

Cisco Bi-Directional Train Top Antenna (IW-ANT-SKD-513-Q)

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Overview

The Cisco Bi-Directional Train Top Antenna (IW-ANT-SKD-513-Q) is a 5 GHz 13 dBi Shark bi-directional antenna with a QMA connector.

The antenna is designed to survive high vibration rail installations, including roof mounting on locomotive and passenger cars.

Figure 1: IW-ANT-SKD-513-Q Antenna



Features include the following:

- Dual feed, dual slant ± 45°, linear polarization
- Designed for metallic or non-metallic roof mounting, no ground plane required

- Extremely rugged purpose built for rail and metro applications
- Symmetrical patterns, maintains same pattern performance over each polarization
- High port-to-port performance correlation
- Designed to meet EN50155 & AAR certification requirements

Electrical Specifications

The following table is a summary of the electrical specifications:

Typical VSWR	<2:1 (max 2.5:1)
Bandwidth	4.9-5.9 GHz
Nominal Impedance	50 Ω
Gain	10-13 dBi
Beamwidth (Free Space, Non-Metallic Ground Plane)	H-Plane 42° E-Plane 28°
Beamwidth (Ground Plane Mounted)	H-Plane 39° E-Plane 21°
Polarization	Dual Slant 45°, Linear
Port-to-Port Isolation	> 22 dB

Mechanical and Environmental Specifications

The following table is a summary of the mechanical and environmental specifications:

Dimensions	8.3 x 5.5 x 3.3 inches (210 x 140 x 85 mm)
Weight	2.7 lbs
Housing Antenna Material	Aluminum, hard coat anodized
Temperature Range	-40°C to +85°C
Ingress Protection	IP56/IP67

Mechanical Drawing

The following diagram provides mechanical details of the antenna.

Figure 2: Front and Side View

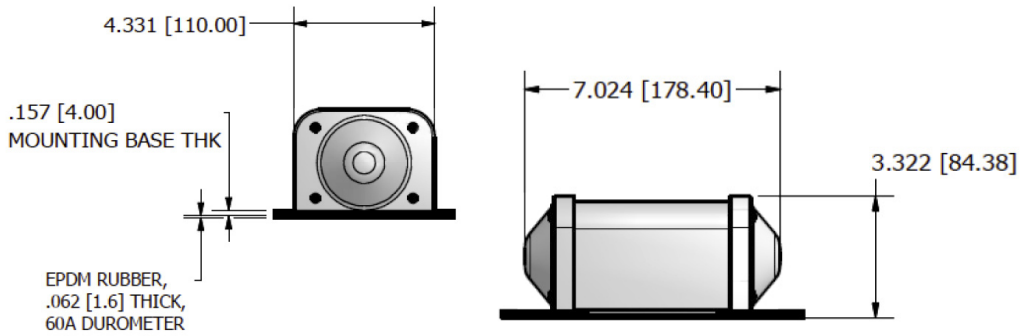
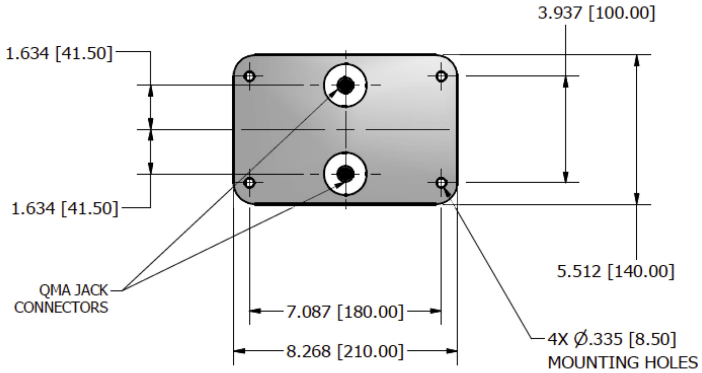


Figure 3: Bottom View



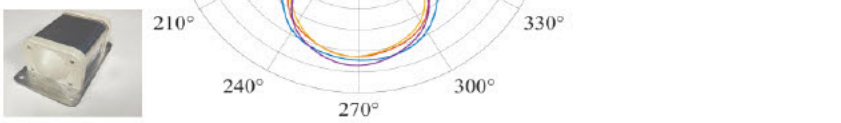
Installation Instructions

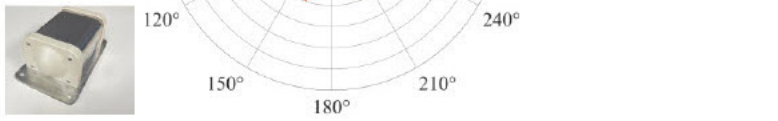
Complete details can be found in the Cisco Ultra-Reliable Wireless Backhaul FM SHARK Installation and Configuration Manual.

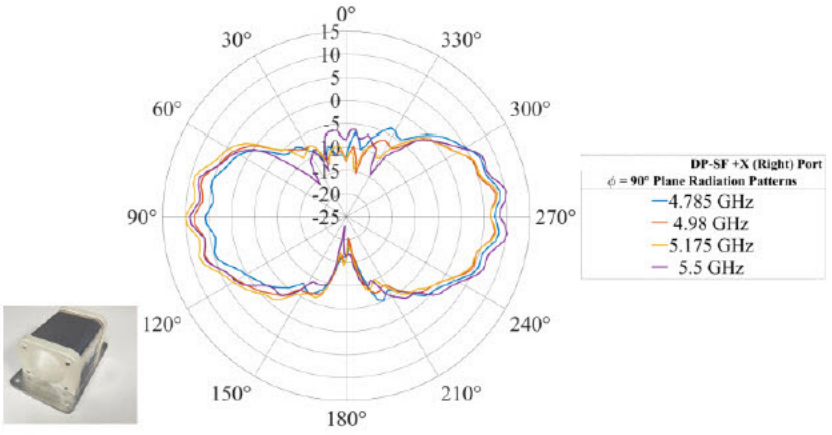
Radiation Patterns

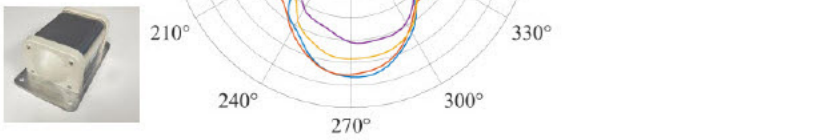
The following figures show the antenna radiation patterns.

Note These radiation patterns show frequencies tested by the antenna vendor outside of the supported 4.9-5.9 GHz frequency range.


90°
120°
60°
150°
30°
180°
0°
210°
330°
240°
300°
270°
15
10
5
0
-5
-10
-15
-20
-25
DP-SF +X (Right) Port
θ = 90° Plane Radiation Patterns
4.785 GHz
4.98 GHz
5.175 GHz
5.5 GHz


0°
30°
330°
60°
300°
90°
270°
120°
240°
150°
210°
180°
15
10
5
0
-5
-10
-15
-20
-25
DP-SF +X (Right) Port
ϕ = 90° Plane Radiation Patterns
5.89 GHz
6.41 GHz
6.735 GHz
7.125 GHz


0°
30°
330°
60°
300°
90°
270°
120°
240°
150°
210°
180°
15
10
5
0
-5
-10
-15
-20
-25
DP-SF +X (Right) Port
ϕ = 90° Plane Radiation Patterns
4.785 GHz
4.98 GHz
5.175 GHz
5.5 GHz


90°
120°
60°
150°
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180°
0°
210°
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240°
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-5
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5000DP-SF +X (Right) Port
θ = 90° Plane Radiation Patterns
5.89 GHz
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