cradlepoint MBR1400 Series

Mission-Critical Broadband Router with Integrated Business Modem



Setup Guide

MBR1400 - Mission-Critical Broadband Router

PACKAGE INCLUDES

MBR1400 Router (Wireless N Gigabit)

Integrated Business-Grade Modem (Optional)

WiFi Antennas (3x)

Modem Antennas (2x optional)

Wall Power Adapter (12v DC)

Ethernet Cable (5-feet)

Mounting Hardware (1x)

Setup Guide



MBR1400 - Mission-Critical Broadband Router



The CradlePoint Mission-Critical Broadband Router (MBR1400) is built to provide an instant network connection from high-speed broadband data modems to your network.

CONNECT

Integrated Business-Grade Modem, USB or ExpressCard modems, Ethernet-Based Wired Services, WiFi

Designed for small businesses, branch offices, and retail locations, the MBR1400 provides a secure, primary or backup connection to the Internet.

With features like failover/failback, secure VPN, VLAN support, multiple encryption modes, dual band WiFi broadcast (2.4 GHz or 5 GHz), guest networks, WiFi as WAN, and data usage management and alerts, the MBR1400 can meet all your business needs.

www.4Gon.co.uk info@4gon.co.uk Tel: +44 (0)1245 808295 Fax: +44 (0)1245 808299

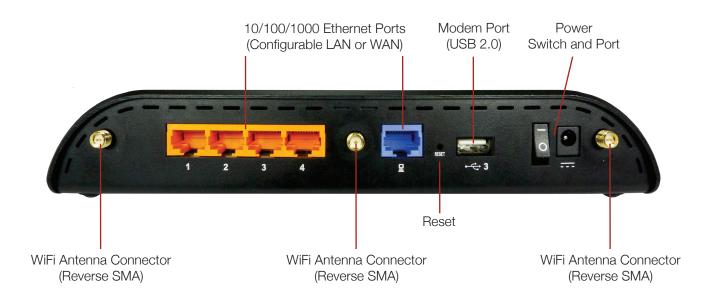
The MBR1400 is compatible with all major corporate network environments like Cisco, Juniper, SonicWall, and others. It also fully supports all 802.11 a/b/g/n client adapters for WiFi networking.

Our web-based configuration and status tool supports Windows XP, Windows Vista, Windows 7, Mac OS X, and most of the Linux distributions - allowing you to manage the router in common environments.

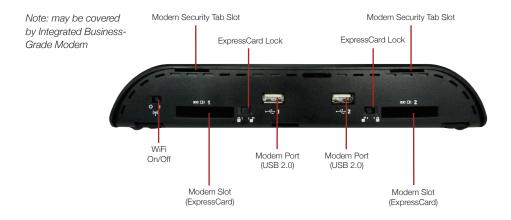
The MBR1400 web-based administration allows you to manage settings, backup and restore, implement the latest firmware upgrades, plus get a complete log of diagnostic and status events for advanced troubleshooting. Remote administration is available through WiPipe Central, SNMP, or a CLI.

The router supports custom DNS configuration with OpenDNS, DHCP server and configuration, and dual-band WiFi options with multiple network names (SSIDs), 802.11 a/b/g/n modes, and broadcast channel selection. This guide will cover additional features of advanced configuration, starting on page 13.

With an MBR1400, you have the power and flexibility you need for the most demanding small business, branch office, or retail environment. The MBR1400 is a flexible, dependable router you can trust.



Ports and Features of the Router (right side)





www.4Gon.co.uk info@4gon.co.uk Tel: +44 (0)1245 808295 Fax: +44 (0)1245 808299

SIM Card Installation (LTE version only)



- 1. Disconnect the modem from the router by pulling from side to side. If you experience difficulty, apply slight pressure to the back of the device to facilitate separation.
- 2. Insert SIM card in the slot in the modem (notch end first, it will click into place).
- 3. Reconnect the modem to the router.
- 4. Insert screws (3) to secure connection between router and modem (backside).

