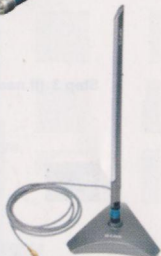
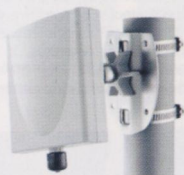
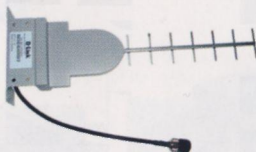
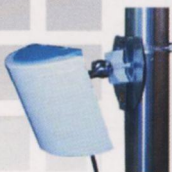


**D-Link**<sup>®</sup>  
Building Networks for People



# User's Guide

Version 2.02

ANT24-Series

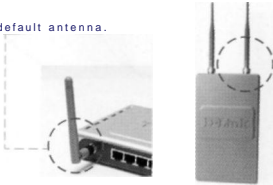
ANT70-Series

**D-Link Antenna Kits**

## D-Link Antenna-kit Installation Guide

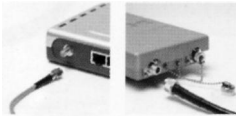
### Step 1

Remove the default antenna.

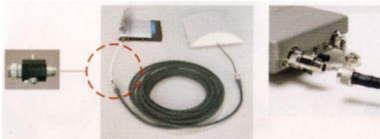


### Step 2

Connect the extension cable/antenna onto the external connector on device.



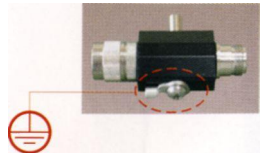
### Step 3 (If needed)



Install the surge protector. (You can install with optional ANT24 series low loss cables)

### Note:

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



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.

# D-Link Antenna-kit Installation Guide

## 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.



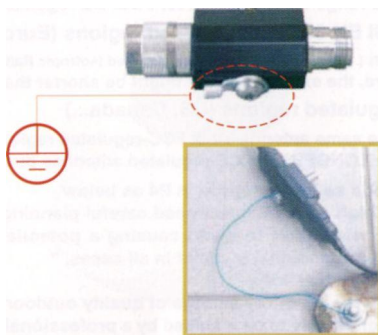
### Step 3

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.



# Regulations

## D-Link WLAN Antenna-kit

Extended range differentiation for FCC/ CE regulated regions

### CE ETSI EN 300 328 regulated regions (European countries)

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.

### 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 ! Please add some sentences in P4 as below

"Use of high gain antennas need careful planning to conform with EU regulations and extra consideration to avoid causing a potential health hazard, Please always seek qualified professional installer in all cases. "

"Outdoor Installations

Although D-Link offers a range of quality outdoor antennas, please note these devices are designed only to be installed by a professional as there are EU regulations that need to be considered. Cable lengths and quality will affect the antenna gain dramatically."

### EIRP limitaton:

		2.4GHz~2.5GHz	5.15GHz~5.35GHz	5.47-5.725	5.75GHz~5.875GHz
ETSI	point to multi-point	20dBm ave. 23dBm peak.	23 dBm	30dSm	X
	point to point				
FCC	point to multi-point	36dBm	23dBm	X	36dBm
	I point to point	30+6(antenna gain ) dBm then above 30dBm, one dB output power reduced, then 3dB antenna gain increased			30+23(airtermgain) then above 30dBm, one dB output power reduced, then 3dB antenna gain increased

! For outdoor use  $EIRP = \text{Effective, Isotropic Radiated Power}$   
 $= \text{Device Output Power} + \text{Antenna Gain} - \text{Cable Loss}$

### Cable Loss

Model	Cable Type	Length	Interface	Cable loss (dB) @ 2.4GHz	Cable loss(dB) @5GHz
ANT24-CB03N	LMR400	3m	N plug to N jack	1	1.75
ANT24-CB06N	LMR400	6m	N plug to N jack	1.85	2.7
ANT24-CB09N	LMR400	9m	N plug to N jack	2.6	3.8
ANT24-ODU03M	LMR200	0.3m	RP N plug to N plug	0.6	1.15
ANT24-ODU1M	LMR400	1m	RP N plug to N plug	0.6	1.15
ANT24-ODU3M	LMR400	3m	RP N plug to N plug	1	1.75
ANT24-DLK3M	LMR200	3m	RP SMAplug to N plug	2	3.45

#### Note:

- The loss value includes two connectors ( around 0.3-0.4dB @ 2.4GHz, 0.39-0.52dB @5GHz ).
- The longer cable you use, the more attenuation it causes, therefore, the extended range might be shorten then a normal link with default cables.
- To comply with EU regulation, please use longer cables which can cause enough attenuation value.
- For more detail of connectors type, please refer to the appendix page.(P.34)

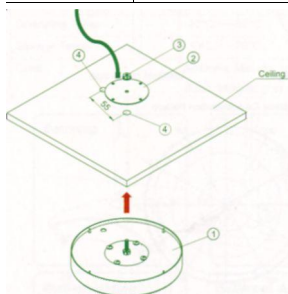
# D-Link ANT24-0401 Ceiling Mount Antenna

## Electrical specification

Frequency band	2400-2500MHz
Antenna gain	2.5-3.7dBi
VSWR	2.0 max
Polarization	Linear vertical
HPBW / H-plane	360
HPBW / E-plane	58 -75
Impedance	50 Ohms
Dimensions	0132x42 mm
Weight	110g without joint

## Environmental & Mechanical Characteristics

Temperature	-10°C to 55°C
Humidity	100% @ 25°C
Lightning protection	DC ground
Radome color	white
Radome material	ABS
Weight	100gw
Dimensions	0132 x 42 mm

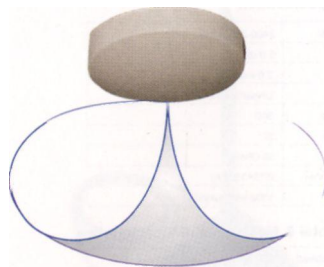


### Installation Note:

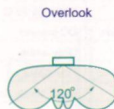
- Carefully remove the antenna from the package.
- Take out the Washer ( 1 pes ) from the package
- Take out the Flange washer ( 1 pes ) as well.
- Drill 2 holes through the ceiling board, one to fix the antenna main body with washer, another for the antenna SMA connector linked onto extension cable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

### Package Contents:

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

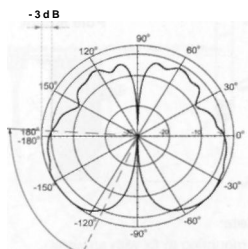


Horizontal coverage

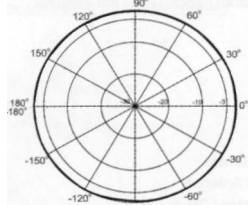


Vertical coverage

Overlook



Vertical Pattern@2.45 GHz



Horizontal Pattern @ 2.45 GHz

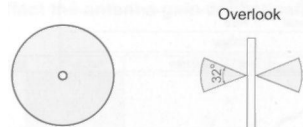
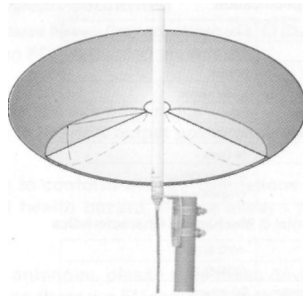
# D-Link ANT24-0500 Indoor/Outdoor Omni-Directional Antenna

## Electrical specification

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	019><330mm
Weight	180g without joint

## Environmental & Mechanical Characteristics

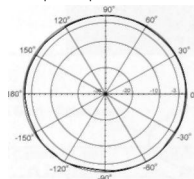
Survival wind speed	180 km/hr
Temperature	-40°C to +80°C
Humidity	100% @ 25°C
Lightning protection	DC ground
Radome color	Gray-white
Radome materia)	Fiberglass
Radiator material	Micro stripe line
Weight	0.3kgw
Dimensions	330x019 mm



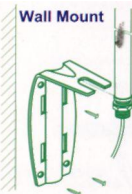
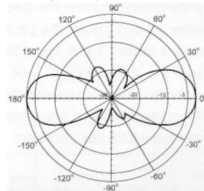
Horizontal coverage

Vertical coverage

H-plane Co-polarization Pattern

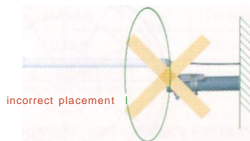


V-plane Co-polarization Pattern



## 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.



## Package Contents:

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

## A CAUTION:

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

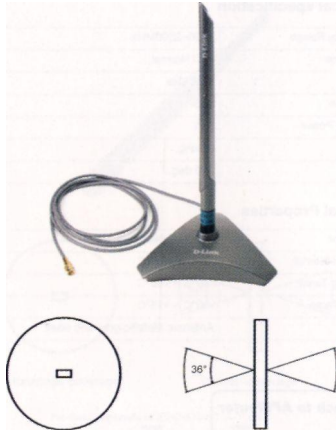
# D-Link ANT24-0501 Indoor Omni-Directional Antenna

## Electrical specification

Frequency Range	2400~2500MHz
Impedance	50n Normal
VSWR	1.92 Max
Return Loss	-10 dB Maximum
Antenna Structure	Helix antenna
Peak Gain (w/o cable loss)	SdBi
Admitted Power	1 w
Cable loss( 1.5m)	2.1dB@2.45GHz
E-Plane	36 deg.
H-Plane	360 deg.

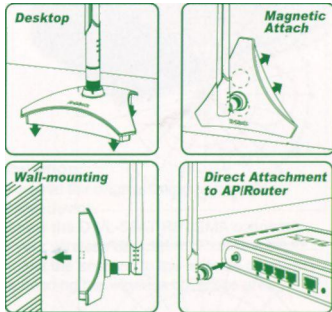
## Physical Properties

Cable	RG-178 500
Cable length	1.5 M
Cable color	Gray
Connector	Reverse SMA plug
Antenna Material	ABS, ABS+PC
Operating Temp	-20°C - +65°C
Storage Temp	-30°C - +75°C
Color	Antenna: Metallic gray and silver Base: Metallic gray

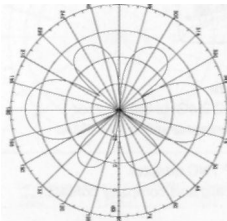


Horizontal coverage

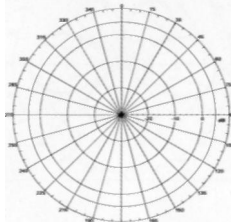
Vertical coverage



Far-field amplitude of 1



Far-field amplitude of D-link SdBi ~1020 msi



## Package Contents

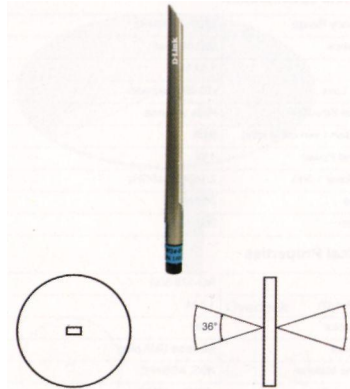
- One ANT24-0501 2.4GHz indoor SdBi omni-directional Antenna with 1.5M extension cable and RP-SMA Jack connector
- One RP-SMA/ RP-TNC adaptor
- One registration card and international office guide
- Mounting kit includes:
  - Two Crews
  - Two plastic fixings
  - One sticker



# D-Link ANT24-0501C Indoor Omni-Directional Antenna

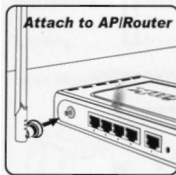
## Electrical specification

Frequency Range	2400-2500MHZ
Impedance	50Ω Normal
VSWR	1.92 Max
Peak Gain	5dBi
Admitted Power	1 W
E-Plane	36 deg.
H-Plane	360 deg.
<b>Physical Properties</b>	
Connector	Reverse SMA plug
Antenna Material	ABS,ABS+PC
Operating Temp	-20°C - +65°C
Storage Temp	-30°C - +75°C
Color	Antenna: Metallic gray and silver



