
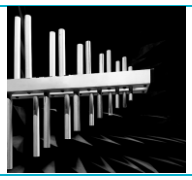
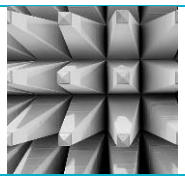

CTC advanced
member of RWTÜV group

Bundesnetzagentur

BNetzA-CAB-02/21-102

Maximum Permissible Exposure (MPE) & Exposure evaluation

Report identification number: 1-0948/20-01-17-A MPE (FCC_ISED)

Certification numbers and labeling requirements	
FCC ID	O6QPMT8X4G
ISED number	3892A-PMT8X4G
HVIN (Hardware Version Identification Number)	PMT8X4G
PMN (Product Marketing Name)	PLICSMOBILE T81
FVIN (Firmware Version Identification Number)	-/-
HMN (Host Marketing Name)	-/-

This test report is electronically signed and valid without handwritten signature. For verification of the electronic signatures, the public keys can be requested at the testing laboratory.

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EUT technologies:

Technologies:	Max. measured power [dBm]		Antenna gain max.: [dBi]	Max. EIRP Declared by Customer	#
	conducted	EIRP			
GSM 850 MHz	28.4	28.3	--	28.3 dBm ± 1.0 dB	A
PCS 1900 MHz	24.8	23.6	--	23.6 dBm ± 1.0 dB	B
UMTS FDD II 1880 MHz	22.1	21.1	--	21.1 dBm ± 1.5 dB	C
UMTS FDD IV 1700 MHz	21.9	20.9	--	20.9 dBm ± 1.5 dB	D
UMTS FDD V 850 MHz	22.7	22.4	--	22.4 dBm ± 1.5 dB	E
LTE FDD 2 1900 MHz	18.6	17.6	--	17.6 dBm ± 1.5 dB	F
LTE FDD 4 850 MHz	17.9	19.1	--	19.1 dBm ± 1.5 dB	G
LTE FDD 5 1750 MHz	18.2	15.7	--	15.7 dBm ± 1.5 dB	H
LTE FDD 7 2600 MHz	18.8	24.0	--	24.0 dBm ± 1.5 dB	I
LTE FDD 17 700 MHz	18.3	17.5	--	17.5 dBm ± 1.5 dB	J
BT LE 2450 MHz	-2.2	0.3	2.5	0.3 dBm	K

Details and origins of the measurements shown in the table above:

#	Results from:		Additional information
A	1-0948/20-01-13	CTC Advanced GmbH	Max conducted / ERP page 23
B	1-0948/20-01-13	CTC Advanced GmbH	Max conducted / EIRP page 35
C	1-0948/20-01-13	CTC Advanced GmbH	Max conducted / EIRP page 47
D	1-0948/20-01-13	CTC Advanced GmbH	Max conducted / EIRP page 55
E	1-0948/20-01-13	CTC Advanced GmbH	Max conducted / ERP page 63
F	1-0948/20-01-13	CTC Advanced GmbH	Max conducted / EIRP page 72 to 74
G	1-0948/20-01-13	CTC Advanced GmbH	Max conducted / ERP page 93 to 95
H	1-0948/20-01-13	CTC Advanced GmbH	Max conducted / EIRP page 83 to 84
I	1-0948/20-01-13	CTC Advanced GmbH	Max conducted / EIRP page 104 to 105
J	1-0948/20-01-13	CTC Advanced GmbH	Max conducted / ERP page 114 to 115
K	1-0948/20-01-15	CTC Advanced GmbH	Antenna Gain page 19 Max conducted page 23

Collocation overview:

Active scenario: / Technology	1	2	3	4
GSM/ UMTS / LTE	x		x	
BT LE	x	x		

Prediction of MPE limit at given distance - FCC

Equation from page 18 of OET Bulletin 65, Edition 97-01

$S = PG / 4\pi R^2$

where: S = Power density
P = Power input to the antenna
G = Antenna gain
R = Distance to the center of radiation of the antenna
PG = Output Power including antenna gain

The table below is excerpted from Table 1B of 47 CFR 1.1310 titled “Limits for Maximum Permissible Exposure (MPE), Limits for General Population/Uncontrolled Exposure”

Frequency Range (MHz)	Power Density (mW/cm²)	Averaging Time (minutes)
300 -1500	f/1500	30
1500 - 100000	1.0	30

where f = Frequency (MHz)

Prediction: worst case

	Technologies:	GSM / UMTS / LTE						BT LE	
	Frequency (MHz)	700	**850**	1700	1880	1900	2600	**2450**	
PG	Declared max power (EIRP)	19	**29.3**	22.4	22.6	24.6	25.5	**0.3**	dBm
R	Distance	20	**20**	20	20	20	20	**20**	cm
S	MPE limit for uncontrolled exposure	0.467	**0.567**	1	1	1	1	**1**	mW/cm²
	Calculated Power density:	0.0158	**0.1694**	0.0346	0.0362	0.0574	0.0706	**0.0002**	mW/cm²
	Calculated percentage of Limit:	3.39%	**29.90%**	3.46%	3.62%	5.74%	7.06%	**0.02%**	
	Collocation:								
	Scenario 1: GSM / UMTS / LTE + BT LE Calculated percentage of Limit:	29.92%							

This prediction demonstrates the following:

The power density levels for FCC at a distance of 20 cm are below the maximum levels allowed by regulations.

Prediction of MPE limit at given distance - ISED

RSS-102, Issue 5, 2.5.2

RF exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm, except when the device operates as follows:

- below 20 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 1 W (adjusted for tune-up tolerance);
- at or above 20 MHz and below 48 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $4.49/f^{0.5}$W (adjusted for tune-up tolerance), where f is in MHz;
- at or above 48 MHz and below 300 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 0.6 W (adjusted for tune-up tolerance);
- at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $1.31 \times 10^{-2}\ f^{0.6834}$ W (adjusted for tune-up tolerance), where f is in MHz;
- at or above 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 5 W (adjusted for tune-up tolerance).

Prediction: worst case

		GSM / UMTS / LTE						BT LE	
	Frequency	700	**850**	1700	1880	1900	2600	**2450**	MHz
R	Distance	20	**20**	20	20	20	20	**20**	cm
PG	Maximum EIRP	19	**29.3**	22.4	22.6	24.6	25.5	**0.3**	dBm
PG	**Maximum EIRP**	79.4	**851.1**	173.8	182.0	288.4	354.8	**1.1**	mW
	Exclusion Limit from above:	1.15	**1.32**	2.11	2.26	2.28	2.83	**2.71**	W
	Calculated percentage of Limit:	6.89%	**64.68%**	8.22%	8.04%	12.65%	12.56%	**0.04%**	
	Collocation:								
	Scenario 1: GSM / UMTS / LTE + BT LE Calculated percentage of Limit:	64.72%							

Conclusion: RF exposure evaluation is not required.