

Характеристики:

- Ультраширокий диапазон рабочих частот 0,1 - 43,5 ГГц
- Управление и питание через USB
- Ослабление до 15,5 дБ с шагом 0,5 дБ



| Parameters | Min. | Typ. | Max. | Min. | Typ. | Max. | Min. | Typ. | Max. | Min. | Typ. | Max. | Units |
|--|---|----------|------|-------|------|------|-------|------|------|---------|------|------|--------|
| Frequency Range | 0.1~18 | | | 18~31 | | | 31~40 | | | 40~43.5 | | | GHz |
| Attenuation Range | | 15.5 | | | 15.5 | | | 15.5 | | | 15.5 | | dB |
| Insertion Loss | | 3.5 | 5.0 | | 5.0 | 7.0 | | 6.5 | 8.5 | | 9.5 | | dB |
| Insertion Loss Temperature Coefficient | | 0.01 | | | 0.01 | | | 0.01 | | | 0.01 | | dB/ °C |
| Attenuation Flatness: (Referenced to Insertion Loss) | | ±4.0 | | | ±5.0 | | | ±6.0 | | | ±6.0 | | dB |
| Control Bits | 5 | | | | | | | | | | | | Bit |
| Control Step Size | | 0.5 | | | 0.5 | | | 0.5 | | | 0.5 | | dB |
| Input VSWR (All Atten. States) | | 1.5 | 2.0 | | 1.7 | 2.0 | | 1.9 | 2.3 | | 3.0 | | : 1 |
| Output VSWR (All Atten. States) | | 1.5 | 2.0 | | 1.7 | 2.0 | | 1.9 | 2.3 | | 3.0 | | : 1 |
| Input 0.1 dB Compression Point (P0.1dB) | | 27 | | | 27 | | | 27 | | | 27 | | dBm |
| RF Input Power | | +27 Max. | | | | | | | | | | | dBm |
| Input IP3 | | 43 | | | 42 | | | 38 | | | 35 | | dBm |
| Weight | 4.8 Max. | | | | | | | | | | | | Ounces |
| Impedance | 50 | | | | | | | | | | | | Ohms |
| Bias Current | 210 Max. | | | | | | | | | | | | mA |
| Power Supply | USB(+5.0V) | | | | | | | | | | | | |
| Input / Output Connectors | 2.92mm-Female | | | | | | | | | | | | |
| Control Interface | USB2.0 & Ethernet(IPv4) (Control Cable Included) | | | | | | | | | | | | |
| Package | Epoxy Sealed (Standard) | | | | | | | | | | | | |
| | Hermetically Sealed (Optional) | | | | | | | | | | | | |

USB / Ethernet поглощающий аттенюатор с цифровым управлением 0,1 - 43,5 ГГц

Ordering Information

| Part No. | Description |
|-----------------------------|--|
| LBW-AT06-F435W05A155-29F29F | 0.1-43.5GHz Digital Control Attenuator |

