram 50: 90 – 110 GHz, Modulation QPSK, Symbolic name: MTH₁₀₀, antenna aligned to PAAM 0, EIRP Vertical polarization

		Ls ●VBW 3MH	Iz Mode Auto S	Sweep					
DF Inp: ExtM Frequency :								o 1Rm Cli	w ⊜2Rm Ma
								M1[2]	
									5.543844 6
0 dBm									
	—H1 -13.000 dBm —								
							М1		
0 dBm									
				and the second	and the state of the state of the state of			in the second state of the	distant of the second second
0 dBm			and the second	a piece of the second			and the second	Burne a	
a neuropanet de tritte		ales al free of the state of the second		and the state of the	ontesting being auf hereis	Webser of the states of the	water of the second	and a feature the half of the feature	e la palatera a la factaria de la constancia de la constancia de la constancia de la constancia de la constanci
	n <mark>a in an an</mark>	a selone i per alle en del Produce de un	And a second state of a second second						
or dBm									
0 dBm									
U dBm									
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0 dBm									
0 dBm									
0 dBm									
0.0 GHz			87001 pt			.0 GHz/			110.0 C

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									_
Ref Level 0.00) dBm			_					
IDF Inp: ExtMix		. s 🗢 VBW З МН	Z Mode Autos	sweep					
Frequency S								o 1 Rm Cli	w ⊜2Rm Ma
								M1[2]	-24.75 dB
									0.007011 G
LO dBm									
	H1 -13.000 dBm —								
20 dBm									
interior and a local									
	and the state of the second	a state of the second state of		the state of the state	and a state of the state of the state of the	in a second state of the parts of the second		a minute in the second second	
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40 dBm			100	p				-	
50 dBm									
50 dBm									
70 dBm									
30 dBm									
90 dBm		<u> </u>							
	1	I	87001 pt	ts	2	2.0 GHz/	1	I	130.0 Gł
10.0 GHz									

Diagram 52: 110 - 130 GHz, Modulation QPSK, Symbolic name: BMTL₁₀₀, antenna aligned to PAAM 0, EIRP Vertical polarization

									_
tet Level 0.0	00 dBm			_					
DF Inp: ExtMi		IS 🖷 VBW 3 MF	Iz Mode Auto 9	sweep					
Frequency S								o 1Rm Cli	rw ⊜2Rm Ma
in orquonoy (M1[2]	-24.75 di
									10.007011 G
0 dBm									
	-H1 -13.000 dBm								
0 dBm									
A THE PARTY OF THE PARTY	White the state of								- the second second second
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0 dBm	1	1.0.014	A new transmission of the help of the	and the second second	It is not but you	and a second of the			
0 dBm									
0 dBm									
0 dBm									
0 dBm									
0 dBm									
								<u> </u>	
10.0 GHz			87001 pt	ts	2	2.0 GHz/			130.0 G

11:00:22 21.01.2019



Diagram 53: 110 - 130 GHz, Modulation QPSK, Symbolic name: MTH₁₀₀, antenna aligned to PAAM 0, EIRP Horizontal polarization

	RBW 1							
	• SWT 1 s • VBW 3	MHz Mode Auto	Sweep					
DF Inp: ExtMix D							- 10 01	
Frequency Sweep								w ⊜2Rm Ma
							M1[2]	-24.94 dE
							1	0.483558 G
0 dBm								
HI -13.0	JO UBM							
0 dBm								
	The second statement of the statement of the second statem		وروس والأخار المراجع وروجا والمراجع أراجع والمراجع والمراجع والمراجع والمراجع والمراجع والمراجع والمراجع والمراجع	فالمتحافظ فالأنصار فيعيدانهم وا	وأعانته والمربية وتقادا ومرارك والتقان	a al an bhliat a th las a said		a priling and an address of the
and any operation of the particular sectors.		an alay kana kata ang kana kata ang kata kana s	an di kan dan pana pana pana pana pana pana pan	a de Britan de California de la constanta de la	debe a serie of a second second second second			
in a data	na na sana na s	ի <mark>նեն ին</mark> ակությունը արտանությունը	<mark>n per la pressione de la pres</mark> ta de la presione de la pressione de la pressione de la pressione de la pressione de	and the second second second	and the set of the set	<u>հղովորվորոն</u> դուներութ	مراجا يندر وبرجات معاول	of heading down to
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10 dBm								
10.0 GHz		87001 p			2.0 GHz/			130.0 G

Diagram 54: 110 - 130 GHz, Modulation QPSK, Symbolic name: MTH₁₀₀, antenna aligned to PAAM 0, EIRP Vertical polarization

