

◆ Product Description

MPAC-017060-50E is a 1.7-6GHz high accuracy programmable phase & amplitude controller. It can change phase and amplitude of RF signal with minimum step 1° and 0.1dB, dynamic range 360° and 50dB. The absolute accuracy is $\pm 2^\circ$ and $\pm 0.2\text{dB}$ Max. from ideal setup of any phase and amplitude combination at any frequency.

The product size is 227x114x50mm with 100-240 VAC. It can be controlled through USB and Ethernet with user-friendly GUI. The unit provides DLL for users to program.

The applications include 5G signal simulator, massive MIMO channel simulation, 5G Antenna OTA test, accurate beamforming producing and algorithm research, phase array antenna test, complicated signals environment producing etc.

Besides 1.7-6GHz system, there are different models can cover 0.5-2GHz, 6-18GHz, 18-40GHz and 24~40GHz respectively.

◆ Key Features

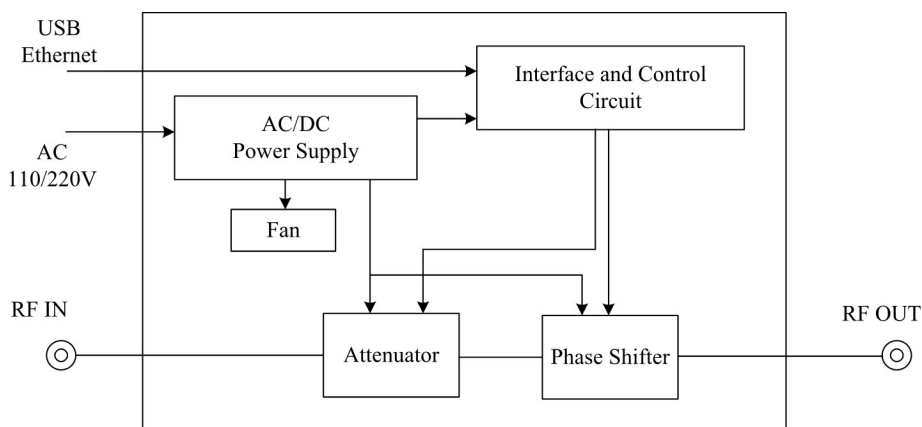
- Wide frequency range, one unit covers 1.7 to 6GHz
- Fine resolution, phase 1° and amplitude 0.1dB
- Super high absolute accuracy, phase $\pm 2^\circ$ Max., $\pm 1^\circ$ Typ., amplitude $\pm 0.2\text{dB}$ Max., $\pm 0.1\text{dB}$ Typ.
- Low insertion loss: 15dB Typ., 17.5dB Max.
- USB/Ethernet control, Easy to install and use
- User friendly Graphical User Interface for any Windows® 32 or 64 bit computer

◆ Specifications

Electrical Specifications at 23±3°C					
Parameter	Frequency Range	Conditions	Min.	Typ.	Max.
Attenuation Range ¹	1.7-6 GHz	0.1 dB Step Min.	0 dB		50 dB
Attenuation Step			0.1 dB		
Attenuation Accuracy		0-50 dB & 0-360°		±0.1 dB	±0.2 dB
Phase Shift Range		1° Step Min.	0°		360°
Phase Shift Step		0-360°	1°		
Phase Accuracy		0-50 dB & 0-360°		±1°	±2°
Insertion Loss		0 dB & 0° Set		15 dB	17.5 dB
VSWR				1.6:1	2:1
Input Power without Performance Degradation					20 dBm
Survival Input Power					30 dBm
Supply Voltage			100 VAC		240 VAC
Control Mode	USB / Ethernet				
RF In / Out Connector	SMA-F				
Size	227 x 114 x 50 mm				
Operating Temperature	0°C to 50°C				
Storage Temperature	-20°C to 70°C				

Note 1: Attenuation range can be customized up to 120dB Max.