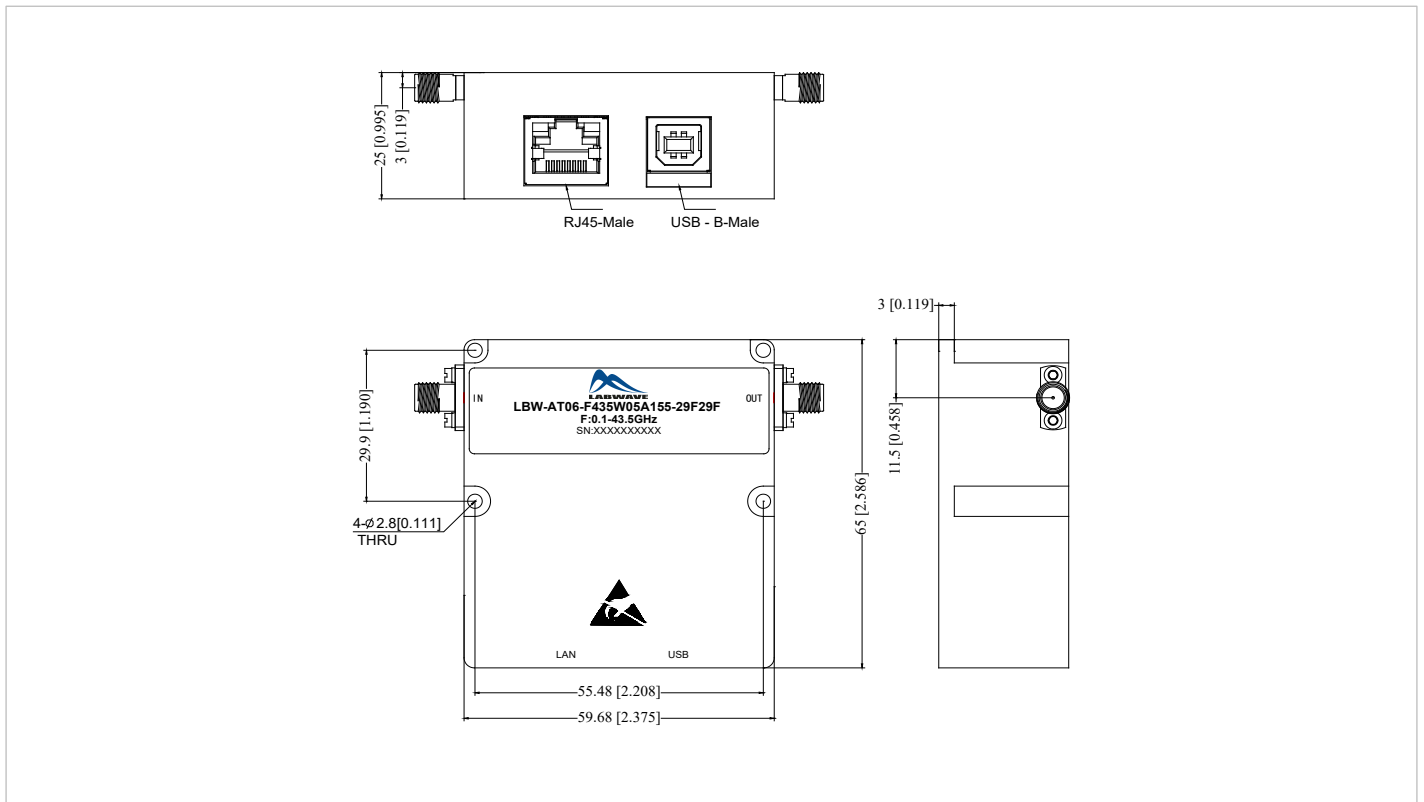
Environmental Specifications

| | |
|-------------------------|---|
| Operational Temperature | -40°C~+85°C |
| Storage Temperature | -50°C~+105°C |
| Vibration | 25g RMS (15 degrees 2KHz) endurance, 1 hour per axis |
| Shock | 20G for 11msec half sine wave, 3 axis both directions |

Outline Drawing:

All Dimensions in mm (inches)

Housing Tolerances ± 0.2 (0.008)



| ID | Packing List | QTY |
|----|---|-----|
| 1 | Fig a. USB/Ethernet Control RF Attenuator | 1 |
| 2 | Fig b. USB2.0 Cable (5 feet / 1.5 meter) | 1 |
| 3 | Fig c. Network Cable (6 feet / 2 meter) | 1 |



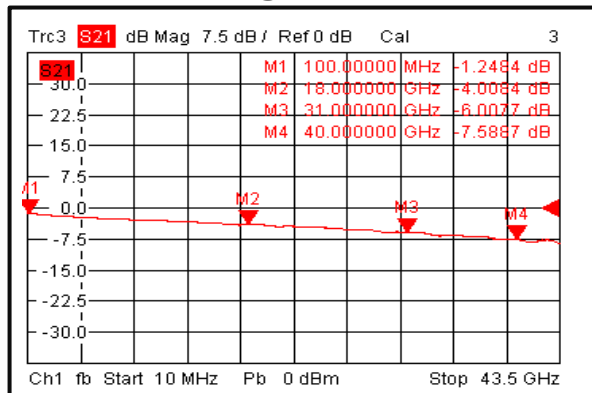
Fig b.



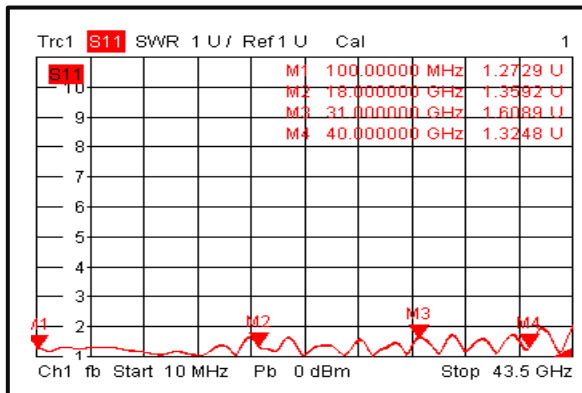
Fig c.

