Request for Additional Information for EMC Certification

Company:	ZTE Corporation	**Composite Device:**	**Yes:** ☐	**No:** ☒
MT#:	27236	**FCC Direct Filing:**	**Yes:** ☐	**No:** ☒
		Permit But Ask:	**Yes:** ☐	**No:** ☒
FCC ID:	Q78-ZTEMF110	**FCC Rule Part:**	22H/24E; 15B	
UPN:	N/A	**RSS Standard:**	N/A	
FRN:	0009043175	**Class II PC/Reassessment:**	**Yes:** ☐	**No:** ☒

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. A block diagram with the frequencies of all oscillators labeled, along with the tuning frequency ranges could not be found in the supporting documentation. This is required by 2.1033.b.5[1]. Please indicate where this diagram may be found.

   Revised. Detailed Block Diagram.pdf

2. The User Manual states the following on page 30 of 32: *"This device complies with part 15 of the FCC Rules. Operation is subjected to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation."* As a licensed device, the following statement should be given in the user manual instead, per 15.19 of the FCC Rules: "This device complies with part 15 of the FCC rules. Operation is subject to the condition that this device does not cause harmful interference." Please correct this statement or justify why this device is not considered a licensed device.

   Revised. ZTE MF110 USB Modem User Manual-090216.pdf

3. Please show the following in a single document that can be submitted to the FCC for their Permit But Ask requirement for Release 6 HSPA devices:

   a) Output power measurement results are according to the FCC 3G SAR measurement procedures (KDB 941225)

   b) Power measurement results are according to device specifications and 3GPP requirements, including but not limited to the sub-test configurations and Maximum Power Reduction (MPR) requirements.

   In these two descriptions, please show how the power measurement results are according to 3GPP MPR requirements and how they are implemented in the device being tested; for example, a power reduction on the order of 0, 2, 1, 2, 0 dB are expected for the HSPA sub-test configurations 1-5, respectively, when implemented according to 3GPP recommendations. Otherwise, detailed explanations must be included in the final SAR report to substantiate the test results.

   This description should show that the operating parameters such as the different β and Δ values are configured properly and the power measurement procedures used have included the power setback considerations specified in 3GPP TS 34.121. It must also

[1] 2.1033.b.5 says: (5) A block diagram showing the frequency of all oscillators in the device. The signal path and frequency shall be indicated at each block. The tuning range(s) and intermediate frequency(ies) shall be indicated at each block.

show that the HSPA channels have remained active with the required E-TFCI and AG index values maintained during the durations of the measurements.

If the power measurements indicate that SAR measurements are necessary for HSPA, the detailed procedures, with respect to 3GPP TS 34.121 for HSPA, must show that the required HSPA test parameters, including stable TFCI and output power conditions, have been used for the HSPA SAR measurements; other related HSPA issues identified in the corresponding KDB must also be addressed.

