

AD-HTS8X8



USB/Ethernet RF Handover Test System

8-Input : 64-Attenuation Channels : 8-Outputs, 95dB, 500-6000 MHz, 0.25dB Step size

Specifications

Attenuation Step Size (dB)	0.25			
Number of individually controlled RF chains	64			
Enclosure	5U Rackmount			
Connectors	SMA or N			
Operating Frequency (MHz)	500 – 6,000			
Attenuation Range (dB)	0 - 95			
Input 0.1dB Compression Power (dBm)	34			
Impedance (Ω)	50			
IP3 Input (dBm) ¹	+58			
Attenuation Accuracy (dB)	Frequency	Conditions	Typical	Max
	50 – 2000 MHz	0.25 – 20	± 0.25	± (5.5% of Atten. + 0.25)
		20.25 – 60	± 0.50	± (2.0% of Atten. + 0.90)
		60.25 – 90	± 0.75	± (3.5% of Atten. + 0.70)
	2000 – 4000 MHz	0.25 – 20	± 0.20	± (5.5% of Atten. + 0.25)
		20.25 – 60	± 0.30	± (2.0% of Atten. + 0.70)
		60.25 – 90	± 0.40	± (3.0% of Atten. + 0.90)
	4000 – 6000 MHz	0.25 – 20	± 0.15	± (6.5% of Atten. + 0.15)
		20.25 – 60	± 0.35	± (3.5% of Atten. + 0.45)
		60.25 – 90	± 0.65	± (3.5% of Atten. + 0.90)
Dwell Time per Channel (ms) ²	1			
Min. Dwell Time for all Channels (ms) ³	2			
Attenuation Transition Time (ns) ⁴	325			
VSWR	< 2.0 : 1 (all states)			
Max Input RF Power (dBm)	+28			
Power Source	AC/DC Adapter (5V / 3A) Power Over Ethernet (PoE) (IEEE802.3at Class 2 compliant)			
Power Use (A)	1.2			
Operating Temperature (°C)	0 to 40			
Communication ⁵	USB (Hybrid Serial COM Port and HID) Ethernet (Telnet, HTTP, HTTP Web GUI, DHCP & Static IP) Manual Keypad Panel			
Power Divider Isolation (dB)	21			
Insertion Loss (dB)		Typical	Max	
	50 MHz	13	18	
	2400 MHz	16	21	
	6000 MHz	18	23	

^A Exceeding absolute maximum ratings may cause permanent damage. Operation should be restricted to the limits in the Operating Ranges table.

Operation between operating range maximum and absolute maximum for extended periods may reduce reliability.

^B Attenuator RF ports are interchangeable bidirectional signal transmission.

¹ Tested with 10 kHz span between signals.

² Dwell Time per Channel is the time it will take an individual attenuator channel to transition to a new attenuation state (without PC communication delays).

³ Minimum Dwell Time for All Channels is the time it takes all channels to transition to a new attenuation state (without PC communication delays).

⁴ Attenuation Transition Time is the time it takes an attenuator to reach a new attenuation state.

⁵ USB support for simultaneous HID and Serial connections.

