

## Product Features

- GaAs MMIC
- Very Low Distortion
- Guaranteed Broadband Power Gain
- Heat Sink 99.9% Copper, Ag or Gold Plate
- Excellent Thermal Conductivity
- Single Supply Voltage @ 24V
- Low DC Power Consumption
- No External Circuit needed

## Application

- Drive Amplifier



## Description

The RFC042 is specifically designed for up to 800MHz in frequency as amplifiers in BTS. This hybrid dynamic range amplifier module operates with a single voltage supply of 24V(DC). The RFC042 is equipped with over-voltage suppressor.

## Specifications

### Absolute Maximum Ratings

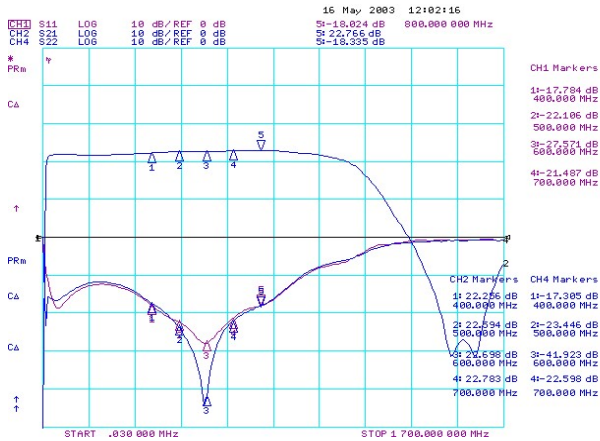
(Operating Temperature:-40°C~+100°C)

PARAMETER	MIN	MAX	UNITS
$V_{DD}/V_{RFOUT}$	0	28	VDC
$RF_{IN}$	-	+22	dBm
Storage Temperature	-40	+100	°C
Operating Temperature	-20	+100	°C

### Electrical Specifications (TA = +25°C, VDD = 24V)

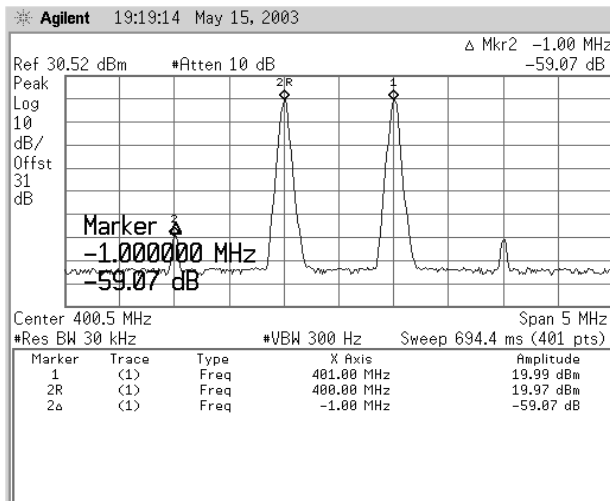
PARAMETER	RFC042			
	MIN	TYP	MAX	
Bandwidth (MHz)	400	-	800	
Gain @870MHz (dB)	21	23	-	
Gain Flatness @870MHz (dB)	-	-	±0.5	
S11 (dB)		1.5 : 1	2.0:1	
S22 (dB)		1.5 : 1	2.0:1	
IP3 (dBm)	400MHz	46	48	-
	600MHz	48	50	
	800MHz	48	50	
IMD3 (dBc) Two Tone 20dBm Output	f1=400 MHz, f2=401 MHz	54	58	-
	f1=600 MHz, f2=601 MHz	56	60	
	f1= 799MHz, f2=800 MHz	56	60	
CDMA (dBm) 29dBc@750KHz 44dBc@1.98MHz	1FA	21	23	
	3FA	21	23	
	8FA	18	20	
Noise Figure (dB) @ 870MHz		4.0	6	
Supply Current (mA)	380	400	430	

