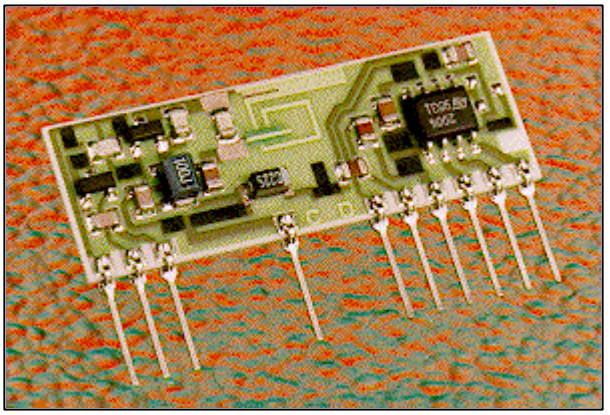
- COMPACT HYBRID MODULES.
- VERY HIGH FREQUENCY STABILITY (with no adjustable components).
- RECEIVING RANGE UP TO 50 METRES.
- CMOS/TTL COMPATIBLE OUTPUT.
- LOW CURRENT CONSUMPTION;
  - ⇒ RR3 TYP 2.5mA.
  - ⇒ RR6/8 TYP 0.5mA.
- SINGLE SUPPLY VOLTAGE 3V or 5V.
- COMPATIBLE WITH R.F. SOLUTIONS AM TRANSMITTERS.
- PATENTED LASER TRIMMED INDUCTOR.
- AVAILABLE FROM 250-450MHz
- COMPLIANT TO ETSI 300-220.
- REQUIRES NO RADIO LICENCE TO OPERATE.



Description

The R.F. Solutions range of AM 'Super Regen' Receiver modules are compact hybrid RF receivers, which can be used to capture undecoded data from any AM Transmitter, such as R.F. Solutions AM-TX1, or AM-RT4 / 5 range of transmitters. (See AM Transmitter data sheet).

These modules show a very high frequency stability over a wide operating temperature even when subjected to mechanical vibrations or manual handling. A unique laser trimming process which has been patented gives a very accurate on board inductor, removing the need for any adjustable components.

All receivers are compatible, producing a CMOS/TTL output, and require connections to power and antenna only. The HRR6 is a version with Very Low Current consumption which has a typical quiescent current drain of only 0.5mA. In addition the HRR8 operates from a 3Vdc supply.

RF Solutions also offer a range of Super Heterodyne Receivers, for data on these products please see Datasheet DS00017.

Product Range

There are several receivers within the range of products as listed below;

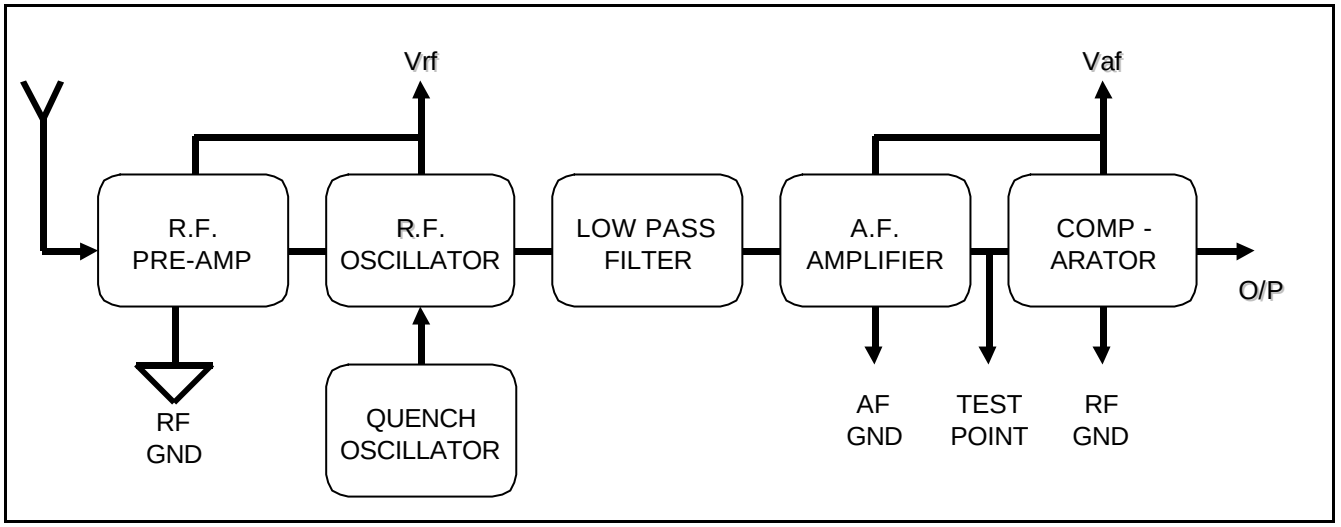
Part Number	Description	Notes
AM-HRR3-XXX	Standard Module	
AM-HRR6-XXX	Very Low Power version	0.5mA
AM-HRR8-XXX	Low Voltage Supply, Very Low Power	3V, 0.5mA
AM-HRR10-XXX	Narrow bandwidth version	Improved Performance within TETRA

