## Hilton Carr

**From:** Alex Miller
**Sent:** 08 January 2004 16:03
**To:** Maggie Glasspool; 'Marco Belli (E-mail)'
**Cc:** Phil Dolling
**Subject:** RE: audit 4111-CDMA Urgent reply need by 8th Jan


Report Number WS611456 – 002 i...


IEEE_Flat_Phantom_F. pdf

Maggie/Hilton

(Hilton, please cut and paste responses as they are especially for item 8)

Item 6) - I have generated a new page in all test data is now tabulated, please see attached 'Report Number WS611456  002 issue 2.0 page 7 of 57.doc'dated 6th January 2004'.

Item 7) - Acknowledged this statement is now included in all new reports as of 01/01/2004.

Item 8) - Although the device is almost as large as the flat phantom it was assessed against, the phantom size was sufficient to cover the whole area
of the device tested and the device's active area was measured to be significantly smaller due to the nature of the frequencies being employed in the transmitter modules. The testing of this device was carried out using the following protocol. Prior to full SAR assessment, the device was placed into the appropriate test mode and initially using a 'Sniffer probe' and a spectrum analyzer the device was scanned to locate the maximum rf energy. Then the device was placed against the Flat phantom which was filled with the appropriate fluid simulant and an area scan was performed on each face of the device to
confirm the location of the transmitter to enable the SAR testing to be performed on the appropriate face.  This was performed for each Radio Module
fitted.  This was carried out with and without both the Headset and Holster in position for the body assessment. This showed that there was no
difference in SAR values and therefore testing was carried out without the headset or holster being used.

The device was positioned so that the central location of the maximum RF energy location was centrally positioned against the 2mm side of the flat
phantom. The actual RF distribution, recorded during the SAR scan showed that there was no potential secondary peak and that there were no significant boundary effects caused by the phantom size.

Your question raises issues about  the size of phantom which would be required to assess a laptop device with embedded RF transmitters. I believe
that the process descibed above more than adequately covers the requirements for assessing localised SAR distributions on larger devices.

Please find attached the following paper 'Flat Phantom Setup for the performance Check and System Validation of measurement systems according to
IEEE1528 and IEC62209 - Andreas Christ and Niels Kuster May 13, 2002'  which suggests that the size of phantom used is quite adequate for the transmit frequency of the device under test since our procedure additionally checked that the SAR field distribution was well-contained within the volume of the phantom.

Best Regards
Alex Miller
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-----Original Message-----
From: Maggie Glasspool
Sent: 06 January 2004 10:10
To: Alex Miller; Marco Belli (E-mail)
Cc: Phil Dolling
Subject: FW: audit 4111-CDMA Urgent reply need by 8th Jan
Importance: High

Hi Alex/Marco,
Hilton needs some responses to the questions below, following an audit by Tim Harrington of the FCC.

Alex please supply details for items 6, 7 and 8.

Marco please supply details for items 4, 5 and 9.

Thanks
Maggie

To: Hilton Carr
From: Tim Harrington
Tim.Harrington@fcc.gov
FCC Equipment Authorization Branch

Re: FCC ID: H9P4111CDMA

Applicant: Symbol Technologies Inc
Correspondence Reference Number: 10488
731 Confirmation Number: TC793915
Date of Original Email: 12/12/2003

Subject: audit

1) FYI in future filings in general a Bluetooth DSS and a LAN DSS can go on the same application/grant-certifcate

2) Please revise grant note to use standard Suppl C body-worn text and SAR number formats, as described in May03 and Oct03 TCB training notes and elsewhere. Contact Tim Harrington at FCC Lab if you need those notes.

3) It is very inconvenient in application review and verification for Internal and External Photo exhibits to be cross-referenced to test reports. I strongly request and urge you to submit separate internal and external photo exhibits, in addition to or in place of having these photos in test reports.

4) Please submit at least any sections of complete operating instructions which instruct/describe/show usage positions (body-worn, handheld, etc)

5) Please submit at least any sections of complete operating instructions which describe how LAN does not operate when BT and CDMA are on.

6) Besides the summary results on 7 of 57 of SAR report, it is useful to include tabular list corresponding to all test positions, freqs, plots - please submit here and in future filings.

7) fyi SAR pg 4 of 57 CFR citation more approriately should be: US Federal Government, Code of Federal Regulations, Title 47 Telecommunication, Chapter I Federal Communications Commission, part 2, section 1093

8) SAR pg 9 of 57 states "Flat Phantom box 2mm side(200mm cube)." Suppl C states:
"Body-worn operating configurations should be tested using a flat phantom. The length and width of the phantom should be at least twice the corresponding dimensions of the test device, including its antenna." TCB applications are required to apply Suppl C. Please comment and/or revise and/or re-test.

9) LAN test report folder contains "Compact Flash Dipole (CF Dipole)" spec sheet - is that used in this handheld device? If no, why is it submitted?

The items indicated above must be submitted before processing can continue on the above referenced application. Failure to provide the requested information within 30 days of the original e-mail date may result in application dismissal pursuant to Section 2.917(c).

DO NOT Reply to this email by using the Reply button. In order for your response to be processed expeditiously, you must upload your response via the Internet at www.fcc.gov, E-Filing, OET TCB Electronic Filing, TCB Login. If the response is submitted through Add Attachments, a message which informs the processing staff that a new exhibit has been submitted must also be submitted via Submit Correspondence. Also, please note that partial responses increase processing time and should not be submitted.

Any questions about the content of this correspondence should be directed to the e-mail address listed below the name of the sender.