## S-Parameter

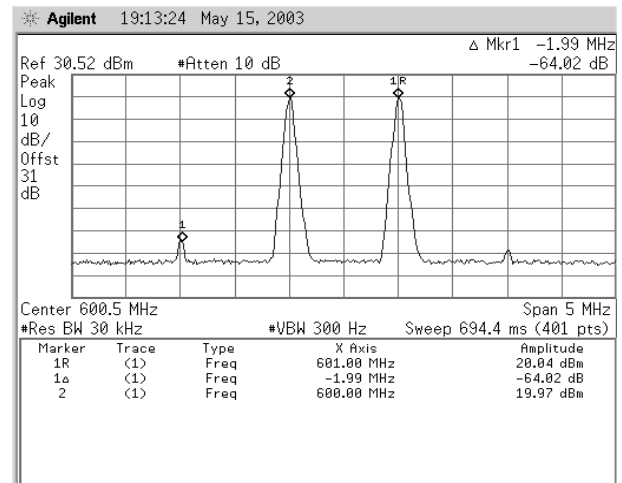


## IMD3

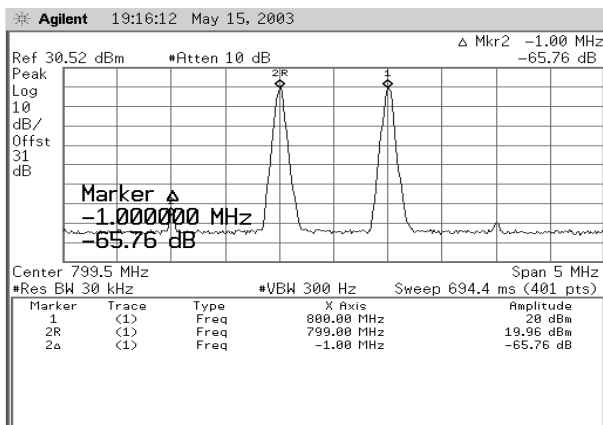
1) F1=400MHz ,F2=401MHz



2) F1=600MHz ,F2=601MHz

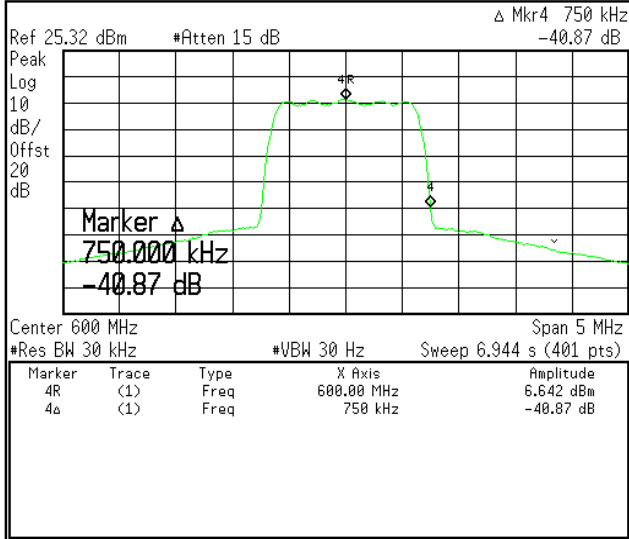


3) F1=799MHz ,F2=800MHz

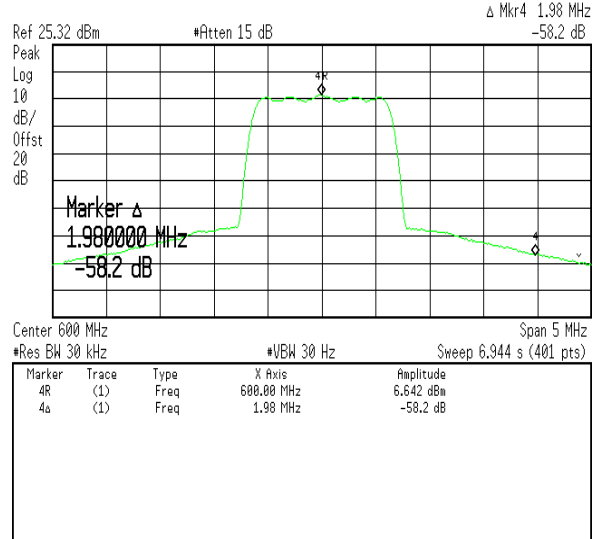


## CDMA 1FA TEST (Out Power 23dBm)

Agilent 19:34:53 May 19, 2003

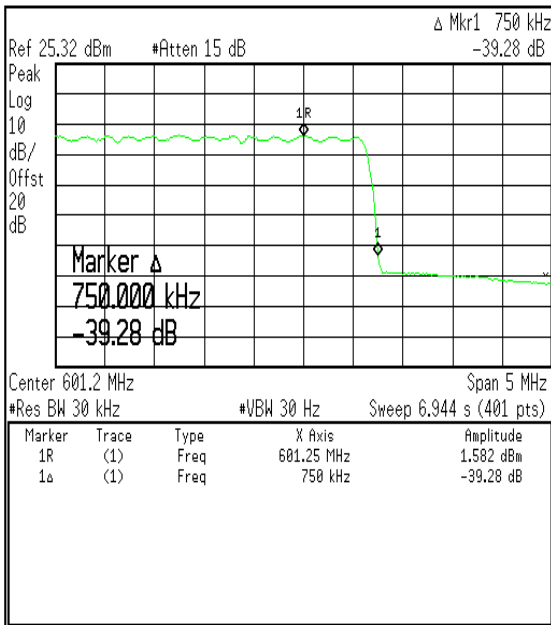


Agilent 19:37:01 May 19, 2003

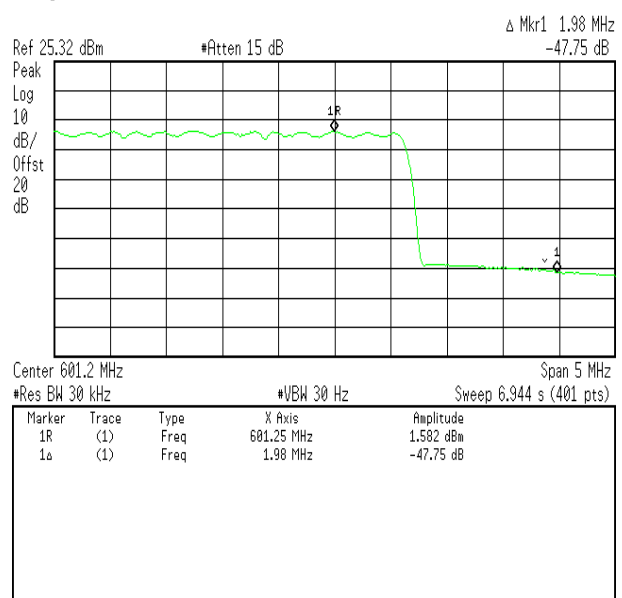


## CDMA 3FA TEST (Out Power 23dBm)

Agilent 19:28:33 May 19, 2003

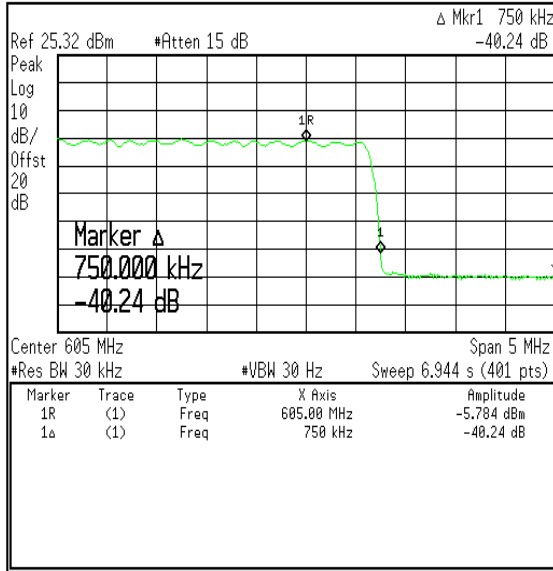


Agilent 19:27:09 May 19, 2003

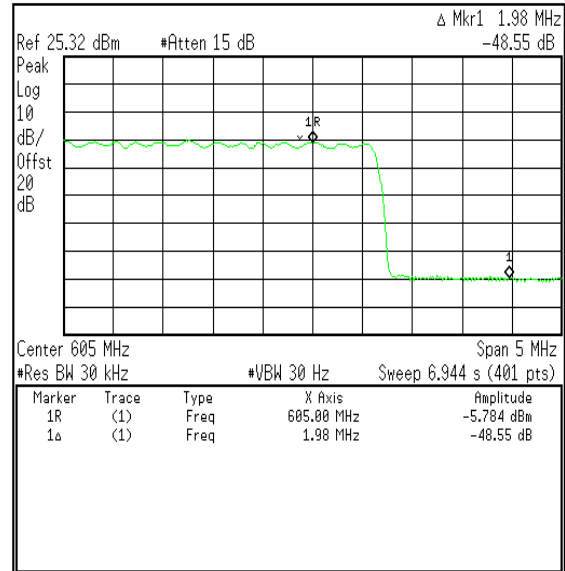


## CDMA 8FA TEST (Out Power 20.5dBm)

\* Agilent 19:20:39 May 19, 2003



\* Agilent 19:19:32 May 19, 2003

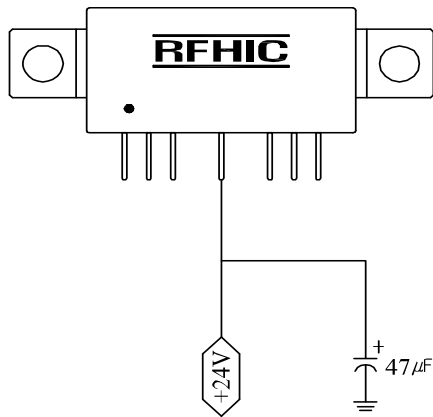


