

Installation Guide & Technical Reference for the BLOOMBERG® service

(on Bloomberg-provided hardware)

Bloomberg
FINANCIAL MARKETS
COMMODITIES
NEWS

SITE PREPARATION

GENERAL

A standard BLOOMBERG Workstation installation consists of the following hardware:

- One Bloomberg provided router
- One Bloomberg Workstation
- One flat panel display monitor
- One infrared (wireless) keyboard, or PC-style keyboard for each user
- One dedicated digital circuit
- One dedicated digital backup line
- One Ethernet hub
- One satellite dish
- One printer

EQUIPMENT LOCATION

A site survey must be performed to determine the location of the following:

- Each user's Bloomberg Workstation, flat-panel display and keyboard
- The Bloomberg provided router
- The dedicated digital line and backup line termination points
- Printer location
- The satellite dish and receiver to access Bloomberg Television (BTV)

A Bloomberg Flat Panel and infrared keyboard go on each user's desk, typically in front of the user.

The Bloomberg provided router and both phone line termination points must be located together in the equipment room.

This environment must be clean, dust free, and have cool circulating air. Power outlet requirements and cable paths to interconnect all the components are discussed herein. Most importantly, power to the Bloomberg provided router must be dedicated—not shared. Including your qualified building electrician in the installation process at this time (i.e., during the site survey) is appropriate. (S)he can make all the difference in ensuring a speedy and successful installation.

DEDICATED DIGITAL CIRCUIT

Bloomberg L.P. (BLP) will order a 4-wire full duplex digital 64kbps or 56kbps (depending on availability) dedicated circuit to transmit data between your site and our host computer or regional "node" site, whichever is more economical for you. BLP will notify you of the order

number, circuit number, and due date of the circuit. Please provide us with the name of one of your people (and an alternate) to be given to the telephone company. All phone companies insist on having a contact that can let them in and show them where the circuit is to terminate. **Remember: the circuits and Bloomberg provided router go together in a computer room/closet.**

The circuit should terminate as close to the location of the Bloomberg provided router as possible (preferably within 6 feet). The appropriate telephone company will install the circuit. If the circuit cannot be terminated at the selected location, the telephone company will terminate the circuit at an appropriate telephone closet "demarc". You must arrange to have a qualified electrician extend the circuit to the Bloomberg provided router's location. Make certain that this circuit terminates on a "RJ48S jack" or its 8-pin jack equivalent, utilizing pins 1 and 2 for transmit data and pins 7 and 8 for receive data. (The telephone company or your electrician will know how to do this.)

Once the circuit is installed (or should there be any problems with its installation), please call our Installations Department at 212-318-2400. BLP uses both our own technicians and third party technicians to perform installation and service work. If you have any questions, all technicians carry identification and you can always check with us before allowing entry to your premises.

DIGITAL BACKUP LINE

BLP must also order a digital dial line for backup for the dedicated circuit. This line must terminate on an "RJ48S jack" or its equivalent (see table below) next to the dedicated circuit termination point. It will be **permanently** connected to the Bloomberg provided router by our technician. Just as with the dedicated circuit, we must give the phone company the names of two of your people; and, if a "demarc" is used, you must have your qualified electrician extend this line as well. In most cases, this dial line is installed by a separate division of the phone company during a separate visit to your office.

INTERNET BACKUP OPTIONS

Optionally, backup service may be obtained via the Internet, whereby a dial-up modem connection to an Internet Service Provider (ISP) of your choice will provide an alternative (backup) con-

nection to the Bloomberg service.

COMMUNICATION JACK CONFIGURATIONS

Circuit Type	Jack Required
56 kbps or 64 kbps	RJ48S 8 pin jack 1 & 2 = Transmit 7 & 8 = Receive
ISDN Backup	RJ48S 8 pin jack 4 & 5 = Transmit & Receive

CABLE

The Bloomberg PC operates over solid CAT5 cabling, and is independent of any customer's Local Area Network (LAN). The cable may be ordered through Bloomberg or provided by the customer.

Each user must have this cable run from the Bloomberg provided router area out to each PC. (Please note that BLP technicians are not authorized to estimate cable lengths.) Consult your electrician to help you determine the required cable lengths. The Bloomberg PC should be no more than 250 feet away from the Bloomberg provided router. Your Installation Representative will be happy to process and expedite all cable orders for you.

Once the cable has been delivered, have your electrician install the cable and terminate it on the BLP supplied surface mount box at each user desk, as well as on the BLP supplied distribution panel at the Bloomberg provided router. The surface mount boxes and distribution panel will help the electrician to ensure a neat and tidy installation. Future service calls will be minimized if this work is done properly at the outset.

