AM / FM RADIO TRANSMITTER KEYFOBS

- Highly Secure KeeLoq Protocol
- 1 – 3 Switch Options
- Led Indication Of Transmission
- Directly Compatible With Keeloq Decoder
- Power Saving Auto Shut Off Feature
- Automatically Transmits Battery Low Condition.
- User Customisable Housing
- Board Level Programming Of Id
- Range:
  - ⇒ AM-315MHz upto 50m
  - ⇒ AM-433MHz upto 100m
  - ⇒ FM-433MHz upto 150m
- EMC & FCC Compliant

DESCRIPTION

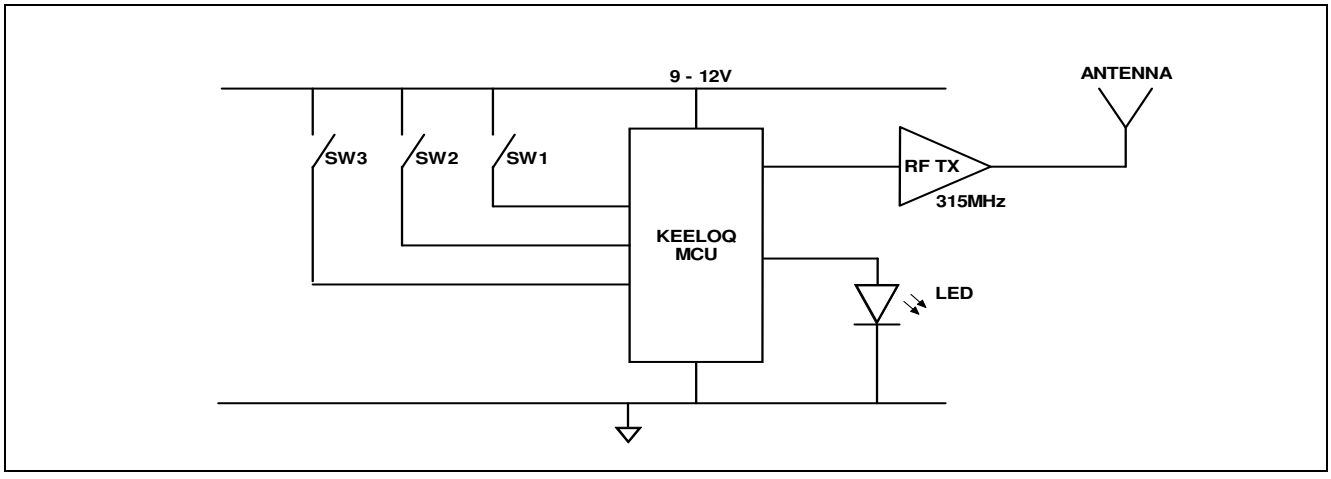
The RF Solutions KEELOQ range of miniature pocket Keyfob encoders are available as Radio of Infra Red transmitters.

When paired with one of the KEELOQ Rx decoder boards, a complete remote control system may be achieved, with comprehensive interfacing capabilities. This may also be high security “code hopping”

The keyfobs are housed in a tough ABS enclosure and supplied with Battery ready to operate.

An membrane overlay sticker is used to indicate the switch positions which may be customised to incorporate a specific logo or mark.

BLOCK DIAGRAM



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AM / FM RADIO TRANSMITTER KEYFOBS

'120' Series FM Keyfob Encoders

Part Number	Description	Freq (MHz)	Range** (Metres)	Compatible Decoders
120T1-433F	FM Keyfob 1 Sw	433.92	150	RF600D HiRK-433F 008-433F 118-433F 119-433F 105-433F
120T2-433F	FM Keyfob 2 Sw	433.92	150	
120T3-433F	FM Keyfob 3 Sw	433.92	150	

