

1

D-Link Antenna-kit Installation Guide

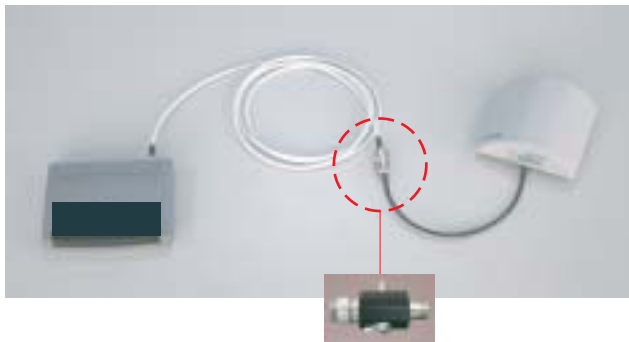
Step 1
Remove the default antenna.



Step 2
Connect the extension cable onto the external connector on device.



Step 3



Install the surge protector as recommended position when you do not purchase the low loss cables (ANT24-CB03N, ANT24-CB06N and ANT24-09N...)

Step 4

Option: Ultra low-loss cable LMR400
Length options: 3M/6M/9M



Install the surge protector as recommended position ,near the device side, when you have the low loss cables (ANT24-CB03N, ANT24-CB06N and ANT24-CB09N ...)

Step 5
Use water-proof tape to wrap around both connectors tightly, as the pictures showed below



CAUTION!!
Please always put the surge protector indoors and near the device side, if you cannot keep it indoors, use the tapes to wrap all the connectors as pictures showed below.



When install the surge protector between cables, wrap the connectors as well. The lightning protection adaptor for grounding the antenna.



Option: Surge protector
Connectors: N-plug to N-jack

With Surge protector (ANT24-SP) adaptor on an outdoor serial is attached to the lightning protection system (ground) of the building. All devices downstream are then protected by the ground from lightning strikes. It can protect your sensitive WLAN equipments from high voltage surges caused by discharge and transients at the antennas. It will be integrated in the cabling system between the antenna and the coax-cable and must have direct ground contact.

1

D-Link WLAN Antenna-kit
Extended range differentiation for FCC/ CE regulated regions
Indoor installation for OUTDOOR Inter-building link



CE ETSI EN 300 328 regulated regions (European countries)

Indoor antenna application for Outdoor inter-building transmission
based on (ETSI EN 300 328), EIRP (Emitted Isotropic Radiated Power) limited within **20dB**.
Therefore, the extended range might be shorter than FCC-regulated antennas.



Indoor application for outdoor inter-building linking:

Antenna-kits extended range based on ETSI EN 300 328: 750m



Indoor application for outdoor inter-building linking:

Antenna-kits extended range based on ETSI EN 300 328: 1000m



CE ETSI
EN 300 328
Regulated regions

FCC regulated regions (US, Canada...)

Using the same antenna-kit in FCC-regulated regions, the extended range might be **LONGER** than CE-regulated antennas due to **HIGHER output power allowance !**
(FCC Regulations: point-to-multipoint EIRP 36dB max. p-t-p EIRP allows 48dBm max.)



Indoor application for outdoor inter-building linking:

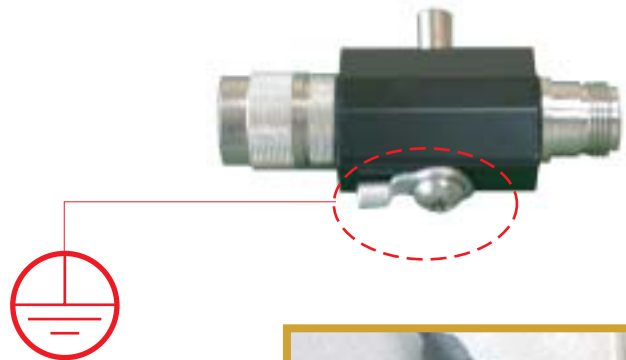
Antenna-kits extended range based on : 1800m



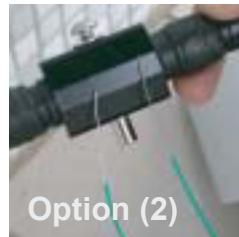
FCC
regulated regions

1

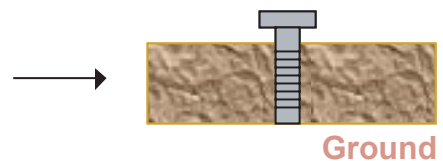
ANT24-SP Surge protector Installation guide for outdoor antenna-kit



Step 1
loosen the screw from the surge protector.



Step 2
get a normal conductive copper wire with 2 sides stripped long enough to be conductive, these wires can lead high voltage surges into the grounding.



Step 3
find a conductive material nearby the antenna installation sites, connect another end of the wire into position, there are several options:

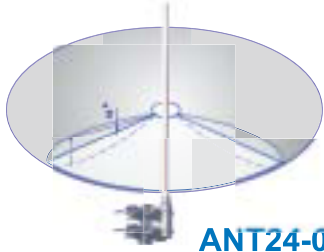
- (1) Use a long screw to stick into the ground tightly, connect another wire onto.
- (2) fix or solder another end of wire onto a steel material/ bar under steel construction, such as wall for buildings, railings or other conductive materials which set up from the ground.

Remark:

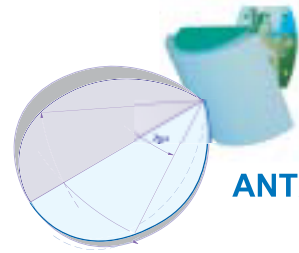
- (1) for the ground screw you use, we suggest the longer (deeper into ground) the better performance it has.
- (2) please use a copper wire with diameter at least from 2.0mm, the thicker the diameter, the higher voltage it can sustain.

1

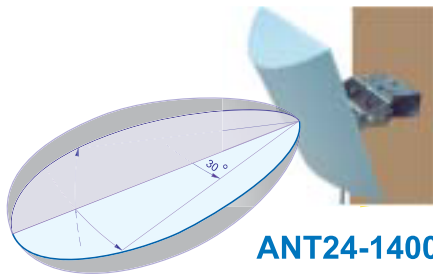
Optional ultra low attenuation cable for ANT24-Outdoor high gain series



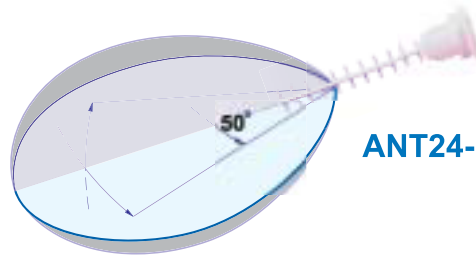
ANT24-0800



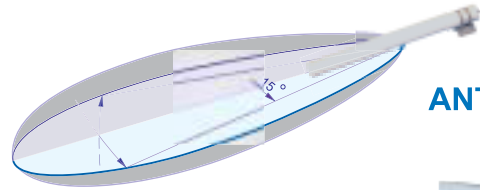
ANT24-0801



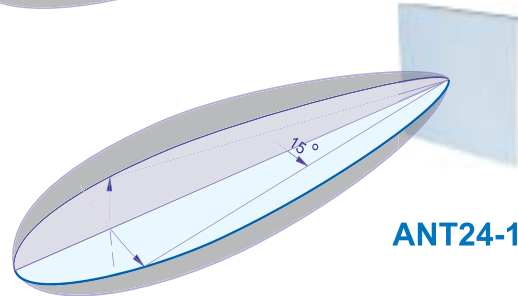
ANT24-1400



ANT24-1201



ANT24-1801



ANT24-1800

We have the following length options to create flexible antenna deployment:



Default extension cables

- P/N: ANT24-CB03N: 3meter @ 0.78dB attenuation
- P/N: ANT24-CB06N: 6meter @ 1.56dB attenuation
- P/N: ANT24-CB09N: 9meter @ 2.34dB attenuation

NOTE:

The longer cable you use, the more attenuation it causes, therefore, the extended range might be shorter than a normal link with default extension cables.



