Access5800 Series
User Manual

August, 2002

- **Trango Broadband Wireless**
- **9939 Via Pasar**
- **San Diego, California 92126**
- **T 858-653-3900**
- **F 858-621-2725**

FCC Information:

This device complies with Part 15 of FCC Rules and Regulations. 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 a residential installation. This equipment generates, uses, and can radiate radio-frequency energy and, if not installed and used in accordance with these instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in any 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 correct the interference by one of more of the following measures:

1) Reorient the antenna;
2) Increase the separation between the affected equipment and the unit;
3) Connect the affected equipment to a power outlet on a different circuit from that which the receiver is connected to;
4) Consult the dealer and/or experienced radio/TV technician for help.

FCC ID: NCYM5800SBAP60
FCC ID: NCYM5800SBSUEXT
Canada: 2945A 12100

IMPORTANT NOTE:

Intentional or unintentional changes or modifications must not be made unless under the express consent of the party responsible for compliance. Any such modifications could void the user's authority to operate the equipment and will void the manufacturer's warranty.

To comply with FCC RF exposure requirements, the following antenna installation and device operating configurations must be satisfied. The antenna for this unit must be fixed and mounted on outdoor permanent structures with a separation distance of at least two meters from all persons. Furthermore, it must not be co-located or operating in conjunction with any other antenna or transmitter.

Table of Contents

1. For your safety

WARNING
Use extreme care when installing antennas near power lines.

CAUTION
Do not apply power to the transmitter until the antenna is connected. Permanent damage may result.

CAUTION
When the unit is in operation, avoid standing directly in front of the antenna. Strong RF fields are present when the transmitter is on**.**

2. Welcome

Thank you for choosing Trango Broadband Wireless to fulfill your wireless Internet access needs. You are now on your way to using a high-speed wireless link, which can serve as an alternative to conventional wiring where such wiring is impractical, too slow or too expensive.

The wireless link requires at least one Access Point Unit and one Subscriber Unit. An Access Point can manage up to five hundred Subscriber Units per sector. A sector is defined as a 60 degree (azimuth) by 10 degree (elevation) coverage area that an Access Point's integrated antenna covers. The system utilizes robust spread-spectrum technology to reduce susceptibility to interference.

2.1 Documentation conventions

Convention	Description
Bold	Indicates emphasized text Example: **Note**
Italic	Indicates a file name Example: *ap_default.cfg*
Bold & italic	Indicates a user command Example: ***tftp***
`Courier New`	Indicates contents in a file
`Courier New`	Indicates descriptions of file contents

2.2 Check list

For each package you receive, you should have the following items:

AP Package	Quantity	Part Number
Access5800 ™ Access Point Radio	1	M5800S-AP-60
Access5800 ™ Quick Setup Check List	1	LT-9005
V-shaped Mounting Brackets	2	ES-9181
Bolts (for Mounting Brackets)	4	H-9138
Lockwashers (for Mounting Brackets)	4	H-9137
Junction Box Kit (contains 20V adapter)	1	ODU-PKIT-1
Mounting Arm with U-bolts	1	H-9125

SU Package, with external antenna	Quantity	Part Number
Access5800 ™ Subscriber Unit Radio	1	M5800S-SU-EXT
Access5800 ™ Quick Setup Check List	1	LT-9005
V-shaped Mounting Brackets	2	ES-9181
Bolts (for Mounting Brackets)	4	H-9138
Lockwashers (for Mounting Brackets)	4	H-9137
Junction Box Kit (contains 20V adapter)	1	ODU-PKIT-1
Coaxial Cables	2	CA-9018
Dish Antenna Kit with Feed Element	1	AD5800-27-D

SU Package, with internal antenna	Quantity	Part Number
Access5800™ Subscriber Unit Radio	1	M5800S-SU
Access5800 ™ Quick Setup Check List	1	LT-9005
V-shaped Mounting Brackets	2	ES-9181
Bolts (for Mounting Brackets)	4	H-9138
Lockwashers (for Mounting Brackets)	4	H-9137
Junction Box Kit (contains 20V adapter)	1	ODU-PKIT-1
Mounting Arm with U-bolts	1	H-9125

If any items are missing, notify your sales representative. If an item appears to be damaged from shipment, replace it in its packing material and notify the shipper.