Horizontal coverage

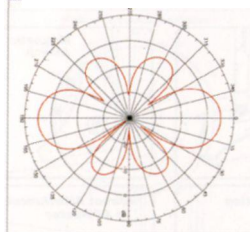
Vertical coverage



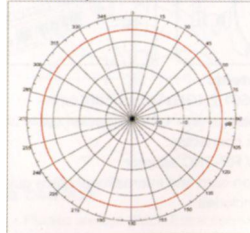
## Package Contents

- One ANT24-0501C 2.4GHz 5dBi indoor omni-directional antenna with a RP-SMA plug connector
- One RP SMA/ RP TNC adapter
- One registration card and company contact guide

Far-Field amplitude..r [>-lmk-Ullli-Ha-1020 nsi



Far-field amplitude of D-link-5dBi-va-1020 nsi

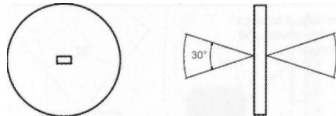




# D-Link DWL-50AT Indoor Omni-Directional Antenna

## Electrical specification

Frequency band	2400-2500MHz
Antenna gain	5.0dBi Typical
VSWR	2.0:1 Max.
Polarization	Linear
HPBW/ H-plane	360°
HPBW/E-plane	30 degree
Impedence	50 Ohms nominal
Dimensions HxWxD	197 mm(length)
Weight	29.5gw

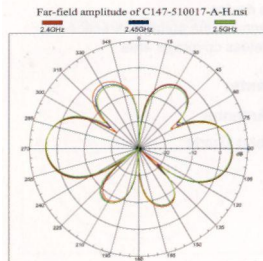
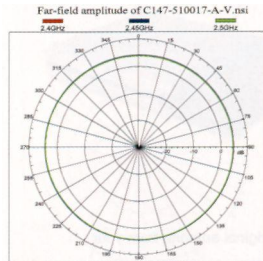


Horizontal coverage

Vertical coverage

## 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.



# D-Link DWL-R60AT Indoor Directional Antenna

## Electrical specification

Frequency band	2400-2500MHz
Antenna gain	6.0dBi Typical
VSWR	2.0:1 Max.
Polarization	Linear
HPBW / H-plane	70°
HPBW/E-plane	85°
Impedance	50 Ohms nominal
Dimensions HxWxD	80x85x12.8 mm
Weight	75gw

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

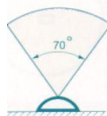


### Installation:

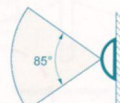
1. Remove the original antenna from your wireless device.
2. Screw the DWL-R60AT RP- SMA connector into your wireless device.
3. Adjust the antenna to the suitable direction for extending the wireless coverage area.

### Package Contents:

- DWL-R60AT Antenna
- Quick Installation Guide

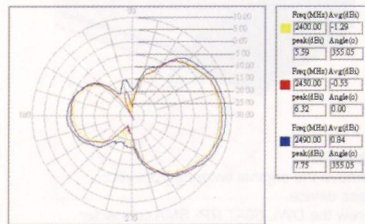


Horizontal coverage

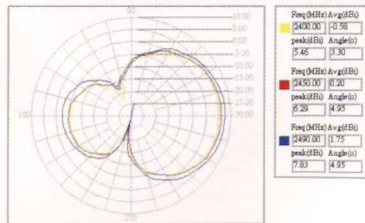


Vertical coverage

### Test Mode: H Plane



### Test Mode: E Plane



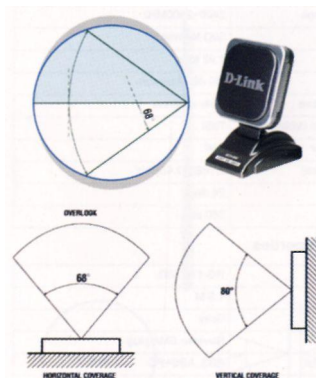
# D-Link ANT24-0600 Indoor Directional Antenna

## Electrical specification

Frequency Range	2400-2500MHZ
Impedance	50Ω Normal
VSWR	1.92 Max
Return Loss	-10 dB Maximum
Antenna Structure	Patch antenna
Peak Gain ( w/o cable loss)	6.0 dBi @ 2.45GHz (typical)
Admitted Power	1 W
Cable loss( 1.5m)	2.1dB@2.45GHz
E-Plane	68°
H-Plane	80°

## Physical Properties

Cable	Filotex 50Ω
Antenna Cover	ABS
Antenna Base	PC
Operating Temp	-20°C - +65°C
Storage Temp	-30°C - +75°C
Color	White



## Desktop

### Magnetic Attach

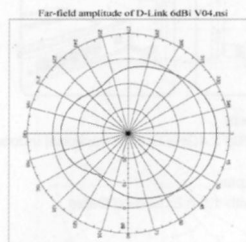
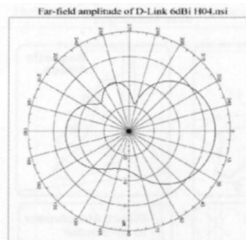


## Wall Mounting



## Package Contents

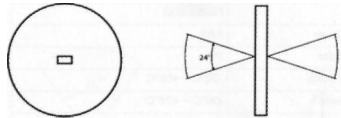
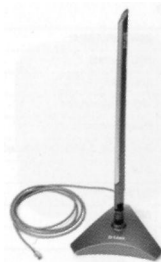
- One ANT24-0600 2.4GHz indoor 6dBi directional Antenna with 1.5 Filotex cable and RP-SMA Jack connector
- One RP-SMA/ RP-TNC adaptor
- One User's QIG
- Two Crews
- Two plastic fixings
- One sticker



# D-Link ANT24-0700 Indoor Omni-Directional Antenna

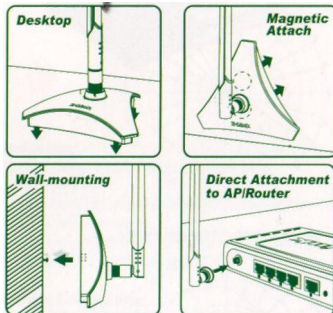
## Electrical specification

Frequency Range	2400-2500MHz
Impedance	50Ω Normal
VSWR	1.92 Max
Return Loss	-10 dB Maximum
Antenna Structure	Helix antenna
Peak Gain ( w/o cable loss)	7dBi
Admitted Power	1 W
Cable loss( 1.5m)	2.1dB@2.45GHz
E-Plane	24 deg.
H-Plane	360 deg.
<b>Physical Properties</b>	
Cable	RG-178 50Ω
Cable length	1.5 M
Cable color	Gray
Connector	Reverse SMA plug
Antenna Material	ABS.ABS+PC
Operating Temp	-20°C - +65°C
Storage Temp	-30°C - +75°C
Color	Antenna: Metallic gray and silver Base: Metallic gray

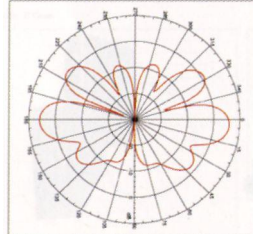


Horizontal coverage

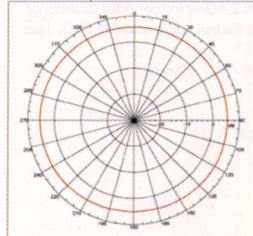
Vertical coverage



Far-field amplitude of D-link-7dBi-HI-1020.nsi



Far-field amplitude of D-link-7dBi-vv-1020.nsi



## Package Contents

- D-Link ANT24-0700 2.4GHz Omni-Directional Indoor Antenna
- SMA to TNC Adapter
- Magnetic Base with 1.5m Extension Cable
- Mounting Kit
- Installation Guide

# D-Link ANT24-0700C

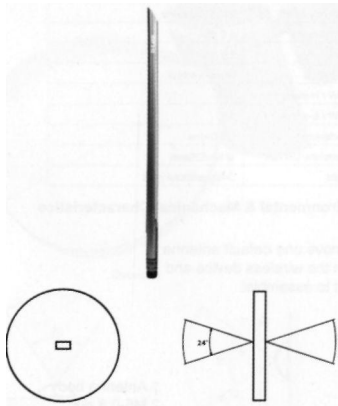
## Indoor Omni-Directional Antenna

### Electrical specification

Frequency Range	2400-2500MHZ
Impedance	50Ω Normal
VSWR	1.92 Max
Return Loss	10 dB Maximum
Antenna Structure	Helix antenna
Peak Gain (w/o cable loss)	7dBi
Admitted Power	1 W
Cable lossf 1.5m)	2.1dB@2.45GHz
E-Plane	24 deg.
H-Plane	360 deg.

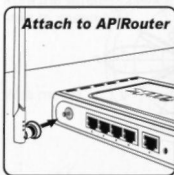
### Physical Properties

Cable	RG-178 500
Cable length	1.5 M
Cable color	Gray
Connector	Reverse SMA plug
Antenna Material	ABS,ABS+PC
Operating Temp	-20°C - +65°C
Storage Temp	-30 C - +75°C
Color	Antenna: Metallic gray and silver Base: Metallic gray



Horizontal coverage

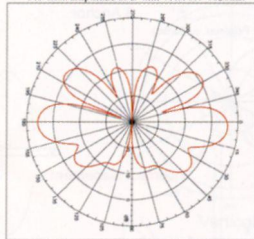
Vertical coverage



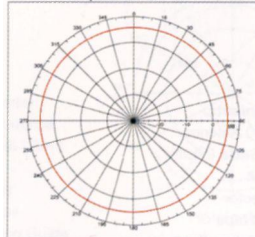
### Package Contents

- One ANT24-0700C 2.4GHz 7dBi indoor omni-directional antenna with a RP-SMA plug connector
- One RP SMA/ RP TNC adapter
- One registration card and company contact guide

Far-field amplitude of D-link-7dBi-H1-1020.nsi



Far-field amplitude of D-link-7dBi-v-1020.nsi



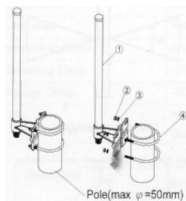
# D-Link ANT24-0800 Indoor/Outdoor Omni-Directional Antenna

## Electrical specification

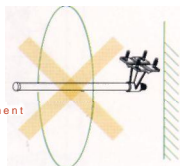
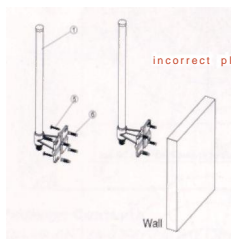
Frequency band	2400-2500MHz
Antenna gain	8.0 dBi
VSWR	2.0 max
Polarization	Linear vertical
HPBW / H-plane	360°
HPBW / E-plane	15°
Impedence	50 Ohms
Dimensions LxWxH	019x52x0mm
Weight	340g without joint

## Environmental & Mechanical Characteristics

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

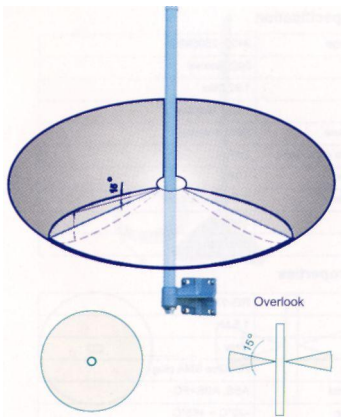


1. Antenna body
2. M5-0.8 nut
3. M5 Washer
4. M5 U-Type Screw
5. Screw
6. Anchor



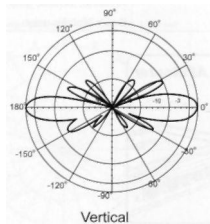
## Package Contents:

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

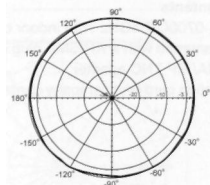


Horizontal coverage

Vertical coverage



Vertical



Horizontal

## A CAUTION:

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

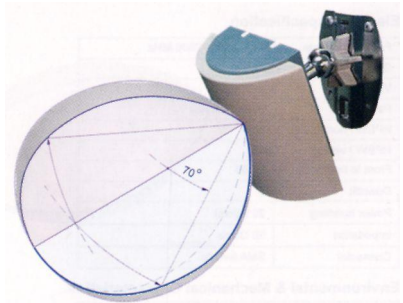
# D-Link ANT24-0801 Indoor/Outdoor Directional Panel Antenna