AD-HTS8X8

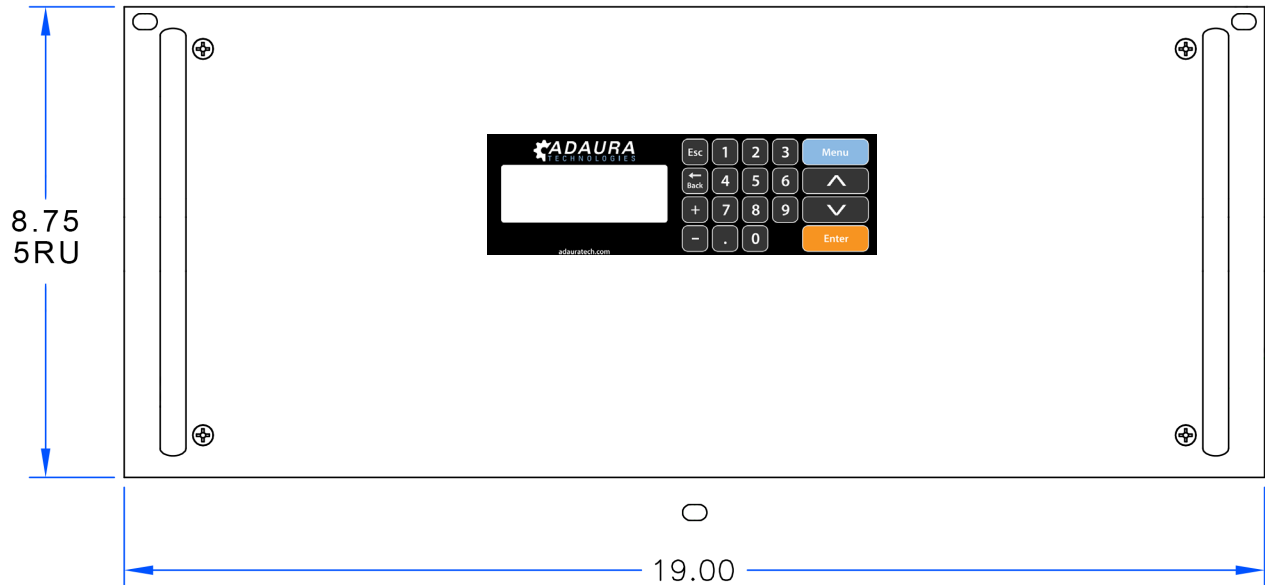


USB/Ethernet RF Handover Test System

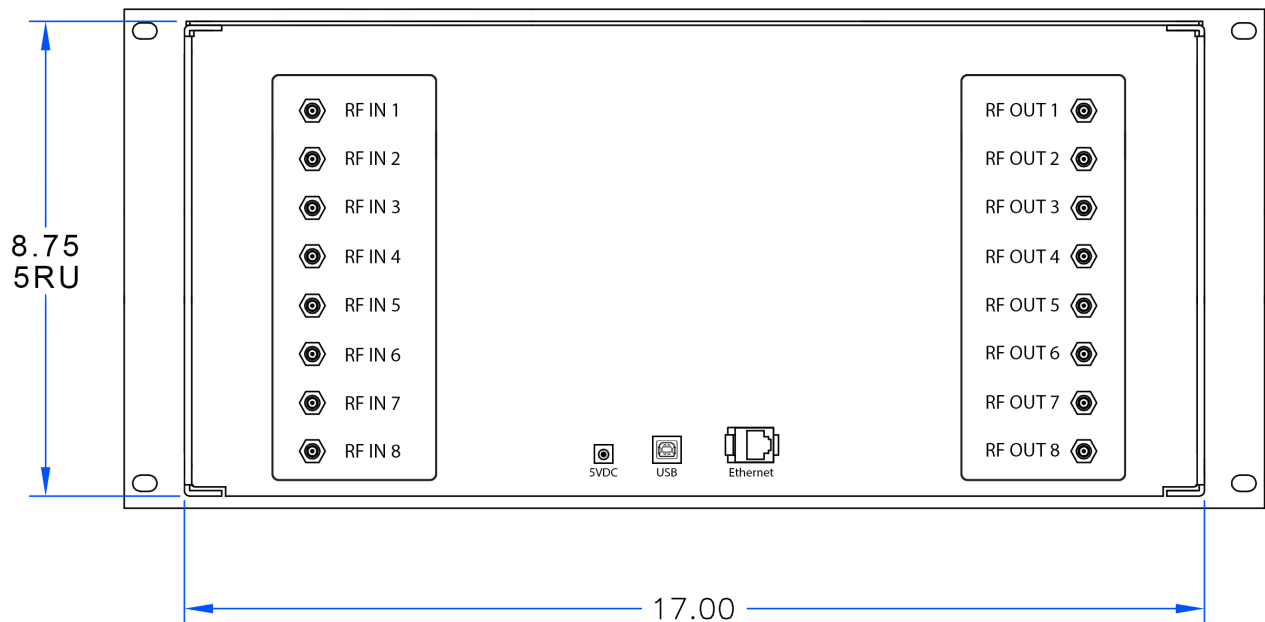
8-Input : 64-Attenuation Channels : 8-Outputs, 95dB, 500-6000 MHz, 0.25dB Step size

Drawing

FRONT VIEW



- Units in inches (in)
- Depth: 24.00
- Connectors: N or SMA



REAR VIEW

Adaura Technologies
adauratech.com

3017 Douglas Boulevard, Suite 300, Roseville, CA 95661, United States
T: (916) 970-7010 | sales@adauratech.com

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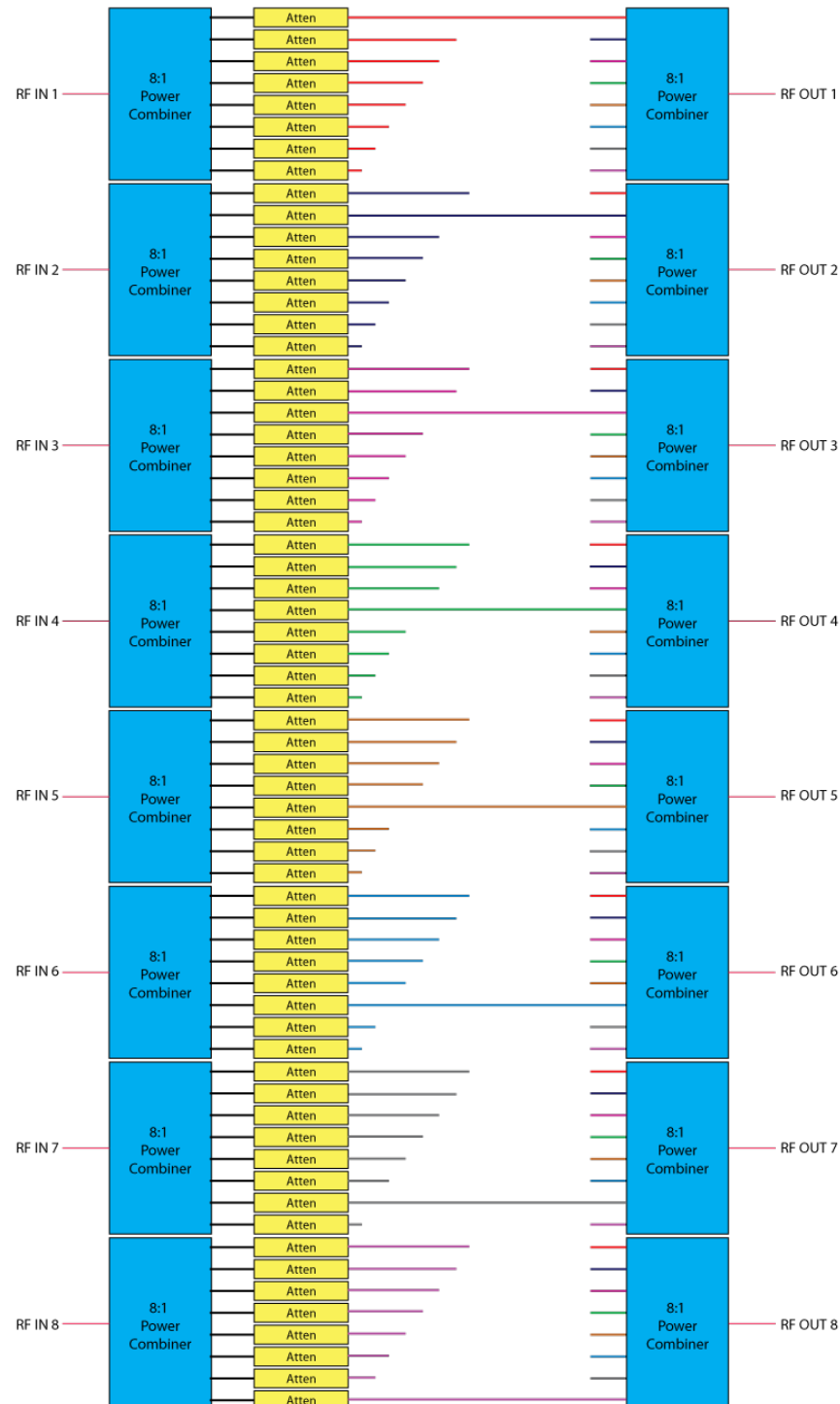
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USB/Ethernet RF Handover Test System

