

Manufacturer: EchoStar Mobile Ltd.

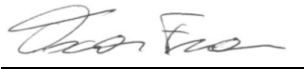
Name: Oscar Frau

Product: EM2050

Title: Project Handler

FCC ID: 2A809-EM2050

Signature:



MPE limits (\$1.1310)

Mode	Frequency	Duty Cycle	Power	Antenna		EIRP ¹	EIRP	Distance	PD ²	PD Limit ³	Margin	2.1091 EIRP	2.1091 EIRP	Worst PD/PD values to be considered
				Gain ⁶								Limit	Margin	
	MHz	%	dBm	dBi		dBm	mW	cm	mW/cm ²	mW/cm ²	dB	mW	dB	
LoRa 125 kHz BW ⁴	902,3	100	20,9	10		30,90	1230,3	20	0,245	0,602	3,91	3018,7	3,90	0,40688
LoRa 500 kHz BW ⁴	903,0	100	20,7	10		30,70	1174,9	20	0,234	0,602	4,11	3021,1	4,10	0,38827
LR-FHSS BW ⁴	903,0	100	20,9	10		30,90	1230,3	20	0,245	0,602	3,91	3021,1	3,90	0,40657
LoRa 125 kHz BW ⁵	2015,0	100	23,3	7,5		30,80	1202,3	20	0,239	1,000	6,21	5018,4	6,21	0,23918
LoRa 250 kHz BW ⁵	2015,0	100	21,5	7,5		29,00	794,3	20	0,158	1,000	8,01	5018,4	8,01	0,15803
LR-FHSS BW ⁵	2015,0	100	27,0	7,5		34,50	2818,4	20	0,561	1,000	2,51	5018,4	2,51	0,56070
FCC Co-Location =		0,40688	+	0,56070	=	0,96758	< 1							

¹EIRP = (Power dBm + Antenna Gain dBi) + 10 x Log (Duty Cycle % / 100)

²PD = EIRP / (4xπxD²)

³CFR 47 Part 1, §1.1310(e), table 1, limits for General Population/Uncontrolled Exposure

⁴See test report n. REP044593 issued by Nemko S.p.A.

⁵See test report n. REP044594 issued by Nemko S.p.A.

⁶Max allowed antenna gain.

2.1091 EIRP Limit

1.1307 (b)(3)(i)(B) exemption limit

0.3 GHz ≤ f < 1.5 GHz

20 cm < d ≤ 40 cm

f	ERP _{20cm}	Pth = ERP _{20cm}	Pth = EIRP _{20cm}	EIRP	Margin
GHz	mW	mW	mW	mW	dB
0,902	1840,7	1840,7	3018,7	1230,3	3,9
0,903	1842,1	1842,1	3021,1	1174,9	4,1
0,903	1842,1	1842,1	3021,1	1230,3	3,9

1.5 GHz ≤ f ≤ 6.0 GHz

20 cm < d ≤ 40 cm

f	ERP _{20cm}	Pth = ERP _{20cm}	Pth = EIRP _{20cm}	EIRP	Margin
GHz	mW	mW	mW	mW	dB
2,015	3060	3060	5018	1202,3	6,21
2,015	3060	3060	5018	794,3	8,0
2,015	3060	3060	5018	2818,4	2,51