USB / Ethernet поглощающий аттенуатор с цифровым управлением 0,1 - 43,5 ГГц

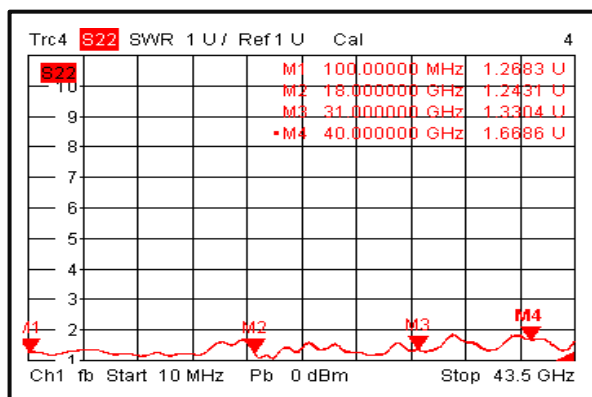
Insertion Loss @+25°C



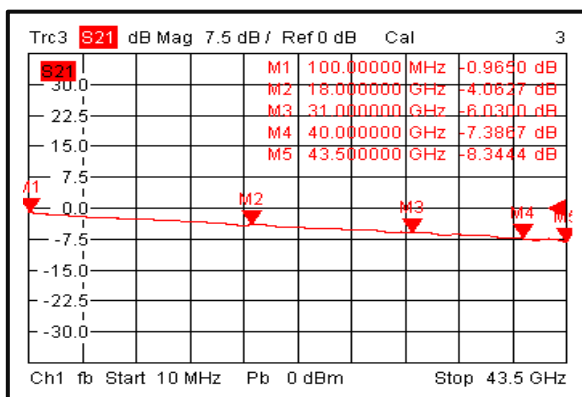
Input VSWR @+25°C



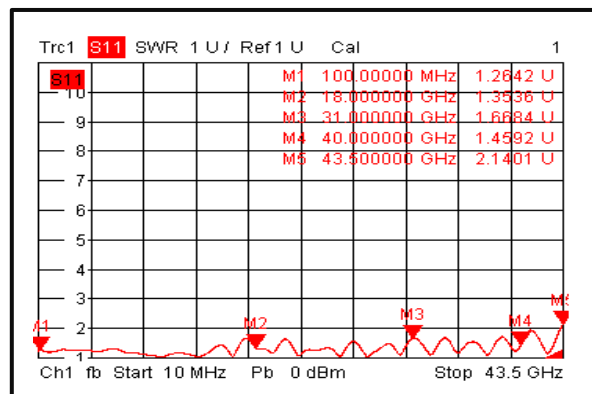
Output VSWR @+25°C



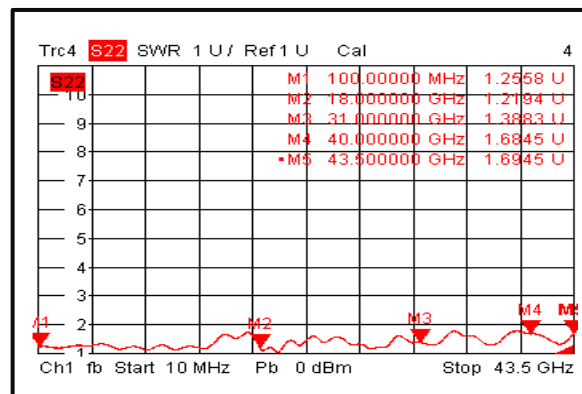
Insertion Loss @-40°C



Input VSWR @-40°C

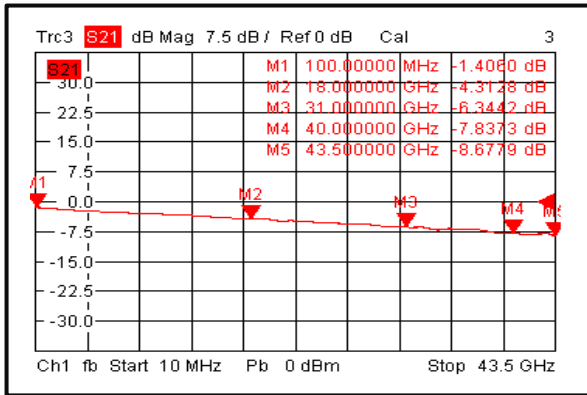


Output VSWR @-40°C

