



ATUC-50 Digital Discussion System



Discussion System

Features

- Crystal-clear, 24-bit digital audio processing with 12-band feedback suppressor
- Easy plug-and-play operation
- Up to 100 ATUC-50DU discussion units, ATUC-50IU integration units and ATUC-50INT interpretation units (max of six) can be connected, in either daisy chain or ring topology, to each ATUC-50CU control unit
- 3 CUs can be linked via Cat5e (or better) cable, providing a system with up to 300 DUs or IUs
- 3 selectable operation modes (Free Talk, Request to Talk, and Full Remote), plus various override settings
- Built-in WAV and MP3 recorder lets you record to a USB mass storage device
- Control available through Web Remote interface and third-party IP Control Systems
- Individual automated gain control (AGC), mic gain and mic EQ for each discussion unit
- 2 Mic/Line inputs, 2 AUX inputs and 2 Interpretation Return inputs
- LED indicators on front panel of control unit allow for easy monitoring of critical system functions
- Front panel OLED for active system information and presets
- Expandable and scalable system design

Description

Featuring easy-to-use, plug-and-play functionality, the ATUC-50 Digital Discussion System offers reliable, clear and intelligible communication to significantly increase meeting efficiency and effectiveness. The system provides 24-bit/48 kHz uncompressed digital audio for natural-sounding voice reproduction, along with a 12-band feedback suppressor that enables higher volume levels.

With the use of the ATLK-EXT165 link extender and firmware V1.6, the ATUC-50CU rack-mountable control unit can power and control up to 100 ATUC-50DU discussion units, ATUC-50IU integration units and ATUC-50INT interpretation units (max of six). Up to three control units may be cascade-connected via Cat5e (or better) cable. This cascade-connection thus enables the use of up to 300 discussion units, integration units and interpretation units (max of six) in one system. The ATUC-50CU features four balanced outputs and one unbalanced output, plus left/right AUX RCA inputs, two mic/line inputs, and two interpretation return inputs to provide simultaneous interpretation feeds in addition to the floor language feed.

The ATUC-50CU is equipped with an audio recorder that can record MP3 or WAV files of 2 GB or less onto a connected USB mass storage device (2 TB max. storage capacity). When the 2 GB limit is reached, a new file can be created to continue recording. Up to four channels are available for recording WAV files; up to two channels are available for recording MP3s.

The front panel of the ATUC-50CU offers several indicator LEDs to display status of USB access, recording, discussion unit power, discussion unit chain, control unit link, remote control, and audio signal level. The OLED display shows system settings that can be adjusted by using the jog dial and back button. Among the settings are multiple modes

that allow the system to adapt to any discussion situation, including Free Talk mode, Request to Talk mode, Full Remote mode, and various override settings. Automated gain control (AGC), mic gain and mic EQ settings are available for each individual discussion unit. Settings can be saved as presets and easily recalled before the start of each meeting. The control unit can also be programmed to work via Web Remote Control, which enables the user to configure and operate the system from a computer or mobile device. IP Control allows full parameter access from most third-party control systems.

Each ATUC-50DU discussion unit is equipped with a 3-pin XLR-type input for use with compatible gooseneck microphones, including the ATUC-M43H or ATUC-M58H microphones specifically designed for the system. The discussion unit also features a display for monitoring volume and channel selection, buttons for selecting channel, a built-in speaker, a headphone jack with volume control, two independently programmable LED indicators, and a talk button to turn the connected microphone on/off or send a request to talk to the moderator. On units designated by the control unit as priority discussion units, the talk button can be used to mute and override a non-priority discussion unit. Up to 100 discussion units may be connected to a control unit, using Cat5e (or better) cable employed in either daisy chain or ring topology. Ring topology offers an additional layer of stability to the system since the system actually regards the start and end of the ring (terminated at the discussion unit chain A/B inputs on the control unit) as the start of two daisy chains. Thus, even if there is a connection failure somewhere in the ring, the control unit will still recognize each discussion unit as part of one of the two daisy chains, allowing the system to function without interruption. The discussion units are designed for tabletop or recessed mounting, and are outfitted with a paintable front plate.

