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RF EXPOSURE ASSESSMENT REPORT

ACCORDING TO: FCC 47 CFR part 1 sections 1.1307 and 1.1310

FOR:

Siklu Communication Ltd.

MultiHaul™ TG Long Reach Terminal Unit

Models:

MH-T280-CCP-PoE-MWB

MH-T280-CNN-PoE-MWB

MH-T270-CCP-PoE-MWB

MH-T270-CNN-PoE-MWB

FCC ID: 2ACYESK-MH60TG-A3

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1 Applicant information

Client name: Siklu Communication Ltd.
Address: 43 Hasivim street, Petach-Tikva 49517, Israel
Telephone: +972 3921 4015
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E-mail: igor.f@siklu.com
Contact name: Mr. Igor Efimov

2 Equipment under test attributes

Product name: MultiHaul™ TG Long Reach Terminal Unit
Product type: Transceiver
Model(s): MH-T280-CCP-PoE-MWB
Serial number: S040000026
Hardware version: A0
Software release: R1.0.3
Receipt date 28-Oct-20

3 Manufacturer information

Client name: Siklu Communication Ltd.
Address: 43 Hasivim street, Petach-Tikva 49517, Israel
Telephone: +972 3921 4015
Fax: +972 3921 4162
E-mail: igor.f@siklu.com
Contact name: Mr. Igor Efimov

4 Test details

Project ID: 42253
Location: Hermon Laboratories Ltd. Harakevet Industrial Zone, Binyamina 30500, Israel
Project started: 16-Jun-2021
Project completed: 16-Jun-2021
Test specification: FCC 47 CFR part 1 sections 1.1307 and 1.1310

5 Tests summary

Test	Status
FCC 47 CFR part 1 sections 1.1307 and 1.1310 and OET Bulletin 65 section 2 standard requirements	
Environmental evaluation and exposure limit	Pass

This test report supersedes the previously issued test report identified by Doc ID: SIKRAD_FCC.42253_RFexposure

Note: It is manufacturer responsibility to make information on RFexposure and safety boundary available to installers and end users.

	Name and Title	Date	Signature
Issued by:	Mrs. S. Peysahov Sheynin, test engineer, EMC & Radio	16-Jun-21	
Approved by:	Mr. M. Nikishin, group manager, EMC & Radio	21-Jun-21	

6 Products Description

6.1 General

The EUT is the MultiHaul™ Long Range Terminal unit. The unit operates in 57-66GHz regulated V-band using the TG protocol. It supports both PtP (Point-to-Point) and PtMP (Point-to-Multipoint) applications.

In PtP application, it communicates with another Long Range Terminal. In PtMP applications, it communicates to the MH-N3666-CCP-PoE-NWB TG Distribution Node acting as an end point in fully meshed MultiHaul™ TG topology.

In both applications the EUT is point-to-point transmitter.

The same hardware can be used as MH-T280-CCP-PoE-MWB which has default PtP application mode configuration and as MH-T270-CCP-PoE-MWB which has default PtMP application mode configuration.

According to manufacturer's declaration provided in Appendix C of the test report the same hardware can be used as MH-T280-CCP-PoE-MWB and MH-T280-CNN-PoE-MWB which has default PtP mode of operation and as MH-T270-CCP-PoE-MWB and MH-T270-CNN-PoE-MWB which has default PtMP mode of operation.

6.2 Maximum antenna gain

The maximum antennas gains as declared by the manufacturer are summarized in the tables below.

Table 6.2.1 Maximum Parabolic Antennas Gain

	Antenna Options:		
	16-cm/ 0.5ft	31 cm / 1ft	65 cm / 2ft
Part Number	(N/A, Integrated)	EH-ANT-1ft-60GHz	EH-ANT-2ft-60GHz
Compatibility	EH-500/600TX	EH-500/600TX	EH-500/600TX
Frequency Range	57 – 69 GHz	57 – 66 GHz	
ETSI Regulatory Compliance	EN 302 217 Class 2	EN 302 217 Class 3A	
Gain	36 dBi +/- 2 dB	43 dBi +/- 2 dB	48 dBi +/- 2 dB
3 dB Beam	2°	0.9°	0.5°
Front-to-Back Ratio	55 dB	62 dB	67 dB
XPD (Cross Polar Discrimination)	25 dB	30 dB	27 dB
Polarization	Linear Vertical	Linear Vertical / Horizontal	
Input power	10 W (max)		
Interface	Circular waveguide V-band		
Weight	980g (2.2 lbs.)	7.2kg (15.9 lbs.)	10.8Kg (23.8 lbs.)
Radome	Plastic	ABS	ABS

6.3 Maximum output power

The maximum output powers per product based on the test results and technical information provided in test report SIKRAD_FCC.42253 issued by Hermon Laboratories are summarized in the table below.

