

WildBlue Installation and Service Call Standards Document

WildBlue only releases payments for successful WildBlue Professional Installations, which may include Standard and/or Exception activities.

This document first outlines the Standard Installation Requirements (Section 1.1) that provides a detailed list of required installation standards. Then it outlines complete installation processes in the Standard Professional Installation (Section 1.2) that provides the detail of the activities involved in a standard professional installation.

Finally, this document outlines the exception activities that may complement the standard professional installation in Section 1.3., Standard Professional Installation Exceptions.

Section 1.4., Standard WildBlue Professional On-site Service Call and Section 1.5., Standard WildBlue Professional On-site Service Call Exceptions outline the standard and non-standard service call on-site support activities.

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1.1. WildBlue Professional Installation Requirements

- **Complete Installation Planning with Customer:** To provide notification to customer of any non-standard charges prior to commencement of work, complete the WildBlue Communications Site Survey Form (leave a copy with the customer):
 - *Review all the customer information fields with the customer.*
 - Confirm Customer and Installer Information
 - Confirm Outdoor Unit (ODU) mounting location
 - Verify Line-of-sight (LOS)
 - Locate the utility ground
 - Determine Cable Routes
 - Determine location for the Indoor Unit (IDU) and verify customer's PC
 - *Site ready to receive WildBlue Service:* Confirm site ready for installation with or out any non-standard work or materials. Post the data on the form, then review the installation data with the customer to confirm the ODU, utility ground, cable route, and IDU locations, along with the PC requirements. Obtain the customer's signature before proceeding with installation of the antenna.
 - *Customer agrees site has a LOS defect but site will currently support WildBlue Service:* The site as a LOS defect but will support WildBlue Service at the time of installation: Post defect on the Site Survey Form, and then review the defect with the customer. **(Defects are things that may interfere with WildBlue service in the future; i.e. tree growth, roof mount may cause leaks over time)** Obtain the customer's signature before proceeding with the installation of the antenna.
 - *Site not able to receive WildBlue Service:* Post the problems that make the site unsuitable for WildBlue service installation on the Site Survey Form, and then review the problems with the customer. Obtain the customer's signature before leaving premise.
 - *Site not ready to receive WildBlue Service:* Post additional or non-standard installation work that makes the site not ready on the Site Survey Form. Document and review with the customer any additional work and/or materials the customer must provide before installation, including PC upgrades, if necessary. Document and review with the customer any additional non-standard work and/or materials **(along with associated costs)** that the installer will provide on or before the day of installation. Obtain the customer's signature before proceeding with installation preparation or antenna installation. Do not begin any antenna installation until the additional work and/or materials listed are available and/or installed.

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- **Proper Electrical Compliance:**
 - All antennas must be located at least 20 feet from overhead power lines and three feet from any standard power circuit or electric light.
 - All aspects of installation are in full compliance with the National Electric Code.
 - All aspects of the installation are in full compliance with any and all applicable state and local codes
 - All aspects of the installation are in full compliance with all WildBlue specifications.
- **Properly Mounted Antenna:**
 - All antenna must be mounted a minimum of 5 feet off the ground and out of reach to small children
 - All antenna are mounted less than 20 feet from the ground (see **Standard Professional Installation Exceptions (section 1.3 of this document) for mounts 20 feet or over**)
 - Wall mounts require structurally sound surfaces that can support the weight of the mount and the antenna. (**Approved surfaces are panel or lap siding, brick or poured concrete or hollow cinder block, or deck rail mounts using the WildBlue Communications Metal Rail Mounting Kit (future offer)**) In addition, all screws must penetrate through the building siding into a stud, joist, or truss and each of the six mounting points will support 300 lbs of pull pressure. Finally, screws inserted into masonry surfaces must be installed at least 2” away from the mortar joint (never in the mortar joint), using the appropriate anchors. The wall mount bracket must be at least 12” from the edge of the wall, window casement, and/or doorframe.
 - Sloped Roof mounts require structurally sound surfaces that can support the weight of the mount and the antenna. (**Slate or shake shingles are not approved surfaces**) Install roof mounts on the overhang section of the roof whenever possible. In addition, install all screws through the roofing and roof decking to penetrate the roof truss or joist and each of the six mounting points will support 300 lbs of pull pressure.
 - Pole mounts require a 2 inch inner diameter Schedule 40 galvanized steel pipe of sufficient length to bury the pole no less than 30” deep, while rising at least 5’ above the ground or walking surface, anchored with at least 120 lbs of quick setting concrete, and able to support up to 1800 lb of pull pressure. If the pole is a part of a non-penetrating mount, all pole requirements apply, with the exception of pole length and replacing the quick setting concrete with the necessary concrete blocks as outlined by the manufacturer. All pole mounts require a WildBlue Pole Adapter. While mounting the antenna on a pole is part of a standard installation, the installation of the pole itself is not. (see **Standard Professional Installation Exceptions (section 1.3 of this document) for information about Pole installation**)

