SIEMENS

August 12, 2019

FEDERAL COMMUNICATIONS COMMISSION
Authorization and Evaluation Division
7435 Oakland Mills Road
Columbia, MD 21046
U.S.A.

Subject: Reassessment Certification (Class II Permissive change)

Applicant: **Siemens Canada Limited - Siemens Milltronics Process Instruments**
Model: **7ML5427**
FCC ID: **NJA-LR260**

Dear Sir/Madam,

By signing this document we, Siemens Milltronics Process Instruments Inc. would like to obtain a Reassessment Certification Class II Permissive change for the above Model and Certification number.

Description of changes:

To the existing LR260 a new antenna type has been added to improve product marketability.

The new antenna (referred herein as Aluminum Horn Antenna) consist in a base 3in aluminum conical horn with a sealing PTFE insert at the horn base, ended at the aperture with an optional polypropylene lens and/or with various process connection options used to attach the horn to the measured process. The gain of the new antennas is comparable with the gain of the equivalent existing SITRANS LR260 standard horn antennas on which the current radio certification is based.

All the above changes are not modifying the RF characteristics of the SITRANS LR260 level radar family.

A new version of the manual updated with this change is available.

1) Enclosure

No changes were made to the enclosure

2) Antenna and process connections

The Aluminum Horn Antenna is a new version of the existing 3in LR260 standard horn antenna. It consists in a 3in aluminum conical horn with a sealing PTFE insert at the horn base, ended at the aperture with an optional polypropylene lens and/or with various process connection options used to attach the horn to the process. The antenna can be used in the below three different groups of configurations

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Additional antenna list:	#1 Without process connection	#2 With flanged horn	#3 With aimer flanged horn
Manufacture:	SIEMENS	SIEMENS	SIEMENS
Type:	3" Horn Antenna	3" Horn Antenna	3" Horn Antenna
Model (Configuration):	7ML5427-0HRX0-XXXX 7ML5427-0JRX0-XXXX	7ML5427-0KRX0-XXXX 7ML5427-0LRX0-XXXX 7ML5427-0MRX0-XXXX	7ML5427-0NRX0-XXXX 7ML5427-0PRX0-XXXX 7ML5427-0QRX0-XXXX
Frequency range:	24.05-29.00 GHz	24.05-29.00 GHz	24.05-29.00 GHz
Impedance:	Waveguide input	Waveguide input	Waveguide input
Gain (dBi):	22.9 dBi	24.6 dBi	23.5 dBi

1) Aluminum Horn Antenna - without process connection - Base horn without lens and process connection options as described in the #1 in the table above.
2) Aluminum Horn Antenna - flanged horn - Configuration obtained by attaching at the aperture of the base horn a polypropylene lens and a dielectric flange as described in the #2 in the table above.
3) Aluminum Horn Antenna – aimer flanged horn - Configuration obtained by attaching at the aperture of the base horn an adapter ring that can be threaded into easy aimer flanges as described in the #3 in the table above.

The Aluminum Horn Antenna attaches permanently to the existing LR260 enclosure using screws. O-rings are placed at different locations to ensure sealing. The antenna connects to the circular waveguide present in the LR260 housing through a built-in waveguide with the same cross section as the housing waveguide. The microwave signal produced by the electronics inside the housing propagates through the waveguides, and it is transferred to the conical horn through the sealing PTFE insert. It propagates through the horn and then it is radiated into the free space either directly (antenna versions #1 and #3) or through the polypropylene lens (antenna version #2). To enhance the radiation pattern the lens is formed in a dual conical shape.

An assembly view with the associated part numbers is shown in the following drawing.

LR260 - Approval drawing - A5E31471373A_004.pdf

The radiation patterns of all four versions of these antennas were measured and the results are presented in the attached report.

Aluminum Horn Antenna directivity diagram.pdf

3) Board stack

No changes were made to the boardstack

4) RF circuits

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No changes were made to the RF circuits

5) Firmware

No changes affecting the RF circuitry control were made to the firmware

6) Manual

The new manuals are attached

7) Conclusion

To the existing LR260 a new antenna type has been added. No changes were done to the RF circuitry, boardstack or software. The gain of the new antennas is comparable with the gain of the highest gain antenna (standard 4in horn) on which the current radio approval is based.

Kindly confirm FCC acceptance of this Class II permissive change by return letter.

Sincere Regards

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