




# 110 / 106 SERIES KEYFOB ENCODERS RADIO / INFRA-RED

- Highly Secure  Protocol
- AM Radio or Infra Red
- 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 45m
  - ⇒ AM-433MHz Upto 100m
  - ⇒ Infra Red Upto 20m
- 433MHz version CE Compliant for use in Europe
- 315MHz FCC Compliant for use in USA



## DESCRIPTION

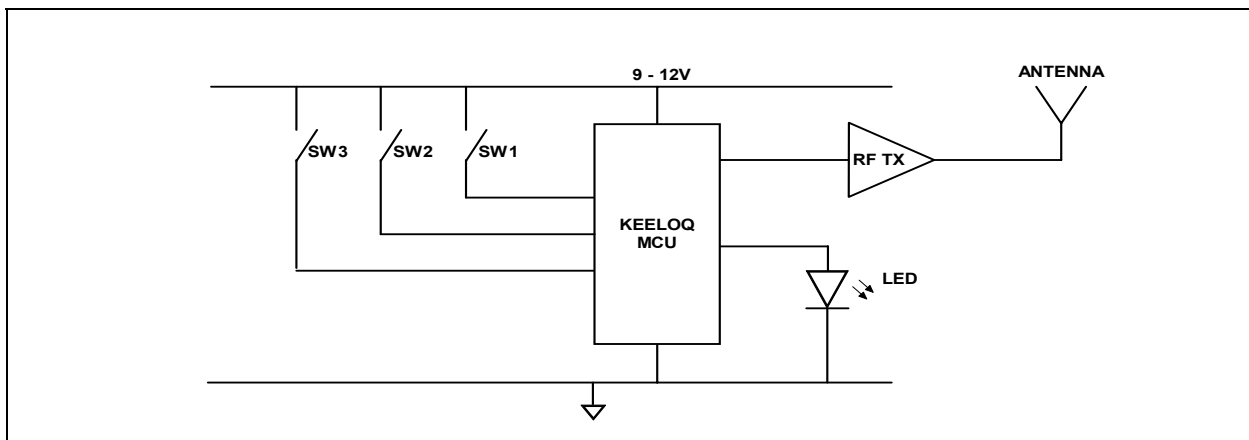
The RF Solutions KEELOQ range of miniature pocket Keyfob encoders are available as Radio or Infra Red transmitters.

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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## 433MHz Keyfob Encoders

Part Number	Description	Freq (MHz)	Range** (Metres)	Compatible Decoders
110C1-315AR1	AM Transmitter Keyfob 1 Sw	315.0	50	AM-HiRK-315
110C2-315AR1	AM Transmitter Keyfob 2 Sw	315.0	50	
110C3-315AR1	AM Transmitter Keyfob 3 Sw	315.0	50	
AM-110C1-433	AM Transmitter Keyfob 1 Sw	433.92	100	AM-HiRK-433 AMS-001B-433 AMS-0011-433 AMS-008C3B-433 AMS-105C3A-433
AM-110C2-433	AM Transmitter Keyfob 2 Sw	433.92	100	
AM-110C3-433	AM Transmitter Keyfob 3 Sw	433.92	100	

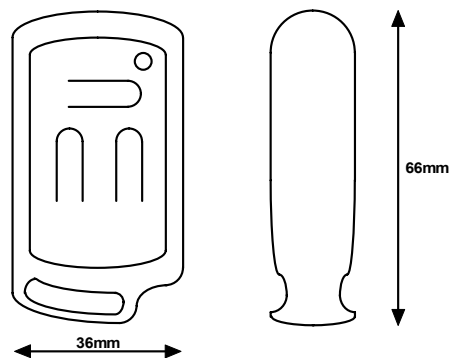
## 'IR' Series Infra Red Keyfob Encoders

These products use the HCS360 Keeloq Encoder Device

Part Number	Description	Range** (Metres)	Compatible Decoders
AM-106C1-433	IR Transmitter Keyfob 1 Sw	20	IR-105C4A
AM-106C2-433	IR Transmitter Keyfob 2 Sw	20	
AM-106C3-433	IR Transmitter Keyfob 3 Sw	20	

\*\* 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 transmit LED flashes during transmission, and the data transmitted includes a 'Low battery' status flag to the receiver decoder.

## Auto Shutoff Feature



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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!).

## License Exemption

The transmitter encoders use ECM compliant radio transmitter modules and complies with ETSI330-220 and ETSI300-683.

## Technical Specification

Max Storage Temperature -10°C to +70°C, Max Operating Temperature 0°C to +55°C

Electrical Characteristics	Min	Typical	Max	Dimension
Supply Current (Transmitting)	9	12	16	mA
Frequency 315MHz version		315.00		MHz
Frequency 433MHz version	432.90	433.920	434.100	MHz
Output Power (ERP) @ 433.92 MHz			10	mW

## Further Information: Developing a Keeloq Based Decoder System

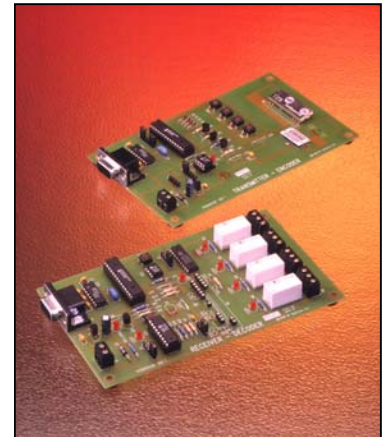
The RFEVAL2 is a Evaluation Kit consisting of a several transmitter encoders and receiver decoder board. This kit provides a hardware development platform capable of accepting a variety of radio modules and antennae to enable the engineer to develop a Remote Telemetry application.

The kit provides a hardware development platform for:

- Embedding Telemetry
- Producing a Decoder with RS232 Output
- Range Testing
- Target Environment Testing
- Antenna Evaluation

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

Please see Datasheet DS123 Full schematics and parts list supplied.



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