6.3.1

Frequency, MHz	λ^* , m	DSO, mV	Power measured, dBm
EUT configuration: MCS1			
58320	0.005144	4.00	12.21
62640	0.004789	4.37	12.11
64800	0.004630	4.31	10.90
EUT configuration: MCS12			
58320	0.005144	3.88	12.03
62640	0.004789	4.47	12.23
64800	0.004630	4.35	10.95

7 RF exposure assessment

7.1 General

Compliance boundary is a volume outside which any point of investigation is deemed to be compliant.

For the assessment of general public exposure from the product, the relevant limits specified as basic restrictions, in FCC CFR 47part 1, §1.1310(e)(1), Table 1—Limits for Maximum Permissible Exposure (MPE), and the accompanying notes to these tables, are applied.

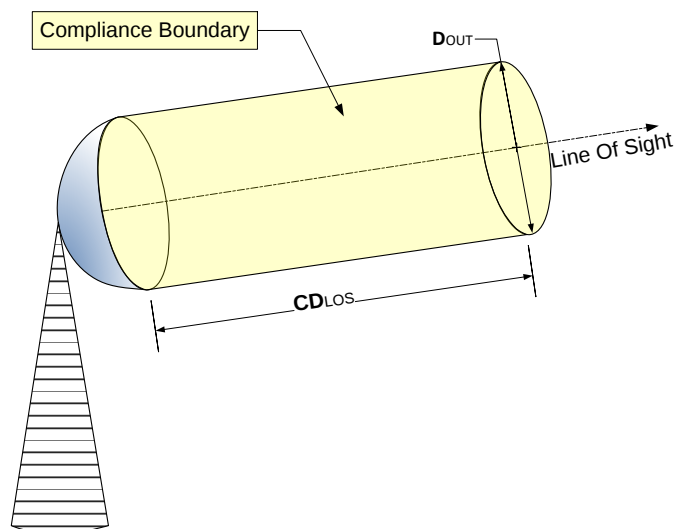
For the assessment of worker exposure from the product, the relevant limits specified as exposure limit values, in FCC CFR 47part 1, §1.1310(e)(1), Table 1—Limits for Maximum Permissible Exposure (MPE), and the accompanying notes to these tables, are applied.

7.1.1 Establishing compliance boundary for systems using dish antennas

MultiHaul™ Long Range Terminal Unit utilize parabolic dishes in which energy is focused into one direction, giving them the high gain properties they are known to have focused energy and does not propagate in all directions like omnidirectional or dipole antennas. Dish antennas are characterized by high directivity, typically above 30 dBi, and low radiation outside the main beam. This highlights that the further analysis of the calculations shows that all compliance distances calculated are only applicable within the bore sight of the antenna and are not applicable outside of this.

The compliance boundary and compliance distance for dish antennas are illustrated on Figure 7.1.1. Based on the above information it can be stated that even if a compliance boundary is a non-zero value that it would only apply within the bore sight of the dish antenna only.

Figure 7.1.1 Safety distance and compliance boundary for dish antenna



7.2 Limitation of exposure of the general public

The below limits are derived from FCC CFR 47part 1, §1.1310(e)(1), Table 1.

Restrictions on exposure to time-varying electric, magnetic fields and power density which are based directly on established health effects and biological considerations are termed 'basic restrictions'. Reference levels are provided for practical exposure-assessment purposes to determine whether the basic restrictions are likely to be exceeded.

Table 7.2.1 Limit for power density for general Occupational/Controlled exposure (1500 Hz to 300 GHz)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposure				
0.3–3.0	614	1.63	* 100	6
3.0–30	1842/f	4.89/f	* 900/f ²	6
30–300	61.4	0.163	1.0	6
300–1,500			f/300	6
1,500–100,000			5	6

Table 7.2.2 Limit for power density for general Population/uncontrolled exposure (1500 Hz to 300 GHz)

0.3–1.34	614	1.63	* 100	30
1.34–30	824/f	2.19/f	* 180/f ²	30
30–300	27.5	0.073	0.2	30
300–1,500			f/1500	30
1,500–100,000			1.0	30

7.3 Compliance boundary

Analysis of the calculations was performed in highest power and all types of antenna summarized in section 6 and shows the worst case of the compliance boundary distance in the line of sight for each one.

The manufacturer is responsible to provide with the radio equipment the following information:

- maximum transmitted power for each transmit frequency band of the radio equipment;
- antenna characteristics (gain, horizontal and vertical beamwidth) for each transmit frequency band, total EIRP, and, if the product is used with external antennas, a detailed description of at least one typical normal configuration, including antenna system (feeders, connectors, combiners, etc.);
- compliance boundaries (if not zero distance) for general public and workers exposure;
- guidelines on how to install the product or the external antennas in order to ensure that the general public is outside the compliance boundaries
- guidelines on how to comply with the applicable normative limits for workers during installation, maintenance and repair of the product.

7.4 Assessment of compliance boundary of dish antenna systems

The assessment was performed based on recommendations of FCC's OET Bulletin 65 "Evaluating Compliance with FCC Guidelines for Human Exposure".

The compliance boundary of a dish antenna (or parabolic antenna) was evaluated according to the Maximum power density directly in front of an antenna (e.g., at the antenna surface) as well the calculation of power density in near, transition and far fields regions.

