## **Multi-channel Attenuator**



The SSA series of solid state RF attenuators from dBm offers unprecedented reliability, fast switching speed (less then 20us), wide dynamic range (95dB), excellent frequency range (20 to 3000 MHz) and a unique digital control bus to permit dense physical packaging. It is ideally suited for OEM switch matix applications. The solid state attenuators, originally developed for dBm's product line of highly accurate, fast carrier/noise generators are now offered with a companion digital control bus and tray assembly to allow users to easily and cost effectively construct their own high speed RF mux of virtually any size. Fast update rates (1 KHz) with data strobing for simultaneous update of all attenuators is offered.

### **RFAttenuator**

Each RF attenuator is constructed using MMIC GaAs technology and has a dynamic range of 95dB with a step size of 1dB. It is designed to handle high power levels (1dB compression point greater then +25 dBm) and is packaged in a compact 3.2" x 1.4" 0.75" housing. The solid state attenuators requires minimal DC power (360mW) and is controlled via a 7 bit parallel TTL word. SMA connectors are offered as standard.

#### **Multi-channel Attenuator tray assembly**

To simplify the construction of RF switch matrixes, a mutli-channel attenuator (up to 16 channels) assembly tray with a high speed digital control board is offered. The tray provides a simple method to mount up to sixteen RF attenuators with a single digital control port and a single connector for DC power input. Multiple trays can be incorporated into a rack mount chassis. Each attenuator is independently controllable . A master strobe input allows all channels to be updated simultaneously. Up to sixteen assembly trays, each with up to 16 RF attenuators (16x16 mux) can easily be configured and controlled via a simple 8 bit parallel address and 8 bit parallel data bus. All attenuators can be continuously and simultaneously updated at a rate exceeding 1 KHz



## **Applications**

- Typical applications for the SSA Series include:
- High speed switching/combining/attenuation wireless simulation system
- RF ATE test systems
- Cell phone and base station inter-op testing

### **Features**

- High reliability solid state design
- Wide frequency range
- Fast switching speeds
- Low amplitude ripple
- Fast update rates
- Dense packaging for RF multi-channel designs

# **Specifications**

# **Ordering Information**

Multi-channe	Attenuator Assembly	Model No.	Description
No. of independent chan Control interface bus Data: Address: Byte write strobe: Mastor strobe:	nels 8 or 16 byte wide parallel latching, double buffered 8 bit parallel 8 bit 1 bit 1 bit	SSA20/3000 MUX-SSA-8 MUX-SSA-16	Solid State Attenuator, 20 MHz to 3,000 MHz 8 channel Attenuator assembly 16 channel Attenuator assembly
Assembly size DC Power	4.2" x 19" x 2" (160 cubic inches) +15V @ 35 mA (19mA for 8 channels) -15V @ 360 mA (180 mA for 8 channels) +5V @ 75 mA	0 0 0 0 0	
Attenuation Range Attenuation resolution Frequency Range Insertion loss	0 to 95 dB 1 dB 20 MHz to 3,000 MHz 7.5 dB (20 to 3,000 MHz)	Typical examp	ple of an 8 channel Attenuator Assembly (Cabling not shown)
Amplitude ripple	+/- 0.75 dB @ 0 dB attn, 20MHz to 3,000MHz +/- 0.2 dB max, per 100MHz		
1 dB Comp point	> +25 dBm, 100 MHz to 3,000MHz, > +19 dBm @ 20MHz	4	
Output 3rd order interce	<b>pt</b> +40 dBm typical @ 0 dB, +35 dBm min any setting		
Noise Floor Switching speed RF rise/fall time VSWR Size Connectors Control Interface DC Power	< -170 dBm/Hz < 16 us 10% TTL to 90% RF < 3us 1.5: 1 , 100 to 3,000MHz 3.2" x 1.4" x 0.75" (excluding RF connectors) SMA(F) 7 bit parallel TTL, binary weighting +15V @ 2 mA -15V @ 22 mA	Internal view of at digital circuitry.	ttenuator

Internal view of attenuator RF circuitry.

**RF** Test Equipment for Wireless Communications

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