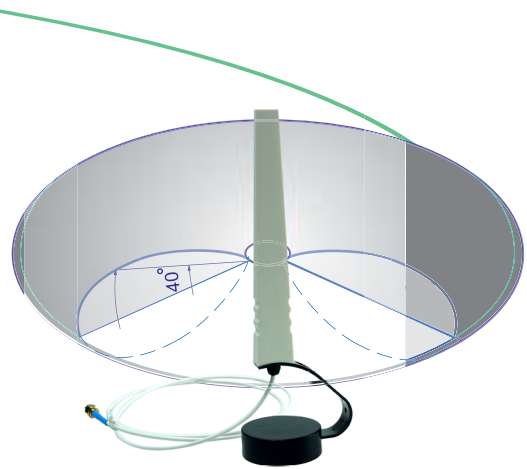
2

D-Link ANT24-0400 Indoor Omni-Directional Antenna



Remove one default antenna from the wireless device and start to assemble!

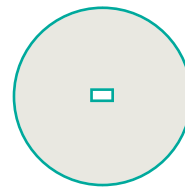
Using ANT24-JC jumper cable to switch to smaller connector which can be compliant with DWL-660 WLAN card.



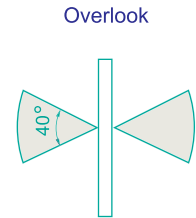
Antenna connector Device connector



ANT24-JC jumper cable



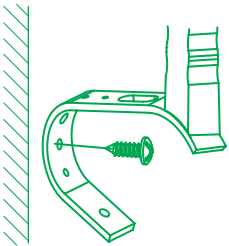
Horizontal coverage



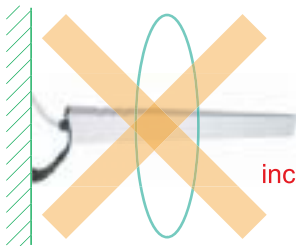
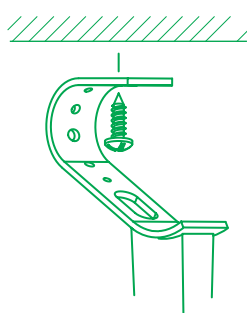
Vertical coverage

Overlook

Wall mount



Ceiling mount



incorrect placement

Frequency band	2400-2500MHz
Antenna gain	4dBi
VSWR	2.0 max
Polarization	Linear vertical
HPBW / H-plane	360°
HPBW / E-plane	40°
Impedence	50 Ohms
Dimensions LxWxH	145X55X48 mm
Weight	180g without joint

Package Contents:

- ANT24-0400 Antenna
- With 1.5m cable
- Mounting Kit
- Quick Installation Guide

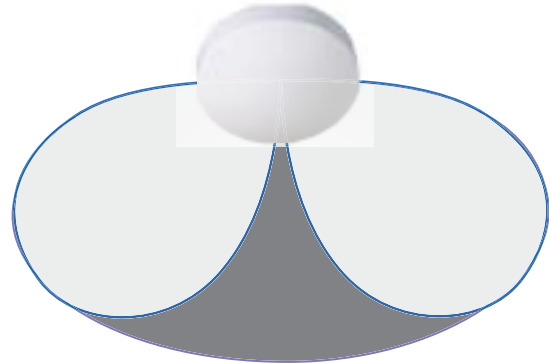
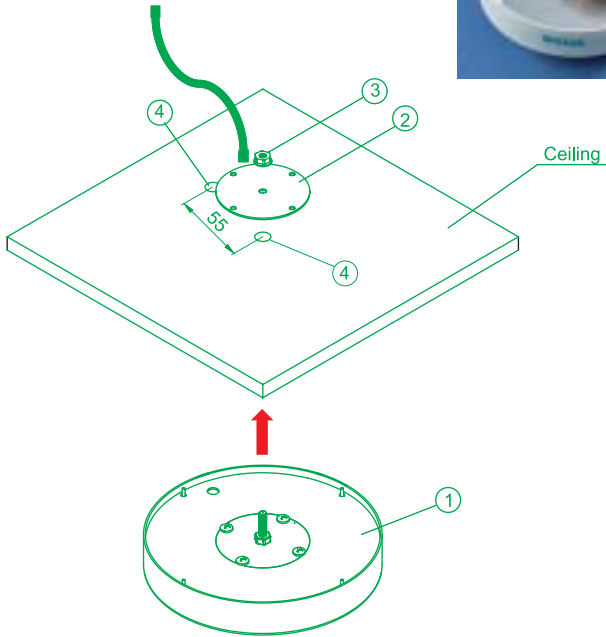
CAUTION:

Please always place the antenna vertically to the desk/ceiling, not recommend to mount the antenna perpendicular to the wall.

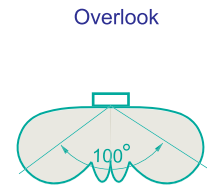
3

D-Link ANT24-0401 Ceiling Mount Antenna

Remove one default antenna from the wireless device and start to assemble!



Horizontal coverage



Vertical coverage

Installation Note:

1. Carefully remove the antenna from the package.
2. Take out the Washer (1 pcs) from the package
3. Take out the Flange washer (1 pcs) as well.
4. Drill 2 holes through the ceiling board, one to fix the antenna main body with washer, another for the antenna SMA connector linked onto extension cable which is included within the package.

Frequency band	2400-2500MHz
Antenna gain	2.5 ~ 3.7 dBi
VSWR	2.0 max
Polarization	Linear vertical
HPBW / H-plane	360°
HPBW / E-plane	50 ~ 75 °
Impedence	50 Ohms
Dimensions	ø132x42 mm
Weight	110g without joint

Package Contents:

- ANT24-0401 Antenna
- Extension Cable (2M)
- Mounting Kit
- Quick Installation Guide

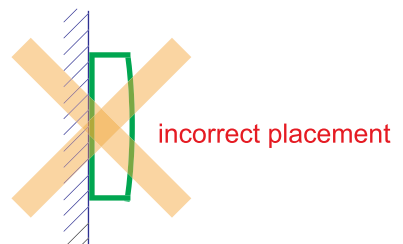
To have correct connection of the attached extension cable (Based on connector color management)



Silver to Antenna



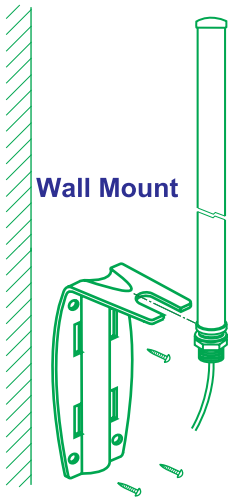
Golden to Device



4

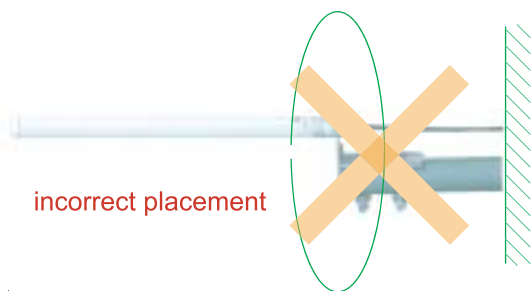
D-Link ANT24-0500 Indoor/Outdoor Omni- Directional Antenna

Remove one default antenna from the wireless device and start to assemble!



