FCC ID: SO4ZB570-PCS-CEL
IC ID: 5544A-ZB570PCSCEL
CT Project: TCB-p1390008

From: Daniel Park

Date: December 2, 2013

1. Please provide photos with RF shields off in “internal-external photo” exhibit. Thus, all the circuitries should be revealed.

Wireless Extenders – Additional photos provided

2. In “Internal_External Photos” exhibit, it shows the 5 pin connector port. Please provide further details.

Wireless Extenders – This is for test and development purposes only. It is covered in final manufacturing. The end user does not have access to this connector.

3. At the page 1 of “Schematic” Exhibit, it shows “SOHO INTERFACE” as “EDGE Connector”. Please provide more information such as functionality or purpose of the feature.

Wireless Extenders – This is for test and development purposes only. It is covered in final manufacturing. The end user does not have access to this connector.

4. Please provide the following items in “Attestation exhibit”. BTW, “Attestation exhibit” was not found in application.
   - Licensee consent for provider-specific booster has been obtained (consent is made available upon FCC/TCB request)
   - NPS and other compliance/safeguard features have been implemented
   - NPS and other compliance/safeguard features are defaulted to be “On” (in operation)
   - NPS and other compliance/safeguard features cannot be field reconfigured, disabled or removed
   - Consumer booster is not user programmable, does not need fine tuning or adjustment, does not require professional installation
   - Future software upgrade will not cause non-compliance

Wireless Extenders – Provided

5. The “theory of operation” didn’t include some of requirements according to KDB 935210 D02 Certification v01r01. Please provide the missing one from the list as below.
   - Provide a list of all operation bands
   - If device is capable of operating outside the current band plan through software configuration, describe how software is managed and controlled
   - Describe the self-monitoring mechanism (HW and SW)
   - Describe the anti-oscillation mechanism
   - Describe the automatic power-down and shut-down mechanism when the booster is not in need
   - Detection scheme for own network
   - Detection scheme for other, like and unlike, networks
   - Power down triggering criteria and adjustable range
   - Shut down triggering criteria and resume/recovery algorithm
   - Describe how “operate only for the duration of a call” is achieved
   - Describe any interference avoidance scheme

Wireless Extenders – Provided

6. Please include the following “Warning Message” in the User Manual:

   1) <u>Warning message for use of unauthorized antennas, cables, and/or coupling devices</u>

Wireless Extenders – User’s Manuals have been revised

7. No Test Setup photo exhibit was provided. Please include the test setup photos.

CT – Provided

8. At the page 5 of the FCC RF test report, please state the full name of KDB 935210 such as “935210 D03 Wideband Consumer Signal Booster Measurement Guidance DR04 41516”.

CT - Added

9. At the page 15 of the FCC RF Test Report for “Out-of-Band Emissions”, the test result wasn’t included LTE portion. Please provide proper justification why the LTE testing wasn’t conducted for the testing.

CT – LTE is an optional test modulation and not a requirement.

10. At the page 16 of the FCC RF test report, the measured power level stated as -38.09 on “GSM uplink Test results” table for 824-849 bands, however, the test result graph is shown as -38.50 dBm. Please verify and correct as necessary.

CT - Typographical error corrected

11. At the page 17 of the FCC RF test report for the 1930-1990 Lower Band Edge test of WDCMA downlink Test Results Table, it states as -51.4dBm, but the test plot is shown as -51.74dBm on the test plot. Please correct the data.

CT - Typographical error corrected

12. For the “Conducted Spurious Emission” at the page 30 of the FCC RF Test report, the emission result for 9KHz to 30 MHz” wasn’t included. Please provide proper justification why “9 KHz to 30 MHz” spurious emission was not presented.

CT – There is no requirement to show emissions that do not exist. The test guidance was followed and sufficient data was provided to show compliance.

13. At the page 43 of the FCC RF test report, please include the noise power measurement data on the table to show FCC Limit (-70 dBm/Mhz) at the inactive state.

CT – The original plots were taken with too much of an offset and internal attenuation to have enough dynamic range to see that the EUT does in fact transition to a level of less than -70 dBm/MHz. The plots have been retaken with enough dynamic range to show compliance to the rule.

FOR IC side:

14. In Section 5.3 of RSS-131, the user manual shall contain the following information on the enhancer as below. Please provide the following information in the User Manual.
    - The nominal pass-band gain (dB);
    - The nominal bandwidth;
    - The rated mean output power;
    - The input and output impedances, and;
    - The following notice: "The Manufacturer's rated output power of this equipment is for single carrier operation. For situations when multiple carrier signals are present, the rating would have to be reduced by 3.5 dB, especially where the output signal is re-radiated and can cause interference to adjacent band users. This power reduction is to be by means of input power or gain reduction and not by an attenuator at the output of the device."

Wireless Extenders – User's Manuals have been revised

15. At the page 14 of the IC RF Test report for "Output Power", it mentioned "intermodulation maximum allowable level" in "Test Procedure". Please state the maximum intermodulation allowable level and show how the test result may be complied with IC Rule. In addition, please include sample calculation for P-mean and Gain result as well.

CT - Report updated to add max level, evidence for compliance to the rule, and gain calculation (report is now Rev2)

16. At the page 38 of the IC RF Test report for "Amplifier Gain and Bandwidth" testing, the given information doesn't give the clear picture whether the test result complied with the section 6.1 in RSS-131. Please show clear explanation and also provide pass-band gain, nominal gain, the nominal bandwidth information by manufacturer, and so forth for supporting the result.

CT - For all plots the peak power was found and from there the -20dB BW points where plotted. Compliance Testing LLC utilized document TPTx3003-Tx Occupied Bandwidth.pdf and RSS-Gen_Issue 3 as a reference.

Response by: John Erhard, Mike Graffeo, Wireless Extenders, Inc.

Submitted by: Amanda Reed

Date: 1/8/2014