CSM-200 OEM Integration Guide

The CSM-200 holds a Limited Modular Approval (LMA) under the FCC Rules.

A Class 2 Permissive Change (C2PC) must be performed for each new OEM host added to the CSM-200 FCC certification.

The FCC document KDB 996369 D03, dated October 25, 2022, governs the integration of this module into any new OEM host. KDB Sections 2.2-2.12 below describe the applicable requirements:

Section 2.2: Applicable FCC rules: Sections 15.225 and 15.247.

Section 2.3: Specific operational use conditions: OEM host applications are limited to those that ensure that the CSM-200 is installed and operated with a minimum separation distance of 20 cm between it and the human body. The OEM host's user manual must include the following statement:

> **FCC / ISED RF Exposure Statement**
>
> This equipment complies with the FCC and ISED RF radiation exposure limits set forth for an uncontrolled environment.
>
> This transmitter must be installed and operated with a **minimum separation distance of 20 cm** between the radiator and any part of your body. End users and installers must ensure that this distance is maintained during normal operation.
>
> This device must not be co-located or operated in conjunction with any other antenna or transmitter, except in accordance with FCC multi-transmitter product procedures.

Section 2.4: Limited module procedures: The following procedure must be followed to ensure that the CSM-200 module is in compliance when used in a new OEM host:

1. Radiated Emissions / Spurious (FCC 15.209 & 15.225, ISED RSS-GEN 8.9 & RSS 210). HF Transmitter using OEM host antenna. Test in all host orientations in the worst-case configuration. Typically 30 MHz–10 GHz, following rules section 15.33. Use the highest data rate modulation.
2. Radiated Emissions / Spurious (FCC 15.209 & 15.247(d), ISED RSS-GEN 6.13 & RSS-247 5.5). BLE Transmitter. Test in all host orientations, all three channels, and in the worst-case configuration. Typically 30 MHz–10 GHz, following rules section 15.33. Use the highest data rate modulation.
3. Band Edge & Out-of-Band Emissions; Check radiated edges, confirm compliance with FCC 15.247 and ISED RSS-247. Particular tests:
    a. FCC 15.247(b)(3), ISED RSS-247 5.4(d); Transmit Power; 2402 MHz@1.4 Mbps
    b. FCC 15.247(a)(2), ISED RSS-247 5.2(a): Bandwidth; 2402 MHz@1.4 Mbps
    c. FCC 15.247(d), ISED RSS-247 5.5; Band-edge; 2402 MHz@1.4 Mbps and 2480 MHz@1.4 Mbps

4. Output Power/ERP/EIRP (confirm limits of original filing not exceeded).
5. Multiple Transmitter Testing (2.947(f)). If the OEM host includes a transmitter that can transmit simultaneously with the CSM-200, co-location testing must be performed in accordance with FCC Section 2.947(f), ISED RSS-GEN 5.6.
6. Host Emissions (Digital Part 15B); Verify emissions meet Class B (consumer) or Class A (industrial).
7. RF Exposure (MPE); Required if host dimensions or antenna placement changed materially from original certification. This is a fixed host, so MPE must be evaluated at 20 cm.

Section 2.5: Trace antenna designs: N/A - the CSM-200 module does not include a trace antenna.

Section 2.6: RF Exposure considerations:

The following RF Exposure statement shall be provided to the OEM host product manufacturer. In addition, it must be provided by the OEM host product manufacturer to end users.

FCC / ISED RF Exposure Statement

This equipment complies with the FCC and ISED RF radiation exposure limits set forth for an uncontrolled environment.

This transmitter must be installed and operated with a **minimum separation distance of 20 cm** between the radiator and any part of your body. End users and installers must ensure that this distance is maintained during normal operation.

This device must not be co-located or operated in conjunction with any other antenna or transmitter, except in accordance with FCC multi-transmitter product procedures.