8-Input : 64-Attenuation Channels : 8-Outputs, 95dB, 500-6000 MHz, 0.25dB Step size

Block Diagram



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AD-HTS644

USB/Ethernet Handover Test System



64-Attenuation Channels : 4-Outputs, 95dB, 500-6000 MHz, 0.25dB Step size

Specifications

Attenuation Step Size (dB)	0.25			
Number of individually controlled RF chains	64			
Enclosure	5U Rackmount			
Connectors	SMA Female or N Female			
Operating Frequency (MHz)	500 – 6,000			
Attenuation Range (dB)	0 – 95			
Input 0.1dB Compression Power (dBm)	34			
Impedance (Ω)	50			
IP3 Input (dBm) ¹	+58			
Attenuation Accuracy (dB)	Frequency	Conditions	Typical	Max
	50 – 2000 MHz	0.25 – 20	± 0.25	± (5.5% of Atten. + 0.25)
		20.25 – 60	± 0.50	± (2.0% of Atten. + 0.90)
		60.25 – 90	± 0.75	± (3.5% of Atten. + 0.70)
	2000 – 4000 MHz	0.25 – 20	± 0.20	± (5.5% of Atten. + 0.25)
		20.25 – 60	± 0.30	± (2.0% of Atten. + 0.70)
		60.25 – 90	± 0.40	± (3.0% of Atten. + 0.90)
	4000 – 6000 MHz	0.25 – 20	± 0.15	± (6.5% of Atten. + 0.15)
		20.25 – 60	± 0.35	± (3.5% of Atten. + 0.45)
		60.25 – 90	± 0.65	± (3.5% of Atten. + 0.90)
Dwell Time per Channel (ms) ²	1			
Min. Dwell Time for all Channels (ms) ³	2			
Attenuation Transition Time (ns) ⁴	325			
VSWR	< 2.0 : 1 (all states)			
Max Input RF Power (dBm)	+28			
Power Source	AC/DC Adapter (5V / 3A) Power Over Ethernet (PoE) (IEEE802.3at Class 2 compliant)			
Power Use (A)	1.2			
Operating Temperature (°C)	0 to 40			
Communication ⁵	USB (Hybrid Serial COM Port and HID) Ethernet (Telnet, HTTP, HTTP Web GUI, DHCP & Static IP) Manual keypad panel			
Power Divider Isolation (dB)	21			
Insertion Loss (dB)		Typical	Max	
	50 MHz	9.8	13.5	
	2400 MHz	12.6	16.3	
	6000 MHz	14.4	17.7	

^A Exceeding absolute maximum ratings may cause permanent damage. Operation should be restricted to the limits in the Operating Ranges table.
Operation between operating range maximum and absolute maximum for extended periods may reduce reliability.

^B Attenuator RF ports are interchangeable bidirectional signal transmission.

¹ Tested with 10 kHz span between signals.

² Dwell Time per Channel is the time it will take an individual attenuator channel to transition to a new attenuation state (without PC communication delays).

³ Minimum Dwell Time for All Channels is the time it takes all channels to transition to a new attenuation state (without PC communication delays).

⁴ Attenuation Transition Time is the time it takes an attenuator to reach a new attenuation state.

⁵ USB support for simultaneous HID and Serial connections.