1. Connect the Router to a Modem / Data Source.

Keep the router in the OFF position until the modem is securely connected. Connect a CradlePoint Business-Grade Modem, or a supported USB or ExpressCard modem to the router in their appropriate port or slot. Your modem will require an active subscription from your service provider. If you have not already done so, add a service plan to your Integrated Business-Grade Modem by contacting your service provider. You will need the modem IMEI, ESN, or WiMAX MAC and SIM ID (LTE/EVDO and LTE/HSPA+ versions only). Connect a Cable or DSL modem to the blue Ethernet WAN port (see page 4).

2. Connect the WiFi and Modem Antennas.

Attach the three included WiFi and optional modem antennas to the connectors. Antennas are jointed, which enables you to position them for optimal WiFi broadcast. To attach, hold the antenna straight and twist the base of the antenna to connect, folding the joint if needed. Please note that 2.4 GHz antennas are provided. 5 GHz antennas are available as accessories.

3. Connect to a Power Source.

Connect the router to the provided power supply (12V DC Wall Adapter). When you flip the power switch to the ON (I) position, watch for the appropriate modem LED to illuminate. Ensure the connected modem LED is lit with a solid green light, which indicates that the modem is properly connected. For other LED states, please see descriptions on page 11 and 12.

4. Connect to a Computer or other Network Equipment.

In order to access the MBR1400, establish a connection to the router. Connect wirelessly to the WiFi broadcast, or with an Ethernet cable connected to your computer and then plugged into one of the Orange Ethernet ports.

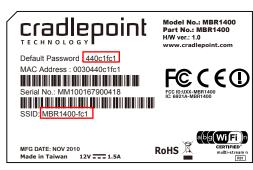
The default WiFi network name broadcast will be seen as "MBR1400-xxx", where "xxx" is the last three characters of your router's MAC address, shown as SSID on the product label.

To connect to the WiFi, you will need to input the default password when prompted.

The default password is provided on the product label found on the bottom of your router (see example below).

5. Use.

For most users, the MBR1400 Router can be used immediately without any special configuration changes. If you would like to change your network name, level of WiFi security, etc. follow the First Time Setup Wizard steps on page 9.



First Time Setup Wizard

The First Time Setup Wizard will help you customize the name of your wireless network, change passwords to something you choose, and establish an optimal WiFi security mode. The MBR1400 comes out of the box with a unique password at WPA2 WiFi security level. **CradlePoint recommends BEST WPA2 WiFi security.**

- 1) Open a browser window and type "cp/" or "192.168.0.1" in the address bar. Press enter/return.
- 2) When prompted for your password, type the eight character **Default Password** found on the product label.
- 3) When you log in for the first time, you will be automatically directed to the **FIRST TIME SETUP WIZARD**.
- 4) If you choose, you can change the router's **DEFAULT ADMINISTRATOR PASSWORD**. Then, select your **TIME ZONE**. Click **NEXT**.
- 5) CradlePoint recommends you customize your **WiFi Network Name**. Type in your personalized network name here. You can also enable the Guest Network feature (see description on page 15).
 - Choose the **WIFI SECURITY MODE** that best fits your needs: **POOR** for **WEP**, **GOOD** for **WPA1/WPA2**, or **BEST** for **WPA2**. Make sure your PC or other devices support the mode you choose.
 - Choose a personalized **WPA PASSWORD or WEP KEY**. This password will be used to reconnect devices to the router's WiFi broadcast once the security settings have been saved. Click **NEXT**.

First Time Setup Wizard

- 6) If you are using a 4G WiMAX modem, you will want to establish the Realm for your carrier. This setting ensures that the modem, when attached to the router, will properly connect to your carrier's wireless broadband service. The MBR1400 will default to the Sprint 4G Realm. Select your carrier from the dropdown menu. Click NEXT.
- 7) If you are using a SIM-based modem (LTE/GSM/HSPA) with your CradlePoint router, you may need to configure the Access Point Name (APN) before it will properly connect to your carrier. Wireless carriers offer several APNs, so check with your carrier to confirm the appropriate one to use. Once you have chosen the APN setting, click NEXT.
- 8) Set the Failure Check mode if desired. You may change the Idle Check Interval (Default: 30 seconds). By default, the router will not check the WAN connection once a link has been established. Change the Monitor while connected setting from Off to Active Ping to ensure active monitoring. To use Active Ping you will need to input a Ping IP Address. Click NEXT.
- 9) Review the details and record your wireless network name, administrative password, and wireless WPA password. Click **APPLY** to save the settings and update them to your router.
- NOTE: If you are currently using the MBR1400 WiFi network, reconnect your devices to the network using the new wireless network name and security password.

