

CL-10 LTE VZW

MPE limits for FCC, 1.1310

	Mode	Frequency MHz	Duty Cycle %	Power dBm	Antenna		EIRP <sup>8</sup> dBm	EIRP mW	Distance D cm	PD <sup>9</sup> mW/cm <sup>2</sup>	PD Limit mW/cm <sup>2</sup>	Margin dB	2.1091 EIRP		PD/PD Limit
					Gain dBi	EIRP <sup>8</sup> dBm							Limit mW	Margin dB	
LARA-R204	LTE eFDD13 <sup>1,2,3</sup>	777	100	24	3	27.0	501	20	0.100	0.518	7.16	2455	6.90	0.19249	
LARA-R204	LTE eFDD4 <sup>1,2,3</sup>	1710	100	24	3	27.0	501	20	0.100	1.140	10.58	2455	6.90	0.08746	
LILY-W132	WiFi 2.4GHz <sup>4,6</sup>	2412	100	21.5	3	24.5	282	20	0.056	1.608	14.58	N/A	N/A	0.03487	
BlueMod+S42	BLE <sup>5,7</sup>	2402	100	4.6	2	6.6	4.6	20	0.001	1.00	30.41	N/A	N/A	0.00091	
FCC Co-Location =			0.19249	+	0.03487	+	0.00091	=	0.22827	< 1					

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

	Mode	Frequency MHz	Duty Cycle %	Power dBm	Antenna		EIRP <sup>8</sup> dBm	EIRP W	Distance D m	PD <sup>9</sup> W/m <sup>2</sup>	PD Limit W/m <sup>2</sup>	Margin dB	RSS 102		PD/PD Limit
					Gain dBi	EIRP <sup>8</sup> dBm							\$2.5.2 Lim. W	Marg. dB	
LARA-R204	LTE eFDD13 <sup>1,2,5</sup>	777	100	24	3	27.0	0.501	0.2	1.00	2.47	3.95	1.238	3.93	0.40298	
LARA-R204	LTE eFDD4 <sup>1,2,5</sup>	1710	100	24	3	27.0	0.501	0.2	1.00	4.24	6.29	2.122	6.27	0.23505	
LILY-W132	WiFi 2.4GHz <sup>4,6</sup>	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 <sup>5,7</sup>	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 =			0.40298	+	0.10449	+	0.00169	=	0.50916	< 1					

EIRP limits for FCC and Innovation, Science and Economic Development Canada

	Frequency MHz	Power dBm	Antenna		EIRP <sup>10</sup> dBm	EIRP W	EIRP Limit W	EIRP Margin dB
			Gain dBi	EIRP <sup>10</sup> dBm				
LARA-R204	LTE eFDD13 <sup>1,2,3</sup>	777	24	3.00	27.00	0.501	4.91	9.91
LARA-R204	LTE eFDD4 <sup>1,2,3</sup>	1710	24	3.00	27.00	0.501	1.0	3.00

<sup>1</sup>FCC ID: XPY1EIQN2NN, IC: 8595A-1EIQN2NN, HVIN: LARA-R204

<sup>2</sup>7layers GmbH, Assessment Reference: MDE\_UBLOX\_1603\_MPEa, Conducted output power values based on "Tune-up" information provided by manufacturer at page 9 section 3.2.2

<sup>3</sup>Open Web Search Kunshan Wavelink Electronic Co.,Ltd. External 4G LTE Antenna Gain

<sup>4</sup>FCC ID: XPYLILYW1, 8595A-LILYW1, LILY-W132

<sup>5</sup>FCC ID: RFRMS42, 4957A-MS42, BlueMod+S42

<sup>6</sup>LILY-W1 series Data Sheet UBX-15000203 - R04 at page 28 section 7.2 Approved antennas

<sup>7</sup>BlueMod+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

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

<sup>9</sup>PD = EIRP / (4πx D<sup>2</sup>)

<sup>10</sup>EIRP = Power dBm + Antenna Gain dBi