



# APC ECHO 5

## Quick Installation Guide

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Product size and shape are subject to change without notice, and actual product appearance may differ from that depicted in the user guide.





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# Introduction

## Copyright

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## Notice

Deliberant reserves the right to change specifications without prior notice.

While the information in this manual has been compiled with great care, it may not be deemed an assurance of product characteristics. Deliberant shall be liable only to the degree specified in the terms of sale and delivery.

The reproduction and distribution of the documentation and software supplied with this product and the use of its contents is subject to written authorization from Deliberant.

## Trademarks

Deliberant logo is trademark of Deliberant LLC.

All other registered and unregistered trademarks in this document are the sole property of their respective owners.

## 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 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.
- This device complies with Part 15 of the 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.

## FCC Caution

To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

## FCC Radiation Exposure Statement

To comply with FCC RF exposure requirements in section 1.1307, a minimum separation distance of 3.9 feet is required between the antenna and all occupational persons, and a minimum separation distance of 16.4 feet is required between the antenna and all public persons.

## Antenna Installation

**WARNING:** It is installer's responsibility to ensure that when using the authorized antennas in the United States (or where FCC rules apply), only those antennas certified with the product are used. The use of any antenna other than those certified with the product is expressly forbidden in accordance to FCC rules CFR47 part 15.204. The installer should configure the output power level of antennas, according to country regulations and per antenna type. Professional installation is required of equipment with connectors to ensure compliance with health and safety issues.

## CE Mark Warning

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

## R&TTE Compliance Statement

This equipment complies with all the requirements of the Directive 1999/5/EC of the European Parliament and the Council of 9 March 1999 on Radio Equipment and Telecommunication Terminal Equipment and the Mutual Recognition of their Conformity (R&TTE). The R&TTE Directive repeals and replaces in the directive 98/13/EEC (Telecommunications Terminal Equipment and Satellite Earth Station Equipment) As of April 8, 2000.

## Safety

This equipment is designed with the utmost care for the safety of those who install and use it. However, special attention must be paid to the dangers of electric shock and static electricity when working with electrical equipment. All guidelines of this manual and of the computer manufacturer must therefore be allowed at all times to ensure the safe use of the equipment.

## EU Countries Not Intended for Use

None.

## About this Guide

### Prerequisite Skills and Knowledge

To use this document effectively, you should have a working knowledge of Local Area Networking (LAN) concepts and wireless Internet access infrastructures.

### Definitions, Acronyms and Abbreviations

The following typographic conventions and symbols are used throughout this document:



Additional information that may be helpful but which is not required.



Important information that should be observed.

**bold**

Menu commands, buttons, input fields, links, and configuration keys are displayed in bold

*italic*

References to sections inside the document are displayed in italic.

`code`

File names, directory names, form names, system-generated output, and user typed entries are displayed in constant-width type

### Technical Support

If you encounter problems when installing or using this product, please consult the Deliberant website at [www.deliberant.com](http://www.deliberant.com) for:

- Direct contact to the Deliberant support centers.
- Frequently Asked Questions (FAQ).
- Download area for the latest software, user documentation and product updates.

### Contact us

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For sales enquiries: [sales@deliberant.com](mailto:sales@deliberant.com)



# Installation

This chapter provides installation instructions for the hardware components of the APC ECHO 5. The APC ECHO 5 is sold in two options; accordingly the full package contents will differ:

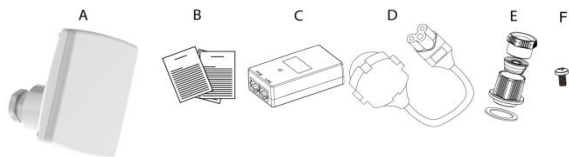
- APC ECHO 5
- APC ECHO 5 together with Offset Dish



If any of listed items are missing or damaged, please contact your reseller.

