

Request for Modular Approval

PART 15 UNLICENSED MODULAR TRANSMITTER APPROVALS

This letter is intended to be an overview of the module subjected to Modular Transmitter Approval.

Alutron Modules Inc. has developed a standalone low power RF transceiver intended for central vacuum applications. It is called CM91 and the main application will be a remote ON/OFF function.

The CM91 is a complete RF transceiver and it contains its own microcontroller, reference oscillator VCO and antenna.

The only connectors to the modules are power supply and modulation/data inputs.

The output power is limited to below 1mW of RF power.

The requirements for Modular Transmitter Approval are identified below and submitted in the application for equipment authorization.

1. The CM91 modular transmitter has its own RF shielding in a form of 0.7x2.0 inches of aluminum or copper foil wrapped around the RF section only. This is intended to ensure that the module does not have to rely upon the shielding provided by the device into which it is installed in order for all modular transmitter emissions to comply with Part 15 limits. It is also intended to prevent coupling between the RF circuitry of the module and any wires or circuits in the device into which the module is installed. Such coupling may result in non-compliant operation.
2. The modular transmitter has modulation/data inputs to ensure that the module will comply with Part 15 requirements under conditions of excessive data rates or over-modulation.
3. The modular transmitter has its own power supply regulation in the range of 1.8V to 3.6VDC. This is intended to ensure that the module will comply with Part 15 requirements regardless of the design of the power supplying circuitry in the device into which the module is installed. This range is ideal for a wall adaptor or a battery as sources of power, and is intended to offer flexibility in the power supply options that we might have.
4. The modular transmitter complies with the antenna requirements of Section

15.203 and 15.204(c). The antenna is permanently attached as a 3.25 inch of 24AWG wire.

5. The modular transmitter is tested in a stand-alone configuration, i.e., the module will not be inside another device during testing. This is intended to demonstrate that the module is capable of complying with Part 15 emission limits regardless of the device into which it is eventually installed. Unless the transmitter module will be battery powered, it must comply with the AC line conducted requirements found in Section 15.207. AC or DC power lines and data input/output lines connected to the module must not contain ferrites unless they will be marketed with the module (see Section 15.27(a)). The length of these lines shall be length typical of actual use or, if that length is unknown, at least 10 centimeters to insure that there is no coupling between the case of the module and supporting equipment. Any accessories, peripherals, or support equipment connected to the module during testing will be unmodified or commercially available.

6. The modular transmitter will be labeled with its own FCC ID number, and, if the FCC ID is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label will be using wording such as the following: "Contains Transmitter Module FCC ID: S3PCM91" or "Contains FCC ID: S3PCM91." Any similar wording that expresses the same meaning may be used. The Grantee may either provide such a label, an example of which is included in the application for equipment authorization, or, must provide adequate instructions along with the module which explain this requirement. In the latter case, a copy of these instructions must be included in the application for equipment authorization.

7. The modular transmitter complies with any specific rule or operating requirements applicable to the transmitter and the manufacturer will provide adequate instructions along with the module to explain any such requirements. A copy of these instructions will be included in the application for equipment authorization. For example, there are very strict operational and timing requirements that must be met before a transmitter is authorized for operation under Section 15.231. For instance, data transmission is prohibited, except for operation under Section 15.231(e), in which case there are separate field strength level and timing requirements. Compliance with these requirements is assured.

8. The modular transmitter complies with any applicable RF exposure requirements. For example, FCC Rules in Sections 2.1091, 2.1093 and specific Sections of Part 15, including 15.319(i), 15.407(f), 15.253(f) and 15.255(g), require that Unlicensed PCS, UNII and millimeter wave devices perform routine environmental evaluation for RF

Exposure to demonstrate compliance. In addition, spread spectrum transmitters operating under Section 15.247 are required to address RF Exposure compliance in accordance with Section 15.247(b)(4). Modular transmitters approved under other Sections of Part 15, when necessary, may also need to address certain RF Exposure concerns, typically by providing specific installation and operating instructions for users, installers and other interested parties to ensure compliance.

Thanks,
Dan Paul M.Sc.
Engineering Manager
Alutron Modules & Power Excellence
420 Industrial Parkway South,
Aurora, Ontario, Canada L4G 3V7
B) 905 - 727-8788 ext 325
F) 905 - 727-8978
T) 877 - 807-7168