XXX = 315, 418, 433MHz

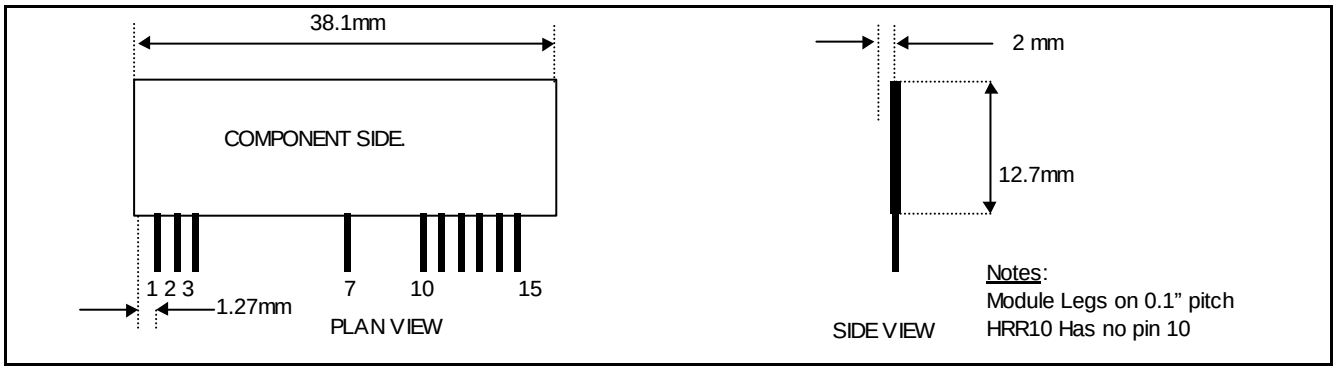
Operational Frequencies

Other Frequencies available on request Modules can be tuned to operate at frequencies between 250 –450MHz.

Block Diagram



Mechanical Details



Pin Description

Pin No	Pin Name	Pin No	Pin Name
1	RF +Vcc	8, 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

Should you require further assistance, please call;

R. F. Solutions Ltd,
Unit 21, Cliffe Industrial Estate,
South Street, Lewes,
E Sussex, BN8 6JL. England.
Tel +44 (0)1273 898 000. Fax +44 (0)1273 480 661.
Web Site http://www.rfsolutions.co.uk Email sales@rfsolutions.co.uk

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

Electrical Characteristics (Applies to all variants)

Ambient temperature = 25° Celsius.

ELECTRICAL CHARACTERISTICS	MIN	TYPICAL	MAX	DIMENSION
Storage Temperature Range	-30		+85	° C
Operating Temperature Range	-25		+85	° C
Tuning Tolerance		+/- 0.2	+/- 0.5	MHz
Working Frequency Range	200		450	MHz
Data Rate	50		2000	Hz
Level of Emitted Spectrum		-65	-60	dBm
High Level Output Voltage	4.5			V
Output Voltage @ 1mA sink		0.6		V
Data Output Current (AM-HRR3-XXX @3.6V)			10	mA

AM-HRR3-xxx Electrical Characteristics

ELECTRICAL CHARACTERISTICS	MIN	TYPICAL	MAX	DIMENSION
Supply Voltage	4.5	5	5.5	V
Supply Current		2.5	3	mA
Time from Power on to Valid Output Signal		1.2		Secs
R.F Sensitivity 100% AM (AM-HRR3-XXX)	-100	-105		dBm
-3dB Bandwidth		+/- 2	+/- 3	MHz

AM-HRR6-xxx Electrical Characteristics

ELECTRICAL CHARACTERISTICS	MIN	TYPICAL	MAX	DIMENSION
Supply Voltage	4.5	5	5.5	V
Supply Current		0.5		mA
Time from Power on to Valid Output Signal		150		mSecs
R.F Sensitivity 100%		-95		dBm
-3dB Bandwidth		+/- 2	+/- 3	MHz

AM-HRR8-xxx Electrical Characteristics

ELECTRICAL CHARACTERISTICS	MIN	TYPICAL	MAX	DIMENSION
Supply Voltage	2.7	3	3.3	V
Supply Current		0.5		mA
Time from Power on to Valid Output Signal		150		mSecs
R.F Sensitivity 100% AM		-90		dBm
-3dB Bandwidth		+/- 2	+/- 3	MHz

AM-HRR10-xxx Electrical Characteristics

ELECTRICAL CHARACTERISTICS	MIN	TYPICAL	MAX	DIMENSION
Supply Voltage	4.5	5	5.5	V
Supply Current		1.7		mA
Time from Power on to Valid Output Signal		150		mSecs
R.F Sensitivity 100% AM		-102		dBm
-3dB Bandwidth		+/- 1.5	+/- 2	MHz

Typical Application