AD-HTS644



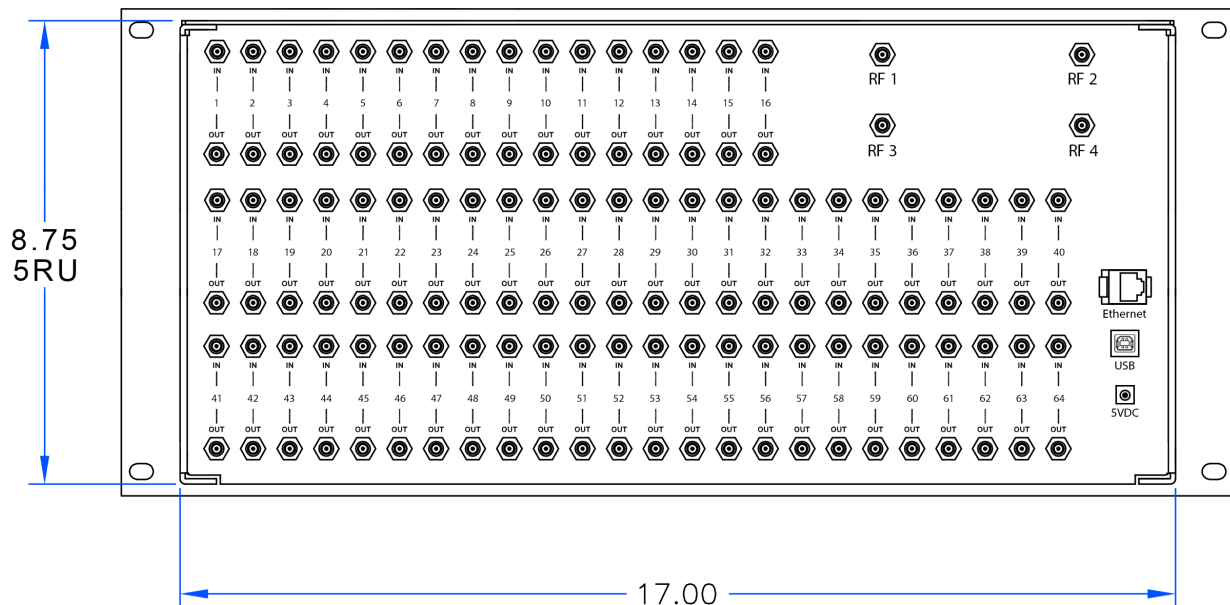
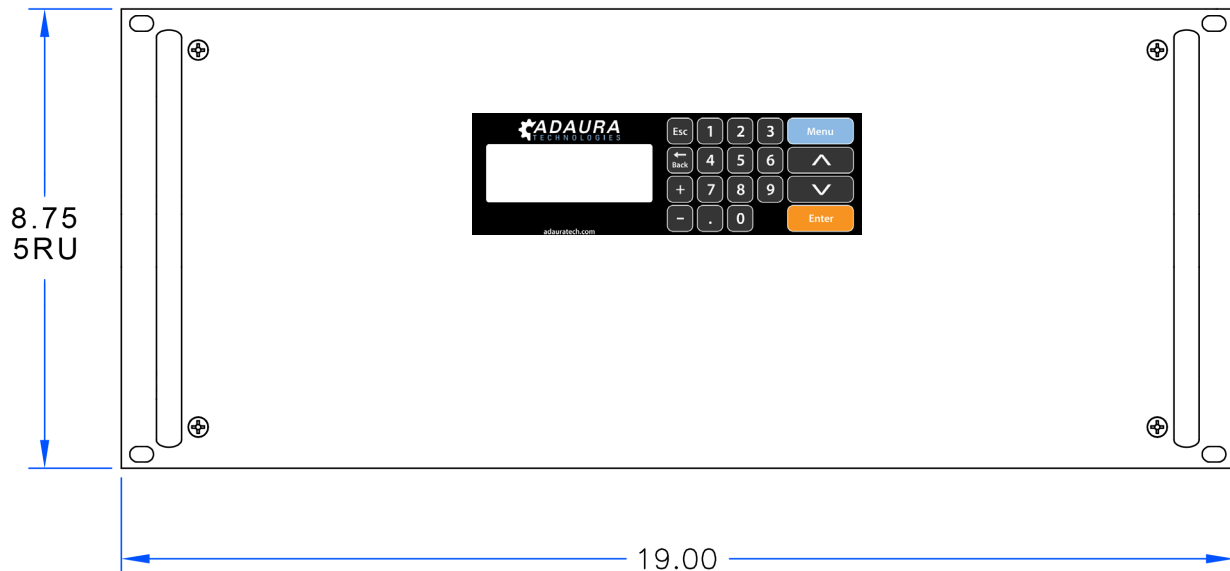
USB/Ethernet Handover Test System