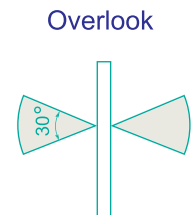
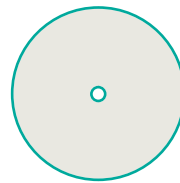
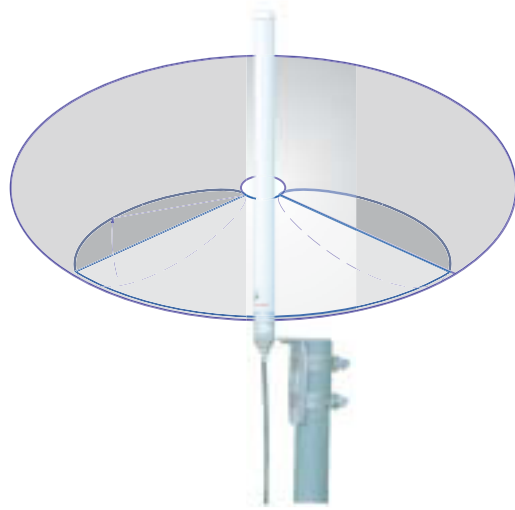
Installation Note:

1. use L- type mounting to fix with antenna
2. use 4 plastic anchor with (4) screws to install the antenna onto the wall.
3. use band clamp (2pcs) to fix the antenna on the pole.



⚠ CAUTION:

Please always place the antenna vertically to the horizontal surface, not recommend to mount the antenna perpendicular to walls.



Frequency band	2400-2500MHz
Antenna gain	5.0 dBi
VSWR	2.0 max
Polarization	Linear vertical
HPBW / H-plane	360°
HPBW / E-plane	32°
Impedence	50 Ohms
Dimensions LxWxH	∅19x330 mm
Weight	180g without joint

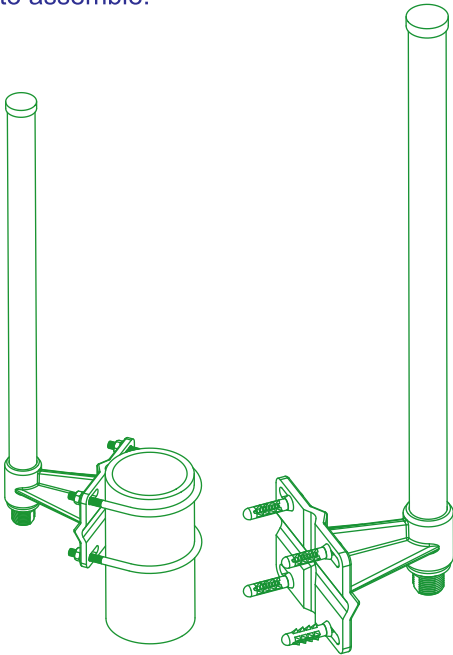
Package Contents:

- ANT24-0500 Antenna
- Extension Cable (3m)
- Mounting Kit
- Quick Installation Guide

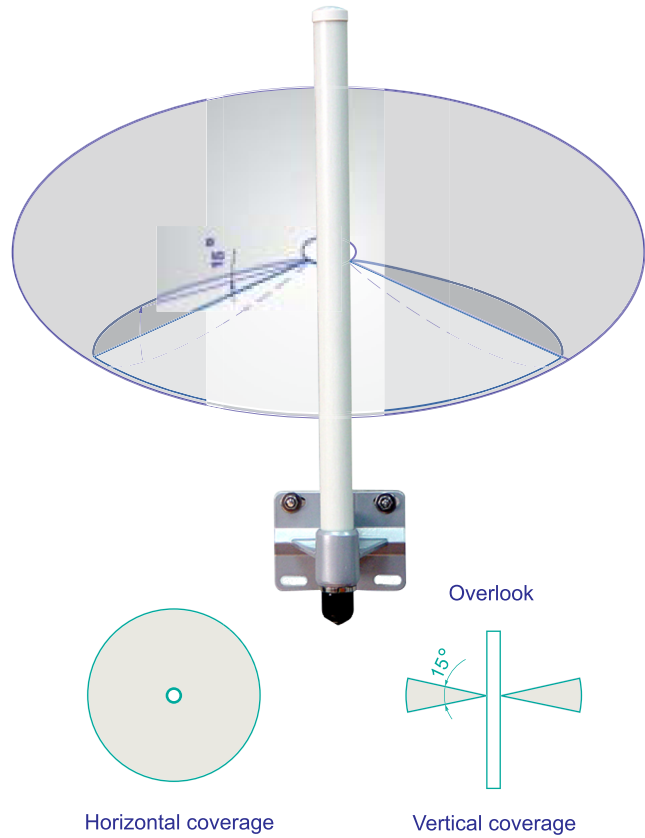
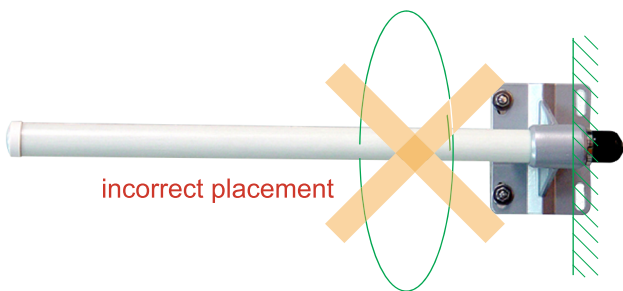
5

D-Link ANT24-0800 Indoor/Outdoor Omni-Directional Antenna

Remove one default antenna from the wireless device and start to assemble!



Mast diameter = 20 ~ 60 mm



Frequency band	2400-2500MHz
Antenna gain	8.0 dBi
VSWR	2.0 max
Polarization	Linear vertical
HPBW / H-plane	360°
HPBW / E-plane	15°
Impedence	50 Ohms
Dimensions LxWxH	∅19x520 mm
Weight	337g without joint

⚠ CAUTION:

Please always place the antenna vertically to the horizontal surface, not recommend to mount the antenna perpendicular to the wall.

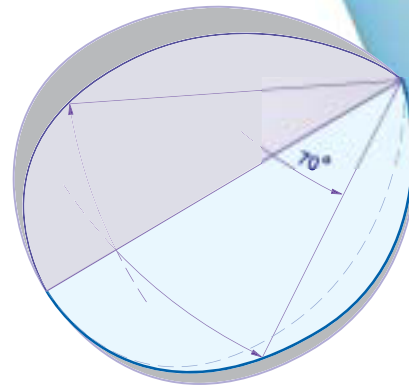
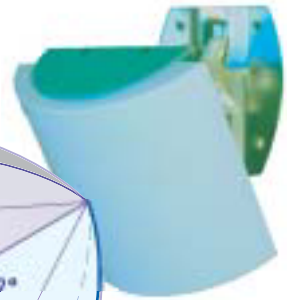
Package Contents:

- ANT24-0800 Antenna
- Extension Cable (50cm)
- Mounting Kit
- Surge Protector
- Water-proof tape
- Quick Installation Guide

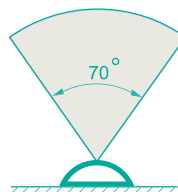
6

D-Link ANT24-0801 Indoor Directional Panel Antenna

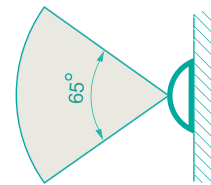
Remove one default antenna from the wireless device and start to assemble!



