

National Semiconductor Corp.  
FCC ID: ED9LMX9838

Request for transmitter modular approval

Transmitter Module Characteristics

Item	Requirements	EUT
1	Have its own RF shielding	<p>The device is a fully integrated antenna, crystal, RF Transceiver, which has both baseband and RF IC in a encapsulated package. The entire signal chain on receiver (LNA, mixer, filters, level shifters, phase detector, equalizer), transmitter (IQ modulator, DACs, filters, mixer and PA) and synthesizer (PLL, VCO and phase detector) are integrated within the device silicon. The RF silicon design was completed with RF shielding in the silicon design and plastic package. This complies with part 15 FCC requirements for transmission. Additionally, due to the design, it also is immune to external coupling from other circuits in a system. As a result, this device complies with #1 modular transmitter requirements with RF shielding.</p>
2	Have buffered modulation/data inputs (if such inputs are provided),	The module has a memory management unit inside of the IC. It buffers the data inputs from the UART terminal.
3	Have it own power supply regulation	Internal 2.8V regulator for radio and 1.8V regulator embedded in baseband.
4	Meet the antenna requirements of Section 15.203	Internal antenna
5	Be tested in a stand-alone configuration, i.e., the antenna, AC or DC power and data input/output lines must be connected to the module but, the module must not be inside another case during testing	The EUT was tested in a stand-alone configuration. The module was fixed in Development Kit during the test.
6	Be labeled with its own FCC ID number, and if the FCC ID is not visible when the module is installed inside another device,	The proposed FCC ID label format will be included in the filing. When the module is installed inside of an end-product, OEM customer will be

	then the outside of the device into which the module is installed must also display a label referring to the enclosed module.	instructed to how to apply the exterior label. Relevant OEM labelling requirements present in the product user manual.
7	The modular transmitter is manufactured so that the user cannot influence the operation of the transmitter that will operate outside of the scope of the regulations.	The device is a fully integrated antenna, crystal, RF Transceiver, which has both baseband and RF IC in a encapsulated package. The entire signal chain on receiver (LNA, mixer, filters, level shifters, phase detector, equalizer), transmitter (IQ modulator, DACs, filters, mixer and PA) and synthesizer (PLL, VCO and phase detector) are integrated within the device silicon.
8	Address compliance with the Commission's RF exposure limits in Sections 1.1310 and 2.1093. 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).	Highest RF conducted output power and EIRP are below the SAR low power threshold, SAR testing is not applicable