



Features

- **Ultra Wideband (UWB Operation)**
- **Integrated receiver/antenna array**
- **Supports up to 14 microphone transmitters**
- **Single Cat 5 shielded cable connection to aci707 for power and data**
- **Interference-free performance**
- **Inherent security (TRANSEC: Transmission Security)**
- **Encryption available (COMSEC: Communication security)**
- **RJ45-type connectors**
- **Flush (3-gang backbox) or surface mounting**
- **Includes surface mount enclosure**
- **Paintable bezel and enclosure**
- **Can be remotely located from aci707 audio control interface**
- **Includes 25' shielded Cat 5 cable with connectors**

Description

The Digital Receiver Module (drm141) is the heart of a SpectraPulse® system acting as both an antenna and transceiver. A single drm141 can support up to 14 Microphone Transmitter Units (mtu). Designed for wall or ceiling installation, the low-profile, unobtrusive drm141 can be flush-mounted in a standard 3-gang electrical box or surface mounted using the included enclosure. SpectraPulse® is a wireless microphone system utilizing ultra wideband (UWB) pulse technology. The system operates in the 6 GHz band to deliver clear, intelligible audio with none of the performance and set-up issues associated with conventional RF wireless microphones. SpectraPulse® operates using a completely digital signal path with imperceptible latency and no compressors or compression, providing excellent audio quality.

The drm141 is connected to the Audio Control Interface (aci707) via a single shielded Cat 5 cable. Standard RJ 45-type connectors are used. The cat 5 cable supplies power to the drm141, as well as the digital signal path between the drm141, and up to two linked aci707s for a capacity of 14 microphone transmitters. The cable length can be up to 333' (100 m). Each drm141 includes a 25-foot shielded Cat 5 cable. The integral antenna within a drm141 is directional favoring the front of the unit. Under normal operating conditions, the antennas provide a coverage area greater than 75' (23 m) from the Digital Receiver Module.

The drm141 is ruggedly constructed and features a removable bezel and surface mount enclosure that can be painted to match the room's décor.

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

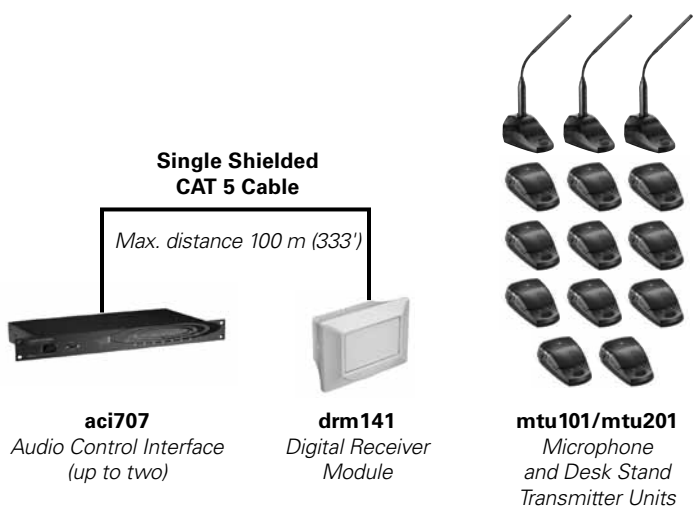
available along with System Encryption Package (sep128) software for digitally encrypting the microphone output.

