AS SERIES

DATASHEET



The AS Series is a UHF antenna distribution system for wireless microphone installations, supplied as a three-part set: the AS-300 antenna splitter in a 19-inch 1U chassis, the AS-200 active directional antenna, and the AS-100 inline amplifier. The whole chain works over 470 to 870 MHz at 50 ohm, covering the full UHF band used by wireless receivers.

The problem the AS Series removes is the one every multi-channel installation runs into: a separate pair of antennas for every receiver. Eight receivers means sixteen whip antennas crowded into the back of one rack, each shadowing the others, each producing its own dropouts. One AS-200 pair feeding one AS-300 replaces all of them, and the receivers see a cleaner, stronger and more even signal than any of them would have collected alone.

The AS-200 is a log-periodic dipole array with the gain stage built onto the antenna body rather than added downstream. Directional pickup of 110 degrees horizontal by 30 degrees vertical at 10 dBi means the antenna listens toward the stage and ignores most of what arrives from behind it - the lighting dimmers, the LED walls, the RF noise sources that live in the back of house. Both the antenna and the AS-100 inline amplifier draw their 12 V supply through the same coaxial cable that carries the signal back, so an antenna hung high on a truss or mounted on a far wall needs no mains outlet next to it. That single fact decides where an antenna can realistically be placed, and it is the reason a directional antenna on a coaxial feed outperforms a whip on the receiver panel in almost every venue.

The AS-300 accepts two antenna inputs, A and B, and distributes each to five outputs, so five receivers are fed a full diversity pair from one antenna system. Output level is adjustable between -0.5 and +3 dB to offset the loss of splitting, and a third-order intercept point of +24 dBm keeps intermodulation products out of the passband when many transmitters are active at once. A cascade pair chains a second AS-300 when the channel count outgrows five receivers, and four switched 12 V DC sockets on the rear panel power accessories using Class 2 wiring. The unit runs on any mains supply from 100 to 240 V.

Key Features

- Complete UHF antenna distribution set: 1 x AS-300 splitter, 2 x AS-200 directional antennas, 2 x AS-100 inline amplifiers
- 470 to 870 MHz over the whole chain, 50 ohm system impedance - covers the full UHF receiver band
- One antenna pair feeds up to five receivers with a full diversity signal, replacing ten whip antennas in the rack
- AS-200 log-periodic dipole array, 10 dBi, 110 deg x 30 deg directional pickup - rejects RF noise arriving from behind the antenna
- 12 V DC bias delivered over the coaxial feed - no mains outlet required at the antenna or amplifier position
- Adjustable RF output level, -0.5 to +3 dB, offsetting split loss; third-order intercept point +24 dBm
- Cascade pair chains a second splitter beyond five receivers without altering the installed antenna arrangement
- AS-300 in a 19 in 1U chassis, 100 to 240 V auto-ranging mains, four switched 12 V DC accessory outlets

Applications

- Multi-channel wireless microphone racks
- Conference halls and cultural houses
- Touring and event production systems
- Houses of worship and school auditoriums

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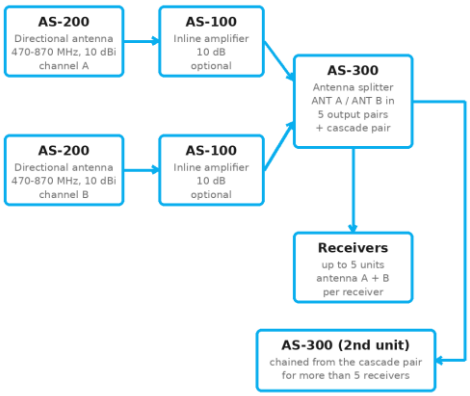
Technical Data

