

Trasna Solutions Technologies Limited

➤ GENERAL PRODUCT DESCRIPTION

The document describes XPYUBX19KM01 RF and hardware interfaces which are connected to your applications. This document can help you quickly understand interface specifications, RF characteristics, electrical and mechanical details, as well as other information of the module.

➤ Product Overview

SARA-R510Sv1	
Packaging type	LGA
Pin counts	96
Dimensions	26.0 mm × 16.0 mm × 2.2 mm
Wireless Network Type	
LTE-FDD	B2, B4,B12

Product description

SARA-R5 series modules include the following variants / products versions:

- SARA-R510S LTE Cat M1 module for multi-region use, designed to achieve extremely low current consumption in deep-sleep power saving mode (PSM)

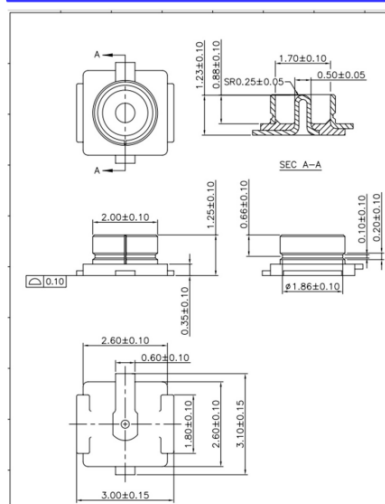
Item	SARA-R500S / SARA-R510S
Cellular protocol stack	3GPP Release 13 LTE Cat M1 and NB1 3GPP Release 14 LTE Cat M1: Coverage Enhancement Mode B, Uplink TBS of 2984b
Cellular Radio Access Technology	LTE Cat M1 Half-Duplex
Cellular operating bands	LTE FDD band 2 (1900 MHz) LTE FDD band 4 (1700 MHz) LTE FDD band 12 (700 MHz)
Cellular data rate	LTE category M1: up to 1200 kbit/s UL up to 375 kbit/s DL

Parameter	Min.	Typ.	Max.	Unit	Remarks
Normal operating temperature	-20	+25	+65	°C	Normal operating temperature range (fully functional and meet 3GPP / ETSI specifications)
Extended operating temperature	-40		+85	°C	Extended operating temperature range (RF performance may be affected outside normal operating range, though module is fully functional)

RF Connector

- IPEX connector with module ANT port

IPEX connector with Lithium ANT 0/1/2/3



FCC

Important Notice to OEM integrators

1. This module is limited to OEM installation ONLY.

2. This module is limited to installation in mobile or fixed applications, according to Part 2.1091(b).
3. The separate approval is required for all other operating configurations, including portable configurations with respect to Part 2.1093 and different antenna configurations.
4. For FCC Part 15.31 (h) and (k): The host manufacturer is responsible for additional testing to verify compliance as a composite system. When testing the host device for compliance with Part 15 Subpart B, the host manufacturer is required to show compliance with Part 15 Subpart B while the transmitter module(s) are installed and operating. The modules should be transmitting and the evaluation should confirm that the module's intentional emissions are compliant (i.e. fundamental and out of band emissions). The host manufacturer must verify that there are no additional unintentional emissions other than what is permitted in Part 15 Subpart B or emissions are compliant with the transmitter(s) rule(s).

The Grantee will provide guidance to the host manufacturer for Part 15 B requirements if needed.

Important Note

Notice that any deviation(s) from the defined parameters of the antenna trace, as described by the instructions, require that the host product manufacturer must notify Ericsson that they wish to change the antenna trace design. In this case, a Class II permissive change application is required to be filed by the Trasna, or the host manufacturer can take responsibility through the change in FCC ID (new application) procedure followed by a Class II permissive change application.

End Product Labeling

When the module is installed in the host device, the FCC ID label must be visible through a window on the final device or it must be visible when an access panel, door or cover is easily re-moved. If not, a second label must be placed on the outside of the final device that contains the following text: "Contains FCC ID: **XPYUBX19KM01**" The FCC ID can be used only when all FCC compliance requirements are met.

Antenna Installation

- (1) The antenna must be installed such that 20 cm is maintained between the antenna and users,
- (2) Co-location of this module with other transmitters that operate simultaneously requires evaluation using the FCC multi-transmitter procedures.
- (3) Only antennas with equal or less gains as shown below may be used with this module. Other types of antennas and/or higher gain antennas may require additional authorization for operation.

Band	Frequency (MHz)	Max Ant Gain Allowed (dBi)
B2	1850 – 1910	2.7
B4	1710 – 1755	3
B12	699 – 716	2

In the event that these conditions cannot be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid, and the FCC ID cannot be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

Manual Information to the End User

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module. The end user manual shall include all required regulatory information/warning as show in this manual.

Federal Communication Commission Interference Statement

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 interference that may cause undesired operation.

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 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.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

List of applicable FCC rules

This module has been tested and found to comply with part 22, part 24, part 27, part 90 and part 96 requirements for Modular Approval.

The modular transmitter is only FCC authorized for the specific rule parts (i.e., FCC transmitter rules) listed on the grant, and that the host product manufacturer is responsible for compliance to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification. If the grantee markets their product as being Part 15 Subpart B compliant (when it also contains unintentional radiator digital circuitry), then the grantee shall provide a notice stating that the final host product still requires Part 15 Subpart B compliance testing with the modular transmitter installed.

This device is intended only for OEM integrators under the following conditions:(For module device use)

1) The antenna must be installed such that 20 cm is maintained between the antenna and users, and 2) The transmitter module may not be co-located with any other transmitter or antenna.

As long as 2 conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed.

Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with

minimum distance 20 cm between the radiator & your body.

Manual Information to the End User

The OEM integrator **must** be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module. The end user manual shall include all required regulatory information/warning as show in this manual.