

Tim, I spoke to the engineer in charge of integrating the cellular module into the product:

John, Can you answer this? ~Greg

Greg - In response to the TCB:

Our product, is using Cinterion PH8 module and has these transmit characteristics:

2G, circuit switched single slot, Power Class 4 +33dBm in the EGSM850 band GMSK, Power Class 1 +30dBm in the GSM1900 Band GMSK.

2G, multi slot GPRS Class 10 supporting two transmit time slots. Power Class 4 +33dBm in the EGSM850 band GMSK, Power Class 1 +30dBm in the GSM1900 Band GMSK.

2G, multi slot EGPRS Class 10 supporting two transmit time slots. Power Class E2 +27dBm in the EGSM850 band 8PSK, Power Class E2 +26dBm in the GSM1900 Band 8PSK.

3G, Power Class 3 +24dBm in the 850 Band (V), CW operation. Power Class 3 +24dBm in the 1900 Band (II) CW operation.

1) The 25% duty cycle applies to 2G, GPRS Class 10 operation. For circuit switched single slot operation the duty cycle is ~12%.

From 3GPP TS 45.002, page 17, paragraph 4.3.1:

One TDMA time slot is 577 usec

One TDMA frame consists of 8 time slots with a frame duration of 4.62 msec.

From 3GPP TS 45.002, page 91, Annex B.1:

Multislot Class 10 supports a maximum of 2 MS (mobile station) transmit slots per TDMA frame.

Worst case transmit duty cycle (D), class 10, 2 transmit time slots (TS) per TDMA frame (TF):

$$\%D = (2(TS) / TF)100$$

$$\%D = ( 2 (.577) / 4.62)100$$

$$\%D = 24.98\% \approx 25\%$$

2) 3G, WCDMA/ UMTS, CW operation

Power Class 3 +24dBm in the 850 Band (V), CW operation Power Class 3 +24dBm in the 1900 Band (II) CW operation.

Our product was not evaluated for operation in the AWS(1700/2100) band because our cellular carrier does not operate in this band. By design, our product will not roam to other cellular carriers that support this band.