



# AN720 RFID Antennas

## Assembly and Installation Instructions



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***AN720 RFID Antennas  
Assembly and Installation Instructions***

*72E-132076-01*

*Rev A*

*November 2009*

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Motorola, Inc.  
One Motorola Plaza  
Holtsville, N.Y. 11742-1300  
<http://www.motorola.com/enterprisemobility>.

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## Warranty

For the complete Motorola hardware product warranty statement, go to:

<http://www.motorola.com/enterprisemobility/warranty>.

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## Patents

This product is covered by one or more patents. For patent information go to:

<http://www.motorola.com/enterprisemobility/patents>.

## Revision History

Changes to the original manual are listed below:

Change	Date	Description
-01 Rev A	11/2009	Initial Release

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# About This Guide

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## Introduction

This guide provides assembly and installation instructions for the AN720 RFID antennas.

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## Service Information

If you have a problem with your equipment, contact Motorola Enterprise Mobility Support for your region. Contact information is available at: <http://www.motorola.com/enterprisemobility/support>.

When contacting Enterprise Mobility Support, please have the following information available:

- Serial number of the unit
  - Scanner serial numbers are located on the label under the top of the scanner
  - Cradles serial numbers are located on the label on the bottom of the cradle
- Model number or product name
  - Scanner model numbers are located on the label under the top of the scanner
  - Cradle model numbers are located on the label on the bottom of the cradle
- Software type and version number

Motorola responds to calls by E-mail, telephone or fax within the time limits set forth in support agreements.

If your problem cannot be solved by Motorola Enterprise Mobility Support, you may need to return your equipment for servicing and will be given specific directions. Motorola is not responsible for any damages incurred during shipment if the approved shipping container is not used. Shipping the units improperly can possibly void the warranty.

If you purchased your Enterprise Mobility business product from a Motorola business partner, contact that business partner for support.

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# Chapter 1 AN720 RFID Antennas Diagrams and Technical Specifications

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## Introduction

Read all instructions carefully before attempting to install and use this product.

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## Safety

The antennas should be mounted permanently and securely on a mounting panel in accordance with all installation instructions.

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## Location

For best results, point the antenna towards the center of the coverage area. A line-of-sight path between the antenna and active floor locations works best. Although signals in these bands penetrate interior walls with little attenuation, reinforced block walls, banks of metal cabinets, or steel shelving may attenuate signals or cause multipath, a condition where reflected signals interfere with the primary signal path. Avoid mounting next to a column or vertical support that could create a “shadow zone” of reduced coverage.

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## Mounting

The AN720 antennas radiate a circularly polarized signal in a directional pattern. Securely mount the antenna to a metal plate using the appropriate size nuts and locking hardware.

