

Key Features

- 0 to 60dB Range
- 0.50dB Digital Steps
- 1GHz to 30GHz
- Low Insertion-Loss
- Front Panel OLED Display
- Standalone Operation, no PC needed
- Programmable via USB virtual COM port
- Ultra Compact
- Affordable & Reliable
- Audio Feedback
- Standard Ethernet
- Precision 2.92mm

DAT306K

30GHz Programmable Microwave Attenuator



The DAT306K Compact RF Attenuator

The DAT306K is a stand-alone wide-band digital microwave attenuator instrument rated from 1 to 30GHz. Attenuation varies from 0 to 60 dB with a 0.50dB minimum step size. Insertion loss is typically below 10dB. The DAT306K is a tri-control device, attenuation setting can be changed by the user interface, via USB port serial commands, or with the Ethernet interface.

Remote Operation

Industry standard SCPI commands allow the DAT306K to be controlled by any host system with a USB interface.

The USB port is configured as a virtual COM port allowing user software to access the DAT306K as if it were a standard serial COM device without any additional drivers.

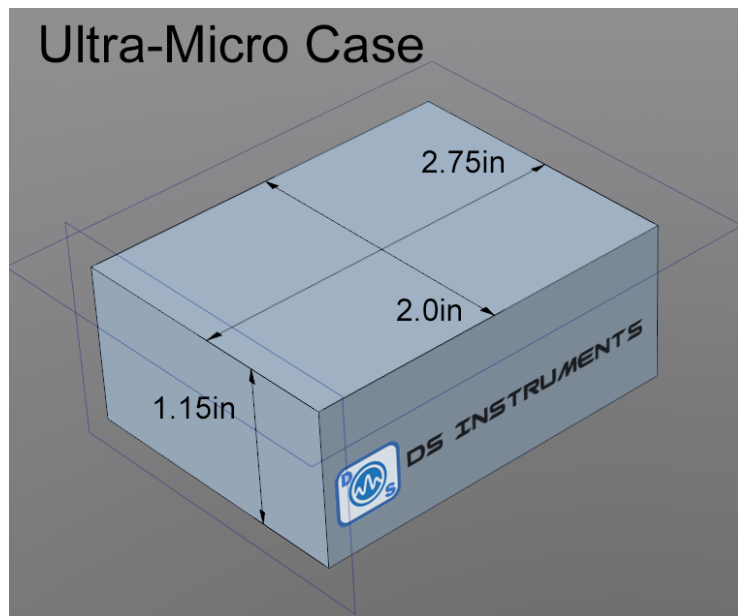
DAT306K Applications

- Electronic warfare
- Automated testing environments
- General RF lab use
- Control systems
- Satellite communications
- Line-of-sight links
- Production verification
- Educational / university lab use
- Aerospace / defense research
- Wireless infrastructure
- Radar systems
- Phased array applications

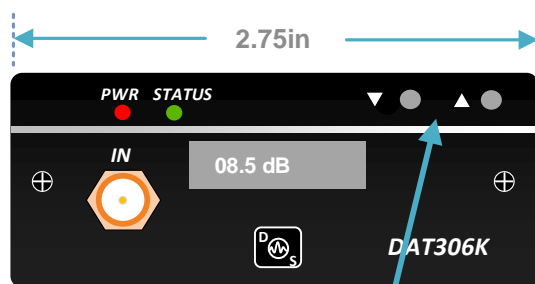


DAT306K

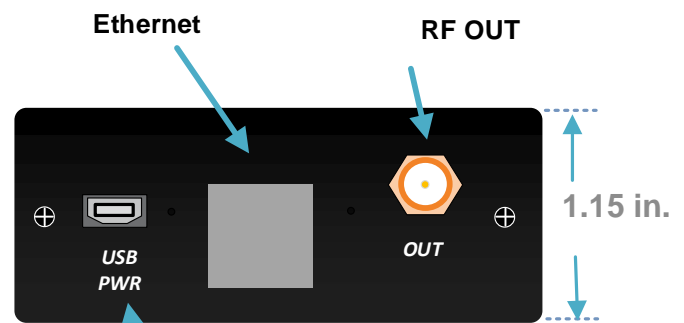
MECHANICAL



CASE DIMENSIONS:
1.15(H)x2.75(W)x2.15(L) in.