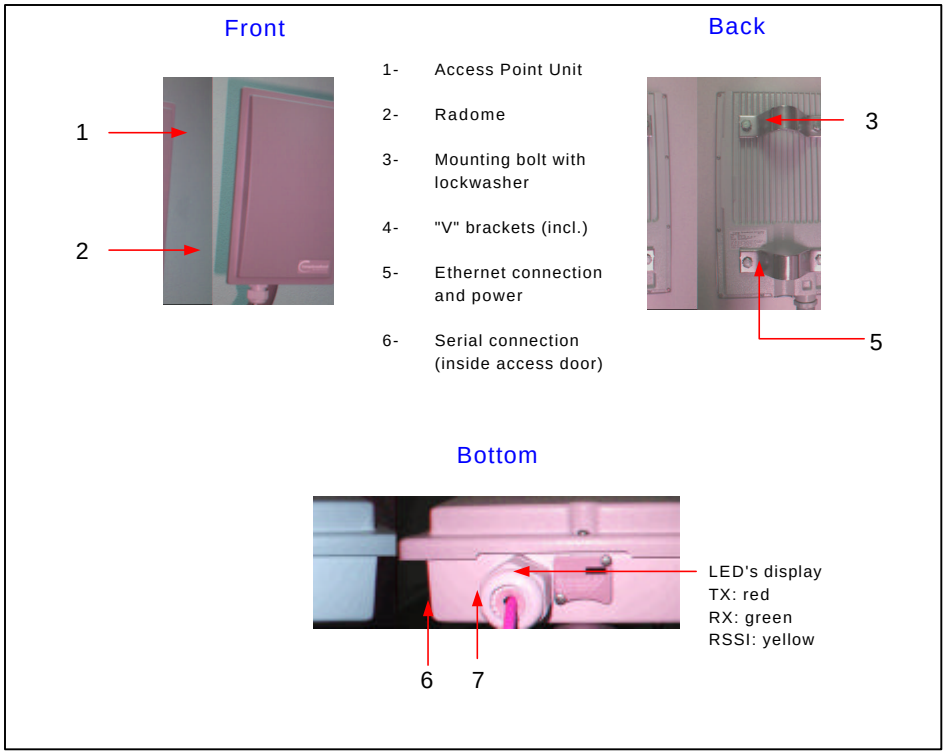
2.3 Service

If the unit ever needs repair service, contact your service provider or an authorized Trango Broadband Wireless distributor for return authorization and shipping instructions.

3. Components and features

3.1 Access Point Unit

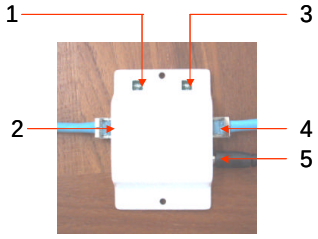
The Access Point Unit coordinates and manages Ethernet packet flow based on a point-to-multipoint Broadband Wireless Access architecture.



1- Access Point Unit
2- Radome
3- Mounting bolt with lockwasher
4- "V" brackets (incl.)
5- Ethernet connection and power
6- Serial connection (inside access door)

3.2 Junction Box

The Junction Box provides power to AP or SU via unused leads in a Shielded Twisted-pair (STP) Ethernet cable. The ODU port in the diagram below connects to AP or SU using 8-conductor STP.