	110-1300		130-150GHz	<u>.</u>					
Ref Level 0.0	10 dBm								
		Ls ●VBW 3MH	Iz Mode Auto S	Sweep					
DF Inp: ExtMi Frequency S								o 1Rm Cli	rw 🛛 2Rm Ma:
r requeriey a	бүүсср							M1[2]	-25.09 dB
									10.356663 G
0 dBm									
	-H1 -13.000 dBm								
0 dBm									
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0 dBm		The second second	a contactor or antimatica fielda	deal art of a second of	Luter and a feature of	a second for the	en koha ere e		
i0 dBm									
i0 dBm									
0 dBm									
10 dBm									
0 dBm									
10.0 GHz			87001 pt	ts	2	2.0 GHz/			130.0 G

10:49:53 21.01.2019



Diagram 55: 130 – 150 GHz, Modulation QPSK, Symbolic name: $BMTL_{100}$, antenna aligned to PAAM 0, EIRP Horizontal polarization

Ref Level 0.00 dBm	RBW 1							
			_					
DF Inp: ExtMix D	2MI 18 - VBW 3	MHz Mode Auto	sweep					
Frequency Sweep							o 1Rm Cli	rw ⊜2Rm Ma
							M1[2]	-21.76 d
								46.691187 0
0 dBm							-	
H1 -13.000) dBm							
0 dBm							M1	
		A Line of A	and the second	A STATE OF THE OWNER	ana yindidada dijina dalih pa	The sector with the sector	an ing a transferration of the second	Million in the second second
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0 dBm								
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30.0 GHz		87001 p	ts	2	.0 GHz/		1	150.0 G
		0/001p						
						Measuring.		11:0

Diagram 56: 130 - 150 GHz, Modulation QPSK, Symbolic name: BMTL₁₀₀, antenna aligned to PAAM 0, EIRP Vertical polarization

		Ls ●VBW 3 MH	z Mode Auto S	Sweep					
DF Inp: ExtN	/lix D								
Frequency	Sweep		1					1	rw ⊜2Rm Ma
								M1[2]	
								14	6.162918 6
0 dBm									
	—H1 -13.000 dBm —								
								M1	
0 dBm							1.4.64	Turner de la composition de la	
				and the state of the second state of the secon	Lines in case is not with the data of the second			aden Paliniannia a laigu	
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0 dBm									
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o aom									
			1	1	1	1	1	1	1

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Diagram 57: 130 - 150 GHz, Modulation QPSK, Symbolic name: MTH₁₀₀, antenna aligned to PAAM 0, EIRP Horizontal polarization

4ultiView 📒 110-130	GHZ	130-150GH	z					
Ref Level 0.00 dBm	■ RBW 1 MH	z						
	1 s ● VBW 3 MH	Iz Mode Auto	Sweep					
IDF Inp: ExtMix D							0 1 D Cl	
Frequency Sweep		T			1			weel2Rm Ma
							M1[2]	-21.99 dE
							14	46.344755 G
10 dBm								
HI -13.000 dBm -								
20 dBm							M1	
			and the set		والمحدور والارتقار والمتعاد والمتقاط والمراجع	والمتركة المتحصية ومعتداه مشروان		ورو القرر والموالية المارية. والمر يتطلقهم
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40 dBm-								
50 dBm								
50 dBm								
70 dBm								
30 dBm								
90 dBm								
30.0 GHz	1	87001 p	ts	2	2.0 GHz/	1	1	150.0 Gł
~			-			Manguring		
						measurina.		

Diagram 58: 130 - 150 GHz, Modulation QPSK, Symbolic name: MTH₁₀₀, antenna aligned to PAAM 0, EIRP Vertical polarization

IultiView 📑			130-150GH	2					
tef Level 0.00 d		RBW 1 Mi							
		s 🖷 VBW З Mi	Hz Mode Auto S	Sweep					
DF Inp: ExtMix D									
Frequency Sw	еер			1					rw ⊜2Rm Ma
								M1[2]	-22.14 df
								14	46.416938 G
.0 dBm									
H1	-13.000 dBm —								
								M1	
0 dBm								-	
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a water spiral projected for	distriction (1997)	last the set of	and a second sec						
40 dBm									
50 dBm									
i0 dBm									
70 dBm									
/U UBIN									
30 dBm									
90 dBm									
30.0 GHz		1	87001 p	is s	2	.0 GHz/	1	1	150.0 G
			5.551 p		-				

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Diagram 59: 150 - 170 GHz, Modulation QPSK, Symbolic name: BMTL₁₀₀, antenna aligned to PAAM 0, EIRP Horizontal polarization

Ref Level).00 dBm								
		1 s 👄 VBW 3 M	Hz Mode Auto	Sweep					
DF Inp: Ext Frequency								o 1 Dec Ch	w ⊜2Rm Ma
Frequency	y sweep							M1[2]	-22.97 dE
									6.231308 G
.0 dBm								10	0.231308 0
o asm-									
0 dBm			M1						
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u abm									
			87001 p		l	2.0 GHz/			170.0 Gł
50.0 GHz						511 GHZ/			170.0.6