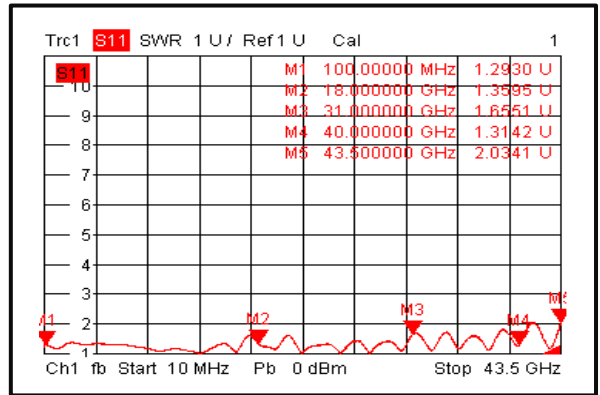


USB / Ethernet поглощающий аттенуатор с цифровым управлением 0,1 - 43,5 ГГц

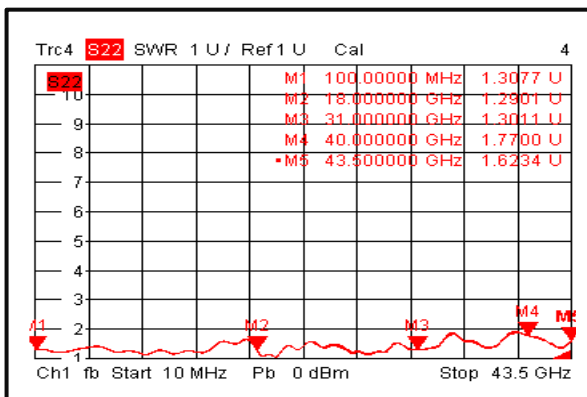
Insertion Loss @+85°C



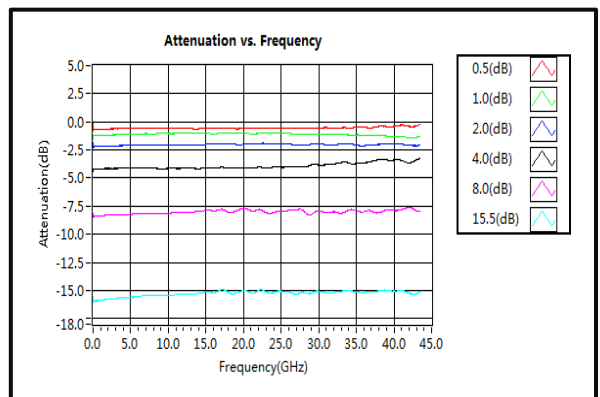
Input VSWR @+85°C



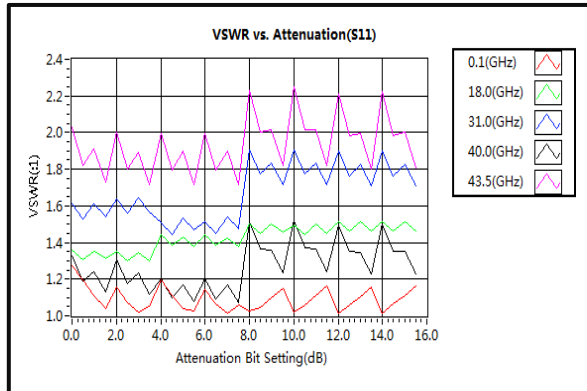
Output VSWR @+85°C



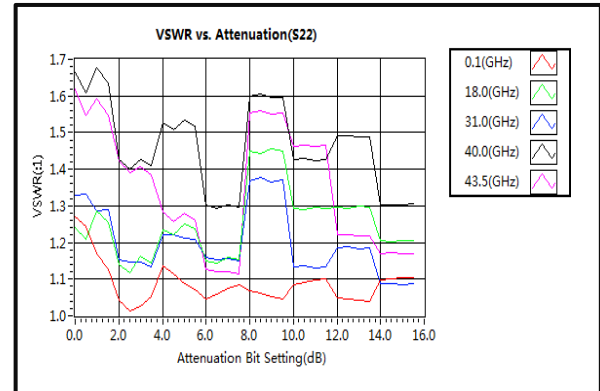
Attenuation vs. Frequency



VSWR vs. Attenuation (S11)

