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Date: 22/05/2017

Ref: RF exposure analysis for the equipment FCC ID: WT7PTMDT500760D

The device MDT-500-2 (FCC ID: WT7PTMDT500760D) is a device designed to be used in mobile/fixed exposure conditions. The analysis provided in this document only covers mobile exposure conditions and for this reason, the antenna(s) used for this transmitter must be installed providing a separation of at least 1 m from all persons and must not be co-located or operated in conjunction with any other antenna or transmitter.

MPE exposure limits

The table below is excerpted from Table 1(A) of 47 CFR 1.1310 titled “Limits for Maximum Permissible Exposure (MPE), (A) Limits for Occupational/Controlled Exposure”:

Frequency Range (MHz)	Power density (mW/cm^2)	Averaging time (minutes)
300-1500	f(MHz)/300	6

Using the equation $S = \frac{PG}{4\pi R^2}$ to calculate the exposure to electromagnetic fields

where: S = power density (in appropriate units, e.g. mW/cm^2)

P = power input to the antenna (in appropriate units, e.g., mW)

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

Compliance with FCC maximum permissive exposure limits is demonstrated based on the following calculations:

Regulatory domain	Technology	Frequency (MHz)	Avg Conducted power (dBm) (Maximum per tune up procedure)	Duty cicle (%)	Average Conducted power (W)	Maximum Antenna Gain (dBi)	Maximum antenna gain (numerical)	Average radiated power (W)	FCC MPE limits (Controlled exposure) (mW/cm^2)	Safety distance to meet MPE limits (cm)	Evaluation distance/Safety distance as stated in the users guide (cm)	Maximum expusure (mW/cm^2)
FCC	P25 - 8.1 kHz	769,0125	44,25	100,0%	26,607	5	3,16	84,14	2,563	51,11	100	0,670
		774,9875	44,25	100,0%	26,607	5	3,16	84,14	2,583	50,91	100	0,670
		799,0125	44,25	100,0%	26,607	5	3,16	84,14	2,663	50,14	100	0,670
		804,9875	44,25	100,0%	26,607	5	3,16	84,14	2,683	49,95	100	0,670
	TI D-LMR – 20 kHz	769,0125	38,00	25,0%	1,577	5	3,16	4,99	2,563	12,44	100	0,040
		774,9875	38,00	25,0%	1,577	5	3,16	4,99	2,583	12,40	100	0,040
		799,0125	38,00	25,0%	1,577	5	3,16	4,99	2,663	12,21	100	0,040
		804,9875	38,00	25,0%	1,577	5	3,16	4,99	2,683	12,16	100	0,040
		809,0125	38,00	25,0%	1,577	5	3,16	4,99	2,697	12,13	100	0,040
		823,9875	38,00	25,0%	1,577	5	3,16	4,99	2,747	12,02	100	0,040
		854,0125	38,00	25,0%	1,577	5	3,16	4,99	2,847	11,81	100	0,040
		868,9875	38,00	25,0%	1,577	5	3,16	4,99	2,897	11,71	100	0,040
	TETRA - 22 kHz	769,0125	38,00	25,0%	1,577	5	3,16	4,99	2,563	12,44	100	0,040
		774,9875	38,00	25,0%	1,577	5	3,16	4,99	2,583	12,40	100	0,040
		799,0125	38,00	25,0%	1,577	5	3,16	4,99	2,663	12,21	100	0,040
		804,9875	38,00	25,0%	1,577	5	3,16	4,99	2,683	12,16	100	0,040
		809,0125	38,00	25,0%	1,577	5	3,16	4,99	2,697	12,13	100	0,040
		823,9875	38,00	25,0%	1,577	5	3,16	4,99	2,747	12,02	100	0,040
		854,0125	38,00	25,0%	1,577	5	3,16	4,99	2,847	11,81	100	0,040
		868,9875	38,00	25,0%	1,577	5	3,16	4,99	2,897	11,71	100	0,040

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