mtu201

Ultra Wideband (UWB) Wireless XLR Desk Stand Transmitter Unit **SpectraPulse**® ultra wideband (uwb) wireless systems

timed sequence over a very wide (500 MHz) frequency spectrum. To decode the pulse streams, the system must know exactly when, where and how to listen for them, providing a very low probability of detection (TRANSEC – Transmission Security). For applications requiring additional levels of security, an optional encryption package that meets the AES 128-bit encryption standard developed by the U.S. government for securing sensitive material is available. (COMSEC – Communications Security)
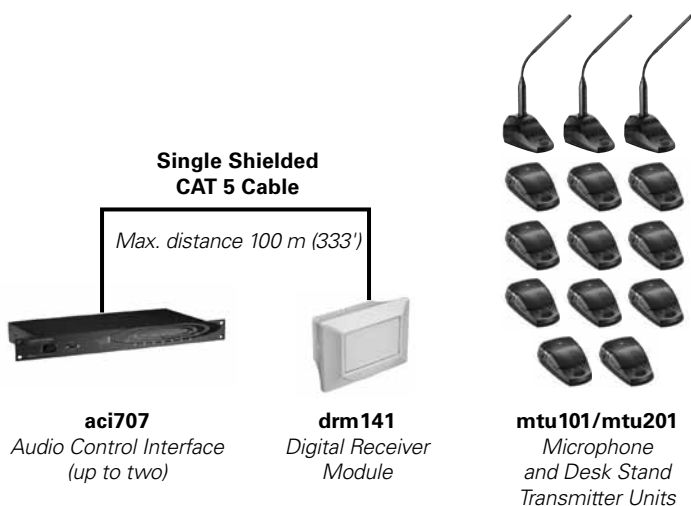
A SpectraPulse® system consists of a Digital Receiver Module (drm141), up to 14 Microphone Transmitter Units/Desk Stand Transmitters (mtu101 and/or mtu201) and up to two Audio Control Interfaces (aci707). The system will support up to 14 simultaneous audio channels. An optional seven space Charging Encryption Station (cei007) and NiMH batteries are available along with System Encryption Package (sep128) software for digitally encrypting the microphone output.

Architect's and Engineer's Specifications
The wireless boundary microphone transmitter shall operate in the 6 GHz band using Ultra Wideband timed pulse technology with pulse duration of 2 nanoseconds and a UWB rate of 8 mbps as part of a complete SpectraPulse® system. Transmitters using conventional carrier-based RF or spread-spectrum methods of transmission shall be unacceptable. Up to 14 microphone transmitters shall be able to be used simultaneously in a single system. The microphone transmitter shall incorporate a simple address/channel selector switch for address assignment, without the need for frequency coordination, scanning, or preset frequency groupings. Average RF power shall be 40 nanowatts. The microphone transmitter's audio output shall be entirely digital with no compression or companders, and the overall system latency shall be less than 1.2 ms. Audio response shall be from 100 Hz to 12,000 Hz, with a sampling rate of 24 kHz and 16 bit AD/DA converters. The output signal from the microphone transmitter shall be inherently secure with a very low probability of transmission detection. For increased security, the transmitter can be encrypted with an AES level 3, 128 bit digital encryption key via a user-controlled software application. Each microphone transmitter shall be equipped with a configurable touch button. This button shall be capable of operating in one of the following modes: Push On/Off, Push to Mute, Push to Talk. It shall be possible to isolate the microphone's audio from the mute/closure function for use with AEC and other systems without rewiring. Mute functions shall be silent. Each microphone transmitter shall incorporate LED indicators for: power, low battery, link present and mute status (mic active). The microphone transmitter shall be an XLR-type desk stand base capable of accepting dynamic or condenser microphones. The base shall incorporate RF-shielding and supply phantom power to operate condenser microphones. It shall be capable of operating with standard AA alkaline or NiMH batteries. When using NiMH batteries, it shall be possible to operate the transmitter (continuous talk) for 9 hours. Battery change-out shall not require any tools or special techniques. Contacts shall be provided on the base of the microphone transmitter allowing it to drop into a charging/encryption station. The construction of the microphone transmitter shall be cast metal with plastic trim. LED indicators on the microphone transmitter shall be blue. The base plate of the microphone transmitter shall be equipped with feet that will not mar or leave marks on tables or other surfaces. All components shall comply with RoHs standards.

The microphone transmitter shall be an Audio-Technica mtu201 XLR desk stand transmitter or equivalent.