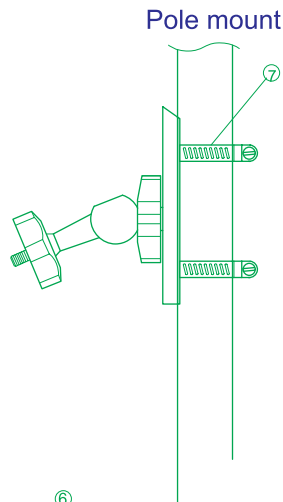
Overlook



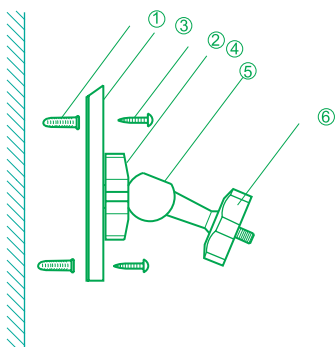
Horizontal coverage



Vertical coverage



Wall mount



Installation Note:

The following parts are needed for wall mounting:

1. plastic wall anchors (4) screws
2. wall screws
3. mounting base
4. locking wheel on the mounting base
5. adjustable pivot arm
6. locking wheel for pivot arm

Frequency band	2400-2500MHz
Antenna gain	8.5 dBi
VSWR	1.5 max
Polarization	Linear vertical
HPBW / H-plane	70°
HPBW / E-plane	65°
Impedance	50 Ohms
Dimensions LxWxH	120x120x43mm
Weight	300g without joint

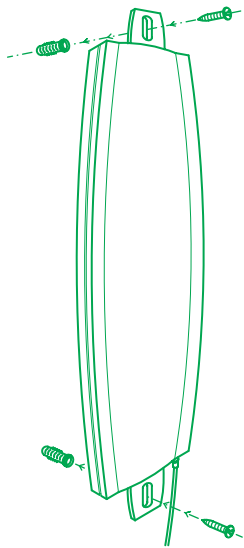
Package Contents:

- ANT24-0801 Antenna
- Extension Cable (3m)
- Mounting Kit
- Surge Protector
- Water-proof tape
- Quick Installation Guide

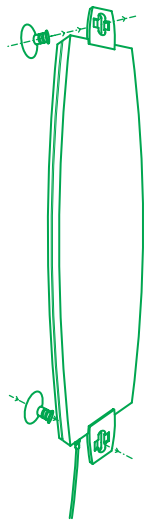
7

D-Link ANT24-1200 Indoor Directional Panel Antenna

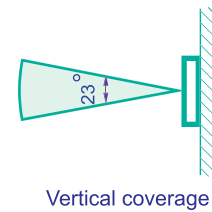
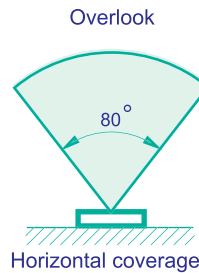
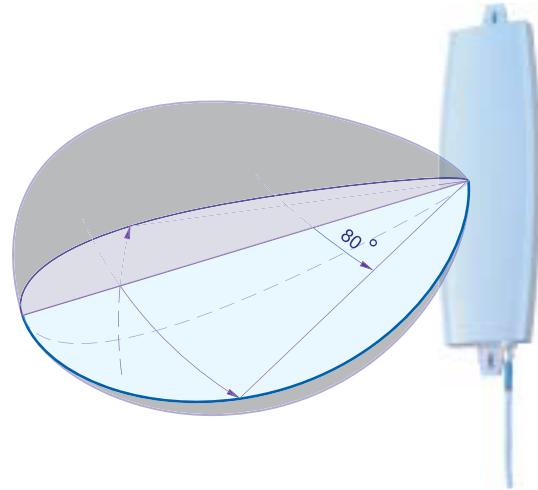
Remove one default antenna from the wireless device and start to assemble!



Wall mount with plastic wall plug



Window suction mount with window suction cup



Frequency band	2400-2500MHz
Antenna gain	11.5 dBi
VSWR	1.5 max
Polarization	Linear vertical
HPBW / H-plane	80°
HPBW / E-plane	23°
Impedence	50 Ohms
Dimensions LxWxH	330x93x20 mm
Weight	190g without joint

To have correct connection of the attached extension cable (Based on connector color management)

Package Contents:

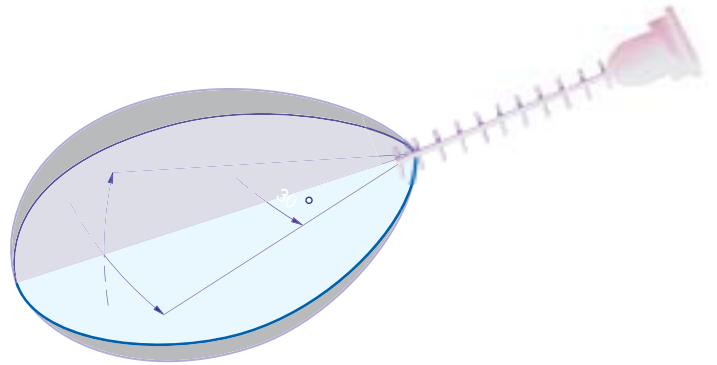
- ANT24-1200 Antenna
- Extension Cable (3m)
- Mounting Kit
- Quick Installation Guide



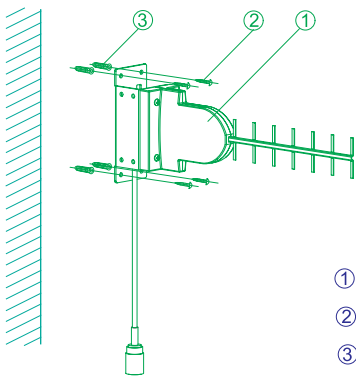
8

D-Link ANT24-1201 Outdoor Directional Yagi Antenna

Remove one default antenna from the wireless device and start to assemble!

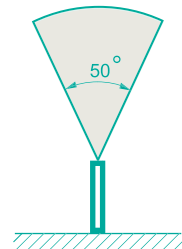


Wall Mount

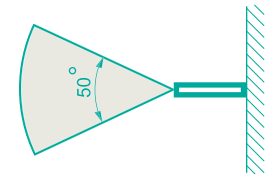


- ① Ant body
- ② 3/4" screw
- ③ Pole mount clip

Overlook

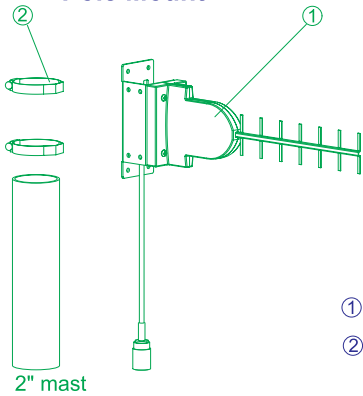


Horizaontal coverage



Vertical coverage

Pole Mount



- ① Ant body
- ② 2-1/2" hose clamp

Frequency band	2400-2500 MHz
Antenna gain	12 dBi
VSWR	1.5 max
Polarization	Linear vertical
HPBW / H-plane	50°
HPBW / E-plane	50°
Impedence	50 Ohms
Dimensions LxWxH	280x87x48 mm
Weight	300g without joint

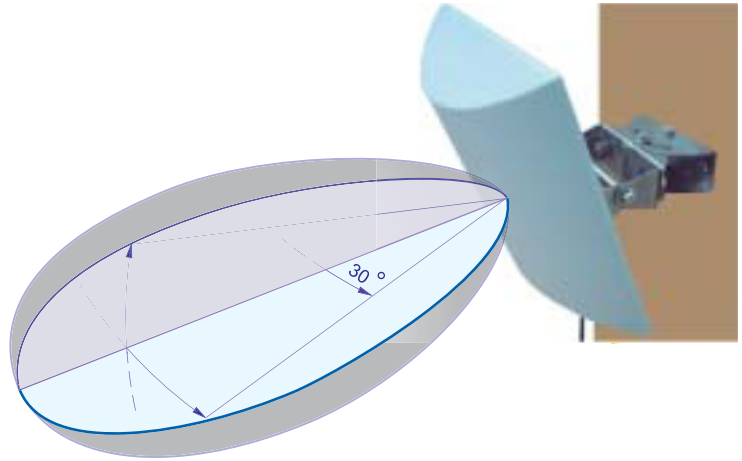
Package Contents:

- ANT24-1201 antenna
- Extension cable (50cm)
- Mounting kit
- Surge protector
- Water-proof tape
- Quick installation guide

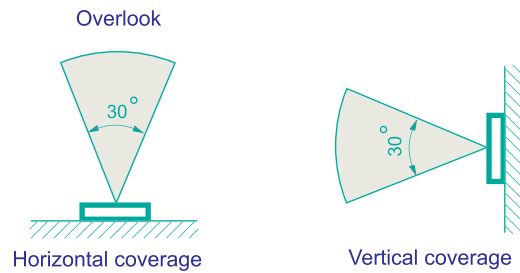
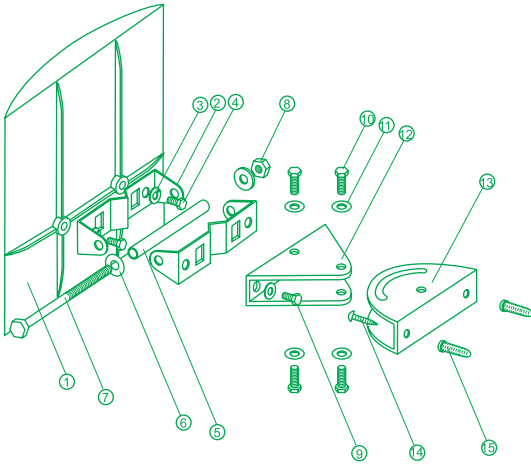
9

D-Link ANT24-1400 Outdoor Directional Panel Antenna

Remove one default antenna from the wireless device and start to assemble!