## APC ECHO 5 Package Contents

The figure below displays APC ECHO 5 package contents:



*Figure 1 – ECHO 5 Package Contents*

Item	Component Name	Quantity
A	APC ECHO 5	1
B	Quick Installation Guide	1
C	PoE	1
D	Power Cord	1
E	Cable Gland	1
F	Grounding Screw	1

## Offset Dish Package Contents



This description of the package contents applies on purchases ECHO 5 together with Offset Dish only.

The figure below displays package contents of the offset ECHO 5 dish (60cm):

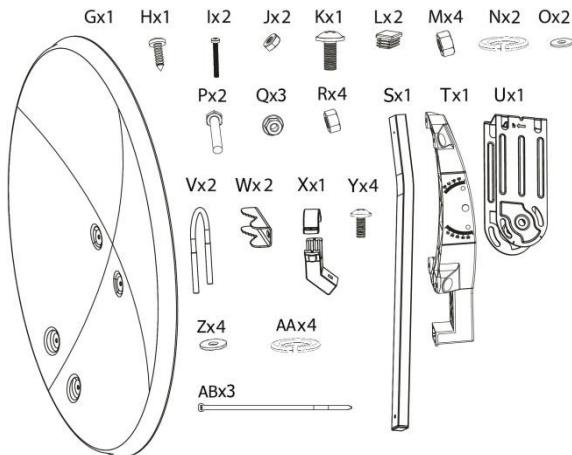


Figure 2 – Offset Dish Package Contents

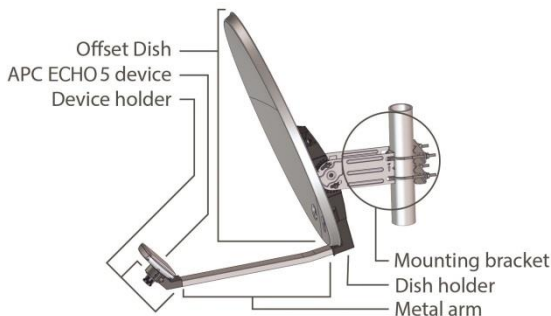
Item	Component Name	Quantity
<b>G</b>	Dish Reflector	1
<b>H</b>	Taping Screw 4x13mm	1
<b>I</b>	Screw M4x20mm	2
<b>J</b>	Nut M4 for Device Holder	2
<b>K</b>	Screw M6x25mm	1
<b>L</b>	Plastic Insert Cap	2
<b>M</b>	Nut M8	4
<b>N</b>	Spring Washer ID=6.5mm	2

Item	Component Name	Quantity
<b>O</b>	Washer ID=6mm	2
<b>P</b>	Screw M6x70mm	2
<b>Q</b>	Flange Nut M6	3
<b>R</b>	Nut M6	4
<b>S</b>	Metal Arm	1
<b>T</b>	Dish Holder	1
<b>U</b>	ADJ (angle adjust) Bracket	1
<b>V</b>	U-bolt	2
<b>W</b>	Clamp Bracket	2
<b>X</b>	Device Holder	1
<b>Y</b>	Screw M6x12mm	4
<b>Z</b>	Washer ID=8mm	4
<b>AA</b>	Spring Washer ID=8mm	4
<b>AB</b>	Plastic cable tie	3

## APC ECHO 5 Hardware Introduction



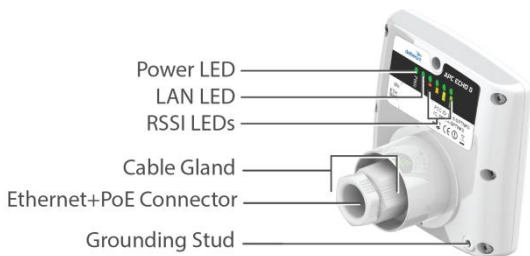
This hardware description provides instructions of installation for complete package of APC ECHO 5 together with Offset Dish.