Features
- **Ultra Wideband (UWB) operation**
- **Easy to set up and operate**
- **Simple channel address selection**
- **Excellent audio quality**
- **Inherently secure transmission**
- **XLR-type connector accepts microphone input**
- **Supplies 12V phantom power for condenser microphones**
- **Configurable soft-touch mute button**
- **LED status indicators (power, low battery, link, mute)**
- **Operates on 2 AA batteries (NiMH or Alkaline)**
- **Immune to multipath interference**
- **Integral charging encryption contacts**
- **Heavy-duty robust construction**
- **Optional rechargeable batteries and charging/encryption station**

Description
The mtu201 is a gooseneck-style microphone transmitter base designed to operate as part of a SpectraPulse® wireless microphone system utilizing ultra wideband (UWB) pulse technology operating in the 6 GHz band. Up to 14 XLR Desk Stand Transmitter Units can be used in a SpectraPulse® system. Channel selection is accomplished by simply setting an address selector on each mtu201 to a different address without the need for frequency scanning, hunting or other frequency-coordination processes. The RF output signal from the mtu201 is time-based rather than frequency-based, making a SpectraPulse® system immune from multipath issues, dropouts and sputters. SpectraPulse® operates using a completely digital signal path with imperceptible latency and no companders or compression, providing excellent audio quality.

A soft-touch button that can be globally configured for push On/Off, push-to-mute, or push-to-talk operation is provided on the mtu201. All muting is silent. LED indicators are provided to show mute status, power, low battery and link. The compact tabletop base accepts any condenser or dynamic microphone or cable ending in a standard XLR-type male connector. 12V DC phantom power is available for powering condenser microphones and the mtu201 incorporates Audio-Technica UniGuard® technology for immunity from RF interference.

Each mtu201 operates using 2 AA batteries. Standard alkaline or NiMH rechargeable batteries can be used. With NiMH batteries, up to nine hours of operation are possible using a fully charged set. Charging contacts on the base of the mtu201 allow it to be dropped into a charging/encryption interface. Recharge time for depleted batteries is typically six hours.

The mtu201's output signal is inherently secure in operation since the UWB data is transmitted in extremely short-duration pulses sent in a

System Block Diagram

**Single Shielded
CAT 5 Cable**

Max. distance 100 m (333')

aci707
*Audio Control Interface
(up to two)*

drm141
*Digital Receiver
Module*

mtu101/mtu201
*Microphone
and Desk Stand
Transmitter Units*

Each aci707 provides up to seven audio outputs.

Specifications

Overall system

Frequency range	6.100 GHz–6.600 GHz
Center frequency	6.350 GHz
AD/DA	16 bits
Clock	24.576 MHz
Sampling rate	24 kHz
Pulse duration	2 nanoseconds
Frame length	1 ms
Time slots per frame	15
UWB rate	8 mbps
Compression	None
Companding	None
Latency	1.1 ms
Average RF power	40 nanowatts
Sync/Re-acquisition time	<3 ms
Range	23 m (75')
Simultaneous channels	14
Mains (aci707)	100–240V, 50/60 Hz RoHs-compliant power supply

Transmitter unit

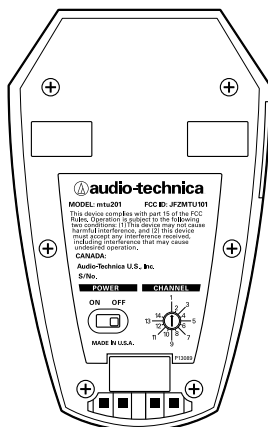|	
Battery life	Approximately 9 hours, depending on battery type and use pattern
Current consumption	135 mA
LED indicators	Power, Mute, Link Configurable button, Push On/Off, Push to Talk, Push to Mute
Switches	Power, address/channel, control button
Accessories included	Two AA Alkaline batteries for set up (per mtu)

Specifications are subject to change without notice.

Battery Compartment Detail
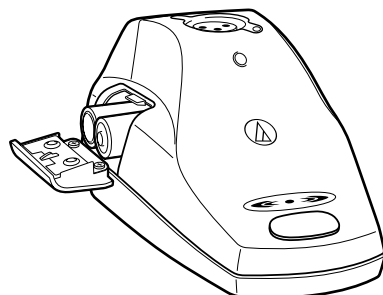
Bottom Detail

(⌀)audio-technica

MODEL: mtu201   FCC ID: JFZMTU101
This device complies with part 15 of the FCC
Rules. Operation is subject to the following
two conditions: (1) This device may not cause
harmful interference, and (2) this device
must accept any interference received,
including interference that may cause
undesired operation.
CANADA:
Audio-Technica U.S. Inc.
S/No.

POWER   CHANNEL
ON   OFF

MADE IN U.S.A.

(⌀)**audio-technica**®