**User Interface
Control Buttons**



**Micro USB Interface to PC
and DC Power Input**

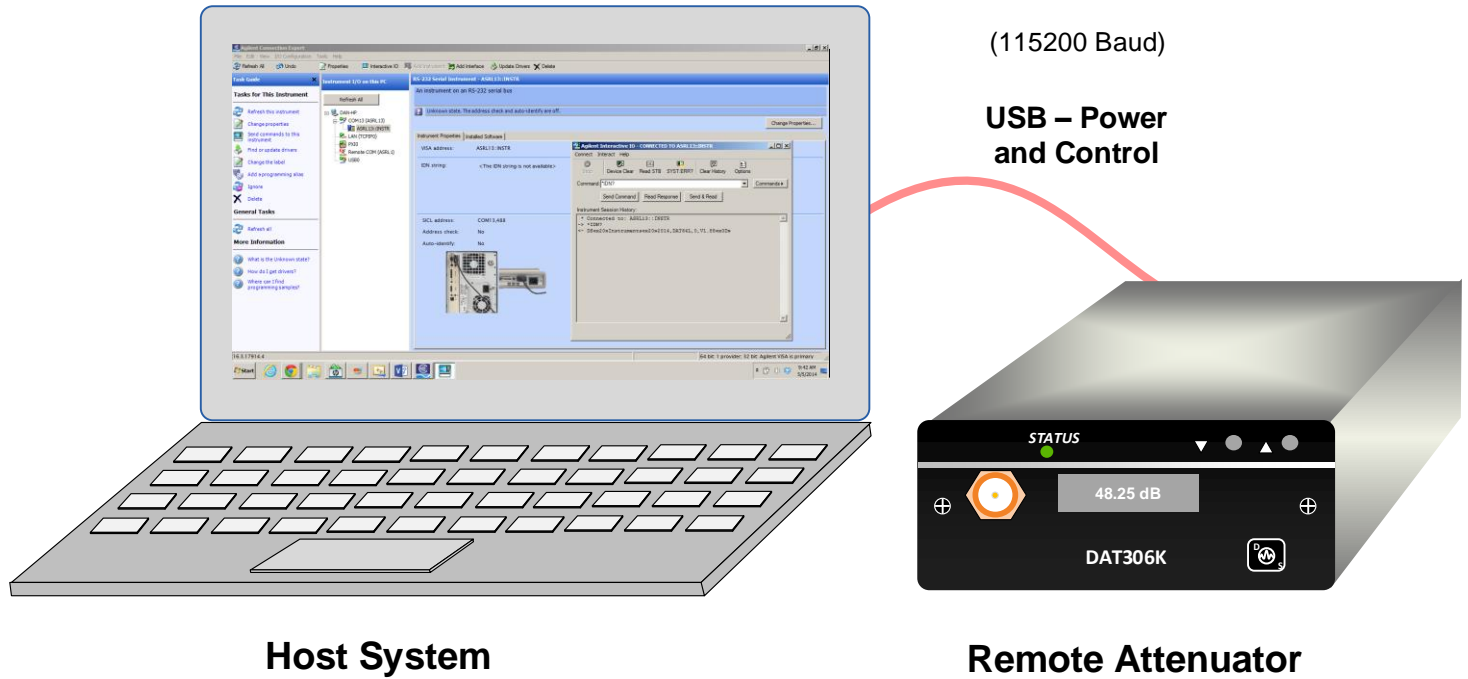
DAT306K

SPECIFICATIONS

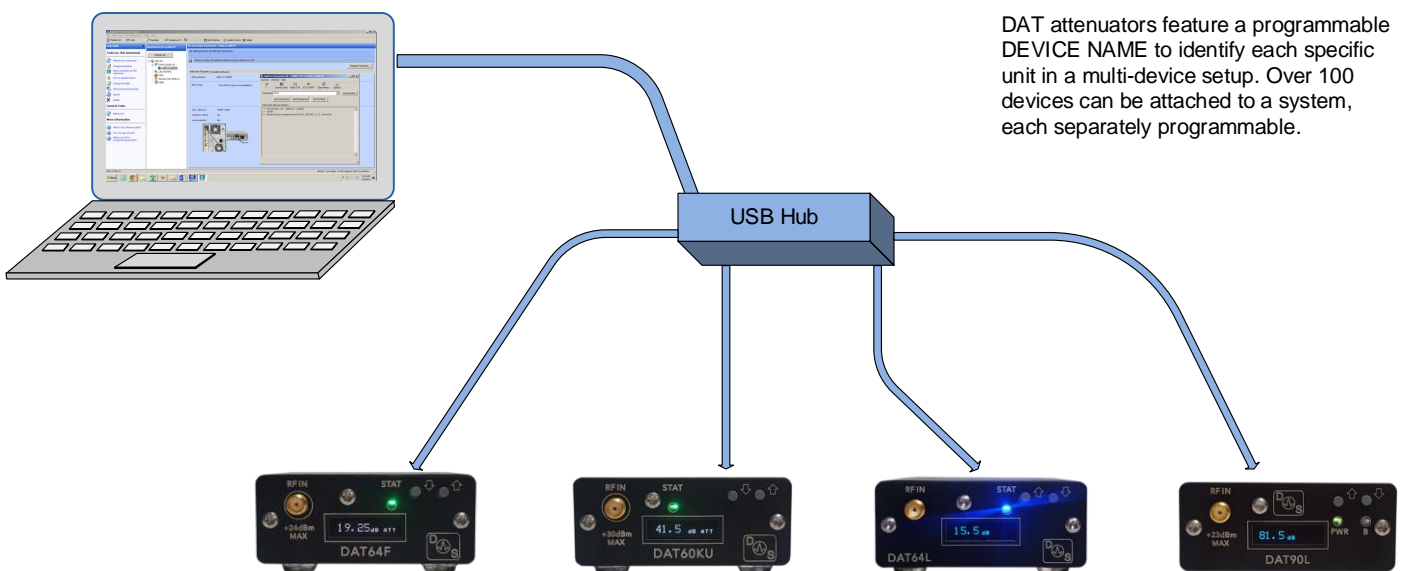
Parameter	Min	Max	Typ	Units
Frequency Range	1	30		GHz
Insertion Loss, 1 to 12GHz	2	5	4	dB
Insertion Loss, 12 to 24GHz	6	9	8	dB
Insertion Loss, 24 to 30GHz	9	12	10	dB
Return Loss	6		10	dB
Attenuation Range	0	60		dB
Min Step Size			0.5	dB
Maximum Continuous Input Power (Input Port)			+27	dBm
Maximum Hot-switching Average Power			+25	dBm
Maximum Input Power (Out Port)			+17	dBm
Third Order Intercept (IP3)			+50	dBm
0.1 dB Power Compression (P0.1dB)			+27	dBm
Step Error (6GHz)			±0.12	dB
Step Error (30GHz)			±0.26	dB
Accuracy (30GHz)		±(0.35 + 4% of State)		dB
Temperature Range (OLED & Controls)	0	50	25	C
Temperature Range (USB only Version)	-30	60	25	C
Switching Speed (OLED & Buzzer Enabled)			35	mS
Switching Speed (USB only)			<1	mS
Precision 2.92mm Jack Rating	0	40		GHz
DC Voltage Input - Micro USB Port	4.50	5.30	5.0	VDC
Device Current Requirement (USB 5V)		400	250	mA
Device Mass			150	g

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Typical User connections for Remote Operation from PC