64-Attenuation Channels : 4-Outputs, 95dB, 500-6000 MHz, 0.25dB Step size

Drawing

- Units in inches (in)
- Depth: 24.00
- Connectors: N or SMA

FRONT VIEW



REAR VIEW

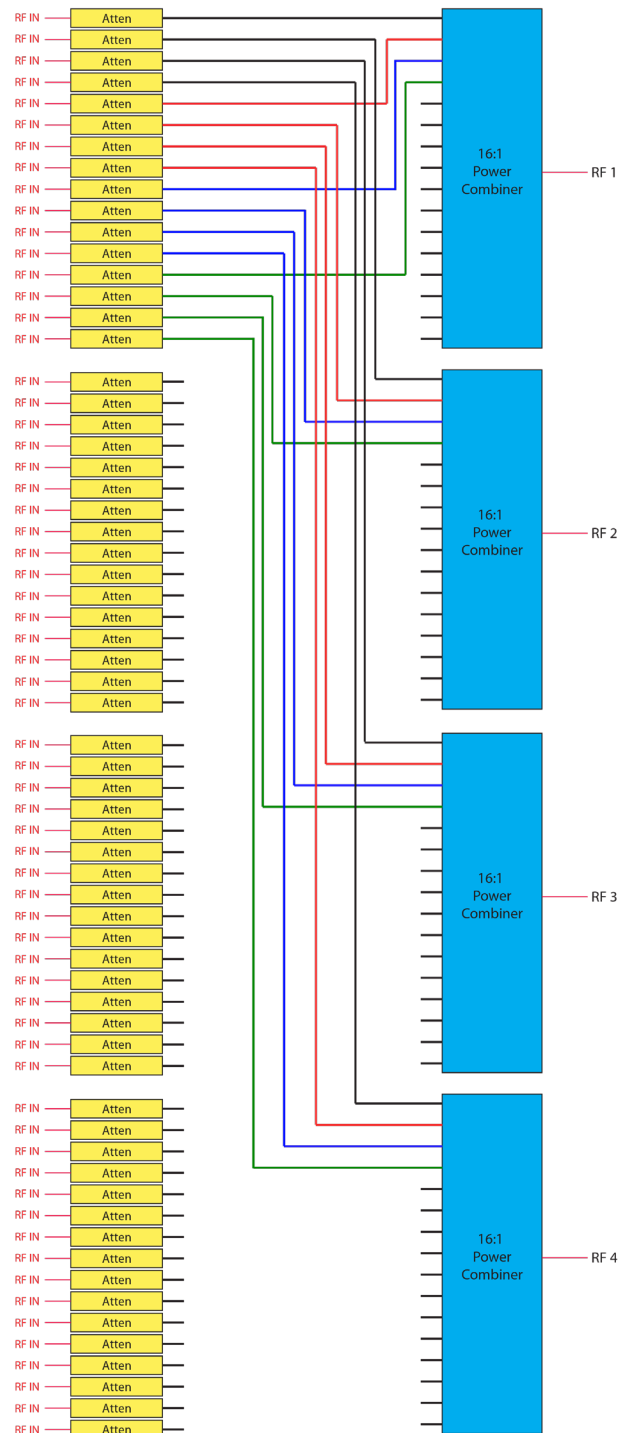
AD-HTS644

USB/Ethernet Handover Test System



64-Attenuation Channels : 4-Outputs, 95dB, 500-6000 MHz, 0.25dB Step size

Block Diagram



AD-HTS648



USB/Ethernet RF Handover Test System

64-Attenuation Channels : 8-Outputs, 95dB, 500-6000 MHz, 0.25dB Step size

Specifications

Attenuation Step Size (dB)	0.25			
Number of individually controlled RF chains	64			
Enclosure	5U Rackmount			
Connectors	SMA Female or N Female			
Operating Frequency (Mhz)	500 – 6,000			
Attenuation Range (dB)	0 - 95			
Input 0.1dB Compression Power (dBm)	34			
Impedance (Ω)	50			
IP3 Input (dBm) ¹	+58			
Attenuation Accuracy (dB)	Frequency	Conditions	Typical	Max
	50 – 2000 MHz	0.25 – 20	± 0.25	± (5.5% of Atten. + 0.25)
		20.25 – 60	± 0.50	± (2.0% of Atten. + 0.90)
		60.25 – 90	± 0.75	± (3.5% of Atten. + 0.70)
	2000 – 4000 MHz	0.25 – 20	± 0.20	± (5.5% of Atten. + 0.25)
		20.25 – 60	± 0.30	± (2.0% of Atten. + 0.70)
		60.25 – 90	± 0.40	± (3.0% of Atten. + 0.90)
	4000 – 6000 MHz	0.25 – 20	± 0.15	± (6.5% of Atten. + 0.15)
		20.25 – 60	± 0.35	± (3.5% of Atten. + 0.45)
		60.25 – 90	± 0.65	± (3.5% of Atten. + 0.90)
Dwell Time per Channel (ms) ²	1			
Min. Dwell Time for all Channels (ms) ³	2			
Attenuation Transition Time (ns) ⁴	325			
VSWR	< 2.0 : 1 (all states)			
Max Input RF Power (dBm)	+28			
Power Source	AC/DC Adapter (5V / 3A) Power Over Ethernet (PoE) (IEEE802.3at Class 2 compliant)			
Power Use (A)	1.2			
Operating Temperature (°C)	0 to 40			
Communication ⁵	USB (Hybrid Serial COM Port and HID) Ethernet (Telnet, HTTP, HTTP Web GUI, DHCP & Static IP) Manual keypad panel			
Power Divider Isolation (dB)	21			
Insertion Loss (dB)		Typical	Max	
	50 MHz	8.6	12.6	
	2400 MHz	10.9	14.2	
	6000 MHz	13.8	16.2	

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⁴ Attenuation Transition Time is the time it takes an attenuator to reach a new attenuation state.

⁵ USB support for simultaneous HID and Serial connections.

