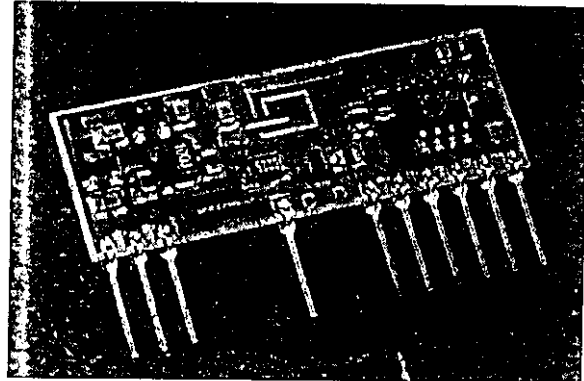


FEATURES

- COMPACT HYBRID MODULE.
- VERY HIGH FREQUENCY STABILITY (with no adjustable components).
- RECEIVING RANGE UP TO 45 METRES.
- CMOS/TTL COMPATIBLE OUTPUT.
- LOW CURRENT CONSUMPTION;
 - RR3 TYP 2.5mA.
 - RR5 TYP 0.8mA.
- SINGLE SUPPLY VOLTAGE 5V.
- COMPATIBLE WITH R.F. SOLUTIONS AM TRANSMITTERS.
- PATENTED LASER TRIMMED INDUCTOR.
- AVAILABLE FROM 250-450MHz
- COMPLIANT TO ETSI 300-339 (CE).
- REQUIRES NO RADIO LICENCE TO OPERATE



DESCRIPTION

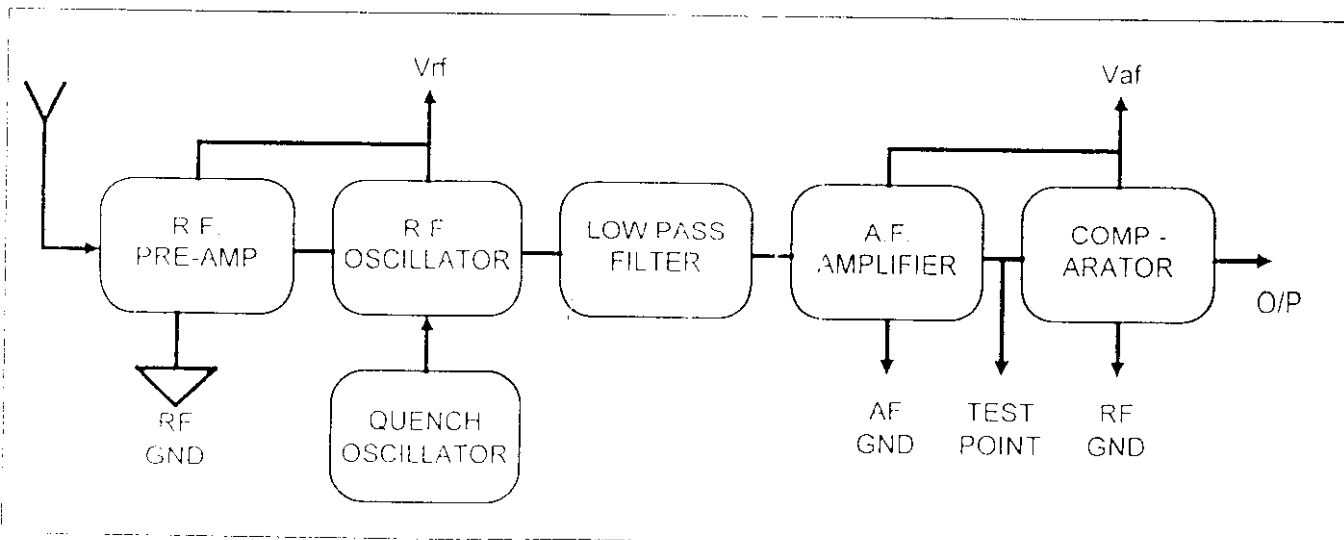
The R.F. Solutions AM Receiver modules are compact hybrid RF receivers, which can be used to capture undecoded data from any 418 or 433MHz AM Transmitter, such as R.F. Solutions AM-TX1, or AM-RT1 range of transmitters. (See AM Transmitter data sheet)

The module shows a very high frequency stability even in the presence of mechanical vibrations, manual handling and with a wide operating temperature range.

