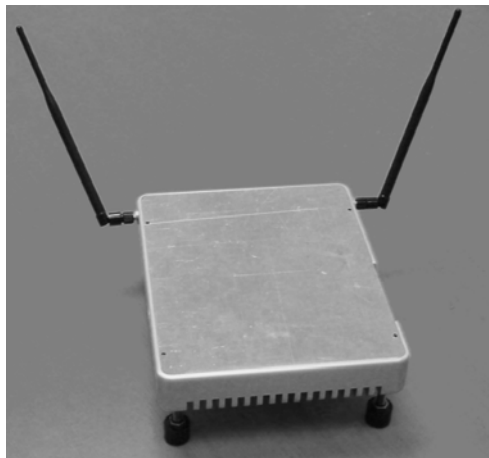




ELECTRO MAGNETIC TEST, INC.

1547 Plymouth Street, Mountain View, CA 94043 Tel: (650) 965-4000 Fax: (650) 965-3000

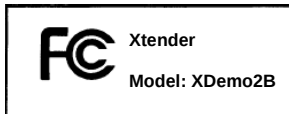
OWNER'S MANUAL / INSTRUCTIONS TO THE USER



Xtender

Quick Install Guide

Radio Frequency Interference Requirements



Note: This device 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

Radio Transmitters (Part 15)

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.

Class B Equipment

This equipment has been certified to comply with the limits for a class B computing device pursuant to FCC Rules. In order to maintain compliance with FCC regulations, shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cables is likely to result in interference to radio and TV reception. *The user is cautioned that changes and modifications made to the equipment without the approval of the manufacturer could void the user's authority to operate this equipment.*

FCC Radiation Exposure Statement

The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

Radio Frequency Interference Requirements- Canada

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

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

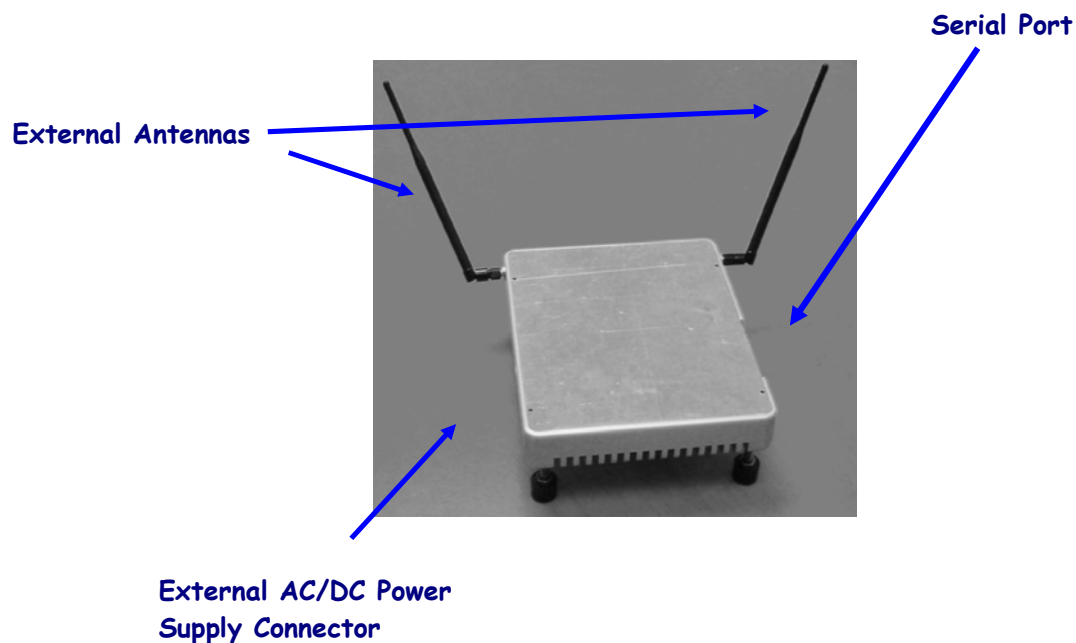
Radio Transmitters

This device complies with RSS 210 of Industry & Science Canada. 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.

