

Professional installation Guide

Product/s covered in this guide:

Device: AP-175 models are part of the Aruba's AP Outdoor family, implementing dual radio cards each 2x2 MIMO supporting IEEE 802.11 a/b/g/n operation.

IMPORTANT - Visit Aruba Support web page for the latest information and documentation related to this product.

IMPORTANT – Please read this document before installing and using your product.

This device must be installed and used in strict accordance with the manufacturer's instructions. Only approved by the manufacturer power adapters must be used. For replacement, contact your supplier or distributor.

Installation of this product must comply with local regulations and codes. When this product is used with external antenna/s, please refer to the installation documentation provided for the antenna/s.

Changes or modifications to the device not approved by the manufacturer of the product could void the user's authority to operate the equipment and will void the warranty of the product. No user serviceable parts; all repairs and service must be handled by a qualified service center.

All products using external antennas must be professionally installed, and the transmit power of the system must be adjusted by the professional installer/s to ensure that the system's EIRP is in compliance with the limit specified by the regulatory authority of the country of deployment.

During deployment of the system and its initial setup, professional installer must ensure that the allowed EIRP limit is not exceeded. To achieve this professional installer must use approved and recommended by the Manufacturer antennas, and enter Antenna gain in the AOS software using to setup and manage the product. In additional attenuation between the device and antenna may have to be measured or calculated.

The following formula can be used to calculate from EIRP limit related RF power based on selected antennas (antenna gain) and feeder (Coaxial Cable loss):

$$\text{EIRP} = \text{Tx RF Power (dBm)} + G_A \text{ (dB)} - F_L \text{ (dB)};$$

EIRP: limit specific for each Country of deployment

Tx RF Power: RF power measured at RF connector of the unit

G_A : Antenna gain

F_L : Feeder loss (including the connectors' loss)

Antenna Types and Maximum Antenna Gains

Frequency Band	Type	Gain (dBi)
2.4 GHz	Dipole/Omni	6
	Directional	14
5 GHz	Dipole/Omni	9
	Directional	14

Note: Antenna information provided above reflect approved antennas for initial release of the device. For full list of antennas approved/recommended by the Manufacture please visit the Aruba Networks Inc. web site.

Avoiding interfering with Terminal Doppler Weather Radar (TDWR) (used near major Airports) when using the 5470-5725 MHz band, especially within 35 km (21.75 mi) of the TDWR

Use Professional Installers procedures provided with the additional steps outlined below.

1. For each device operating at 5470-5725 MHz UNII band, determine if it is within 35 km (21.75 mi) of any Terminal Doppler Weather Radar (TDWR). This can be done using the map search tool at <http://www.spectrumbridge.com/udia/search.aspx> , or other mapping tools using the data from Table below.
2. If a device is within 35 km (21.75 mi) of any TDWR
 - set the primary transmit frequency (and alternate frequencies, if used) to a frequency (or frequencies) at least 30 MHz (center-to-center) from the TDWR operation frequency shown on <http://www.spectrumbridge.com/udia/search.aspx> or in Table below.
 - even if the primary device itself is more than 35 km from the TDWR, if any of its clients are within 35 km, it must operate at least 30 MHz from the TDWR operation frequency.
3. Register each 5470-5725 MHz UNII band device operating within 35 km (21.75 mi) of any TDWR in the voluntary WISPA-sponsored database at <http://www.spectrumbridge.com/udia/home.aspx>.
 - Registration includes, at a minimum, Latitude, Longitude, and External Antenna Model. When registering a device, choose whether to allow General Access or to have the device information viewable only by you and government representatives.