## Electrical specification

Frequency	2400-2500MHZ
Gain	8.5 dBi
VSWR	1.5 : 1 Max
Polarization	Linear, vertical
HPBW/ horizontal	65°
HPBW/vertical	65°
Front to back ratio	15dB
Power handling	50 W (cm)
Impedance	50 Ohms
Connector	N - female

## Environmental & Mechanical Characteristics

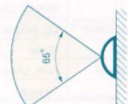
Survival wind speed	216 km/hr
Temperature	-40 C to +80 C
Humidity	95% @ 55 C°
Lightning protection	DC ground
Radome color	Gray-white
Radome material	ABS, UV resistant
Housing material	AL6063
Weight	0.3 kgw
Dimensions	120 x 120 x 43 mm



Overlook

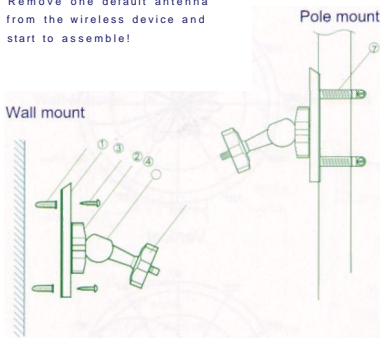


Horizontal coverage



Vertical coverage

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



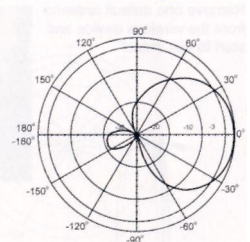
## Installation Note:

The following parts are needed for wall mounting:

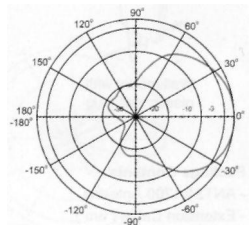
1. plastic wall anchors (4) screws
2. wall screws
3. mounting base
4. locking wheel on the mounting base
5. adjustable pivot arm
6. locking wheel for pivot arm

## Package Contents:

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



Vertical



Horizontal



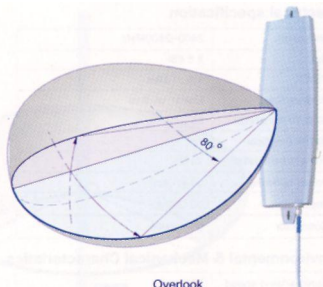
# D-Link ANT24-1200 Indoor Directional Panel Antenna

## Electrical specification

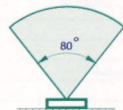
Frequency range	2400 MHz -2500 MHz
Gain	12 dBi
VSWR	1.5:1 Max
Polarization	Linear, vertical
HPBW / horizontal	80°
HPBW / vertical	23°
Front to back ratio	15 dB
Downtilt	0°
Power handling	20 W(cm)
Impedance	50 Ohms
Connector	SMA female

## Environmental & Mechanical Characteristics

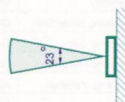
Survival wind speed	180 km/hr
Temperature	-10°C to +55°C
Humidity	95% @ 55°C
Lightning protection	DC ground
Radome color	White
Radome material	ABS, UV resistant
Weight	19 kgw
Dimensions	330 x 93 x 20.7 mm



Overlook

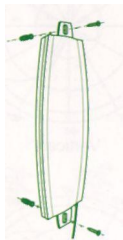


Horizontal coverage



Vertical coverage

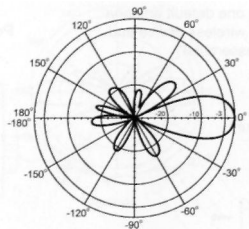
Remove one default antenna from the wireless device and start to assemble!



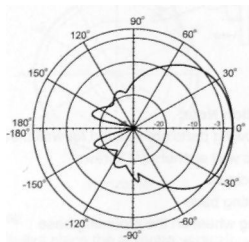
Wall mount with plastic wall plug



Window suction mount with window suction cup



Vertical



Horizontal

## Package Contents:

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

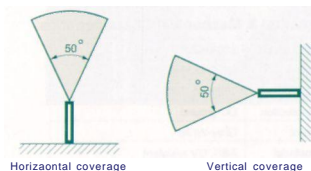
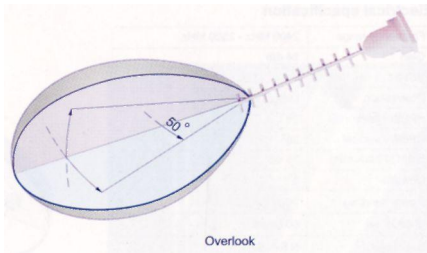
# D-Link ANT24-1201 Outdoor Directional Yagi Antenna

## Electrical specification

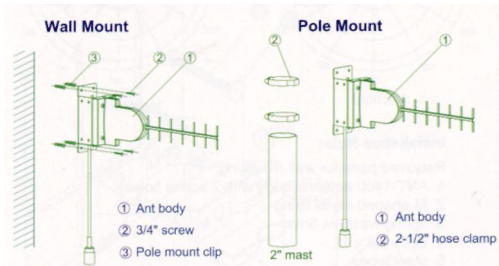
Frequency range	2400 MHz - 2500 MHz
Gain	12 dBi
VSWR	1.5 : 1 Max
Polarization	Linear, vertical
HPBW / horizontal	50°
HPBW/vertical	50°
Front to back ratio	15 dB
Downtilt	0°
Power handling	10 W (cm)
Impedance	50 Ohms
Connector	N female
Cable	UL 198; 32cm

## Environmental & Mechanical Characteristic

Survival wind speed	216 km/hr
Temperature	-40° C to +80° C
Humidity	95% @ 25 C°
Lightning protection	DC ground
Radome color	Gray-White
Radome material	ABS, UV resistant fire retarded
Weight	0.3 kgw
Dimensions	280 x 87x 48 mm

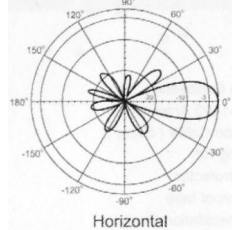
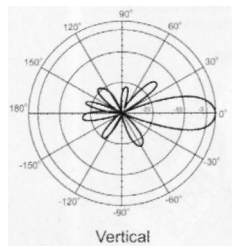


Remove one default antenna from the wireless device and start to assemble!



## Package Contents:

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



# D-Link ANT24-1400 Outdoor Directional Panel Antenna

## Electrical specification

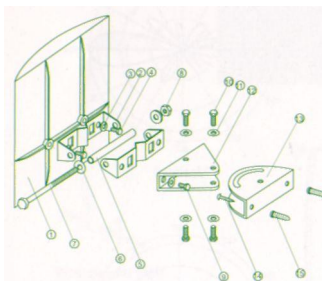
Frequency range	2400 MHz- 2500 MHz
Gain	14 dBi
VSWR	1.5 : 1 Max
Polarization	Linear, vertical
HPBW / horizontal	30°
HPBW / vertical	30°
Front to back ratio	15dB
Down tilt	0°
Power handling	10 W (cm)
Impedance	50 Ohms
Connector	N female
Cable	ULA198

## Environmental & Mechanical Characteristic

Survival wind speed	216 km/hr
Temperature	-40C to +80°C
Humidity	100% @ 25°C
Lightning protection	DC ground
Radome color	Gray-White
Radome material	ABS, UV resistant
Weight	0.825 kgw
Dimensions	240 x240x 69.5 mm

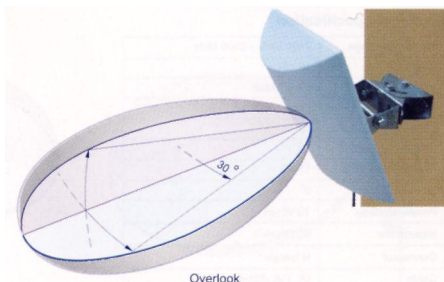
Remove one default antenna from the wireless device and start to assemble!

## Wall mount

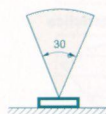


## Package Contents:

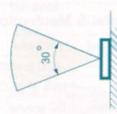
- ANT24-1400 Antenna
- Extension Cable ( 50cm )
- Mounting Kit
- Surge protector
- Water-proof tape
- Quick Installation Guide



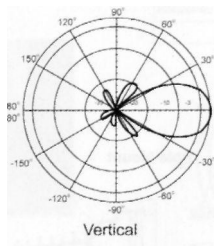
Overlook



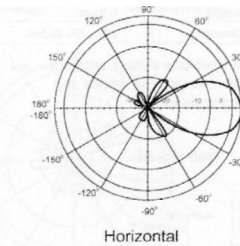
Horizontal coverage



Vertical coverage



Vertical



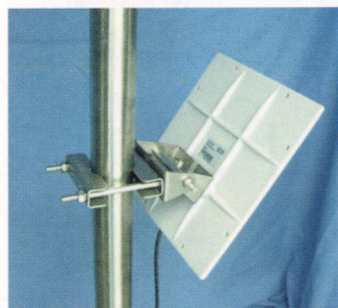
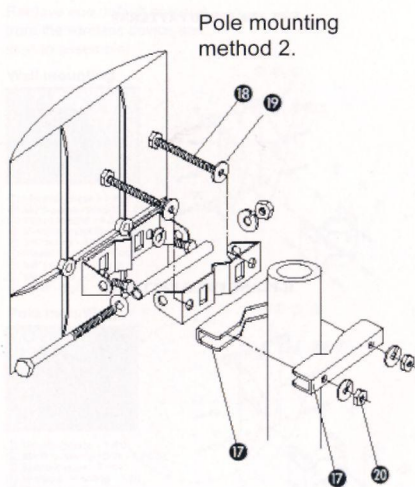
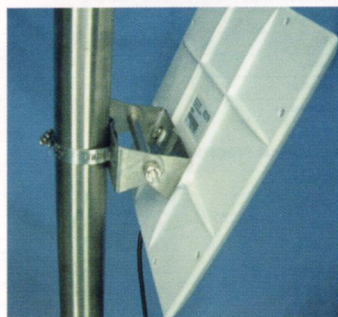
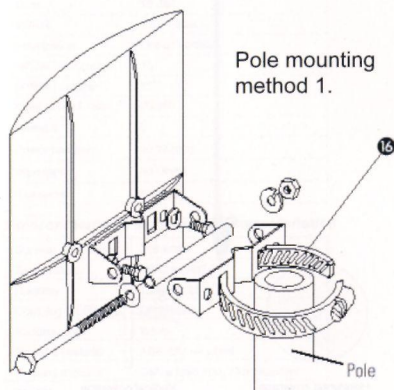
Horizontal

## 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 M8x 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

# D-Link ANT24-1400(cont.) Outdoor Directional Panel Antenna



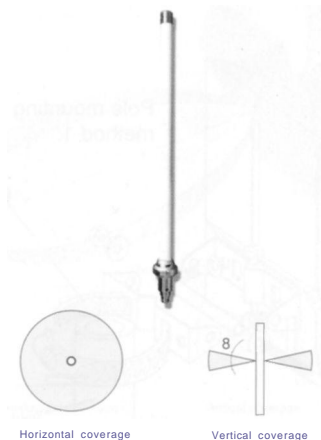
# D-Link ANT24-1500 Outdoor Omni Directional Panel Antenna

## Electrical specification

Frequency Range	2400-2500 MHz
Impedance	50 OHMS $\pm$ 50
SWR	1=1.3 Max
Gain	15 d $\times$
Radiation	Omni directional
Polarization	Vertical