LED Information

- **SIGNAL STRENGTH BUTTON** Blue LED bars indicate the active modem's signal strength. Press button to turn on/off. 4 Solid Bars = strongest signal. 1 Blinking Bar = weakest signal.
- **POWER** The MBR1400 must be powered using an approved 12V DC power source.

 Green = Powered On. No Light = Not receiving power. Check that the unit is connected to an outlet.

 Amber = Attention. Check router status page.
- NETWORK LAN CONNECTION Indicates a connected device on the 1-4 LAN ports on the MBR1400.

 Green = Connected to an active 10/100 Ethernet interface. Blinking Green = Traffic. Blue = Connected to an active 10/100/1000 Ethernet interface. Blinking Blue = Traffic. No Light = Not connected, the connection is not configured correctly, router is not configured correctly, or may not be turned on.
- **WPS** WiFi Protected Setup. When you press the WPS button for five seconds, it allows you to use WPS for your WiFi security. Blinking Blue = WPS setting is in progress. Solid Blue = WPS is active. CradlePoint recommends using WPA2 WiFi Security.
- **WAN CONNECTION** Indicates information about a data source connected to the WAN port (Blue Ethernet port). Green = Connected to an active 10/100 Ethernet interface. Blinking Green = Traffic. Blue = Connected to an active 10/100/1000 Ethernet interface. Blinking Blue = Traffic. No Light = Not connected, the connection is not configured correctly, and/or router are not configured correctly or turned on.

LED Information

((1)) **WIFI BROADCAST** Indicates activity on the WiFi broadcast for either the 2.4 GHz or 5 GHz band.

Green = 2.4 GHz WiFi is on and operating normally.

Blue = 5 GHz WiFi is on and operating normally.

Blinking Red = Error with 2.4 GHz or 5 GHz connection.

No Light = WiFi is off.

USB MODEMS Indicates the status of any USB or Business-Grade modems connected to the MBR1400.

A connected CradlePoint Business Grade Modem LED information will be shown on LED #1 or #2.

Green = Modem has established an active connection. Blinking Green = Modem is connecting.

Amber = Modem is not active. Blinking Amber = Data connection error. No modem connection possible.

Blinking Red = Modem is in the process of resetting.

EXPRESS CARD MODEMS Indicates the status of any ExpressCard modems connected to the MBR1400.

Green = Modem has established an active connection. Blinking Green = Modem is connecting.

 $\label{eq:Amber} Amber = Modem \ is \ not \ active. \ Blinking \ Amber = Data \ connection \ error. \ No \ modem \ connection \ possible.$

Blinking Red = Modem is in the process of resetting.

The CradlePoint MBR1400 is a business-grade router specifically designed for retail locations and small/branch offices. Optimized for performance, reliability, and maximum WiFi range, the MBR1400 has access to a cloud-based tool called WiPipe Central, for group-based configuration, management, and monitoring of remotely deployed routers.



Secure Access

The MBR1400 supports WEP, WPA, and WPA2 encryption modes to create secure Internet connections for up to 128 connected devices via WiFi. 253 users can connect via Ethernet. Prevent unwanted access to computers connected to your networks with an SPI Firewall and NAT (Network Address Translation). Features like URL Filtering, Traffic Filtering, DMZ, Virtual Server, Port Forwarding, and FTP pass-through (passive and active) are also available to enable safe Internet access for all connected users.

VPN (Virtual Private Networking), GRE (Generic Route Encapsulation)

Create, manage, and terminate secure VPN tunnels between remote computers and secure corporate networks with IPSec. With up to 20 concurrent sessions, the MBR1400 supports both VPN and GRE, including multiple routes in a single tunnel. Provide end-to-end protection of secure company communications with Hash and Cipher encryption algorithm protocols.

Network Failover Support

When multiple Internet sources (4G, 3G, DSL, Cable, T1, modems) are connected to the MBR1400, it can automatically detect an Internet outage and "failover" to a secondary connection and "failback" when the primary data service returns. Redundant connection keeps your business going.

