

MULTI-FUNCTION MODULE SERIES

Configurations:

Rack mount, multi-module Individually mounted modules

Applications:

Video and cable systems Automated test equipment Laboratory Manufacturing **OEM** integration

Interfaces:

RS232 I2C ™

RF connections: Type F

Functions: RF switches

Attenuators Amplifiers **RF Noise Source**

IED INSTRUMENTS, INC.

RF TEST AND MEASUREMENT

RF Cogs[™] **Flexible RF Module System**

The RF Cogs[™] family of products is a collection of high performance, low cost RF modules intended for a variety of system integration applications.

- Simple to integrate in a rack mount panel or separate modules
- Simple to control via USB or RS232 interface
- Superior RF performance
- Low cost

Modules are usually connected by daisy-chained control cables headed by a USB interface module. The USB interface module provides a single point for controlling all modules from a PC via a simple serial interface and command set (USB or RS232).

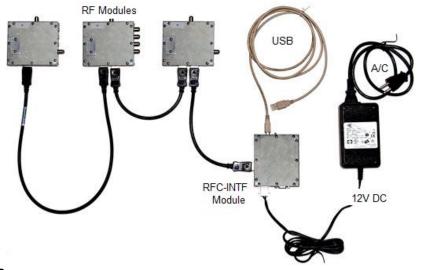


For rack-mount applications, a 3RU cage is available for mounting selected modules and blank panels are available for completing the bay. Additional vertical space may be required in the rear for cabling.

Alternatively, you may mount the modules individually in locations designed to minimize the RF cabling. Control and power are distributed from an interface module to the RF modules on the same cable in daisy-chain fashion.

For embedded OEM applications, the USB interface may be omitted and control provided by an I2C interface. A simple adapter board is available for connection to the host processor and DC power.

Interfacing to a computer is simple: just connect a standard USB or RS232 cable. You can use a terminal emulation program such as Hyperterm to send commands or use your own software.



INTERFACE MODULES

- RFC-INTF USB Interface Module (includes RS232)
- RFC-TERM I2C interface and power termination board

RF MODULES AVAILABLE NOW

- RFC-AT60 Step attenuator, 4 stage (0, 15, 30, 45, 60 dB)
- RFC-SW41 RF Switch, single pole 4 throw, relay type, bi-directional

See individual data sheets for specifications.

RF MODULES AVAILABLE SOON

- RFC-AMP1G Amplifier, 5:1000 MHz, 20 dB gain (on/off selection)
- RFC-NS2G RF Noise Source, 5:2150 MHz
- RFC-SW22 RF Switch, double pole, double throw, relay type, bidirectional
- RFC-SW22S RF Switch, double pole, double throw, solid state
- RFC-AT32P1 Step attenuator, 0.1 dB steps, 32 dB range, 5:1000 MHz, 75 Ohm

Contact us for specifications or to request additional modules.

ACCESSORIES

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- RFC-RM Rack Mount Cage, 13 module spaces
- RFC-BP1 Blank panel, single module wide
- RFC-BP5 Blank panel, five modules wide
- RFC-CBL12 Control cable, 12 inch
- RFC-CBL36 Control cable, 36 inch
- RFC-CBL72 Control cable, 72 inch
 - RFC-DISC CD with Sample Control Software for PC (Note: Software download via internet is free)

Warranty

Warranted for a period of one year against defects in material and workmanship

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Indianapolis, IN 46203 [USA] Email: info@appliedin.com
 Phone:
 (317) 782-4331

 Fax:
 (317) 786-9665

 Toll Free
 (800) 244-2976 (in USA)



Applied Instruments takes pride in providing information and technical support to customers when they need it.

SAMPLE APPLICATION #1

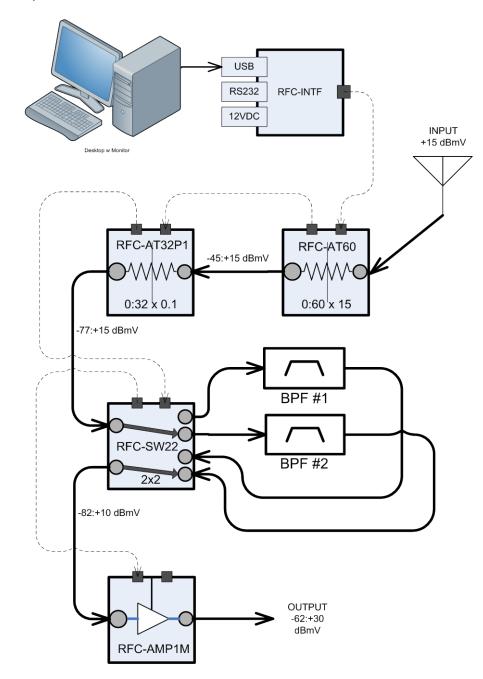
Suppose you have a wideband signal source that outputs a signal at +15 dBmV and you want to limit the signal to one of two narrower band frequency ranges with a varying signal level of -30 to +30 dBmV. This will be controlled by a Labview application running on a PC.

Step 1: Use variable attenuation to obtain desired power range.

Step 2: Select band-pass filter to obtain desired frequency range.

Step 3: Amplify signal to final desired power level.

For simplicity sake, we will assume 5 dB insertion loss for the band pass filters and ignore other insertion losses and frequency band conversions in this example.



Sample Application #2 - Noise Power Ratio (NPR) Testing

In this application, band-pass filters are applied to a noise source to obtain a simulated broadband signal. The power level is read with a spectrum analyzer. A notch filter is then inserted and the power in the notch is read with the spectrum analyzer. The system can select one of two ranges and one of two notches. The notch in/out operation is performed using a solid state switch module to avoid relay wear since it occurs frequently. An Applied Instruments NS-3 is used as the signal source, it has 32 dB of range with 0.1 dB step size. A 0:60 dB step attenuator module and amplifier module are used to extend the power range. Additional signal processing may be required in front of the analyzer to avoid over-driving the analyzer front end.