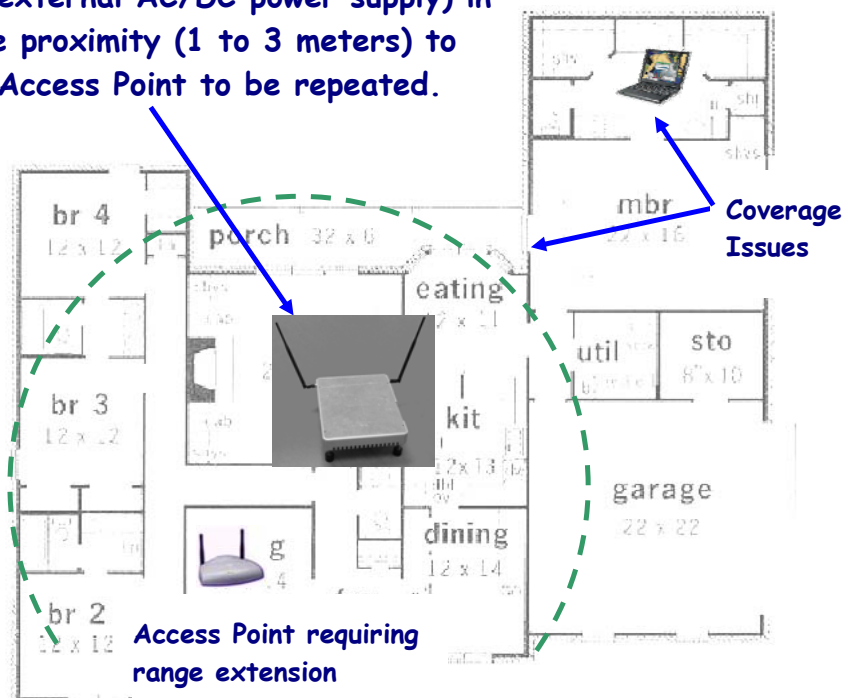
Label Marking: The Term "IC:" before the radio certification only signifies that Industry Canada technical specifications were met.

Xtender Quick Install

1. The Xtender[™] is configured as shown in the figure below.



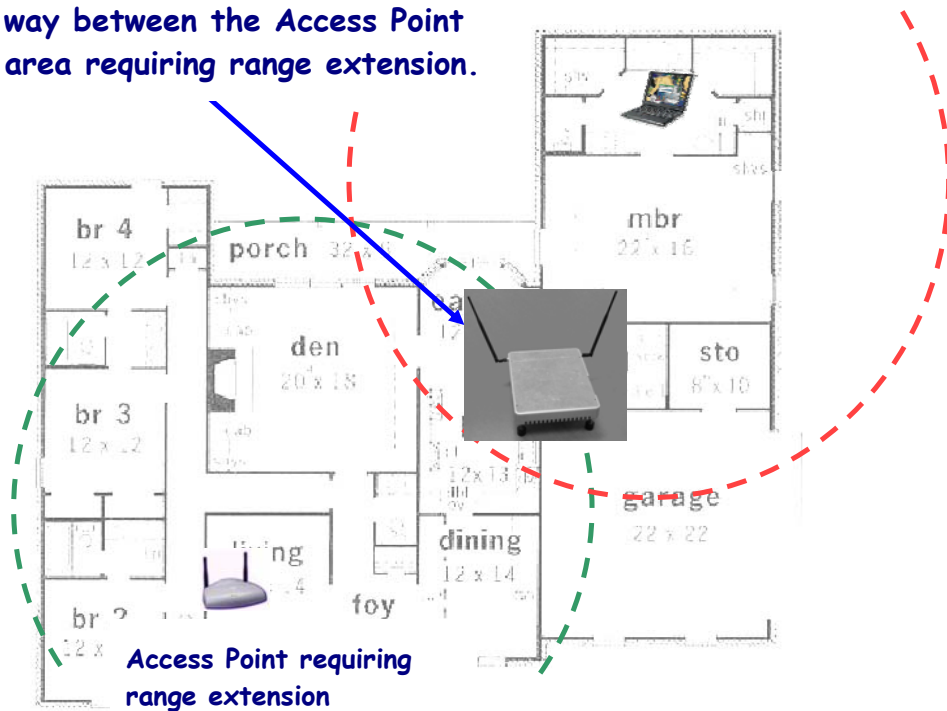
2) Power up Xtender™ (by attaching the external AC/DC power supply) in close proximity (1 to 3 meters) to the Access Point to be repeated.



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- 3) Connect the Xtender™ to a computer using the USB-to-serial cable.
- 4) Start the XDemo2 software on the computer.
- 5) Use the 'Affiliate' button to initiate the affiliation of the Xtender™ unit with the Access Point.
- 6) Disconnect the USB-to-serial cable. The Xtender™ unit will now affiliate with the Access Point.
- 7) Wait 5 minutes for the affiliation to complete.
- 8) Unplug the AC/DC power supply from the wall power socket.

9) Relocate and power-up Xtender™ mid way between the Access Point and area requiring range extension.



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10) After 60 seconds verify that the AP range has been extended by checking the device(s) that previously had no wireless connection. This device(s) should now be able to see the wireless network.

Notes:

If the device still can not see the wireless network, power-up Xtender™ in a new location closer to the Access Point.