*Figure 3 – ECHO 5 with Offset Dish Overview*

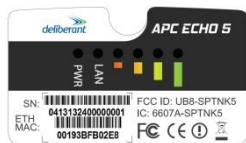
The base of the APC ECHO 5 unit's housing is made from the metal for heat dissipation and contains:

- **6 LEDs:** power LED, LAN activity LED and 4 LEDs for device RSSI level indication
- **Ethernet cable gland**
- **Ethernet + PoE** connector
- **Grounding stud**

*Figure 4 – ECHO 5 Overview*

The APC ECHO 5 label contains with following information:

- Model name.
- Serial Number
- ETH MAC address
- FCC ID
- IC ID

*Figure 5 – APC Label*

Product size and shape are subject to change without notice, and actual product appearance may differ from that depicted in the user guide.

## LEDs

The APC ECHO 5 has 6 LEDs located on the back panel: power, LAN and 4 RSSI LEDs (refer at the *Figure 4 – ECHO 5 Overview* for details). The various states of the LEDs indicate different connection operations as follows:

LED	Color	Status	Indication
Power	Green	On	The APC is active/working
		Off	No power on APC
LAN	Green	On	LAN connection exists.
		Blinking	Indicates the traffic on LAN interface.
		Off	No LAN connection.
RSSI (1, 2, 3, 4)	Yellow	On	The RSSI level has reached the appropriate threshold level (default RSSI threshold levels: 10, 25, 35, 50)
		Off	The RSSI level has not reached the appropriate threshold level

## Assembling APC ECHO 5 with Offset Dish

**Step 1.** Install **ECHO 5** by tightening Plastic Holder (item **X**) with two Screws M4x20mm and two Nuts M4 (items **I** and **J**). Connect Ethernet cable into the **ECHO 5** and tighten it with Cable Gland (item **E**):



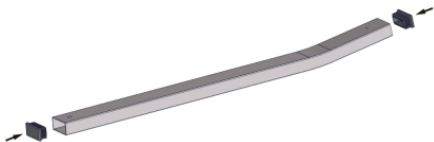
It is recommended to use STP, Cat5e, 24AWG, solid copper conductor (NOT copper wrap aluminum) Ethernet cable.



To ensure a successful ground, it is recommended to solder the metal drain wire to the shielded RJ45 connector, as this provides a more reliable grounding.



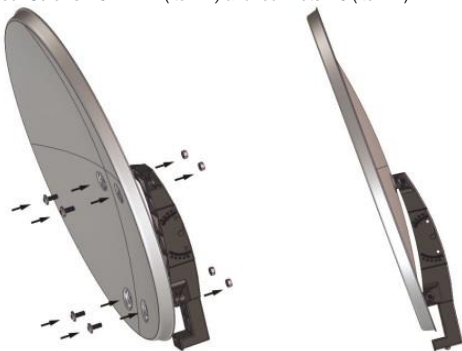
- Step 2.** Attach the Plastic Insert Caps (item **L**) at the ends of the Metal Arm (item **S**):



- Step 3.** Attach the Plastic Holder together with **ECHO 5** to Metal Arm (item **S**) using the Screw M6x25 (item **K**) and Flange Nut M6 (item **Q**):



- Step 4.** Attach the Dish Reflector (item **G**) to the Dish Holder (item **T**) using four Screws M6x12mm (item **Y**) and four Nuts M6 (item **R**):





- Step 5.** Attach the Metal Arm (together with **ECHO 5**) to the Offset Dish using the Taping Screw 4x13mm (item **H**):



It is recommended to secure the Ethernet cable on the metal arm with plastic cable ties (item **AB**) to avoid damage of the Ethernet port of the **ECHO 5**.

## ECHO 5 with Dish Assembly Mounting on Pole

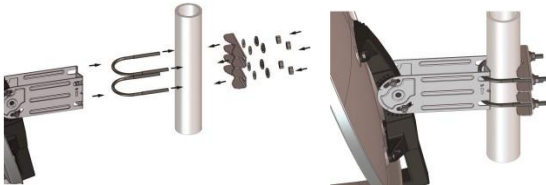
The APC ECHO 5 with Offset Dish is supplied with mounting kit for pole installation (40-60mm diameter). Use the following procedure to mount the device on a pole:

- Step 1.** Fasten the Angle Adjust Bracket (item **U**) to the Dish Holder using two Screws M6x70mm (item **P**), and two Flange Nuts M6 (item **Q**) with two Washers ID=6mm (item **O**) and with two Spring Washers ID=6.5mm (item **N**).