Wall mount



Installation Note:

Required parts for wall mounting:

1. ANT-1400 antenna body with 2 screw holes
2. M-shaped metal fixing
3. spring washers 8mm
4. bolts M8 x 12
5. steel tubes
6. 8mm washer
7. bolt M8 x 110
8. nut M8 with lock washer
9. bolts M8 x16 with lock washer, washers and nuts
10. bolts M6 x10 with washers
11. 6mm washers
12. triangular stand
13. half-round metal stand
14. wall screws
15. plastic wall anchor

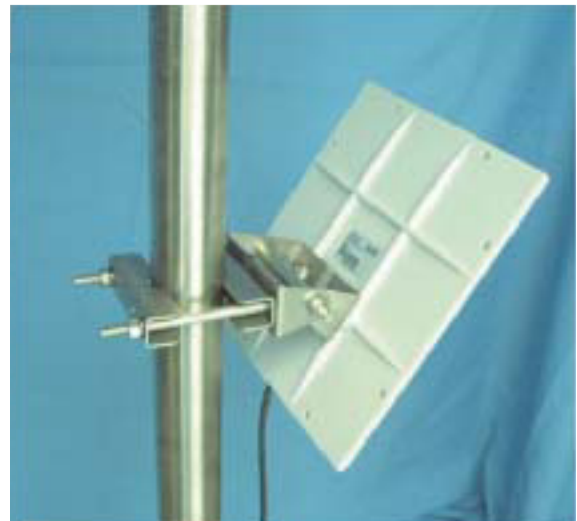
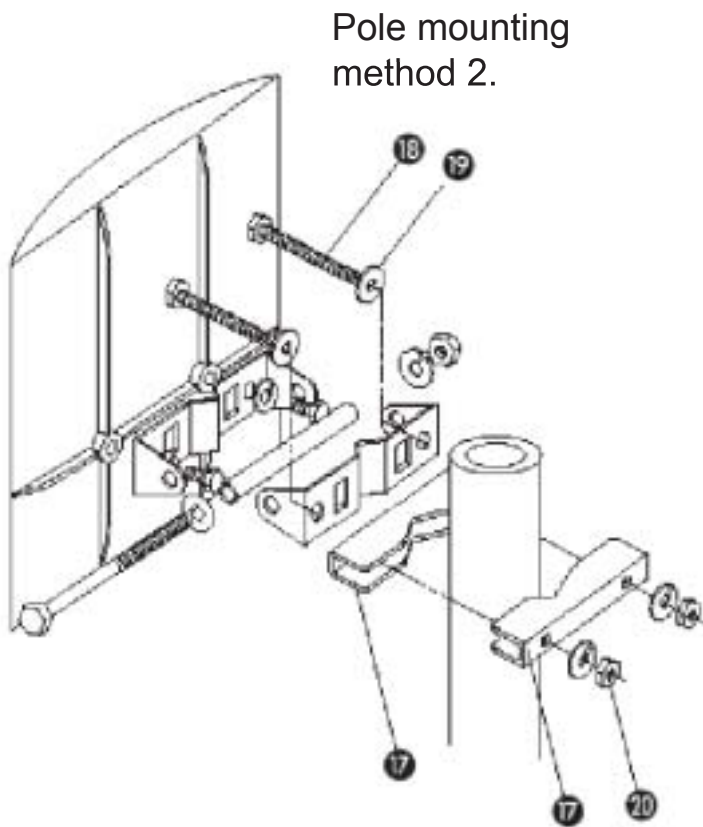
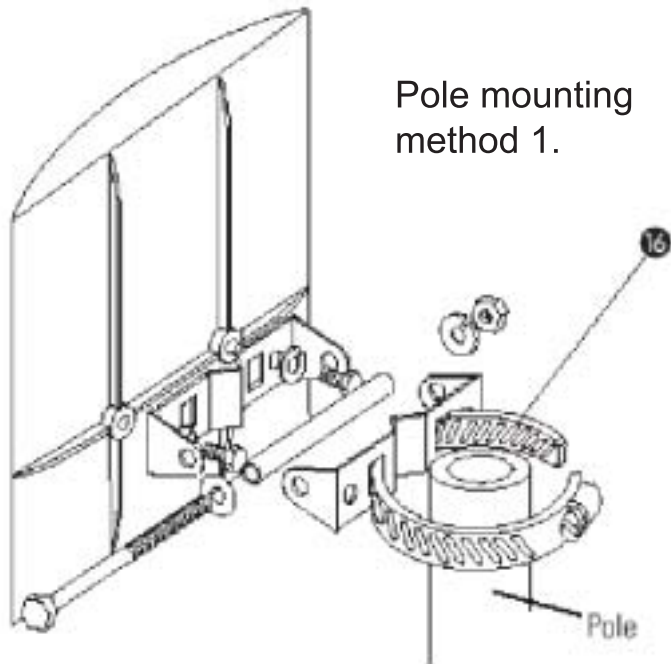
Frequency band	2400-2500 MHz
Antenna gain	14 dBi
VSWR	1.5 max
Polarization	Linear vertical
HPBW / H-plane	30°
HPBW / E-plane	30°
Impedence	50 Ohms
Dimensions LxWxH	240x240x69 mm
Weight	825g without joint

Package Contents:

- ANT24-1400 Antenna
- Extension Cable (50cm)
- Mounting Kit
- Surge protector
- Water-proof tape
- Quick Installation Guide

9

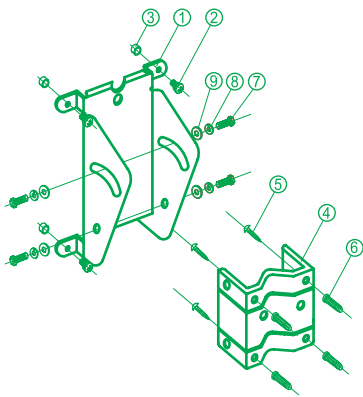
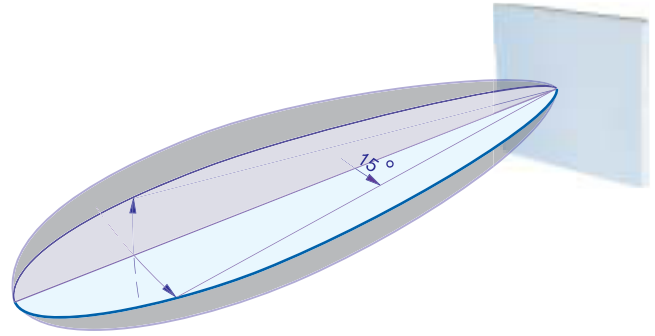
D-Link ANT24-1400 Outdoor Directional Panel Antenna



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D-Link ANT24-1800 Outdoor Directional Panel Antenna

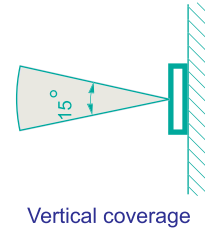
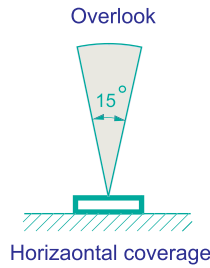
Remove one default antenna from the wireless device and start to assemble!