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- **Properly Aligned Antenna:**
 - Correct assembly of the WildBlue Satellite Antenna using WildBlue's specifications.
 - Properly pointed and peaked antenna using the WildBlue Antenna Pointing Aid (APA) and a Satellite Signal Level Meter (SSLM).
 - The acquired Satellite Signal at the Satellite Modem (SM).
- **Properly Cabled Service:**
 - The installer will only use Approved Cable Models from the **WildBlue Approved Cable Model List** (see Section 1.7 of this document)
 - Provide an End-to-end COAX connection from the Satellite Modem to WildBlue Satellite Antenna.
 - No COAX cable run used to support WildBlue service will have bends that are less than the 5.44 inch bend radius minimum.
 - Provide an Ethernet connection from the Satellite Modem to the customer's computer using an approved WildBlue Ethernet RJ45-to-RJ45 Ethernet cable.
 - COAX cable rout includes drilling through one exterior wall and/or one interior wall or floor. (see Standard Professional Installation Exceptions (section 1.3 of this document) for routs that require additional drilling)
 - All ground/pole mount cabling is a minimum of 6 inches below ground level, enclosed in ½-inch PVC conduit.
 - The installer will not use flooded cable in any portion of the installation.
 - Installation of COAX cable and service/drip loops conforms to manufacturer and WildBlue's specifications. All outside cable connections/building penetration points have service/drip loops that conform to a minimum bend radius of 5.44 inches.
 - Secure visible cable along appropriate structural lines using screw-type Single/Dual Flexible Cable Clips or Vinyl Siding Cable Clips.
 - Installer provides up to 150 feet of WildBlue approved RG-6 2.2 MHz cabling. (see **Standard Installer Provided Materials** in this section for cable costing.)
 - Maximum COAX cable length does not exceed 150 feet. (Including Indoor COAX Extension Cables)
 - Installer will attach Tape-Labels each end of every COAX cable length; both transmit and receive. (**Tape Label: Red for Receive and Green for Transmit**)
 - The installer will build and install two appropriate length and Tape-Labeled COAX Extension Cables for each installation: one for transmit and one for receive.

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- **Properly Ground/Bonded Antenna:**
 - The installer provides a WildBlue approved 2.2 GHz Grounding Block that is installed in all COAX cable runs
 - Grounding requirements for the 2.2 GHz Grounding Block:
 - Less than 20 feet: #10 copper or #8 Aluminum grounding wire terminated in an approved building ground.
 - Greater than 20 feet: Install an 8-foot Grounding Rod between the antenna mount location and the approved building ground location. #6 copper wire is used to bond the grounding rod to the ground block and/or pole, if necessary, to the building ground. **(While this ground/bond is a standard requirement, the materials and installation of the grounding rod and #6 copper wire are not. (see Section 1.3. Standard Professional Installation Exceptions))**
 - All grounding runs will be less than the total length of the COAX cable run.
 - Installer must provide and install (per WildBlue instructions) the following Dish grounding materials:
 - #10 Ring Tongue Ground Lug
 - 5/16 Ring Tongue Ground Lug
 - #10-32 1/4 inch screw
 - 12 inches of sheathed #10 copper wire or #8 aluminum wire to connect the dish ground to the TRIA ground set screw
 - If local code requires a separate dish ground to ground block, use sheathed #10 copper wire or #8 aluminum to connect the dish ground to the ground block in a separate ground set screw than the building ground.
 - Installer must provide and install (per WildBlue instructions) the following Antenna to building grounding materials:
 - All WildBlue installations require the installation of a 2.2 GHz dual grounding block.
 - Sheathed #10 copper wire or #8 aluminum wire to connect the separate ground block grounding set screw to an approved building ground.
 - Approved building grounds:
 - Metal electrical service panel
 - Metal electrical raceway or conduit
 - A metal water pipe that is with five feet of the entry the water service and in earth contact for at least 10 feet before entering the building.
 - Electrical service electrode or conductor that connect the electrical service grounding system.
 - In metal or steel structure the metal frame can provide ground.
 - All antenna ground/bond installations must meet the minimum WildBlue standards, but also must meet all federal, state, and local ground/bond requirements.

