~Key Features~

- Front Panel OLED Display
- 63 dB Range, 0.5dB Steps
- 5MHz to 6GHz
- Standalone Operation, no PC needed
- Can be used as programmable attenuator using USB port/PC
- Ultra Compact
- Affordable
- Audio & Visual Feedback
- Low Insertion Loss

DS Instruments

# DAT64L (R6)

## *Programmable RF Attenuator - 63 dB Range*

### *With OLED Display and User Interface*




## The DAT64L Compact RF Attenuator

The DAT64L is a stand-alone wide-band digital attenuator instrument rated for 6GHz. Attenuation range varies from 0 to 60 dB with a 0.50dB minimum step size. Insertion loss is between 2dB and 6dB, and return loss is typically 15dB. The DAT64L is a dual-control device: attenuation setting can be accomplished both by the user interface OR via USB port serial commands.

## Remote Operation

Industry standard SCPI commands allow the DAT64L 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 DAT64L as if it were a standard serial COM device without any additional drivers.

## DAT64L Applications

- Internet of things development
- 5G design and testing
- Automated testing environments
- General RF lab use
- Control systems
- Production verification
- Educational / university lab use
- Aerospace / defense research
- Wireless infrastructure

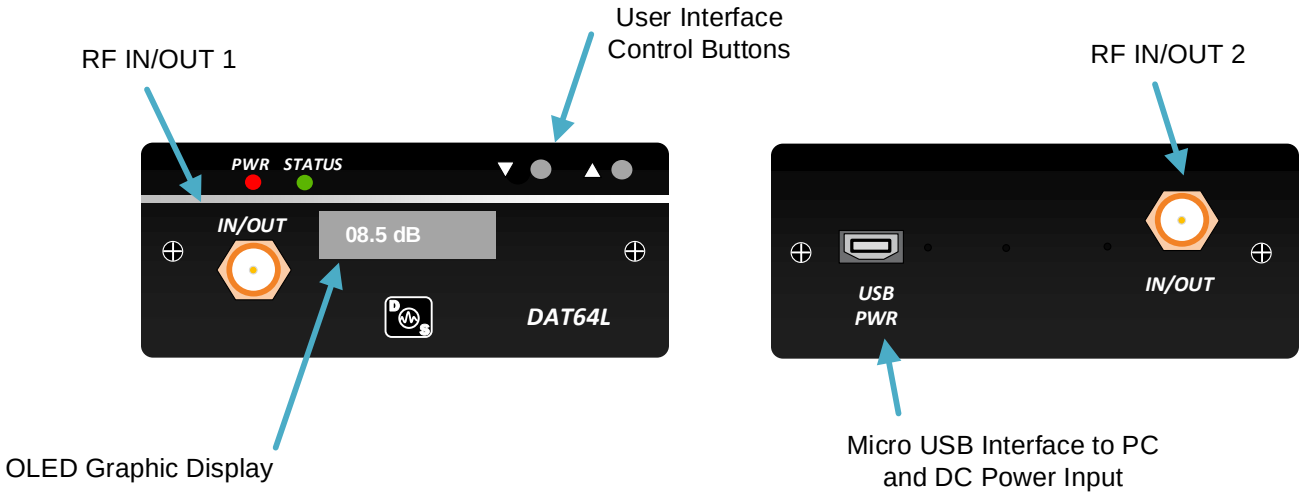
# DAT64L

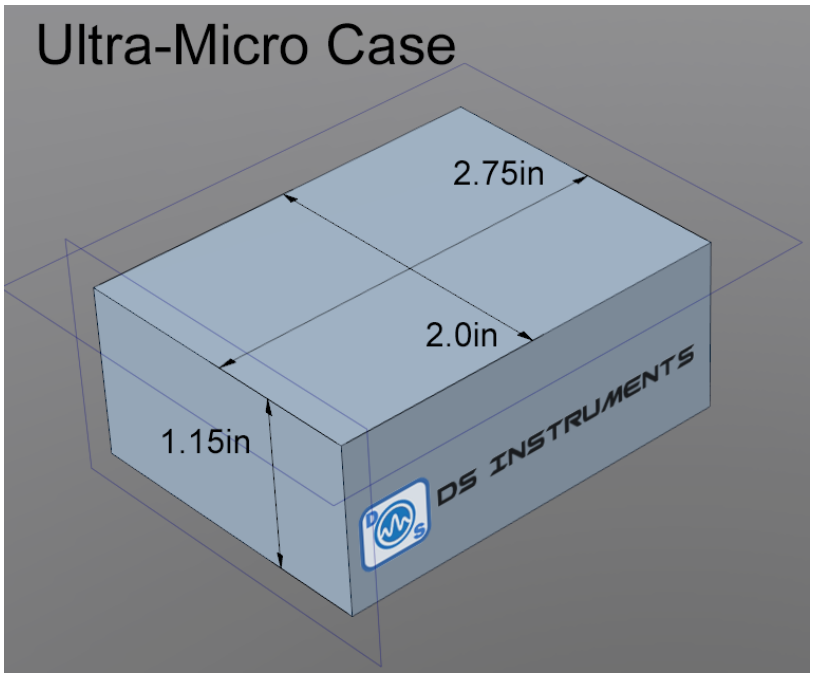
## SPECIFICATIONS

| Parameter | Min | Max | Typ | Units |
|---|---|---|---|---|
| DAT64L Frequency Range | 5 | 6000 | | MHz |
| Insertion Loss, 1 to 3000MHz | 2 | 4 | **3** | dB |
| Insertion Loss, 3 to 4.5GHz | 4 | 6 | **5** | dB |
| Insertion Loss, 4.5 to 6GHz | 5 | 8 | **6** | dB |
| Return Loss | 12 | 20 | **15** | dB |
| Attenuation Range | 0 | 63 | | dB |
| Min Step Size | | | **0.5** | dB |
| Step Size Error | | ±0.25 | | dB |
| Maximum Input Power | | **+25** | | dBm |
| Third Order Intercept (IP3) | | | **+55** | dBm |
| Input 0.1dB compression | | | **+33** | dBm |
| Accuracy, all states: DC - 0.8GHz<br>(Referenced to Insertion Loss) 0.8GHz – 6GHz | | ± (0.10 + 5% of Atten. Setting) Max.<br>± (0.30 + 3% of Atten. Setting) Max. | | |
| USB Port DC Voltage | 4.75 | 5.35 | **5.0** | VDC |
| Switching Time (OLED & Buzzer) | | | **35** | mS |
| Switching Time (USB Only) | | | **500** | uS |
| Temperature Range | -30 | 50 | **25** | C |
| Current Requirement | | | **150** | mA |
| SMA Frequency Rating | 0 | 18 | | GHz |
| Write Cycle Lifespan | | | **10^8** | |