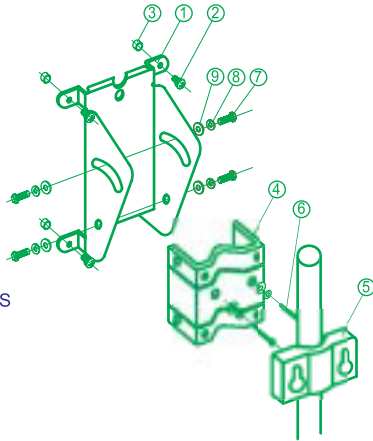
Wall mounting



- ① Mounting base - 1 PC
- ② M4*8 screw+W+S/W - 4 PCS
- ③ Space keeper - 4 pcs
- ④ M-shape mounting - 1 pc
- ⑤ 3/4" screw - 4 pcs
- ⑥ Plastic wallplug - 4 pcs
- ⑦ M6*16 screw - 4 pcs
- ⑧ M6 S/W - 4 pcs
- ⑨ M6 W - 4 pcs



Pole mounting



- ① Mounting base - 1 PC
- ② M4*8 screw+W+S/W - 4 PCS
- ③ Space keeper - 4 pcs
- ④ M-shape mounting - 1 pc
- ⑤ Pole mount clip - 1 pc
- ⑥ M6*60 screw - 2 pcs
- ⑦ M6*16 screw - 4 pcs
- ⑧ M6 S/W - 4 pcs
- ⑨ M6 W - 4 pcs

Frequency band	2400-2500 MHz
Antenna gain	18 dBi
VSWR	1.5 max
Polarization	Linear vertical
HPBW / H-plane	15°
HPBW / E-plane	15°
Impedance	50 Ohms
Dimensions LxWxH	360x360x16 mm
Weight	1600g without joint

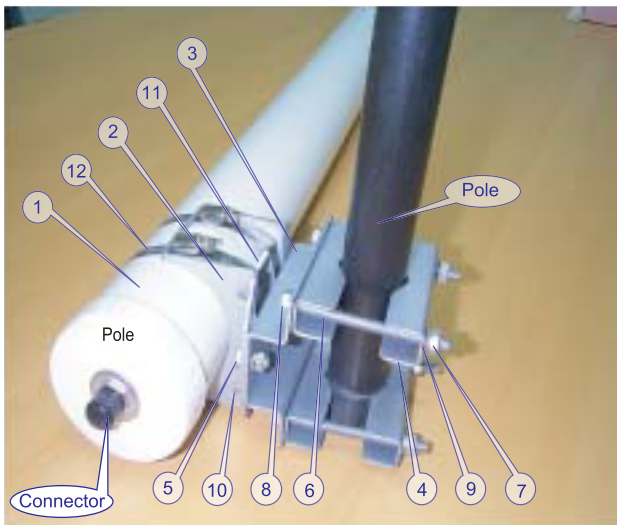
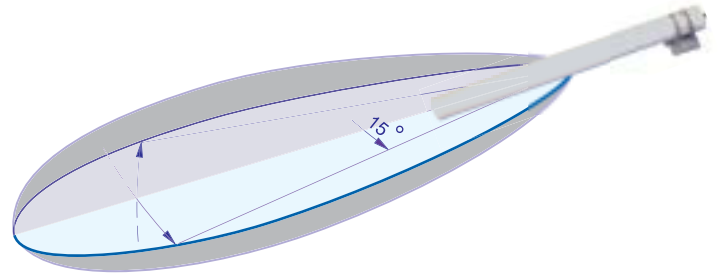
Package Contents:

- ANT24-1800 Antenna
- Extension Cable (50cm)
- Mounting Kit
- Surge protector
- Water-proof tape
- Quick Installation Guide

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D-Link ANT24-1801 Outdoor Directional Yagi Antenna

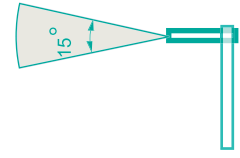
Remove one default antenna from the wireless device and start to assemble!



Overlook



Horizontal coverage

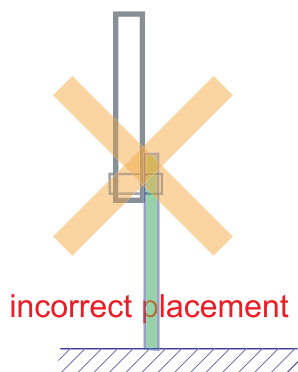


Vertical coverage

Frequency band	2400-2500 MHz
Antenna gain	18 dBi
VSWR	1.5 max
Polarization	Linear vertical
HPBW / H-plane	15°
HPBW / E-plane	15°
Impedence	50 Ohms
Dimensions LxWxH	ø89x1000 mm
Weight	3500g without joint

Installation Note:

1. Main body
2. Angle mounting
3. Mounting bracket
4. 2" pole clamp
5. M8x 20 bolt
6. M8x 110 bolt
7. M8 nut
8. M8 washer
9. M8 spring washer
10. M6-95 screw
11. M6 nut
12. Band clamp



Package Contents:

- ANT24-1801 Antenna
- Extension Cable (50cm)
- Mounting Kit
- Surge protector
- Water-proof tape
- Quick Installation Guide

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D-Link DWL- 50AT Indoor Omni Antenna



Remove one default antenna from the wireless device and start to assemble!



D-Link's Omni Directional Antenna offers the most cost effective solution for extending the wireless LAN coverage area. The antenna is fully compatible with all products and can be used with any 2.40 to 2.4835 GHz products.

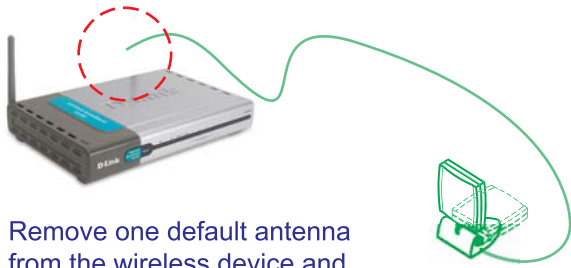
Installation:

1. Remove the original antenna from your wireless device.
2. Screw the DWL-50AT RP- SMA connector into your wireless device.
3. Adjust the antenna to the suitable direction for extending the wireless coverage area.

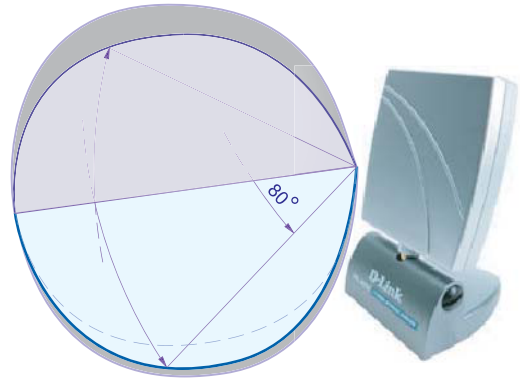
Frequency band	2400-2500MHz
Antenna gain	5.0dBi Typical
VSWR	2.0:1 Max.
Polarization	Linear
HPBW / H-plane	Toroidal
HPBW / E-plane	60 degree
Impedence	50 Ohms nominal
Dimensions HxWxD	197 mm(length)
Weight	29.5gw

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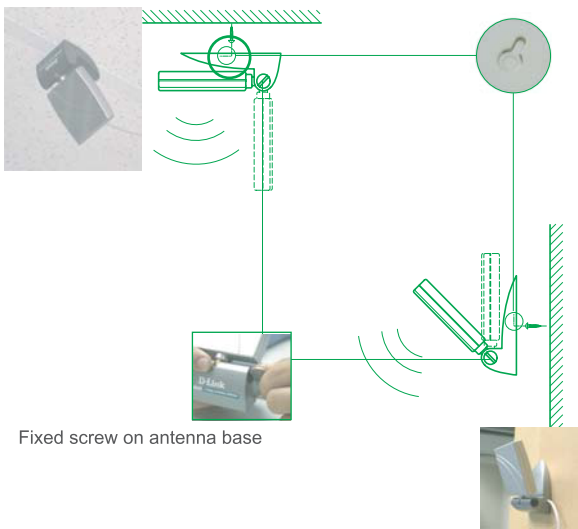
D-Link DWL-M60AT Indoor Directional Antenna



Remove one default antenna from the wireless device and start to assemble!