The ATUC-50INT interpretation unit has the same body as the ATUC-50DU, but is programmed for use by interpreters in bi- or trilingual discussion applications. The unit's selection buttons allow interpreters to monitor either the floor language or an alternate language and to output their interpretation to one of up to three different language channels that can be monitored on the ATUC-50DU units. Two ATUC-50INT units may be linked to provide hardware redundancy for a particular language feed.

The ATUC-50IU integration unit is essentially a discussion unit that is designed to give installers the flexibility to choose the inputs and outputs best suited for a particular installation. The unit is equipped with two RJ-45 ports for connection to other discussion system components, seven Euroblock connectors for audio and control options, and six Euroblock connectors for LED power and general-purpose input/output (GPIO). Its flexible feature set includes a mic input, speaker output, headphone output, control input (Talk On, Vol. Up, Vol. Down, Channel Select), LED status output, and GPIO. The unit can be mounted in discreet locations, such as the underside of a tabletop.

The ATLK-EXT165 link extender allows users to extend the cable runs in a system. The extender is equipped with two RJ-45 ports through which it supplies DC +48V power to connected devices. It can be set to power on/off automatically in tandem with a connected control unit or to operate locally, powering on/off with the press of its Mode switch.

The ATUC-M43H and ATUC-M58H gooseneck microphones each feature a hypercardioid condenser element with double-layer pop filter, a remote-controlled LED ring, 3-pin XLRM-type connector with rubber cap to prevent mechanical vibration, and RFI-shielding technology.

Architect's and Engineer's Specifications

The digital discussion system shall consist of up to three control units that can be connected to one another in cascading fashion via Cat5e (or better) cable. With the use of a link extender and up-to-date firmware each control unit shall have the capacity for connecting to 100 discussion units, integration units and interpretation units (max of six) via Cat5e (or better) cable, in either daisy chain or ring topology.

The control unit shall be all metal and shall support a 24-bit/48 kHz digital audio stream. It shall incorporate a 12-band feedback suppressor and shall provide individual digital signal processing for each connected discussion unit, along with automated gain control (AGC), mic gain and mic EQ. The control unit shall be equipped with the following 3.81 mm terminal blocks: four balanced outputs and one unbalanced



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output, two mic/line inputs, and two interpretation return inputs. The control unit shall be equipped with the following RJ-45 terminals: a network terminal for connecting to the local network, discussion unit chain A/B terminals for connecting discussion units, and control unit link A/B terminals for cascade-connecting multiple control units (or for connecting additional discussion units as a C/D chain). The control unit shall also be equipped with left/right AUX RCA inputs. The control unit shall include a built-in recorder that shall be capable of recording audio from the discussion system in WAV (up to 4 channels) and MP3 (up to 2 channels) files of 2 GB or less. To support the recording process, the front panel of the control unit shall include a USB terminal that allows connection to a USB mass storage class device with storage capacity up to 2 TB. The front panel of the control unit shall also include indicator LEDs to display the status of USB access, recording, discussion unit power, discussion unit chain, control unit link, remote control, and audio signal level. A display screen shall be included to show available system settings, including master volume level, recording settings, and operation mode settings. The control unit shall allow user to save settings as presets that can be recalled at the start of each discussion session. A jog dial and back button shall be included on the control unit to allow local adjustment of settings. The control unit shall also include Web remote functionality, enabling the system to be configured and operated from a computer or mobile device. IP control shall be available to allow full parameter access from most third-party control systems. The control unit shall be able to be powered by 120V AC 60 Hz.

The discussion unit shall be designed to work with a phantom-powered condenser gooseneck microphone with an integral 3-pin XLRM-type output connector. The discussion unit shall offer a 3-pin XLRM-type input connector, two RJ-45 terminals for connecting to the control unit or to other discussion units, and an RJ-45 extension terminal. The discussion unit shall include a talk button that shall function according to settings assigned to it by the connected control unit (allowing user to turn mic on/off or to request the opportunity to talk). It shall be equipped with a display for monitoring volume and channel selection, up/down channel-selection buttons, a built-in speaker, a 3.5 mm (1/8") stereo mini-plug headphone jack with two-button (+/-) volume control, and two independently programmable LED indicators (one located above the talk button to display talk status and one located on the rear of the unit for more general display purposes, such as grouping sets of discussion units by LED color). The discussion unit shall be capable of supplying 12V DC of phantom power. It shall be designed for tabletop or recessed mounting, and shall be outfitted with a paintable front plate.