## Mechanical Properties

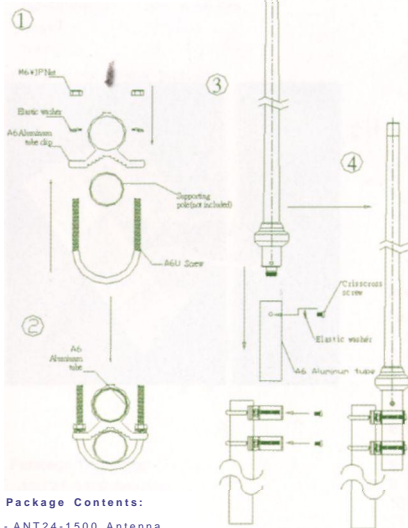
Connector	N (FEMALE)
Weight	1050 g
Radiator	Copper
Radome	Fiberglass
Mounting	Zinc
Guide Pipe	Aluminum Alloy
Bracket	Aluminum Alloy



Horizontal coverage

Vertical coverage

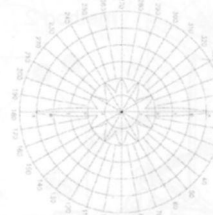
## Magnetic Attach



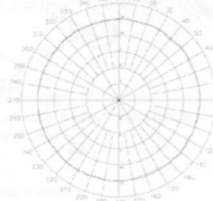
## Package Contents:

- ANT24-1500 Antenna
- DHF extension cable(3m, N male-RPSMA)
- Mounting kit
- Waterproof tape
- Quick Installation Guide

## E-PLANE FIELD PATTERNS



## H-PLANE FIELD PATTERNS



# D-Link ANT24-1800 Outdoor Directional Panel Antenna

## Electrical specification

Frequency range	2400 MHz • 2500 MHz
Gain	18dBi
VSWR	1.5:1 Max
Polarization	Linear, vertical
HPBW / horizontal	15°
HPBW / vertical	15
Front to back ratio	26 dB
Downhill	0°
Power handling	50 W (cm)
Impedance	50 Ohms
Connector	N female

## Environmental & Mechanical Characteristics

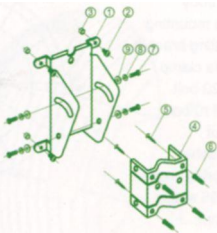
Survival wind speed	216km/hr
Temperature	-40°C to +80°C
Humidity @ 25°C	100% @ 25°C
Lightning protection	DC ground
Radome color	White
Radome material	ABS, U V resistant
Housing material	Galvanized Iron, Fire retardant
Weight	1.6 kgw
Dimensions	360 K 360x 16 mm*

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

### Wall mounting



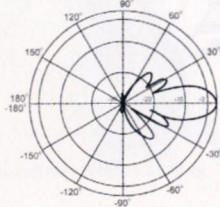
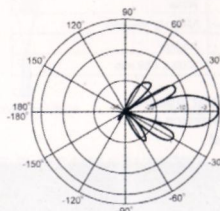
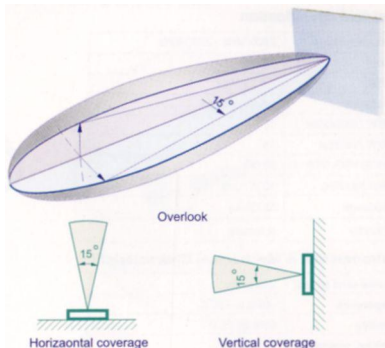
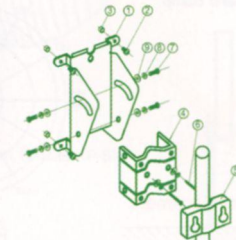
- ① Mounting base - 1 PC
- ② M4\*8 screw+W+SW - 4 PCS
- ③ Space keeper - 4 pcs
- ④ M-shape mounting - 1 pc
- ⑤ 3/4" screw - 4 pcs
- ⑥ Plastic wallplug - 4 pcs
- ⑦ M6\*16 screw - 4 pcs
- ⑧ M6 S/W - 4 pcs
- ⑨ M6 W - 4 pcs



### Pole mounting



- ① Mounting base - 1 PC
- ② M4\*8 screw+W+SW - 4 PCS
- ③ Space keeper - 4 pcs
- ④ M-shape mounting - 1 pc
- ⑤ Pole mount clip - 1 pc
- ⑥ M6\*50 screw - 2 pcs
- ⑦ M6\*16 screw - 4 pcs
- ⑧ M6 S/W - 4 pcs
- ⑨ M6 W - 4 pcs



### Package Contents:

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

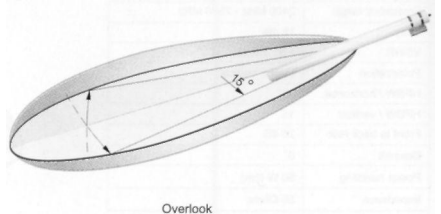
# D-Link ANT24-1801 Outdoor Directional Panel Antenna

## Electrical specification

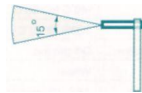
Frequency range	2400 MHz-2700 MHz
Gain	18 dBi
VSWR	1-5: 1 Max
Polarization	Linear, vertical
HPBW/ horizontal	15°
HPBW / vertical	15°
Front to back ratio	25 dB
Power handling	10 W(cm)
Impedance	50 Ohms
Connector	N female

## Environmental & Mechanical Characteristics

Survival wind speed	216 km/hr
Temperature	-40°C to +80°C
Humidity	95% @ 25 C°
Lightning protection	DC ground
Radome color	White
Radome material	ABS, UV resistant
Weight	3.5 kgw
Dimensions	1000x 089 mm

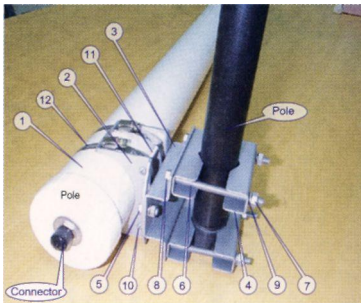


Horizontal covers



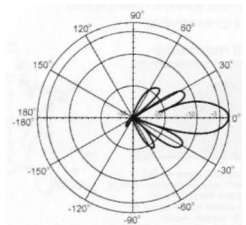
Vertical coverage

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

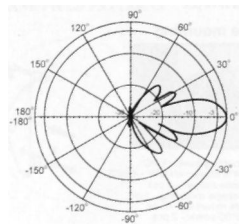


### Installation Note:

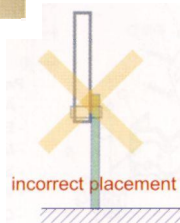
1. Main body
2. Angle mounting
3. Mounting bracket
4. 2" pole clamp
5. M8x 20 bolt
6. M8x 110 bolt
7. M8 nut
8. M8 washer
9. M8 spring washer
10. M6-95 screw
11. M6 nut
12. Band clamp



Vertical



Horizontal



### Package Contents:

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



# D-Link ANT24-2100

## Outdoor Directional Antenna

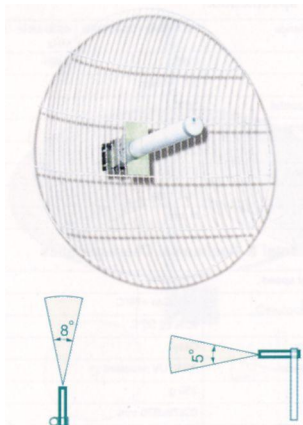
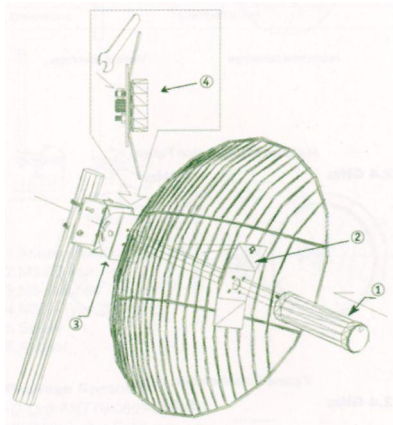
### Electrical specification

Frequency Range	2400-2500 MHz
Impedance	50 OHMS $\pm$ 50
VSWR	1 = 1.5 Max
Gain	21 dBi
Radiation	Directional
Polarization	Vertical

### Physical Properties

Connector	N-FEMALE
Weight	4.21kg
Radiator	Steel
Radome	Fiberglass
Size	cp610mm * 150mm
Bracket	Stainless Steel

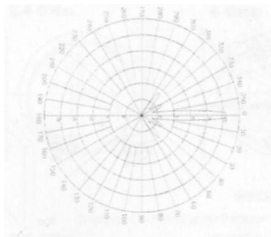
### Magnetic Attach



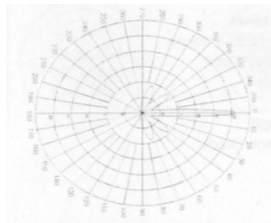
Horizontal coverage

Vertical coverage

### E-PLANE FIELD PATTERNS



### H-PLANE FIELD PATTERNS



### Package Contents:

- ANT24-2100 Antenna
- DHF extension cable(3m, N male/RP-SMA)
- Mounting kit
- Waterproof tape
- Quick Installation Guide

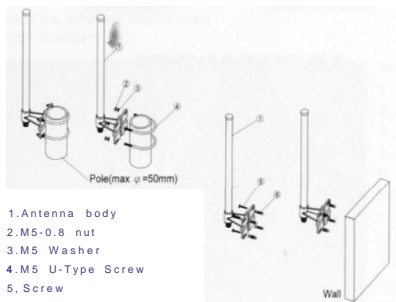
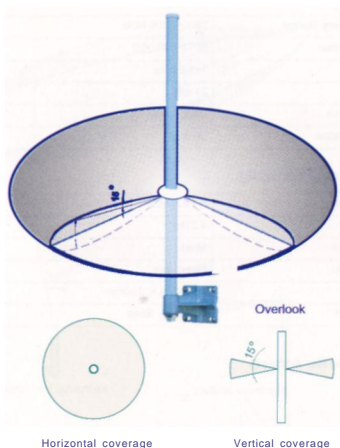
# D-Link ANT70-0800 Dual-Band Omni-Directional Antenna

## Electrical specification

Frequency Range	2400 MHz-2500 MHz	4900 MHz-5470 MHz
Gain	8dBi	8dBi
VSWR	2.0 : 1 Max.	
HPBW / horizontal	360°	
HPBW / vertical	15°	
Polarization	Linear, vertical	
Power handling	5 W(cw)	
Impedance	50 Ohms	
Connector	N Jack	

## Environmental & Mechanical Characteristics

Survival wind speed	216km/hr
Temperature	-40°C to +70°C
Humidity	95% @ 55 C
Radome color	Gray
Radome material	ABS, UV resistant
Weight	350 g
Dimensions	80x78x870 mm

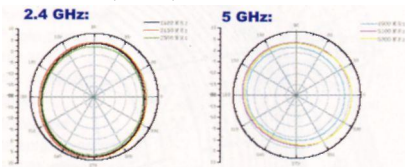


1. Antenna body
2. M5-0.8 nut
3. M5 Washer
4. M5 U-Type Screw
5. Screw
6. Anchor

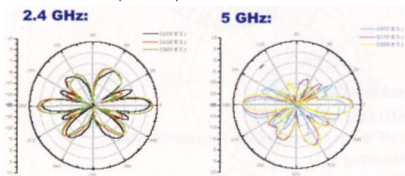
## Package Contents

- D-Link ANT70-0800 Antenna
- Extension Cable(<50cm)
- Surge Protector
- Mounting Kit
- Water-proof tape
- Quick Installation Guide

## H-plane Co-polarization Pattern



## V plane Co-polarization Pattern



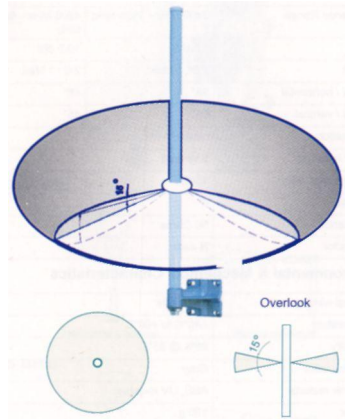
# D-Link ANT70-0801 Dual-Band Omni-Directional Antenna

