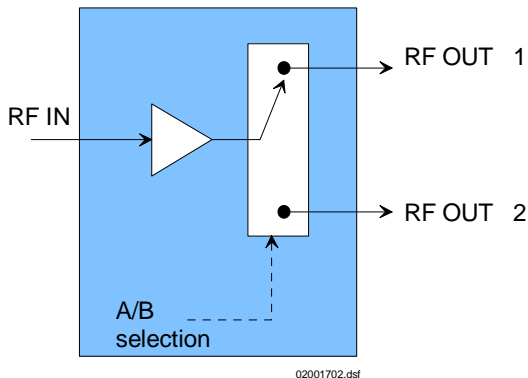
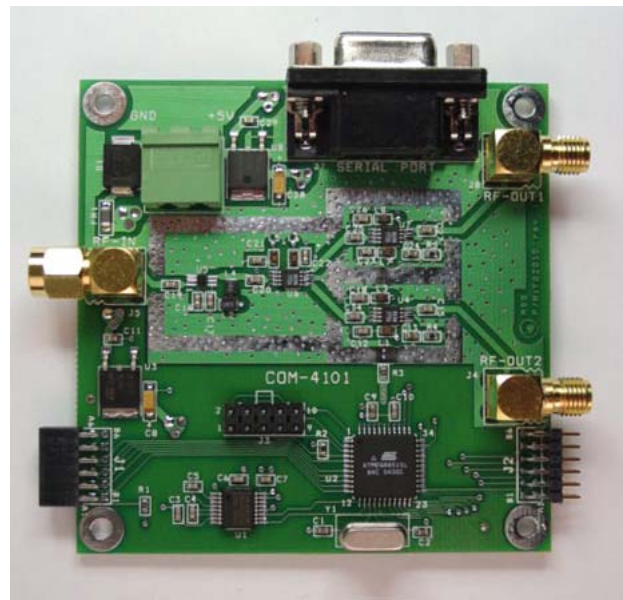


## COM-4101 RF TRANSMIT REDUNDANCY MODULE Amplifier & A/B Switch

### Key Features

- 10 – 1850 MHz amplifier, 15 dB min gain,  $P_{1dB} = +12.8 \text{ dBm @ 70 MHz}$ .  
 $P_{1dB} = +6.8 \text{ dBm @ 1.5 GHz}$
- A/B Redundancy switch, software controlled. Isolation:  
> 80 dB @ 70 MHz  
> 46 dB @ 1.5 GHz
- 2 methods for controlling the A/B switch:
  - software command
  - LVTTL signal. (switching time < 10  $\mu\text{s}$ )
- Single 5V supply
- Connectorized 3"x 3" module for ease of prototyping. Standard SMA connectors.



For the latest data sheet, please refer to the **ComBlock** web site: [www.comblock.com/download/com4101.pdf](http://www.comblock.com/download/com4101.pdf). These specifications are subject to change without notice.

For an up-to-date list of **ComBlock** modules, please refer to [www.comblock.com/product\\_list.htm](http://www.comblock.com/product_list.htm).

### Interfaces

Interface	Definition
RF IN	J5. SMA connector male, 50 Ohm Absolute maximum input level: +13 dBm
RF OUT	J4, J8. SMA connector female, 50 Ohm
<b>Control Lines</b>	<b>Definition</b>
A/B#_SELECT	Low-voltage TTL input control. Used to select the RF path. Level signal: 3.3V = RF OUT 1 enabled 0V = RF OUT 2 enabled Response time is typically in the range 5-10 $\mu\text{sec}$ Connector J2 Pin B3. This control signal is enabled only when REG0 bit 1 = '1'.
<b>Serial Monitoring &amp; Control</b>	DB9 connector. 115 Kbaud/s. 8-bit, no parity, one stop bit. No flow control.
<b>Power Interface</b>	4.75 – 5.25VDC. Terminal block. Power consumption is 53mA.

## Absolute Maximum Ratings

Supply voltage	-0.5V min, +6V max
Digital inputs	-0.5V min, +3.8V max
RF_IN	+13 dBm

## Configuration (via Serial Link / LAN)

Complete assemblies can be monitored and controlled centrally over a single serial or LAN connection.

The module configuration parameters are stored in non-volatile memory. All control registers are read/write.

Parameters	Configuration
Redundancy path selection	Output port selection : RF_OUT_1 (J8): 1 RF_OUT_2 (J4): 0 REG0 bit 0
External controls enabled/disabled	Enable or disable the output select A/B#_SELECT external control on the J2 connector. 0 = external control disabled 1 = external control enabled Note: when the external control is enabled, bit 0 must be set to 0 (i.e. the condition REG0 = 0x03 is illegal and yields undetermined results). REG0: bit 1

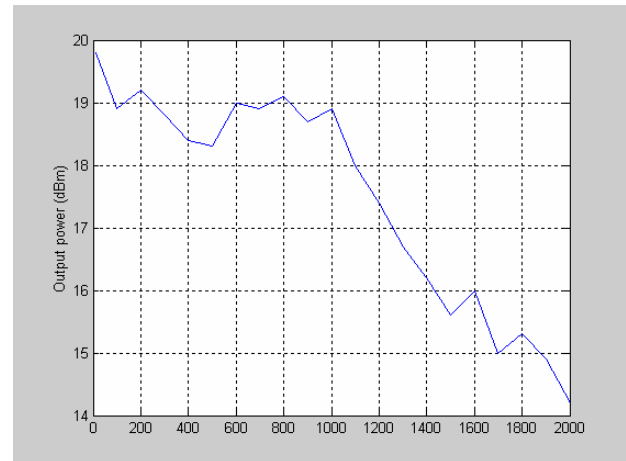
## Monitoring (via Serial Link / LAN)

Parameters	Monitoring
Version	Returns '4101x' when prompted for version number.

