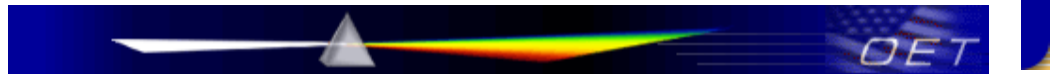


**Jon Hughes**

**From:** oetech@fccsun27w.fcc.gov  
**Sent:** Thursday, June 11, 2009 1:44 PM  
**To:** jon.hughes@celltechlabs.com  
**Subject:** Response to Inquiry to FCC (Tracking Number 344446)



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**Office of Engineering and Technology****Inquiry:**

---Reply from Customer on 06/05/2009---

Further to telephone discussion with Tim Harrington on June 5:

1. If the Commission is prepared to consider Footnote 5 further with our inquiry then we wish to pursue this. Based on the Max. Measured SAR Level at 25% duty cycle is 0.058 W/kg, the SAR for 4.48% duty cycle is expected to be considerably lower (at or near the measurement noise floor).
2. If SAR data is required for the TCB submittal then 25% would be the duty cycle evaluated. We only have SAR data for 901 MHz (24D Band 1 = 901-902 MHz) at 25% duty cycle based on the worst-case SAR at 100% was 0.202 W/kg compared to the SAR levels measured for 930 MHz (24D Band 2 = 930-931 MHz) and 941 MHz (24D Band 3 = 940-941 MHz) at 100% duty cycle were 0.089 W/kg and 0.086 W/kg respectively. If SAR data is required for the TCB submittal are we permitted to provide 901 MHz data only in the SAR report for 25% duty cycle? We also have an issue for testing/reporting the 941 MHz channel SAR data because our probe calibration is 835 MHz +/- 100 MHz and our dipole calibration is 835 MHz.

**Response:**

after further review, application for this device may proceed with TCB submittal and using kdb344446 as pre-filing test approval

however please disregard FCC response sent 6/5/09; rather for application package, along with SAR report please incorporate info of previous attachment i.e.

"Celltech Response to FCC KDB 344446, confidential exhibit"

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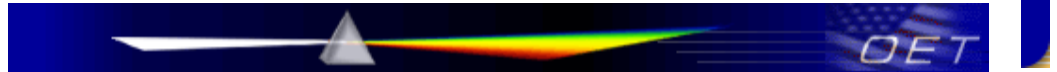
**Jon Hughes**

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**From:** oetech@fccsun27w.fcc.gov  
**Sent:** Friday, June 05, 2009 2:24 PM  
**To:** jon.hughes@celltechlabs.com  
**Subject:** Response to Inquiry to FCC (Tracking Number 344446)



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**Office of Engineering and Technology****Inquiry:**

---Reply from Customer on 05/14/2009---

Please see response attached and confirm if SAR can be excluded from TCB filing or additional info required.

**Response:**

in general it is requested that SAR be evaluated at whatever is typical maximum duty factor supported by device; e.g. preliminary data showing compliance at 100 % duty factor is not very relevant if device is designed (component overheads, etc) to normally operate at much lower

in general, for routine evaluation device where SAR is available such as it appears to be here, it is requested that SAR be included

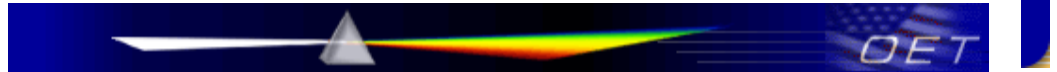
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**Jon Hughes**

**From:** oetech@fccsun27w.fcc.gov  
**Sent:** Wednesday, March 11, 2009 12:44 PM  
**To:** jon.hughes@celltechlabs.com  
**Subject:** Response to Inquiry to FCC (Tracking Number 344446)



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**Office of Engineering and Technology****Inquiry:**

---Reply from Customer on 03/06/2009---

KDB 447498 1)c) - it is our understanding that this device is not excluded from SAR evaluation based on any provision under *specific FCC test procedures*; however we do expect the SAR levels to be very low based on a maximum source-based time-averaged duty cycle of 6.58% and subsequent source-based time-averaged conducted power of 7.2 dBm. Per footnote 5 we expect the SAR to be < 0.2 W/kg. Based on KDB 447498 1)c) (very low SAR expected) we are asking the FCC if a SAR evaluation is necessary?

**Response:**

- Part 24 is routine eval. [KDB 447498 item 1) b), etc]; parts 90 & 101 are categ. excl. [KDB 447498 item 1) c), etc]; note also 101.139(e)
- fyi eventual filing must also address KDB pub 634817
- via review in this KDB, FCC will consider supporting info which you can provide per following description, and which when finalized could be used to allow TCB processing in absence of SAR test results

in reply within this KDB, please provide attachment addressing at minimum:

- 1) latest reply-to-inquiry-response mentions footnote 5 of KDB 447498, i.e. "we expect the SAR to be < 0.2 W/kg"  
 - please provide detailed analysis and rationale about such expectation
- 2) detailed analysis and rationale and device descriptions are needed to demonstrate hardware / infrastructure based duty factors for use in source-based time-averaging, not capable of or subject to changeable firmware, usage (e.g. drive-by speed / increment) or network traffic conditions, etc
- 3) fyi - in general, SAR testing is requested for some number of channels for devices subject to SAR routine evaluation, except possibly in some cases e.g. outside of pulse-signal duty factor and repetition rate parameters specified by IEEE Std 1528-2003; depending on items 1) and 2) herein, information about this matter may be unneeded

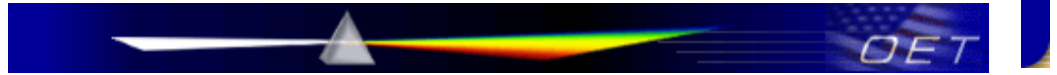
Do not reply to this message. Please select the [Reply to an Inquiry Response](#) link from the OET Inquiry System to add any additional information pertaining to this inquiry.

**Jon Hughes**

**From:** oetech@fccsun27w.fcc.gov  
**Sent:** Friday, March 06, 2009 12:49 PM  
**To:** jon.hughes@celltechlabs.com  
**Subject:** Response to Inquiry to FCC (Tracking Number 344446)



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**Office of Engineering and Technology**

**Inquiry:**  
 Device is a body-worn wireless utility meter (see attached photograph with supplied case accessory) with internal transmitter frequency range 896-960 MHz to be certified under FCC Rule Part 24, 90 and 101. Max. rated RF conducted output power is 18-19 dBm. Device also contains a co-transmitting Class 2 Bluetooth (3 dBm). Distance between antennas = 3.2 cm. Closest distance from antenna-to-body = 4 cm (both licensed and unlicensed antennas). Device dimensions are 65 mm (L) x 22 mm (W) x 120 mm (H). Device intended for operation only by trained persons in the utility industry and not a consumer device.

Duty Cycle information from the manufacturer is as follows:

Packet length = 88 bytes

Data rate = 5kbps

Min Time between Packets = 2 seconds

% duty cycle = 6.58%

$88 * 8 * (1/5000) = .1408s$   $.1408 / 2.1408 = 6.58\%$  duty cycle

Question: Is a SAR evaluation required for FCC TCB certification of this device?

**Response:**

based on actual source-based time-average conducted power, please determine whether any of following KDB 447498 items apply: 1) b), 1) c), 4) c)

Do not reply to this message. Please select the [Reply to an Inquiry Response](#) link from the OET Inquiry System to add any additional information pertaining to this inquiry.