MPE 1
88mm GSM rubber cellular Antenna with pigtail Cable and helical printed PCB antenna

FCC ID: 2AKXF-ALB030
IC: 22365-ALB030
HVIN: ALF-000008-001
Contains FCC ID: XPYSARAU260, IC: 8595A-SARAU260
Only one of the two radios will be allowed to transmit at any one time.

MPE limits for FCC, 1.1310

Mode	Frequency MHz	Duty Cycle %	Power dBm	Antenna Gain[8] dBi	EIRP dBm	EIRP mW	Distance D cm	PD mW/m^2	Limit mW/cm^2	Margin dB	2.1091 EIRP Limit mW	2.1091 EIRP Margin dB
GSM / GPRS[1,2,3,4,6]	824	50	34	2.2	33.2	2084	26	0.245	0.549	3.50	2455	0.71
GSM / GPRS[1,2,3,4,6]	1850	50	31	2.5	30.5	1119	26	0.132	1.00	8.80	4910	6.42
W-CDMA[2,3,4,6]	824	100	24	2.2	26.2	417	26	0.049	0.55	10.5	2455	7.70
W-CDMA[2,3,4,6]	1850	100	24	2.5	26.5	447	26	0.053	1.00	12.8	4910	10.41
LoRa Radio[5,6,7]	902	100	18.54	3.37	21.9	155	26	0.018	0.60	15.2	---	---

EIRP = (Power dBm + Antenna Gain dBi) + 10 x Log (Duty Cycle % / 100)
$PD = EIRP / (4 \times \pi \times D^2)$

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

Mode	Frequency MHz	Duty Cycle %	Power dBm	Antenna Gain[8] dBi	EIRP dBm	EIRP W	Distance D m	PD W/m^2	Limit W/m^2	Magin dB
GSM / GPRS[1,2,3,4]	824	50	34.0	2.2	33.2	2.08	0.26	2.45	2.58	0.21
GSM / GPRS[1,2,3,4]	1850	50	31.0	2.5	30.5	1.119	0.26	1.32	4.48	5.31
W-CDMA[2,3,4]	824	100	24.0	2.2	26.2	0.417	0.26	0.49	2.58	7.20
W-CDMA[2,3,4]	1850	100	24.0	2.5	26.5	0.447	0.26	0.53	4.48	9.30
LoRa Radio[5,6,7]	902	100	18.54	3.37	21.9	0.155	0.26	0.18	2.74	11.76

EIRP = (Power dBm + Antenna Gain dBi) + 10 x Log (Duty Cycle % / 100)
$PD = EIRP / (4 \times \pi \times D^2)$

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

	Frequency MHz	Power dBm	Antenna Gain[8] dBi	EIRP dBm	EIRP W	EIRP Limit W	EIRP Margin dB
GSM / GPRS[3]	824	32.72	2.2	34.920	3.105	11.5	5.7
GSM / GPRS[3]	1850	29.90	2.5	32.400	1.7378	2.0	0.6
W-CDMA[3]	824	22.12	2.2	24.320	0.2704	11.5	16.3
W-CDMA[3]	1850	22.28	2.5	24.780	0.301	2.0	8.2

[1]GSM multi-slot class 12, 50% duty cycle

[2]Conducted output power values bases on "Tune -up" information provided by manufacturer.

[3]7Layers Assessment Reference: MDE_UBLOX_1404_MPEa, 08.09.2014, FCC ID: XPYSARAU260, IC: 8595A-SARAU260

[4]Related Equipment, Contains FCC ID: XPYSARAU260, 8595A-SARAU260

[5]FCC ID: 2AKXF-ALB030, IC: 22365-ALB030, HVIN: ALF-000008-001

[6]Only one of the two radios will be allowed to transmit at any one time.[Alert Labs Sentree A/C Sensor Operational Description]

[7]Reference: FCC ID: T9JRN2903, IC: 6514A-RN2903, Microchip Technology Inc., Low-Power Long Range LoRa™ Technology, Transceiver Module, RN2903

[8]88mm GSM rubber cellular Antenna with pigtail Cable and helical printed PCB antenna

