

TX ASSY-KEYLESS ENTRY / RX ASSY-KEYLESS ENTRY

User's Manual

TX Model: HM-TX-315

RX Model: RX_BOARD 315

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1. Constitution of the Radio Frequency Keyless Entry System for vehicle

The radio frequency keyless entry is a system that it controls locking and unlocking doors. It can open and close sliding doors and tail gate automatically. It can notice us where the car is by panic button.

The TRANSMITTER is a device that transmits the signal when the button is pressed. The transmission signal consists of preamble, header, random, key data, sync, c/s, and inter frame code.

The RECEIVER is fixed inside of the vehicle. It works intermittently to prevent the battery exhaustion. When the receiver detects the preamble code, it runs continuously to receive the signals completely. After receiving the signal, the receiver decides which operation will be performed. The user can select the following operations by pressing the button of the remote transmitter.





CAUTION

"RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.

DISPOSE OF USED BATTERIES ACCORDING TO THE NATIONAL CODE OR RECYCLING PROGRAM."

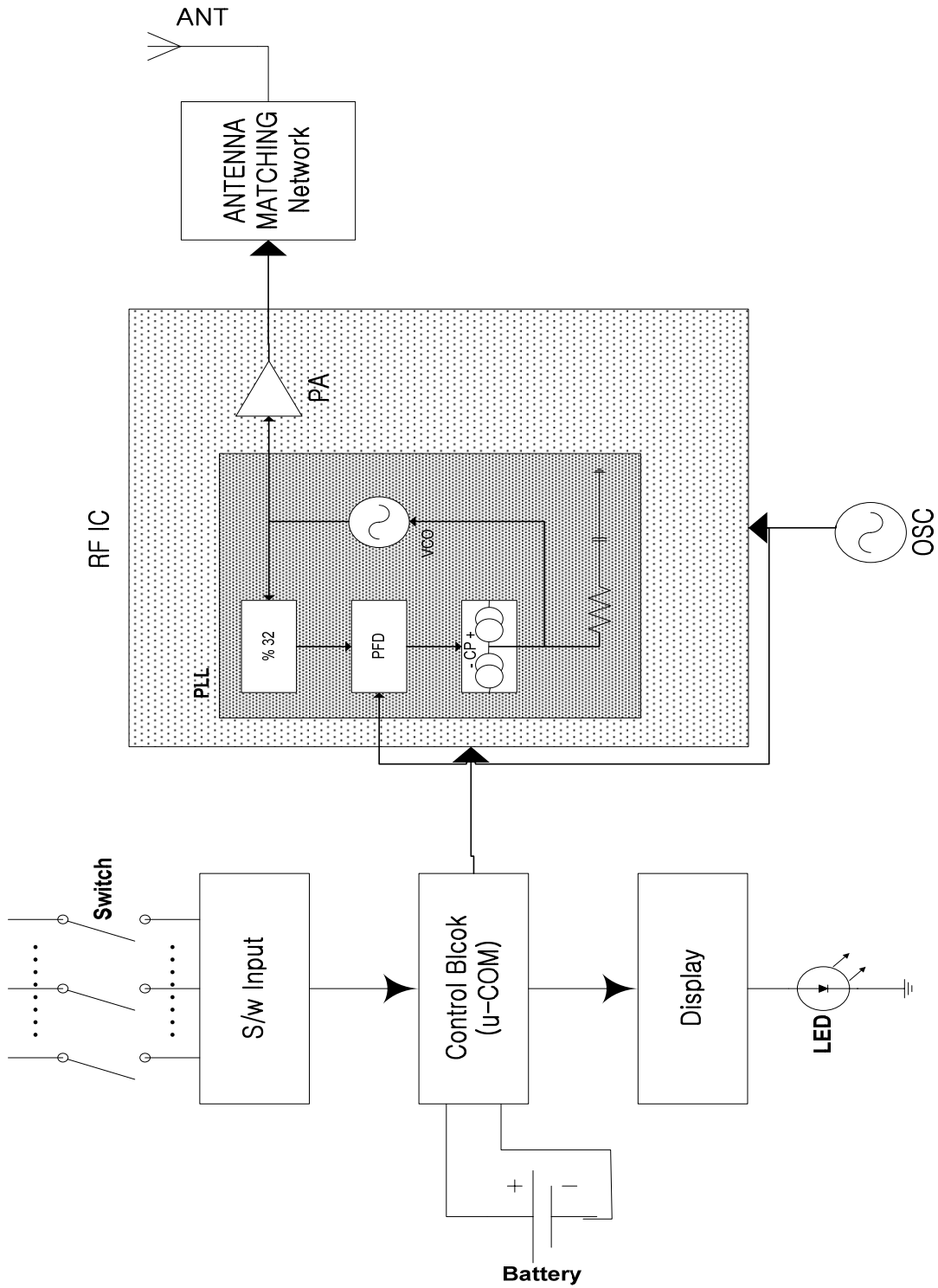


2. User's manual

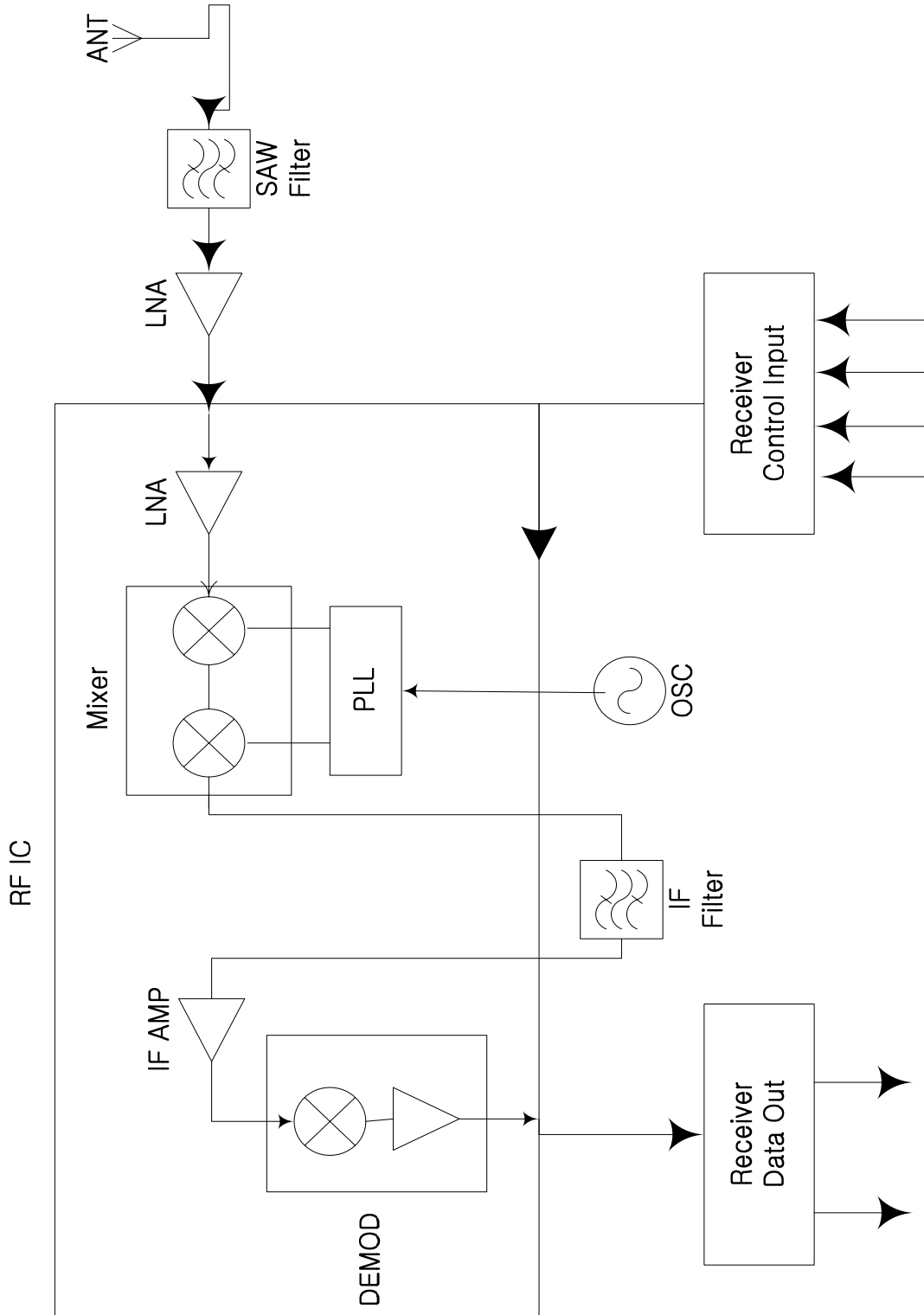
Key	Mark	Operation	Function	Model
Lock		Lock key is pressed	CENTRAL LOCK Horn for 30mS Lighting turn lamp for 1 second	
		Lock key is pressed for 0.5 seconds	Closing window of driver's seat	
Unlock		Unlock key is pressed	CENTRAL UNLOCK Blinking turn lamp twice for 1 second	
		Unlock key is pressed for 0.5 seconds	Opening window of driver's seat	
Panic		Panic key is pressed	To stop horn by pressing the panic key	
			Horn for 27 seconds	
			Blinking turn lamp for 27 seconds	
Tail Gate		Tailgate key is pressed for 0.5 seconds	Opening or closing tailgate	
			Blinking turn lamps 5 times	