Antenna Surface:

The maximum power density directly in front of an antenna (e.g., at the antenna surface) was approximated by the following equation (equation 11 of Bulletin 65) :

$$S_{surface} = \frac{4P}{A}$$

where: $S_{surface}$ = maximum power density at the antenna surface
P = power fed to the antenna
A = physical area of the aperture antenna

Near-Field Region:

The extent of the near-field was described by the following equation (equation 12 of Bulletin 65):

$$R_{nf} = \frac{D^2}{4\lambda}$$

where: R_{nf} = extent of near-field
 D = maximum dimension of antenna (diameter if circular)
 λ = wavelength

Power density can be expressed by the following equation (equation 13 of Bulletin 65):

$$S_{nf} = \frac{16\eta P}{\pi D^2}$$

where: S_{nf} = maximum near-field power density
 η = aperture efficiency, typically 0.5-0.75
 P = power fed to the antenna
 D = antenna diameter

Aperture efficiency was obtained from the ratio of the effective aperture area to the physical area as follows (equation 14 of Bulletin 65):

$$\eta = \frac{\left(\frac{G\lambda^2}{4\pi} \right)}{\left(\frac{\pi D^2}{4} \right)}$$

where: η = aperture efficiency for circular apertures
 G = power gain in the direction of interest relative to an isotropic radiator
 λ = wavelength
 D = antenna diameter

Transition Region:

If the location of interest falls within this transition region, the on-axis power density was determined from the following equation (equation 17 of Bulletin 65):

$$S_t = \frac{S_{nf} R_{nf}}{R}$$

where: S_t = power density in the transition region
 S_{nf} = maximum power density for near-field calculated above
 R_{nf} = extent of near-field calculated above
 R = distance to point of interest

Far-Field Region:

The power density in the far-field region of the radiation pattern was estimated by the general equation discussed earlier (equation 18 of Bulletin 65):

$$S_{ff} = \frac{PG}{4\pi R^2}$$

where: S_{ff} = power density (on axis)
 P = power fed to the antenna
 G = power gain of the antenna in the direction of interest relative to an isotropic radiator
 R = distance to the point of interest

Table 7.4.1 Power density calculation for integrated antenna

F, GHz	λ , m	G_A , dBi	P_{TX} , dBm	EIRP, dBm	EIRP, Watt	D, m	η	R_{nt} , m	R_{w} , m	R, m	S_i , mW/cm ²	S_i , W/m ²	General public exposure		Workers exposure	
													S_i , mW/cm ²	S_i , W/m ²	S_i , mW/cm ²	S_i , W/m ²
62.64	0.00478	38	12.23	50.23	105.4	0.16	0.573	1.336	3.207	0.00	0.33	3.32	1.00	10.00	5.00	10.00
62.64	0.00478	38	12.23	50.23	105.4	0.16	0.573	1.336	3.207	0.10	0.19	1.90	1.00	10.00	5.00	10.00
62.64	0.00478	38	12.23	50.23	105.4	0.16	0.573	1.336	3.207	0.20	0.19	1.90	1.00	10.00	5.00	10.00
62.64	0.00478	38	12.23	50.23	105.4	0.16	0.573	1.336	3.207	0.30	0.19	1.90	1.00	10.00	5.00	10.00
62.64	0.00478	38	12.23	50.23	105.4	0.16	0.573	1.336	3.207	0.40	0.19	1.90	1.00	10.00	5.00	10.00
62.64	0.00478	38	12.23	50.23	105.4	0.16	0.573	1.336	3.207	0.50	0.19	1.90	1.00	10.00	5.00	10.00
62.64	0.00478	38	12.23	50.23	105.4	0.16	0.573	1.336	3.207	0.75	0.19	1.90	1.00	10.00	5.00	10.00
62.64	0.00478	38	12.23	50.23	105.4	0.16	0.573	1.336	3.207	1.00	0.19	1.90	1.00	10.00	5.00	10.00
62.64	0.00478	38	12.23	50.23	105.4	0.16	0.573	1.336	3.207	1.25	0.19	1.90	1.00	10.00	5.00	10.00
62.64	0.00478	38	12.23	50.23	105.4	0.16	0.573	1.336	3.207	1.50	0.16	1.69	1.00	10.00	5.00	10.00
62.64	0.00478	38	12.23	50.23	105.4	0.16	0.573	1.336	3.207	1.75	0.14	1.45	1.00	10.00	5.00	10.00
62.64	0.00478	38	12.23	50.23	105.4	0.16	0.573	1.336	3.207	2.00	0.13	1.27	1.00	10.00	5.00	10.00
62.64	0.00478	38	12.23	50.23	105.4	0.16	0.573	1.336	3.207	2.25	0.11	1.13	1.00	10.00	5.00	10.00
62.64	0.00478	38	12.23	50.23	105.4	0.16	0.573	1.336	3.207	2.50	0.10	1.01	1.00	10.00	5.00	10.00
62.64	0.00478	38	12.23	50.23	105.4	0.16	0.573	1.336	3.207	2.75	0.09	0.92	1.00	10.00	5.00	10.00
62.64	0.00478	38	12.23	50.23	105.4	0.16	0.573	1.336	3.207	3.00	0.08	0.84	1.00	10.00	5.00	10.00
62.64	0.00478	38	12.23	50.23	105.4	0.16	0.573	1.336	3.207	3.50	0.27	2.73	1.00	10.00	5.00	10.00
62.64	0.00478	38	12.23	50.23	105.4	0.16	0.573	1.336	3.207	4.00	0.21	2.09	1.00	10.00	5.00	10.00
62.64	0.00478	38	12.23	50.23	105.4	0.16	0.573	1.336	3.207	4.50	0.16	1.65	1.00	10.00	5.00	10.00
62.64	0.00478	38	12.23	50.23	105.4	0.16	0.573	1.336	3.207	5.00	0.13	1.34	1.00	10.00	5.00	10.00
62.64	0.00478	38	12.23	50.23	105.4	0.16	0.573	1.336	3.207	6.00	0.09	0.93	1.00	10.00	5.00	10.00
62.64	0.00478	38	12.23	50.23	105.4	0.16	0.573	1.336	3.207	7.00	0.07	0.68	1.00	10.00	5.00	10.00
62.64	0.00478	38	12.23	50.23	105.4	0.16	0.573	1.336	3.207	8.00	0.05	0.52	1.00	10.00	5.00	10.00
62.64	0.00478	38	12.23	50.23	105.4	0.16	0.573	1.336	3.207	9.00	0.04	0.41	1.00	10.00	5.00	10.00
62.64	0.00478	38	12.23	50.23	105.4	0.16	0.573	1.336	3.207	10.00	0.03	0.33	1.00	10.00	5.00	10.00
62.64	0.00478	38	12.23	50.23	105.4	0.16	0.573	1.336	3.207	11.00	0.03	0.27	1.00	10.00	5.00	10.00
62.64	0.00478	38	12.23	50.23	105.4	0.16	0.573	1.336	3.207	12.00	0.02	0.23	1.00	10.00	5.00	10.00
62.64	0.00478	38	12.23	50.23	105.4	0.16	0.573	1.336	3.207	13.00	0.02	0.19	1.00	10.00	5.00	10.00
62.64	0.00478	38	12.23	50.23	105.4	0.16	0.573	1.336	3.207	14.00	0.02	0.17	1.00	10.00	5.00	10.00
62.64	0.00478	38	12.23	50.23	105.4	0.16	0.573	1.336	3.207	15.00	0.01	0.14	1.00	10.00	5.00	10.00
62.64	0.00478	38	12.23	50.23	105.4	0.16	0.573	1.336	3.207	16.00	0.01	0.13	1.00	10.00	5.00	10.00
62.64	0.00478	38	12.23	50.23	105.4	0.16	0.573	1.336	3.207	17.00	0.01	0.11	1.00	10.00	5.00	10.00
62.64	0.00478	38	12.23	50.23	105.4	0.16	0.573	1.336	3.207	18.00	0.01	0.10	1.00	10.00	5.00	10.00
62.64	0.00478	38	12.23	50.23	105.4	0.16	0.573	1.336	3.207	19.00	0.01	0.09	1.00	10.00	5.00	10.00
62.64	0.00478	38	12.23	50.23	105.4	0.16	0.573	1.336	3.207	20.00	0.01	0.08	1.00	10.00	5.00	10.00