Xtender™ performance can be maximized by setting your Access Point channel to 1 instead of 6 or 11

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Product Overview

Xtender™ is a full duplex, physical layer, Wi-Fi repeater designed to extend the range and throughput of an existing 802.11b or 802.11b/g Wi-Fi™ network operating in the 2.4 GHz Frequency Band. A patent pending architecture is leveraged to transmit and receive 802.11b/g signals resulting in greater than a 2x improvement in range.

This unique architecture enables range extension while maintaining full throughput and compatible with QOS and time sensitive applications. Xtender™ is also fully compatible with any Wi-Fi 802.11b or 802.11b/g certified Access Point or Client card and is fully compatible with emerging 802.11i security protocols including Wi-Fi's WPA and WPA2.

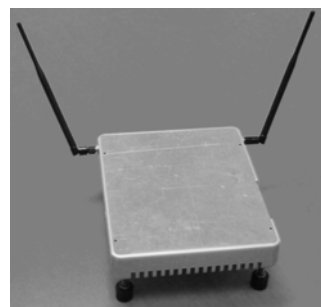
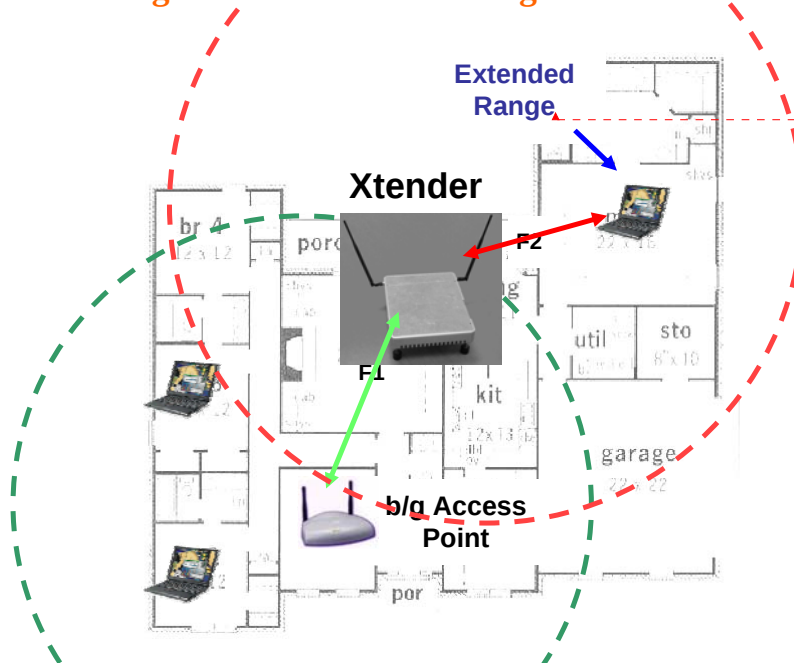


Figure 1 – Xtender™ Range Extension



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A Wi-Fi user experiencing coverage issues can increase range and throughput of their home network simply by installing Xtender™ half way between their access point and area with coverage issues.

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Once configured, Xtender™ extends range and throughput coverage by retransmitting all Wi-Fi packet traffic received from the Access Points (or clients) on Channel F1 to a different Channel F2 as shown in Figure 1. At the same time, all packets received on F2 are amplified and re-transmits on channel F1. A client who is located beyond the reach of an Access Point can now reach the Access Point through the Xtender™ unit.

Specification Summary

Requirement	Specification
Standards	IEEE 802.11b, and 802.11g
Data Rates	802.11b: 11 Mbps, 5.5 Mbps, 2 Mbps, 1 Mbps (Only 1 and 2 Mbps are required for internally generated control packets) 802.11g: 54 Mbps, 48 Mbps, 36 Mbps, 24 Mbps, 18 Mbps, 12 Mbps, 9 Mbps, 6 Mbps (No internally generated g packets are required)
Modulation	802.11b CCK (11 Mbps, 5.5 Mbps), DQPSK (2 Mbps), DBPSK (1 Mbps) (Only 1 and 2 Mbps are required for internally generated control packets) 802.11g OFDM (No internally generated OFDM packets are required)
Sensitivity	-75 dBm @ 1 Mbps; -69 dBm @ 11 Mbps -70 dBm @ 6 Mbps; -60 dBm @ 54 Mbps
Operating Frequencies	2.412-2.462 GHz
Operating Channels	Channels 1-11 (US and Canada)
Minimum allowable full duplex Repeat Channel Separation	Minimum of 5 channel separation between AP channel and repeat channel Note: This is automatically controlled
Average target RF output power	5 channel spacing +10dBm All other channel spacing + 10dBm
Maximum peak RF output power	+15 dBm
Receiver Noise Figure	8 dB Max
Input Range	-40 dBm to -75 dBm
Packet Delay	< 1 usec
Network Architecture	Infrastructure Mode and AD-Hoc Mode
Security	64/128 Bit WEP, 802.11i, WPA, WPA2
GUI	Single Button Configuration GUI

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Contact Information

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