AD-HTS648



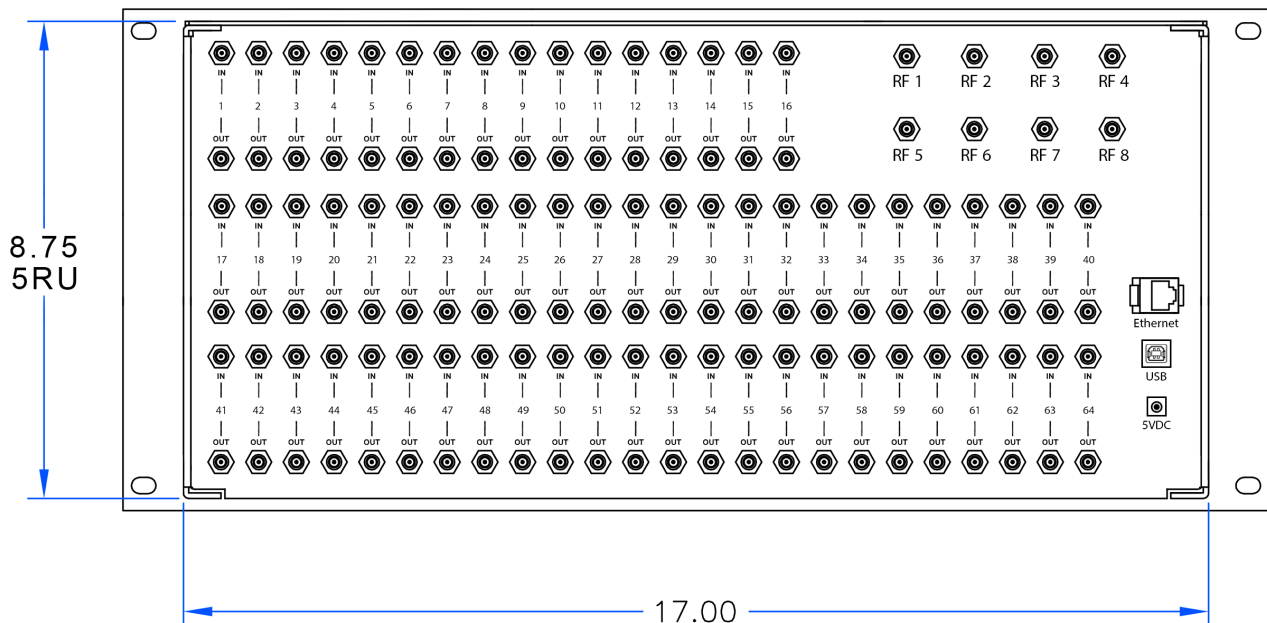
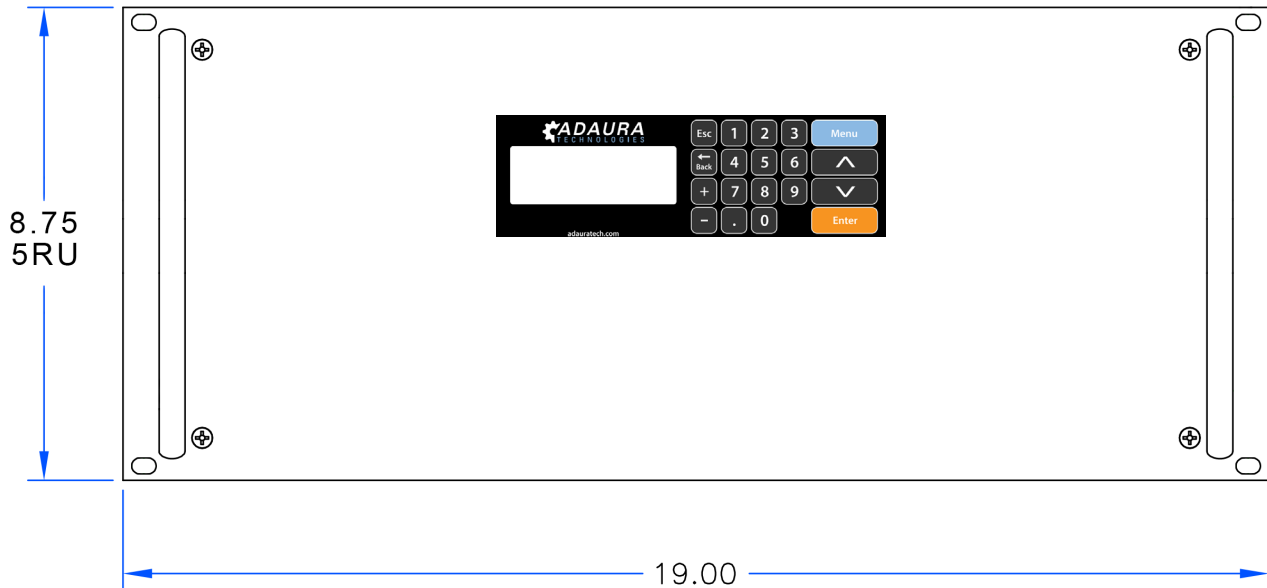
USB/Ethernet RF Handover Test System

