DW-349 PRO

DATASHEET



The DW-349 PRO is a two-channel true diversity UHF wireless microphone system comprising a 19-inch 1U receiver and two handheld transmitters, intended for stage performance, conference halls and houses of worship.

Frequency control is by digital phase-locked loop across 200 selectable channels in the 640–695 MHz band, and transmitters are synchronised to the receiver by infrared — point the handheld at the receiver's IR window and the frequency transfers, with no menu navigation and no chance of a mismatched pair during a changeover.

The receiver is true diversity. Each channel runs two complete and independent RF receive paths, each fed by its own antenna, with automatic real-time switching to whichever path is receiving the stronger signal. This is what separates a system that survives a real venue from one that does not: with a single receive path, one performer standing in the wrong spot creates an RF null and the signal drops out. The four TNC 50 Ω antenna connectors are removable, so the system accepts directional antennas and external RF distribution when a room demands it.

Transmitter RF power is selectable between 10 mW and 30 mW — the lower setting for small rooms where battery life matters more than reach, the higher for large halls. Receiver sensitivity is better than –90 dBm, giving up to 200 m of range in clear line of sight.

An integrated companding circuit lifts the working signal-to-noise ratio above that of conventional analogue FM systems, yielding better than 100 dB with distortion under 0.5 %. The handheld bodies are metal alloy with quick-release AA battery compartments, and the capsule grilles are hardened woven steel — impact resistant, and effective against wind and breath noise at close working distance.

Key Features

- Two independent UHF channels, 640–695 MHz, 200 selectable frequencies
- True diversity reception – two complete independent RF paths per channel with automatic real-time path switching
- Four removable TNC 50 Ω antenna connectors, two per channel, for directional antennas and external RF distribution
- DPLL frequency control with infrared transmitter synchronisation from the receiver
- Selectable 10 mW / 30 mW RF transmit power – battery life or coverage
- Receiver sensitivity better than –90 dBm, up to 200 m working range in clear line of sight
- Integrated companding circuit – signal-to-noise above 100 dB, THD below 0.5 %
- Two balanced XLR outputs, one per channel, plus a 6.35 mm mixed output
- Twin symmetrical receiver displays: frequency, channel, RF level, AF level and status
- Metal alloy handheld bodies with quick-release AA battery compartments and LCD display
- Steel receiver chassis with brushed aluminium front panel, 19" 1U per EIA-310

Applications

- Stage performance and live events
- Conference and multi-purpose halls
- Houses of worship
- Schools and cultural centres

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Technical Data

Type	**2-channel true diversity UHF wireless system** **1U receiver + 2 handheld transmitters**
Frequency band	**UHF 640 – 695 MHz | 200 selectable channels**
Frequency control	**Digital phase-locked loop (DPLL)** **Infrared transmitter sync from receiver**
Receiver type	**True diversity – two independent RF paths per channel** **Automatic real-time path switching**
Antenna	**4 × TNC 50 Ω, two per channel, removable** **Accepts directional antennas and external RF distribution**
RF transmit power	Selectable 10 mW / 30 mW
Receiver sensitivity	Better than –90 dBm
Working range	Up to 200 m, clear line of sight
Frequency response	**40 Hz – 16 kHz**
Signal-to-noise ratio	≥ 100 dB
Total harmonic distortion	≤ 0.5 %
Dynamic range	100 dB
Audio processing	Integrated companding circuit
Outputs	**2 × balanced XLR, one per channel** **1 × 6.35 mm mixed output (channels 1 & 2)** **Nickel-plated alloy XLR connectors**
Receiver display	Twin symmetrical displays: frequency, channel number RF level, AF level and operating status
Receiver controls	Dedicated power button | function keypad | frequency keys
Receiver chassis	Powder-coated steel with brushed aluminium front panel
Receiver rack format	**19" 1U per EIA-310 (482.6 × 44.45 mm)**
Receiver weight	4 kg | 8.8 lbs
Receiver power	DC 12 V via external PSU, 220 V / 50 Hz mains
Transmitter body	Metal alloy, quick-release battery compartment
Transmitter display	LCD: frequency, channel group, battery status
Transmitter power	2 × AA cells per handheld
Capsule grille	Hardened woven steel – impact resistant, wind and breath screening
Operating temperature	–10 °C to +50 °C
Storage temperature	–20 °C to +60 °C
Operating humidity	≤ 80 % RH, non-condensing
Certification	CO / CQ per shipment
Warranty / spare parts	12 months | antennas, battery doors and capsules available 5 years

System Views



receiver, front



receiver, rear panel



handheld transmitters

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Architect Specification

The wireless microphone system shall be a two-channel true diversity UHF system comprising one receiver in a 19-inch 1U rack format conforming to EIA-310 (482.6 × 44.45 mm) and two handheld transmitters, intended for stage performance.

The system shall operate in the UHF band from 640 to 695 MHz with not fewer than 200 selectable channels. Frequency control shall be by digital phase-locked loop. Transmitter frequency shall be synchronised to the receiver by an infrared link integrated in the receiver, without manual frequency entry at the transmitter.

The receiver shall be of true diversity type, each channel comprising two complete and independent radio-frequency receive paths, each connected to its own antenna, with automatic real-time switching to the path receiving the stronger signal in order to eliminate dropout caused by radio-frequency nulls as the performer moves. Single-path receivers and antenna-switching arrangements sharing one receive path shall not be accepted. The receiver shall provide four TNC 50 Ω antenna connectors, two per channel, removable to permit connection of directional antennas and external radio-frequency distribution.

Transmitter radio-frequency output power shall be selectable between not fewer than two levels of 10 mW and 30 mW, permitting battery life and coverage to be balanced against venue size. Receiver sensitivity shall be better than –90 dBm and maximum working range shall be not less than 200 m in clear line of sight.

Audio frequency response shall be 40 Hz to 16 kHz. Signal-to-noise ratio shall be not less than 100 dB, total harmonic distortion shall not exceed 0.5 % and dynamic range shall be not less than 100 dB. An integrated companding circuit shall be provided to achieve a working signal-to-noise ratio above that of conventional analogue frequency-modulated systems.

The receiver shall provide two balanced XLR outputs, one per channel, and one 6.35 mm mixed output combining both channels. XLR connectors shall be nickel-plated alloy resistant to oxidation. The receiver shall carry twin symmetrical displays indicating frequency, channel number, radio-frequency signal strength, audio level and operating status, with a dedicated power button, function keypad and frequency adjustment keys.

The receiver chassis shall be powder-coated steel with a brushed aluminium alloy front panel, and shall weigh not more than 4 kg. Receiver supply shall be DC 12 V from an external power supply unit operating from 220 V / 50 Hz mains.

Handheld transmitter bodies shall be metal alloy with oxidation-resistant finish and a quick-release battery compartment permitting rapid battery replacement during extended programmes, powered by two AA cells each. Each transmitter shall carry an LCD display indicating frequency, channel group and battery status. Capsule grilles shall be hardened woven steel providing impact resistance and reducing wind and breath noise.

Permitted ambient conditions shall be –10 °C to +50 °C operating and –20 °C to +60 °C storage, at not more than 80 % relative humidity, non-condensing.

The system shall be supplied with certificate of origin and certificate of quality per shipment. The operating band shall fall within the frequencies permitted for use under the radio frequency management regulations in force in the territory of installation. Replacement antennas, battery doors and capsules shall be available for not less than five years.

The wireless microphone system shall be the D&L DW-349 PRO.

References

Full measurement data and loudspeaker presets are available on request – dailycompanyltd@gmail.com