TDWR Location Information

State	City	Longitude	Latitude	Frequency	Terrain Elevation (MSL)	Antenna Height above Terrain
					(ft)	(ft)
AZ	PHOENIX	W 112 09 46	N 33 25 14	5610 MHz	1024	64
CO	DENVER	W 104 31 35	N 39 43 39	5615 MHz	5643	64
FL	FT LAUDERDALE	W 080 20 39	N 26 08 36	5645 MHz	7	113
FL	MIAMI	W 080 29 28	N 25 45 27	5605 MHz	10	113
FL	ORLANDO	W 081 19 33	N 28 20 37	5640 MHz	72	97
FL	TAMPA	W 082 31 04	N 27 51 35	5620 MHz	14	80
FL	WEST PALM BEACH	W 080 16 23	N 26 41 17	5615 MHz	20	113
GA	ATLANTA	W 084 15 44	N 33 38 48	5615 MHz	962	113
IL	MCCOOK	W 087 51 31	N 41 47 50	5615 MHz	646	97
IL	CRESTWOOD	W 087 43 47	N 41 39 05	5645 MHz	663	113
IN	INDIANAPOLIS	W 086 26 08	N 39 38 14	5605 MHz	751	97
KS	WICHITA	W 097 26 13	N 37 30 26	5603 MHz	1270	80
KY	COVINGTON CINCINNATI	W 084 34 48	N 38 53 53	5610 MHz	942	97
KY	LOUISVILLE	W 085 36 38	N 38 02 45	5646 MHz	617	113
LA	NEW ORLEANS	W 090 24 11	N 30 01 18	5645 MHz	2	97
MA	BOSTON	W 070 56 01	N 42 09 30	5610 MHz	151	113
MD	BRANDYWINE	W 076 50 42	N 38 41 43	5635 MHz	233	113
MD	BENFIELD	W 076 37 48	N 39 05 23	5645 MHz	184	113
MD	CLINTON	W 076 57 43	N 38 45 32	5615 MHz	249	97
MI	DETROIT	W 083 30 54	N 42 06 40	5615 MHz	656	113
MN	MINNEAPOLIS	W 092 55 58	N 44 52 17	5610 MHz	1040	80
MO	KANSAS CITY	W 094 44 31	N 39 29 55	5605 MHz	1040	64
MO	SAINT LOUIS	W 090 29 21	N 38 48 20	5610 MHz	551	97
MS	DESOTO COUNTY	W 089 59 33	N 34 53 45	5610 MHz	371	113
NC	CHARLOTTE	W 080 53 06	N 35 20 14	5608 MHz	757	113
NC	RALEIGH DURHAM	W 078 41 50	N 36 00 07	5647 MHz	400	113
NJ	WOODBIDGE	W 074 16 13	N 40 35 37	5620 MHz	19	113
NJ	PENNSAUKEN	W 075 04 12	N 39 56 57	5610 MHz	39	113
NV	LAS VEGAS	W 115 00 26	N 36 08 37	5645 MHz	1995	64
NY	FLOYD BENNETT FIELD	W 073 52 49	N 40 35 20	5647 MHz	8	97
OH	DAYTON	W 084 07 23	N 40 01 19	5640 MHz	922	97
OH	CLEVELAND	W 082 00 28	N 41 17 23	5645 MHz	817	113
OH	COLUMBUS	W 082 42 55	N 40 00 20	5605 MHz	1037	113
OK	AERO. CTR TDWR #1	W 097 37 31	N 35 24 19	5610 MHz	1285	80
OK	AERO. CTR TDWR #2	W 097 37 43	N 35 23 34	5620 MHz	1293	97
OK	TULSA	W 095 49 34	N 36 04 14	5605 MHz	712	113
OK	OKLAHOMA CITY	W 097 30 36	N 35 16 34	5603 MHz	1195	64
PA	HANOVER	W 080 29 10	N 40 30 05	5615 MHz	1266	113
PR	SAN JUAN	W 066 10 46	N 18 28 26	5610 MHz	59	113
TN	NASHVILLE	W 086 39 42	N 35 58 47	5605 MHz	722	97
TX	HOUSTON INTERCONTL	W 095 34 01	N 30 03 54	5605 MHz	154	97
TX	PEARLAND	W 095 14 30	N 29 30 59	5645 MHz	36	80
TX	DALLAS LOVE FIELD	W 096 58 06	N 32 55 33	5608 MHz	541	80
TX	LEWISVILLE DFW	W 096 55 05	N 33 03 53	5640 MHz	554	31
UT	SALT LAKE CITY	W 111 55 47	N 40 58 02	5610 MHz	4219	80
VA	LEESBURG	W 077 31 46	N 39 05 02	5605 MHz	361	113
WI	MILWAUKEE	W 088 02 47	N 42 49 10	5603 MHz	820	113
Latitude and Longitude are specified in NAD 83 Last updated July 30, 2010						