## Antenna Diagrams

### Antenna Front View

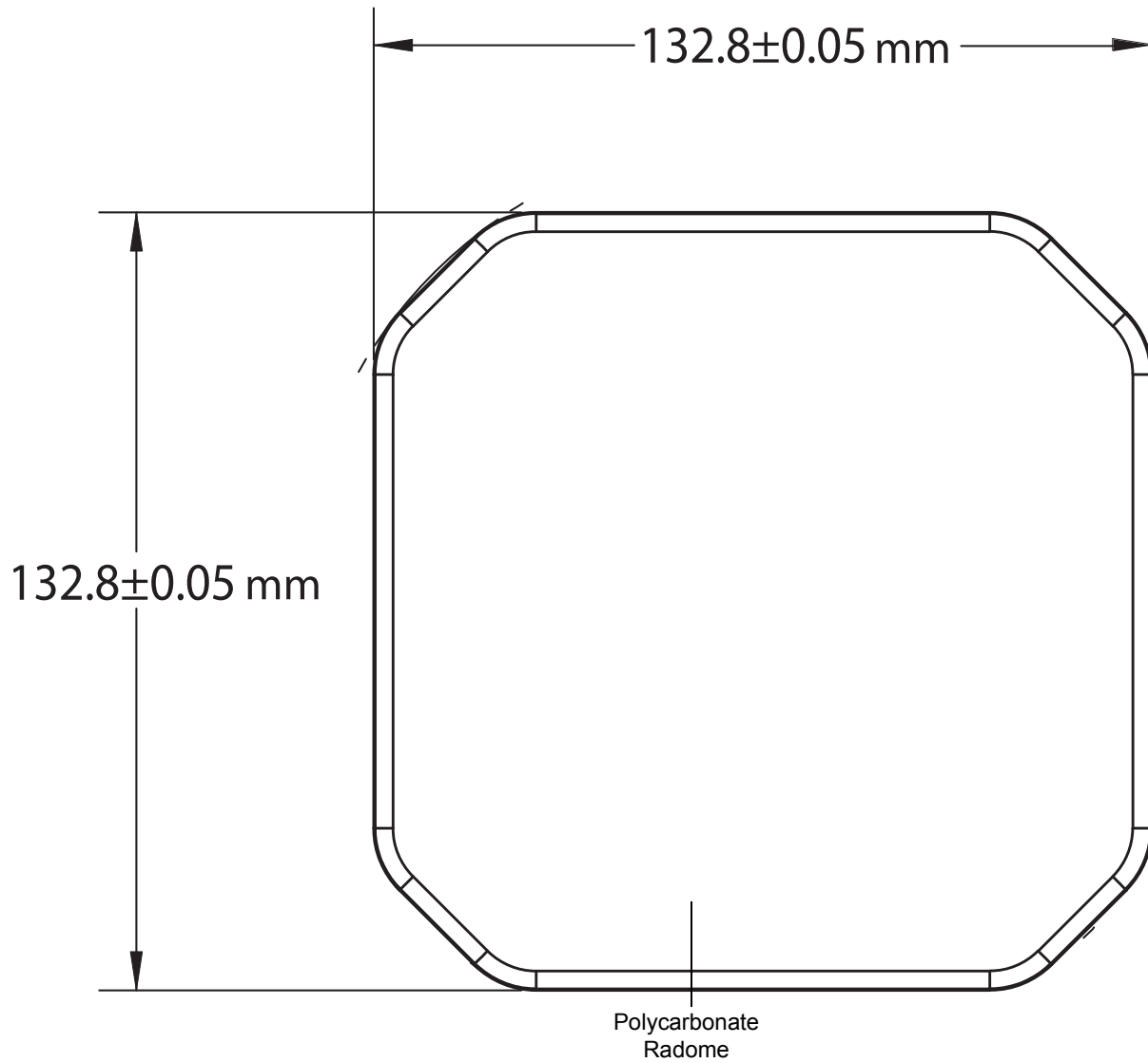
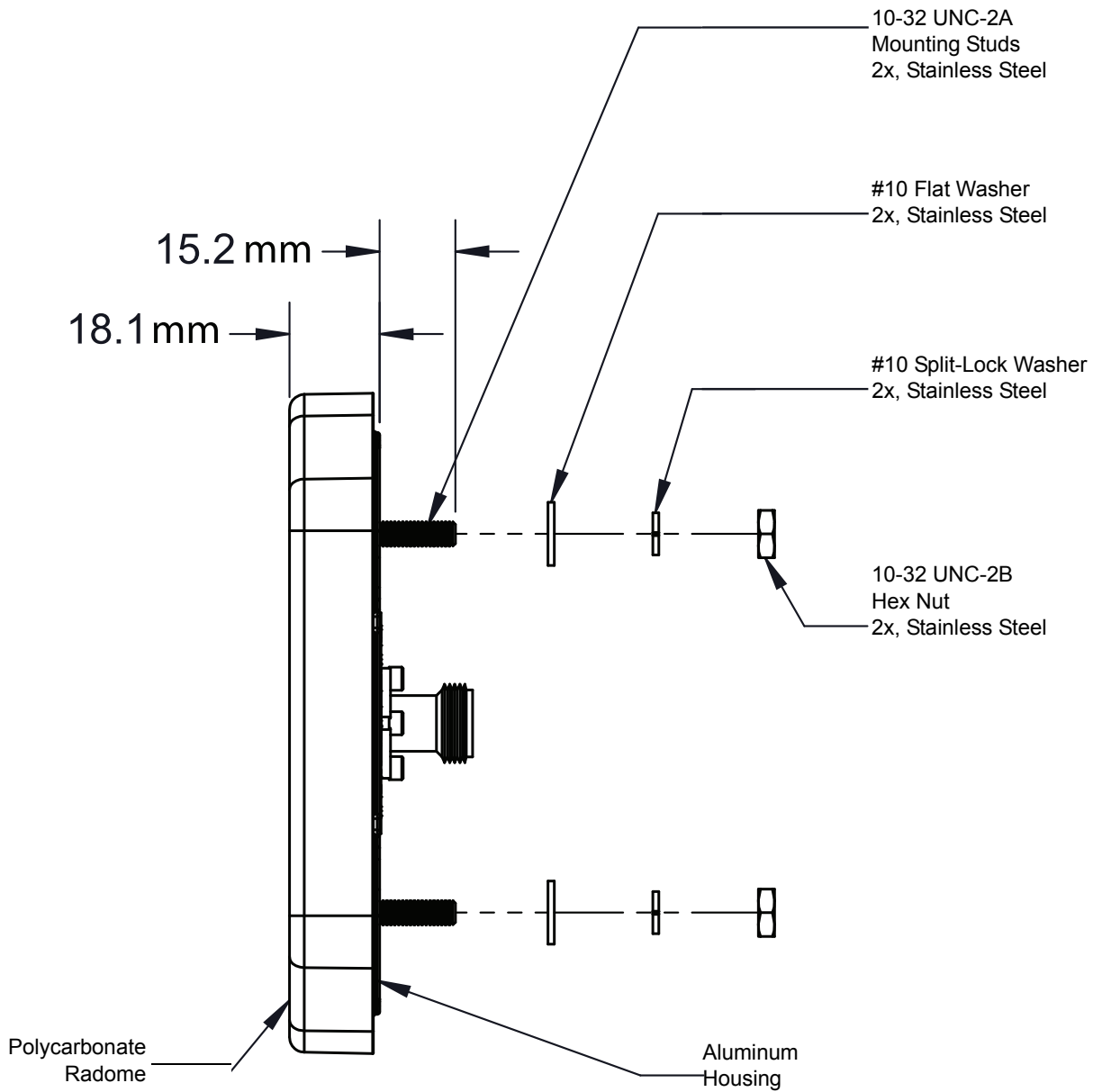