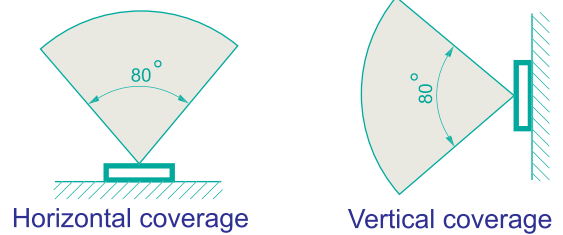


Ceiling mount



Wall Mount

Overlook



Frequency band	2400-2500MHz
Antenna gain	6dBi
VSWR	1.5 max
Polarization	Linear vertical
HPBW / H-plane	80°
HPBW / E-plane	80°
Impedence	50 Ohms
Dimensions HxWxD	115x76x33mm
Weight	110g without joint

⚠ CAUTION:

1. Always place the antenna on a flat or secure surface.
2. Concealing the antenna behind books, cabinets or other office equipment may affect the performance of the wireless networks.
3. The antenna transmission range may vary according to different environments or applications.

Package Contents:

- DWL-M60AT Antenna
- Fixed cable (1.5m)
- Mounting Kit
- Quick Installation Guide

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D-Link DWL-R60AT Indoor Directional Antenna



Remove one default antenna from the wireless device and start to assemble!



D-Link's Single Patch Flat Antenna offers the most cost effective solution for extending the wireless LAN coverage area. The antenna is fully compatible with all products and can be used with any 2.40 to 2.4835 GHz products.

Installation:

1. Remove the original antenna from your wireless device.
2. Screw the DWL-R60AT RP- SMA connector into your wireless device.
3. Adjust the antenna to the suitable direction for extending the wireless coverage area.

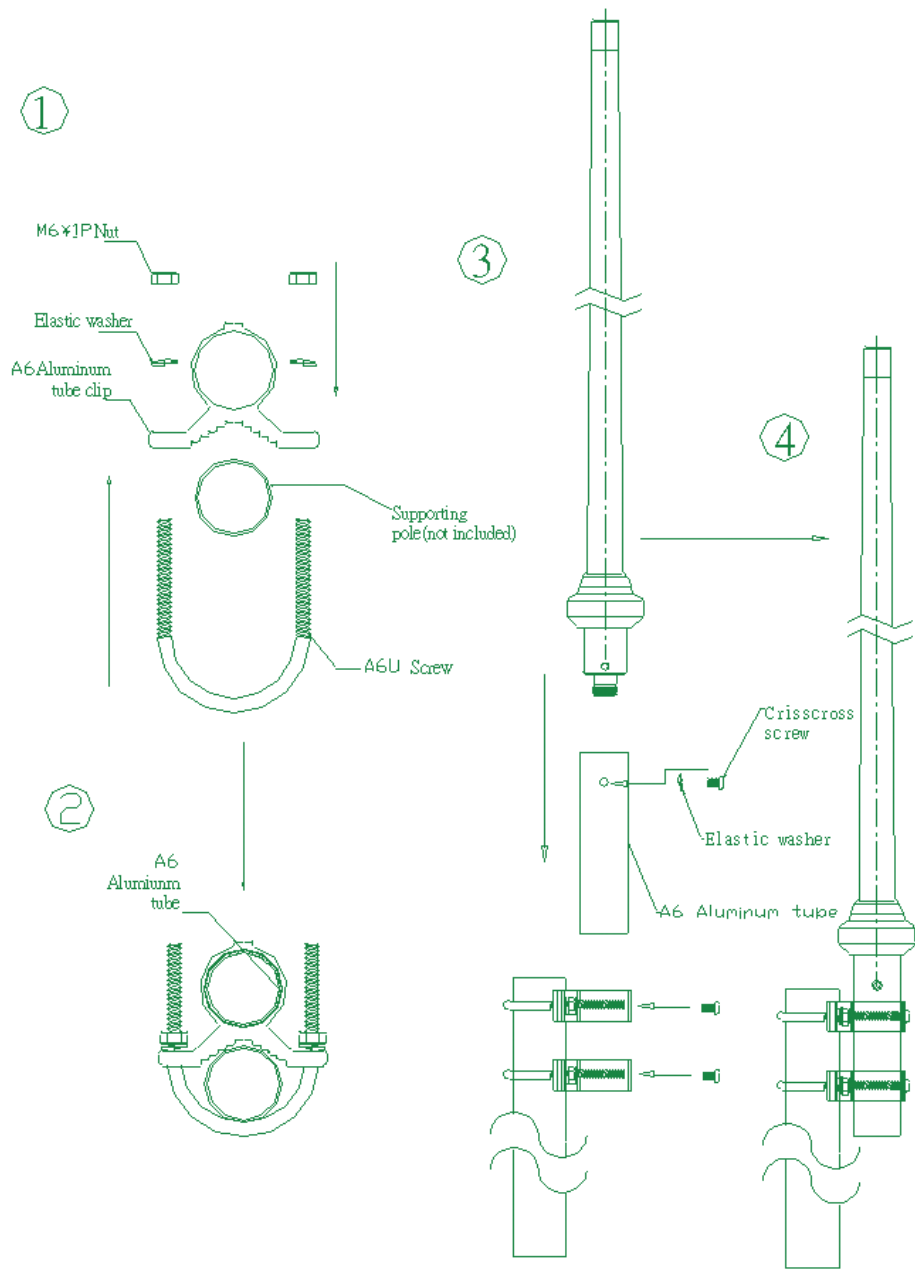
Frequency band	2400-2500MHz
Antenna gain	6.0dBi Typical
VSWR	2.0:1 Max.
Polarization	Linear
HPBW / H-plane	90°
HPBW / E-plane	75°
Impedence	50 Ohms nominal
Dimensions HxWxD	80x85x12.8 mm
Weight	75gw

Package Contents:

- DWL-R60AT Antenna
- Quick Installation Guide

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D-Link DWL-1500 Outdoor Omni Antenna