3. Block diagram

3.1 Transmitter



3.2 Receiver



4. Specification

4.1 Transmitter

Type	PIC16F676 (Manufacturer : MICROCHIP)
RFIC	TH72001 (Manufacturer : Melexis)
Memory	2K × 8bit
Clock frequency	4.00MHz
Clock frequency generation	INTERNAL
Package	14pin TSSOP
Carrier frequency	315 MHz
Frequency generation	Crystal
Modulation	FSK
Bandwidth	≤ 100 kHz
RF output power	≤ 75dBuV/m

4.2 RF Receiver module

Local clock frequency	315 MHz
Frequency generation	Crystal
Modulation Scheme	FM (Single Superheterodyne)
Bandwidth	±100KHz
RFIC	TH71102 Manufacturer : Melexis

4.3 Others

Item	Transmitter	Receiver
Dimension	6.8 x 3.7 x 1.1 (cm)	20 x 16 x 7 (cm)
Weigh	24.5g	
Battery	LITHIUM Coin Type(DC 3V)	Car Battery(DC 12V)
Operation Temperature	-30℃ ~ +80℃	

5. DATA structures

1. RKE key data

Key bit7	Key bit6	Key bit5	Key bit4	Key bit3	Key bit2	Key bit1	Key bit0	Function
0	0	0	0	0	0	0	1	Lock
0	0	0	0	0	0	1	0	Unlock
0	0	0	0	0	1	0	0	Tail Gate
0	0	0	0	1	0	0	0	Panic

2. Message table

FRAME	Field	Length (Tbits)	Value (Bin=binary/hex= hexadecimal)	Duration (ms)
First frame	Preamble	80	00000 hex	66.66
	Header	4	1010 bin	3.332
	Random	24	RRRRRR hex	19.99
	Key	8	k-k-k-k-k-k-k-k-bin	6.664
	Sync	24	SSSSSS hex	19.99
	Check sum	8	XX hex	6.664
	Inter-frame	6	"H" + "L" + 0000 bin	4.998
Second frame	Header	4	1010 bin	3.332
	Random	24	RRRRRR hex	19.99
	Key	8	k-k-k-k-k-k-k-k-bin	6.664
	Sync	24	SSSSSS hex	19.99
	Check sum	8	XX hex	6.664
	Inter-frame	2	"H" + "L"	1.666
TOTAL		224bits		186 ms

6. Homologation

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 interference that may cause undesired operation.**

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.