



FortiCam CD51

QuickStart Guide



July 20, 2021

1st Edition

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Package Contents

Camera Box

- FortiCam camera
- QSG
- EMT adapter
- Mounting plate
- Replacement dry pack



Accessory Box

- Torx T10 allen key
- Waterproof connection kit
- Grounding kit
- Machine bolt kit
 - 4x M4 bolts (M4x10mm)
- Screw and plug kit
 - 2x short screw (4x20mm)
 - 2x long screw (4x32mm)
 - 2x anchors
- T-bar mount kit
 - 2x 3/4" clips
 - 2x 1" clips
 - 2x M3 bolts (M3x16mm)
 - 2x M3 nuts

Hardware Installation

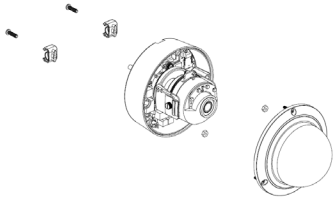
- Before installing surveillance cameras, design your system carefully and verify the location and coverage of each camera. Additionally, decide whether to run the cables through the wall/ceiling (drilling required) or along the wall/ceiling through the cable notch on the base.
- Install the camera in a protected location that is not easily accessible, and is away from impacts or heavy vibrations.
- Avoid exposure to direct sunlight for better image quality and longer service life.
- Provide adequate grounding to the unit and the PoE injector, in compliance with your local electrical code or regulations. The grounding wire color must be a green-and-yellow combination and the conductor size must be a minimum of 18 AWG.
- Hire qualified technicians to carry out maintenance and repairs. Disconnect power from the unit when performing maintenance tasks.

There are multiple ways to install the CD51 camera. To determine your optimal installation method, consult the Mounting Guide. The following procedure demonstrates installing the camera on the wall or ceiling using the standard mounting procedure:

Important: Only remove the protective wrap from the camera lens when the entire installation process is completed to avoid damage and scratches.

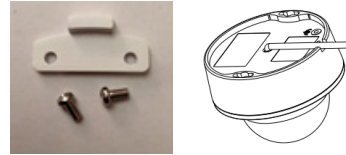
Note: You can use the longer screws and plugs to directly mount the camera body to a surface without using the mounting plate.

Note: For mounting the camera on a tiled suspended ceiling, select the fitting pair of T-bar clips and attach them to the camera body using the M3 bolts and nuts. Use the tip of the allen key to hold the nuts and push them down in the mounting holes while tightening the M3 bolts. Click the camera directly on a T-bar rail, making sure it is a correct fit.

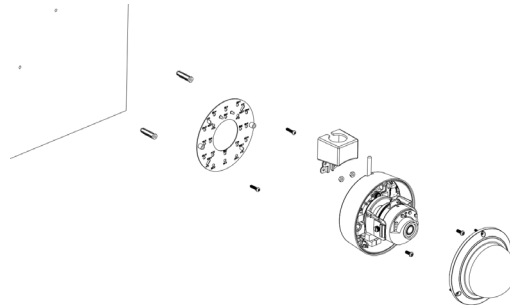


1. Place the mounting plate on the ceiling or wall and mark the drilling positions using any opposite pair of holes or slots. Keep in mind the direction of the camera facing and where the cable leaves the camera when mounting. Consult the Mounting Plate Details diagram on page 13 for facing direction and an explanation of the mounting holes.

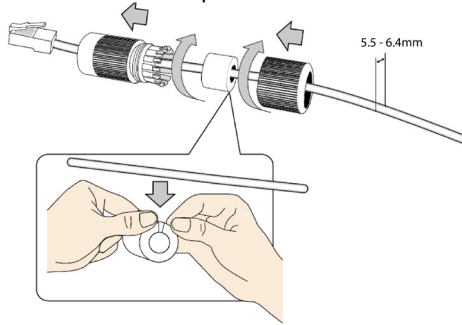
2. Drill holes at the marked positions and use the supplied plugs and screws to attach the mounting plate to the surface.
3. Remove the small cover at the side of the camera if the cable is not fed through a hole in the wall or ceiling.



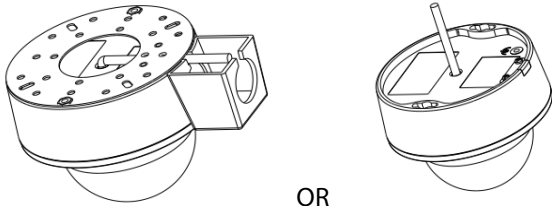
4. If using Electro Mechanical Tubing, attach the EMT adapter to the mounting plate with the two M3 nuts supplied in the T-bar mounting kit. Install the 3/4" EMT conduit to the camera location and attach it to the EMT adapter. Use the short screws (4mm x 20mm) and plugs to connect the adapter plate to the surface.



