

July 18, 2026

FCC / ISED

RE: FCC Class II Permissive Change Application — FCC ID: E5MDS-SD4
Project: #141757 | **IC:** 101-SD4
Original Grant Date: March 4, 2008
Subject: Revised C2PC Letter — Response to TCB Reviewer Comments

This C2PC covers a **hardware-only** modification. No firmware or software changes of any kind are associated with this application.

1. DESCRIPTION OF HARDWARE CHANGE

This C2PC introduces the **LF-6420ESD4B PCB assembly** — a hardware-banded Driver and Power Amplifier (PA) replacement board for the ESD4B RF module. Specifically:

- The LF-6420ESD4B uses **band-specific RF bandpass filter components** and a **PA matching network** tuned exclusively to the 406.1–450 MHz sub-band
- These components **physically prevent** the circuit from generating or amplifying signals outside the 406.1–450 MHz range
- PCB layout, mechanical form, fit, and function are **identical** to the previously authorized version — this is analogous to a component-level substitution
- No structural changes to PCB board layout, chassis, enclosure, or mechanical assembly

2. FIRMWARE / SOFTWARE STATUS

No firmware or software changes are made in this C2PC. No firmware files, revision numbers, or software updates are applicable. The original firmware version remains unchanged. The frequency limitation is implemented entirely through hardware means — no programming, firmware, or software control is involved.

FVIN (Firmware Version Identification Number): **N/A**

3. FREQUENCY RANGE — ORIGINAL GRANT VS. THIS C2PC

Original Grant (E5MDS-SD4, granted 03/04/2008):

- Full range: 406.1 – 512.0 MHz
- 12 equipment specification rows (Grant Note 20, FCC Rule Part 90)
- Emission designators: 11K0F1D, 11K0F2D, 11K0F3D, 23K4F1D, 23K4F2D, 23K4F3D
- Output power: 5.5W and 0.1W

This C2PC — LF-6420ESD4B variant only:

GRANT NOTE	FCC RULE PART	FREQUENCY RANGE	OUTPUT POWER	EMISSION DESIGNATOR
20	90	406.1 – 450 MHz	5.4 W	20K0F3D

The original FCC authorization (**E5MDS-SD4, 406.1–512.0 MHz**) remains valid and is **NOT modified, reduced, or revoked by this C2PC**. This application introduces an additional hardware sub-variant (LF-6420ESD4B) that operates within a subset of the originally authorized frequency range. The frequency reduction is implemented solely through hardware banding (RF filters and PA matching network).

4. ITEMS WITH NO CHANGE

The following items are **unchanged** from the original authorization and require no update:

ITEM	STATEMENT
External Enclosure / Housing	No changes. External form factor, dimensions, connectors, labeling, and all external surfaces are identical to the previously authorized device.
Antenna	No changes. External detachable antenna via TNC connector (Port P1). Antenna type, gain (16.5 dBi), connector, and installation requirements are identical to original authorization.
Label / Label Location	No changes. FCC ID label, model number, regulatory markings, and label placement are unchanged.
Operational Description	No changes. All operating modes, data rates, modulation types, and user-accessible features remain unchanged.
User Manual	No changes. No operational changes, new features, or usage instructions changed. Updated user manual not required.
Tune-up Procedure	Not applicable. No tune-up procedure exists for this product in the original authorization or this C2PC.
External Photos	No changes to external appearance. LF-6420ESD4B is an internal component change only. New external photos not required.

5. UPDATED ITEMS SUBMITTED

ITEM	DETAIL
Schematics	Updated schematics for LF-6420ESD4B submitted as separate exhibit (Drawing 00-6240A18). Overall circuit topology and signal path unchanged.
Bill of Materials (BOM)	Updated BOM submitted as separate confidential exhibit, reflecting updated RF filter and PA matching network components.
Block Diagram	Resubmitted as PDF: SD4 BD.pdf (Drawing 00-6240A18 Rev B, Variant 4B, 400–450 MHz). No changes to system architecture.
Internal Photos	Closeup photographs submitted: “LF-6420ESD4B Assembly” — (1) Top view with RF shields installed; (2) Top view with RF shields removed showing updated Driver/PA components; (3) Bottom view.

6. GRANT NOTE 20 COMPLIANCE

GE Vernova MDS LLC confirms that all electrical and mechanical devices employed for spurious radiation suppression, including any modifications made during certification testing of the LF-6420ESD4B assembly, are incorporated in each unit marketed.

7. ORIGINAL GRANT INFORMATION

FIELD	DETAIL
FCC ID	E5MDS-SD4
Date of Original Grant	March 4, 2008
Granted By	ACB, Inc. (TCB), Falls Church, VA
IC	101-SD4

8. TEST DOCUMENTATION

PARAMETER	DETAIL
Test Report	WIRA141757-FCC P90_RSS-119-R1 (FCC Part 90 / RSS-119 Issue 12)
Tested Frequencies	406.1 MHz, 425.0 MHz, 450.0 MHz
Modulation	3-Level FSK (4800F, 9600, 19200 bps)
Max Conducted Output Power	37.32 dBm (5.39 W)
Emission Masks	PASS (Masks C, D, E per channel bandwidth)
Test Dates	May 5 – June 1, 2026
Test Engineers	Bryan Taylor, Sergio Gutierrez
MPE Report	WIRA141757-MPE-R1 — RF Exposure Compliance confirmed

9. COMPLIANCE STATEMENT

All modifications described herein comply with the requirements of a Class II Permissive Change per **47 CFR §2.1043** and **KDB 178919**. A detailed line-by-line response to all TCB reviewer comments (14 FCC items + 2 ISED items) is provided in the attached companion document.

10. ISED (INDUSTRY CANADA) STATEMENT

This C2PC covers a **hardware-only** modification to IC: 101-SD4. No software or firmware changes are made. The LF-6420ESD4B PCB assembly introduces band-specific RF filter components and a PA matching network that limit operation to 406.1–450 MHz. All other aspects of the device remain unchanged from the original certification.

Should you require any additional information or clarification, please do not hesitate to contact the undersigned.

Sincerely,



Digitally signed by John Harmon
DN: cn=John Harmon gn=John
Harmon c=US United States l=US
United States o=GE VERNOVA
MDS LLC
e=john.harmon1@gevernova.com
Location:
Date: 2026-08-06 21:40-04:00

John Harmon
Lead Engineer, Technical Regulations and Standards
GE Vernova MDS LLC
175 Science Parkway, Rochester, NY 14620, USA
Tel: +1 513 813 9058
Email: John.Harmon1@gevernova.com

- Enclosures:**
- 1. Detailed Response to TCB Reviewer Comments (Line-by-Line) — 14 FCC + 2 ISED items
 - 2. Updated Schematics — Drawing 00-6240A18
 - 3. Updated Bill of Materials (Confidential)
 - 4. Block Diagram — SD4 BD.pdf (Drawing 00-6240A18 Rev B)
 - 5. Internal Photographs — LF-6420ESD4B Assembly (3 views)
 - 6. Test Report — WIRA141757-FCC P90_RSS-119-R1
 - 7. MPE Report — WIRA141757-MPE-R1