Diagram 60: 150 – 170 GHz, Modulation QPSK, Symbolic name: BMTL₁₀₀, antenna aligned to PAAM 0, EIRP Vertical polarization

ef Level 0.00 dB	m	• RBW 1 MH	7						_
		s ө VBW З МН		Sween					
DF Inp: ExtMix G									
Frequency Swe	ер							o 1Rm Clr	rw ⊜2Rm Ma
								M1[2]	-22.06 dE
								15	6.669923 G
.0 dBm									
	13.000 dBm —								
			M1						
20 dBm			-						
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50 dBm									
50 dBm									
70 dBm									
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10 dBm									
50.0 GHz			87001 pt	 re		.0 GHz/	1		170.0 G
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Diagram 61: 150 - 170 GHz, Modulation QPSK, Symbolic name: MTH₁₀₀, antenna aligned to PAAM 0, EIRP Horizontal polarization

Defi and o	00 dBm	• RBW 1 MH	_						_
kei Level 0.		се квүй тмн Ls ● VBW ЗМН							
DF Inp: ExtM		LS - VDW SMII	2 Mode Auto 3	sweep					
Frequency								o 1Rm Clr	w e2Rm Ma:
								M1[2]	-22.39 dE
									2.892725 G
l0 dBm									
	—H1 -13.000 dBm —								
	M1								Í
20 dBm	-								
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50.0 GHz			97001						170.0.0
50.0 GHZ			87001 p	ts	2	2.0 GHz/			170.0 G
							 Measuring. 		15:08

Diagram 62: 150 – 170 GHz, Modulation QPSK, Symbolic name: MTH₁₀₀, antenna aligned to PAAM 0, EIRP Vertical polarization

ultiView	150-1700	GHz	170-190GHz	: 19	90-200GHz				
ef Level 0.00	l dBm	• RBW 1 MH	z						
	 SWT 1 	s 🖷 VBW 3 MH	z Mode Auto S	Sweep					
DF Inp: ExtMix									
Frequency S	weep								rw. ⊜2Rm Ma:
								M1[2]	-22.06 dE
								1:	6.669923 G
l0 dBm	41 -13.000 dBm								
Í	11 13.000 0011								
20 dBm			M1						
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40 dBm									
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50.0 GHz			87001 pt		,	2.0 GHz/			170.0 Gł
			67001 p	13		2.0 GHZ/			170.0 G

14:20:18 21.01.2019



Diagram 63: 170 – 190 GHz, Modulation QPSK, Symbolic name: BMTL₁₀₀, antenna aligned to PAAM 0, EIRP Horizontal polarization

Ref Level 0	.00 dBm	🗢 RBW 1 M	Hz						
	SWT 1	ls ө VBW ЗМ	Hz Mode Auto	Sweep					
TDF Inp: ExtN									
Frequency	Sweep		_					1	rw 😑 2Rm Ma:
								M1[2]	-18.93 dE
								18	89.925403 G
l0 dBm			-						
	—H1 -13.000 dBm —								
20 dBm-						المتعادية بالبلاط والمتعادين	ni yilin hini wakati ingini kata kata	en singer an	ANTARIA MARTINI ANTARA
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50 dBm									
50 dBm									
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90 dBm									
70.0 GHz			87001 p	te		2.0 GHz/			190.0 G
70.0 0112			67001 p	13	2				

Diagram 64: 170 – 190 GHz, Modulation QPSK, Symbolic name: BMTL₁₀₀, antenna aligned to PAAM 0, EIRP Vertical polarization

ultiView	150-170G	iHz	170-190GH	z 19	90-200GHz				
ef Level 0.0	0 dBm	RBW 1 MH	z						
		s 🗢 VBW 3 MH	z Mode Auto	Sweep					
DF Inp: ExtMi>								0 1 D Ch	
Frequency S	weep					1		M1[2]	w ●2Rm Ma: -18,80 dB
									-18.80 dB
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	 -H1 -13.000 dBm								
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20 dBm							tenting the printing international or	a sin da sa ang ing arabatar ajar ing	-
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70.0 GHz			87001 p	ts	2	2.0 GHz/	·		190.0 G
							Measuring		14:22

14:22:21 21.01.2019



Diagram 65: 170 - 190 GHz, Modulation QPSK, Symbolic name: MTH₁₀₀, antenna aligned to PAAM 0, EIRP Horizontal polarization