## Electrical specification

Frequency Range	2400 MHz-2500 MHz	5400 MHz- 5875 MHz
Gain	8dBi	8dBi
VSWR	2.0 : 1 Max.	
HPBW / horizontal	360°	
HPBW/vertical	15°	
Polarization	Linear, vertical	
Power handling	5 W(cw)	
Impedance	50 Ohms	
Connector	N Jack	

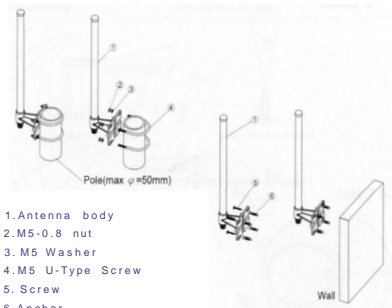
## Environmental & Mechanical Characteristics

Survival wind speed	216 km/hr
Temperature	- 40°C to +70°C
Humidity	95% @ 55 X
Radome color	Gray
Radome material	ABS, UV resistant
Weight	350 g
Dimensions	80x78x870 mm



Horizontal coverage

Vertical coverage

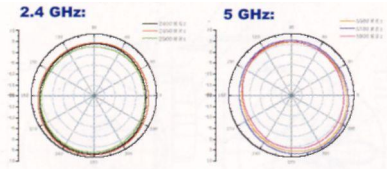


1. Antenna body
2. M5-0.8 nut
3. M5 Washer
4. M5 U-Type Screw
5. Screw
6. Anchor

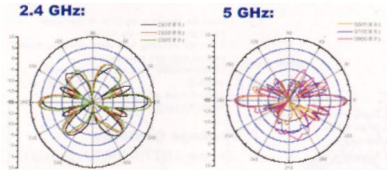
## Package Contents

- D-Link ANT70-0801 Antenna
- Extension Cable(50cm)
- Surge Protector
- Mounting Kit
- Water-proof tape
- Quick Installation Guide

## H-plane Co-polarization Pattern



## V-plane Co-polarization Pattern



# D-Link ANT70-1000 Dual-Band Directional Panel Antenna

## Electrical specification

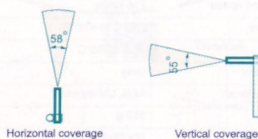
Frequency Range	2400 MHz- 2500 MHz	4900 MHz - 5875 MHz
Gain	8.5 dBi	10.5 dBi
VSWR	2.0 : 1 Max.	2.0 : 1 Max.
HPBW/horizontal	58°	45°
HPBW/vertical	55°	45°
Polarization	Linear, vertical	
Power handling	5W(cw)	
Front to back ratio	15dB	
Down tilt	0°	
Impedance	50 Ohms	
Connector	N Jack	

## Environmental & Mechanical Characteristics

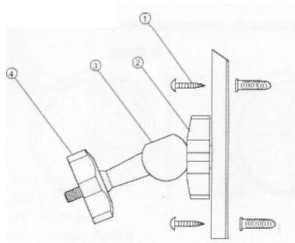
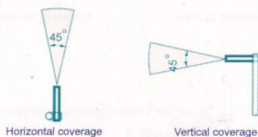
Survival wind speed	216 km/hr
Temperature	- 40X to +80°C
Humidity	95% @ 55X
Radome color	Gray
Radome material	ABS, UV resistant
Weight	150g
Dimensions	114x124x40 mm



### 2.4 GHz:



### 5 GHz:



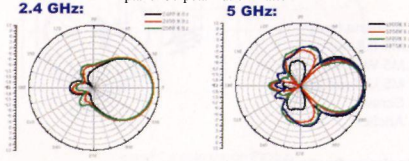
1. Insert the tapping screw ① to fix the whole set of universal joint on the wall.
2. Rotate the mounting base of the antenna to connect antenna body and universal joint.
3. Fix the mounting base by rotate the rotating handle ②.
4. Adjust the ball joint ③ to the convenient angle. Rotate the handle to fix the ball joint ④.

- 1. Tapping Screw
- 2. Rotate Handle
- 3. Ball Joint
- 4. Rotating Handle

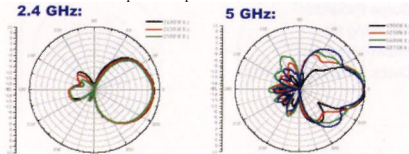
## Package Contents

- D-Link ANT70-1000 Antenna
- Extension Cable(50cm)
- Surge Protector
- Mounting Kit
- Water-proof tape
- Quick Installation Guide

## H-plane Co-polarization Pattern



## V-plane Co-polarization Pattern



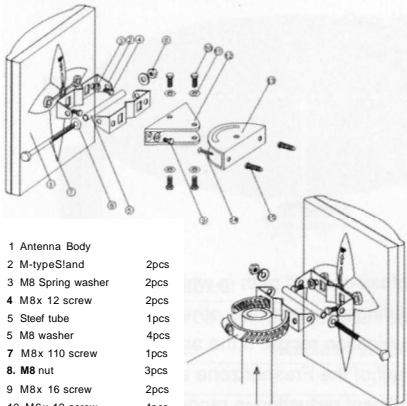
# D-Link ANT70-1800 Dual-Band Directional Panel Antenna

## Electrical specification

Frequency Range	2400 MHz-2500 MHz	4900 MHz - 5875 MHz
Gain	14dBi	15 dBi
VSWR	2.0:1 Max.	2.0 : 1 Max.
HPBW / horizontal	30°	15°
HPBW / vertical	30°	15°
Polarization	Linear, vertical	
Power handling	10 W(icw)	
Front to back ratio	15dB	
Down tilt	0°	
Impedance	50 Ohms	
Connector	N Jack	

## Environmental & Mechanical Characteristics

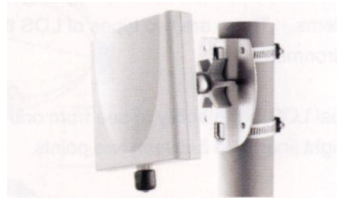
Survival wind speed	216km/hr
Temperature	- 40°C to +80°C
Humidity	95% @ 55X
Radome color	Light Gray
Radome material	ABS, UV resistant
Weight	400 g
Dimensions	200 x218x50 mm



- 1 Antenna Body
- 2 M-type Stand 2pcs
- 3 M8 Spring washer 2pcs
- 4 M8x 12 screw 2pcs
- 5 Steel tube 1pcs
- 5 M8 washer 4pcs
- 7 M8x 110 screw 1pcs
- 8. M8 nut 3pcs
- 9 M8x 16 screw 2pcs
- 10 M6x 12 screw 4pcs
- 11 M6 washer 4pcs
- 12 Triangle stand
- 13. Man stand
- 14 Screw 2pcs
- 15 Plastic conical anchor 2pcs
- 16 Hose Clamp 2-1/2"

### Package Contents

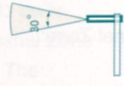
- D-Link ANT70-1800 Antenna
- Extension Cable(50cm)
- Surge Protector
- Mounting Kit
- Water-proof tape
- Quick Installation Guide



### 2.4 GHz:



Horizontal coverage

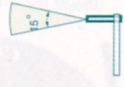


Vertical coverage

### 5 GHz:



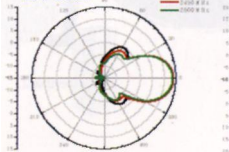
Horizontal coverage



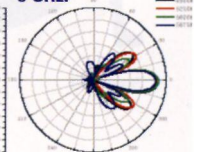
Vertical coverage

### H-plane Co-polarization Pattern

#### 2.4 GHz:

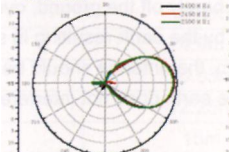


#### 5 GHz:

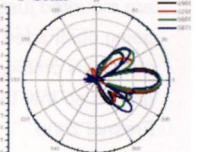


### V-plane Co-polarization Pattern

#### 2.4 GHz:



#### 5 GHz:



## Line-of-Sight (LOS)

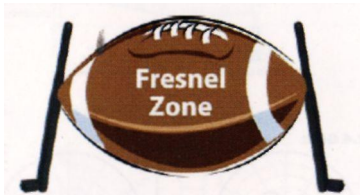
Visual and RF Line-of-Sight ( LOS ) between the sending and receiving antennas is essential in achieving long range in wireless communication systems. There are two types of LOS that are generally used to describe an environment:

Visual LOS is the ability to see from one site to the other. It requires only a straight liner path between two points.

RF LOS requires not only visual LOS, but also a football-shaped path free of obstacles for data to optimally travel from one point to another.

Fresnel Zone:

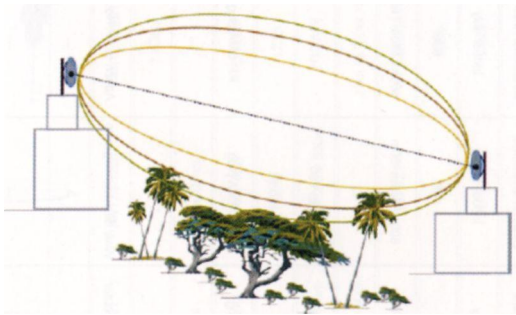
The Fresnel Zone can be thought of as a football-shaped tunnel between two sites that provides a path for RF signals.



Antenna 1

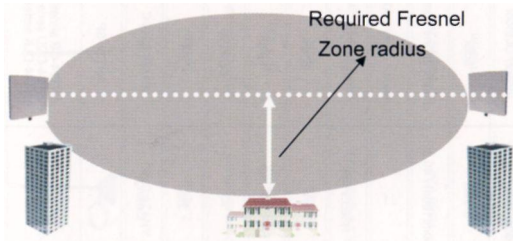
Antenna 2

In order to achieve the greatest range, the football-shaped path in which radio waves travel must be free of obstructions. Buildings, trees or any other obstacles in the path will decrease the communication range. If the antennas are mounted just barely off the ground, over half of the Fresnel zone ends up being obstructed by the earth resulting in significant reduction in range. To avoid this problem, the antenna should be mounted high enough off of the ground so that the earth does not interfere with the central radius of the Fresnel zone.



How far above the ground and other obstacles the antennas need to be is determined by the radius of the Fresnel zone. The radius of the Fresnel Zone depends upon the frequency and distance between the two antennas. The following table provides approximate Fresnel zone radius:

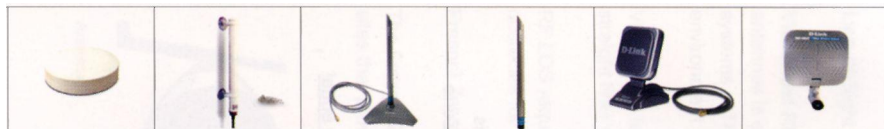
In order to have LOS clearance, the combined antenna height should be equal to or at least 70% of the radius of the Fresnel zone.