5. Assemble the waterproof connector onto the Ethernet cable.

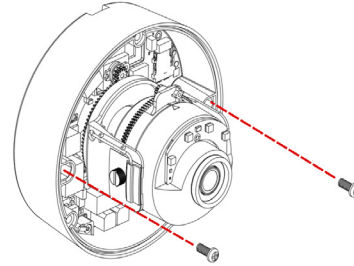


6. Connect the Ethernet cable. The cable can be stored in the EMT tubing or in the hole in the wall or ceiling.

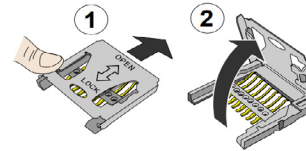


7. Open camera housing using the 3 cover screws without removing the protective wrap from the lens.

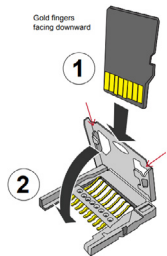
8. Place the camera on the mounting plate so the sockets fit into the matching recesses on the camera bottom.
9. Fasten the camera with the two supplied machine bolts (M4 x 10mm) to the sockets.



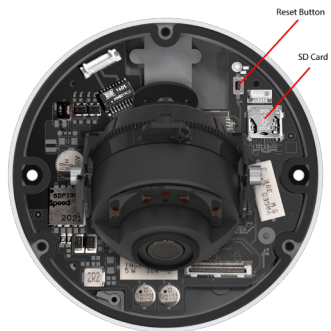
10. Open the MicroSD card socket lid by sliding it backwards. This and the following two steps are only required if onboard storage is preferred.



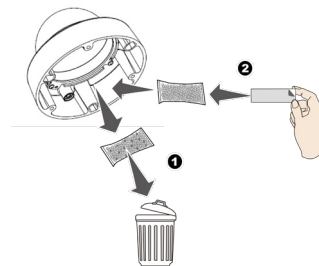
11. Insert a MicroSD card into the socket, close the lid, and then slide the lid until you hear a click.



12. Press the reset button on the camera.



13. Adjust the camera's pan, tilt, and rotation angle.
14. Replace the dry pack found inside the camera with the fresh one from the protective pouch in the box. Ensure no moisture gets trapped inside the camera.

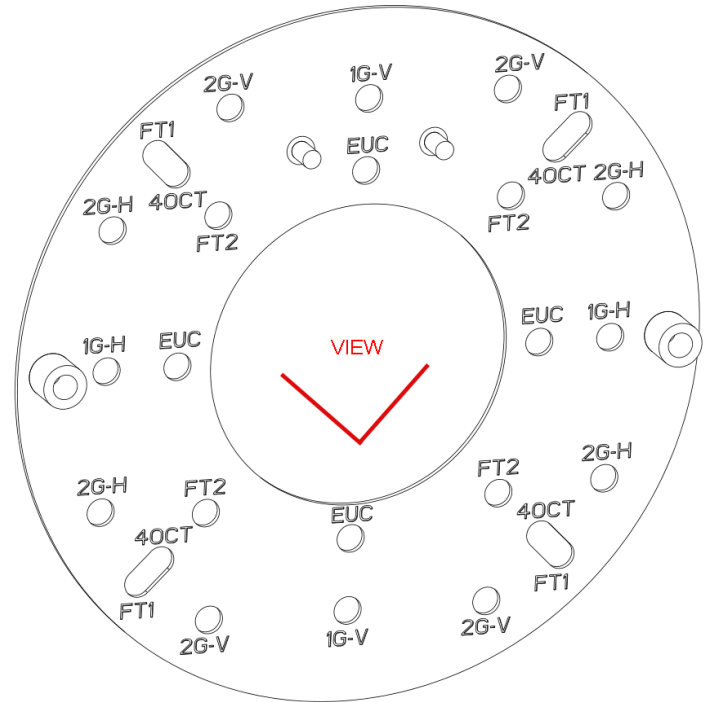


15. Ensure the inside of the dome cover is free of dust and particles by gently wiping the inside with a clean lint free cloth or blowing the dust away. Install the dome cover and remove the protective wrap.

Mounting Plate Details

The following table is an explanation of the various mounting holes on the mounting plate and their function.