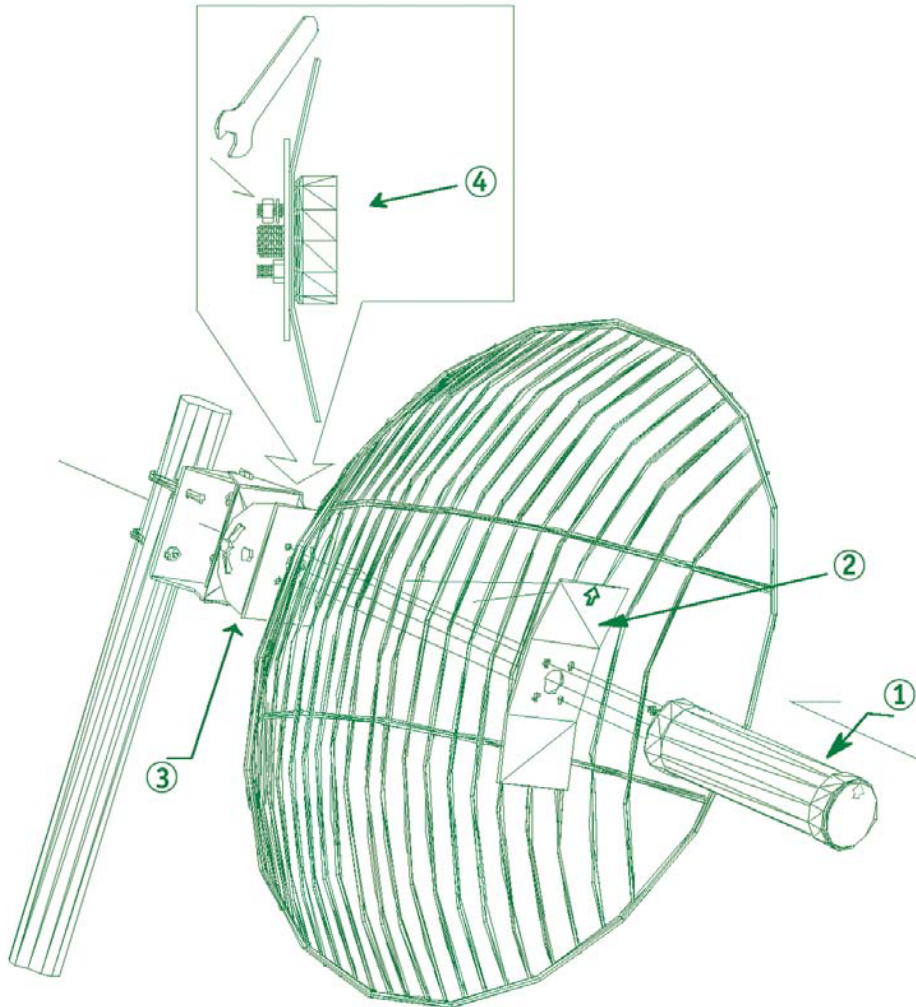
Frequency band	2400-2500MHz
Antenna gain	15dBi
VSWR	1.5 max
Polarization	Vertical
HPBW / H-plane	360°
HPBW / E-plane	60°
Impedence	50 ± Ohms
Dimensions	165cm (length)
Weight	750g ± 20g

Package Contents:

- DWL-1500 Antenna
- DHF extension cable(3m, N male-RPSMA)
- Mounting kit
- Waterproof tape
- Quick Installation Guide

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D-Link DWL-2100 Outdoor Grid Antenna


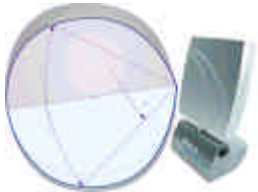





Frequency band	2400-2500MHz
Antenna gain	21dBi
VSWR	1.5 max
Polarization	Vertical
HPBW / H-plane	70°
HPBW / E-plane	24°
Impedence	50 ± Ohms
Dimensions	15cm x 61cm Diam.
Weight	2700g ± 10g

Package Contents:

- DWL-2100 Antenna
- DHF extension cable(3m, N male/RP-SMA)
- Mounting kit
- Waterproof tape
- Quick Installation Guide

Indoor/ Outdoor Antenna Table:

					
Model Name	DWL-R60AT	DWL-M60AT	ANT24-0400	ANT24-0401	ANT24-0500
Signal directivity	Directional Antenna	Directional Antenna	Omni-directional	Omni-directional	Omni-directional
Application range	Indoor only	Indoor only	Indoor only	Indoor ceiling only	Indoor/ Outdoor
Gain (Without cable loss)	6dBi	6dBi	4dBi	3.5dBi	5dBi
Approximate Range at 1 Mbps *	1Km	1kM	800M	800M	1km
Approximate Range at 11 Mbps *	400M	400M	300M	300M	450M
Half power beam width **	H60 V90	H80 V80	H360 V40	H360 V120	H360 V30
Pigtail cable length	NA	150cm	150cm	NA	30cm
Antenna fixed connector	RP-SMA plug	RP-SMA plug	RP-SMA plug	SMA jack	N-jack
Surge protector for outdoors	---	---	---	---	Optional
Default extension cable length	NA	NA	NA	2M	3M
Default mounting configuration	NA	Wall/ desktop	Wall/ desktop	Ceiling	Pole
Antenna-kit weight (Kg)	300g	330g	320g	310g	540g
Optional accessories	ANT24-JC For DWL-660 links	ANT24-JC For DWL-660 links	ANT24-JC For DWL-660 links	ANT24-JC For DWL-660 links	ANT24-JC ANT24-SP ANT24-CB series





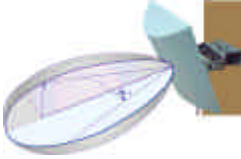
*1.Extended range reference based on RF-Output Power 14dbm with default cable loss

*2.The transmission distance range might depend on the two same spec antennas with default cable loss

**HPBW: Half Power Beam Width. H : horizontal plane pattern, V : vertical plane pattern

The actual Indoor range will be effected by users' physical environment. The above figures are reference.

Indoor/ Outdoor Antenna Table:

					
Model Name	ANT24-0800	ANT24-0801	ANT24-1200	ANT24-1201	ANT24-1400
Signal directivity	Omni-directional	Directional	Directional	Directional	Directional
Application range	Outdoor	Outdoor	Indoor only	Outdoor	Outdoor
Gain (Without cable loss)	8dBi	8.5dBi	12dBi	12dBi	14dBi
Approximate Range at 1 Mbps *	2Km	2Km	3.5Km	3.5Km	5Km
Approximate Range at 11 Mbps *	600M	600M	1.6Km	1.6Km	2.5Km
Half power Beam width **	H360 V15	H70 V65	H80 V23	H50 V50	H30 V30
Pigtail cable length	NA	30cm	NA	30cm	30cm
Antenna fixed connector	N-jack	N-jack	SMA jack	N-jack	N-jack
Surge protector for outdoors	Included	Included	---	Included	Included
Default Extension Cable Length	50cm	3M	3M	50cm	50cm
Default mounting configuration	Pole	Wall/ pole	Window/ wall	Wall/ pole	Wall/ pole
Antenna-kit weight (kg)	1.4Kg	1.04Kg	530g	380g	2.35Kg
Optional accessories	Ultra low loss cable For ANT24-CB series	Ultra low loss cable For ANT24-CB series	Ultra low loss cable For ANT24-CB series	Ultra low loss cable For ANT24-CB series	Ultra low loss cable For ANT24-CB series





*1.Extended range reference based on RF-Output Power 14dbm with default cable loss

*2.The transmission distance range might depend on the two same spec antennas with default cable loss

**HPBW: Half Power Beam Width. H : horizontal plane pattern, V : vertical plane pattern

The actual Indoor range will be effected by users' physical environment. The above figures are reference.

Indoor/ Outdoor Antenna Table:

				
Model Name	ANT24-1800	ANT24-1801	ANT24-1500	ANT24-2100
Signal directivity	Directional	Directional	Omni-directional	Directional
Application range	Outdoor	Outdoor	Outdoor	Outdoor
Gain (Without cable loss)	18dBi	18dBi	15dBi	21dBi
Approximate Range at 1 Mbps *	8Km	8Km	6Km	10Km
Approximate Range at 11 Mbps *	3Km	3Km	2.7Km	4.5Km
Half power Beam width **	H15 V15	H15 V15	H360 V6	H70 V24
Pigtail cable length	NA	NA	NA	NA
Antenna fixed connector	N-jack	N-jack	N-jack	N-jack
Surge protector for outdoors	Included	Included	Included	Included
Default Extension Cable Length	50cm	50cm	3M	3M
Default mounting configuration	Wall/ pole	Pole	Pole	Pole
Antenna-kit weight (Kg)	3.2Kg	4.22Kg	2.5Kg	4Kg
Optional accessories	Ultra low loss cable For ANT24-CB series	Ultra low loss cable For ANT24-CB series	Ultra low loss cable For ANT24-CB series	Ultra low loss cable For ANT24-CB series

*1.Extended range reference based on RF-Output Power 14dbm with default cable loss

*2.The transmission distance range might depend on the two same spec antennas with default cable loss

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