HOW TO CONFIGURE: Select **INTERNET** from the top tab and **CONNECTION MANAGER** from the dropdown menu. Order your connections by failover priority. Select a connection and click **EDIT**. Select desired **FAILURE CHECK** and **FAILBACK CONFIGURATION** settings. Click **SUBMIT**.

Load Balancing

When multiple data sources are connected to the MBR1400 (up to two 4G devices), the router can be configured to distribute all connected users or device traffic across active data connections. This feature distributes each connected user to the best data source available, relieving congestion and pressure on any single data source.

Dual-Band WiFi

The MBR1400 provides the option of broadcasting your WiFi network on either the 2.4 GHz or 5 GHz band. This allows administrators the option to select the less used 5 GHz frequency band if desired. For best operation, use the 5 GHz antenna available as an accessory.

WiFi Networks

The MBR1400 can make four WiFi networks on either the 2.4 GHz or 5 GHz band. Secured SSIDs are used for your trusted workgroup members. Guest (public) SSIDs can provide full, secure access to the Internet - but users are restricted from accessing the router administration console or any connected devices on the private network. Each network can be configured with its own security, QoS, and VLAN Settings. The ability to "Hide" network names (SSIDs) from broadcast is also available.

HOW TO CONFIGURE: Enable the Guest Network in Step 2 of the First Time Setup Wizard. It will appear by default as "Guest-XXX" in your available networks list (XXX = the last three characters of your routers MAC Address).

VLAN Support

Create and manage virtual LANs to segregate and secure your network.

WiFi as WAN

The MBR1400 can receive an existing WiFi signal and use it to create secure Internet access, allowing you to connect up to 128 devices using the MBR1400's security features. The WiFi as WAN feature can be used as a WiFi repeater or as a WiFi to Ethernet adapter for non-WiFi devices.

HOW TO CONFIGURE: Enable this feature by logging in to your router (see steps 1 & 2 on page 9) and select **INTERNET** on the top navigation bar and then **WiFi as WAN / Bridge** in the dropdown menu.

Cloud-Based Router Management Service

WiPipe Central: Efficiently manage all your CradlePoint Routers.

CradlePoint's cloud-based management service, WiPipe Central, gives you a consolidated router management tool to communicate with and manage dispersed CradlePoint routers. This service allows you to have firmware update and configuration options for the edge of your network, as well as gain information about other data connections (4G/3G/T1/DSL/Cable/etc) across geographies and networks.

Designed to eliminate conflict with existing firewalls (using device-initiated HTTP protocols), WiPipe Central has user-defined groups for quick communication with all grouped devices. It provides remote access to an individual router or pre-defined group for firmware and configuration updates.

CradlePoint has a demonstration of WiPipe Central available for your use.

visit: https://services.cradlepoint.com

username: **Demo** password: **Demo**

NOTE: This account is tied to 15 dedicated routers at CradlePoint Headquarters. The routers and account are live – you may view connection status, update firmware, and change the configuration settings. The routers and management account are reset nightly to original settings.

To learn more about WiPipe Central, contact services@cradlepoint.com

Integrated Business-Grade Modem

The CradlePoint series of Business-Grade Modems provides the highest level of data throughput at the same location as a standard USB modem. CradlePoint optimizes and intelligently manages the co-existence between the wireless broadband signal and the WiFi broadcast of the router, creating a fast, wide-range, truly business-class, modem-based instant network.

FEATURES

- Business-Class modems provide optimal data throughput and co-existence
- Establish continuous uptime with optimum total cost of ownership for broad deployment
- Flexible installation provides highest level of 3G/4G performance
- Standardized platform and centralized remote management
- Enterprise-level security features
- Simple to install, configure and maintain minimal impact on IT
- Ability to attach remote antennas for better signal reception



CradlePoint Business-Grade Modem Series.

LTE/HSPA+, LTE/ EVDO, WiMAX, and EVDO models available.

Antenna Positioning with Business Grade Modem

CradlePoint recommends the following antenna positioning for best performance.

