FCC ID: QVJSAP300
Access Point 300

Exhibit 9

User's Manual

Fleetlink
Access Point 300

Installation Guide

Fleetlink Access Point 300 Installation Guide

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Chapter 1

Preliminaries

Welcome to Fleetlink

Welcome to Fleetlink, FleetMind's fleet management solution. In this installation guide, you will learn about the Fleetlink Access Point 300, including how to install it. The guide is divided into three chapters (see "Using the Documentation" in this chapter), which will help you understand how the Access Point 300 works and the role it plays in the Fleetlink solution.

Important Safety and Compliance Information

Note This section applies to the Fleetlink Access Point 300 model, specifically model S-AP-300.

Before you install or use the Fleetlink product, read the FCC and other regulatory material found below, as well as in the other documents that accompanied your order.

This section provides information on the following topics:

- FCC compliance statement (USA)
- Industry Canada Certification

Warning To meet FCC / IC RF exposure guidelines, you must keep at least 8in. (20 cm.) from the antenna during operation.

FCC Compliance Statement (USA)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15. These limits are designed to provide reasonable protection against harmful interference in a residential environment notwithstanding use in commercial, business and industrial environments. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the product manuals, may cause harmful interference to radio communications. This equipment also complies with the FCC Part 15 Subpart C.

Caution Changes or modifications to this unit not expressly approved by the party responsible for compliance could void your authority to operate this equipment.

Industry Canada Certification

This Class B digital apparatus complies with Canadian ICES ICES-003 and RSS 210.

Using the Documentation

This installation guide assumes some basic understanding of the Fleetlink fleet management system and is intended for installers. It is divided into the following three chapters:

1 Preliminaries

Provides general information about the manual, safety and compliance information, as well as information on how to contact customer support.

2 Introduction

Provides an overview of the Access Point 300, including information about its components.

3 Installation

Provides installation considerations, as well as detailed installation instructions.

Conventions

This user guide uses the following conventions to convey instructions and information:

Table1 Installation Guide Conventions

Convention	Description
Bold	When bold is used within procedures, it identifies key's on the PC or on the Access Point Installation Terminal.(e.g., Press **Enter**.).
Caution	Indicates *reader be careful*. In this situation, you might do something that could result in equipment damage or loss of data.
Note	Indicates *reader take note*. Notes contain helpful suggestions or references to additional information and material.
Tip	Indicates that *the described action saves time*.

Suggested Reading

For related information, see the following publications:

- *Fleetlink Report Manager User Guide*, 33-911-0001-01
- *Fleetlink Hardware Installation and Configuration Guide*, 33-911-0002-01
- *Fleetlink Administrator Guide*, 33-911-0003-01
- *Fleetlink Driver Display for TRUX*, 33-911-0005-01
- *Fleetlink Driver Display for Soft-Pak*, 33-911-0006-01

Service and Support

If you require assistance with this or any other FleetMind product, please call or email technical support.

Call for Assistance:

Greater Montreal Area: 514.631.3666, ext. 250

Toll-free North America: 1.877.698.4286, ext. 250

Email for Assistance:

service@fleetmind.com

Contacting Us

If you have comments about this or other FleetMind product documentation, send us an email at techdocs@fleetmind.com. In your message, be sure to include the manual's complete document number and revision letter (e.g., 33-911-0001-01.A), which you can find on the back cover. We appreciate your comments.

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Chapter 2

Introduction

Introduction

This manual describes the Fleetlink Access Point 300 and provides instructions for its installation and operation. This chapter provides an introduction to the Fleetlink Access Point 300, including its key components.

What is the Access Point 300?

The Access Point 300 offers a wireless connection to remote computers from the Fleetlink server, forming a wireless Local Area Network (LAN). The radio frequency (RF) portion of the Access Point 300 consists of an antenna, which is connected by a short antenna cable to the radio transceiver and control circuitry. This RF part often needs to be located far from the server computer in order to make contact with the remote on-board computers (referred to as “Copilots”), which are found in the vehicles.

