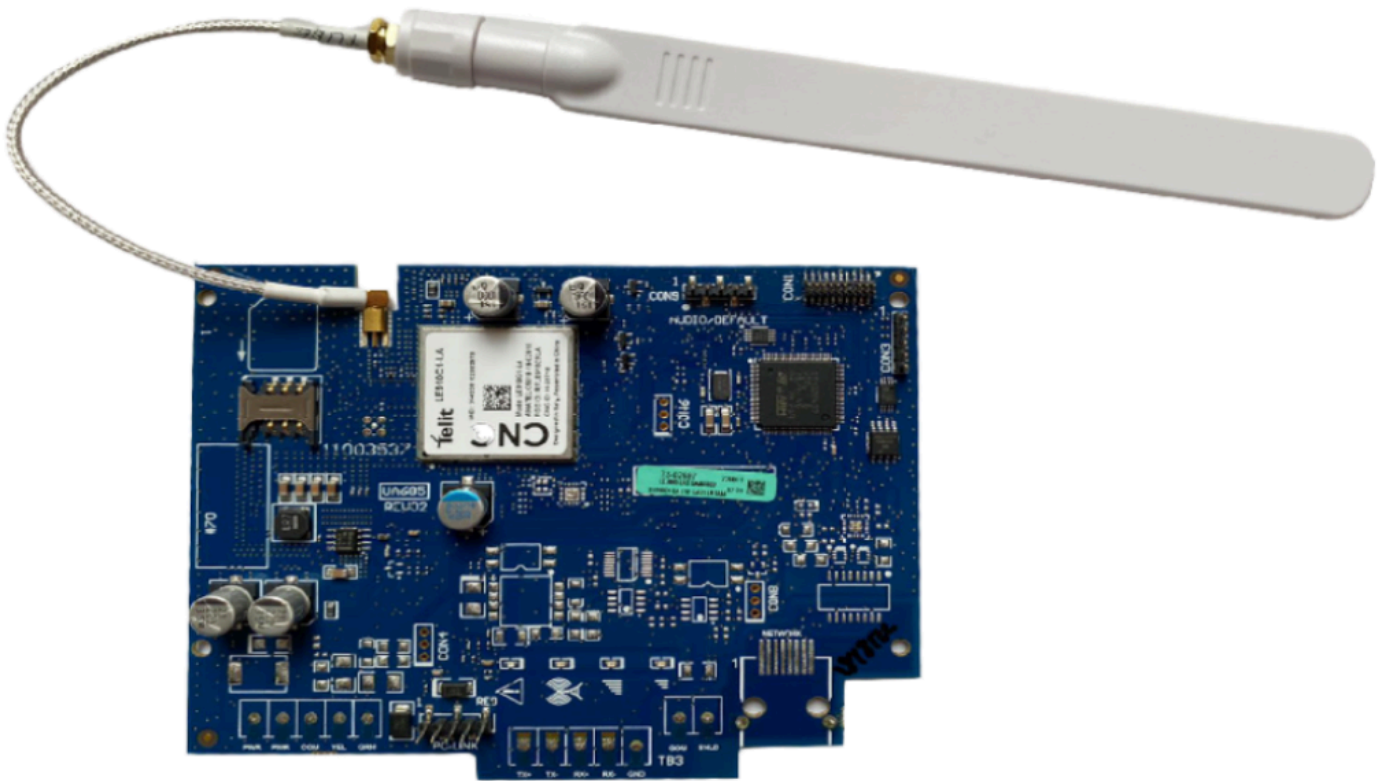




# TL280LE-LAT, LE2080-LAT Technical Manual



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# Introduction

The TL280LE-LAT is an LTE/HSPA/Ethernet communication module. Use it with NEO Power series alarm control panels. The LE2080 is an LTE/HSPA communications module. These products use a Telit Wireless LE910C1-LA LTE/3G/2G radio modem. The design architecture consists of PC-Link communication channels to the control panel processor, and an optional radio module and Ethernet port for alarm communication to a monitoring station.