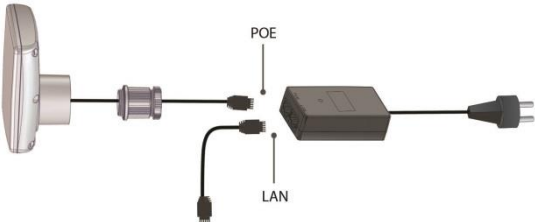




**Step 2.** Attach the Dish Assembly to the pole using the two U-Bolts (item **V**), two Clamp Brackets (item **W**), four Washers ID=8mm (item **Z**), four Spring Washers ID=8mm (item **AA**) and four Nuts M8 (item **M**):



**Step 3.** Connect the APC to a PoE power source: connect an Ethernet cable coming from Ethernet port on the APC ECHO 5 to the **POE** port of the PoE Adapter, then connect other Ethernet cable from your LAN to the Ethernet port labeled **LAN** on the PoE Adapter and power up the device:



- Step 4.** After the unit is powered-on, the green Power LED must be on (refer at the respective section *LEDs*). Dependently on link quality, up to four yellow LEDs will switch on indicating that link between two units was established successfully.

## ECHO 5 Grounding

The **APC ECHO 5** must be grounded before connecting power to protect against lightning.

- Step 1.** The grounding cable must be attached to the grounding stud and fixed with the grounding screw (item **F** in the *Figure 1 – ECHO 5 Package Contents*):

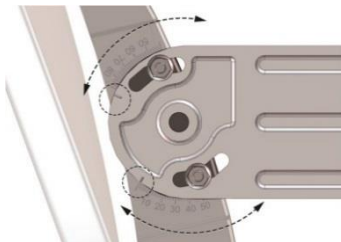


**Grounding recommendations:**

- Use the grounding cable to connect the device housing with the grounding stake.
- Use conductor larger than 6 AWG.
- Keep grounding cable as short as possible.

## ECHO 5 with Dish Assembly Adjustment

The ECHO 5 Offset Dish has an elevation scale on the holder which allows adjust dish to the correct elevation angle. Assuming that elevation angle of the link is 0 degrees, point the marks on the ADJ mounting bracket (item **U** on the *Figure 2 – Offset Dish Package Contents*) at 0 degrees on lower scale (90 degrees on upper scale) and then firmly tighten the nuts:



Use lower scale on the bracket for change dish elevation angle up (therefore the upper scale is for aligning dish elevation angle down).

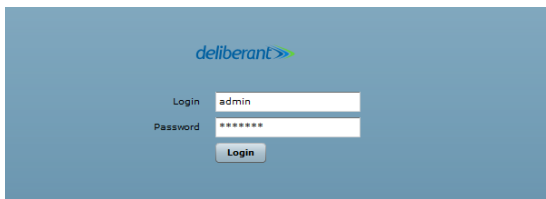
# APC Management

The first connection to the APC can be made using a standard Ethernet cable connected directly to your PC. See next section for the instructions on how to access the APC management interface.

## Access the APC

The default IP address of the APC ECHO 5 is 192.168.2.66 with a subnet mask of 255.255.255.0

- Step 1.** Configure your PC with a static IP address on the 192.168.2.0 subnet (i.e. 192.168.2.10) with mask 255.255.255.0. Connect the APC Ethernet interface in to the same physical network as your PC. Open the Web browser and type the default IP address of the APC: <https://192.168.2.66/>



- Step 2.** Enter the APC administrator login details to access the Web management.



The default administrator login settings for all APC:

Login: **admin**

Password: **admin01**

- Step 3.** After successful administrator log on you will see the main page of the APC Web management interface. The APC is now ready for configuration. For further instructions on Web management refer to the respective document APC User Guide.