# DAT64L

## Front and Rear Panel Features

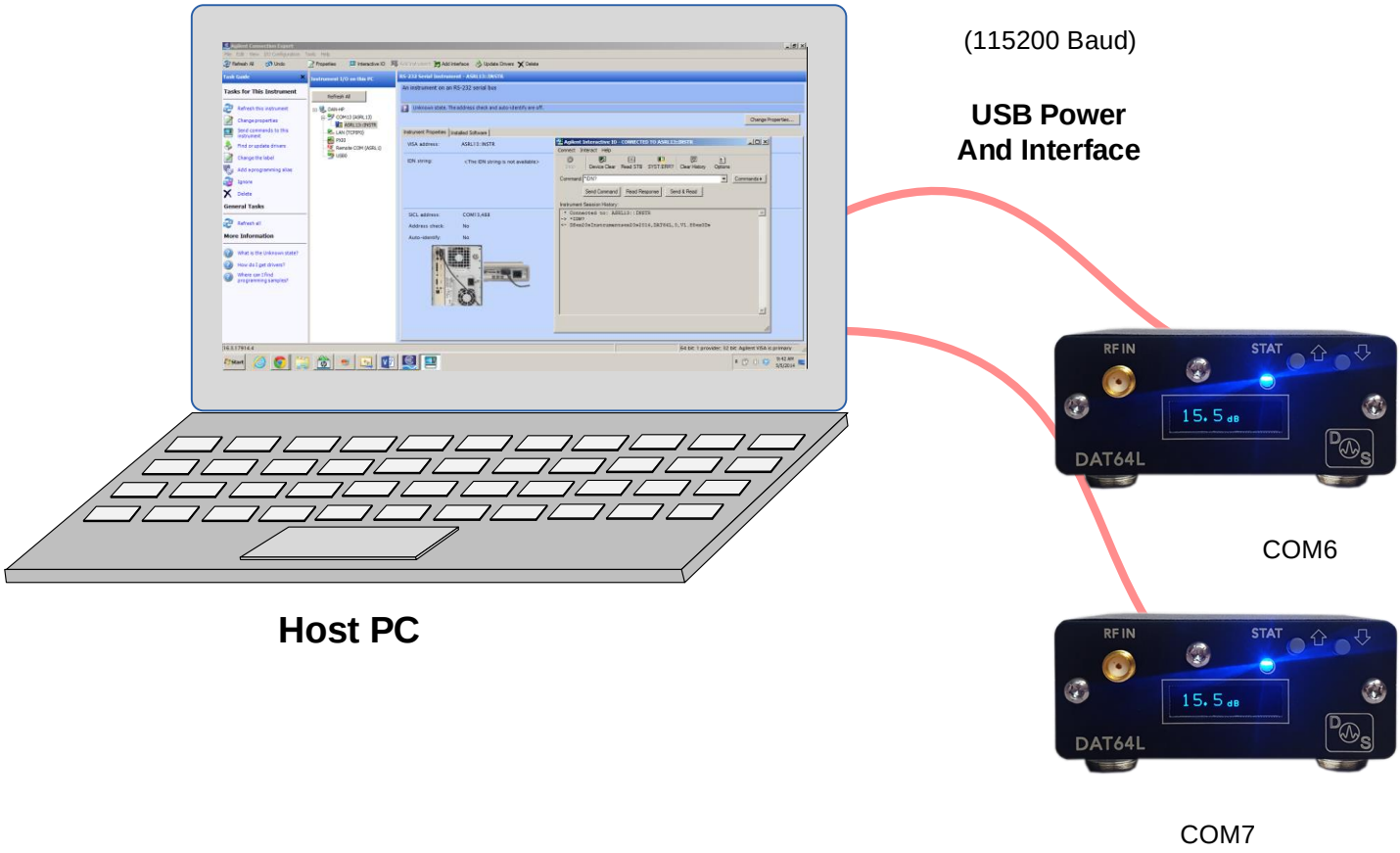




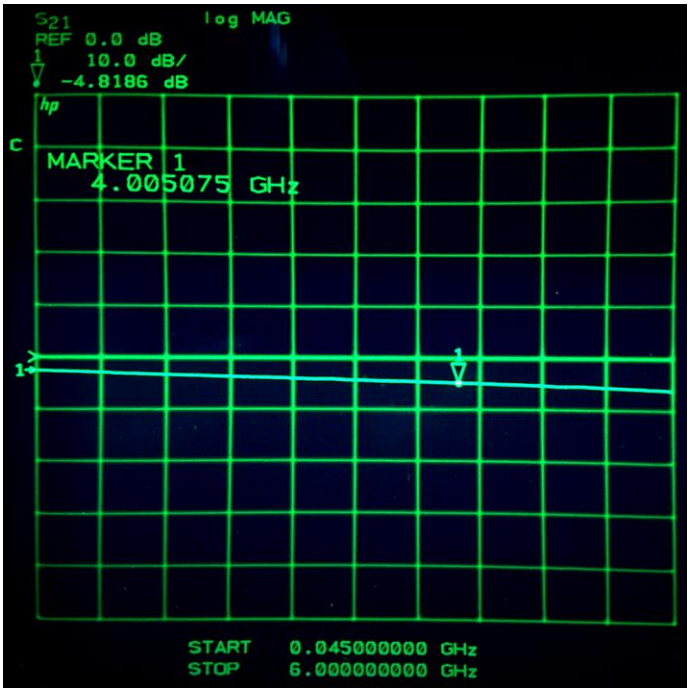

# DAT64L

## *Typical User connections for Remote Operation from PC*

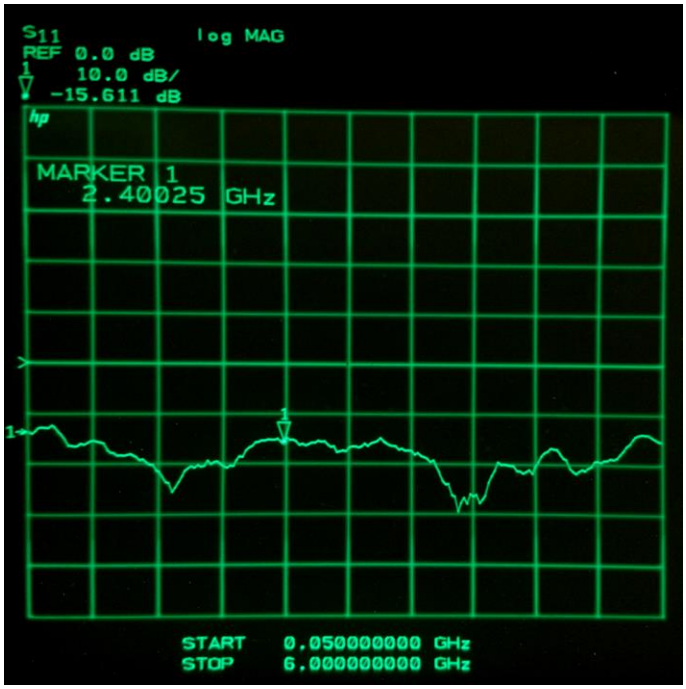


# DAT64L

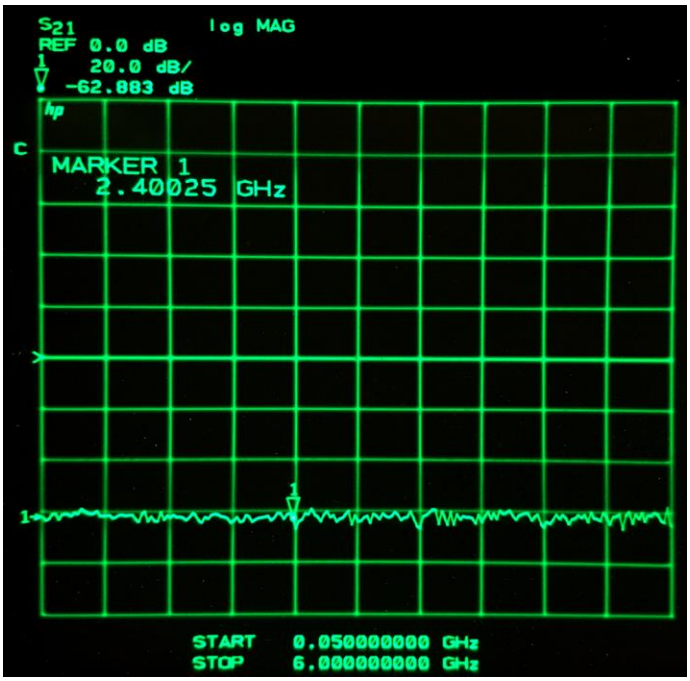
## *Performance Plots*



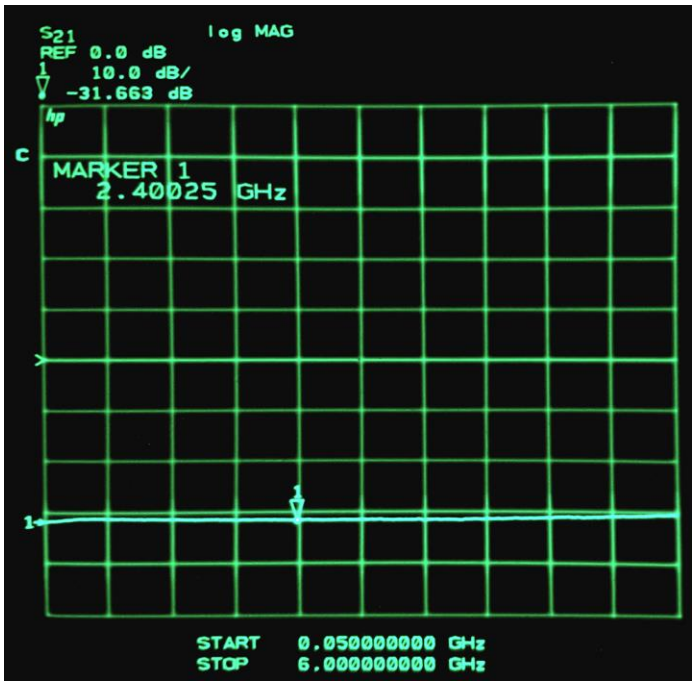

**Insertion Loss – 0dB Setting**




**Return Loss – 0dB Setting**




**Frequency Response – 63dB Setting**




**Frequency Response – 32dB Setting**

# DAT64L

## Windows GUI




## USB COM Port SCPI Commands

| | |