The interpretation unit shall be designed to work with a phantom-powered condenser gooseneck microphone with an integral 3-pin XLRM-type output connector. The discussion unit shall offer a 3-pin XLRM-type input connector, two RJ-45 terminals for connecting to the control unit or to other interpretation units, and an RJ-45 extension terminal. The interpretation unit shall include a talk button that allows user to turn mic on/off, a monitor channel selection button, and A/B interpretation language selection buttons to set the language group of the output speech. The unit shall also be equipped with a display that indicates volume, monitor channel and the language group assigned to the unit's output; a built-in speaker; a 3.5 mm (1/8") stereo mini-plug headphone jack with two-button (+/-) volume control; and two independently programmable LED indicators (one located above the talk button to display talk status and one located on the rear of the unit for more general display purposes, such as grouping sets of discussion units by LED color). The interpretation unit shall be capable of supplying 12V DC of phantom power. It shall be designed for tabletop or recessed mounting, and shall be outfitted with a paintable front plate.

The integration unit shall be equipped with two RJ-45 ports for connection to other discussion system components, seven Euroblock connectors for audio and control options, and six Euroblock connectors for LED power and general-purpose input/output (GPIO). Its flexible feature set shall include a mic input, speaker output, headphone output, control input (Talk On, Vol. Up, Vol. Down, Channel Select), LED status output, and GPIO. It shall be designed to mount discreetly (e.g., on the underside of a tabletop).

The link extender shall be equipped with two RJ-45 ports capable of supplying DC +48V power to connected devices. It shall be configurable to power on/off automatically in tandem with a connected control unit or to operate locally, powering on/off with the press of a switch located on the link extender itself.

Two fixed-charge condenser gooseneck microphones, specially designed to work with the system, shall be available in lengths of 430 mm (16.93") and 580 mm (22.83"). Each microphone shall have a hypercardioid polar pattern with a uniform 100° angle of acceptance and a frequency response of 100 Hz to 15,000 KHz. Each shall include a remote-controlled LED ring, a double-layer pop filter and RFI-shielding technology. Each shall operate from an external 11V to 52V DC phantom power source. Each shall be capable of handling sound input levels up to 134 dB. Nominal open-circuit output voltage shall be 10.0 mV at 1V, 1 Pascal. Output shall be low impedance balanced (250 ohms). Each microphone shall offer outstanding rejection of radio frequency interference (RFI). The microphone shall incorporate a self-contained power module with an XLRM-type connector at the base for direct connection to the discussion unit's XLRM-type jack. A rubber cap shall cover the XLRM-type connector to absorb any mechanical vibration from the desk or discussion unit. The head diameter of microphone shall be 12.2 mm (0.48"). Finish for each microphone shall be low-reflectance black.

The specified digital discussion system shall be an Audio-Technica ATUC-50 digital discussion system.

The specified component(s) shall be Audio-Technica (note to specifier—choose components):

ATUC-50CU control unit

ATUC-50DU discussion unit

ATUC-M43H gooseneck microphone (430 mm/16.93")

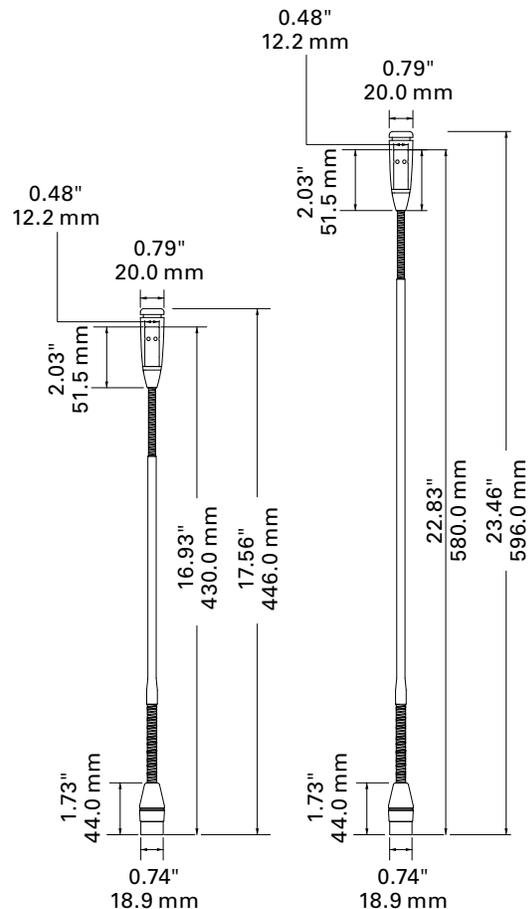
ATUC-M58H gooseneck microphone (580 mm/22.83")

