DC-26.5GHz 3.5mm 70dB Programmable Step Attenuator P/N: YX-PSADC-26.5G-70-10P1

Overview:

The 3.5mm 70dB program-controlled stepping attenuator provides 0-70dB attenuation across a frequency range of DC-26.5GHz, with a minimum step size of 10dB. This programmable attenuator features high accuracy, good repeatability, low insertion loss, and long service life. It is primarily used to control signal amplitude entering the system, manage output power, adjust matching between the signal source and load, and simulate transmission path losses in communication systems.

Features:

- High attenuation accuracy
- Good repeatability
- Low insertion loss
- Long service life

Typical Applications:

- Broadband spectrum analyzers
- Broadband vector network analyzers
- Broadband synthesized signal sources
- Noise figure test instruments
- Microwave automatic test systems
- Wireless communication systems

RoHS

Electrical &Mechanical Specifications				
Frequency Range	DC-26.5GHz			
Attenuation	70dB			
VSWR	≤1.8			
Input Power (CW)	1W (continuous wave)			
Attenuation	10dB	20dB	40dB	70dB
Attenuation Accuracy	±1.0dB	±1.0dB	±1.2dB	±2.7dB
Insertion loss	≤3.5dB (0dB)			
Weight	Maximum 0.35kg			
Step amount	10dB			
Connector form	3.5mm			
Electrical connector form	Pitch: 2.54mm×2.54mm; Straight needle Section: 0.64mm×0.64mm; Number of cores: 10;			

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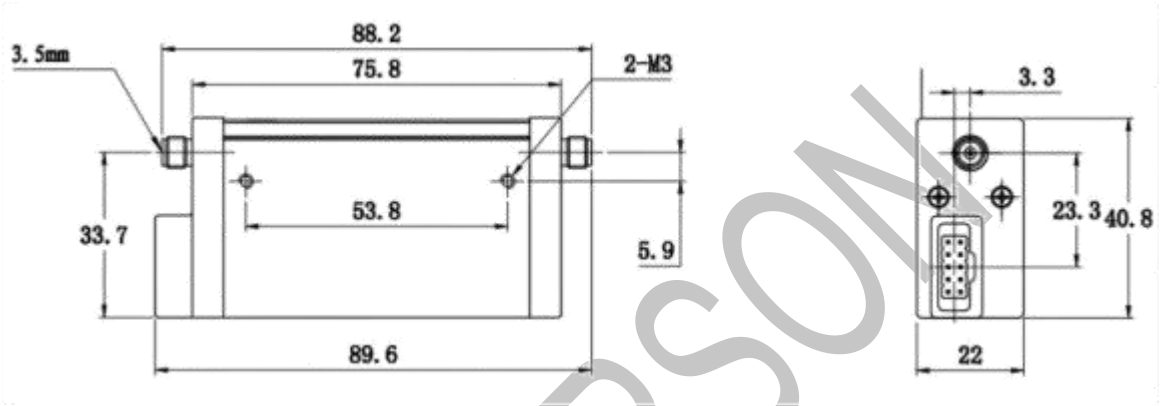
Environmental Specifications	
Operational Temperature	-20℃to+70℃
Storage Temperature	-55℃to+85℃
Repeatability	≤0.05dB (Typical value)
Minimum service life	1 million times (Per Stage)
Impact (working state)	10g, 6ms, Three Axes and Six Directions.
Vibration (working state)	Acceleration 5g, 50-2000Hz
Shock	Humidity Resistance

Outline drawing(Unit:mm)



Attenuation Composition:

The programmed attenuator consists of four components, each of which can switch between pass-through and different attenuation levels.

For instance, the first component includes a straight-through piece and a 10dB attenuator, the second has a straight-through piece and a 40dB attenuator, while the third contains a straight-through piece and a 20dB attenuator.

These pieces can be combined to achieve attenuation from 0dB to 70dB. The specific combination method is as follows:

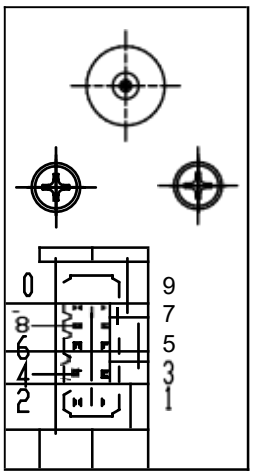
Attenuation	First Stage	Second Stage	Third Stage
0dB	O	O	O
10dB	×	O	O
20dB	O	O	×
30dB	×	O	×
40dB	O	×	O
50dB	×	×	O
60dB	O	×	×
70dB	×	×	×

Control Mode:

The relay in the drive program-controlled stepping attenuator requires a DC voltage of 20V to 28V and a drive current of 126mA (at room temperature with a 24V supply for each stage). It includes a latch device that automatically cuts off power after activation, ensuring low power consumption. The relay switching time is ≤20ms.

The control relay needs TTL level input at the corresponding connector to select either the pass-through or attenuation option. Triggering occurs on the falling edge (transition from high Level to low level), with the low level lasting more than 20ms. The specific control relationships are as follows:

Power supply: Pin 10 serves as the positive terminal (+20V to +28Vdc), rated at +24Vdc, while



Pin 1	First stage pass-through
Pin 2	First stage 10dB attenuation
Pin 4	Second stage pass-through
Pin 5	Third stage pass-through
Pin 6	Unused
Pin 7	Unused
Pin 8	Third stage 20dB attenuation
Pin 9	Second stage 40dB attenuation

For example: to achieve 60dB attenuation, power the connector as follows:

Pin 1	TTL high level to low level and low level duration greater than 20ms
Pin 2	TTL High Level
Pin 3	Ground
Pin 4	TTL High Level
Pin 5	TTL High Level
Pin 8	TTL high level to low level and low-level duration greater than 20ms
Pin 9	TTL high level to low and low duration greater than 20ms
Pin 10	+24Vdc

Cautions:

1. When powering the programmed stepping attenuator, pin 3 must be well grounded, otherwise it may cause permanent damage to the internal components of the programmed stepping attenuator.
2. When the attenuator is installed, in order to make it have better seismic performance, place the attenuator horizontally (that is, the mounting screw of the attenuator is perpendicular to the horizontal plane).
3. The attenuator can only withstand a maximum of 1W (CW) of power, so do not input more than 1W (CW) of power into this attenuator port at this time.
4. The programmable stepping attenuator port is a precision female connector, which can only be connected with its matching connector. At the same time, when connecting, attention should be paid to whether the port size to be connected meets the national standard requirements to avoid damage to the connector, affecting the indicators and service life of the device. In addition, when the connector is connected and disconnected, it is best to use a torque wrench. When not in use, the connector will be covered with a dust-proof cap to avoid excess into the attenuator internal impact indicators.