The Access Point 300 offers the following advantages:

- Higher speed synchronous data communications, which lessens the time required to download information to the Copilot.
- No memory limitations causing lost packets (the radio data is sent directly at high speed to the card in the PC and buffering is not required)
- Robust Communications Stack which allows efficient error detection / correction and the seamless use of terrestrial and satellite communication as well
- The ability to handle a large number of trucks in the yard at once, without degradation of system performance.
- Remote control of the frequency channel which is kept in non-volatile memory
- Status information for the Access Point from the server side of the cable

The Access Point 300 system consists of:

- Access Point 300 radio box and antenna
- ESCC card mounted in the server
- Software in the server, which includes the communications stack and low level drivers
- Cable and splitter connecting the radio box to the server. The splitter separates the connections for the ESCC card, the Fleetlink terminal and power inputs
- Fleetlink terminal with AcPt300 remote control and status program (or a serial port and equivalent program on the server PC).

Access Point 300 Radio Box

The Access Point 300 radio box comprises a circuit board with a microcontroller that controls the Proxim RXA-300 radio card and loads it with the correct channel and the transmit or receive state, line drivers and receivers to interface over a long cable with a server, and a switching power regulator for maximum efficiency and the ability to operate from a low-cost power adapter at the far end of the long cable. In addition, it includes a low-speed serial port for remote settings and diagnostics that virtually eliminates the need to open the unit once mounted.

Hardware is provided for three analog values: temperature, input voltage to the unit and RSSI (Received Signal Strength Indicator). The states of input and output control lines are available remotely as a status report, at regular intervals or on request only, if the firmware supports these features. All remote connections are made via a single male DB25 connector.

The housing is a die-cast aluminum box with flanged lid for wall mounting. To provide a remote indication of tampering, this enclosure can have an actuator for a PCB mounted snap action (micro) switch or a magnet to close a Normally Open PCB-mounted reed switch. It is designed so that the screws attaching the cover are inaccessible once mounted on the wall.

Proxim RXA-300

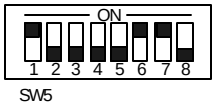
The Proxim RXA-300 is a 900 MHz spread-spectrum radio transceiver mounted on the circuit board of the Access Point 300 radio box.

ESCC Card

The connection to the software in the server is made using a plug-in card that can exchange data at the radio's maximum speed. The ESCC card is available in both ISA and PCI bus versions, and is usually pre-configured and mounted in the server by FleetMind personnel.

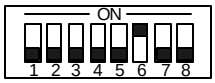
DIP switch setting for ESCC PCI Card.

CLOCK CONTROL



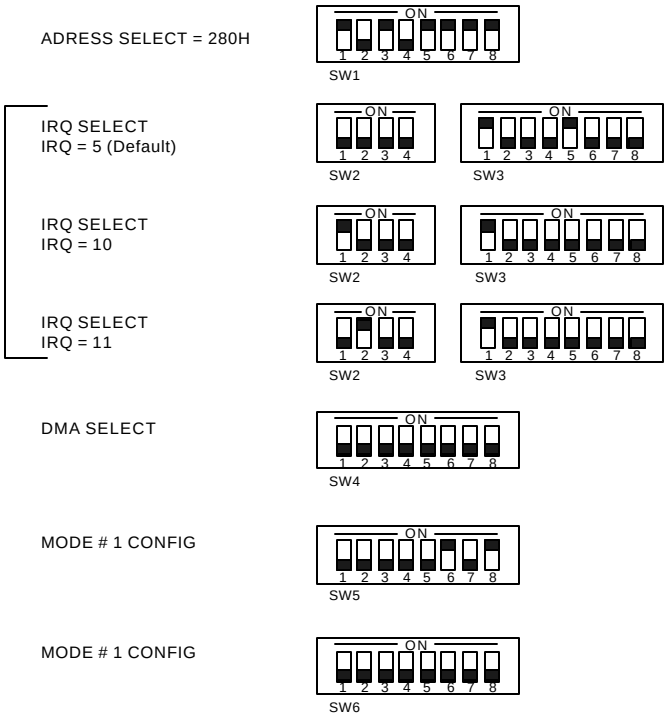
SW5

485 CONTROL



SW6

DIP switch setting for ESCC ISA Card



Software

The required software is usually pre-installed in the server PC by FleetMind personnel. This software controls the transmit / receive operation of the Access Point 300 radio and sends and receives data between the Manager applications in the server and the Copilots in the trucks.