ATUC-50INT interpretation unit

ATUC-50IU integration unit

ATLK-EXT165 link extender

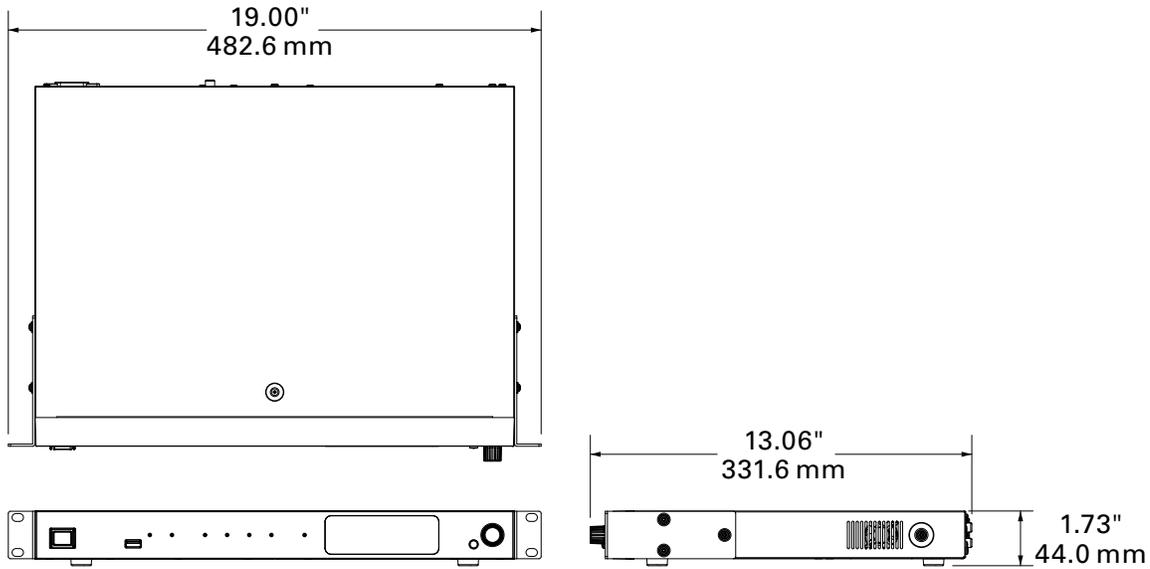
ATUC-M43H and ATUC-M58H Microphones



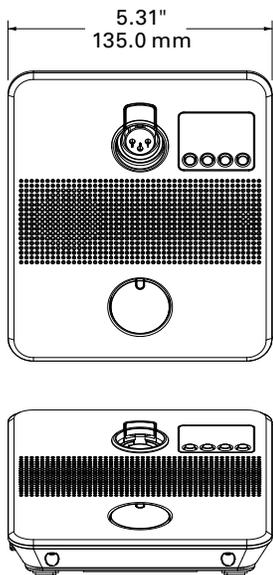


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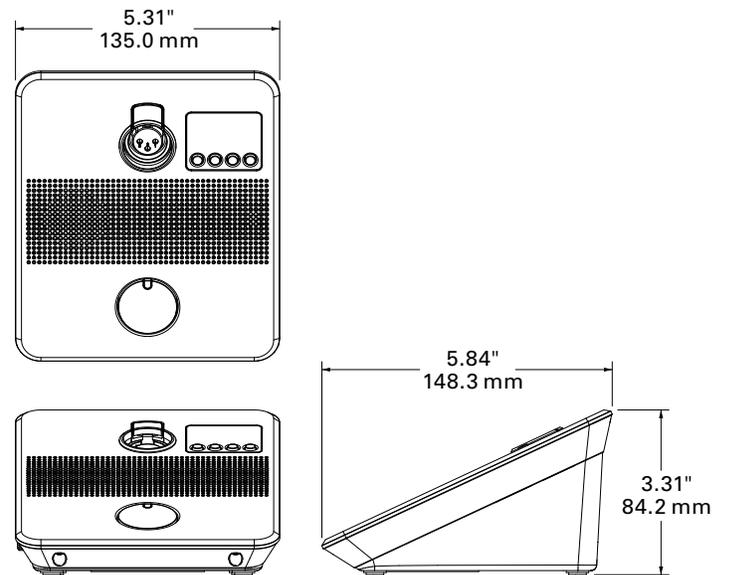
ATUC-50CU Control Unit



