



Request for Additional Information for EMC Certification

Company:	Lenovo Mobile	Composite Device:	Yes: <input checked="" type="checkbox"/>	No: <input type="checkbox"/>
MT#:	29361	FCC Direct Filing:	Yes: <input type="checkbox"/>	No: <input checked="" type="checkbox"/>
		Permit But Ask:	Yes: <input type="checkbox"/>	No: <input checked="" type="checkbox"/>
FCC ID:	YCNA332	FCC Rule Part:	22/24, 15C and 15B	
UPN:	N/A	RSS Standard:	N/A	
FRN:	0019761469	Class II PC/Reassessment:	Yes: <input type="checkbox"/>	No: <input checked="" type="checkbox"/>

Dear Cai Cai,

Thank you for your application. In order for us to process your approval, the following must be addressed. Please provide a response in a timely manner to avoid delays or dismissals.

Technical Review:

1. There are several FCC FHSS requirements that are not yet declared as being compliant in the application referenced above. These requirements are automatically deemed compliant if the device meets the Bluetooth Specification. The device is called a Bluetooth device; however there is no clear statement that the device complies with the Bluetooth CORE specification. Please either provide a declaration with the Bluetooth CORE Specification or provide individual declarations of compliance with the following items needed for FCC 15.247 compliance:
 - Is the hopping sequence pseudorandom, based on the technical description?
 - Is each channel used equally on average, based on the technical description?
 - Does the associated system receiver have a compliant input bandwidth, based on the measured 20 dB emission bandwidth?
 - Does the associated system receiver have the ability to hop in synchronization with the transmitter, based on the technical description?
 - Does the design of the frequency hopping system allow it to comply with all pertinent requirements when presented with a lengthy data stream?
 - Does the frequency hopping system comply with the non-coordination requirement?

Please see the declaration as attached.

2. The Operational Description and Block Diagram exhibit contains no information for the Bluetooth circuitry. Please provide an Operational Description and a Block Diagram for the Bluetooth portion of this device.

The Operational Description and Block Diagram have been updated.

3. The ERP/EIRP measured values (0.115 W and 0.061 W) seem very low compared to the measured conducted powers (32dBm and 29dBm). Please provide the antenna specifications and justify the 12 dB and more reduction from the conducted power to the ERP/EIRP values. Additional ERP/EIRP and/or conducted power measurements may be necessary if the difference can not be justified.

Same was re-checked and test ERP/EIRP and Radiated emission, ERP (850MHz) has 3dB difference, results of EIRP and radiated emissions are almost same as before. So we only updated the reports for ERP/EIRP part. Updated RF test reports and 731 form are enclosed.

4. The SAR testing seems to have been performed with the Handset transmitting simultaneously with the Bluetooth transmitter. You have stated in item #8 on page 18 of 102 that the Bluetooth SAR testing is not required, but the measurement was performed anyway and tested while transmitting simultaneously with the Handset. Please follow the procedure for documenting the testing required as required in FCC KDB #447498 section 3 and KDB 648474 D01 which includes a measurement of antenna-to-antenna separation to determine if SAR of the Bluetooth transmitter is required for this device. Please provide an exhibit that shows the antenna-to-antenna separation distance. In the future you should only perform the tests required by FCC policy/procedures and not perform tests with transmitters operating simultaneously unless directed to by FCC.



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We checked the antenna distance and look over the Maximum SAR value, we decide to delete the test results of BT from test report. See attached.

5. The test setup photos show the EUT resting flat on the test table, but do not show any method of placing the handset into different orientations. Please explain how the handset was placed into the 3 orthogonal orientations.

SAR report updated on page 61.

6. The SAR plots for GPRS 2-slot modes show a Duty Cycle of 1:4, but for this mode should be 1:4.15. Please correct the plots and report or re-measure using the correct Duty Factor.

It is updated.

7. FCC KDB 450824, page 3, there are additional steps that should be performed when the SAR measurement frequency is >50MHz from the SAR probe calibration frequency. SAR probe S/N: 3088 has a calibration for Head and Body fluids at 900MHz, which is greater than +/-50MHz from the 824.2 MHz bottom channel. Please follow the guideline of this FCC KDB for the additional Measurement Uncertainty considerations.

We added Annex F to the SAR Report. See attached.

If you have any questions or concerns, please contact us.

Thank you!

Jennifer Warnell
TCB Administrator
MET Laboratories, Inc.
tcbinfo@metlabs.com
www.metlabs.com

Admin Review By: Jenn Warnell

Technical Review By: Chris Harvey

Please note that partial responses increase processing time and should not be submitted. The items indicated above must be provided before processing can continue on the above referenced application. Failure to provide the requested information in a timely manner may result in application dismissal.



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Dear Cai Cai,

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Technical Review:

1. The ERP/EIRP measured values (0.115 W and 0.061 W) seem very low compared to the measured conducted powers (32dBm and 29dBm). Please provide the antenna specifications and justify the 12 dB and more reduction from the conducted power to the ERP/EIRP values. Additional ERP/EIRP and/or conducted power measurements may be necessary if the difference can not be justified.

Same was re-checked and test ERP/EIRP and Radiated emission, ERP (850MHz) has 3dB difference, results of EIRP and radiated emissions are almost same as before. So we only updated the reports for ERP/EIRP part. Updated RF test reports and 731 form are enclosed.

Additional RT - There was no antenna information provided and the 12dB difference between the conducted and radiated measurements seems excessive. Possibly the orientation issue in the question below can explain the difference.

2. The test setup photos show the EUT resting flat on the test table, but do not show any method of placing the handset into different orientations. Please explain how the handset was placed into the 3 orthogonal orientations.

SAR report updated on page 61.

Additional RT - This Question was requesting clarification on how in the RF testing (not SAR) the handset is oriented in different positions to get maximum ERP/EIRP measurements.

If you have any questions or concerns, please contact us.

Thank you!

Jennifer Warnell
TCB Administrator
MET Laboratories, Inc.
tcbinfo@metlabs.com
www.metlabs.com

Admin Review By: Jenn Warnell

Technical Review By: Chris Harvey

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Thank you for your application. In order for us to process your approval, the following must be addressed. Please provide a response in a timely manner to avoid delays or dismissals.

Technical Review:

1. The Antenna Specification exhibit, even though it is in Chinese, does not address the antenna gain of the antenna and thus does not assist in explaining the great difference between the Conducted and Radiated power measurements. The concerns have not been addressed.

Please find the below email which give the antenna gain by our client. We re-test ERP/EIPR and RSE with the SAR sample, the ERP/EIPR value is bigger than before. Our engineer said maybe the previous antenna is not well contact. Please see the updated report as attached. Also the 731 form is updated, FYI.

4.4.1. Minimum Gain Values in Azimuth plane:

Band	Description	TX	RX
GSM850	Peak	-1.0dBi**	-1.0dBi**
	Average	-2.5dBi**	-2.5dBi**
PCS	Peak	-1.5dBi**	-1.5dBi**
	Average	-3.0dBi**	-3.0dBi**

If you have any questions or concerns, please contact us.

Thank you!

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Admin Review By: Jenn Warnell

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