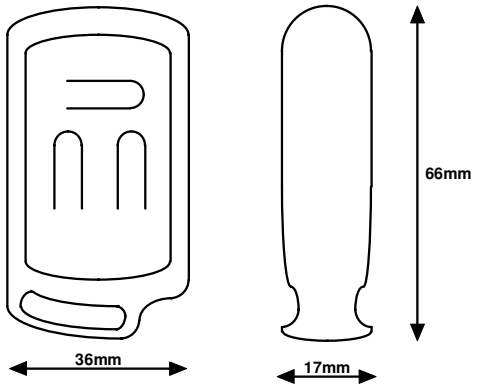
'110' Series Keyfob Encoders

These products use the HCS360 Keeloq Encoder Device

Part Number	Description	Freq (MHz)	Range** (Metres)	Compatible Decoders
110C1-315A	AM Keyfob 1 Sw	315	50	RF600D HiRK-315A 008-315A 118-315A 105-315A
110C2-315A	AM Keyfob 2 Sw	315	50	
110C3-315A	AM Keyfob 3 Sw	315	50	
110C1-315A	AM Keyfob 1 Sw	433.92	100	RF600D HiRK-433A 008-433A 118-433A 119-433A 105-433A
110C2-433A	AM Keyfob 2 Sw	433.92	100	
110C3-433A	AM Keyfob 3 Sw	433.92	100	

** Range stated is optimum, direct line of sight. In worst conditions this can be reduced by upto 50%

Mechanical Details



Operation

The Tx encoder transmits the KEELOQ code for as long as any push-button switch is depressed. Operation of the Tx encoder buttons will cause either a momentary or a latching action at the Rx decoder, depending on the configuration of the Rx decoder.

Battery Supply

The keyfob is supplied with a standard cigarette lighter 12V battery type GP23A or equivalent.

Low Battery

When the unit measures a low battery voltage level, the data transmitted includes a 'Low battery' status flag to the receiver decoder.

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Auto Shutoff Feature

After ~26seconds of continuous transmission the Keyfobs are programmed shut down. This is to prevent the battery being drained through accidental operation (i.e. if it is in the users pocket!). This feature can be removed by re-flash programming of the unit.

License Exemption

The transmitter encoders use EMC compliant radio transmitter modules and complies with ETSI330-220 and ETSI300-683.
USA : This device complies with part15 of the FCC rules.
Operation is subject to the following two conditions:

1. The device may not cause harmful interference, and
2. This device must accept any interference received including interference that may cause undesired operation.

Bespoke Versions

Custom versions available with your own logo and or protocol.
Please contact Sales for further info

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Technical Specification

Max Storage Temperature -10°C to +85°C, Max Operating Temperature 0°C to +55°C

Electrical Characteristics	Min	Typical	Max	Dimension
Supply Current (Transmitting)	9	12	16	mA
Frequency		315.00		MHz
Frequency	432.90	433.920	434.100	MHz
Output Power (ERP) @ 433.92 MHz			10	mW

Building a Receiver Decoder

Any of the keyfob Tx Encoders may be decoded with one of the complete RF Solutions receiver decoders or by using the appropriate receiver and RF600 decoder I/C. Schematic design is given in the datasheet for RF600 (DS600)

Further Information: Developing a Keeloq Based Decoder System

The RFEVAL3 is an Evaluation Board consisting a receiver decoder board. The board can accept several RF Receivers and RF6000 decoding I/C providing a hardware development platform to enable the integration of remote Control.

- Range Testing
- Encoding / Decoding Testing
- AM / FM Selection
- Remote Switching
- Antenna Evaluation

This enables the engineer to select the optimum radio modules, antenna type and get a radio application working with the minimum time.

R. F. Solutions Ltd.,
William Way, Burgess Hill, RH15 9AG,
England
Tel +44 (0)1444 227900

Email sales@rfsolutions.co.uk http://www.rfsolutions.co.uk

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Waste Batteries and Accumulators Directive **2006/66/EC** Where batteries are fitted, before recycling the product, the batteries must be removed and disposed of at a licensed collection point.

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