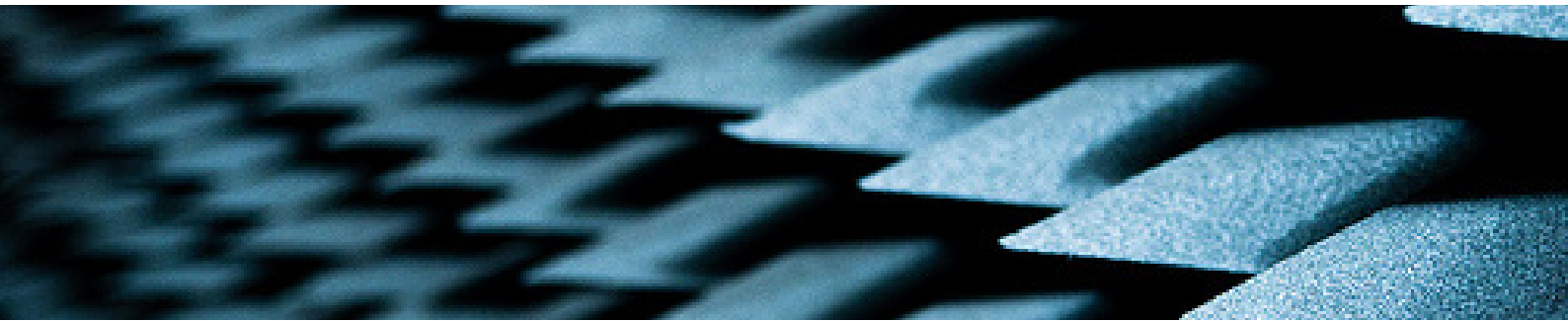


CSA.32L

LTE Device Radiated Spurious Emissions Testing for PTCRB



Service name:

CSA.32L LTE Device Radiated Spurious Emissions Testing for PTCRB

Deliverables

RSE Compliance Report

Duration:

1 Week

Items

- A. Test in anechoic chamber – Active-mode RSE test on all device-supported cellular band
- B. Test in anechoic chamber – Idle-mode RSE test
- C. If fail consult with Noise Control Division



What is the problem or concern we are addressing?

Post-integration verification of active-mode Radiated Spurious Emissions compliance per PTCRB-required limits. PTCRB requires all module integrations to be compliant to Radiated Spurious Emissions Limits per 3GPP standards, on all bands supported by the cellular modem inside the device.

PTCRB has specific tests and metrics for radiated performance on transmit (TRP), receive (TIS) and co-existence interference (Radiated Spurious Emissions, RSE). These tests enforce a minimum level of performance on the wireless product. This is done to ensure end customer use-experience expectations are met, thus protecting the carrier's network brand.

Testing these performance parameters early in the design cycle can reduce risk of certification failure and costly design and tooling changes late in the design cycle. The best way to test these parameters is through completing the real testing in a real chamber.

Taoglas can perform these pre-certification tests with any GSM, GPRS, UMTS, or LTE device. As UMTS and LTE devices may support a large number of bands, the device will be tested according to PTCRB rules allowing a reduced test set. All bands will be tested, but only one technology will be tested per band, according to the following priority: (1) LTE; (2) UMTS; (3) GSM/GPRS.

The Processes

Part 1

- Taoglas will setup your device in our chamber and power the device as per your instructions. If the device is intended to be used on a person, a phantom will be used.
- A base station emulator will be used to establish a call or test-mode connection with the device.
- The automated test system will perform the active-mode RSE tests at the middle channels of all device-supported cellular bands. Only harmonics will be measured.

- The automated test system will disconnect the call or test-mode connection and perform idle-mode RSE measurements (30MHz - 1GHz).
- Taoglas will complete the test report detailing the setup and results.

What does Taoglas need?

In all cases Taoglas will require the following:

- Two (2) complete devices, with all the bits and pieces. The devices need to be functional enough to enable the cellular modem and enable AT command access to the modem. The devices should be built-up as much as possible, the closer to the final assembly the more accurate the results. Batteries, displays, and metallic sub-assemblies will impact the test results and should be included.
- One complete set of any support devices such as spare battery packs, battery charger, interface cables, etc.
- Instructions on how to connect the device, power on the device, and connect to the AT command interface. If the battery will need to be charged or replaced, include instructions on how to do so. Taoglas will need access to the SIM card, or for an embedded SIM, a 3GPP test profile configured on the SIM.

Part 2

Taoglas engineering will determine if the measured emissions levels are compliant to PTCRB requirements. If RSE levels are out of compliance, Taoglas will perform simple debugging on-site, such as checking the test setup, moving the antenna (for external antennas), and removing unnecessary external cables. If the emissions levels are still out of compliance, Taoglas sales and Noise Control Division engineering can provide guidance or can engage in a design certification readiness review, an ISA.20.

Deliverables

Taoglas will compile a report on the RSE measurements, including:

- Device test setup picture.
- Spurious emissions plots from all measurements performed.