1- Indicates voltage to J-Box OK
2- NET port (RJ45)
3- Indicates AP or SU drawing current
4- ODU port (RJ-45)
5- Power port (20 Vdc)

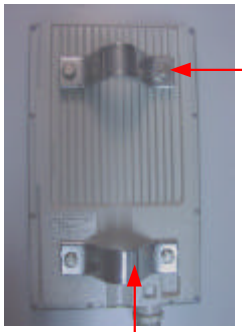
3.3 Subscriber Unit

The Subscriber Unit interfaces with end users via Ethernet devices such as network switch, hub or a PC network interface card (NIC).

Front

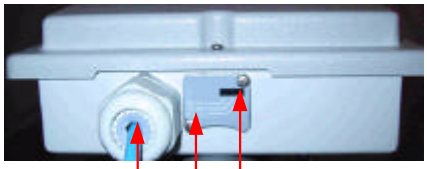
1- SubscriberUnit
2- Antenna ports (H & V)
3- Mounting bolt and lockwasher(4)
4- "V" brackets (incl.)
5- Dish antenna
6- Feed arm
7- Feed
8- Flange Ethernet connection and power
9- Serial connection (inside access door)
10- LED display
TX: red
RX: green
RSSI: yellow

Back



Installed on dish antenna mounting arm

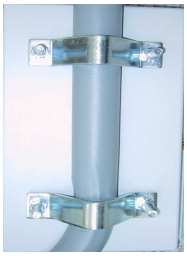
Bottom



4. Installation

4.1 Access Point Mechanical Installation

(1) Mount the arm to an earth-grounded mast or secured wall. U-bolts required for mast mount

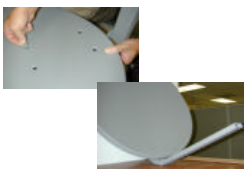


(2) Mount the AP to the mounting arm

(3) Align antenna

4.2 Subscriber Unit Mechanical Installation

(1) Mount the arm to an earth-grounded mast or a secured wall (U-bolts required for mast mount).



(2) Assemble the antenna dish and feed arm (upper left picture). The lower right picture shows the dish with feed arm.

(3) Mount the dish to the mounting arm.

(4 Mount the feed to the feed arm.

(5) Adjust the mounting arm to horizontal level.

(6) Mount SU on the mounting arm.

(7) Connect one end of two RF cables to the feed and run other end through feed arm to the SU.