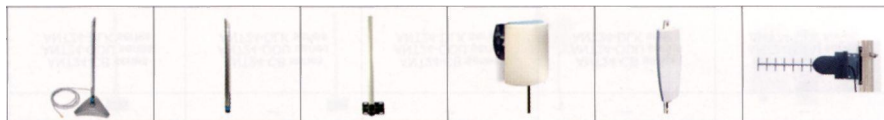
Fresnel Zone Radius:

Range Distance between antennas	Required Fresnel Zone Radius ( 2.4GHz Radius)	Required Fresnel Zone Radius ( 5GHz Radius)
300m	3.06m	2.12m
1.6Km	7.07m	4.9m
8Km	15.81m	10.95m
10Km	17.68m	12.25m
15Km	21.65m	15m

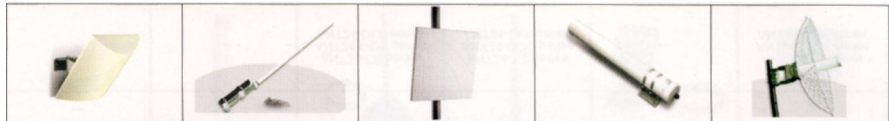




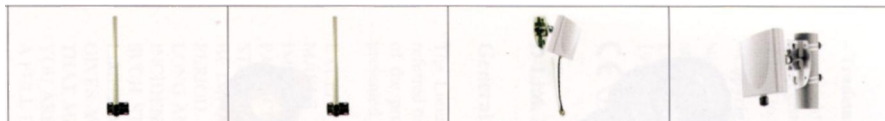
Model Name	ANT24-0401	ANT24-0500	ANT24-0501	ANT24-0501C	ANT24-0600	DWL-R60AT
Frequency	2.4GHz	2.4GHz	2.4GHz	2.4GHz	2.4GHz	2.4GHz
Signal directivity	Omni-directional	Omni-directional	Omni-directional	Omni-directional	Directional Antenna	Directional Antenna
Application range	Indoor ceiling only	Indoor/ Outdoor	Indoor only	Indoor only	Indoor only	Indoor only
Gain (Without cable loss)	3.5dBi	5dBi	5dBi	5dBi	6dBi	6dBi
Approximate Range at 1 / 11 / 54Mbps ( Works with Indoor AP )	250m/100m /40 m	500m/ 250m/ 60m	500m/ 200m/ 50m	550m/ 250m/ 60m	600m/ 350m /80m	600m/ 350m / 80m
Approximate Range at 1/11 /54Mbps (Works with Outdoor AP)	-	1.5Km/1.3Km/ 200m	-			
Half Power Beam width	H360 V120	H360 V32	H360 V36	H360 V36	H68 V80	H70 V85
Pigtail cable length		30cm	150cm		150cm	
Antenna fixed connector	RP-SMA jack	N-jack	RP-SMA plug	RP-SMA plug	RP-SMA plug	RP-SMA plug
Surge protector for outdoors		Optional				
Default extension cable length	2M	3M				-
Default mounting configuration	Ceiling	Pole	Wall / desktop/magnetic	Attach to AP/Router	Wall/ desktop/magnetic	Attach to AP/Router
Optional accessories		ANT24-SP				
Optional antenna cable kits		ANT24-CB series ANT24-ODU series ANT24-DLK series				



Model Name	ANT24-0700	ANT24-0700C	ANT24-0800	ANT24-0801	ANT24-1200	ANT24-1201
Frequency	2.4GHz	2.4GHz	2.4GHz	2.4GHz	2.4GHz	2.4GHz
Signal directivity	Omn-directional	Omn-directional	Omn-directional	Directional	Directional	
Application range	Indoor only	Indoor only	Indoor/ Outdoor	Indoor/ Outdoor	<b>Indoor only</b>	Outdoor
Gain (Without cable loss)	7dBi	7dBi	8dBi	8.5dBi	12dBi	12dBi
Approximate Range at 1 / 11 / 54Mbps ( Works with Indoor AP )	550m/ 250m/60m	600m/ 300m/ 70m	700m/ 350m/100m	800m/ 500m/ 150m	1.5Km/1.2Km/ 500m	
Approximate Range at 1/11 /54Mbps (Works with Outdoor AP)	-	-	2Km/1Km/ 400m	2.5Km/1.5Km/ 600m		3Km/2.5Km/1Km
Half Power Beam width	H360 V24	H360 V24	H360 V15	H70 V65	H80 V23	H50 V50
Pigtail cable length	150cm	150cm	NA	30cm	NA	30cm
Antenna fixed connector	RP-SMA plug	RP-SMA plug	N-jack	N-jack	SMAjack	N-jack
Surge protector for outdoors	-	-	Included	Included	-	Included
Default extension cable length			50cm	3M	3M	50cm
Default mounting configuration	Wall/ desktop/magnetic	Attach to AP/Router	Pole	Wall/ pole	Window/ wall	Wall/ pole
Optional accessories				-		-
Optional antenna cable kits	-	-	ANT24-CB series ANT24-ODU series ANT24-DLK series	ANT24-CB series ANT24-ODU series ANT24-DLK series		ANT24-CB series ANT24-ODU series ANT24-DLK series



Model Name	ANT24-1400	ANT24-1500	ANT24-1800	ANT24-1801	ANT24-2100
Frequency	2.4GHz	2.4GHz	4.6GHz	2.4GHz	2.4GHz
Signal directivity	Directional	Omni-directiona	Directional	Directional	Directional
Application range	Outdoor	Outdoor	Outdoor	Outdoor	Outdoor
Gain (Without cable loss)	14dBi	15dBi	18dBi	18dBi	21dBi
Approximate Range at 1 / 11/ 54Mbps ( Works with Indoor AP )				-	-
Approximate Range at 1/11 /54Mbps (Works with Outdoor AP)	6Km/4.5Km/1Km	4Km / 2.5Km/ 500m	8Km/6Km/1.5Km	8Km/6Km/ 1.5Km	12Km/9Km/ 2.5Km
Half Power Beam width	H30 V30	H360 V8	H15V15	H15 V15	H5 V8
Pigtail cable length	30cm	-	-	-	-
Antenna fixed connector	N-jack	N-jack	N-jack	N-jack	N-jack
Surge protector for outdoors	Included	Included	Included	Included	Included
Default extension cable length	50cm	<b>3M</b>	50cm	50cm	3M
Default mounting configuration	Wall/ pole	Pole	Wall/ pole	Pole	Pole
Optional accessories					-
Optional antenna cable kits	ANT24-CB series ANT24-ODU series ANT24-DLK series	ANT24-CB series ANT24-ODU series ANT24-DLK series	ANT24-CB series ANT24-ODU series ANT24-DLK series	ANT24-CB series ANT24-ODU series ANT24-DLK series	ANT24-CB series ANT24-ODU series ANT24-DLK series



Model Name	ANT70-0800	ANT70-0801	ANT70-1000	ANT70-1800
Frequency	2.4GHz/ 5GHz	2.4GHz/ 5GHz	2.4GHz/ 5GHz	2.4GHz/ 5GHz
Signal directivity	Omni-Directional	Omni-Directional	Directional	Directional
Application range	Indoor/ Outdoor	Indoor/ Outdoor	Indoor/ Outdoor	Outdoor
Gain (Without cable loss)	2.4GHz: 8dBi 5GHz: 5dBi	2.4GHz: 8dBi 5GHz: 8dBi	2.4GHz: 8dBi 5GHz: 10dBi	2.4GHz: 14Bi 5GHz: 18dBi
Approximate Range at 1 / 11 / 54Mbps ( Works with Indoor AP )	2.4GHz: 700m/ 350m/ 100m 5GHz: 1K/500m/ 200m	2.4GHz: 700m/ 350m/ 100m 5GHz: 1K/ 500m/ 200m	2.4GHz: 800m/400m/ 150m 5GHz: 1.2K/600m/250m	—
Approximate Range at 1/11 /54Mbps (Works with Outdoor AP)	2.4GHz: 800m/ 450m/ 150m 5GHz: 1K/500m/200m	2.4GHz: 800m/ 450m/ 150m 5GHz: 1K/ 500m/ 200m	2.4GHz: 1K/500m/200m 5GHz: 1.5K/700m/300m	2.4GHz: 6K/ 4.5m/ 1Km 5GHz: 8Km/ 5Km/1.5Km
Half Power Beam width	2.4GHz: H360V15 5GHz: H360 V15	2.4GHz: H360 V15 5GHz: H360V15	2.4GHz: H58 V55 5GHz: H55 V45	2.4GHz: H30 V30 5GHz: H15 V15
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	50cm	50cm
Default mounting configuration	Pole	Pole	Pole	Pole
Optional accessories	-	-	-	-
Optional antenna cable kits	ANT24-CB series ANT24-ODU series ANT24-DLK series	ANT24-CB series ANT24-ODU series ANT24-DLK series	ANT24-CB series ANT24-ODU series ANT24-DLK series	ANT24-CB series ANT24-ODU series ANT24-DLK series

**NOTE:**

\*1 .Extended range reference based on RF-Output Power 16dbm( Indoor AP), 23 ( outdoor AP) with default cable loss,

\*2,The transmission distance range might depend on the two same spec antennas with default cable loss under free line-of -sight environment.

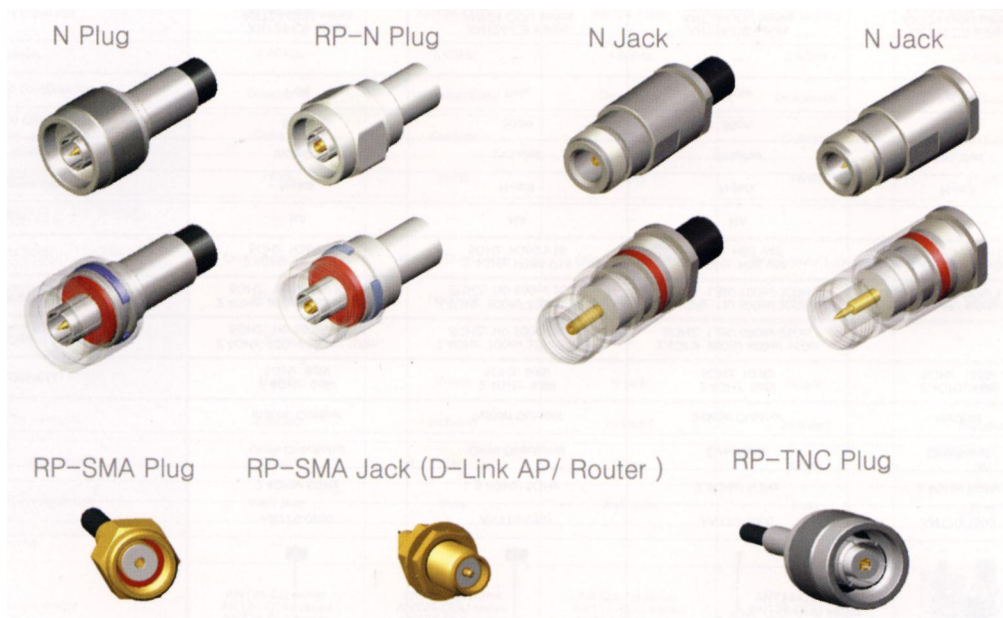
\*3. Effective range based on EIRP( Effected Isotropic Radiation Power. = device output power + antenna gain - cable lost)

\*\*BW: Beam Width. H : horizontal plane pattern, V : vertical plane pattern

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

# (Appendix)

## CONNECTORS OUTLOOK



## **- Trademarks**

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# CCCD

## **D-Link Europe Limited Product Warranty**

### **General Terms**

The Limited Product Warranty set forth below is given by D-LINK (Europe) Ltd. (herein referred to as "D-LINK"). This Limited Product Warranty is only effective upon presentation of the proof of purchase. Upon further request by D-LINK, this warranty card has to be presented, too.

EXCEPT AS EXPRESSLY SET FORTH IN THIS LIMITED WARRANTY, D-LINK MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. D-LINK EXPRESSLY DISCLAIMS ALL WARRANTIES NOT STATED IN THIS LIMITED WARRANTY. ANY IMPLIED WARRANTIES THAT MAY BE IMPOSED BY LAW ARE LIMITED IN DURATION TO THE LIMITED WARRANTY PERIOD. SOME STATES OR COUNTRIES DO NOT ALLOW A LIMITATION ON HOW LONG AN IMPLIED WARRANTY LASTS OR THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR CONSUMER PRODUCTS. IN SUCH STATES OR COUNTRIES, SOME EXCLUSIONS OR LIMITATIONS OF THIS LIMITED WARRANTY MAY NOT APPLY TO YOU. THIS LIMITED WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS. YOU MAY ALSO HAVE OTHER RIGHTS THAT MAY VARY FROM STATE TO STATE OR FROM COUNTRY TO COUNTRY. YOU ARE ADVISED TO CONSULT APPLICABLE STATE OR COUNTRY LAWS FOR A FULL DETERMINATION OF YOUR RIGHTS.