Hole	Function
1G-V	1-gang NA junction box, vertical mount
1G-H	2-gang NA junction box, horizontal mount
2G-V	2-gang NA junction box, vertical mount
2G-H	2-gang NA junction box, horizontal mount
4OCT	4" octagon NA junction box
EUC	EU/UK/China junction box
FT1	General wall or ceiling mount, Fortinet pendant cap (FCM-CD5-PCP) and L-type wall (FCM-CD5-WMT) mount
FT2	Fortinet junction box (FCM-FB5-JBX) mount



Status LED Explanation

The following table is an explanation of the various statuses of the camera.

Note: Status LEDs can be disabled through software

Note: Bluetooth pairing mode is active after a factory reset or it can be entered via the reset button or software command.

Operation		
Color	Solid	Flashing
Green	Connected through Ethernet	Firmware updating
Blue	Connected through WIFI	
Cyan	Connected to Bluetooth	Bluetooth Pairing mode
Amber	Warning	
Red	Fatal error	
Bootup Sequence		
Red	Hardware initialization	
White	Bootloader	
Cyan	Bluetooth Pairing mode initialized (3 flashes)	
Red/Green Blue	Searching for connections (rotating)	

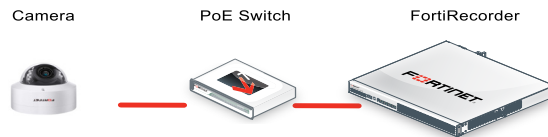
Camera Connection

Caution: This device complies with IEEE 802.3af PoE specification. Do not use any PoE injectors that are not IEEE 802.3af compliant as they may damage your device.

Attention: Cet appareil est conforme à la spécification PoE IEEE 802.3af. N'utilisez pas d'injecteurs PoE non conformes à la norme IEEE 802.3af car ils pourraient endommager votre appareil.

Caution: The power cord of the PoE adapter or PoE switch should be connected to a socket outlet with a grounded connection

Attention: Le cordon d'alimentation de l'adaptateur PoE ou du commutateur PoE doit être connecté à une prise de courant avec une connexion à la terre.



To connect the camera

1. Connect the Ethernet port of the camera to the FortiRecorder NVR via a PoE switch. The camera gets its IP address from the DHCP server automatically.

- Go to the FortiRecorder web UI to configure the discovered camera. For details, see the FortiRecorder Administration Guide on <http://docs.fortinet.com>.

To use Bluetooth functionality

- Power up or reset the camera and watch the Status LED for Bluetooth Pairing mode.
- Use FortiRecorder Mobile on your mobile device to discover and pair with the camera.
- Configure the camera locally. The camera should be able to connect to the recorder at this point.

Note: Pairing is disabled once the camera is connected to a FortiRecorder. It can be enabled through FRC or Reset button operation (factory reset or enable pairing).

Note: The default IP address of the camera is 192.168.1.245.

Reset Button Operation		
Press Time	LED	Action
< 5 seconds	No change in color	Reboot
5-10 seconds	Flashing Cyan	Reboot + Bluetooth Pairing mode initialized.
> 10 seconds	Alternating Green / Blue	Factory reset

Technical Specifications

Camera	
Format	Fixed dome, day/night, vandal
Sensor Type	5 mega-pixel, 1/2.8" low light CMOS
Iris	F2.0/fixed
Focal Length	f=2.8 mm
View Angle	H:95°, V:72°, D118°
Minimum Illumination	0.05 Lux (color) @ F2 and 0.01 Lux (B/W) @ F2
WDR	HDR (>80dB)
Network Interface	RJ-45 Ethernet 10/100 Mbps
IRLED/IRC	20+m/yes, dimmable
3DNR	Yes
Streaming Protocol	RTSP
SD Card	512 GB SD card (Reserved)
Video Compression	H.264/H.265 (HEVC)
Audio	one-way, built-in mic
Image Resolution	5MP at 30 frames per second, 4MP, 3MP, 1080p, 720p 1024x768, 640x480, 320x240

Mounting	Wall, ceiling, tile, 3-axis, 3/4" conduit, junction box
Wifi/Bluetooth	
Number of Antennas	1 internal
Peak Antenna Gain	3.4dBi for 2.4GHz, 4.1dBi for 5GHz
Frequency of Radio 1	2.4GHz b/g/n or 5GHz a/n/ac
Bluetooth Features	BLE V5.0 3.4dBi @ 2.4GHz
Dimensions	
Height x Width x Length	3.8 x 4.7 x 4.7" (97 x 120 x 120 cm)
Weight	1.09lb (498g)
Environment	
Power Required	PoE (802.3af) class 3
Power Consumption (AVG)	< 12.95W
Operating Temperature	40–122°F (-40–50°C)
Humidity	5–90% non-condensing
Compliance	
FCC Class B, FCC 15C, FCC 15E, FCC Part 2.1091/ICES-003,RSS-247, RSS 102/CE/CB/IP67/IK10	

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Toll free: 1 866 648 4638

Phone: 1 408 486 7899

Fax: 1 408 235 7737

Email: register@fortinet.com

Cautions and Warnings

Environmental Specifications

Ambient operating temperature: -40°C to 50°C

Refer to specific Product Model Data Sheet for Environmental Specifications (Operating Temperature, Storage Temperature, Humidity, and Altitude)

Référez à la Fiche Technique de ce produit pour les caractéristiques environnementales (Température de fonctionnement, température de stockage, humidité et l'altitude).