ATUC-50DU Discussion Unit



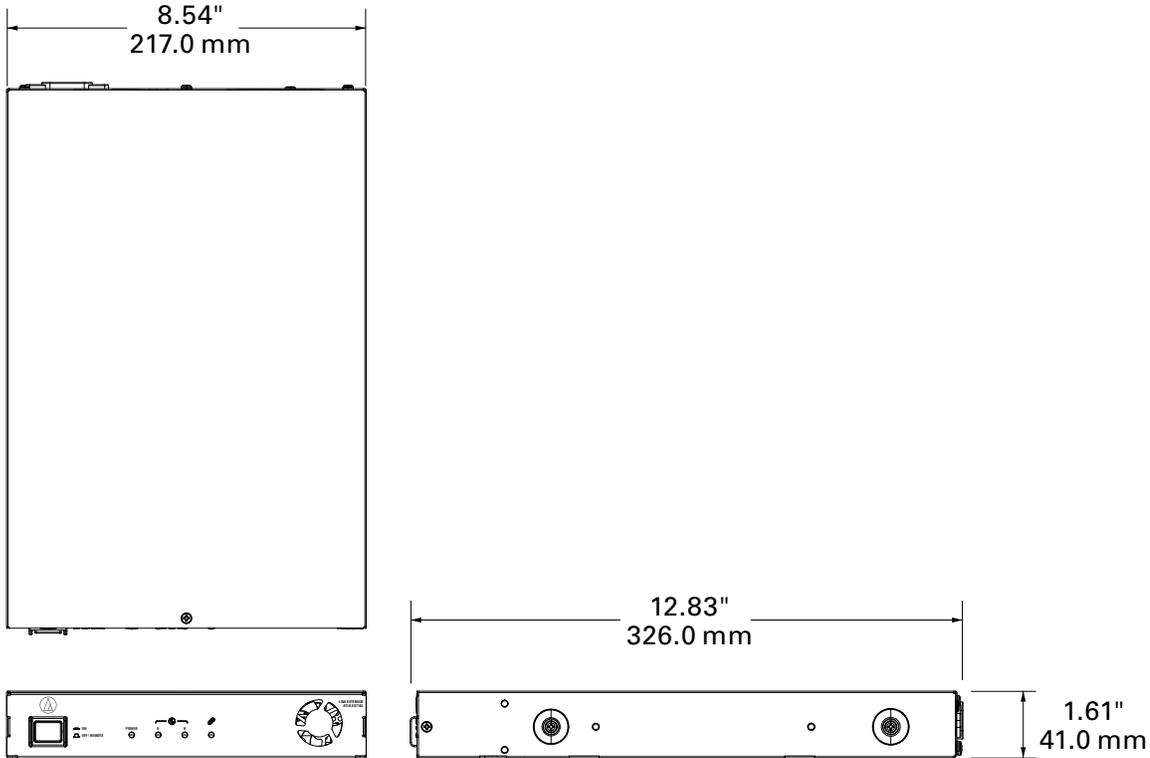
ATUC-50INT Interpretation Unit



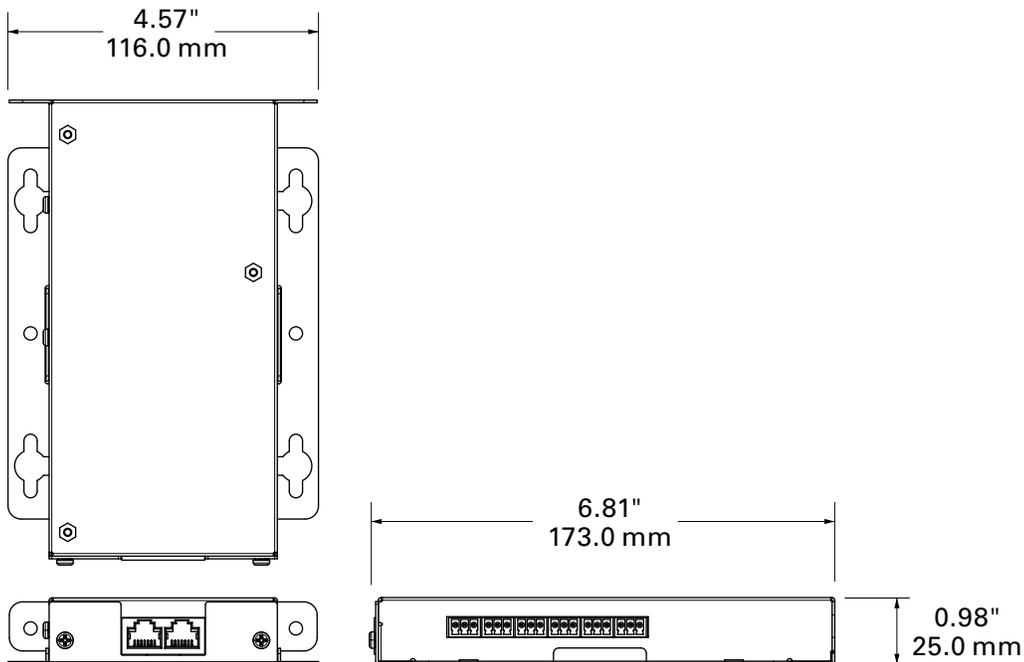


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ATLK-EXT165 Link Extender



ATUC-50IU Integration Unit





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Specifications

ATUC-50CU Control Unit	
Dynamic range	110 dB A-weighted
Frequency response	20 Hz to 20 kHz (+1.0, -2.0 dB)
Audio sampling	24 bit/48 kHz
Recording (via USB)	WAV: 1/2/3/4-track w/ CUE point (BWF standard) MP3: 1/2-track w/ CUE point (original format)
Playback—WAV	Data length: 16 bit, 24 bit Sampling frequency: 48 kHz
Playback—MP3 (MPEG - 1, Audio Layer - 3)	Bit rate: 32 - 320 kbps Sampling frequency: 48 kHz
Playback—Files	Maximum file size: 2 GB Maximum number of files: 30
Supported file systems	FAT16/FAT32
MP3 bit rate	64 kbps/128 kbps/192 kbps/256 kbps/320 kbps
I/O connectors	Inputs: Mic/Line x 2, AUX (St), Interpretation return x 2 Outputs: Balanced x 4, Unbalanced x 1 Link/Chain: DU RJ-45 A/B terminals, CU RJ-45 A/B terminals (DU RJ-45 C/D terminals)
Latency	Mic input to output: 1 ms DU to CU: 1.2 ms
Signal-to-noise	90 dB, A-weighted
Headroom	20 dB
Equivalent input noise	< -126 dBu (Rs=150 ohms)
Total harmonic distortion	< 0.03% (1 kHz unity)
Crosstalk	< -80 dB at 1 kHz
Phantom power	DC +48V
Power supply	100V-240V AC (50/60 Hz)
Power consumption	20 W-175 W (max)
Operation temperature	0° to 40° C (32° to 104° F)
Operation humidity	25-85%
Dimensions	482.6 mm (19.00") W x 44.0 mm (1.73") H x 331.6 mm (13.06") D
Net weight	3.4 kg (7.5 lbs)
Accessories included	AC power cord; Euroblock connectors x 9