If the CAT5 cable is ordered through BLP, the cable company will charge you directly. This bill will include both cable charges, shipping charges, and taxes. All solid CAT5 cabling provided through the cable company will be plenum (teflon). Some international countries may require zero halogen cabling, which can also be ordered through BLP.

Please note, **there are restocking charges if you return unused cable.** If cable or connectors need to be returned, please note the following return material authorization (RMA) requirements:

- All returns are subject to a \$50 handling fee, which is payable to the cable supplier
- All materials returned will be evaluated and the appropriate credit will only be applied to good usable products that are returned. Any damaged product will be sent back to the customer. **The customer will be responsible for related charges.**
- Cable and connectors may **not** be returned without an RMA#. To acquire an RMA#, please call BLOOMBERG Installations at 1-212-318-2400. **All returns must go back to the cable supplier, not BLP.**
- All returns must be made within 30 days of receipt or they will not be accepted.

Make certain you do not underestimate the cable runs

Make certain you do not exceed the cable run spec of 250 feet

It is vital to have a qualified electrician terminate both ends of the cable

Additionally, BLP offers BLOOMBERG Television (BTV) over your BLOOMBERG terminal which requires one coaxial cable to be run from the BLP provided satellite receiver to each BLOOMBERG Proprietary PC. See "Cable Specifications" on page 4 for more information about BTV distribution.

ELECTRICITY

Each Bloomberg PC and Bloomberg provided router **requires a separate 100VAC power plug**. While none draws much current (3 amps per PC and 1 amp per Bloomberg provided router), your Bloomberg will work more efficiently if given "clean power". Do **not** use power circuits with other devices on them. Other computers or office equipment may cause power spikes, dips, noise, electrical interference, or magnetic interference when turned on or off.

EQUIPMENT SPECIFICATIONS

BLOOMBERG-PROVIDED ROUTER

The Bloomberg provided router coordinates access to the host computer and controls all on-site equipment. It should be located in a secure room on a table, shelf, or rack as close to the dedicated digital circuit termination point and digital backup line as possible. **We will not**

install any equipment on the floor or on top of other equipment.

This device functions best in a cool environment with circulating air between 60° to 90°F. Air-conditioning is not required but it is recommended. There must also be enough rear access space for our technicians to connect the cables with ease and comfort, and to allow easy access for any required service. **(It is preferable not to install this unit by a user's desk due to the cable connections which need to be made.)**

This equipment requires one 100V, 1-amp, 3-prong AC electric power outlet on an **independent** circuit. Remember that cables are pulled from the Bloomberg provided router to each user's station. In multiple user locations, please provide adequate room for cables on racks or shelves. Both phone circuits must also be connected to our Bloomberg provided router.

Height:	2.80"	7.12 cm
Width:	17.25"	43.84 cm
Depth:	12.50"	31.77 cm
Weight:	15 lb	6.80 kg

Connectivity:

- Ethernet Interface: 15-pin AUI connector, RJ-45
- Token Ring interface: 9-pin MAU connector, RJ-45
- ISDN BRI S/T: RJ-45
- ISDN BRI U: RJ-45
- CSU/DSU: 56/64Kbps RJ-48-C
- Modem: RJ-45 for V.34 connectivity

Standards Compatibility:

- IEEE 802.3i Ethernet
- IEEE 802.5 Token Ring

Microprocessor:

33 MHz Motorola MC68040 and MC68360

Power Requirements:

100/240 VAC at 1.0 amp Maximum

Altitude: 0 - 8000 ft 0 - 2400 m

Humidity: 20% to 80% (noncondensing)

Temperature: 32° to 104° F 0° to 40° C

BLOOMBERG WORKSTATION

The Bloomberg Workstation exists for those customers who do not have their own desktop equipment upon which to receive the Bloomberg Service, or for those customers who desire a separate Bloomberg PC and LAN for their Bloomberg service. For an additional charge of \$100.00 US per month, Bloomberg will deliver and maintain a "Bloomberg Ready" PC for the customer's use as a Bloomberg terminal. This PC is accompanied by our 12" flat panel display which is included in the \$100.00 per month charge. Alternatively, the PC can be provided with our 2-screen (Dual) or 4-screen (Quad) 14" flat panel display for a **total** additional \$200.00 (or \$300.00) per month fee (\$100.00 for the PC plus \$100.00 (or \$200.00) for the 14" Dual (or Quad) display).