Section 2.7: Antennas: Antennas used by the CSM-200 are as follows:

1. 13.56 MHz (HF) antenna: This antenna is typically a coil antenna and is connected to the CSM-200 module via unique connector J3. The size and dimensions of the 13.56 MHz antenna, as well as its mounting conditions, may vary with host configuration. Once a new host is approved via C2PC, any change to the HF antenna itself will require a new C2PC be performed.
2. 2.4 GHz (BLE) antenna: The BLE antenna is Johanson Model 2450AT42E010BE monopole chip antenna. It is mounted to the PCB and self-contained. Therefore, there is no requirement that the OEM host implement a trace, or other, antenna.

Section 2.8: Label and compliance information:

A physical or e-label must be provided on the host device indicating the presence of the CSM-200 module. This label must use the following verbiage:

"Contains FCC ID: T8I-CONEKT6" and "Contains IC: 6504A-CONEKT6"

FCC KDB 784748 D02 should be followed in order to ensure compliance with e-labeling requirements.

Section 2.9: Information on test modes and additional testing requirements:

A Class 2 Permissive Change (C2PC) must be performed for each new OEM host added to the CSM-200 FCC certification. Farpointe shall load special test-mode firmware in the CSM-200 to facilitate the required testing for a new OEM host. OEMs should contact Farpointe at the phone number below to reach the Engineering Department for this firmware assistance.

Section 2.10: Additional testing, Part 15 Subpart B disclaimer

The CSM-200 module is only authorized for the specific rule parts listed on the FCC grant (15.225 and 15.247). The OEM host manufacturer (be it Farpointe Data or a different manufacturer) is responsible for compliance to any other FCC rules that apply to the host, particularly Part 15 Subpart B unintentional radiator compliance, with the module installed.

Hosts that receive power from the AC lines are also subject to AC powerline emissions testing.

The CSM-200 module may be approved for use either in another Farpointe Data host or in a host manufactured by a non-Farpointe Data OEM integrator. These situations have different compliance requirements, detailed below.

In all cases when the CSM-200 module is used in a new host (from Farpointe Data or from a different host manufacturer), Farpointe Data is responsible for approving the host environment. Only upon approval by Farpointe Data can the CSM-200 be shipped for utilization in the new host.

Approval Process for CSM-200 Module in another Farpointe Data Host:

For use in additional Farpointe hosts other than the host originally granted with the CSM-200, a Class 2 Permissive Change is required to be performed on the CSM-200 grant to register the additional host as a specific host also approved with the CSM-200. This C2PC will include the required limited testing of the CSM-200 in the new host (defined in Section 2.4 and this section.)

Approval Process for CSM-200 Module in a Non-Farpointe Data OEM Integrator Host:

Because Farpointe Data is responsible for ensuring that the new host product meets the necessary requirements to satisfy the limited module conditions, the OEM integrator must work closely with Farpointe Data during the compliance process. Farpointe will assist the integrator in achieving the certification.

There are two ways the CSM-200 may be certified for use in a new host product:

1. The OEM integrator can request a change in FCC ID for the CSM-200 module for use in the new host product. The new FCC ID will be owned by the OEM integrator. A Class 2 Permissive Change will then be done to this new ID, to facilitate the required limited testing of the CSM-200 in the new host (defined in Section 2.4 and this section.)

2. The OEM integrator can elect not to utilize the Limited Modular Approval of the CSM-200 and instead treat it simply as a component in the new host device. In this case, the OEM integrator will be required to perform full testing of the device to obtain an end product certification under a new FCC ID.

Section 2.11: EMI Considerations

The OEM host manufacturer is referred to 996369 D04 Module Integration Guide v01 for guidance on best practice techniques to prevent and mitigate EMI due to placement of module close to OEM host components.

Section 2.12: How to make changes

Only Grantees are permitted to make permissive changes. Please contact Farpointe Data, Inc. directly for additional information on CSM-200 module integration.

Note: The CSM-200 holds a Limited Modular Approval (LMA) under ISED Canada's Rules and is subject to their C2PC requirements as well.

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