Architect's and Engineer's Specifications

The digital receiver module shall be part of a wireless microphone system operating in the 6 GHz band using Ultra Wideband timed pulse technology with a pulse duration of 2 nanoseconds and a UWB rate of 8 mbps. It shall receive UWB signals from the associated microphone transmitter units. The digital receiver module shall house both transmitter and receiver antennae. Systems using conventional carrier-based RF or spread-spectrum methods of transmission shall be unacceptable. Each digital receiver module will support up to fourteen microphone transmitters without the need for frequency coordination, scanning, or preset frequency groupings. The system shall operate using TDMA methodology with a 1 ms frame length and 15 time slots per frame. The audio path shall be entirely digital with no compression or compressors and the overall 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 system shall be inherently secure with a very low probability of transmission detection. For increased security, an AES level 3, 128 bit digital encryption software with a user-controlled programmable key shall be available. Assigning the key shall be via an RS232 port on the front of the audio control interface and at the microphone transmitters. The digital receiver module shall connect to the audio control interface via a single shielded cat 5-type cable to allow for remote operation. Connections for this cable shall utilize standard RJ45 type connectors. It shall be possible to extend the length of this cable to 333 feet (100 m) with no signal degradation. Power for the digital receiver module shall be provided from the audio control interface. The associated audio control interface shall provide visual indication of power, link status, microphone transmitter mute, contact closure status and microphone transmitter low battery. Control input and output connections on the associated audio control interface shall be provided to interface the system to other equipment. It shall be possible to isolate the microphone audio from the mute/closure function for use with AEC and other systems without rewiring. No switches, adjustments or indicators shall be located on the digital receiver module. The digital receiver module shall be designed to flush mount using a standard 3-gang electrical box or be surface mounted with the included enclosure. A removable bezel shall be paintable to allow the digital receiver module to blend in with its surroundings. All components shall comply with RoHS standards.

The digital receiver module shall be an Audio-Technica drm141 or equivalent.

System Block Diagram



Each aci707 provides up to seven audio outputs.

Specifications

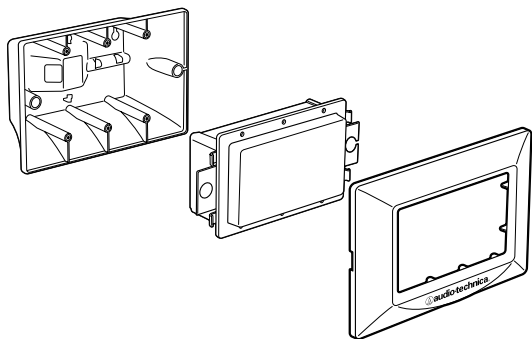
Frequency range	6.100 GHz – 6.600 GHz
Center frequency	6.350 GHz
AD/DA	16 bits
Clock	24.576 MHz
Sampling rate	24 KHz
Pulse duration	2 nanoseconds
Frame length	1 ms
Time slots per frame	15
UWB rate	8 mbps
Compression	None
Companding	None
Latency	1.1 ms
Average RF power	40 nanowatts
Sync/re-acquisition time	< 3 ms
Range	23 m (75')
Simultaneous channels	14
Accessories included	25' shielded Category 5 (CAT 5) cable with RJ45 connectors for use between aci707 and drm141; ferrite bead

Specifications are subject to change without notice.

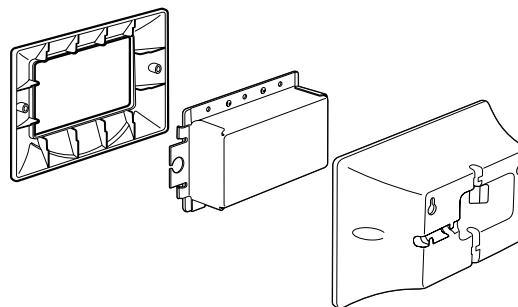


Exploded View: drm141 components

front view

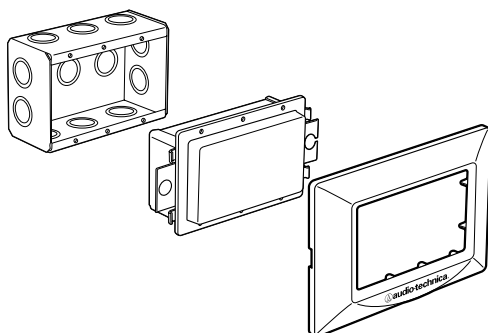


back view



Exploded View: drm141 mounting to 3-gang electrical box

front view



 **audio-technica**

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