This limited warranty applies to D-LINK branded hardware products (collectively referred to in this limited warranty as "D-LINK Hardware Products") sold by from D-LINK (Europe) Ltd., its worldwide subsidiaries, affiliates, authorized resellers, or country distributors (collectively referred to in this limited warranty as "D-LINK") with this limited warranty. The Term "D-LINK Hardware Product" is limited to the hardware components and all its internal components including firmware. The term "D-LINK Hardware Product" DOES NOT include any software applications or programs.

## **Geographical Scope of the Limited Product Warranty**

This Limited Product Warranty is applicable in all European Countries as listed in the addendum "European Countries for D-LINK Limited Product Warranty". The term "European Countries" in this D-LINK Limited Product Warranty only include the countries as listed in this addendum. The Limited Product Warranty will be honored in any country where D-LINK or its authorized service providers offer warranty service subject to the terms and conditions set forth in this Limited Product Warranty. However, warranty service availability and response times may vary from country to country and may also be subject to registration requirements.

## **Limitation of Product Warranty**

D-LINK warrants that the products described below under normal use are free from material defects in materials and workmanship during the Limited Product Warranty Period set forth below ("Limited Product Warranty Period"), if the product is used and serviced in accordance with the user manual and other documentation provided to the purchaser at the time of purchase (or as amended from time to time). D-LINK does not warrant that the products will operate uninterrupted or error-free or that all deficiencies, errors, defects or non-conformities will be corrected.

This warranty shall not apply to problems resulting from: (a) unauthorised alterations or attachments; (b) negligence, abuse or misuse, including failure to operate the product in accordance with specifications or interface requirements; (c) improper handling; (d) failure of goods or services not obtained from D-LINK or not subject to a then-effective D-LINK warranty or maintenance agreement; (e) improper use or storage; or (f) fire, water, acts of God or other catastrophic events. This warranty shall also not apply to any particular product if any D-LINK-serial number has been removed or defaced in any way.

**D-LINK IS NOT RESPONSIBLE FOR DAMAGE THAT OCCURS AS A RESULT OF YOUR FAILURE TO FOLLOW THE INSTRUCTIONS FOR THE D-LINK HARDWARE PRODUCT.**

## **Limited Product Warranty Period**

The Limited Product Warranty Period starts on the date of purchase from D-LINK. Your dated sales or delivery receipt, showing the date of purchase of the product, is your proof of the purchase date. You may be required to provide proof of purchase as a condition of receiving warranty service. You are entitled to warranty service according to the terms and conditions of this document if a repair to your D-LINK branded hardware is required within the Limited Product Warranty Period.

This Limited Product Warranty extends only to the original end-user purchaser of this D-LINK Hardware Product and is not transferable to anyone who obtains ownership of the D-LINK Hardware Product from the original end-user purchaser.

<b>Product Type</b>	<b>Product Warranty Period</b>
Managed Switches (i.e. switches with built in SNMP agent)(including modules and management software)	Five (5) years



All other products	Two (2) years
Spare parts (i.e. External Power Adapters, Fans)	One (1) year

The warranty periods listed above are effective in respect of all D-LINK products sold in European Countries by D-LINK or one of its authorized resellers or distributors from 1<sup>st</sup> of January 2004. All products sold in European Countries by D-LINK or one of its authorized resellers or distributors before 1<sup>st</sup> January 2004 carry 5 years warranty, except power supplies, fans and accessories that are provided with 2 year warranty.

The warranty period stated in this card supersedes and replaces the warranty period as stated in the user's manual or in the purchase contract for the relevant products. For the avoidance of doubt, if you have purchased the relevant D-LINK product as a consumer your statutory rights remain unaffected.

#### **Performance of the Limited Product Warranty**

If a product defect occurs, D-LINK's sole obligation shall be to repair or replace any defective product free of charge to the original purchaser provided it is returned to an Authorized D-LINK Service Center during the warranty period. Such repair or replacement will be rendered by D-LINK at an Authorized D-LINK Service Center. All component parts or hardware products removed under this limited warranty become the property of D-LINK. The replacement part or product takes on the **remaining** limited warranty status of the removed part or product. The replacement product need not be new or of an identical make, model or part; D-LINK may in its discretion replace the defective product (or any part thereof) with any reconditioned equivalent (or superior) product in all material respects to the defective product. Proof of purchase may be required by D-LINK.

#### **Warrantor**

D-Link (Europe) Ltd  
1 Abbey Road  
Park Royal  
London  
NW10 7BX

Telephone: +44-020-8731-5555

Facsimile: +44-020-8731-5511

[www.dlink.co.uk](http://www.dlink.co.uk)

## Notice of wireless radio LAN usage in the European Community

- At the time of writing this addendum, some countries such as Italy, Greece, Portugal and Spain hasn't allowed operation of radio devices in the 5Ghz bands, although operation of 2.4Ghz radio devices are allowed. Please check with your local authority to confirm.
- This device is restricted to **indoor use** when operated in the European Community using channels in the 5.15-5.35 GHz band to reduce the potential for interference.

### Usage Notes:

- To remain in conformance with European National spectrum usage regulations, frequency and channel limitations will be applied on the products according to the country where the equipment will be deployed.
- This device is restricted from functioning in **Ad-hoc mode while operating in 5Chz**. Ad-hoc mode is direct peer-to-peer communication between two client devices without an Access Point.
- Access points will support DFS (Dynamic Frequency Selection) and TPC (Transmit Power Control) functionality as required when operating in 5Ghz within the EU.

### **5GHz wireless frequency and channel operation in EEC countries**

Allowable 802.11a Frequencies and Channels	Countries
5.15-5.25 GHz (Channels 36, 40, 44, 48)	Liechtenstein,
5.15-5.25 GHz & 5.725-5.875 GHz (Channels 36, 40, 44, 48, 149, 153, 157, 161, 165, 169)	Austria
5.15-5.35 GHz (Channels 36, 40, 44, 48, 52, 56, 60, 64)	France
5.15-5.35 & 5.47-5.725 GHz (Channels 36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140)	Denmark, Germany, Iceland, Finland, Netherlands, Norway, Poland, Sweden, Slovenia, Luxembourg, U.K., Ireland, Slovak, Switzerland, Hungary
5.15-5.35 GHz & 5.125-5.875 GHz (Channels 36, 40, 44, 48, 52, 56, 60, 64, 149, 153, 157, 161, 165, 169)	Czech Republic

### **2.4GHz wireless frequency operation in EEC countries**

Countries	Frequency band	Max output power (EIRP)
France	2400-2483.5 MHz	100mW EIRP indoor
France	2400- 2454 MHz	100mW EIRP, outdoor
France	2454- 2483.5 MHz	10mW EIRP, outdoor
Rest of EU community	2420-2483.5MHz	100mW EIRP indoor and outdoor

<b>R&amp;TTE 1999/5/EC</b>			
<b>WLAN 2.4 - 2.4835 GHz</b>			
<b>IEEE 802.11b/g</b>			
Spectrum regulation	MHz, Europa (ETSI)	max. EIRP Innenbereich	max. EIRP Außenbereich
Europa	2400-2483,5 MHz	100 mW	100mW
<b>Frankreich</b>	2400-2454 MHz	100 mW	100mW
	2454-2483,5 MHz	100 mW	<b>10 mW</b>

**European Community Declaration of Conformity:**

English	Hereby, <i>D-Link Corporation</i> declares that this Wireless LAN device is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
Finnish	<i>Valmistaja D-Link Corporation</i> vakuuttaa taten etta Wireless LAN device tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sita koskevien direktiivin muiden chtojen mukainen.
Dutch	Hierbij verklaart <i>D-Link Corporation</i> dat het toestel Wireless LAN device in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG Bij deze verklaart <i>D-Link Corporation</i> dat deze Wireless LAN device voldoet aan de essentiële eisen en aan de overige relevante bepalingen van Richtlijn 1999/5/EC.
French	Par la presente, <i>D-Link Corporation</i> declare que l'appareil Wireless LAN device est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE Par la presente, <i>D-Link Corporation</i> declare que ce Wireless LAN device est conforme aux exigences essentielles et aux autres dispositions de la directive 1999/5/CE qui lui sont applicables
Swedish	<i>I</i> ärnad intygar <i>D-Link Corporation</i> att denna Wireless LAN device star i overensstammelse med de vasentliga egenskapskrav och ovriga relevanta bestammelser som framgar av direktiv 1999/5/EG.
Danish	Undertegnede <i>D-Link Corporation</i> erklærer herved, at tlgende udstyr Wireless LAN device overholder de vjessentlige krav og ovrigte relevante krav i direktiv 1999/5/EF
German	Hiennit erklart <i>D-Link Corporation</i> dass sich <i>dieser/diesehliesses</i> Wireless LAN device in Obereinstimmung mit den grundlegenden Anforderungen und den anderen relevanten Vorschriften der Richtlinie 1999/5/EG befindet". (BMW i) Hiennit erklart <i>D-Link Corporation</i> die Obereinstimmung des Gerates Wireless LAN device mit den grundlegenden Anforderungen und den anderen relevanten Festlegungen der Richtlinie 1999/5/EG. (Wien)
Greek	<i>ME THN UAPOYZAD-Link Corporation</i> <i>AHAQNEI OTI</i> Wireless LAN device <i>ZYMMOPQNETAI LIPOZ TILOYIQAEIIFIAITHEIEIKAI TIEAOMEEZXTIKEZAIATAEEIE THEOAHEIAZ</i> 1999/5/EK
Italian	Con la presente <i>D-Link Corporation</i> dichiara che questo Wireless LAN device e conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
Slovakian	Týmto výroba <i>D-Link Corporation</i> deklaruje, ze tento typ zariadenia je v sulade so zakladnymi po/iadavkami a ostatnymi nariadeniami uvedenymi v Direktive 1999/5/EC.
Slovenian	Proizvajalec <i>D-Link Corporation</i> izjavlja, da je naprava proizvedena v skladu s obveznimi zahtevami in ostalimi pomembnimi dolocili Direktive 1999/5/EC
Spanish	Por medio de la presente <i>D-Link Corporation</i> declara que el Wireless LAN device cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE
Portuguese	<i>D-Link Corporation</i> declara que este Wireless LAN device esta conforme com os requisitos essenciais e outras disposicoes da Directiva 1999/5/CE.
Hungarian	Alulirott, <i>D-Link Corporation Ltd.</i> , nvilatkozom, hoav a termek meefeel a vonatkozó alapveto követelményeknek es az 1999/5/EC irányelv egyeb eloirasainak.
Czech	<i>D-Link Corporation</i> týmto prohlasuie, ze tento vrobek je ve shode se zakladnymi pozadavky a dalsimi pfislusnymi ustanovenimi smernice 1999/5/ES.
Polish	Niniejszym <i>D-Link Corporation</i> deklaruie zaodnosc tego urzadzenia z zasadniczymi wymaganiami okresionymi w Dyrektywie 1999/5/EC.

#### CALCOLO DELLA POTENZA E.I.R.P. IN EMISSIONE

La formula di calcolo per ottenere l'E.I.R.P. effettivo è la seguente:

$E.I.R.P. (dBm) = P_{tx} (dBm) + G_{tx} (dBi)$  dove

$P_{tx}$  = Potenza trasmessa al connettore dell'antenna di trasmissione

$G_{tx}$  • Guadagno dell'antenna di trasmissione

Il valore ottenuto dalla somma, NON deve superare quanto espresso dalla normativa ovvero 20dBm. Nel caso in cui si voglia convertire il risultato ottenuto in mW, utilizzare la semplice tabella di conversione di seguito riportata.

(dBm)	mW	(dBm)	mW	(dBm)	mW
0	1	11	16	71	128
1	1.25	12	20	22	160
2	1.56	13	23	23	200
7	2	14	25	24	256
4	2.5	15	32	7.5	320
5	3.12	16	40	26	400
6		17	50	27	512
7	5	18	64	28	640
	6.25	19	80	21	800
0	K	70	100	30	1000
10	10				

## LIMITED WARRANTY

O-Link provides this limited warranty for its product only to the person or entity who originally purchased the product from D-Link or its authorized reseller or distributor. D-Link would fulfill the warranty obligation according to the local warranty policy in which you purchased our products.