## Technical specifications

**Table 1: Environmental parameters**

Environmental factor	Detail
Temperature	-10 to + 55 °C
Humidity	0 to 95% RH (non-condensing)
Environment	Indoor, home, office, industrial

**Table 2: Radio and product information**

Item	Description
Brand	DSC/ Johnson Controls/ TSP
Module(s)	TL280LE-LAT LE2080-LAT
FCC ID	F5317TL280LER
FCC Standards Applied	FCC Part 15B, Part 22, Part 24
Radio Brand	Telit Wireless
Radio Model	LE910C1-LA
Cellular Operating Bands	See cellular operating bands and antenna gain
Cellular Transmission Power	Typical values for max output level: <b>2 G(GSM):</b> LB: Class 4 (2 W, 33 dBm) Class E2 (0.5 W, 27 dBm@EDGE) HB: Class 1 (1W, 30 dBm) Class E2 (0.4 W, 26d Bm@EDGE) <b>3G (WCDMA):</b> Class 3 (0.25 W, 24 dBm) <b>TD-SCDMA:</b> Class 3 (0.4W, 26 dBm@EDGE) <b>4G (FDD and TDD):</b> Class 3 (0.2 W, 23 dBm@1RB)
Cellular Modulation Type	GSM/GPRS/EDGE: GMSK/8PSK UMTS/HSPA: BPSK/QPSK LTE: QPSK/16QAM
Communication Protocols	TCP/IP, UDP, GSM, GPRS, UMTS, LTE
SAR Certificate	Not applicable as this is not a portable device and must be more than 20 cm from the human body
Cellular Network / Operator Approval	Not Required
Cellular Emission Designation	243KGXW, 244KG7W, 245KGXW, 4M13F9W, 4M24F9W, 17M8G7D, 5M26W7D, 5M25W7D, 8M92G7D, 4M90W7D, 5M18W7D
Company name	Tyco Safety Products Canada Ltd.
Company Address	3301 Langstaff Rd., Concord, ON, L4K4L2 Canada
Manufacturer name	Johnson Controls Matamoros
Manufacturing Location	Antonio Meucci #10002 Parque Industrial Las Ventanas. Matamoros, Tamps. CP 87560 Mexico
Country of Origin	Mexico
TAC (LE910C1-LA)	35720968
TAC Holder	Telit Communications SpA

**Table 3: Antenna parameters**

Antenna detail	Parameter
Antenna Manufacturer	Cheerfar
Antenna Type	LTE Pentaband
Antenna Connector Type	RP-SMA

## Cellular Operating Bands and Typical Antenna Gain

**Table 4: Cellular operating bands and typical antenna gain**

Product	Cell band	Operating frequency	Antenna gain (dBi)
TL280LE-LAT and LE2080-LAT -Anatel, FCC, CNC Compliant NOM-019 / NOM-221 compliant	LTE B1	UL: 1920 - 1980 DL: 2110 - 2170	5.6
	LTE B2	UL: 1850 - 1910 DL: 1930 - 1990	5.8
	LTE B3	UL: 1710 - 1785 DL: 1805 - 1880	3.6
	LTE B4	UL: 1710 - 1755 DL: 2110 - 2155	4.5
	LTE B5	UL: 824 - 849 DL: 869 - 894	1.1
	LTE B7	UL: 2500 - 2570 DL: 2620 - 2690	3.5
	LTE B28	UL: 703 - 748 DL: 758 - 803	-0.2
	WCDMA B1	UL: 1920 - 1980 DL: 2110 - 2170	5.6
	WCDMA B2	UL: 1850 - 1910 DL: 1930 - 1990	5.8
	WCDMA B4	UL: 1710 - 1755 DL: 2110 - 2155	4.5
	WCDMA B5	UL: 824 - 849 DL: 869 - 894	1.1
	2G B2	UL: 1850 - 1910 DL: 1930 - 1990	5.8
	2G B3	UL: 1710 - 1785 DL: 1805 - 1880	3.6
	2G B5	UL: 824 - 849 DL: 869 - 894	1.1
	2G B8	UL: 880 - 915 DL: 925 - 960	2.6