Ref Level 0.	00 dBm	RBW 1 MH	z						
	SWT 1	ls ө VBW ЗМН	z Mode Auto S	Sweep					
DF Inp: ExtN	1ix G								
Frequency	Sweep							IRm Cli	w 😑 2Rm Ma:
								M1[2]	-19.36 dE
								18	6.382455 G
0 dBm									
	—H1 -13.000 dBm —								
								M1	
0 dBm						مؤلف والمراجع المراجع	white we with the property of the state	ale, dellander er e	laine hippopping all integration with
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70.0 GHz			87001 p	ts	2	2.0 GHz/			190.0 G
							Measuring.		21.01.2

Diagram 66: 170 – 190 GHz, Modulation QPSK, Symbolic name: MTH₁₀₀, antenna aligned to PAAM 0, EIRP Vertical polarization

ultiView	150-1700	iHz	170-190GH	z 1	90-200GHz				
ef Level 0.0	0 dBm	RBW 1 MH	z						_
		s 🗢 VBW 3 MH	z Mode Auto	Sweep					
DF Inp: ExtMix								0 1 D Ch	
Frequency S	weep					1		M1[2]	w ●2Rm Ma: -19,40 dB
									-19,40 df
.0 dBm								10	9.914029 G
U UBIN	 -H1 -13.000 dBm								
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0 dBm						. I Un	المتأود بالإرجر والمقافية والما أوميدها	-	Middle and the second difference in the
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14:19:50 21.01.2019





Diagram 67: 190 – 200 GHz, Modulation QPSK, Symbolic name: BMTL₁₀₀, antenna aligned to PAAM 0, EIRP Horizontal polarization

Ref Level 0.00 DF Inp: ExtMix Frequency Sv	G	● RBW 1 N s ● VBW 3 N							
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			1Hz Mode Auto S	Sweep					
Frequency Sw								0 1 D Ob	
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	41 -13.000 dBm								
M1									
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90.0 GHz		·	44001 pt	s	. 1	.0 GHz/	·	·	200.0 GHz
							Measuring.		21.01.2019 15:04:41

Diagram 68: 190 – 200 GHz, Modulation QPSK, Symbolic name: BMTL₁₀₀, antenna aligned to PAAM 0, EIRP Vertical polarization

	150-170G		170-190GHz		L90-200GHz				
Ref Level 0.0	0 dBm	RBW 1 MH:	z						
		s 🖷 VBW 3 MH:	z Mode Auto S	Sweep					
DF Inp: ExtMi Frequency S								o 1 Pro Cli	rw ⊜2Rm Ma
Trequency a	weep							M1[2]	-19.59 di
									90.497148 6
LO dBm									
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90.0 GHz			44001 pt	S	1	LO GHz/			200.0 G
							Measuring		14:22

14:22:48 21.01.2019



Diagram 69: 190 – 200 GHz, Modulation QPSK, Symbolic name: MTH₁₀₀, antenna aligned to PAAM 0, EIRP Horizontal polarization

	150-1706 00 dBm		170-190GHz						_
ter Level 0.									
DF Inp∶ E×t№		. s 🗢 VBW ЗМН	Z Mode Auto S	weep					
Frequency								o 1Rm Cl	rw 😑 2Rm Ma
						1		M1[2]	-19,74 di
									90.463512 G
0 dBm									
	—H1 -13.000 dBm —								
M1									
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90.0 GHz			44001 pt		L1	0 GHz/			200.0 G
20.0 GHZ			44001 pi	.5	1				
							Measuring		15:09

Diagram 70: 190 – 200 GHz, Modulation QPSK, Symbolic name: MTH₁₀₀, antenna aligned to PAAM 0, EIRP Vertical polarization

Apple in the set of the	MultiView		iHz	170-190GHz	19	90-200GHz				•		
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1 Frequency Sweep •18 m Clow # 2 km Max -10 dm Image: Sweep (Sweep (
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-40 dBm		1	and the production of the prod	and here the product of the projection	n die geschichte der State der Beiter der Bei	- Plannessen in Bankaran and	and an an and the second sheet	, որ ինչեր աներաներություններությունը հանցերությունը հանցերությունները հանցերություններություններություններութ Դարություններություններություններություններություններություններին հանցերություններություններություններություննե	distribution biological and an	All indications of the state of		
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14:19:12		✓ Measuring ■ Massering ■										

14:19:12 21.01.2019



Photos of test object

Front side

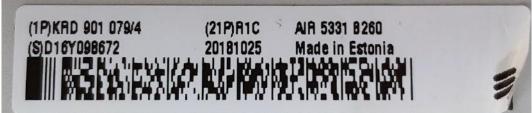


Test object label KRD 901 079/1:





Test object label KRD 901 079/4:



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Bottom side KRD 901 079/1



Bottom side KRD 901 079/4



Top side







Right side



RISE Research Institutes of Sweden AB





SFP module Data 1:



SFP module Data 2:



SFP module Data 3:



SFP module Data 4:

