

CL-10 3G

MPE limits for FCC, 1.1310

	Mode	Frequency MHz	Duty Cycle %	Power dBm	Antenna	EIRP dBm	EIRP mW	Distance D cm	PD ⁹ mW/m^2	PD Limit mW/cm^2	Margin dB	2.1091 EIRP	2.1091 EIRP	PD/PD Limit
					Gain dBi							Limit mW	Margin dB	
SARA-U201	GSM ^{1,2,3}	837.06	N/A	N/A	N/A	27.0 ²	501	20	0.100	0.558	7.48	2455	6.90	0.17868
SARA-U201	GSM ^{1,2,3}	1880	N/A	N/A	N/A	32.3 ²	1698	20	0.338	1.00	4.71	4910	4.61	0.33785
LILY-W132	WiFi 2.4GHz ^{4,6}	2412	100	21.5	3	24.5 ⁸	282	20	0.056	1.608	14.58	N/A	N/A	0.03487
BlueMod+S42	BLE ^{5,7}	2402	100	4.6	2	6.6 ⁸	4.6	20	0.001	1.00	30.41	N/A	N/A	0.00091
FCC Co-Location =					0.17868	+	0.03487	+	0.00091	=	0.21445	< 1		

MPE limits for Innovation, Science and Economic Development Canada, RSS-102 Issue 5

	Mode	Frequency MHz	Duty Cycle %	Power dBm	Antenna	EIRP ⁸ dBm	EIRP W	Distance D m	PD ⁹ W/m^2	PD Limit W/m^2	Margin dB	RSS 102	RSS 102	PD/PD Limit
					Gain dBi							\$2.5.2 Lim. W	\$2.5.2 Marg. dB	
SARA-U201	GSM ^{1,2,3}	837.06	N/A	N/A	N/A	27.0	0.501	0.2	1.00	2.60	4.17	1.302	4.15	0.38299
SARA-U201	GSM ^{1,2,3}	1880	N/A	N/A	N/A	32.3	1.698	0.2	3.38	4.53	1.27	2.264	1.25	0.74651
LILY-W132	WiFi 2.4GHz ^{4,6}	2412	100	21.5	3	24.5	0.282	0.2	0.56	5.37	9.81	2.684	9.79	0.10449
BlueMod+S42	BLE ^{5,7}	2412	100	4.6	2	6.6	0.005	0.2	0.01	5.37	27.71	2.684	27.69	0.00169
Canada Co-Location =					0.38299	+	0.10449	+	0.00169	=	0.48917	< 1		

EIRP limits for FCC and Innovation, Science and Economic Development Canada (\$24.132, \$24.232 / RSS 132 \$5.4, RSS 133 \$6.4)

		Frequency MHz	EIRP dBm	EIRP W	EIRP Limit W	EIRP Margin dB
SARA-U201	GSM ^{1,2,3}	837.06	27.00	0.501	11.5	13.61
SARA-U201	GSM ^{1,2,3}	1880	32.30	1.698	2.0	0.71

¹FCC ID: XPY1CGM5NNN, IC: 8595A-1CGM5NNN, HVIN: SARA-U201

²Nemko S.p.A. test report no. 369095-7TRFWL (March 29, 2019), pages 16, 17, 26 and 27, RF output power tables.

³SARA-G3 and SARA-U2 series System Integration Manual UBX-13000995 - R27

⁴FCC ID: XPYLILYW1, 8595A-LILYW1, LILY-W132

⁵FCC ID: RFRMS42, 4957A-MS42, BlueMod+S42

⁶LILY-W1 series Data Sheet UBX-15000203 - R04

at page 28 section 7.2 Approved antennas

⁷BlueMod+S42 Hardware User Guide 1VV0301303 Rev.6 – 2017-06-07

at page 44 section 5.6.3 Antenna-Gain and Radiation Pattern and page 58 section 8.3.4 Antenna peak Gain

⁸EIRP = (Power dBm + Antenna Gain dBi) + 10 x Log (Duty Cycle % / 100)

⁹PD = EIRP / (4 π r²)