ATUC-50DU Discussion Unit	
Dynamic range	107 dB, A-weighted
Frequency response	20 Hz to 20 kHz (+1.0, -2.0 dB)
Audio sampling	24 bit/48 kHz
Signal-to-noise	87 dB, A-weighted
I/O connectors	Input: 3-pin XLR-type Output: 3.5 mm (1/8") stereo mini-plug headphone jack Link/Chain: RJ-45 A/B terminals
Headroom	20 dB
Equivalent input noise	< -121 dBu (Rs=150 ohms)
Total harmonic distortion	< 0.07% (1 kHz unity)
Phantom power	DC +24V
Power supply	DC +48V
Power consumption	2.2 W
Operation temperature	0° to 40° C (32° to 104° F)
Operation humidity	25-85%
Dimensions	135.0 mm (5.31") W x 84.2 mm (3.31") H x 148.3 mm (5.84") D
Net weight	570 g (20.1 oz)
Finish	Top panel: Gun metal Enclosure: Black

ATUC-50DU Interpretation Unit	
Dynamic range	107 dB, A-weighted
Frequency response	20 Hz to 20 kHz (+1.0, -2.0 dB)
Audio sampling	24 bit/48 kHz
Signal-to-noise	87 dB, A-weighted
I/O connectors	Input: 3-pin XLR-type Output: 3.5 mm (1/8") stereo mini-plug headphone jack Link/Chain: RJ-45 A/B terminals
Headroom	20 dB
Equivalent input noise	< -121 dBu (Rs=150 ohms)
Total harmonic distortion	< 0.07% (1 kHz unity)
Phantom power	DC +48V
Power supply	DC +48V
Power consumption	2.2 W
Operation temperature	0° to 40° C (32° to 104° F)
Operation humidity	25-85%
Dimensions	135.0 mm (5.31") W x 84.2 mm (3.31") H x 148.3 mm (5.84") D
Net weight	570 g (20.1 oz)
Finish	Top panel: Gun metal Enclosure: Black

ATLK-EXT165 Link Extender	
I/O Connectors	Output: LINK power status Input: DU port A/B
Power Supply	100V-240V AC (50/60 Hz)
Power Consumption	15 W-160 W (max)
Operation temperature	0° to 40° C (32° to 104° F)
Dimensions	217.0 mm (8.54") W 41.0 mm (1.61") H 326.0 mm (12.83") D
Net Weight	2.2 kg (4.9 lbs)
Accessories Included	AC power cord; Euroblock connector; AT8649 table mount kit
Compatible Devices	ATUC-50CU, ATUC-50DU, ATUC-50INT, ATUC-50IU, ATDM-0604

ATUC-M43H and ATUC-M58H Microphones	
Element	Fixed-charge back plate, permanently polarized condenser
Polar pattern	Hypercardioid
Frequency response	100 Hz to 15 kHz
Sensitivity	-40 dB (10.0 mV) re 1V at 1 Pa
Maximum input sound level	134 dB SPL, 1 kHz at 1% T.H.D.
Signal-to-noise ratio	≥ 64 dB at 1 kHz/Pa
Impedance	250 ohms (balanced)
Output connector	3-pin XLRM-type
Finish	Low-reflectance black
Dimensions	ATUC-M43H: 430.0 mm (16.93") long, 12.2 mm (0.48") head diameter ATUC-M58H: 580.0 mm (22.83") long, 12.2 mm (0.48") head diameter
Net weight	ATUC-M43H: 82 g (2.9 oz) ATUC-M58H: 92 g (3.2 oz)

In the interest of standards development, A.T.U.S. offers full details on its test methods to other industry professionals on request.

1 Pascal = 10 dynes/cm² = 10 microbars = 94 dB SPL

Specifications are subject to change without notice.



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Specifications	ATUC-50IU Integration Unit
Dynamic range	106 dB, A-weighted
Frequency response	20 Hz to 20 kHz (+1.0, -2.0 dB)
Audio sampling	24 bit/48 kHz
Signal-to-noise	86 dB, A-weighted
Headroom	20 dB
Phantom power	DC +48V
Power requirement	DC +48V
Power consumption	3.4 W
Operation temperature	0° to 40° C (32° to 104° F)
Operation humidity	25-85%
Connectors	2 x RJ45 39 pin on EuroBlock
Dimensions	116.0 mm (4.57") W x 25.0 mm (0.98") H x 173.0 mm (6.81") D
Net weight	460 g (16.2 oz)
Included Accessory	Euroblock connectors x 13

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