Universal Indoor-Outdoor AM/FM/HD Antenna
DXE-AFHD-4

The DX Engineering **DXE-AFHD-4** AM/FM/HD Antenna is designed for easy outdoor or attic installation. With rugged pro-quality construction, this low profile omni-directional antenna will bring out the best performance from any receiver. This antenna delivers best-in-class AM/FM and HD radio reception over a single RG-6 cable.

AFHD-4 Antenna Features:

- Digital and Analog reception on both AM and FM broadcast
- Pure band separation for optimal performance
- Omni-Directional antenna receives signals from 360 degrees
- High Gain on both bands for greater sensitivity
- Easy to install; mast and wall-mount options included
- Requires single RG-6 coaxial cable (not included)

Many audiophiles use high-quality classic or vintage receivers. HD listeners use the latest in digital technology. Why not have a pro-quality antenna that will satisfy both kinds of listening? Old receiver or new, one of these DX Engineering **DXE-AFHD-4** AM/FM/HD Antennas will bring out the best in radio reception.

This kit includes the following items required to achieve high quality reception of AM, FM and HD radio signals:

Qty	Description
1	AM/FM/HD antenna
1	L-mounting bracket
1	AM FM band separator

Qty	Description
2	U bolts with nuts
2	Pole mount saddle brackets
1	F-female to twin-lead adaptor

AM/FM/HD Antenna

L-Bracket with connector (attached to antenna)

F-Female to Twin-Lead Adapter

AM/FM Band Separator

U-Bolt with Nuts Pole Mount Brackets

Antenna Location (Very Important!) - For optimum results the antenna should be mounted outdoors as high above ground and roof level and as far away as possible from any AM interference sources (see **Table 1**). It can also be mounted in an attic, but reception will depend on the roofing material and the insulation and siding materials. Thermal insulation that uses aluminum foil backing or metal roofing/siding material will shield the antenna from achieving good reception. Most stone and stucco siding has wire mesh reinforcement that will also block signal reception indoors. Before finalizing the mounting location it is recommended to experiment with a few different temporary locations. AM and FM reception can vary greatly as function of the antenna's location.

AM Interference - Unfortunately in this age of digital entertainment, AM radio has become the "weak sister" of features included in most entertainment systems. Most receiver manufacturers are spending the minimum possible amount on their AM tuning sections and the number of household sources of AM radio interference has increased exponentially (see **Table 1** below). Fortunately the emergence of Hybrid Digital (HD) AM radio technology is helping to cure some of these problems but the best strategy for good AM reception is to first eliminate as many of the interference sources as is practical and then locate the receiving antenna as far away as possible from the remaining interference sources. Using high quality well shielded, Quad RG-6 lead-in wire from the antenna to the receiver will help reduce interference and optimize reception.

Table 1 - Some Sources of Common AM Interference

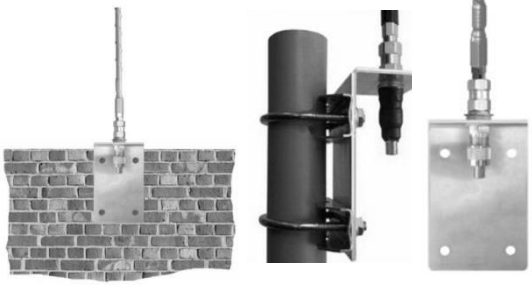
Dimmer switch - Neighbor's dimmer switch - Fluorescent light - Computer - Touch lamp (even when turned off) - Automatic on/off night lights - Automatic outdoor yard lights - Electronic bug and pest controllers - Light bulb that is about to burn out - Faulty electrical switch - Nearby television, plasma or LCD display - Neighbor using fluorescent lights - Christmas tree lights & other blinking bulbs - Neighbor's dimmer switch (apt. complex) - Cell phone chargers - Dirty insulators on nearby power pole - Electric blanket - 120 VAC smoke detectors (battery operated OK) - Ionic Breeze or other electrostatic air purifier - Ultrasonic motion detectors - Appliances with motors - Lap top computer power supply - Almost any wall mounted power supply that uses a switching design - Computer network "Cat 5" wiring

Cable Length, Type and Routing

Figure 1

Always use good quality RG-6 cable and do not run the cable more than 200 ft. The shorter the better for best FM reception. RG-6 cable has a loss of about 2.8 dB I 100 ft at the high end of the FM band (108 MHz). For AM reception, RG-6 cable loss is not an issue (only 0.33 dB per 100 ft at 1.7 MHz) but for best rejection of local AM interference, Quad-shielded RG-6 should be considered. In addition, do not run the cable in parallel with cat 5 cables carrying digital signals or in parallel with AC power lines.