## ESD PROTECTION

Gallium Arsenide Integrated Circuits are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these devices. Some of the precautions recommended are;

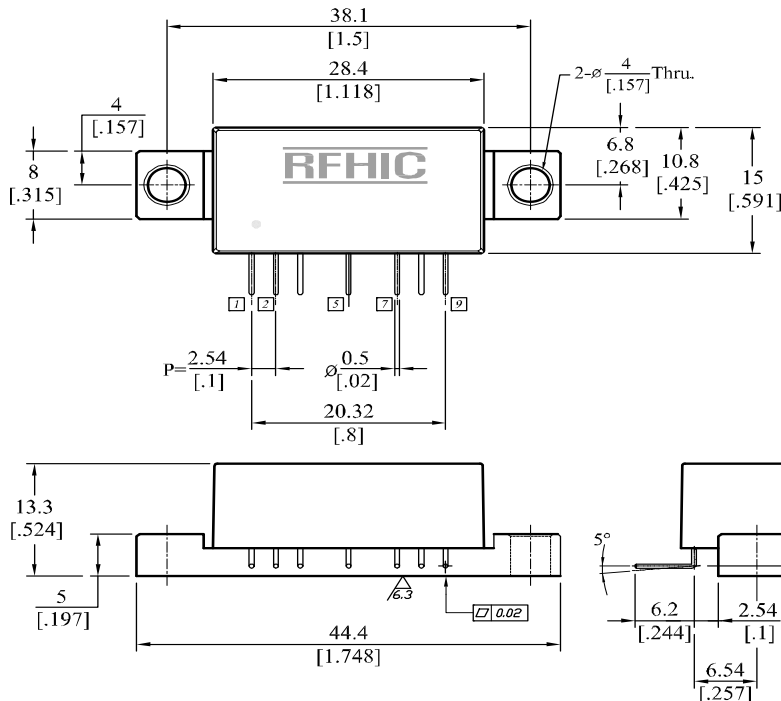
- Person at a workbench should be earthed via a wrist strap and a resistor.
- All mains-powered equipment should be connected to the mains via an earth-leakage switch.
- Equipment cases should be grounded.
- Relative humidity should be maintained between 40% and 50%.
- An ionizer is recommended.
- Keep static materials, such as plastic envelopes and plastic trays etc. away from the workbench.

## NOTES FOR CORRECT USE



1. On the power input port (Pin#5), 47uF/35V capacitor GND is recommended.
2. The heat sink of CATV Hybrids is to be mounted in direct contact with the metal case of the equipment. Heat conducting grease should be applied to the module/equipment interface and the unit tightly secured.
3. Put the power off before adjusting in/output matching of the system.
4. The unit must have a common ground with the equipment and the analyzer.
5. Pay close attention to the input voltage not to over power the hybrid.
6. The space between bottom of socket and the tip of the lead is recommended to have space of 2mm+ to protect the pin
7. Do not open the plastic cover to change the matching inside the hybrid. Once opened, RFHIC will not be responsible for the hybrid.

## Package Dimensions (Type: DP-27)



Unit : mm [inch]	Tolerance : ± 0.2 [.008]
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Pin No.	Function
1	RF Input
2,3,7,8	Ground
5	Vcc
9	RF Output

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