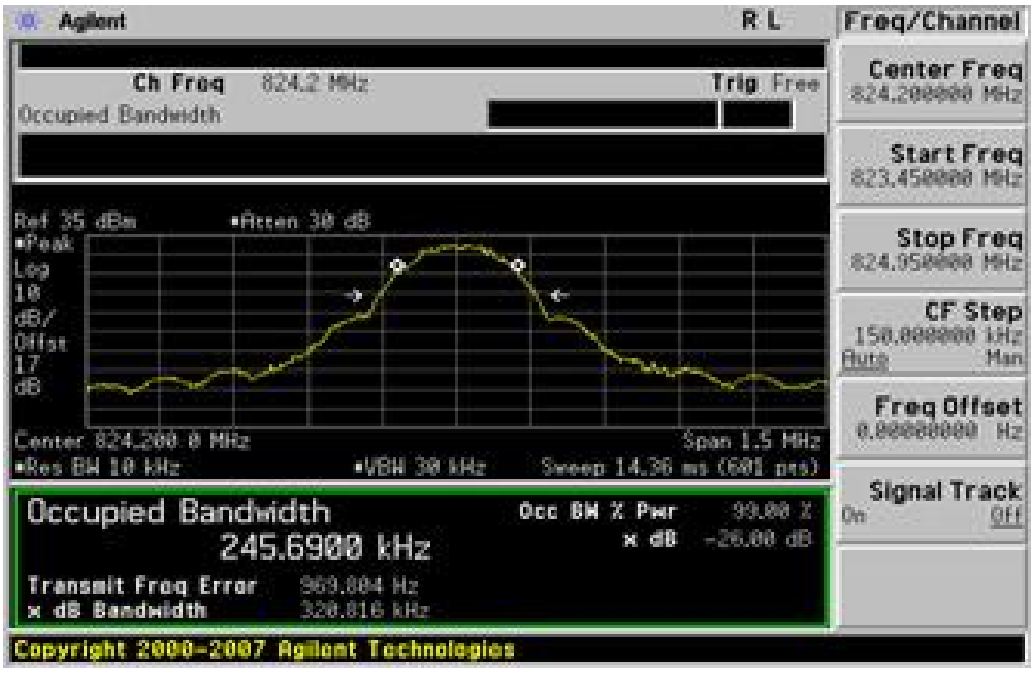
See PBA.pdf

4. In Internal Photos.pdf, photograph Internal of EUT-3 does not clearly show the parts and part locations. The parts appear to be blurry and difficult to distinguish part names. Please indicate where a photograph that clearly shows the parts and part locations for this view might be found.

   Revised internal EUT-3 Photo. Internal Photos(Ver.1).pdf

5. FYI, in ER-2009-20013_Part 22H+24E Report.pdf, the Occupied Bandwidth tables list the 99% Bandwidth. The -26 dBc bandwidth is not the 99% bandwidth; in fact, it is the 99.5% bandwidth. Since the -26 dBc values are given on the plots, these bandwidth values will be used for the emissions designator.

   Test equipment can test 99% bandwidth and -26dB Values. Please see the following figure.



6. In figure 8.4 of ER-2009-20013_Part 22H+24E Report.pdf, there appears to be a point at 824 MHz that is above the -13 dBm limit. The EUT is to transmit at the -13 dBm limit or lower at the band edge. Please confirm that the EUT is exceeding the limit at the band edge and make appropriate corrections.

   Re-tested GSM850 and PCS1900 of the bandedge. Please see figure 8.4, 8.5, 8.9, and 8.10 in ER-2009-20013 _Part 22H+24E Report (Ver.1).pdf

7. In figure 8.5 of ER-2009-20013_Part 22H+24E Report.pdf, there appears to be a point at 849 MHz that is above the -13 dBm limit. The EUT is to transmit at the -13 dBm limit or

lower at the band edge. Please confirm that the EUT is exceeding the limit at the band edge and make appropriate corrections.

Re-tested GSM850 and PCS1900 of the bandedge. Please see figure 8.4, 8.5, 8.9, and 8.10 in ER-2009-20013 _Part 22H+24E Report (Ver.1).pdf

8. In figure 8.10 of ER-2009-20013_Part 22H+24E Report.pdf, the marker does not appear to be at the highest point for frequencies greater than 849 MHz. The EUT is to transmit at the -13 dBm limit or lower at the band edge. Please confirm that the EUT is below the limit at the highest point above the band edge, and provide evidence of this fact in the test report.

   Re-tested GSM850 and PCS1900 of the bandedge. Please see figure 8.4, 8.5, 8.9, and 8.10 in ER-2009-20013 _Part 22H+24E Report (Ver.1).pdf

9. In ER-2009-20013_Part 22H+24E Report.pdf, the modulating characteristics test of 2.1047 is not addressed. Please declare the applicability of this test and provide test results as appropriate.

   We don't think digital modulation needs 2.1047 modulation characteristics measurements, please check this again.

