

## Product Features

- Integrated Monolithic GaAs Converter Package Module
- High Reliability
- Lower Manufacturing Cost
- Higher Productivity
- Very Low Noise Figure & Low Distortion
- Very Low Phase Noise (Ceramic Resonator used)
- Pb Free / RoHS Standard

## Application

- Repeater
- Base Station



Package Type: HY-5A

## Description

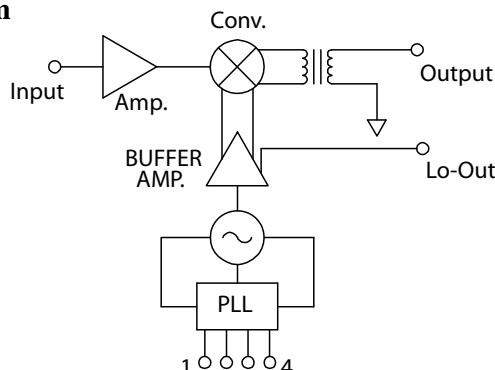
GSM Mixer is a very compact size due to using simple matching circuit board including PLL circuits. Customers can apply this part to GSM systems

## Specifications

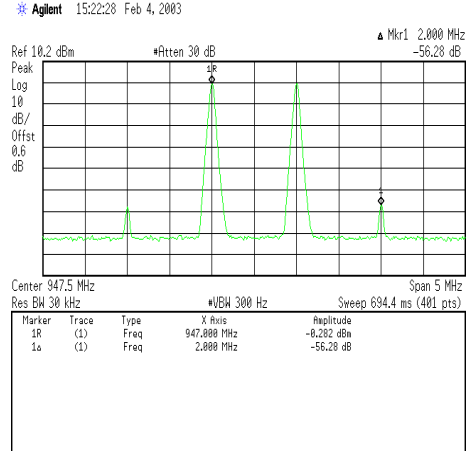
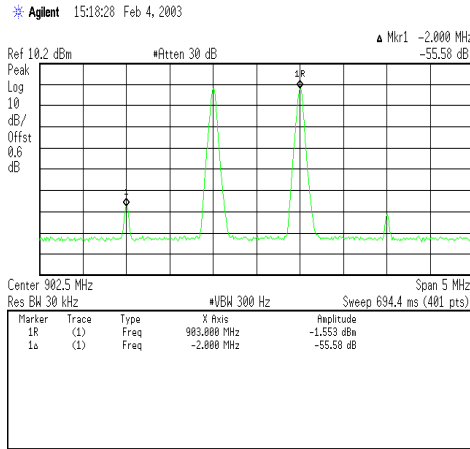
(Operating Temperature:-30°C~+80°C)

PARAMETER	RFUR09-50 (Rx-Up)	RFDR09-51 (Rx-Down)	RFDR09-55 (Tx-Down)	RFUR09-56 (Tx-Up)
Input Frequency Range (MHz)	70 (IF)	890~915 (RF)	935~960 (RF)	70 (IF)
Output Frequency Range (MHz)	890~915 (RF)	70 (IF)	70 (IF)	935~960 (RF)
LO Frequency Range (MHz)	820~845	820~845	1005~1030	1005~1030
Conversion Gain (dB)	8.0±1	9.0±1	9.0±1	9.0±1
Gain Flatness (Max.) (dB)	±0.5	±0.5	±0.5	±0.5
Noise Figure (Typ.)(dB)	8.0±0.5	6.5±0.5	6.5±0.5	6.5±0.5
OIP3 (Typ. dBm)	26	28	28	26
LO to RF Leakage (dBm)	-6	-15	-15	-6
LO to IF Leakage (dBm)	-15	-15	-15	-15
RF(IF) to IF(RF) Leakage(dBm)	35	35	35	35
LO Output Level (dBm)	4±1	4±1	4±1	4±1
LO Phase Noise (Typ.) Step Size : 10KHz	-65dBc/Hz @1KHz -95dBc/Hz @10KHz -115dBc/Hz @100KHz	-65dBc/Hz @1KHz -95dBc/Hz @10KHz -115dBc/Hz @100KHz	-65dBc/Hz @1KHz -95dBc/Hz @10KHz -115dBc/Hz @100KHz	-65dBc/Hz @1KHz -95dBc/Hz @10KHz -115dBc/Hz @100KHz
PLL Control (LMX2326)	3 wire	3 wire	3 wire	3 wire
Vcc/Idd	5V / 170mA	5V / 170mA	5V / 170mA	5V / 170mA