Cable and Splitter

The cable and splitter connect the radio box to the server, and splits the connections for ESCC card, Fleetlink terminal and power input. A 25-wire, low capacitance, computer-grade cable is run from the server room to the Access Point 300 box. There is a DB25 female connector at the Access Point 300 end and a DB25 male connector at the server end connected pin to pin. Standard cable lengths are 3.75 meters (12.3 feet) part number: 926-0026-00.00 and 30 meter (100 feet) part number: 926-0026-01.00. More than one cable can be plugged end to end, up to a maximum length of 90 meters (300 feet). This cable can be supplied by FleetMind made to a length determined from a site survey. If the server needs to be relocated later, this cable can be extended with a standard DB25 male-female cable. At the server end, a FleetMind splitter separates the connections according to function. The splitter provides a DB25 female connector to mate with the ESCC Port 1 Male connector, a DB9 female for the Fleetlink terminal and two power jacks (i.e., one for the Access Point 300 radio box and one for the FleetMind terminal, if used).

Access Point InstallationTerminal

The Access Point Terminal includes the AcPt300 remote control and status program. It has a single screen for all normal operation, making it easy to use. Following is an explanation of what you see on the terminal screen and how to use the terminal:

- Connected to:

  The Access Point 300 sends its program version when first powered up. This program version will be displayed on the first line below the title if the Terminal is connected and already powered.

- <Ask Status>

  When you press **Enter** with **<Ask Status>** highlighted, the terminal requests a status report from the Access Point 300. On receiving the status request, if the firmware version supports this feature, the Access Point 300 circuit reads the analog values and sends them with the channel number and system states (control lines) over the RS-232 connection part of the cable back to the terminal.

- <Config>

  When you press **Enter** with **<Config>** highlighted, the terminal switches to the Configuration Screen. This screen allows you to alter the look of the display, calibrate the temperature reading (future option), and turn on or off key backlighting or beep.

- SetChannel

  If the radio's frequency channel needs to be changed, type the channel number from 1 to 7 and press **Enter**. A status report is automatically sent back by the Access Point 300 to update the channel number display (shown after **Now:**)

- AutoReport (Future use)

  Type the time interval for automatic status reporting by the Access Point 300, in tenths of a second, from 10 to 250, then press **Enter**. For example, type **50** for once every 5 seconds or **250** for once every 25 seconds. To turn off automatic status report generation, type **0** and press **Enter**.

- Alarm Status

  This line is used to display the status of alarms (requires special firmware in the Access Point). **Normal** indicates that there are no abnormal conditions (no alarms). **Too Hot!** indicates that the temperature reading sent in the status report exceeds a set limit. **Low Voltage!** indicates that the input voltage at the Access Point 300 end of the cable is too low for reliable operation. **Tamper Alarm!** indicates that the tamper switch has been activated (box cover removed).

- Analog Values (requires special firmware in the Access Point, dummy values are displayed with standard firmware).

  Exemple: Temp 020 RSSI 000 13 V indicates that the temperature inside the AccessPoint300 box is approximately 20°C, the RSSI is 0 (radio is off) and the input power voltage is between 13 and 13.9 V.

- Digital States

  The line **dtr DSR cts - rts Rx** indicates the current state of input and output control lines the two radio states. Uppercase letters indicate a control line in the active state and lowercase letters indicate a control line in the inactive state.

  The current state of the Microcontroller /Standby and Tx/ /Rx outputs to the RXA-300 are also displayed: **—**indicates that the radio is in standby (off) mode; **On** normally appears when the server activates DTR and the radio is turned on by the microcontroller; **Rx** indicates the receive state of the Rx/Tx radio control line. The terminal can display what states the Access Point 300 is receiving for the control signals DTR and RTS, and what it is outputting for CTS and DSR. This information is helpful for troubleshooting the wiring when there is a difference between what the server expects and what the Access Point 300 card reports.

Chapter 3

Installation

Introduction

This chapter provides installation considerations for the Access Point 300 antenna, as well as detailed instructions for installing the Access Point 300.