Figure 1-1 Antenna Front View

**Antenna Side View**



**Figure 1-2** *Antenna Side View*

### Bottom View

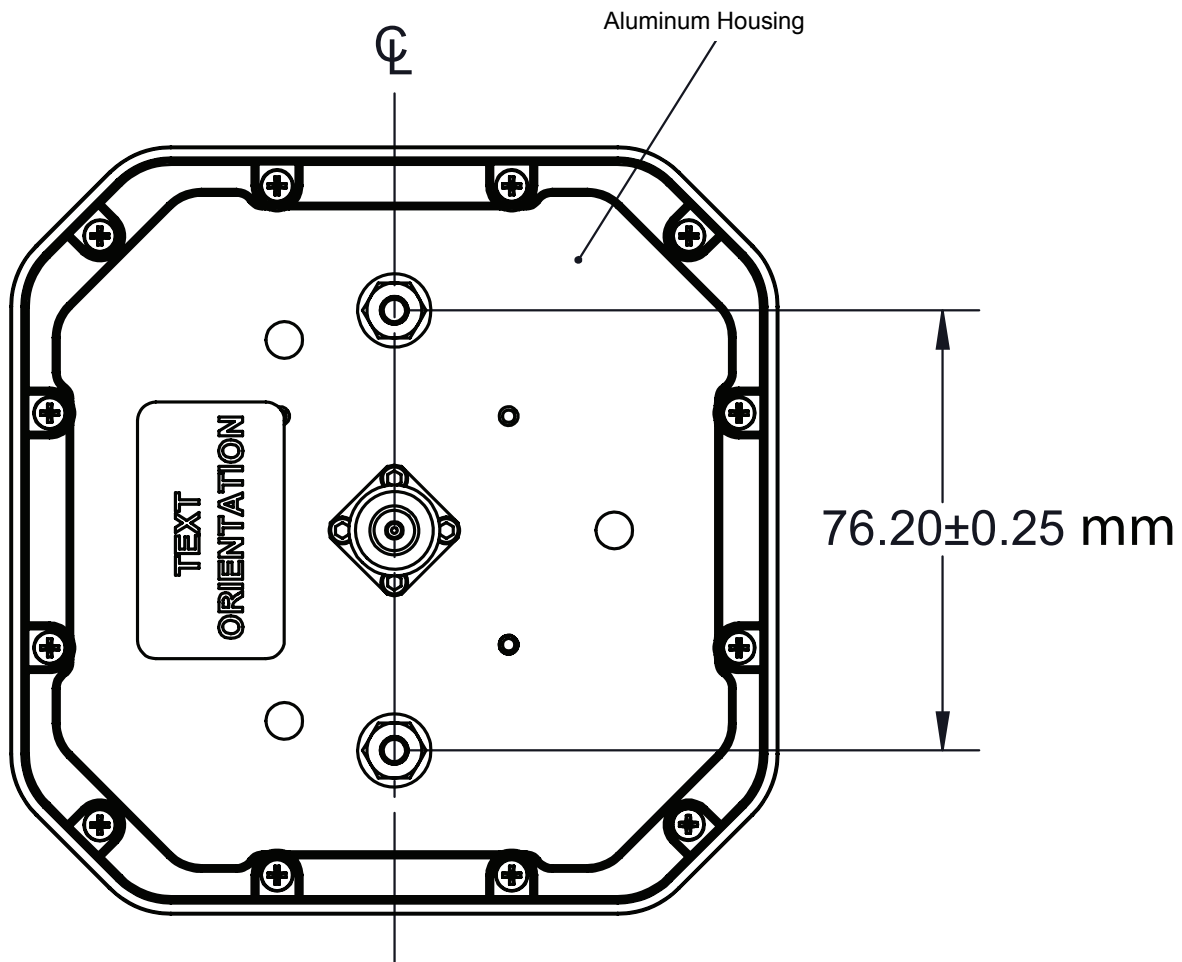


Figure 1-3 Antenna Bottom View

### Wall Mount Configuration

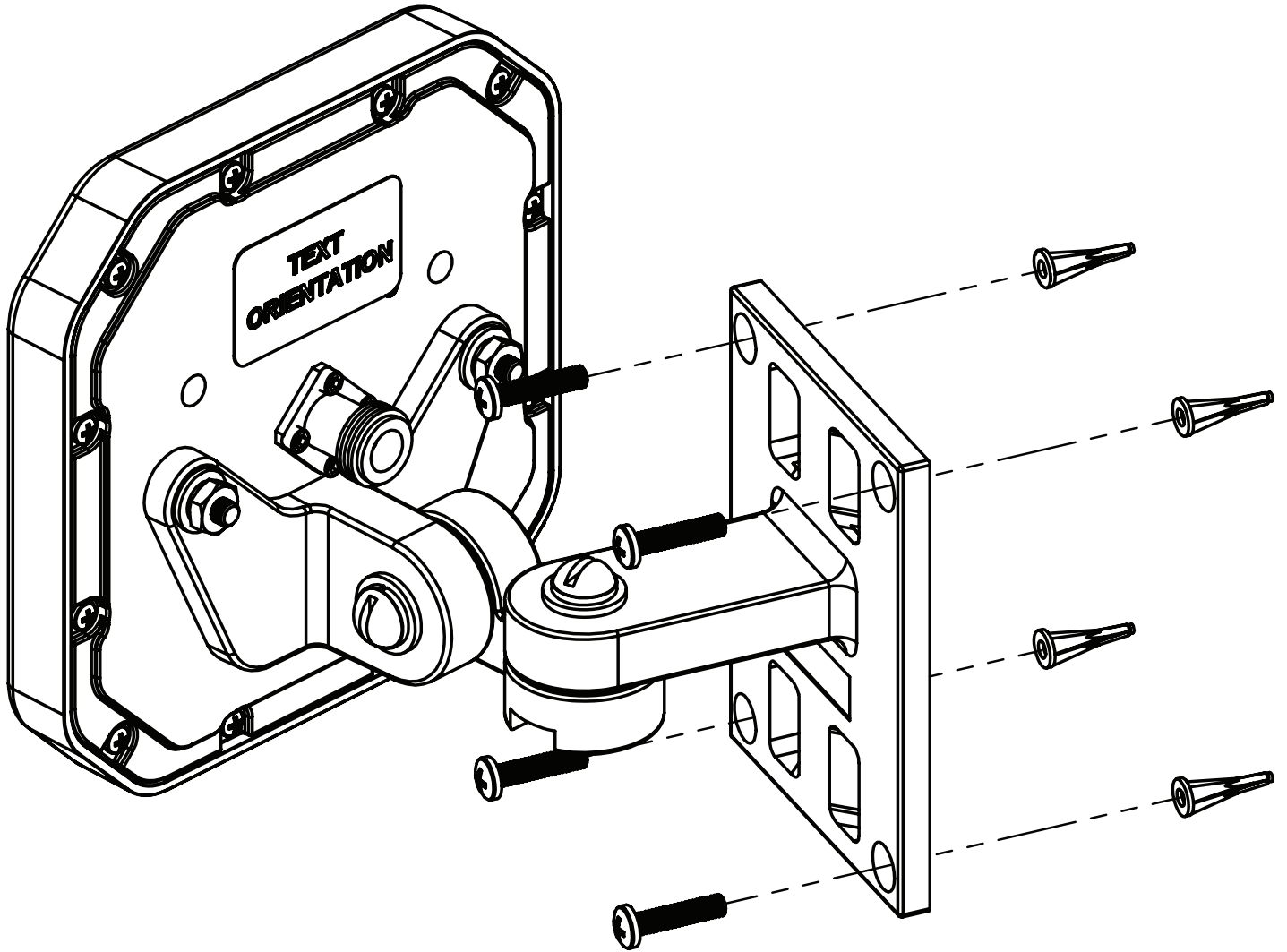


Figure 1-4 Wall Mount Configuration

## Pole Mount Configuration

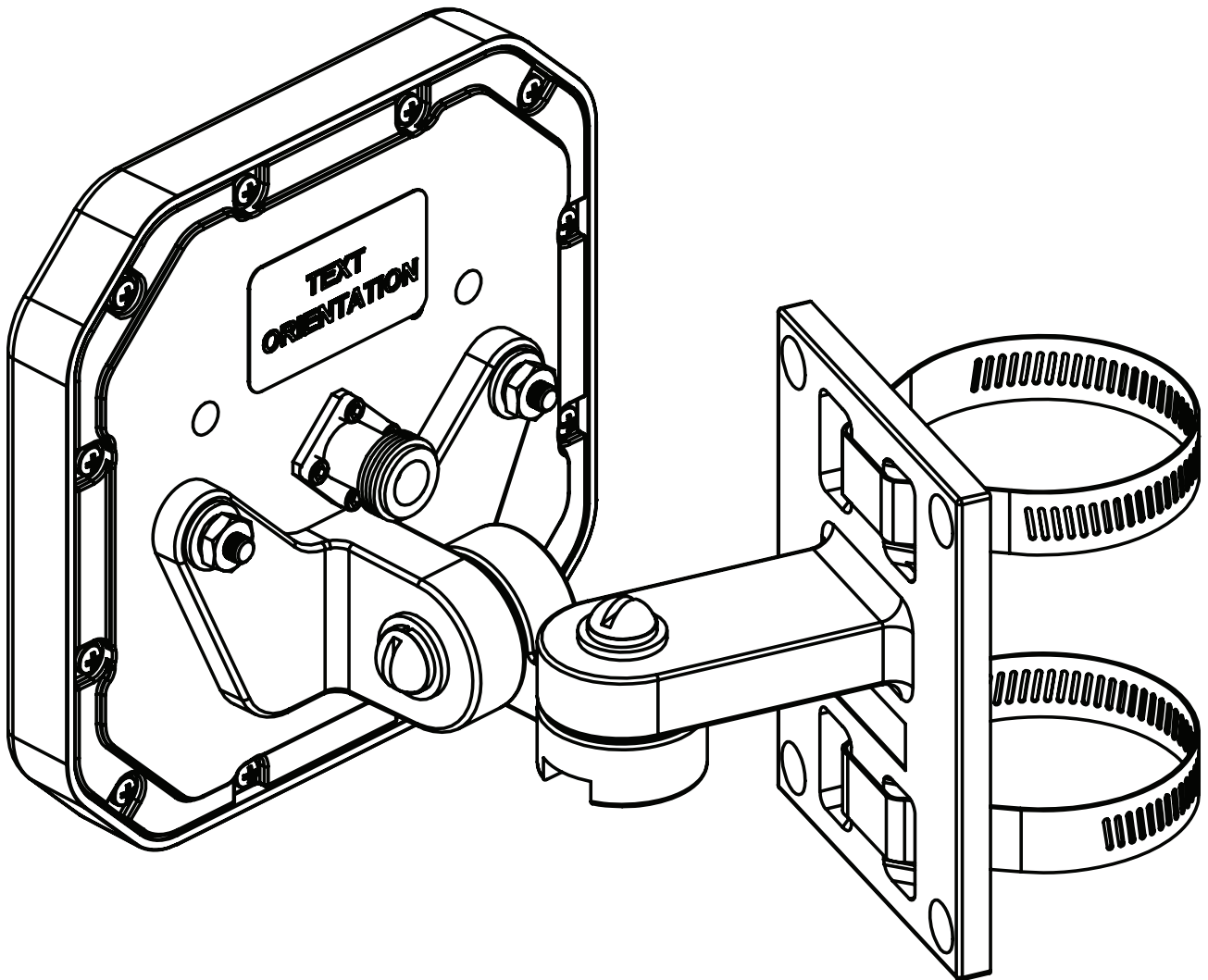


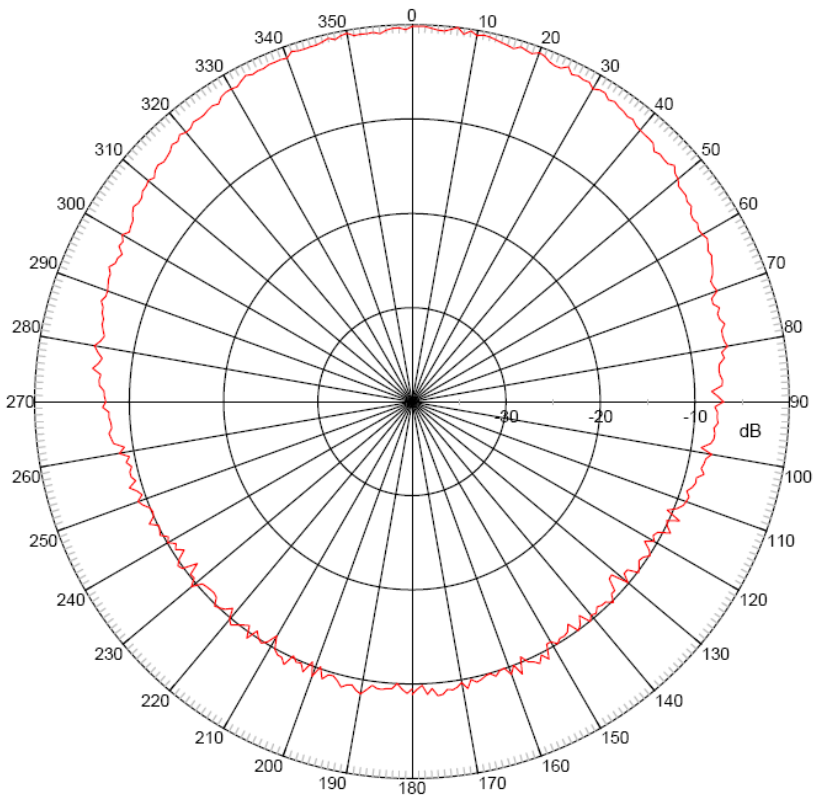
Figure 1-5 Pole Mount Configuration

## Technical Specifications

### AN720-L51NF00WUS

**Table 1-1** AN720-L51NF00WUS Product Specifications

Item	Description
Model	AN720
Motorola Part Number	AN720-L51NF00WUS
Connector	N-Type, female
Frequency, MHz	902-928
Gain	5.5 dBic typical, 6 dBic max
VSWR	1.5:1
F/B	8 dB
Normal Impedance	50 $\Omega$
Beam width	100°
Polarization	Circular (L) left
Antenna Weight	0.37kg (S/B .8 lbs)
Power, watts	10
Axial Ratio	2 dB
Mounting	2 threaded studs (rack mount)
Dimensions, mm (in)	132.8 mm x 132.8 mm x 18.1 mm (5.2 in x 5.2 in x 0.7 in)
Temperature Operational	-30°C to +70°C (-22°F to 158°F)
Storage Temperature	40°C to 85°C (104°F to 185°F)
Impact Resistance	0.46kg (1 lb.) Ball Drop, 24 in
Vibration	MIL-STD-810
Shock	IEC 68-2-27
Humidity	IEC 68-2-30
Lightning Protection	DC Grounded
Enclosure Rating	IP 67