Table 7.4.2 Power density calculation for EH-ANT-1ft-60GHz antenna

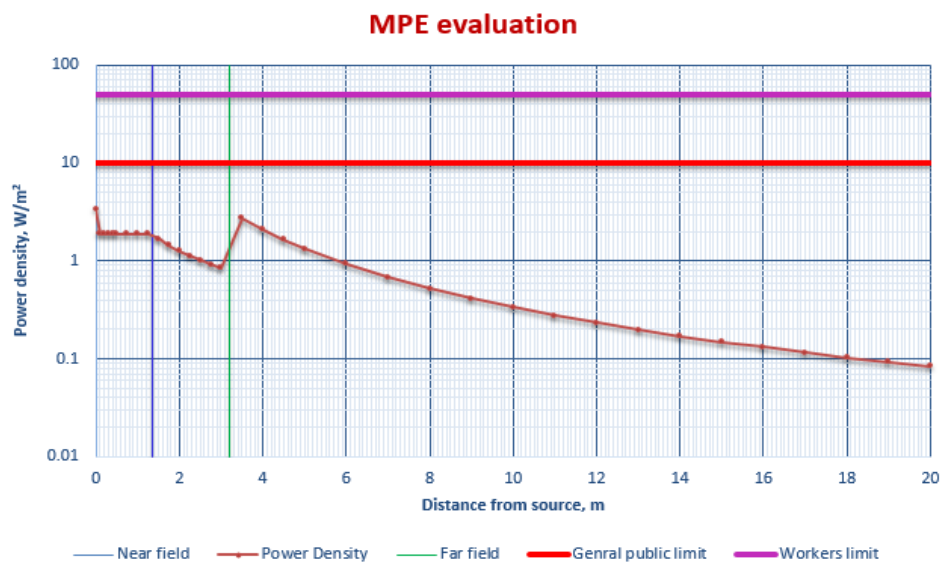
F, GHz	λ , m	G_A , dBi	P_{TX} , dBm	EIRP, dBm	EIRP, Watt	D , m	η	R_{n0} , m	R_{n1} , m	R , m	S , mW/cm ²	S , W/m ²	General public exposure		Workers exposure	
													S , mW/cm ²	S , W/m ²	S , mW/cm ²	S , W/m ²
62.64	0.00478	45	12.23	57.23	528.4	0.31	0.765	5.016	12.040	0.00	0.08	0.88	1.00	10.00	5.00	10.00
62.64	0.00478	45	12.23	57.23	528.4	0.31	0.765	5.016	12.040	0.10	0.06	0.67	1.00	10.00	5.00	10.00
62.64	0.00478	45	12.23	57.23	528.4	0.31	0.765	5.016	12.040	0.20	0.07	0.67	1.00	10.00	5.00	10.00
62.64	0.00478	45	12.23	57.23	528.4	0.31	0.765	5.016	12.040	0.30	0.07	0.67	1.00	10.00	5.00	10.00
62.64	0.00478	45	12.23	57.23	528.4	0.31	0.765	5.016	12.040	0.40	0.07	0.67	1.00	10.00	5.00	10.00
62.64	0.00478	45	12.23	57.23	528.4	0.31	0.765	5.016	12.040	0.50	0.07	0.67	1.00	10.00	5.00	10.00
62.64	0.00478	45	12.23	57.23	528.4	0.31	0.765	5.016	12.040	0.75	0.07	0.67	1.00	10.00	5.00	10.00
62.64	0.00478	45	12.23	57.23	528.4	0.31	0.765	5.016	12.040	1.00	0.07	0.67	1.00	10.00	5.00	10.00
62.64	0.00478	45	12.23	57.23	528.4	0.31	0.765	5.016	12.040	1.25	0.07	0.67	1.00	10.00	5.00	10.00
62.64	0.00478	45	12.23	57.23	528.4	0.31	0.765	5.016	12.040	1.50	0.07	0.67	1.00	10.00	5.00	10.00
62.64	0.00478	45	12.23	57.23	528.4	0.31	0.765	5.016	12.040	1.75	0.07	0.67	1.00	10.00	5.00	10.00
62.64	0.00478	45	12.23	57.23	528.4	0.31	0.765	5.016	12.040	2.00	0.07	0.67	1.00	10.00	5.00	10.00
62.64	0.00478	45	12.23	57.23	528.4	0.31	0.765	5.016	12.040	2.25	0.07	0.67	1.00	10.00	5.00	10.00
62.64	0.00478	45	12.23	57.23	528.4	0.31	0.765	5.016	12.040	2.50	0.07	0.67	1.00	10.00	5.00	10.00
62.64	0.00478	45	12.23	57.23	528.4	0.31	0.765	5.016	12.040	2.75	0.07	0.67	1.00	10.00	5.00	10.00
62.64	0.00478	45	12.23	57.23	528.4	0.31	0.765	5.016	12.040	3.00	0.07	0.67	1.00	10.00	5.00	10.00
62.64	0.00478	45	12.23	57.23	528.4	0.31	0.765	5.016	12.040	3.50	0.07	0.67	1.00	10.00	5.00	10.00
62.64	0.00478	45	12.23	57.23	528.4	0.31	0.765	5.016	12.040	4.00	0.07	0.67	1.00	10.00	5.00	10.00
62.64	0.00478	45	12.23	57.23	528.4	0.31	0.765	5.016	12.040	4.50	0.07	0.67	1.00	10.00	5.00	10.00
62.64	0.00478	45	12.23	57.23	528.4	0.31	0.765	5.016	12.040	5.00	0.07	0.67	1.00	10.00	5.00	10.00
62.64	0.00478	45	12.23	57.23	528.4	0.31	0.765	5.016	12.040	6.00	0.06	0.56	1.00	10.00	5.00	10.00
62.64	0.00478	45	12.23	57.23	528.4	0.31	0.765	5.016	12.040	7.00	0.05	0.48	1.00	10.00	5.00	10.00
62.64	0.00478	45	12.23	57.23	528.4	0.31	0.765	5.016	12.040	8.00	0.04	0.42	1.00	10.00	5.00	10.00
62.64	0.00478	45	12.23	57.23	528.4	0.31	0.765	5.016	12.040	9.00	0.04	0.37	1.00	10.00	5.00	10.00
62.64	0.00478	45	12.23	57.23	528.4	0.31	0.765	5.016	12.040	10.00	0.03	0.33	1.00	10.00	5.00	10.00
62.64	0.00478	45	12.23	57.23	528.4	0.31	0.765	5.016	12.040	11.00	0.03	0.30	1.00	10.00	5.00	10.00
62.64	0.00478	45	12.23	57.23	528.4	0.31	0.765	5.016	12.040	12.00	0.03	0.28	1.00	10.00	5.00	10.00
62.64	0.00478	45	12.23	57.23	528.4	0.31	0.765	5.016	12.040	13.00	0.09	0.99	1.00	10.00	5.00	10.00
62.64	0.00478	45	12.23	57.23	528.4	0.31	0.765	5.016	12.040	14.00	0.08	0.85	1.00	10.00	5.00	10.00
62.64	0.00478	45	12.23	57.23	528.4	0.31	0.765	5.016	12.040	15.00	0.07	0.74	1.00	10.00	5.00	10.00
62.64	0.00478	45	12.23	57.23	528.4	0.31	0.765	5.016	12.040	16.00	0.06	0.65	1.00	10.00	5.00	10.00
62.64	0.00478	45	12.23	57.23	528.4	0.31	0.765	5.016	12.040	17.00	0.06	0.58	1.00	10.00	5.00	10.00
62.64	0.00478	45	12.23	57.23	528.4	0.31	0.765	5.016	12.040	18.00	0.05	0.51	1.00	10.00	5.00	10.00
62.64	0.00478	45	12.23	57.23	528.4	0.31	0.765	5.016	12.040	19.00	0.05	0.46	1.00	10.00	5.00	10.00
62.64	0.00478	45	12.23	57.23	528.4	0.31	0.765	5.016	12.040	20.00	0.04	0.42	1.00	10.00	5.00	10.00

Table 7.4.3 Power density calculation for EH-ANT-2ft-60GHz antenna

F, GHz	λ , m	G _A , dBi	P _{TX} , dBm	EIRP, dBm	EIRP, Watt	D, m	η	R _{nt} , m	R _{ft} , m	R, m	S, mW/cm ²	S, W/m ²	General public exposure		Workers exposure	
													S, mW/cm ²	S, W/m ²	S, mW/cm ²	S, W/m ²
62.64	0.00478	50	12.23	62.23	1671.1	0.65	0.550	20.05	52.93	0.00	0.02	0.20	1.00	10.00	5.00	10.00
62.64	0.00478	50	12.23	62.23	1671.1	0.65	0.550	20.05	52.93	0.10	0.01	0.11	1.00	10.00	5.00	10.00
62.64	0.00478	50	12.23	62.23	1671.1	0.65	0.550	20.05	52.93	0.20	0.01	0.11	1.00	10.00	5.00	10.00
62.64	0.00478	50	12.23	62.23	1671.1	0.65	0.550	20.05	52.93	0.30	0.01	0.11	1.00	10.00	5.00	10.00
62.64	0.00478	50	12.23	62.23	1671.1	0.65	0.550	20.05	52.93	0.40	0.01	0.11	1.00	10.00	5.00	10.00
62.64	0.00478	50	12.23	62.23	1671.1	0.65	0.550	20.05	52.93	0.50	0.01	0.11	1.00	10.00	5.00	10.00
62.64	0.00478	50	12.23	62.23	1671.1	0.65	0.550	20.05	52.93	0.75	0.01	0.11	1.00	10.00	5.00	10.00
62.64	0.00478	50	12.23	62.23	1671.1	0.65	0.550	20.05	52.93	1.00	0.01	0.11	1.00	10.00	5.00	10.00
62.64	0.00478	50	12.23	62.23	1671.1	0.65	0.550	20.05	52.93	1.25	0.01	0.11	1.00	10.00	5.00	10.00
62.64	0.00478	50	12.23	62.23	1671.1	0.65	0.550	20.05	52.93	1.50	0.01	0.11	1.00	10.00	5.00	10.00
62.64	0.00478	50	12.23	62.23	1671.1	0.65	0.550	20.05	52.93	1.75	0.01	0.11	1.00	10.00	5.00	10.00
62.64	0.00478	50	12.23	62.23	1671.1	0.65	0.550	20.05	52.93	2.00	0.01	0.11	1.00	10.00	5.00	10.00
62.64	0.00478	50	12.23	62.23	1671.1	0.65	0.550	20.05	52.93	2.25	0.01	0.11	1.00	10.00	5.00	10.00
62.64	0.00478	50	12.23	62.23	1671.1	0.65	0.550	20.05	52.93	2.50	0.01	0.11	1.00	10.00	5.00	10.00
62.64	0.00478	50	12.23	62.23	1671.1	0.65	0.550	20.05	52.93	2.75	0.01	0.11	1.00	10.00	5.00	10.00
62.64	0.00478	50	12.23	62.23	1671.1	0.65	0.550	20.05	52.93	3.00	0.01	0.11	1.00	10.00	5.00	10.00
62.64	0.00478	50	12.23	62.23	1671.1	0.65	0.550	20.05	52.93	3.50	0.01	0.11	1.00	10.00	5.00	10.00
62.64	0.00478	50	12.23	62.23	1671.1	0.65	0.550	20.05	52.93	4.00	0.01	0.11	1.00	10.00	5.00	10.00
62.64	0.00478	50	12.23	62.23	1671.1	0.65	0.550	20.05	52.93	4.50	0.01	0.11	1.00	10.00	5.00	10.00
62.64	0.00478	50	12.23	62.23	1671.1	0.65	0.550	20.05	52.93	5.00	0.01	0.11	1.00	10.00	5.00	10.00
62.64	0.00478	50	12.23	62.23	1671.1	0.65	0.550	20.05	52.93	6.00	0.01	0.11	1.00	10.00	5.00	10.00
62.64	0.00478	50	12.23	62.23	1671.1	0.65	0.550	20.05	52.93	7.00	0.01	0.11	1.00	10.00	5.00	10.00
62.64	0.00478	50	12.23	62.23	1671.1	0.65	0.550	20.05	52.93	8.00	0.01	0.11	1.00	10.00	5.00	10.00
62.64	0.00478	50	12.23	62.23	1671.1	0.65	0.550	20.05	52.93	9.00	0.01	0.11	1.00	10.00	5.00	10.00
62.64	0.00478	50	12.23	62.23	1671.1	0.65	0.550	20.05	52.93	10.00	0.01	0.11	1.00	10.00	5.00	10.00
62.64	0.00478	50	12.23	62.23	1671.1	0.65	0.550	20.05	52.93	11.00	0.01	0.11	1.00	10.00	5.00	10.00
62.64	0.00478	50	12.23	62.23	1671.1	0.65	0.550	20.05	52.93	12.00	0.01	0.11	1.00	10.00	5.00	10.00
62.64	0.00478	50	12.23	62.23	1671.1	0.65	0.550	20.05	52.93	13.00	0.01	0.11	1.00	10.00	5.00	10.00
62.64	0.00478	50	12.23	62.23	1671.1	0.65	0.550	20.05	52.93	14.00	0.01	0.11	1.00	10.00	5.00	10.00
62.64	0.00478	50	12.23	62.23	1671.1	0.65	0.550	20.05	52.93	15.00	0.01	0.11	1.00	10.00	5.00	10.00
62.64	0.00478	50	12.23	62.23	1671.1	0.65	0.550	20.05	52.93	16.00	0.01	0.11	1.00	10.00	5.00	10.00
62.64	0.00478	50	12.23	62.23	1671.1	0.65	0.550	20.05	52.93	17.00	0.01	0.11	1.00	10.00	5.00	10.00
62.64	0.00478	50	12.23	62.23	1671.1	0.65	0.550	20.05	52.93	18.00	0.01	0.11	1.00	10.00	5.00	10.00
62.64	0.00478	50	12.23	62.23	1671.1	0.65	0.550	20.05	52.93	19.00	0.01	0.11	1.00	10.00	5.00	10.00
62.64	0.00478	50	12.23	62.23	1671.1	0.65	0.573	20.05	52.93	20.00	0.01	0.11	1.00	10.00	5.00	10.00

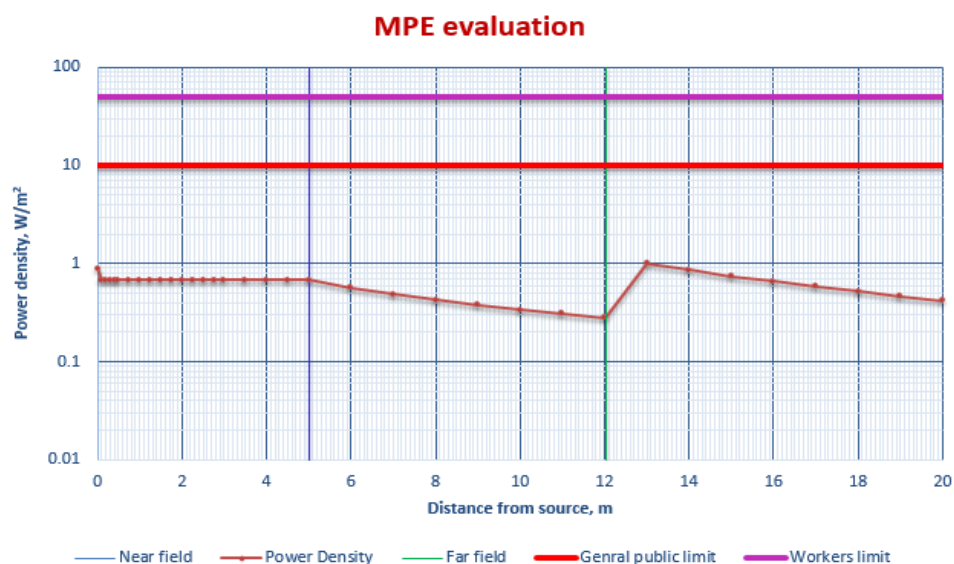
7.5 Guidance on compliance boundary of a dish integrated antenna

This guidance provides graphical presentation of the compliance distance in the line of sight versus the separation distance from the antenna on the near, transition and far fields regions. There is no minimum separation distance required to meet the general public limits.