|---|---|
| INPUT:ATT xyz | - Set attenuation to “xyz” |
| INCR | - Increase attenuation by stepsize |
| DECR | - Decrease attenuation by stepsize |
| INCR x | - Increase attenuation by “x” |
| DECR y | - Decrease attenuation by “y” |
| STEP xy | - Set the stepsize to “xy” |
| *IDN? | - Return standard identification string |
| *RST | - Reset device |

(115200 Baud)

# DAT64 STEP ATTENUATOR FAMILY

## Ordering Information

| | |
|---|---|
| **DAT64, 0- 63dB, 5 to 6000MHz (USB only)** | **$519.00** |
| **DAT64L, 0- 63dB, 5 to 6000MHz (OLED + Buttons + USB)** | **$599.00** |
| **DAT90L, 0-90dB, 5-6000MHz (OLED + Buttons + USB)** | **$699.00** |
| **DAT64F, 0-63dB, 100-6000MHz, 0.25dB steps (OLED + Buttons + USB)** | **$629.00** |
| **DAT64H, 0-63dB, 0.1-12GHz, 0.5dB steps (OLED + Buttons + USB)** | **$899.00** |
| **DAT60KU, 0-63dB, 1-18GHz, 0.5dB steps (OLED + Buttons + USB)** | **$1099.00** |

*NOTES: Some devices listed have separate dedicated datasheets available

## Contact Information


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