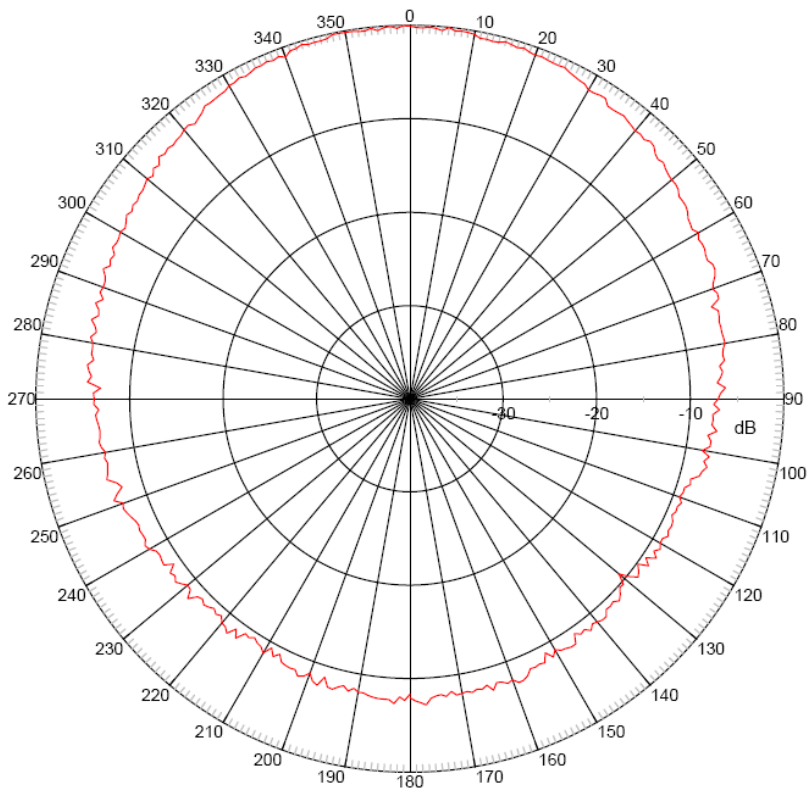


**Figure 1-6** AN720 US Radiation Plots - 915MHz



**AN720-L51NF00WEU****Table 1-2** AN720-L51NF00WEU Product Specifications

Item	Description
Model	AN720
Motorola Part Number	AN720-L51NF00WEU
Connector	N-Type, female
Frequency, MHz	865-868
Gain	5.5 dBic typical, 6 dBic max
VSWR	1.5:1
F/B	8 dB
Normal Impedance	50 $\Omega$
Beam width	100°
Polarization	Circular (L) left
Antenna Weight	0.37kg (S/B .8 lbs)
Power, watts	10
Axial Ratio	2 dB
Mounting	2 threaded studs (rack mount)
Dimensions, mm (in)	132.8 mm x 132.8 mm x 18.1 mm (5.2 in x 5.2 in x 0.7 in)
Temperature Operational	-30°C to +70°C (-22°F to 158°F)
Storage Temperature	40°C to 85°C (104°F to 185°F)
Impact Resistance	0.46kg (1 lb.) Ball Drop, 24 in
Vibration	MIL-STD-810
Shock	IEC 68-2-27
Humidity	IEC 68-2-30
Lightning Protection	DC Grounded
Enclosure Rating	IP 67



**Figure 1-7** AN720 EU Radiation Plots - 867.5MHz



## Waste Electrical and Electronic Equipment (WEEE)

**English:** For EU Customers: All products at the end of their life must be returned to Motorola for recycling. For information on how to return product, please go to: <http://www.motorola.com/recycling/weee>.

**Bulgarian:** За клиенти от ЕС: След края на полезния им живот всички продукти трябва да се връщат на Motorola за рециклиране. За информация относно връщането на продукти, моля отидете на адрес: <http://www.motorola.com/recycling/weee>.

**Čeština:** Pro zákazníky z EU: Všechny produkty je nutné po skončení jejich životnosti vrátit společnosti Symbol k recyklaci. Informace o způsobu vrácení produktu najdete na webové stránce: <http://www.motorola.com/recycling/weee>.

**Dansk:** Til kunder i EU: Alle produkter skal returneres til Motorola til recirkulering, når de er udtjent. Læs oplysningerne om returnering af produkter på: <http://www.motorola.com/recycling/weee>.

**Deutsch:** Für Kunden innerhalb der EU: Alle Produkte müssen am Ende ihrer Lebensdauer zum Recycling an Motorola zurückgesandt werden. Informationen zur Rücksendung von Produkten finden Sie unter <http://www.motorola.com/recycling/weee>.

**Eesti:** EL klientidele: kõik tooted tuleb nende eluea lõppedes tagastada taaskasutamise eesmärgil Motorola'ile. Lisainformatsiooni saamiseks toote tagastamise kohta külastage palun aadressi: <http://www.motorola.com/recycling/weee>.

**Español:** Para clientes en la Unión Europea: todos los productos deberán entregarse a Motorola al final de su ciclo de vida para que sean reciclados. Si desea más información sobre cómo devolver un producto, visite: <http://www.motorola.com/recycling/weee>.