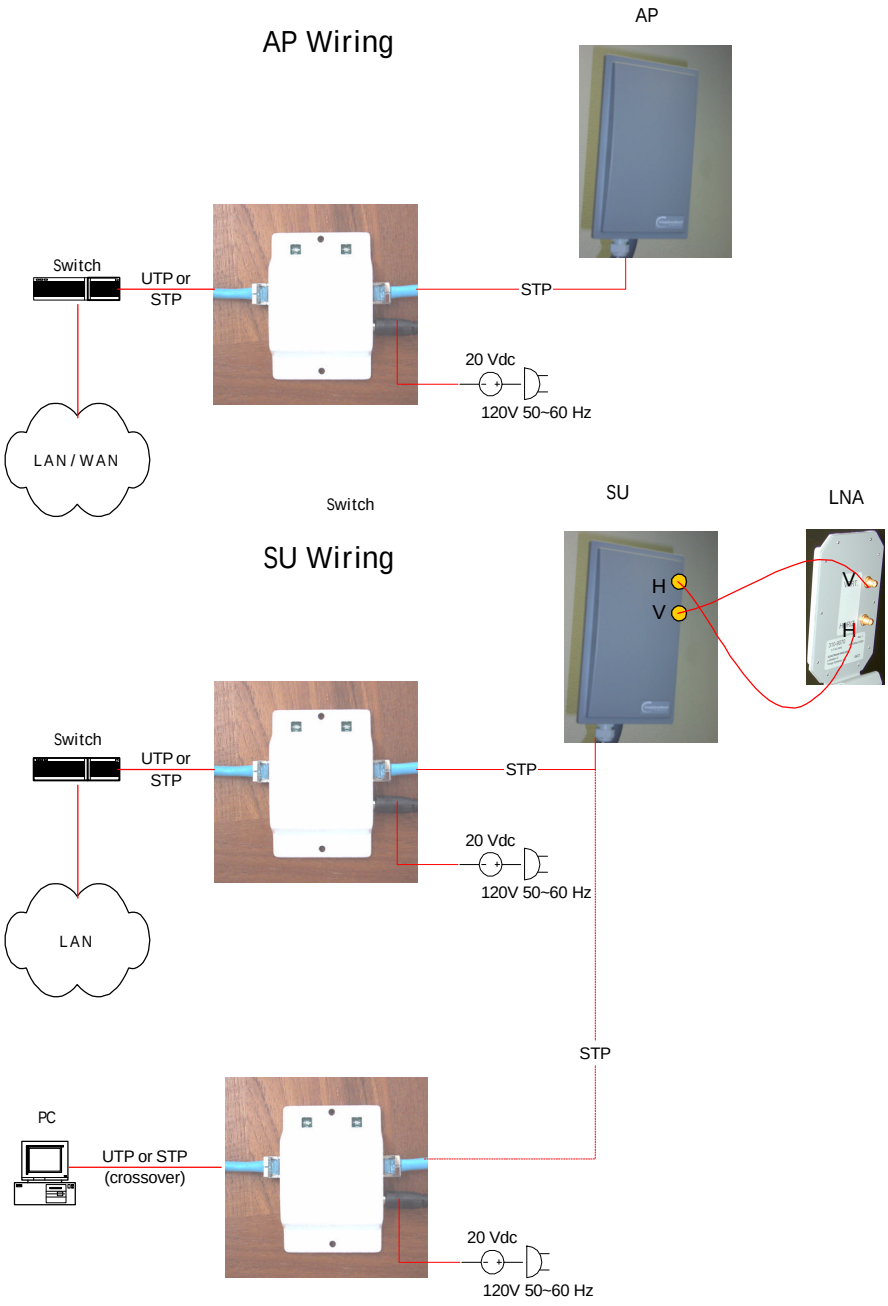
(8) If the AP is at the horizon, rotate the dish to the 50 mark.

(9) If the AP is not at the horizon, use the 50 mark as the offset point and direct the SU antenna up or down until the RSSI is acceptable.

(10) Slightly adjust the dish antenna up and down, left and right until the strongest RSSI is reached. Then tighten down the bolts.

4.3 Wiring

Wiring diagram is shown as below: (please note that the Junction Box is an indoor device that requires a dry environment. STP stands for shielded twisted-pair, and UTP for unshielded twisted-pair.)



The maximum cable length from the Junction Box to the unit (AP or SU) is 100 meters (328feet). Please note that the maximum cable length from the radio to PC/hub/switch is 100 meters (328 feet), as specified in the Ethernet standard.

5. Appendix: Unit Configuration Default Information

ap_default.cfg

```
[Base ID] 1
[AP ID] 1
[IP] 192.168.0.1
[Default Opmode] off
[Service Range] 10 miles
[MIR Threshold] off [MIR Threshold Kbps] 6144
[RF Channel] 1 h 5736 MHz
[RF Rx Threshold] off
Channel Table:
[Ch#1] 5736 MHz [Ch#2] 5756 MHz [Ch#3] 5776 MHz [Ch#4] 5796 MHz
[Ch#5] 5816 MHz [Ch#6] 5836 MHz
[Broadcast Packet] block
[Remarks]
```

su_default.cfg

```
[Base ID] 1
[AP ID] 1
[SU ID] 1
[IP] 192.168.0.1
[Default Opmode] off
Channel Table:
[Ch#1] 5736 MHz [Ch#2] 5756 MHz [Ch#3] 5776 MHz [Ch#4] 5796 MHz
[Ch#5] 5816 MHz [Ch#6] 5836 MHz
[Channel Scan Sequence] 1 h 2 h 3 h 4 h 5 h 6 h
[Broadcast Packet] block [Auto Scan AP] on [TCP/IP for AP] off
[Remarks]
```

Trango Systems, Inc.

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