Installation Considerations

Antenna Installation

Proper antenna positioning maximizes antenna performance. A site survey with portable equipment should be performed prior to installation to determine the best location and provide assurance that the coverage will be satisfactory. When you determine the proper antenna position, consider the environment in which the device will be used. Environments can vary significantly, and incorporating the antenna is an integral part of a successful installation. Use only the antenna supplied, part number 891-001 antenna with 891-004 magnetic mount base.

When you are installing an antenna, you should consider the following issues:

- Vertical polarization

  Because the Access Point 300 network is based on a vertically polarized radio-frequency transmission, the antenna should be oriented vertically and upward.

- Proximity to active electronics

  You should position the antenna as far as possible from the computing devices' active electronics.

- Transmission interference

  To prevent interference from the antenna into the Access Point 300 during transmission, the antenna must be placed a minimum of 8 in. (20 cm) away from the Access Point 300. For best performance, the antenna should be placed more than 12 in. (30 cm) away from the Access Point 300.

- Device position

  Fleetmind recommends that you install the Access Point 300 inside the building in a temperate location that is out-of-the-way, but accessible for service. This location must be within the antenna coax cable length distance from the antenna. Above the false ceiling and high on the truck terminal wall are two possible mounting locations.

- Antenna Installation

  The Antenna should be installed outside on a metal ground plane at least 12"x12" (30 X 30 cm) size, where there is a clear view of the area required to be in RF coverage. Using a metal ground plane for the antenna will allow it to achieve its design performance and optimize the system's coverage. Galvanized or painted thick steel (14 ga. or thicker) is recommended so that the magnetic mount can attach securely, without relying on additional means to hold it in place.

  This ground plane could be a steel roof or a plate on a bracket attached to the top of a building, or a pole. It must be placed where the antenna will always be a minimum of 8 in. (20 cm) away from human contact, typically 14 ft. or more above ground level.

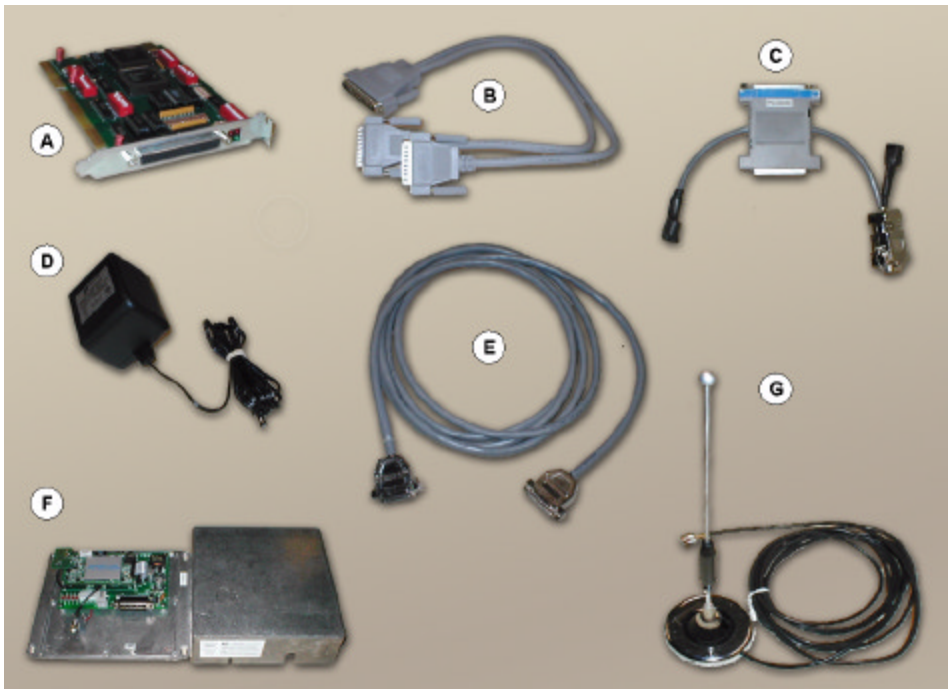
Installing the Access Point 300

Access Point 300 System Components

The components that make up the Access Point 300 are—

- **A** ESCC card
- **B** ESCC 2-port cable
- **C** Splitter
- **D** AC adapter
- **E** DB25 cable
- **F** Access Point 300 with cover
- **G** Antenna