Safety

Caution: This equipment is to be used in a Network Environment 0 per IEC/EN 62101. This product is connected only to PoE networks without routing to the outside plant.

Attention: Ce matériel doit être utilisé dans un Environnement Réseau 0 par IEC/EN 62101. Ce produit est uniquement connecté aux réseaux PoE sans installation externe de routage.

The connecting cable between the outdoor equipment and the indoor ITE devices should comply with Class 3 wiring methods as listed in NEC, Table 725.154(G) for Class 3 Cable Substitutions.

Le câble connectant l'équipement extérieur et ceux d'intérieur de type ITE doit être conforme avec les méthodes de câblage de classe 3 tel que listé dans le standard NEC, Table 725.154(G) pour les câbles de substitutions de classe 3.

Grounding — To prevent damage to your equipment, connections that enter from outside the building should pass through a lightning / surge protector, and be properly grounded. Use an electrostatic discharge workstation (ESD) and/or wear an anti-static wrist strap while you work. In addition to the grounding terminal of the plug, on the back panel, there is another, separate terminal for earthing.

Mise à la terre — Pour éviter d'endommager votre matériel, assurez-vous que les branchements qui entrent à partir de l'extérieur du bâtiment passent par un parafoudre / parasurtenseur et sont correctement mis à la terre. Utilisez un poste de travail de décharge électrostatique (ESD) et / ou portez un bracelet anti-statique lorsque vous travaillez. Ce produit possède une borne de mise à la terre qui est prévu à l'arrière du produit, à ceci s'ajoute la mise à la terre de la prise.

This product has a separate protective earthing terminal provided on the back of the product in addition to the grounding terminal of the attachment plug. This separate protective earthing terminal must be permanently connected to earth with a green with yellow stripe conductor minimum size # 18 AWG and the connection is to be installed by a qualified service personnel.

Ce produit a une borne de mise à la terre séparé sur le dos de l'appareil, en plus de la borne de mise à la terre de la fiche de raccordement. Cette borne de mise à la terre séparée doit être connecté en permanence à la terre avec un conducteur vert avec la taille bande jaune de minimum # 18 AWG et la connexion doit être installé par un personnel qualifié.

This product is intended to be supplied by a Listed PoE Adapter marked "L.P.S." (or "Limited Power Source"), rated 802.3af class 3, Tma = 50 degree C, and the altitude of operation = 2000m. If you require further assistance with purchasing the power source, please contact Fortinet for information.

Ce produit est destiné pour être alimenté par un adaptateur inscrit pour l'alimentation électrique par Ethernet (PoE) identifié L.P.S. (source d'énergie limitée), homologué 802.3af de la classe 3, Tma = 50 degrés Celsius, et l'altitude de fonctionnement = 2000 m. Si vous avez besoin d'une assistance supplémentaire pour l'achat de la source d'énergie, veuillez communiquer avec Fortinet.

Regulatory Notices

Federal Communication Commission (FCC) – USA

This device complies with Part 15 of FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received; including interference that may cause undesired operation.

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 residential installation. This equipment generates, uses, and can radiate radio frequency energy, and if it is not installed and used in accordance with the instruction manual, it 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.

WARNING: Any changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Caution: Operation of this device is restricted to indoor use only.

For operation within 5.15 ~ 5.25GHz frequency range, it is restricted to indoor environment.

This device meets all the other requirements specified in Part 15E, Section 15.407 of the FCC Rules.

Industry Canada Equipment Standard for Digital Equipment (ICES) – Canada

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Innovation, Science and Economic Development (ISED) – Canada

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

1. L'appareil ne doit pas produire de brouillage;
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

For product available in the USA/Canada market, only channel 1~11 can be operated. Selection of other channels is not possible.

Pour les produits disponibles aux États-Unis / Canada du marché, seul le canal 1 à 11 peuvent être exploités. Sélection d'autres canaux n'est pas possible.

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

Cet équipement est conforme aux limites d'exposition aux rayonnements ISED établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20cm de distance entre la source de rayonnement et votre corps.