10. In figure A-4a of SAR-GSM11598970S02_V1_0.pdf, it appears that the clamp was attached directly to the USB modem for position 1. KDB 447498 states that the EUT should be embedded in several cm of Styrofoam in order to prevent field perturbation. Please justify why testing was preformed this way, or correct these results in the test report.

    a) The Styrofoam used to avoid perturbation to reduce the measurement uncertainty, we can make sure that the EUT cannot move during the SAR test.

    b) The device holder clamps is made of low loss and low permittivity materials, which influences the field distribution of the EUT should not be account for

    c) The antenna in the end of the EUT and the most part of the EUT is free space, which does not influence the field distribution of the EUT.

11. Please confirm that SAR testing was performed according to KDB 941225. FYI, the photographs of the settings on the Base Station Simulator during each mode of testing should be included in each FCC SAR report. The FCC has very precise requirements on the settings of the EUT during SAR testing, and these settings need to be verified during the TCB review.

    a) SAR testing has been preformed according to KDB 941225.

For 2G: 1. GSM Voice mode is not applied for this data card, we have evaluated in the GPRS one timeslot with the maximum output power,

2. In EGPRS mode we have used the GMSK modulation with the MCS 1 to evaluated. The multi-slot configuration mode has also been evaluated for GPRS and EGPRS.

For 3G: 1. In WCDMA mode, SAR is measured using the 12.2 kbps RMC with TPC bits configured to all 1.

2. in HSDPA mode, SAR is measured using an FRC with H-Set 1 in Sub-test 1 and a 12.2 kbps RMC configuration in test loop mode 1.

b) The photographs of the setting on the Base Station Simulator have been included in the SAR-GSM11598970S02 report (Page 12)

c. We also updated the plot for this project just as MF100.

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

Thank you!

Jenn Warnell
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www.metlabs.com

Admin Review By: Jenn Warnell
Technical Review By: Jeff Hazen

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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FRN:	0009043175	**Class II PC/Reassessment:**	**Yes:** ☐	**No:** ☒

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. In ER-2009-20013_Part 22H+24E Report.pdf, the modulating characteristics test of 2.1047 is not addressed. Please declare the applicability of this test and provide test results as appropriate.

   You are correct in saying that the modulating characteristics do not apply, but this needs to be stated in the test report. This is because all relevant parts of the FCC Rule Part 2 need to be addressed in the test report. Please state in the test report why this test was not performed.

   We have updated the report on page 12, we add the explanation of §2.1047 in the summary result.

2. In figure A-4a of SAR-GSM11598970S02_V1_0.pdf, it appears that the clamp was attached directly to the USB modem for position 1. KDB 447498 states that the EUT should be embedded in several cm of Styrofoam in order to prevent field perturbation. Please justify why testing was preformed this way, or correct these results in the test report.

   FCC KDB 447498 states the following:

   > In addition, USB dongles will need to be embedded in several cm of Styrofoam to reduce measurement uncertainty field by avoiding perturbation due to device holder clamps used to position the dongle for SAR testing.

   Figure A-4a on page 65 of 109 of SAR-GSM11598970S02_V1_0.pdf shows the USB dongle as being held by a clamp and not embedded in several cm of Styrofoam. This non-compliance will probably be picked up by the FCC, and therefore it should be corrected. Please provide data and photographs for the position P1 shown in Figure A-4a with the USB dongle embedded in Styrofoam.

   We re-tested the P1 for the Quad bands, and updated the photos on page 12 to 13.

3. FYI, please provide SAR operation configuration photographs that can be clearly read to observe the configuration settings. On pages 12 and 13 of SAR-GSM11598970S02_V1_2.pdf, most of the text on the screen of the CMU200 does not appear to be clear enough to read.

   We re-tested the P1 for the Quad bands, and updated the photos on page 12 to 13.

Request for Additional Information for EMC Certification

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

Thank you!

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

Admin Review By: Jenn Warnell
Technical Review By: Jeff Hazen

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