Figure1 Access Point 300 System Components

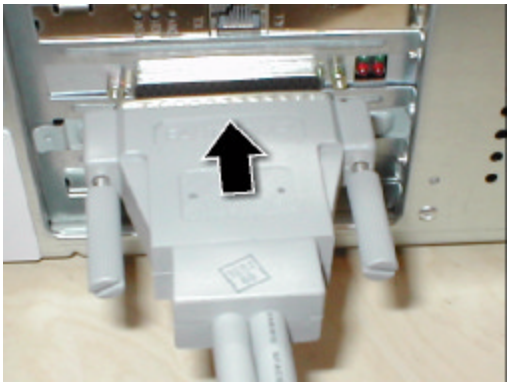


Installation Procedure

To install the Access Point 300:

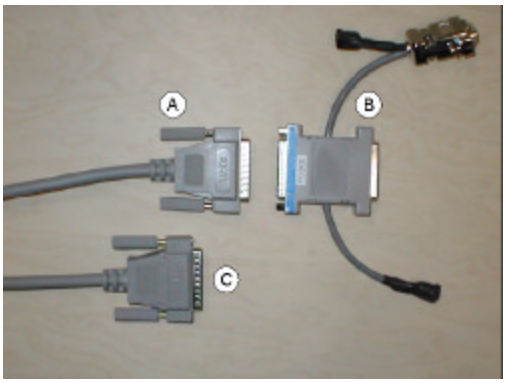
1 Plug the **FASTCOMM** end of the ESCC 2-port cable into the ESCC card, which was installed in your computer by FleetMind personnel.

Figure2 ESCC Cable's FASTCOMM Connector



2 Plug the **PC SIDE** of the splitter (B) into the PORT1 connector of the ESCC 2-port cable (A).

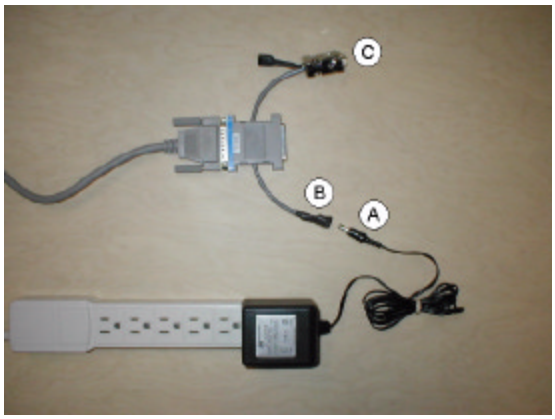
Figure3 Splitter and ESCC Cable's PORT1 Connector



Caution Do not connect the splitter to the ESCC cable's PORT2 connector (C). If you do this, the Access Point 300 will not function.

3 Plug the AC adapter (A) into the splitter's power connector (B).

Figure4 AC Adapter



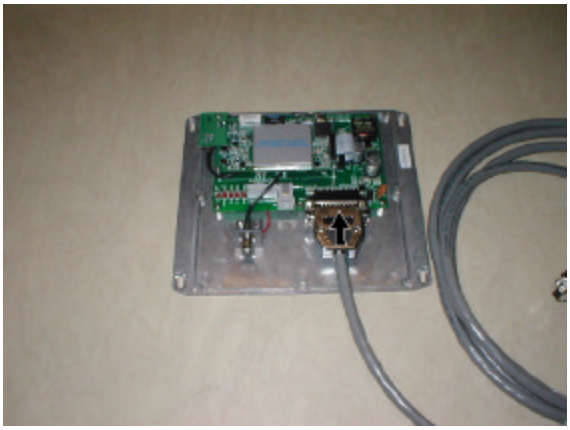
Note The splitter's DB9 / power connector (C) is for diagnostic and channel selection purposes only. Connect to PC serial port or temporarily to Access Point Terminal.

4 Connect the male end of the DB25 cable (A) into the free end of the splitter (B).

Figure5 Splitter and DB25 Cable

5 Connect the female end of the DB25 cable into the Access Point 300.

Figure6 DB25 Cable



6 Connect the antenna's coaxial cable to the RF connector on the Access Point 300.

Figure7 Antenna's coaxial Cable

7 Put the cover back and install the Access Point 300 as recommended in the previous section.

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