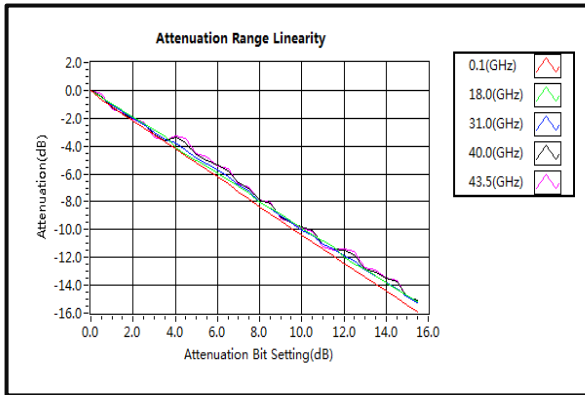


VSWR vs. Attenuation (S22)

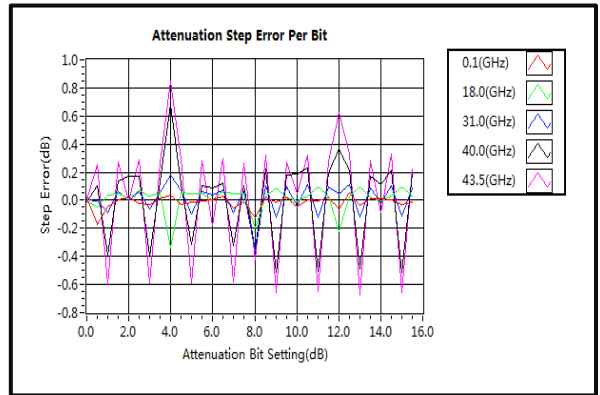


USB / Ethernet поглощающий аттенуатор с цифровым управлением 0,1 - 43,5 ГГц

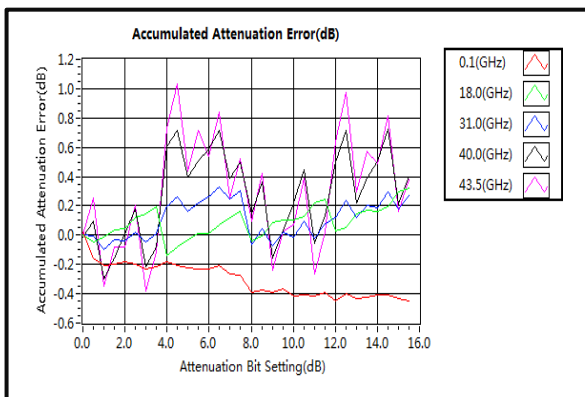
Attenuation Range Linearity



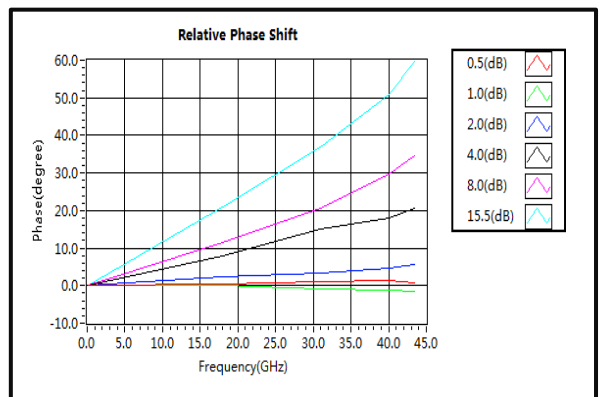
Attenuation Step Error Per Bit (dB)



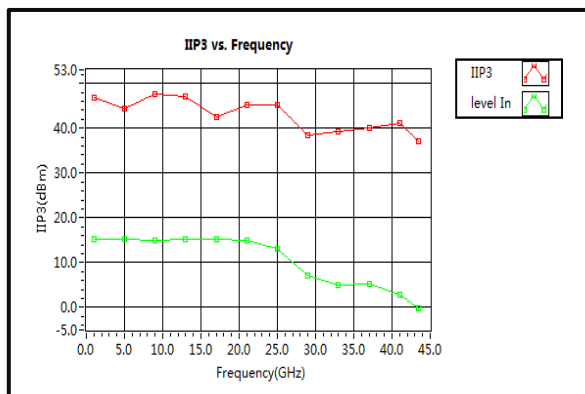
Accumulated Attenuation Error (dB)