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MPE limits for FCC, 1.1310

Mode	Frequency	Duty Cycle	Power	Antenna Gain[8]	EIRP	EIRP	Distance D	PD	Limit	Margin	2.1091 EIRP Limit	2.1091 EIRP Margin
	MHz	%	dBm	dBi	dBm	mW	cm	mW/m^2	mW/cm^2	dB	mW	dB
GSM / GPRS[1,2,3,4,6]	824	50	34	0.756	31.7	1495	26	0.176	0.549	4.94	2455	2.15
GSM / GPRS[1,2,3,4,6]	1850	50	31	1.535	29.5	896	26	0.106	1.00	9.77	4910	7.39
W-CDMA[2,3,4,6]	824	100	24	0.756	24.8	299	26	0.035	0.55	11.9	2455	9.14
W-CDMA[2,3,4,6]	1850	100	24	1.535	25.5	358	26	0.042	1.00	13.8	4910	11.38
LoRa Radio[5,6,7]	902	100	18.54	3.37	21.9	155	26	0.018	0.60	15.2	---	---

EIRP = (Power dBm + Antenna Gain dBi) + 10 x Log (Duty Cycle % / 100)
PD = EIRP / $(4 \pi \times D^2)$

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

Mode	Frequency	Duty Cycle	Power	Antenna Gain[8]	EIRP	EIRP	Distance D	PD	Limit	Magin
	MHz	%	dBm	dBi	dBm	W	m	W/m^2	W/m^2	dB
GSM / GPRS[1,2,3,4]	824	50	34.0	0.756	31.7	1.49	0.26	1.76	2.58	1.65
GSM / GPRS[1,2,3,4]	1850	50	31.0	1.535	29.5	0.896	0.26	1.06	4.48	6.28
W-CDMA[2,3,4]	824	100	24.0	0.756	24.8	0.299	0.26	0.35	2.58	8.64
W-CDMA[2,3,4]	1850	100	24.0	1.535	25.5	0.358	0.26	0.42	4.48	10.27
LoRa Radio[5,6,7]	902	100	18.54	3.37	21.9	0.155	0.26	0.18	2.74	11.76

EIRP = (Power dBm + Antenna Gain dBi) + 10 x Log (Duty Cycle % / 100)
PD = EIRP / $(4 \pi \times D^2)$

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

	Frequency	Power	Antenna Gain[8]	EIRP	EIRP	EIRP Limit	EIRP Margin
	MHz	dBm	dBi	dBm	W	W	dB
GSM / GPRS[3]	824	32.72	0.756	33.476	2.226	11.5	7.1
GSM / GPRS[3]	1850	29.90	1.535	31.435	1.3916	2.0	1.6
W-CDMA[3]	824	22.12	0.756	22.876	0.1939	11.5	17.7
W-CDMA[3]	1850	22.28	1.535	23.815	0.241	2.0	9.2

[1]GSM multi-slot class 12, 50% duty cycle

[2]Conducted output power values bases on "Tune -up" information provided by manufacturer.

[3]7Layers Assessment Reference: MDE_UBLOX_1404_MPEa, 08.09.2014, FCC ID: XPYSARAU260, IC: 8595ASARAU260

[4]Related Equipment, Contains FCC ID: XPYSARAU260, 8595A-SARAU260

[5]FCC ID: 2AKXF-ALB030, IC: 22365-ALB030, HVIN: ALF-000008-001

[6]Only one of the two radios will be allowed to transmit at any one time.[Alert Labs Sentree A/C Sensor Operational Description]

[7]Reference: FCC ID: T9JRN2903, IC: 6514A-RN2903, Microchip Technology Inc., Low-Power Long Range LoRa™ Technology, Transceiver Module, RN2903

[8]Attenuation at 900 MHz due to 3 m Low Loss RG174 =	2.244	dB	Antenna Gain =	0.756 dBi
[8]Attenuation at 2 GHz due to 3 m Low Loss RG174 =	3.4647	dB	Antenna Gain =	1.535 dBi

[8]GSM flat antenna with 3m Low loss 50ohm RG174 Cable and helical printed PCB antenna