Antenna Mounting - The antenna L-bracket (**Figure 1**) should be first mounted in place to either a wall (**Figure 2**), chimney or a pole (not larger than 2 inches in diameter) as shown in **Figure 3**. The antenna should be as high above ground level as practical and as far away as possible from local AM interference sources and any structure (including aluminum siding) that could block reception.



Figures 2 & 3

After mounting the L-bracket, screw the antenna rod into its base and tighten with a wrench. Wire the components as shown in **Figure 4**. Make sure that the black wire from the coax- to-twin lead adaptor is connected to the ground input of receiver's AM antenna terminals.

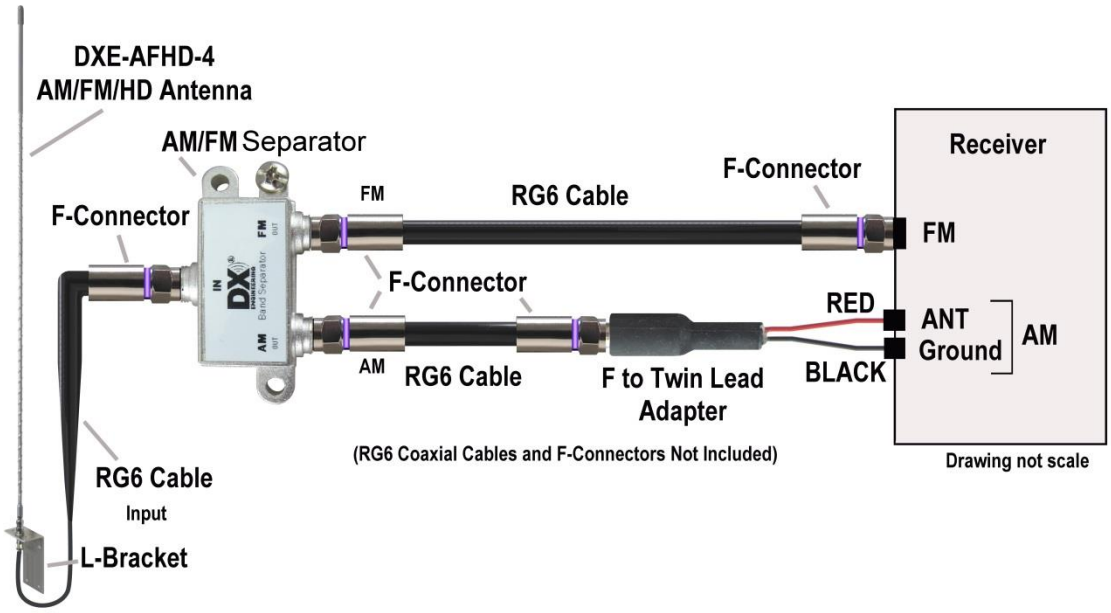


Figure 4

Specifications:

Antenna length:	48 inches	Antenna Beam Width:	Omni-Directional
AM capture length:	300 inches	Ground plane required:	None
Frequency of operation:	AM Band 500 KHz to 1750 kHz - FM Band 88 MHz -108 MHz		

AM / FM Band Separator Performance:

FM rejection in AM band:	> 50 dB	AM rejection in FM band:	> 60 dB AM/FM
Pass-band loss:	< 1 dB AM load impedance: 300 ohms	FM load impedance:	75 ohms

Reception Performance:

These results will vary as function of the antenna's height above ground, the power of the transmitting station, the transmitter's antenna beam pattern, the local terrain and the quality of the receiver utilized. **Table 2** shows actual reception test results for the antenna mounted 20 feet above ground over flat terrain, using a Sangean Model HDT-1X as the receiver with 200 ft of cable between the antenna and receiver.

Table 2 - Reception Capability

Receiver Mode	Reliable Good Quality Daytime Reception
FM Stereo	80 Miles
FM HD	50 Miles
AM (Mono)	90 Miles
AM HD	50 Miles

Test Conditions	
Receiver:	Sangean HDT-1X
Cable Length (antenna to receiver):	200 feet RG-6 cable
Antenna height above ground:	20 feet
Terrain:	Flat

Technical Support

If you have questions about this product, or if you experience difficulties during the installation, contact DX Engineering at (330) 572-3200. You can also e-mail us at: DXEngineering@DXEngineering.com

For best service, please take a few minutes to review these instructions before you call.

Warranty

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