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July 20, 2016

To: American Certification Body, Inc.
6731 Whittier Avenue Suite C110
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Permissive Change Request

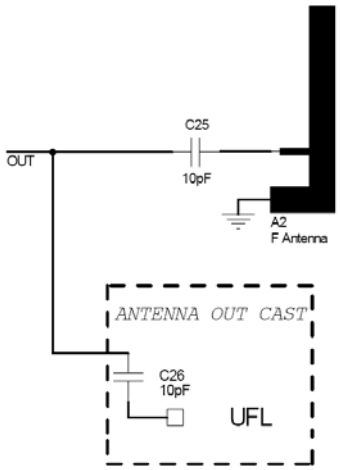
CEL is seeking a Class II Permissive change to their ZICM357SP0-1 module (FCC ID: W7Z-ZICM357SP0, IC: 8254A-ZICM357SP0) to allow the use of external antennas.

To comply with FCC rules of unique coupling, antenna E-2820-CA has its own RF cable with a U.FL connector on the other end. A U.FL receptacle must be placed on a host printed circuit board and use a micro-strip trace to connect to the module's RF energy.

The LSR 001-0010 antenna has a Reverse Polarity SMA connector as its connector to comply with unique coupling requirement. An interface cable length of three inches was used to interface to the RP-SMA during testing.

To accommodate the implementation at the module level, only the correct placement and orientation of a capacitor is required. This placement would be implemented during factory assembly of the module.

A portion of the schematic and photo of the module is shown below which details the implementation. The only change between the existing design and the permissive change request would be the placement of capacitor C26 instead of capacitor C25 during manufacturing.



Given that the only change to the module from the existing module is the orientation of a capacitor, the transmitter is identical and the frequency of operation is exactly the same as the existing certified module. RF testing at a certified lab has been completed and has verified that the RF performance has not degraded when connected to the external antennas.

FCC/IC Compliance testing of the existing design configured for use with the external antennas has been completed by DLS Electronic Systems, Inc. and been found to be specification compliant and consistent with the certified module using the trace antenna provided channel 26 had the power reduced to power setting "-7" in order to be compliant with band-edge requirements.

The power setting restrictions will be implemented in the firmware for the specific part number of the module that corresponds to the one using the external antenna. This will be done at the factory by loading the correct firmware image based on the module Part Number ZICM357SP0-1C. Therefore, the maximum allowed power is factory set so the end user has no means to increase the output power beyond the acceptable limits. The power setting is governed by commands sent through the serial port by the end user. The internal firmware will compare the Power setting received through the UART to the acceptable level and if greater will overwrite the user specified level with a lower value that is acceptable. For any values below the limits, the firmware will allow that user setting to be implemented. Through this method, it is not possible for the end user set power settings greater than the certified power settings.

CEL believes the change qualifies for certification because there were no changes made to any of the RF circuitry or PCB. The only change is the use of an external Whip antenna. Since the Whip antenna has RF characteristics different than the PCB trace antenna, testing was done to determine the power shaping required to maintain spec. compliance as stated above.