Verizon: MBR1400LE-VZ (LTE/EVDO), MBR1400E-VZ (EVDO) Sprint: MBR1400W-SP (WiMAX), MBR1400E-SP (EVDO)

AT&T: MBR1400LP-AT (LTE/HSPA+)



Desk Mount Use
(All modems desk mount)

Note: Desk mount not recommended for Sprint WIMAX

Wall Mount Use (All modems wall mount)



WiFi



When connecting the provided antennas, review the connection points.

WiFi antennas have flat circular bases.

Modem antennas have protruding pins.

Modem



Troubleshooting

You may need to update the CradlePoint MBR1400 firmware to get our latest features or to use with new modems. For more information, visit **knowledgebase.cradlepoint.com**

HOW TO UPDATE FIRMWARE (AUTOMATIC)

- 1) Connect your computer to the router via the WiFi SSID or to an orange Ethernet LAN port with an Ethernet cable.
- 2) Open a browser window and type "cp/" or "http://192.168.0.1" in the address bar. Press enter/return.
- 3) When prompted for your password, type the default password found on the MBR1400 product label.
- 4) Select SYSTEM SETTINGS -> SYSTEM SOFTWARE.
- 5) If new firmware is available, select AUTOMATIC (Internet). (This process requires an active data source.)
- 6) Wait a moment while firmware is updated and the router reboots (do not close the browser window when updating).

HOW TO UPDATE FIRMWARE (MANUAL)

Downloading firmware before updating is only required if your modem doesn't work in the router initially.

- 1) Go to www.cradlepoint.com/firmware. Select the MBR1400 from the dropdown list.
- 2) Download the most current version of the router firmware to your desktop.
- 3) Follow steps 1-4 above. Select **MANUAL FIRMWARE UPLOAD** and click the **BROWSE** button.
- 4) Select the firmware file you saved to your desktop and click **OPEN** and then **BEGIN FIRMWARE UPGRADE**.
- 5) Wait a moment while firmware is updated and the router reboots (do not close the browser window when updating).

Troubleshooting (continued)

Depending on your modem, you may need to set the WIMAX REALM or specify the ACCESS POINT NAME.

SELECT THE WIMAX REALM

- 1) Log in to the router following Steps 1-3 on Page 19.
- 2) Click the **INTERNET** tab on the top navigation bar, then **CONNECTION MANAGER** in the dropdown menu.
- 3) Select the 4G modern you would like to manage. Click EDIT.
- 4) Select the **WIMAX SETTINGS** tab, then open the **WIMAX REALM** dropdown menu. Choose your carrier realm.
- 5) Click SUBMIT.

SELECT THE ACCESS POINT NAME (APN)

- 1) Log in to the router following Steps 1-3 on Page 19.
- 2) Click the **INTERNET** tab on the top navigation bar, then **CONNECTION MANAGER** in the dropdown menu.
- 3) Select the modern you would like to manage. Click **EDIT** to open the WAN Configuration editor.
- 4) Select the SIM/APN SETTINGS tab. In the ACCESS POINT NAME (APN) field, either select the desired APN from the dropdown list or enter it manually.
- 5) Some APNs require a username and password. From within the WAN Configuration editor, input the username and password under the **MODEM SETTINGS** tab.
- 6) Click SUBMIT.

Support and Accessory Options

Managed Services

WiPipe Central Subscription Service

Learn More: https://services.cradlepoint.com

Support

Enterprise Support and Service Agreements
Learn More by Contacting: services@cradlepoint.com

Accessories

5 Ghz WiFi Antennas

Power Adapters

External Modem Antennas and Cabling

Security Modem Cap Enclosure for USB and ExpressCard Modems

Regulatory, Warranty, Safety, and Privacy Information

Federal Communication Commission Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against such 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 provided by CradlePoint, may cause harmful interference to radio communications. This device must accept any interference received, including interference that may cause undesired operations. 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 using 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 or television technician for help.

Changes or modifications not expressly approved by CradlePoint, Inc. could void the user's authority to operate the product.

Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. To maintain compliance with FCC RF exposure compliance requirements, please follow operation instruction as documented in this manual.

Industry Canada Statement 2

This device complies with RSS-210, RSS-102, and RSS-Gen of the Industry Canada 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.

Regulatory, Warranty, Safety, and Privacy Information (continued)

IMPORTANT NOTE: Radiation Exposure Statement

This equipment complies with IC 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.