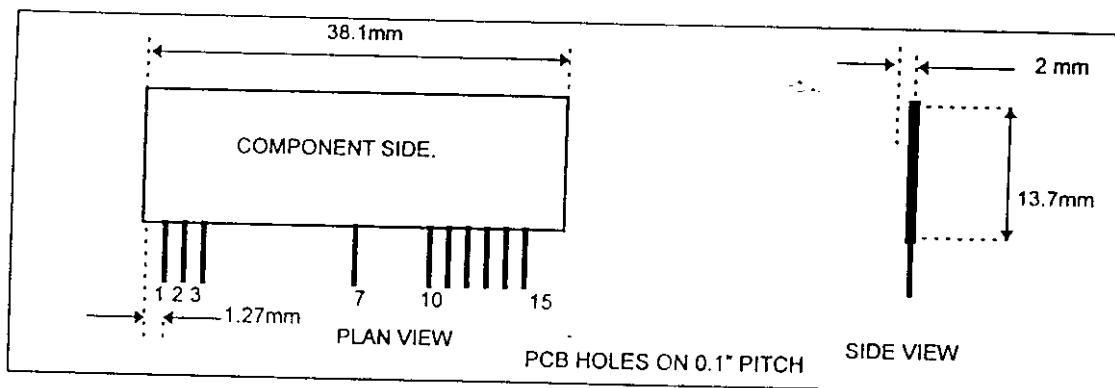
A unique laser trimming process which has been patented gives a very accurate on board inductor, removing the need for any adjustable components.

The RR5 is a version with Very Low Current consumption which has a typical quiescent current drain of only 0.8mA. All receivers are compatible, producing a CMOS/TTL output, and require connections to power and antenna only.

BLOCK DIAGRAM



MECHANICAL DETAILS



PIN DESCRIPTION

Pin No	Pin Name	Pin No	Pin Name
1	RF +Vcc	9	NC
2	RF GND	10	AF +VCC
3	DATA IN (Ant)	11	AF GND
4	NC	12	AF +VCC
5	NC	13	TEST POINT
6	NC	14	DATA OUT
7	RF GND	15	AF +VCC
8	NC		

Ambient temperature = 25° Celcius.

ELECTRICAL CHARACTERISTICS	MIN	TYPICAL	MAX	DIMENSION
Storage Temperature Range	-30		+85	°C
Operating Temperature Range	-25		+85	°C
RF Supply Voltage (RF+Vcc)	4.5	5	5.5	V
AF Supply Voltage (AF+Vcc)	4.5	5	5.5	V
Supply Current (AM-HRR3-XXX)		2.5	3	mA
Supply Current (AM-HRR3-XXX-LP)		1.8	2	mA
Supply Current (AM-HRR5-XXX-VLC)		0.8	1	mA
Working Frequency	200		450	MHz
Tuning Tolerance		+/- 0.2	+/- 0.5	MHz
-3dB Bandwidth		+/- 2	+/- 3	MHz
Max Data Rate			2	KHz
R.F Sensitivity 100% AM (AM-HRR3-XXX)	-100	-105		dBm
R.F Sensitivity 100% AM (AM-HRR3-XXX-LP)		-98		dBm
R.F Sensitivity 100% AM (AM-HRR5-XXX-VLC)		-94		dBm
Level of Emitted Spectrum		-65	-60	dBm
Low Level Output Voltage			0.6	V
High Level Output Voltage	4.5			V

ORDERING INFORMATION

HRR3-XXX	Receiver Module
HRR3-XXX-LP	Receiver Module Low Power
HRR5-XXX-VLC	Receiver Module Very Low Power

Should you require further assistance, please call;

R. F. Solutions Ltd,
Pannetts Building, Railway Lane, Lewes, E Sussex, BN7 2AQ. England.
Tel +44 (0)1273 488 880 Fax +44 (0)1273 480 661.

Email sales@rfsolutions.co.uk

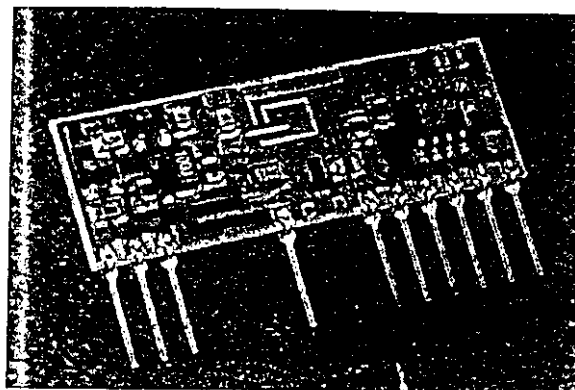
Visit our Web Site, <http://www.rfsolutions.co.uk>

RF Solutions is a member to the Low Power Radio Association.