**limited Hardware Warranty:** D-Link warrants that the hardware portion of the D-Link products described below ("Hardware") will be free from material defects in workmanship and materials from the date of original retail purchase of the Hardware, for the period set forth below applicable to the product type ("Warranty Period") if the Hardware is used and serviced in accordance with applicable documentation; provided that a completed Registration Card is returned to an Authorized D-Link Service Office within ninety (90) days after the date of original retail purchase of the Hardware. If a completed Registration Card is not received by an authorized D-Link Service Office within such ninety (90) period, then the Warranty Period shall be ninety (90) days from the date of purchase.

<b>Product Type</b>	<b>Warranty Period</b>
Product (including Power Supplies and Fans)	One (1) Year
Spare parts and pare kits	Ninety (90) days

I-Link's sole obligation shall be to repair or replace the defective Hardware at no charge to the original owner. Such repair or replacement will be rendered by D-Link at an Authorized D-Link Service Office. The replacement Hardware need not be new or of an identical make, model or part; D-Link may in its discretion may replace the defective Hardware (or any part thereof) with any reconditioned product that I-Link reasonably determines is substantially equivalent (or superior) in all material respects to the defective Hardware. The Warranty Period shall extend for an additional ninety (90) days after any repaired or replaced Hardware is delivered. If a material defect is incapable of correction, or if D-Link determines in its sole discretion that it is not practical to repair or replace the defective Hardware, the price paid by the original purchaser for the defective Hardware will be refunded by D-Link upon return to D-Link of the defective Hardware. All Hardware (or part thereof) that is replaced by D-Link, or for which the purchase price is refunded, shall become the property of D-Link upon replacement or refund.

**I united Software Warranty:** D-Link warrants that the software portion of the product ("Software") will substantially conform to D-Link's then current functional specifications for the Software, as set forth in the applicable documentation, from the date of original delivery of the Software for a period of ninety (90) days ("Warranty Period"), if the Software is properly installed on approved hardware and operated as contemplated in its documentation. D-Link further warrants that, during the Warranty Period, the magnetic media on which D-Link delivers the Software will be free of physical defects. D-Link's sole obligation shall be to replace the non-conforming Software (or defective media) with software that substantially conforms to D-Link's functional specifications for the Software. Except as otherwise agreed by D-Link in writing, the replacement Software is provided only to the original licensee, and is subject to the terms and conditions of the license granted by D-Link for the Software. The Warranty Period shall extend for an additional ninety (90) days after any replacement Software is delivered. If a material non-conformance is incapable of correction, or if D-Link determines in its sole discretion that it is not practical to replace the non-conforming Software, the price paid by the original licensee for the non-conforming Software will be refunded by D-Link; provided that the non-conforming Software (and all copies thereof) is first returned to D-Link. The license granted respecting any Software for which a refund is given automatically terminates.

***What You Must Do For Warranty Service:***

**Registration Card.** The Registration Card provided at the back of this manual must be completed and returned to an Authorized D-Link Service Office for each D-Link product within ninety (90) days after the product is purchased and/or licensed. The addresses/telephone/fax list of the nearest Authorized D-Link Service Office is provided in the back of this manual. FAILURE TO PROPERLY COMPLETE AND TIMELY RETURN THE REGISTRATION CARD MAY AFFECT THE WARRANTY FOR THIS PRODUCT.

**Submitting A Claim.** Any claim under this limited warranty must be submitted in writing before the end of the Warranty Period to an Authorized D-Link Service Office. The claim must include a written description of the Hardware defect or Software nonconformance in sufficient detail to allow D-Link to confirm the same. The original product owner must obtain a Return Material Authorization (RMA) number from the Authorized D-Link Service Office and, if requested, provide written proof of purchase of the product (such as a copy of the dated purchase invoice for the product) before the warranty service is provided. After an RMA number is issued, the defective product must be packaged securely in the original or other suitable shipping package to ensure that it will not be damaged in transit, and the RMA number must be prominently marked on the outside of the package. The packaged product shall be insured and shipped to Authorized D-Link Service Office with all shipping costs prepaid. D-Link may reject or return any product that is not packaged and shipped in strict compliance with the foregoing requirements, or for which an RMA number is not visible from the outside of the package. The product owner agrees to pay D-Link's reasonable handling and return shipping charges for any product that is not packaged and shipped in accordance with the foregoing requirements, or that is determined by D-Link not to be defective or non-conforming.

***What Is Not covered:***

This limited warranty provided by D-Link does not cover:

Products that have been subjected to abuse, accident, alteration, modification, tampering, negligence, misuse, faulty installation, lack of reasonable care, repair or service in any way that is not contemplated in the documentation for the product, or if the model or serial number has been altered, tampered with, defaced or removed;

Initial installation, installation and removal of the product for repair, and shipping costs;

Operational adjustments covered in the operating manual for the product, and normal maintenance;

Damage that occurs in shipment, due to act of God, failures due to power surge, and cosmetic damage; and

Any hardware, software, firmware or other products or services provided by anyone other than D-Link.

***Disclaimer of Other Warranties:*** EXCEPT FOR THE LIMITED WARRANTY SPECIFIED HEREIN, THE PRODUCT IS PROVIDED "AS-IS" WITHOUT ANY WARRANTY OF ANY KIND INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT. IF ANY IMPLIED WARRANTY CANNOT BE DISCLAIMED IN ANY TERRITORY WHERE A PRODUCT IS SOLD, THE DURATION OF SUCH IMPLIED WARRANTY SHALL BE LIMITED TO NINETY (90) DAYS.

EXCEPT AS EXPRESSLY COVERED UNDER THE LIMITED WARRANTY PROVIDED HEREIN, THE ENTIRE RISK AS TO THE QUALITY, SELECTION AND PERFORMANCE OF THE PRODUCT IS WITH THE PURCHASER OF THE PRODUCT.

*limitation of Liability:* TO THE MAXIMUM EXTENT PERMITTED BY LAW, D-LINK IS NOT LIABLE UNDER ANY CONTRACT, NEGLIGENCE, STRICT LIABILITY OR OTHER LEGAL OR IQUITABLE THEORY FOR ANY LOSS OF USE OF THE PRODUCT, INCONVENIENCE OR DAMAGES OF ANY CHARACTER, WHETHER DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL (INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF GOODWILL, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, LOSS OF INFORMATION OR DATA CONTAINED IN, STORED ON, OR INTEGRATED WITH ANY PRODUCT RETURNED TO D-LINK FOR WARRANTY SERVICE) RESULTING FROM THE USE OF THE PRODUCT, RELATING TO WARRANTY SERVICE, OR ARISING OUT OF ANY BREACH OF THIS LIMITED WARRANTY, EVEN IF D-LINK HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THE SOLE REMEDY FOR A BREACH OF THE FOREGOING LIMITED WARRANTY IS REPAIR, REPLACEMENT OR REFUND OF THE DEFECTIVE OR NON-CONFORMING PRODUCT.

**GOVERNING LAW.** This Limited Warranty shall be governed by the laws of the state of California.

Some states do not allow exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the foregoing limitations and exclusions may not apply. This limited warranty provides specific legal rights and the product owner may also have other rights which vary from state to state.

#### **Trademarks**

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## **FCC Warning**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/ TV technician for help.

## **FCC Radiation Exposure Statement**

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum 20cm between the radiator and your body.

## Notice of wireless radio LAN usage in the European Community

- At the time of writing this addendum, some countries such as Italy, Greece, Portugal and Spain hasn't allowed operation of radio devices in the 5Ghz bands, although operation of 2.4Ghz radio devices are allowed. Please check with your local authority to confirm.
- This device is restricted to indoor use when operated in the European Community using channels in the 5.15-5.35 GHz band to reduce the potential for interference.

### Usage Notes:

- To remain in conformance with European National spectrum usage regulations, frequency and channel limitations will be applied on the products according to the country where the equipment will be deployed.
- This device is restricted from functioning in Ad-hoc mode while operating in 5Ghz. Ad-hoc mode is direct peer-to-peer communication between two client devices without an Access Point.
- Access points will support DFS (Dynamic Frequency Selection) and TPC (Transmit Power Control) functionality as required when operating in 5Ghz within the EU.

Allowable 802.11a Frequencies and Channels	Countries
5.15-5.25 GHz (Channels 36, 40, 44, 48)	Liechtenstein, Hungary, Switzerland
5.15-5.25 GHz & 5.725-5.875 GHz (Channels 36, 40, 44, 48, 149, 153, 157, 161, 165, 169)	Austria
5.15-5.35 GHz (Channels 36, 40, 44, 48, 52, 56, 60, 64)	France, Slovak
5.15-5.35 & 5.47-5.725 GHz (Channels 36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140)	Denmark, Germany, Iceland, Finland, Netherlands, Norway, Poland, Sweden, Slovenia, Luxembourg, U.K., Ireland
5.15-5.35 GHz & 5.725-5.875 GHz (Channels 36, 40, 44, 48, 52, 56, 60, 64, 149, 153, 157, 161, 165, 169)	Czech Republic
IEEE 802.11b 2.4Ghz operation	Countries
2.4-2.4835 GHz	Rest of EU Community
2.4465-2.4835 GHz (Channels 10,11,12,13)	France

### European Community Declaration of Conformity:

English	Hereby, <i>D-Link Corporation</i> declares that this Wireless LAN device is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
Finnish	<i>Yhteistyö D-Link Corporation</i> vakuuttaa taten että Wireless LAN device tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja siihen koskevien direktiivin muiden ehtojen mukainen.
Dutch	Hierbij verklaart <i>D-Link Corporation</i> dat het toestel Wireless LAN device in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG
French	Bij deze verklaart <i>D-Link Corporation</i> dat deze Wireless LAN device voldoet aan de essentiële eisen en aan de overige relevante bepalingen van Richtlijn 1999/5/EC. Par la présente <i>D-Link Corporation</i> déclare que l'appareil Wireless LAN device est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE
Swedish	Par la présente, <i>D-Link Corporation</i> déclare que ce Wireless LAN device est conforme aux exigences essentielles et aux autres dispositions de la directive 1999/5/CE; qui lui sont applicables
Danish	Harmed intygar <i>D-Link Corporation</i> att denna Wireless LAN device står i överensstämmelse med de väsentliga egenskapskrav och övriga i tvk'vama h'ljinn'kr som (VanLis' a) dnvkr. ! 1 (i
German	Undertegnede <i>D-Link Corporation</i> erklærer herved, at følgende udstyr Wireless LAN device overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF Hiermit erklart <i>D-Link Corporation</i> dass sich dieser/diese/dieses Wireless LAN device in Übereinstimmung mit den grundlegenden Anforderungen und den anderen relevanten Vorschriften der Richtlinie 1999/5/LG bmdet". (BMW i) Hiermit erklart <i>D-Link Corporation</i> die Übereinstimmung des Gerätes Wireless LAN device mit den grundlegenden Anforderungen und den anderen relevanten Bestimmungen der Richtlinie 1999/5/EG. (Wien)
Greek	ME THN IIAPOYEA <i>D-Link Corporation</i> AHAQNEI OTI Wireless LAN device EYMMOP&QNETAI UPOE TIE OYEIQAIE ALIATHETIE KAI TIE AOHEEEXETIKEAIATAEIEIETHOAHIIAEI1999/5EK
Italian	Con la presente <i>D-Link Corporation</i> dichiara che questo Wireless LAN device è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
Slovakian	Týmto výrobcu <i>D-Link Corporation</i> deklaruje, že tento typ zariadenia je v súlade so základnými požiadavkami a ostatnými nariadeniami uvedenými v Direktive 1999/5/CE.
Slovenian	Proizvajalec <i>D-Link Corporation</i> izjavlja, da je naprava proizvedena v skladu s obveznimi zahtevami in ostalimi pomembnimi določili Direktive 1999/5/CE
Spanish	Por medio de la presente <i>D-Link Corporation</i> declara que el Wireless LAN device cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE
Portuguese	<i>D-Link Corporation</i> declara que este Wireless LAN device está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.

# International Offices

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