**Ελληνικά:** Για πελάτες στην Ε.Ε.: Όλα τα προϊόντα, στο τέλος της διάρκειας ζωής τους, πρέπει να επιστρέφονται στην Motorola για ανακύκλωση. Για περισσότερες πληροφορίες σχετικά με την επιστροφή ενός προϊόντος, επισκεφθείτε τη διεύθυνση <http://www.motorola.com/recycling/weee> στο Διαδίκτυο.

**Français :** Clients de l'Union Européenne : Tous les produits en fin de cycle de vie doivent être retournés à Motorola pour recyclage. Pour de plus amples informations sur le retour de produits, consultez : <http://www.motorola.com/recycling/weee>.

**Italiano:** per i clienti dell'UE: tutti i prodotti che sono giunti al termine del rispettivo ciclo di vita devono essere restituiti a Motorola al fine di consentirne il riciclaggio. Per informazioni sulle modalità di restituzione, visitare il seguente sito Web: <http://www.motorola.com/recycling/weee>.

**Latviešu:** ES klientiem: visi produkti pēc to kalpošanas mūža beigām ir jānogādā atpakaļ Motorola otrreizējai pārstrādei. Lai iegūtu informāciju par produktu nogādāšanu Motorola, lūdzu, skatiet: <http://www.motorola.com/recycling/weee>.

**Lietuvių:** ES vartotojams: visi gaminiai, pasibaigus jų eksploatacijos laikui, turi būti gražinti utilizuoti į kompaniją „Motorola“. Daugiau informacijos, kaip gražinti gaminį, rasite: <http://www.motorola.com/recycling/weee>.

**Magyar:** Az EU-ban vásárlóknak: Minden tönkrement terméket a Motorola vállalathoz kell eljuttatni újrahasznosítás céljából. A termék visszajuttatásának módjával kapcsolatos tudnivalóért látogasson el a <http://www.motorola.com/recycling/weee> weboldalra.

**Malti:** Għal klijenti fl-UE: il-prodotti kollha li jkunu waslu fl-aħħar tal-ħajja ta' l-użu tagħhom, iridu jiġu rritornati għand Motorola għar-riċiklaġġ. Għal aktar taġħrif dwar kif għandek tirritorna l-prodott, jekk jogħġbok żur: <http://www.motorola.com/recycling/weee>.

**Nederlands:** Voor klanten in de EU: alle producten dienen aan het einde van hun levensduur naar Motorola te worden teruggezonden voor recycling. Raadpleeg <http://www.motorola.com/recycling/weee> voor meer informatie over het terugzenden van producten.

**Polski:** Klienci z obszaru Unii Europejskiej: Produkty wycofane z eksploatacji należy zwrócić do firmy Motorola w celu ich utylizacji. Informacje na temat zwrotu produktów znajdują się na stronie internetowej <http://www.motorola.com/recycling/weee>.

**Português:** Para clientes da UE: todos os produtos no fim de vida devem ser devolvidos à Motorola para reciclagem. Para obter informações sobre como devolver o produto, visite: <http://www.motorola.com/recycling/weee>.

**Românesc:** Pentru clienții din UE: Toate produsele, la sfârșitul duratei lor de funcționare, trebuie returnate la Motorola pentru reciclare. Pentru informații despre returnarea produsului, accesați: <http://www.motorola.com/recycling/weee>.

**Slovenski:** Za kupce v EU: vsi izdelki se morajo po poteku življenjske dobe vrniti podjetju Motorola za reciklažo. Za informacije o vračilu izdelka obiščite: <http://www.motorola.com/recycling/weee>.

**Slovenčina:** Pre zákazníkov z krajín EU: Všetky výrobky musia byť po uplynutí doby ich životnosti vrátené spoločnosti Motorola na recykláciu. Bližšie informácie o vrátení výrobkov nájdete na: <http://www.motorola.com/recycling/weee>.

**Suomi:** Asiakkaat Euroopan unionin alueella: Kaikki tuotteet on palautettava kierrätettäväksi Motorola-yhtiöön, kun tuotetta ei enää käytetä. Lisätietoja tuotteen palauttamisesta on osoitteessa <http://www.motorola.com/recycling/weee>.

**Svenska:** För kunder inom EU: Alla produkter som uppnått sin livslängd måste returneras till Motorola för återvinning. Information om hur du returnerar produkten finns på <http://www.motorola.com/recycling/weee>.

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**MOTOROLA**

Motorola, Inc.  
One Motorola Plaza  
Holtsville, New York 11742, USA  
1-800-927-9626  
<http://www.motorola.com/enterprisemobility>

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