64-Attenuation Channels : 8-Outputs, 95dB, 500-6000 MHz, 0.25dB Step size

Drawing

FRONT VIEW

- Units in inches (in)
- Depth: 24.00
- Connectors: N or SMA



REAR VIEW

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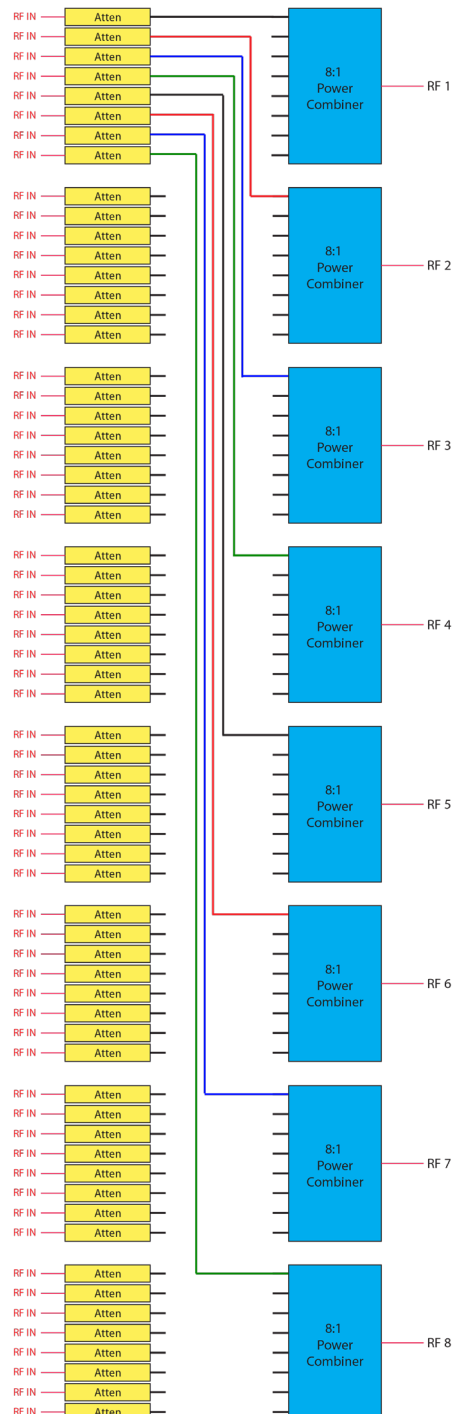
AD-HTS648

USB/Ethernet RF Handover Test System



64-Attenuation Channels : 8-Outputs, 95dB, 500-6000 MHz, 0.25dB Step size

Block Diagram



AD-HTS324



USB/Ethernet RF Handover Test System

32-Attenuation Channels : 4-Outputs, 95dB, 500-6000 MHz, 0.25dB Step size

Specifications

Attenuation Step Size (dB)	0.25			
Number of individually controlled RF chains	32			
Enclosure	4U Rackmount			
Connectors	SMA Female or N Female			
Operating Frequency (MHz)	500 – 6,000			
Attenuation Range (dB)	0 – 95			
Input 0.1dB Compression Power (dBm)	34			
Impedance (Ω)	50			
IP3 Input (dBm) ¹	+58			
Attenuation Accuracy (dB)	Frequency	Conditions	Typical	Max
	50 – 2000 MHz	0.25 – 20	± 0.25	± (5.5% of Atten. + 0.25)
		20.25 – 60	± 0.50	± (2.0% of Atten. + 0.90)
		60.25 – 90	± 0.75	± (3.5% of Atten. + 0.70)
	2000 – 4000 MHz	0.25 – 20	± 0.20	± (5.5% of Atten. + 0.25)
		20.25 – 60	± 0.30	± (2.0% of Atten. + 0.70)
		60.25 – 90	± 0.40	± (3.0% of Atten. + 0.90)
	4000 – 6000 MHz	0.25 – 20	± 0.15	± (6.5% of Atten. + 0.15)
		20.25 – 60	± 0.35	± (3.5% of Atten. + 0.45)
		60.25 – 90	± 0.65	± (3.5% of Atten. + 0.90)
Dwell Time per Channel (ms) ²	1			
Min. Dwell Time for all Channels (ms) ³	2			
Attenuation Transition Time (ns) ⁴	325			
VSWR	< 2.0 : 1 (all states)			
Max Input RF Power (dBm)	+28			
Power Source	AC/DC Adapter (5V / 3A) Power Over Ethernet (PoE) (IEEE802.3at Class 2 compliant)			
Power Use (A)	0.750			
Operating Temperature (°C)	0 to 40			
Communication ⁵	USB (Hybrid Serial COM Port and HID) Ethernet (Telnet, HTTP, HTTP Web GUI, DHCP & Static IP) Manual keypad panel			
Power Divider Isolation (dB)	21			
Insertion Loss (dB)		Typical	Max	
	50 MHz	8.2	12.0	
	2400 MHz	10.4	14.0	
	6000 MHz	12.8	16.0	

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³ Minimum Dwell Time for All Channels is the time it takes all channels to transition to a new attenuation state (without PC communication delays).

⁴ Attenuation Transition Time is the time it takes an attenuator to reach a new attenuation state.

⁵ USB support for simultaneous HID and Serial connections.