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- **Properly Connected Service:**
 - The installer will use only approved parts. All F Connectors must be approved 2.2 MHz Compression Connectors installed using an approved Compression Tool. The installer will not use Crimp Connectors in any part of the installation.
 - Indoor COAX cable terminations are properly dressed:
 - Floor connections use Feed-through Bushings leaving 3 inches of COAX Feed Cable above the floor with each cable equipped with a Tape-label for either Transmit or Receive and Female-to-Female connector.
 - Wall connections use Dual Wall Faceplates with one connector labeled TX for transmit and one connector labeled RX for receive.
- **Properly Managed Structural Penetrations:**
 - Outdoor, 45-degree upward angle structural penetrations are weather sealed with appropriate silicone.
 - Outdoor, 90-degree structural penetrations require 5.44 inches radius service loops, Feed-through Bushings, and are weather sealed with appropriate silicone.
 - All structural penetrations required for Mounting Bracket are appropriately sealed
 - Indoor structural penetrations require 45-degree angle to support COAX cable runs with the minimum bend radius of 5.44 inches.
- **Complete Customer Account Activation:**
 - The installer and the customer have successfully completed the WildBlue Satellite Modem provisioning process.
 - The installer has installed the WildBlue Optimizer on the customer PC (if PC is a Optimizer supported Operating System)
 - The installer verifies that the following PC settings are correctly configured, either through Optimizer installation or manual configuration (with Customer Care Support)
 - DHCP
 - Internet Browser Settings
 - Set the customer PC browser homepage to the customer portal (www.wildblue.net for WildBlue ISP customers)
 - Set a browser bookmark for the customer the support page (<http://help.wildblue.net> for WildBlue ISP customers)
 - Installer has activated the customer WildBlue Email account (WildBlue ISP customers only)
 - Created one Email Address
 - Entered the correct Contact Email Address
 - Installer has configured one PC Email client* for one Email account. Installation support required for:
 - Outlook
 - Outlook Express

* If customer can elects to use WEBmail, setup WEBmail on the customer homepage (WildBlue ISP customers only)

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- **Provide Customer Training:**
 - Installer provides at least 15 minutes of customer education on system operation and features.
 - Training includes:
 - Show how to navigate the WildBlue Customer homepage
 - Demonstrate Internet access
 - Show how to change the Weather Display on the Customer homepage to the local area ZIP code
 - Demonstrate Email Client Application access*
 - Show how to retrieve, create and send Email messages in the Email Client Application*
- **Standard Installer Provided Material:**
 - The installer provides, at no charge to the customer, up to 150 feet of 2.2 MHz RG-6 COAX cable. (use only a cable model from the WildBlue Approved Cable Modem List, see Section 1.6 of this document)
 - The installer provides all installation hardware necessary to mount, wire, ground, receive, and transmit the WildBlue service without additional charges to the customer.
 - The installer provides all approved 2.2 MHz Compression Connectors F Connectors, Female-to-Female adapter, and Dual Wall Plates.
- **Proper Installation Completion:**
 - Installer obtains appropriate customer signature on:
 - Installation Completion Form (Retail Installers)
 - 12 Month Service Agreement
 - WildBlue Site Survey (Wholesale Installers)
 - Complete the online forms (Wholesale Installer)
 - Fax the proper forms to the Member or Master Agent
 - Clean up any mess made during installation and remove all installation debris (cable scraps, wire ends, packaging, boxes) from the customer premise

Activities that supplement the WildBlue Professional Standard Installation Requirements are provided during installation, with extra customer charges, in alignment with the Standard Installation Exceptions

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1.2. Standard Professional Installation

