

FCC ID: N2S-SL4210-245-OEM

The product SL4210-245-O is approved for modular certification by FCC under the following ID:

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Modular approval allows installation in different end-use products by an OEM with limited or no additional testing or equipment authorization for the transmitter function provided by the SL4210-245-O:

- No additional transmitter compliance testing is required if the module is operated with an approved antenna.
- No additional transmitter compliance testing is required if the module is operated with the same general type of antenna listed as approved in the SL4210-245-O documentation.
 - Acceptable antennas must be of equal or less far field gain than the antenna previously authorized under the same FCC ID and must have similar in band and out of band characteristics.

The end-product must comply with all applicable FCC equipment authorizations, regulations, requirements and equipment functions not associated with the SL4210-245-O.

- Compliance must be demonstrated to regulations for other transmitter components within the host product, to requirements for unintentional radiators (Part 15B), and to additional authorization requirements for the non-transmitter functions.

The OEM applying the SL4210-245-O is required to include all FCC statements and warnings detailed in the following sections to the end-product labeling and in the finished product manual.

Product Label:

A statement must be included on the exterior of the final OEM product which communicates that the device identified by the FCC ID number is contained within the product. Include the statement:

- Contains FCC ID: N2S-SL4210-245-OEM

Additionally, the OEM must include the following statements on the exterior of the finished product:

- This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including any interference that may cause undesired operation.

Silvus radio model #: SL4210-235-O



Equipment Class: Digital Transmission System

Frequency band: S-band, 2200-2500 MHz

Maximum output power/antenna: 0.5W, 27dBm

Bandwidth: 1.25, 2.5 or 5MHz

Maximum 5MHz Bandwidth Output Power @ Frequency #1: (BACL test report)

Maximum 5MHz Bandwidth Output Power @ Frequency #2: (BACL test report)

Maximum 5MHz Bandwidth Output Power @ Frequency #3: (BACL test report)

Maximum output power for 5MHz @ operating frequency spectrum should not exceed 27dBm/0.5W/antenna

Recommended Antennas: 2.1dBi Omni Antennas (Silvus part# AOV2D230515G-TM) or equivalent for FCC 2.109 & 15.247 RF Exposure compliance

DC supply: the customer provides DC power from their own DC supply source, the supply should be fused for 5-amp circuit.

User Manual

Any user documentation that accompanies the end-product must include the following information in a location that is easily read:

- To comply with FCC's RF radiation exposure requirements, the antenna(s) used for this transmitter must be installed such that a minimum separation distance of 20 cm is maintained between the reader (antenna) & user's/nearby people's body at all times and must not be colocated or operating in conjunction with another antenna or transmitter.

The finished product manual must contain the following statement:

- **WARNING:** The Federal Communications Commission warns that changes or modifications of the radio module within this device not expressly approved by Silvus Technologies, Inc. could void the user's authority to operate the equipment.

In the case where an OEM seeks class B (residential) limits for the host product, the finished product manual must contain the following statement:

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help

In the case where an OEM seeks the lesser category of a Class A digital device for their finished product, the following statement must be included in the manual of the finished product:

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

OEM Accessories:

Accessories for the SL4200 OEM unit are detailed below:

Silvus PN	Description
SC42E-OEM-2	RF connector, right angle SMP (f) to TNC (f); 38 mm length
SC22-OEM-6	RF connector right angle SMP (f) to SMA (f); 21 mm length
SC22-OEM-6-75mm	75 mm length
SC22-OEM-6-150mm	150 mm length
SC22-OEM-6-155mm	155 mm length
SC22-OEM-6-240mm	240 mm length
SC22-OEM-6-750mm	750 mm length
SL42-OEM-CK	Mating connector kit (6 connectors, less RF, with extra crimp pins)
SL42-OEM-L200	Status LED (200 mm wire leads; Red/Green color)
SL42-OEM-S0	2-pos On/Off rotary switch (no wires, contacts only)

Interface Connections:

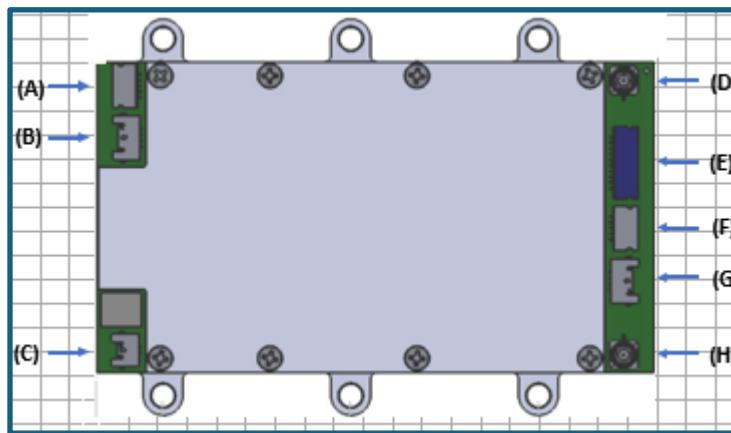


Fig Ref	PCB Nom	Description	Connector Type	Vendor	MPN Mating Connector
A	USB1	USB1	Header RA 5-POS (1mm)	JST Sales	SHLP-05V-S-B
B	USB PD	USB-PD (9V only)	Header RA 4-POS (1mm)	Molex	50376404013
C	VBAT	VBAT (9V - 32V)	Header RA 3-POS (1mm)	Molex	50376403013
D	1	RF-1	SMP Straight Jack (Male)	Amphenol	See accessories
E	RS232	Serial & Misc	Header RA 10-POS (1mm)	JST Sales	SHLP-10V-S-B
F	USBO	USBO	Header RA 5-POS (1mm)	JST Sales	SHLP-05V-S-B
G	ONOFF	Status LED/Power Switch	Header RA 4-POS (1mm)	Molex	50376404013
H	2	RF-2	SMP Straight Jack (Male)	Amphenol	See accessories

Connections pin-outs are detailed in [StreamCaster Lite SL4200OEM Integration](#).

DC Power Consumption & Heat Management requirements:

The SL4200 OEM radio has a maximum native RF output power of 500 mW/antenna. Power consumption varies from 4.8 Watts (not transmitting) to 17 Watts depending on the transmit duty cycle, transmit power, frequency band used and if USB devices are connected. Average power consumption will be proportional to the transmit duty cycle. Peak power is 25 Watts (2.8A @ 9VDC, 2.1A @ 12 VDC) @burst transmissions for 100usec long.

When using a USB-C PD power source, the source must be rated to supply 3.0A @ 9 VDC. The external power source must be sized to meet this peak requirement. When using VBAT input the voltage range is 9.0 to 32.0 VDC. However, the radio is most power efficient when operating at 15VDC.

The recommended heat management details in [StreamCaster Lite SL4200OEM Integration Manual](#).