AD-HTS324

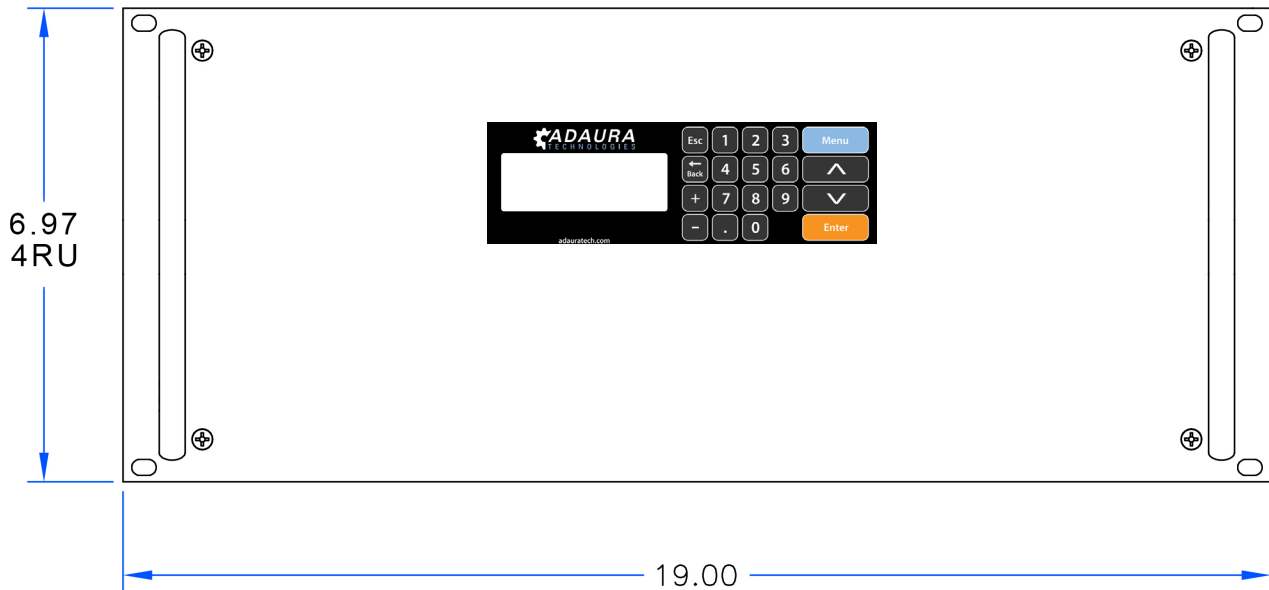


USB/Ethernet RF Handover Test System

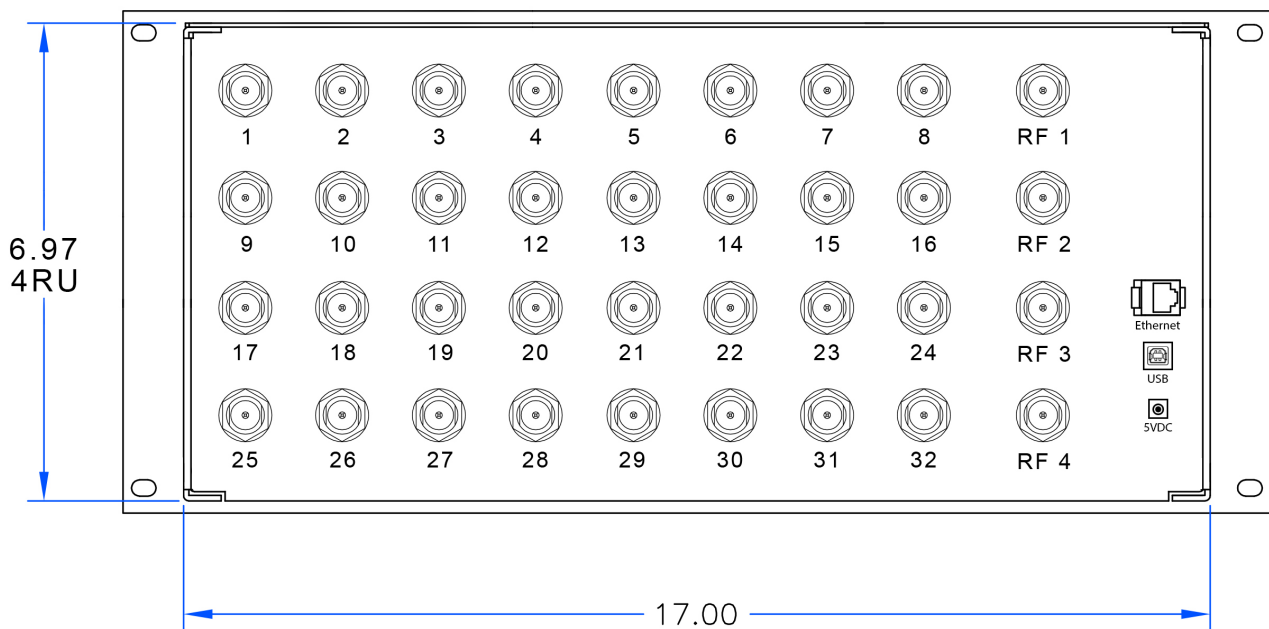
32-Attenuation Channels : 4-Outputs, 95dB, 500-6000 MHz, 0.25dB Step size

Drawing

FRONT VIEW



- Units in inches (in)
- Depth: 24.00
- Connectors: N or SMA



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AD-HTS324



USB/Ethernet RF Handover Test System

32-Attenuation Channels : 4-Outputs, 95dB, 500-6000 MHz, 0.25dB Step size

Block Diagram