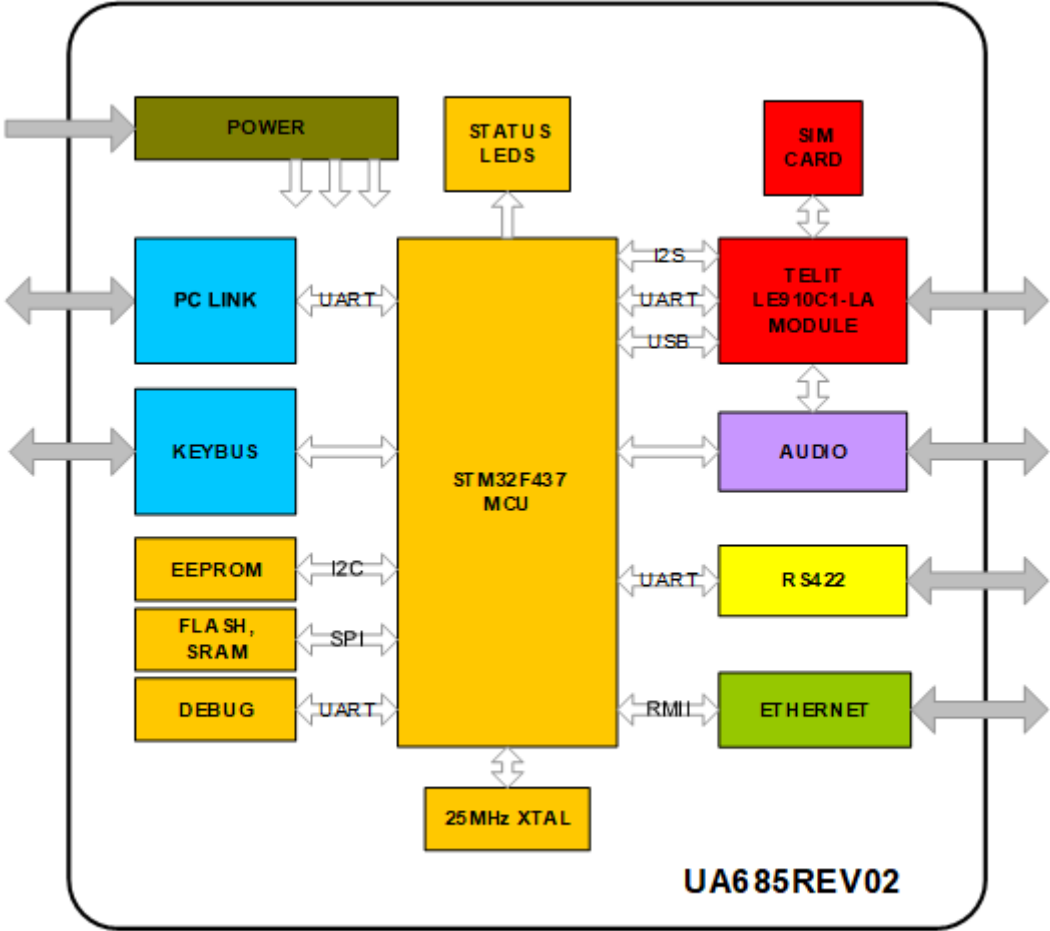
**Table 5: Emissions of harmonic/spurs frequencies (non-essential radiation according to UIT)**

Frequency (MHz)	dBuV/m (at 10m)	
-	Class A	Class B

# Block diagram

This block diagram illustrates the hardware functional layout. The functional block of the power supply includes several elements of switch mode and linear regulator circuits. Blocks in orange represent the main processor circuits, and blue represents communication links with the control panel. Functional blocks on the left with arrows represent connections with the control panel. Blocks with arrows on the right represent communication channels that may leave the cabinet.

Figure 1: Block diagram



# Regulatory statement

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

This equipment is to be installed and operated with a minimum distance of 20 centimeters between the radiator and your body. Under Industry Canada regulations, this radio transmitter only operates using an antenna of a type and maximum, or lesser, gain approved for the transmitter by Industry Canada.

To reduce potential radio interference to others, choose the antenna type and its gain so that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

This device complies with Industry Canada license- exempt RSS standard. Operation is subject to the following two conditions: (1) this device must not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