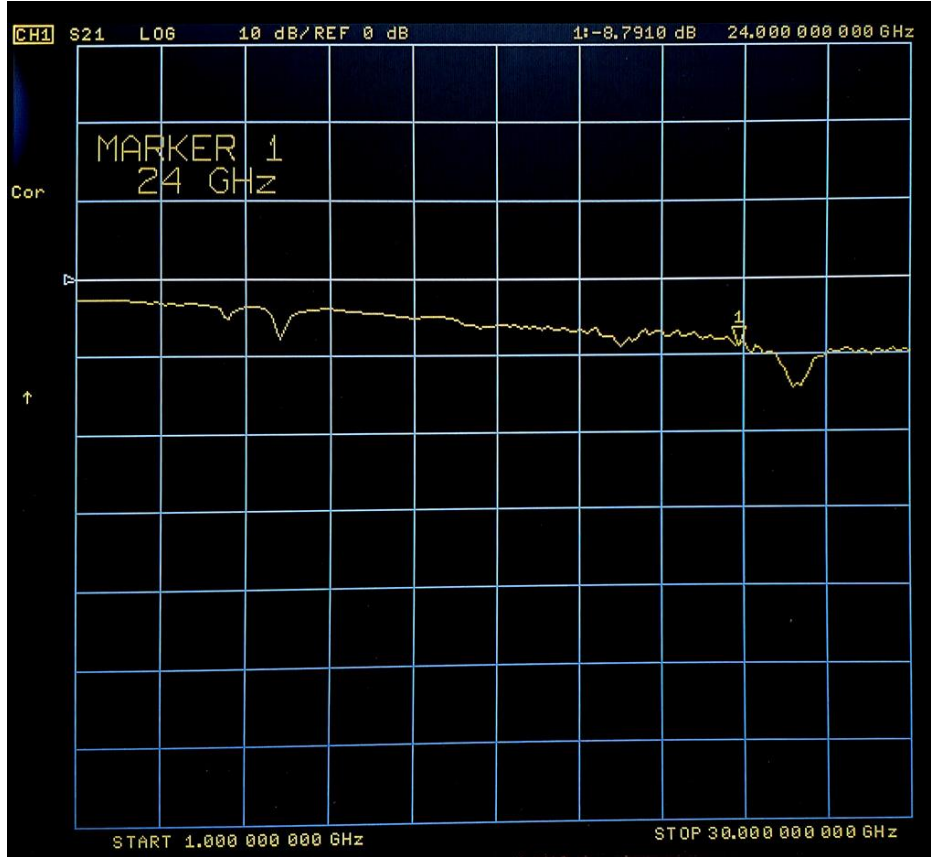


Multiple DAT6X Attenuator Setup

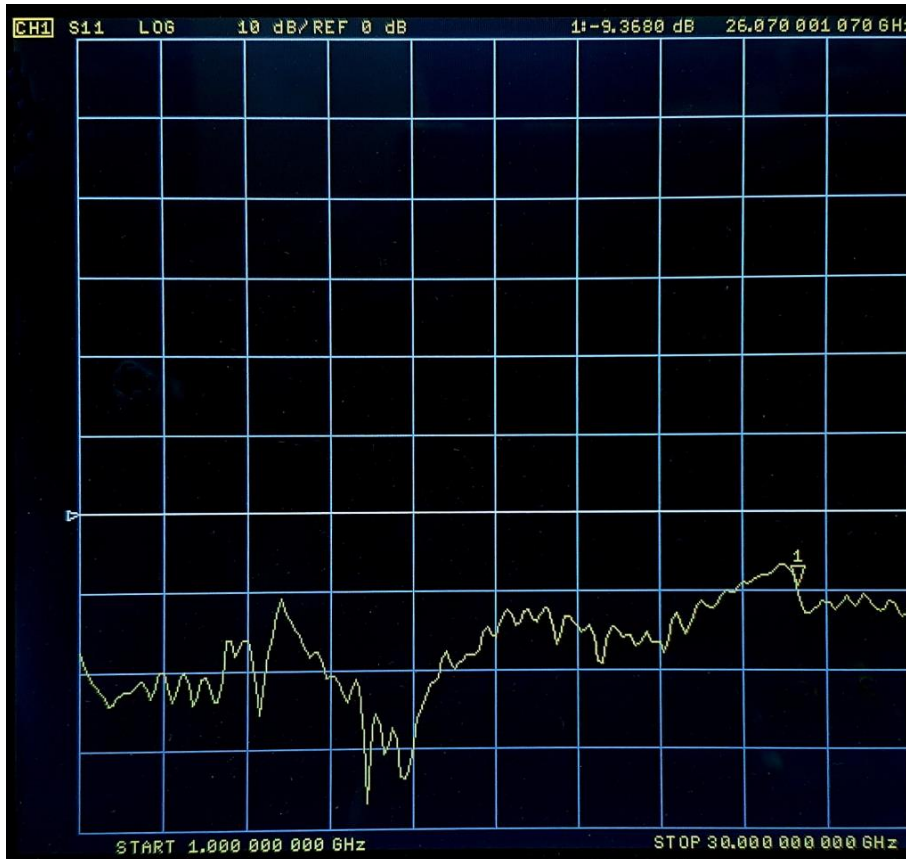


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Typical Frequency Response



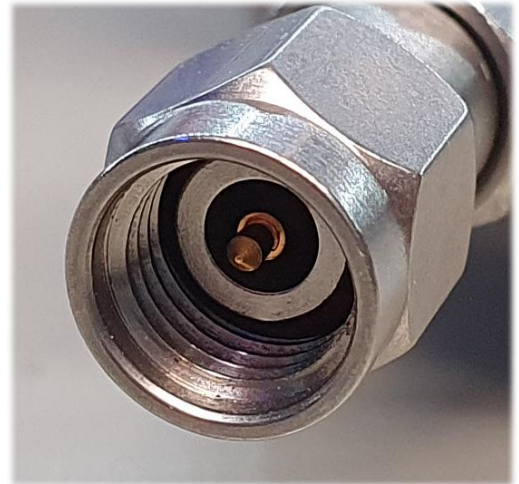
Insertion Loss:
0dB Setting



Return Loss:
0dB Setting

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Connector Warning



WARNING !

The Precision 2.92mm microwave output jack is easily damaged!

Because SMA is only rated to 26GHz we use a 2.92mm RF port. Precision 2.92mm is technically mechanically compatible with SMA, but an adapter is HIGHLY recommended, as they are NOT EXACTLY the same!

Take extra care when mating a cable or connector to this port, as it is expensive and extremely difficult to replace. Make sure the connectors are perfectly centered and parallel while beginning to tighten.

Any SMA cable *could* damage this port because SMA manufacturing tolerance is inferior!

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USB COM Port SCPI Commands

ATT xyz	- Shorthand command for INPUT:ATT
ATT?	- Return current attenuation setting
INCR	- Increase attenuation by step size
DECR	- Decrease attenuation by step size
INCR x	- Increase attenuation by "x"
DECR y	- Decrease attenuation by "y"
STEP xy	- Set the step size to "xy"
*UNITNAME TomJ	- Set a custom nickname for this unit
*UNITNAME ?	- Return user set device nickname
*BUZZER OFF	- Turn off audio beeps – lower response time
*DISPLAY OFF	- Disable OLED display – lower response time
*IDN?	- Return standard identification string
*RST	- Reset device

(115200 Baud)

Free Windows GUI – Digital Attenuator Control

DS Instruments

Digital Attenuator Control

COM91

DAT90L - SER:114 - FW:7.32

90RED-6

Quick dB Setting

0 10 20 30 40 50 60 70 80 90

Set Attenuation (dB)

- 80.50 +

DS Instruments

PONG!

Download our lightweight and easy-to-use control software for PC at our website!

DAT306K

Ordering Information

DAT306K, 0-60dB, 1-30GHz Digital Attenuator (OLED Display, standard Ethernet, USB)	\$1899.00
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DAT306K, 0-60dB, 1-30GHz Attenuator (No Display / USB only)	\$1699.00
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Contact Information

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