The maximum antenna gain permitted for devices in the band 5725-5850 MHz shall be such that the equipment still complies with the e.i.r.p. limits specified for point-to-point and non-point-to-point operation as appropriate.

Le gain maximal d'antenne permis (pour les dispositifs utilisant la bande 5725-5850 MHz)

doit se conformer à la limite de p.i.r.e. spécifiée pour l'exploitation point à point et non point à point, selon le cas.

Caution: The device for the band 5150-5250 MHz is only for indoor usage to reduce potential for harmful interference to co-channel mobile satellite systems.

Attention: Le dispositif de la bande 5150-5250 MHz est réservé à un usage intérieur afin de réduire l'interférence nuisible potentielle aux systèmes mobiles par satellite co-canal.

This radio transmitter (IC: 7280B-1117013 / Model: FCM-CD51) has been approved by ISED to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Le présent émetteur radio (IC: 7280B-1117013 / Model: FCM-CD51) a été approuvé par ISED pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal et l'impédance requise pour chaque type d'antenne. Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

This device and its antennas(s) must not be co-located or operating in conjunction with any other antenna or transmitter except in accordance with IC multi-transmitter product procedures.

Cet appareil et son antenne (s) ne doit pas être co-localisés ou fonctionner en association avec une autre antenne ou transmetteur.

Antenna Type	PIFA		
Antenna Connector	I-PEX		
	Gain (dBi)		
Antenna No.	2400MHz~2500MHz	5150MHz-5250MHz	5725MHz~5850MHz
Ant 1	3,4	4,1	2,9

European Conformity (CE) - EU

This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.



The product transmits within the frequency ranges and less than or equal to the power listed below:

2402-2480MHz less than 20dBm

2412-2472MHz less than 20dBm

5180-5240MHz less than 23dBm

This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Simplified EU Declaration of Conformity

This declaration is only valid for Fortinet products (including combinations of software, firmware and hardware) provided by Fortinet or Fortinet's authorized partners to the end-customer directly for use within the EU or countries that have implemented the EU Directives and/or spectrum regulation. Any Fortinet products not obtained directly from Fortinet or Fortinet's authorized partners may not comply with EU Directives and Fortinet makes no assurances for such products.

Български

Този продукт е в съответствие с Директива 2014/53/ЕС.

Česky

Tento produkt je v souladu se směrnici 2014/53/EU.

Dansk

Denne produkt er i overensstemmelse med direktiv 2014/53/EU.

Deutsch

Dieses Produkt entspricht der Richtlinie 2014/53/EU.

Eesti

See toode vastab direktiivile 2014/53/EL.

English

This product is in compliance with Directive 2014/53/EU.

Español

Este producto cumple con la Directiva 2014/53/UE.

Ελληνική

Το προϊόν αυτό συμμορφώνεται με την Οδηγία 2014/53/ΕΕ.

Français

Ce produit est conforme à la Directive 2014/53/UE.

Hrvatski

Ovaj proizvod je u skladu s Direktivom 2014/53/EU.

Italiano

Questo prodotto è conforme alla Direttiva 2014/53/UE.

Latviski

Šis produkts atbilst Direktīvai 2014/53/ES.

Lietuvių

Šis gaminys atitinka direktyvą 2014/53/ES.

Malti

Dan il-prodott huwa konformi mad-Direttiva 2014/53/UE.

Magyar

Ez a termék megfelel a 2014/53/EU irányelvnek.

Nederlands

Dit product is in overeenstemming met Richtlijn 2014/53/UE.

Norsk

Dette produktet er i samsvar med direktiv 2014/53/UE.

Polski

Ten produkt jest zgodny z dyrektywą 2014/53/UE.

Português

Este produto está em conformidade com a Diretiva 2014/53/UE.

Rumunski

Acest produs este în conformitate cu Directiva 2014/53/UE.

Slovensky

Tento produkt je v súlade so smernicou 2014/53/EÚ.

Slovensko

Ta izdelek je v skladu z Direktivo 2014/53/EU.

Suomi

Tämä tuote on direktiivin 2014/53/EU mukainen.

Svenska

Denna produkt överensstämmer med direktiv 2014/53/EU.

Note: The full Declaration of Conformity for this product is available in the link below:

<https://site.fortinet.com/ProductRegulatory/EU>

The device is restricted to indoor use only when operating in the 5150 to 5350 MHz frequency range in the following countries:

	AT	BE	BG	HR	CY	CZ	DK
	EE	FI	FR	DE	EL	HU	IE
	IT	LV	LT	LU	MT	NL	PL
	PT	RO	SK	SI	ES	SE	UK

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Version 2, June 1991

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Version 2.1, February 1999

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