- Travel to and from customer location within 50 miles of installer office
- Complete installations must meet all the WildBlue Professional Standard Installation Requirements as outlined in Section 1.1 of this document:
 - Complete Installation Planning with Customer
 - Proper Electrical Code Compliance
 - Properly Mounted Antenna
 - Properly Aligned Antenna
 - Properly Cabled Service
 - Properly Ground/Bonded Antenna
 - Properly Connected Service
 - Properly Managed Structural Penetrations
 - Complete Customer Account Activation
 - Provide Customer Training
 - Standard Installer Provided Material
 - Proper Installation Completion
- Before an installer payment a copy of the signed Installation Completion Form, containing all customer initials is left with the customer and a copy is provided to the proper support billing organization. (Retail Installers)
- Before an installer payment, the installer will complete the order sprocess on the WBinstalls.net site. (Wholesale installers)
- The Installer and/or their support billing organization are responsible for processing the billing for all Standard Professional Installation Exceptions added to the Installation Completion Form.
- For all Dead on Arrival (DOA) equipment: Installer completes the Installer Return Merchandise Authorization (RMA) Request form and packs the completed form in the same box as failed equipment. Installer ships failed equipment to the appropriate source organization that manages the WildBlue RMA process.

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1.3. Standard Professional Installation Exceptions

The Standard WildBlue Installation does not include the following and additional charges may apply.

- Travel to and from customer location over 50 miles of installer office is billed to the customer on a per-mile basis.
- Installation of WildBlue antenna at a location on the customer structure 21 feet or higher above the ground and not accessible from a 25-foot ladder
- Extra approved WildBlue RG-6 or RG-11 cabling over the maximum of 150 feet.
- Drilling through more than one exterior wall and/or more than one interior wall or floor
- Any materials used to hide exposed cabling
- Non-penetrating roof mounts and chimney mounts
- Non-standard roof or wall mounts
- Installation of pole and conduit for pole mount installation (pole must be long enough to place the dish 5-feet above the ground)
- Providing and installing the Grounding rod and #6 Bond wire when the Grounding Block is over 20 feet from the approved building ground. (see Properly Ground/Bonded Antenna in section 1.1)
- Removal and/or repair of previously mounted equipment with a Waiver of Liability signed off by customer (this is never done without the Waiver of Liability)
- Customer requested installation of complex cabling, including excess cabling requirements, wall fishes, or Ethernet networking; to include wired and wireless configurations.
- Installation and/or configuration of a Local Area Network that supports multiple computers or connections, wired or wireless

Additional installation charges may be applicable and must be determined and agreed upon between customer and premise installer prior to beginning work. Document all intended additional work on the WildBlue Site Survey Form and the Installation Completion. Obtain customer signature, prior to ordering materials or beginning work.

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1.4. Standard WildBlue Professional On-site Service Call

The Standard WildBlue Professional On-site Service Call ensures that the restoration of WildBlue service to working condition that parallels a successfully completed WildBlue standard service installation*. Any and/or all of the following actions may occur during a service call.

- Travel to and from customer location within 50 miles of installer office
- Problem isolation inspection
- Verify site survey and placement of the antenna.
- Re-point the antenna and peak the signal for optimal performance.
- Replace damaged or failed IDU (Modem) or TRIA.
- Ensure the update of WildBlue inventory systems with the replacement TRIA and/or Modem information.
- Ensure all connections from the ODU to IDU to customer computer are intact and secure and meet WildBlue Installation requirements.
- Re-provision replaced IDU.
- Verify TCP/IP settings to ensure connection to the Network
- Verify or complete ISP registration (if customer uses WB ISP).
- Verify or reconfigure a WildBlue approved email client to receive WildBlue ISP email. (if customer uses WB ISP email)
- Verify or reconfigure a web browser to set the WildBlue portal as a home page and create a bookmark for the WildBlue ISP portal page. (if customer uses WB ISP)
- Installer obtains appropriate customer signature on Service Call Reference Form.
- Installer completes the Installer Return Merchandise Authorization (RMA) Request form and packs the completed form in the same box as failed equipment. . Installer ships failed equipment to the appropriate source for managing the WildBlue RMA process.

****Note:** The Standard WildBlue Service Call does not cover any non-standard work agreed upon between the customer and the premise installer as part of the initial installation (see section 1.3 Standard Professional Installation Exceptions for a listing of non-standard work).*

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1.5. Standard WildBlue Professional On-site Service Call Exceptions

The Standard WildBlue Service Call does not cover any non-standard work agreed upon between the customer and the premise installer as part of the initial installation (see section 1.3 Standard Professional Installation Exceptions for a listing of non-standard work). Therefore, any non-standard work completed during a Standard WildBlue Service Call is subject to additional fees. Additional Service Call charges may be applicable and must be determined and agreed upon between customer and premise installer prior to beginning work. Document all intended additional work on the Standard WildBlue Service Call Form with customer signature, prior to beginning work.

