User Manual / Functional Description

of

RF Receiver module

Type: SVI-KORX433(433.92MHz)

1. General information

This Korean RF Receiver is used for RKE functions on vehicles.
The receiver principle is super heterodyne PLL frequency synthesizer and designed for the reception of 1KHz Manchester codes with only FSK signal optimized.
The Center frequency are 433.92MHz(5WY8231, NA).
This receiver has oriented enhanced RF LNA characteristic to improve RF sensitivity instead of internal LNA part of InfineonTDA 522x provided.(removed internal LNA)
The receiver module is best optimized SAW filter, External LNA and 1K data baud filtering for data band spectrum noise characteristic.
This receiver has 9 leg's(1.Antenna input, 2.GND- antenna, 3.LNA- power supply, 4.Vcc-power supply, 5.PWDN, 6.RSSI, 7.DATA-output, 8.GND, 9.MSL)
which will be united to SRX PCB by wave soldering.(stick into main PCB by hand).

1.Operating temperature range

-40 ^{0}C < T < +85 ^{0}C

2. Technical Data

All data is specified at T= 25 °C (RT) and V_{CC} = 5V

3. VCO – Frequency

Frequency Variants	VCO frequency	Tolerance T=-40 ^{0}C to +85 ^{0}C
433.92MHz,	846.44MHz	± 90ppm

4. Input Sensitivity

Input sensitivity at center frequency, BER 10 $^{-2}$ (Vcc=5V)

- FSK:
  fmod = 1 kHz square- wave +/-35KHz deviation.

Variants	Description	Condition	Typ	min	unit
5WY 8231	433.92MHz, FSK,1K	FSK ,Fmod=1KHz	-110	≤ -107	dBm

4.1 Sensitivity Variation over temperature

Sensitivity Variation T=-40 to 85°C:	normal sense @ RM ≤ ±3dB

4.2 FSK frequency-deviation

Max .FSK deviation		ΔF= ±120 kHz
Min. FSK deviation	1k variants	ΔF = ± 10 kHz
For the min. sensitivity, under the degraded Freq-deviation less than 30 KHz, could be allowed within 3dB.		

5. Current Consumption; V_{cc} = 5 V (RT)

(no RF – signal applied to the receiver input)

5.1 Current consumption

- V_{cc} = 5 V,
- No RF signal applied at RF input

5.2 Active current (Switching High) with LNA

@ T=25°C (RT):	FSK	**I_s < 9.1 mA**

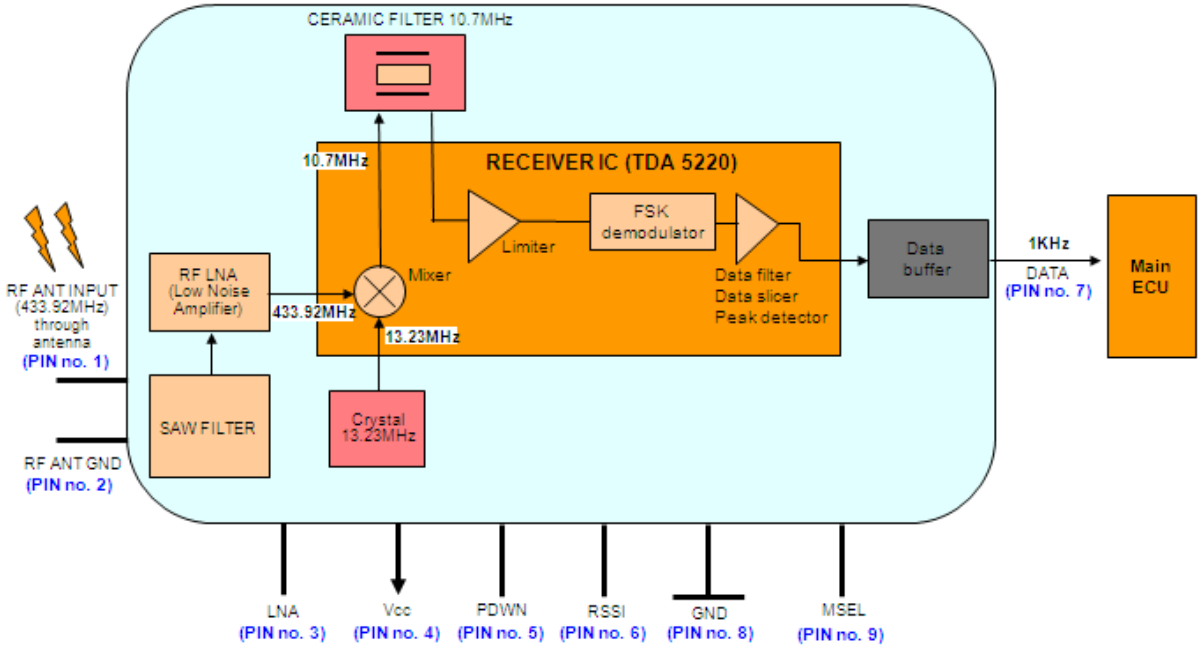
@T=-40 to +85°C	FSK	**I_s < 9.3 mA**

5.3 Standby current (switching Low) with LNA

@ T=-40 to +85°C	**I_s < 5 µA**

The power supply is not ESD protected.
This protection must be done on the main board (ECU).

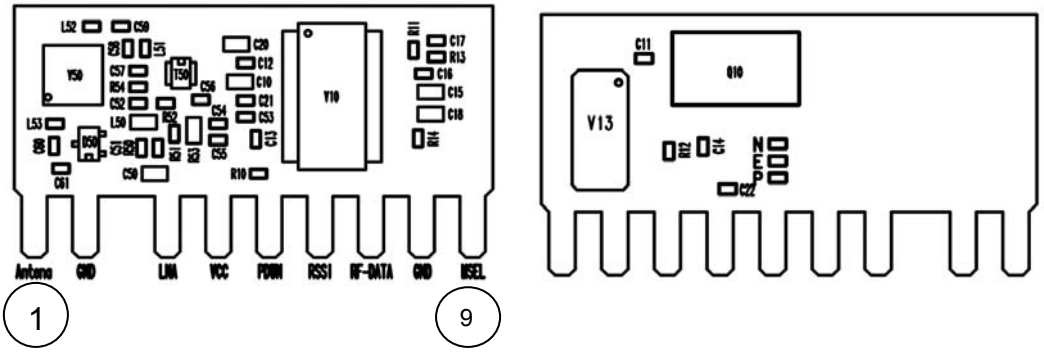
6. Schematic Block diagram



7. Physical Layout information

7.1 I/O pins layout

<Top side viewww> <Bottom side view>



KOR-baby-Rx I/O pin configuration

1- Antenna input
2- GND- antenna
3- LNA- power supply
4- Vcc-power supply
5- PWDN
6- RSSI
7- DATA-output
8- GND
9- MSEL

8. Homologation labelling

8.1 Model name : SVI-KORX433
8.2 USA(433.92MHz) : SY5KORX433
8.3 CANADA(433.92MHz) : 8325A-KORX433
8.4 Homologation statement

FCC Compliance 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 interferencethat 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 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.

Do Not

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

IC Compliance Statement.

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

Le present appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisee aux deux conditions suivantes :

(1) l'appareil ne doit pas produire de brouillage, et
(2) l'utilisateur de l'appareil doit accepter tout brouillage radioelectrique subi, meme si le brouillage est susceptible d'en compromettre le fonctionnement.