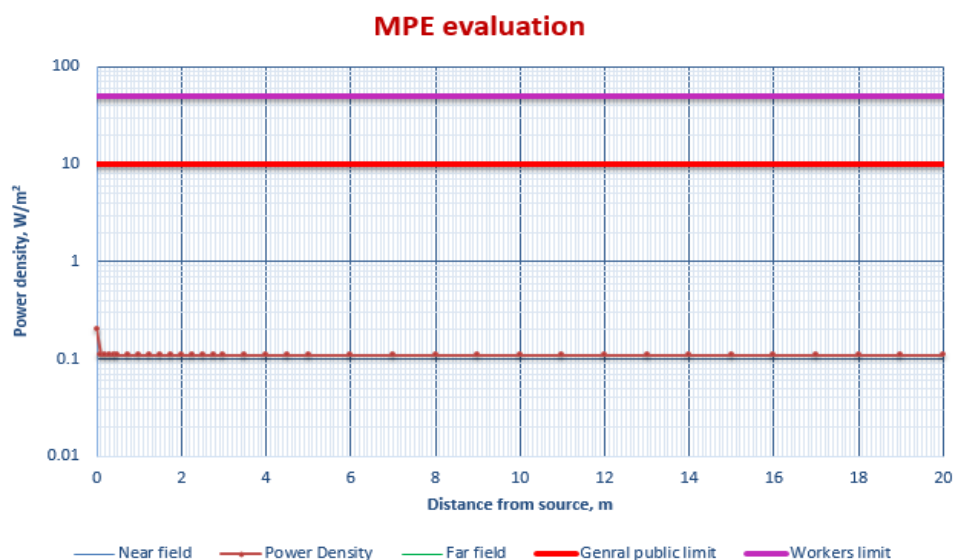
7.6 Guidance on compliance boundary of a dish EH-ANT-1ft-60GHz antenna

This guidance provides graphical presentation of the compliance distance in the line of sight versus the separation distance from the antenna on the near, transition and far fields regions. There is no minimum separation distance required to meet the general public limits.



7.7 Guidance on compliance boundary of a dish EH-ANT-2ft-60GHz antenna

This guidance provides graphical presentation of the compliance distance in the line of sight versus the separation distance from the antenna on the near, transition and far fields regions. There is no minimum separation distance required to meet the general public limits.



8 APPENDIX A 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

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e-mail: mail@hermonlabs.com

website: www.hermonlabs.com

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

9 APPENDIX B Specification references

47CFR part 1: 2019

Radiofrequency radiation exposure limits.

OET Bulletin 65: Edition 97-01

Evaluating Compliance with FCC

Guidelines for Human Exposure to

Radiofrequency Electromagnetic Fields

10 APPENDIX C Manufacturer's declaration



Declaration of Identity

We, the undersigned,

Company: Siklu Communication Ltd.

declare under our sole responsibility that the following equipment:

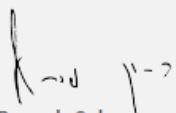
Brand/Item	Type/Model	Short Product description
MultiHaul™ TG	MH-T280-CCP-PoE-MWB	MultiHaul™ TG LR TU with ANT. port, 2 RJ-45 & 1 SFP+, PoE In/Out, White

Is electronically/ electrically/ mechanically identical to the following equipment (including Software/Hardware version(s)):

Brand/Item	Type/Model	Short Product description
MultiHaul™ TG	MH-T280-CNN-PoE-MWB	MultiHaul™ TG LR TU with ANT. port, 1 RJ45, PoE In, White
MultiHaul™ TG	MH-T270-CCP-PoE-MWB	MultiHaul™ TG LR TU with ANT. port, 2 RJ-45 & 1 SFP+, PoE In/Out, White
MultiHaul™ TG	MH-T270-CNN-PoE-MWB	MultiHaul™ TG LR TU with ANT. port, 1 RJ45, PoE In, White

The reason for model and name changes is: differentiating our products by SW features for different application in the networks of our customers.

June 6 2021


 Baruch Schwarz
 Chief Engineer

SIKLU Communication Ltd.
 43 Hasivim St., Petah Tikva, 49517 Israel
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11 APPENDIX D Abbreviations and acronyms

A	ampere
AM	amplitude modulation
BB	broad band
cm	centimeter
dB	decibel
dBm	decibel referred to one milliwatt
dB(μ V)	decibel referred to one microvolt
dB(μ V/m)	decibel referred to one microvolt per meter
dB(μ A)	decibel referred to one microampere
dB Ω	decibel referred to one Ohm
EIRP	equivalent isotropically radiated power
ERP	effective radiated power
EUT	equipment under test
F	frequency
GHz	gigahertz
HL	Hermon laboratories
Hz	hertz
k	kilo
kHz	kilohertz
m	meter
MHz	megahertz
min	minute
mm	millimeter
ms	millisecond
μ s	microsecond
NA	not applicable
NB	narrow band
OATS	open area test site
PM	pulse modulation
RE	radiated emission
RF	radio frequency
rms	root mean square
Rx	receive
s	second
Tx	transmit
V	volt

END OF DOCUMENT