Caution: 2

- 1) 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.
- 2) The maximum antenna gain permitted (for devices in the band 5725-5825 MHz) to comply with the e.i.r.p. limits specified for point-to-point and non point-to-point operations as appropriate, as stated in section A9.2(3).

This device has been designed to operate with an antenna having a maximum gain of 5 dBi. Antenna having a higher gain is strictly prohibited per regulations of Industry Canada. The required antenna impedance is 50 ohms.

Déclaration d'Industrie Canada 2



Ce dispositif est conforme à la norme CNR-210. CNR-102, et CNR-Gen d'Industrie Canada applicable aux appareils radio exempts de licence. Son fonctionnement est sujet aux deux conditions suivantes: (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

NOTE IMPORTANTE (Pour l'utilisation de dispositifs mobiles): Déclaration d'exposition aux radiations Cet équipement est conforme aux limites d'exposition aux ravonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de ravonnement et votre corps.

Précaution

1) Le dispositif fonctionnant dans la bande 5150-5250 MHz est réservé uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux.

Regulatory, Warranty, Safety, and Privacy Information (continued)

2) Le gain d'antenne maximal autorisé (pour les appareils dans la bande 5725-5825 MHz) pour se conformer à la pire limites fixées pour les opérations de point à point et non point à point et non le cas échéant, comme indiqué dans la section A9.2 (3).

Ce dispositif a été conçu pour fonctionner avec une antenne ayant un gain maximal de 5 dBi. Une antenne à gain plus élevé est strictement interdite par les règlements d'Industrie Canada. L'impédance d'antenne requise est de 50 ohms

Open Source Software 2

This product contains software distributed under one or more of the following open source licenses: GNU General Public License Version 2, NetBSD Foundation License, Net-SNMP License, and PSF License Agreement for Python 3.1.1. For more information on this software, including licensing terms and your rights to access source code, contact CradlePoint at www.CradlePoint.com.

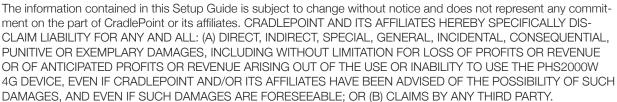
Warranty Information

CradlePoint, Inc. warrants this product against defects in materials and workmanship to the original purchaser (or the first purchaser in the case of resale by an authorized distributor) for a period of one (1) year from the date of shipment. This warranty is limited to a repair or replacement of the product, at CradlePoint's discretion. CradlePoint does not warrant that the operation of the device will meet your requirements or be error free. Within thirty (30) days of receipt should the product fail for any reason other than damage due to customer negligence, purchaser may return the product to the point of purchase for a full refund of the purchase price. If the purchaser wishes to upgrade or convert to another CradlePoint, Inc. product within the thirty (30) day period, purchaser may return the product and apply the full purchase price toward the purchase of another CradlePoint product. Any other return will be subject to CradlePoint,

Regulatory, Warranty, Safety, and Privacy Information (continued)

N

Inc.'s existing return policy. Limitation of CradlePoint Liability



Notwithstanding the foregoing, in no event shall the aggregate liability of CradlePoint and/or its affiliates arising under or in connection with the MBR1400 or integrated modems, regardless of the number of events, occurrences, or claims giving rise to liability, exceed the price paid by the original purchaser of the MBR1400 or integrated modems.

Privacv

CradlePoint may collect general data pertaining to the use of CradlePoint products via the Internet including, by way of example, IP address, device ID, operating system, browser type and version number, etc. To review CradlePoint's privacy policy, please visit: http://www.cradlepoint.com/privacy.

Other Binding Documents: Trademarks: Copyright

By using your CradlePoint device, you agree to be bound by CradlePoint's Terms of Use, User License and other Legal Policies, all as posted at www.cradlepoint.com/privacy. Please read these documents carefully. CradlePoint, the CradlePoint logo, are trademarks of CradlePoint, Inc. © 2012 CradlePoint, Inc. All Rights Reserved.

Applies to MBR1400, MC100E, MC100W, MC200LE, MC200LP

Applies to MBR1400 only

ADDITIONAL INFORMATION

cradlepoint.com/mbr1400

Enterprise level service and support agreements available.

P/N 170559-002