- Repairs to a WildBlue antenna at a location 21 feet or above the ground and not accessible from a 25-foot ladder
- Repairs to extra approved WildBlue RG-6 cabling over one hundred and fifty feet
- Drilling through more than one exterior and/or more than one interior wall or floor
- Any materials used to hide exposed cabling
- Replacement and/or repair of the mount bracket, mount pole, or dish
- Removal and/or repair of previously mounted equipment with a Waiver of Liability signed off by customer (this is never done without the Waiver of Liability)
- Repairs to complex or custom installations including excess cabling requirements, wall fishes, networking, etc.
- Repair or reconfiguration of a Local Area Network that supports multiple computers or connections, wired or wireless
- Relocation dish to correct a dish move done by the customer or to accommodate changes in the location (i.e. the customer built or planted something that blocks the LOS)
- Reattachment and/or replacement of damaged or loose indoor and/or outdoor coaxial cabling according to WildBlue Installation requirements

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1.6. Non-Standard Installation Charges

- Ground Mount using 2 3/8 "OD Schedule 40 pipe installed in normal soil \$125.00.
- Cable trenching cost is \$2.00 a foot over 10' in normal soil.
- Time and material rates not to exceed \$65.00 per hour, materials are cost plus 15%.

All other exceptions must have prior approval from the Master Agents and WildBlue.

All state and local requirements supersede WildBlue directions and exceptions.

- Accepted materials that are cost plus 15%
 - Ballast for non pen mounts
 - Conduit
 - Grounding rods
 - Special approved mounts
 - Zoning license and permits for historical districts
 - Rental tools for digging and trenching in rock
 - Sub-contractors for work performed outside the normal installations.

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1.7. WildBlue Approved Cable Model List:

To ensure the WildBlue service works properly in all conditions, the following cable models are those that have passed testing and been approved by WildBlue engineering. Use only these approved cable models for WildBlue installations. The use of any other cable models will not meet WildBlue quality installation standards.

NOTICE: *Not meeting the WildBlue quality installation standards will result in payments not being issued for installations.*

Approved WildBlue Cables:

Approved Vextra RG6 Cable:

- V621 Single / 1000 ft on our custom 12" reel
- V621B Single / 1000 ft in a convenient 17" box
- V621GW Single RG6 with Ground / 1000 ft on a 14.5" reel
- V2621 Dual RG6 / 1000 ft on an 18" reel
- V621Q Quad Shield RG6 Single / 1000 ft on a 14.5" reel
- V2621Q Quad-shielded Dual / 1000 ft on a 22" reel
- V2621GW Dual RG 6 with Ground wire

Approved Commscope RG6 Cable:

- 5729 Single
- 5731 Single RG6 with Ground
- 0461 Dual RG6
- 0467 Dual RG 6 with Ground wire

Approved Beldon RG6 Cable:

- 1829AC Single / 1000 ft on our custom 12" reel
- 1839AC Single with Ground wire.
- 1841AC Dual RG6l
- 1840AC Dual RG 6 with Ground wire

Approved Eagle Aspen RG6 Cable:

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- 39B2 – Single / 1000 ft Black Reel in box
- 59B3 – Dual RG6
- 69B3 – Dual RG6 w/ Ground

Approved Diamond Series by Vextra:

- V621BLKSP – Single RG6 / 1000 ft Black Spool
- V621BLKBX – Single RG6 / 1000 ft Black Boxed
- V2621BLKSP – Dual RG6 / 1000 ft Spool
- V2621GWBSP – Dual RG6 w/ Ground

Approved Perfect Vision:

- ULPVRG6SCDUAL – Dual RG6 / 500 ft

NOTE: Please ensure when purchasing cable for WildBlue installations that the cable is 100% copper. Copper clad cabling has proven not to consistently work with the WildBlue service.

WildBlue is currently testing the following cables:

- No cable models in current testing

Request for Testing: If you have solid copper, 60% braid, 2.2Mhz or higher rated cable that does not appear on the approved list that you would like tested, please ship a minimum of 100 feet to:

WildBlue Communications
Attn: Terry Presson
5970 Greenwood Plaza Blvd.
Greenwood Village, CO 80111

WildBlue will test and approve any cable received and update the WildBlue Approved Cable Models List quarterly.