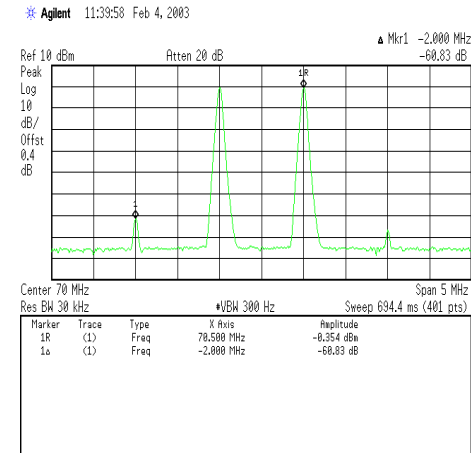
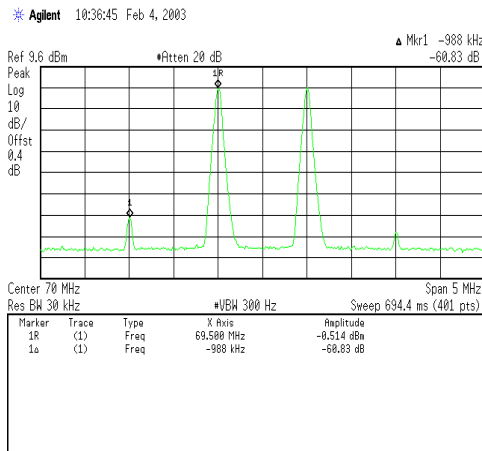
## Functional Diagram



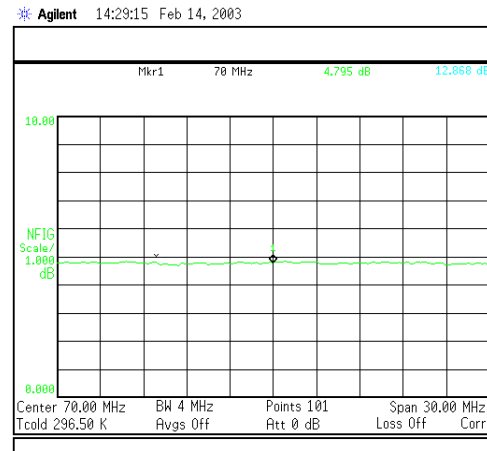
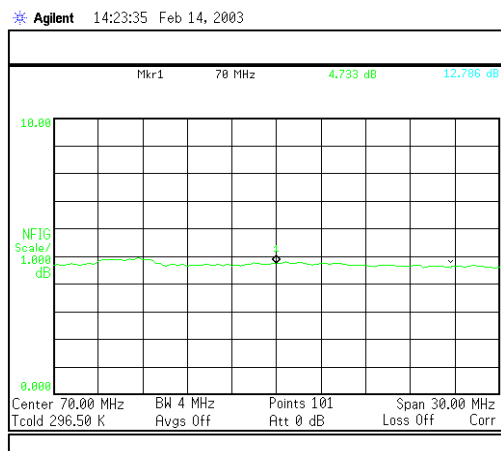
**RFUR09-50, 56 OIP3 Test (Up Converter)**



**RFDR09-51, 55 OIP3 Test (Down Converter)**

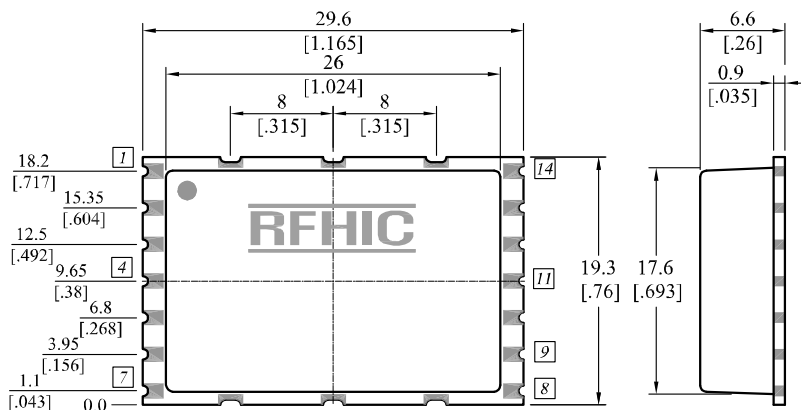


**RFDR09-51, 55 Noise Figure Test (Down Converter)**

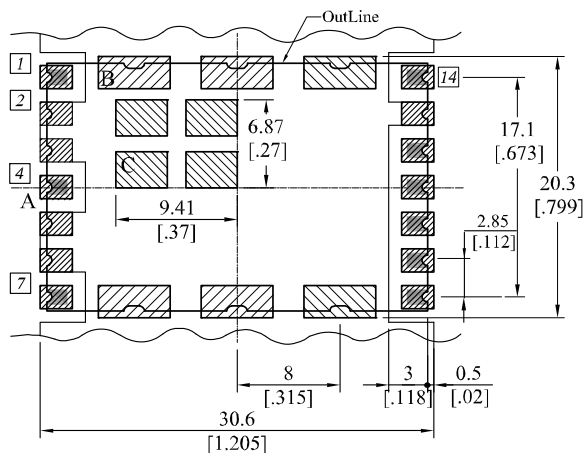


**Pacakage Dimensions (Type: HY-5A)**

Unit : $\frac{\text{mm}}{\text{[inch]}}$	Tolerance : $\pm \frac{0.2}{.008}$
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**Recommended Pattern**



Pin No.	Function	Pin No.	Function
1	Input	14	Output
2	Ground	13	Ground
3	Ground	12	Lo_Out
4	Vcc+5V	11	Fo/LD
5	Ground	10	LE
6	Ground	9	Data
7	Ref in	8	Clock

Pattern Size		WxL	
	mm	inch	
A	2.5 x 1.8	.098 x .071	
B	5.6 x 2.5	.22 x .098	
C	4 x 2.8	.157 x .11	

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