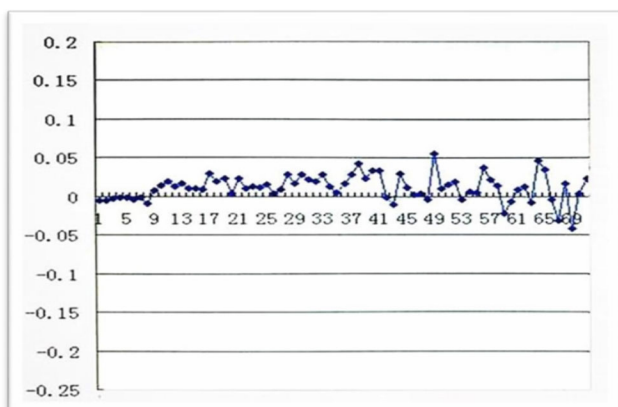
◆ Schematic Diagram



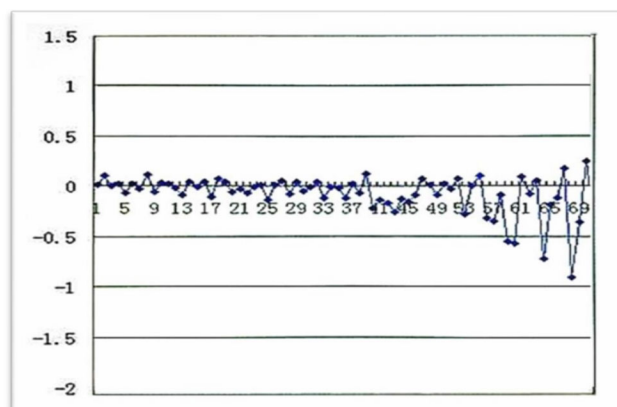
The input and output is reciprocal

◆ Typical Tested Curve

Phase & Amplitude Control Accuracy



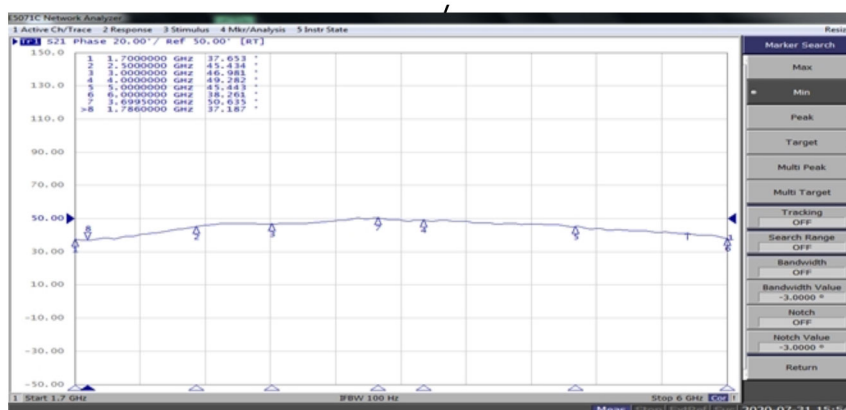
Amplitude accuracy tested data@ 3.5GHz,
Any combination of phase & attenuation
among 0~50dB & 0~360°



Phase accuracy tested data@3.5GHz,
Any combination of phase & attenuation
among 0~50dB & 0~360°

The X-coordinate shows the number of random sampled points within 0~50 dB & 0~360°

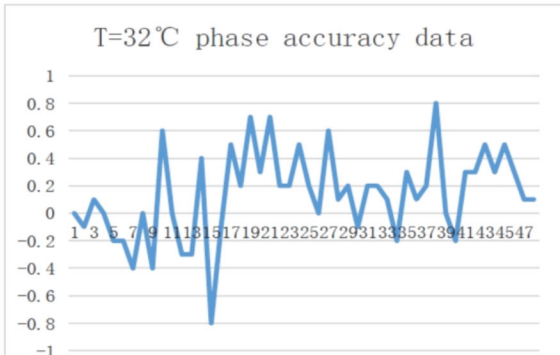
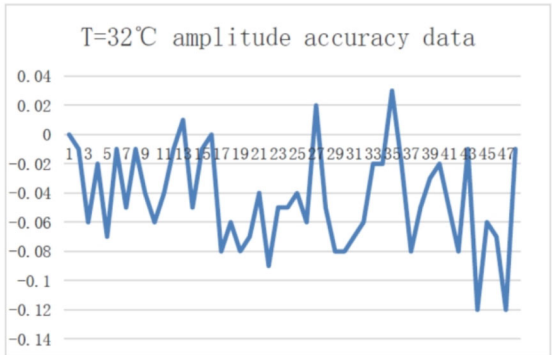
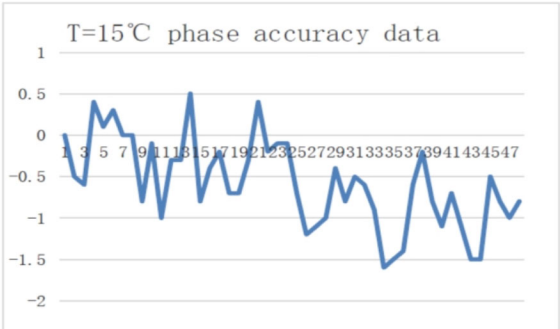
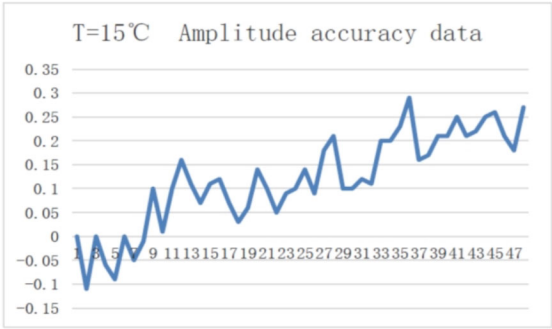
1.7-6GHz Phase Change over Frequency



Amplitude & Phase Set: 15dB, 50°

Phase Tested (Max: 50.635° Min: 37.187° Max-Min: 13.448°) /

Phase & Amplitude Accuracy VS Temperature



Tested Frequency: 3.5GHz