

1. The design of the module does not change. The Permissive change for the module is to allow integration into a host product which could be used closer than 20cm from a user (see Permissive Change request letter in the 731 application). The justification for exclusion of SAR testing is the subject of this PBA.

2. The unit uses 2 uplink time slots. There are 217 frames per second in each GSM frame is about $(1/217) = 4.61\text{ms}$. With each GSM frame having 8 time slots in each slot is about $(4.61\text{ms} / 8) = 576\text{microsecond}$. For 2 uplink a maximum of 434 transmitting timeslots per second, therefore for 600 second there are $(434 \times 6000 \text{ per slots per } 600 \text{ second} = 4340)$. The Calculation has now been amended to reflect the uplink time slots.

3. Manufacturer has declared the worst case Normal tx time is 30sec which is restricted by coded firmware not to exceed this given duration. The maximum data transmission occurs during the 30 second transmission.

4. The device repeats or retries the transmission in a 10 minutes (600 second) interval which is controlled and restricted by manufacturer coded firmware. This is the cases for both GSM operating frequencies (GSM850 and PCS1900) bands. Access to the device firmware is not accessible by user and therefore cannot be changed by the user of the device.

5. Calculation:

Source based time avg. duty factor for tx period = $30 / 600 \text{ sec} = 0.05 = 5\%$

equ (1):

GPRS Class 10 duty factor for 2 uplink = $2/8 = 0.25$

equ (2):

Maximum worst case duty factor = $\text{equ}(1) * \text{equ}(2) = 0.05 * 0.25 = 0.0125$

equ

(4):

At 850MHz the device measured average power = 1510 mW

equ (5):

With duty factor applied average power = $\text{equ}(4) * 1510 = 0.0125 \times 1510 = 18.875\text{mW}$

equ (6):

At 1900MHz the device measured average power = 870 mW

equ (7):

With duty factor applied average power = $\text{equ}(4) * 870 = 0.0125 \times 870 = 10.875\text{mW}$

equ (8):

Limit for SAR applicability $\square 60/f_{(\text{GHz})}$

At 850 MHz: $60/0.85 = 70.6 \text{ mW}$

At 1900 MHz: $60/1.9 = 31.6 \text{ mW}$

Conclusion:

SAR is not required at GSM850 band as output power < $60/f$

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7. The device repeats or retries the transmission in a 10 minutes (600 second) interval which is controlled and restricted by manufacturer coded firmware. This is the cases for both GSM operating frequencies (GSM850 and PCS1900) bands. Access to the device firmware is not accessible by user and therefore cannot be changed by the user of the device.

9. See Point 5.

10. Customer Attestation letter to confirm that the device is incapable of transmitting higher than the duty factor supported by the information provided in the equipment certification filing is enclosed.