AS-300 antenna splitter	**19 in / 1U rack-mounting UHF antenna distribution system**
Frequency range	**470 - 870 MHz**
Configuration	**2 antenna inputs (ANT A / ANT B), 5 output pairs, 1 cascade pair**
RF output level	-0.5 to +3 dB, adjustable
Third-order intercept point	+24 dBm
System impedance	50 ohm
Antenna bias	12 V DC, 150 mA per antenna input, over the coaxial feed
DC accessory outlets	4 x 12 V DC, 1.5 A total, Class 2 wiring
Connectors	BNC throughout
Mains supply	**100 - 240 V AC, 50/60 Hz, 1 A nominal / 5 A maximum**
Dimensions / weight	**480 (W) x 45 (H) x 250 (D) mm | 2.15 kg**
AS-200 directional antenna	**Active log-periodic dipole array with integrated gain stage**
Frequency range / gain	**470 - 870 MHz | 10 dBi**
Beamwidth (H x V)	**110 deg x 30 deg**
Power handling	50 W combined
Connector / powering	BNC | 12 V DC over the coaxial feed
Mounting	Microphone stand, ceiling or wall via integrated swivel bracket
Dimensions / weight	**220 x 190 x 45 mm | 0.8 kg**
AS-100 inline amplifier	**Inline RF amplifier for coaxial cable loss compensation**
Frequency range / gain	**470 - 870 MHz | 10 dB**
Connectors / powering	BNC input and output | 12 V DC over the coaxial feed
Dimensions / weight	**70 x 25 x 25 mm | 0.1 kg**

System Signal Flow



DC 12 V bias reaches the antennas and the inline amplifiers through the same coaxial cables that carry the RF signal, so no mains outlet is needed at the antenna position. The cascade pair chains a further splitter without altering the antenna arrangement already installed.

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Architect Specification

The antenna distribution system shall be supplied as a set comprising one rack-mounting antenna splitter, two active directional antennas and two inline amplifiers, operating over a continuous range of 470 to 870 MHz at a system impedance of 50 ohm throughout.

The directional antenna shall be a log-periodic dipole array with the gain stage integrated into the antenna body, providing a gain of not less than 10 dBi and a directional pickup pattern of not less than 110 degrees horizontal by 30 degrees vertical. Omnidirectional whip antennas mounted directly on the receiver panel shall not be accepted, as they collect radio-frequency noise equally from all directions including the rear of house.

The antenna and the inline amplifier shall both draw their operating supply as a 12 V DC bias carried on the same coaxial cable as the signal. Arrangements requiring a separate mains outlet at the antenna position shall not be accepted, as they restrict antenna placement to positions where mains power already exists.

The inline amplifier shall provide not less than 10 dB of gain to compensate coaxial cable loss on long runs, terminated in BNC connectors at input and output, in an enclosure not exceeding 70 x 25 x 25 mm and 0.1 kg.

The splitter shall accept two antenna inputs and distribute each to not fewer than five outputs, so that not fewer than five receivers are fed a complete diversity pair from a single antenna system. Output level shall be adjustable between -0.5 and +3 dB to offset distribution loss, and the third-order intercept point shall be not lower than +24 dBm.

The splitter shall provide a cascade output pair permitting a further splitter to be chained where the receiver count exceeds five, without alteration to the installed antenna arrangement. It shall further provide not fewer than four switched 12 V DC accessory outlets rated at 1.5 A in total, wired to Class 2 requirements.

The splitter shall be housed in a 19-inch rack chassis of one rack unit height to EIA-310, with dimensions not exceeding 480 (W) x 45 (H) x 250 (D) mm and a weight not exceeding 2.2 kg. Its mains supply shall be auto-ranging over not less than 100 to 240 V AC at 50/60 Hz.

All radio-frequency connections in the system shall be BNC. The system shall be compatible with any diversity receiver providing detachable antenna connections, without restriction as to receiver brand.

Certificates of origin and quality shall be provided for the delivered batch, together with manufacturer technical documentation evidencing frequency range, gain and impedance, and a commitment to supply spare parts for not less than five years.

The antenna distribution system shall be the D&L AS-300 with AS-200 antennas and AS-100 inline amplifiers.

References

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