

RF Exposure Considerations for FCC ID: Z4HTDFTI

FCC ID: Z4HTDFTI contains a GSM GPRS/ EDGE/ UMTS HSDPA data only transmitter used within a handheld device. This transmitter operates in the GSM850, PCS1900 and UMTS II and V operating bands and has GPRS/ EDGE Class 12 operation.

Considerations for proximity of equipment user's hand to the equipment

KDB447498 - Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies.

4) SAR test positions and requirements for specific host platforms and exposure conditions

c) Extremity and body SAR evaluation considerations

iii) Contact the FCC Laboratory to determine whether:

(1) Hand SAR is required for hand-held and hand-operated devices with output power > $1000 \cdot [f(\text{GHz})]^{-0.5}$ mW that are designed with the hand operating closer than 5 cm from the antenna during normal use.

For FCC ID: Z4HTDFTI

Specified maximum output power = 33dBm @ 850MHz

= 30dBm @ 1900MHz

= 24dBm @ UMTS

Freq (GHz)	TruDefender FT	Max. output power mW (conducted)	$1000 \cdot [f \text{ GHz}]^{-0.5}$ mW	SAR Testing Required
0.85	UMTS	250	1,085	No
1.9	UMTS	250	726	No
0.85	GPRS	$2000/2 = 1,000^*$	1085	No
1.9	GPRS	$1000/2 = 500^*$	726	No

* Per KDB 447498 D01 Mobile Portable RF Exposure v04, "... Unless otherwise specified, the power thresholds in this document are applied for conducted output power with respect to the source-based time-averaged output power defined in §§ 2.1091(d)(2) and 2.1093(d)(5) of the rules."

GPRS Class 12 used in TruDefender FT qualifies for a source-based time-averaged factor of 4/8.

(2) Extremity SAR is required for wrist, feet or ankle worn devices.

Not Applicable for TruDefender FT.

(3) Body SAR is required for hand-held and hand-operated or wrist, feet and ankle worn devices that operate closer than 5 cm to the body and the output power is $> 300 \cdot [f(\text{GHz})]^{-0.5} \text{ mW}$.

Not Applicable for TruDefender FT. For its intended operation, wireless transmission is enabled when the device is $>20\text{cm}$ from the body.

Considerations for equipment usage at $>20\text{cm}$ from the body

FCC Part 2.1091 compliance

Part 22 devices operating at frequencies at or below 1.5GHz with effective radiated power (ERP) of 1.5 watts or more are subject to routine RF exposure evaluation, otherwise they are categorically excluded.

Part 24 devices operating at frequencies above 1.5GHz with effective radiated power (ERP) of 3 watts or more are subject to routine RF exposure evaluation, otherwise they are categorically excluded.

GSM 850 band

Transmitter frequency range = 824MHz to 849MHz

Transmitter Power (EIRP measured) = 19.3dBm (0.085W)

PCS1900 band

Transmitter frequency range = 1850MHz to 1910MHz

Transmitter Power (EIRP measured) = 29.5dBm (0.89W)

UMTS Band II

Transmitter frequency range = 1852MHz to 1908MHz

Transmitter Power (EIRP measured) = 27dBm (0.50W)

UMTS Band V

Transmitter frequency range = 826 – 847MHz band

Max. measured Transmitter EIRP = 14.8dBm max. (0.03W)

Conclusion

The considerations for the TruDefender FT in accordance with FCC KDB 447498 D01 v04, Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies confirms that RF exposure SAR testing is not required for normal handheld operation of the equipment.

The TruDefender FT is also categorically excluded from FCC Part 2.1091 routine RF exposure evaluation.