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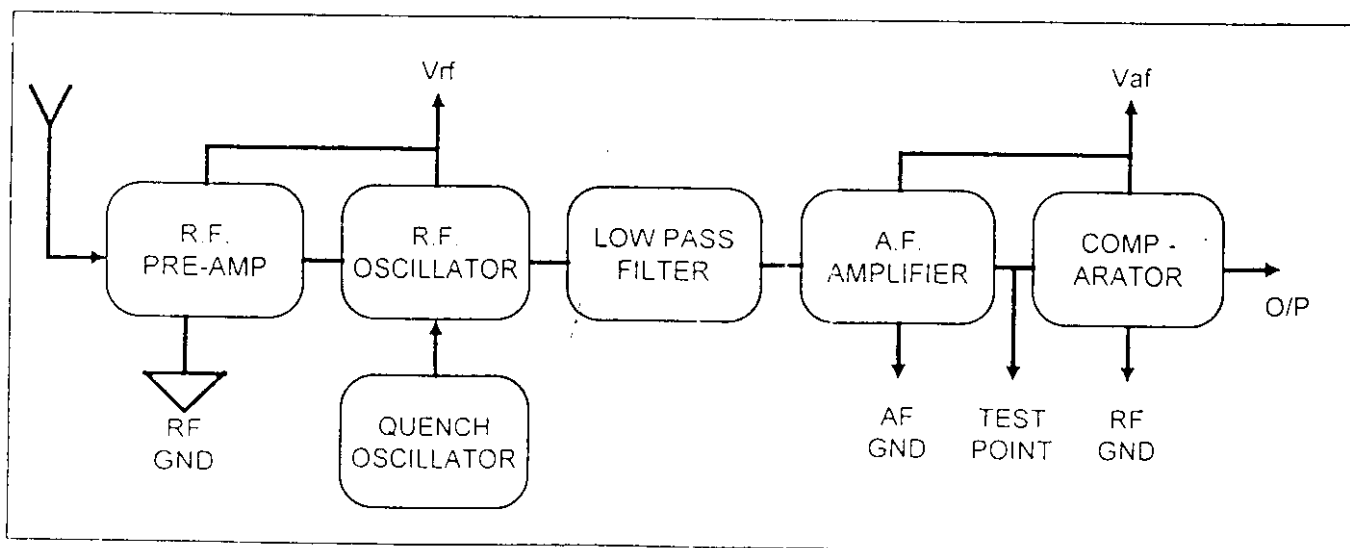
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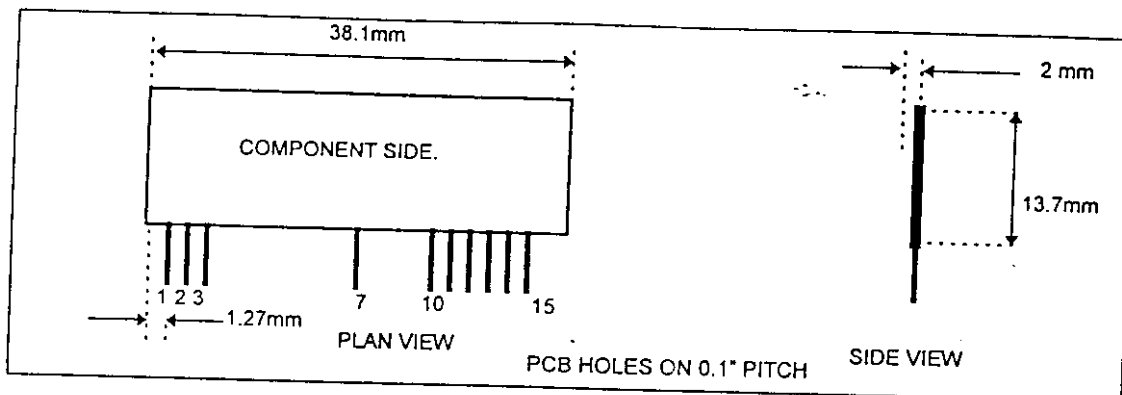
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BLOCK DIAGRAM



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Technical Description, Reilor Dog Flap Receiver

The integrated RF receiver and dog flap access control system is housed in the plastics of the dog flap itself. It is a single board, low voltage system, operating at a nominal 5 Volts DC which is derived from a low voltage safety isolating transformer connected to the mains supply which produces a nominal 12 Volts DC unregulated output. This output is regulated down to the operating voltage using a 5 volt linear regulator. In the event of a supply power failure the unit continues to operate from internal batteries for a limited period of time.

The RF receiver is of the Regenerative type and receives Amplitude Modulated transmissions at the specific frequency of 433 MegaHertz.

The decoding of the received RF data and the control of the two low voltage DC motors which drive the flap access bolts is performed using a PIC type of microprocessor. The PIC clock frequency is 4 MegaHertz and is derived from a ceramic resonator.

Spurious emissions from the leads supplying power between the safety isolation transformer and the actual control board itself are limited by using ferrite bead suppressors at the board end.

The operation of the control system is as follows:

On receipt of the RF data (nominally a 65 millisecond burst of RF, square wave modulated i.e. on/off, with 1 millisecond pulses) the PIC microprocessor analyses the incoming data stream and on receipt of a valid bit stream sequence drives the flap access bolts open. After a predetermined time (user selectable) the flap access bolts are driven closed.