Relative Phase Shift



IIP3

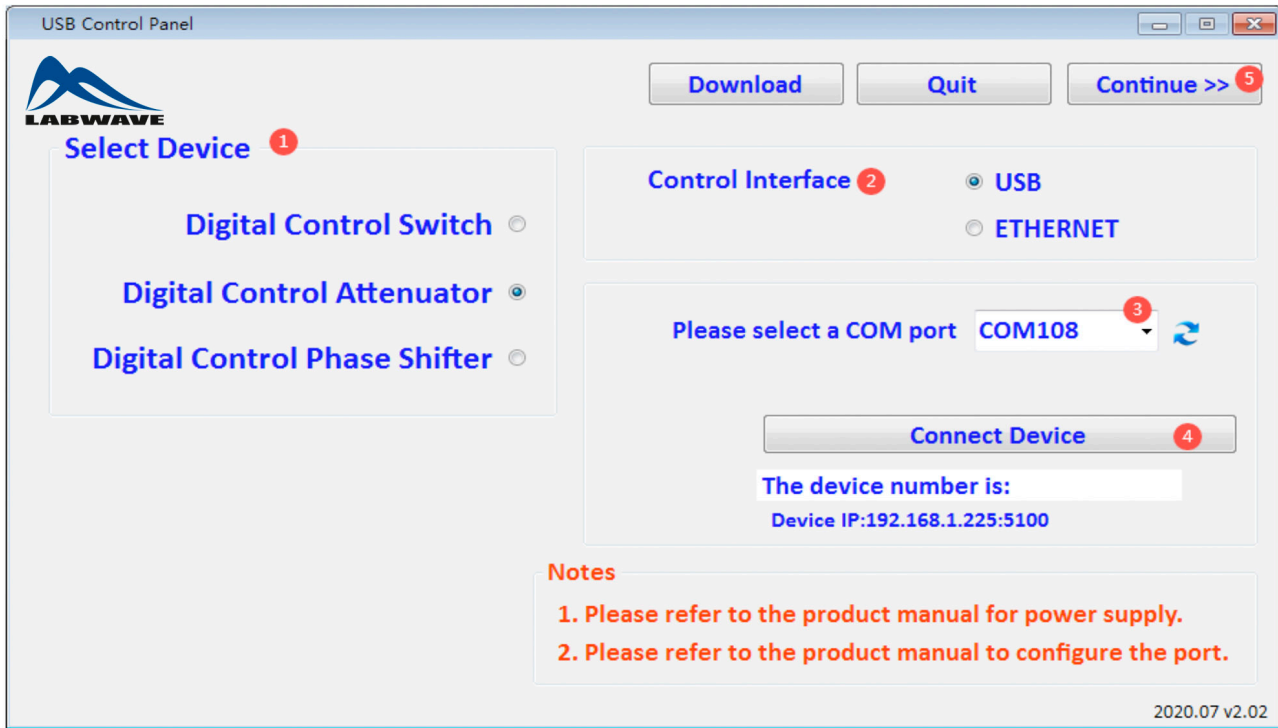


USB / Ethernet поглощающий аттенюатор с цифровым управлением 0,1 - 43,5 ГГц

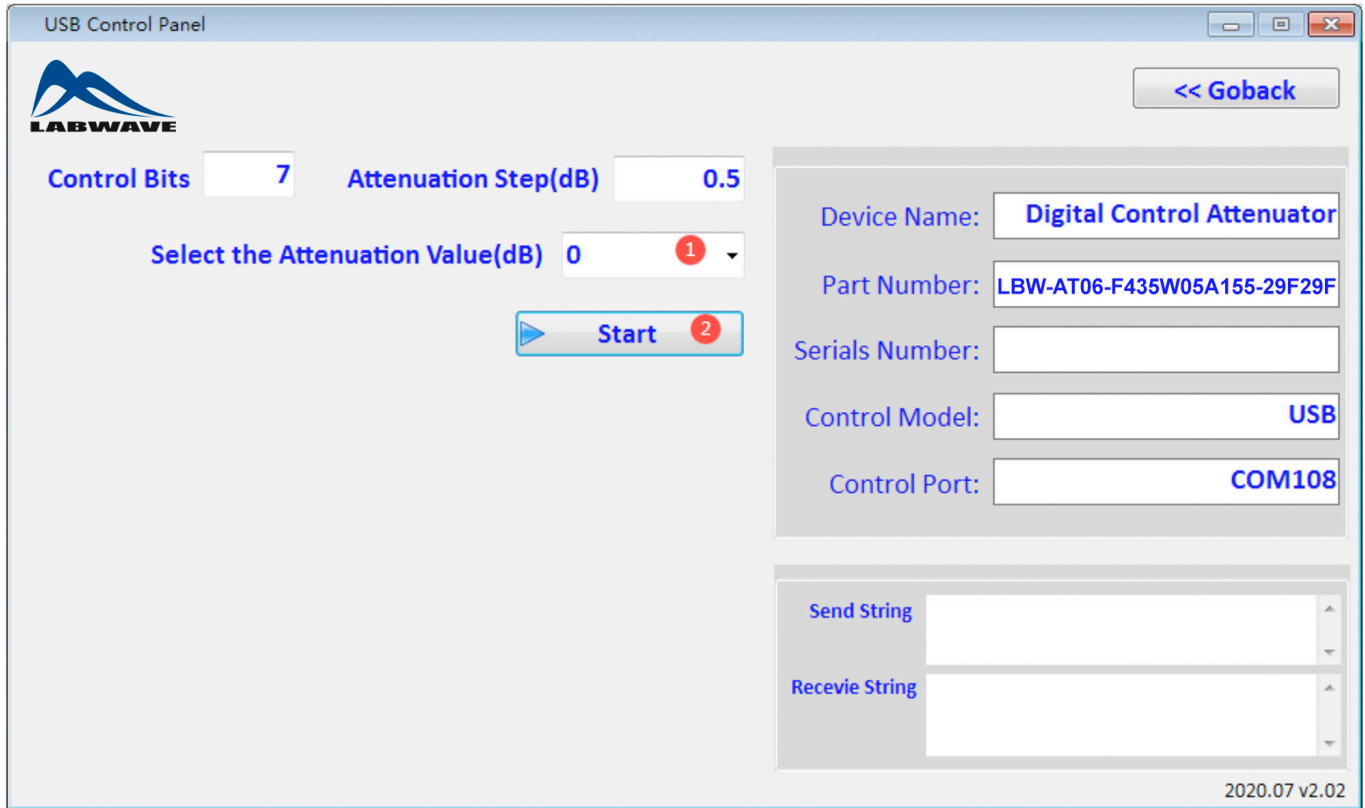
| Control Content Description | | | |
|--|---|---|--|
| Format Requirement | USB (virtual serial port) Configuration | LAN Interface | Range of Parameters |
| a.All commands must end with a semicolon. b.All commands are case insensitive. c.Comma is used to separate multiple parameters in commands. d.All commands are suitable for USB(virtual serial port) and LAN interface. | Baud Rate :115200 Data bits : 8 Parity : None Stop bits : 1 Flow Type :None | IP address and Port. Default:192.168.1.225:5100; use 'USB Control panel.exe' to u pdate. | x(Step): 1~2^n ,n is control bits. |

| Command Specification | | | | |
|-----------------------|-----------|------------------------------------|--|-----------------------------------|
| ID | Order | Description | Return | Example |
| 1 | *IDN?; | Query product information | Product PN ,SN, Manufacturer ,version | *IDN?; |
| 2 | Reset; | Reset the product | / | Reset; |
| 3 | AT:ATT x; | Set attenuation step | Attenuation value | AT:ATT 2; Return : 2*step size |
| 4 | AT:ATT?; | Query current attenuation value | Attenuation step, attenuation value | AT:ATT? Return :2, 2*step size |
| 5 | AT:ATTS? | Query attenuation step size | Attenuation step size | AT:ATTS? Return : step size |

| Error Code Query | | |
|------------------|--------|-------------------------|
| ID | Return | Description |
| 1 | E1 | Missing semicolon |
| 2 | E2 | Incorrect command |
| 3 | E3 | Missing space character |
| 4 | E4 | Out of range parameters |



USB / Ethernet поглощающий аттенуатор с цифровым управлением 0,1 - 43,5 ГГц



USB Control Panel

LABWAVE

Control Bits Attenuation Step(dB)

Select the Attenuation Value(dB) 1

2

Device Name:

Part Number:

Serials Number:

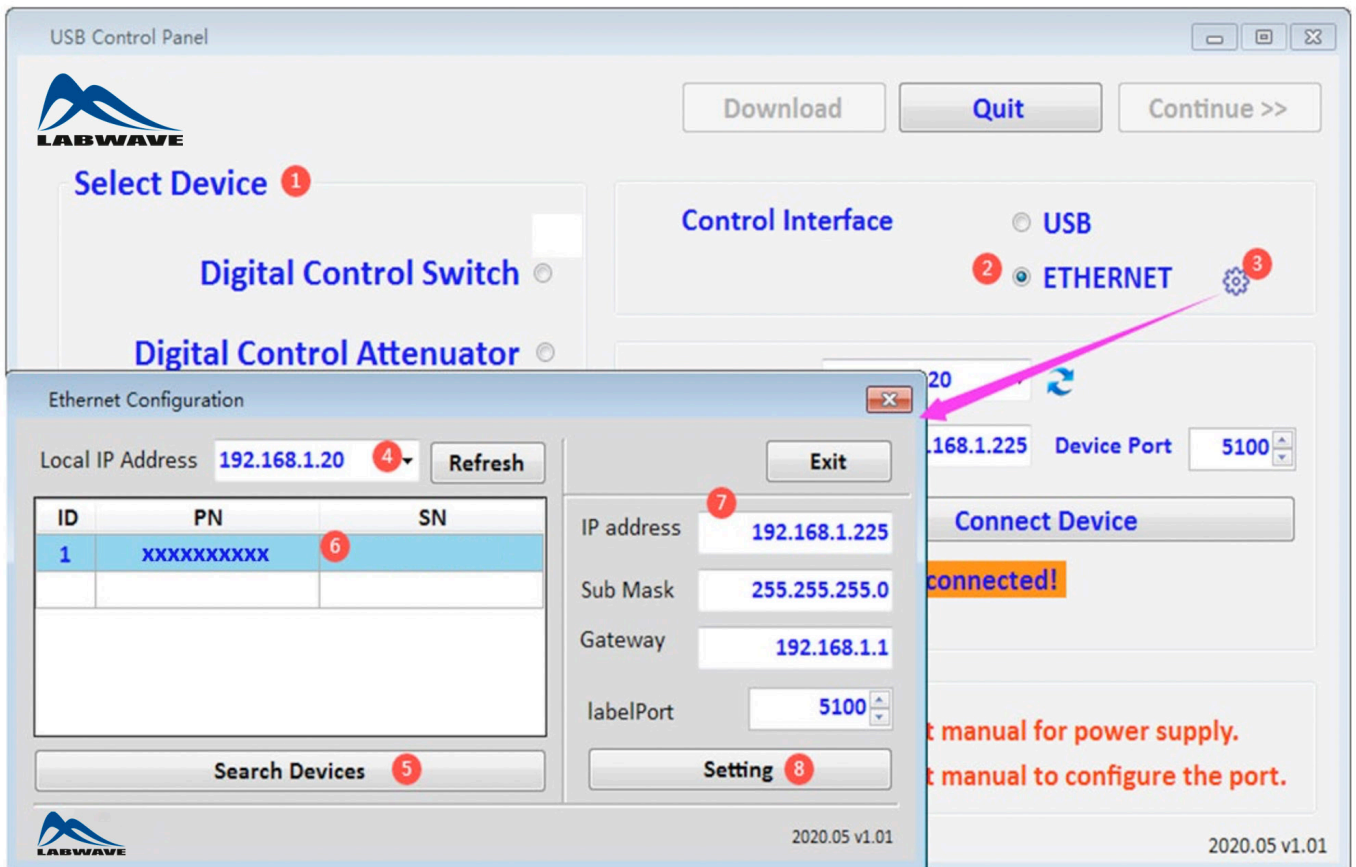
Control Model:

Control Port:

Send String

Recevie String

2020.07 v2.02



USB Control Panel

LABWAVE

Select Device 1

Digital Control Switch

Digital Control Attenuator

Control Interface

USB

ETHERNET 2 3

Local IP Address 4

| ID | PN | SN |
|----|---|----|
| 1 | XXXXXXXXXX 6 | |

5

IP address 7

Sub Mask

Gateway

labelPort

8

192.168.1.225 Device Port

connected!

at manual for power supply.

at manual to configure the port.

2020.05 v1.01