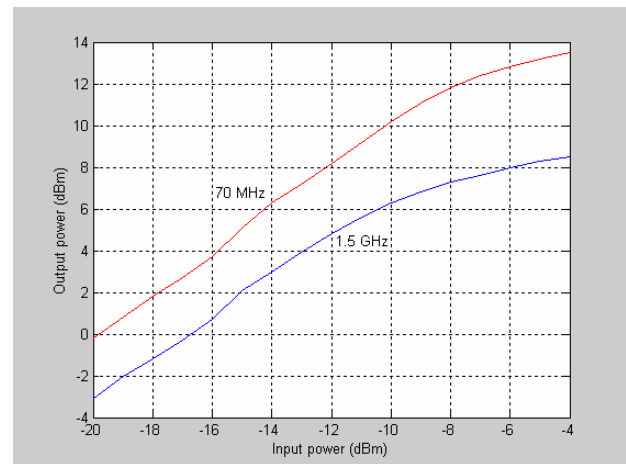
## Performances

**Gain flatness:**  $< \pm 0.5$  dB in any 120 MHz band between 10 MHz and 2 GHz.

## Gain versus frequency:



## Linearity:



## 1 dB compression point at output:

$P_{1dB} = +12.8$  dBm @ 70 MHz.

$P_{1dB} = +6.8$  dBm @ 1.5 GHz

## Off-state attenuation:

RFOUT1:

$> 80$  dB @ 70 MHz

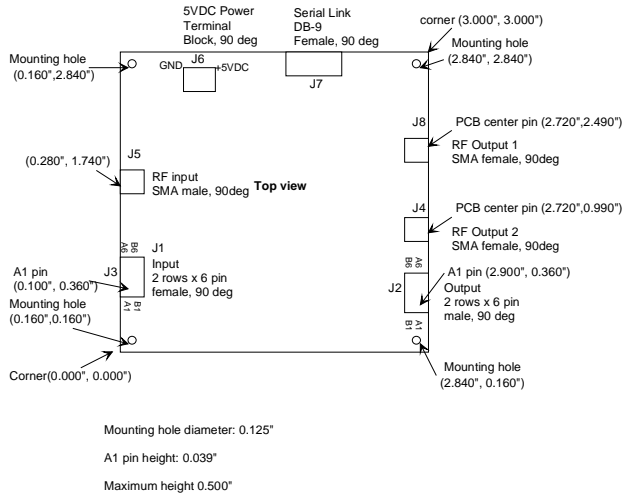
$> 46$  dB @ 1.5 GHz

RFOUT2:

$> 80$  dB @ 70 MHz

$> 50$  dB @ 1.5 GHz

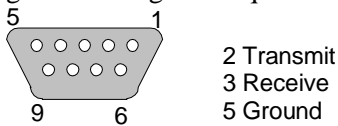
## Mechanical Interface



## Pinout

### Serial Link J7

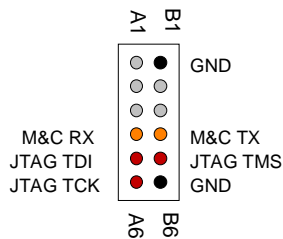
The DB-9 connector is wired as data circuit terminating equipment (DCE). Connection to a PC is over a straight-through cable. No null modem or gender changer is required.



DB-9 Female

### Input M&C Connector J1

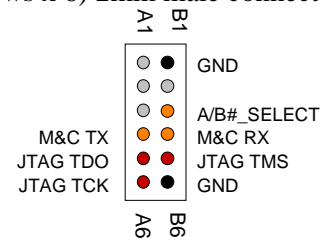
12-pin (2 rows x 6) 2mm female connector.



This connector is to forward JTAG, GND and other monitoring and control signals to subsequent analog modules.

### Output M&C Connector J2

12-pin (2 rows x 6) 2mm male connector.



This connector is to forward JTAG, GND and other monitoring and control signals to subsequent analog modules.

## I/O Compatibility List

(not an exhaustive list)

Input	Output
<a href="#">COM-4004</a> 70 MHz IF modulator and frequency synthesizer	
<a href="#">COM-4002</a> L-band [950-1450 MHz] quadrature modulator	
<a href="#">COM-4005</a> [800 – 1000 MHz] quadrature modulator	

## ComBlock Ordering Information

COM-4101 RF TRANSMIT REDUNDANCY MODULE.

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 E-mail: sales@comblock.com