## Declaration Of Conformity

### Česky [Czech]

Deliberant tímto prohlašuje, že tento Deliberant APC ECHO 5, je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.

### Dansk [Danish]

Undertegnede Deliberant erklærer herved, at følgende udstyr Deliberant APC ECHO 5, overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.

### Nederlands [Dutch]

Hierbij verklaart Deliberant dat het toestel Deliberant APC ECHO 5, in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.

Bij deze verklaart Deliberant dat deze Deliberant APC ECHO 5, voldoet aan de essentiële eisen en aan de overige relevante bepalingen van Richtlijn 1999/5/EC.

### English

Hereby, Deliberant, declares that this Deliberant APC ECHO 5, is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

### Eesti [Estonian]

Käesolevaga kinnitab Deliberant seadme Deliberant APC ECHO 5, vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.

### Suomi [Finnish]

Deliberant vakuuttaa täten että Deliberant APC ECHO 5, tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.

### Français [French]

Par la présente Deliberant déclare que l'appareil Deliberant APC ECHO 5, est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.

Par la présente, Deliberant déclare que ce Deliberant APC ECHO 5, est conforme aux exigences essentielles et aux autres dispositions de la directive 1999/5/CE qui lui sont applicables.

### Deutsch [German]

Hiermit erklärt Deliberant, dass sich diese Deliberant APC ECHO 5, in Übereinstimmung mit den grundlegenden Anforderungen und den anderen relevanten Vorschriften der Richtlinie 1999/5/EG befindet. (BMW)

Hiermit erklärt Deliberant die Übereinstimmung des Gerätes Deliberant APC ECHO 5, mit den grundlegenden Anforderungen und den anderen relevanten Festlegungen der Richtlinie 1999/5/EG. (Wien)

### Ελληνική [Greek]

ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ Deliberant ΔΗΛΩΝΕΙ ΟΤΙ Deliberant APC ECHO 5, ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ.

### Magyar [Hungarian]

Alulírott, Deliberant nyilatkozom, hogy a Deliberant APC ECHO 5, megfelel a vonatkozó alapvető követelményeknek és az 1999/5/EC irányelv egyéb előírásainak.

### Íslenska [Icelandic]

Hér með lýsir Deliberant yfir því að Deliberant APC ECHO 5, er í samræmi við grunnkröfur og aðrar kröfur, sem gerðar eru í tilskipun 1999/5/EC.

### Italiano [Italian]

Con la presente Deliberant dichiara che questo Deliberant APC ECHO 5 , è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.

### **Latviski [Latvian]**

Ar šo Deliberant deklarē, ka Deliberant APC ECHO 5 , atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.

### **Lietuvių [Lithuanian]**

Šiuo Deliberant deklaruoją, kad šis Deliberant APC ECHO 5 , atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.

### **Malti [Maltese]**

Hawnhekk, Deliberant, jiddikjara li dan Deliberant APC ECHO 5 , jikkonforma mal-htigijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm f'd-Direttiva 1999/5/EC.

### **Norsk [Norwegian]**

Deliberant erklærer herved at utstyret Deliberant APC ECHO 5 , er i samsvar med de grunnleggende krav og øvrige relevante krav i direktiv 1999/5/EF.

### **Slovensky [Slovak]**

Deliberant týmto vyhlasuje, že Deliberant APC ECHO 5 , spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.

### **Svenska [Swedish]**

Härmed intygar Deliberant att denna Deliberant APC ECHO 5 , står i överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.

### **Español [Spanish]**

Por medio de la presente Deliberant declara que el Deliberant APC ECHO 5 , cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.

### **Polski [Polish]**

Niniejszym, firma Deliberant oświadcza, że produkt serii Deliberant APC ECHO 5 , spełnia zasadnicze wymagania i inne istotne postanowienia Dyrektywy 1999/5/EC.

### **Português [Portuguese]**

Deliberant declara que este Deliberant APC ECHO 5 , está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE



To get full CE declaration of conformity documents, refer at  
<http://www.deliberant.com/conformity>.