We believe we have chosen a robust and proven PC configuration from the world's leading supplier of PCs — Compaq®. The PC we have arranged to provide on our customer's behalf is the Compaq DeskPro EN 6400/CDS Desktop Computer. This PC comes fully-configured with the following:

- Pentium® III 500 MHz Processor
- 100 MHz Bus speed
- 6.4 GB SMART II Ultra ATA Hard Drive
- 128 MB SDRAM
- 512 KB (ECC) Cache
- 4MB Integrated SGRAM Video Memory
- Compaq 10/100 TX PCI Intel WOL UTP Network Controller (network interface card - NIC)
- 3.5" Floppy Drive
- 14 - 32X IDE CD-ROM
- Appian Jeronimo twin VGA Card
- PremierSound™ ESS 1869 integrated full-duplex audio
- Hauppauge CinemaPro TV Card
- Microsoft Mouse
- Mouse Pad
- Windows NT 4.0 operating system, factory installed, local language version
- Microsoft Office 97 Pro
- McAfee Antivirus software
- Bloomberg Application Software installed and tested

Note: This configuration is subject to change based on local availability. The PC supplied will be functionally equivalent and ready to receive the Bloomberg Service as described in this document.

Bloomberg Workstation Specs (cont'd)

Height:	5.8"	14.93 cm
Width:	19.16"	48.66 cm
Depth:	16.85"	43.43 cm
Weight:	32.0 lbs.	14.5 kg
Operating Temperature:		
	50° to 95°F	10° to 35°C
Shipping Temperature:		
	-4° to 140°F	-20° to 60°C
Operating Voltage Range:		
	90-132 VAC	180-264 VAC
Rated Voltage Range:		
	100-120 VAC	220-240 VAC
Rated Line Frequency:		
	47-63 Hz	47-63 Hz
Rated Input Current:		
Max.	5.5 amps	2.75 amps
Power Output:		
	200 watts	200 watts
Relative Humidity: Non-condensing		
Operating	8% to 90%	
Non-operating	5% to 95%	
Heat Dissipation (nominal):		
Nominal	525 Btu/hr	2.21 kcal/min
Maximum	1050 Btu/hr	4.41 kcal/min

KEYBOARDS

BLP make two keyboards available for our customers:

- A wireless, infrared keyboard and
- A PC-style keyboard.

INFRARED KEYBOARD

BLP has designed a compact, wireless infrared, multicolored keyboard for our customers' convenience to provide easy access to all Bloomberg functions including audio and multimedia applications. It is designed to take up a negligible amount of space on the user's desk and is typically placed directly in front of the flat

panel display screens.

Height:	1.3"	3.3 cm
Width:	11.45"	29.1 cm
Depth:	6.1"	15.5 cm
Weight:	1.5 lbs.	0.68 kg
Frequency:	56KHz	
Data Format:	Data 8 BTVs Parity 1 BTV	
Effective Operating Distance:		
	10'	3.05 m
Effective Operating Angle:		
	Within 15°	
Power:	2 AA Batteries	

PC-STYLE KEYBOARD W/ AUDIO

BLP has designed a multicolored PC-style keyboard for our customers' convenience to provide easy access to all Bloomberg functions including audio and multimedia applications. It comes with a separate 110V A/C power supply to provide audio through the speakers built into the keyboard.

Height:	2.125"	5.4 cm
Width:	19"	48.3 cm
Depth:	8"	20.3 cm
Weight:	7 lbs.	3.15 kg
Cable Length:		
	4.5' coiled	137.2 cm
	7' uncoiled	213.4 cm

BLOOMBERG DUAL FLAT PANEL DISPLAY

The Bloomberg Dual Flat Panel offers 1024 x 768 XGA resolution with 256 colors, on two 14" or 12.1" diagonal screens. Each screen utilizes high contrast, no flicker technology to reduce eye strain and is 300% brighter than standard LCDs. Bloomberg will ship this unit in the horizontal configuration unless the vertical model is specifically requested. The flat panel requires a separate 110 VAC power plug.

EQUIPMENT

Horizontal Screen Display (12" / 14"):

Height:	15.75 / 17.5 in	40 / 44.4 cm
Width:	25.5 / 29 in	64.8 / 73.6 cm

Vertical Screen Display (12" / 14"):

Height:	22 / 25.25 in	55.9 / 64.1 cm
Width:	12.5 / 14.4 in	31.8 / 35.8 cm

Depth of Screen & Stand (Horiz. & Vert. - 12" & 14"):

10 in	25.4 cm
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Weight (12" / 14"):

24 / 26 lbs.	10.8 / 11.7 kg
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Operating Temperature Range:

95°F (35°C) at 85% relative humidity

Operating Voltage Range:

+12 VDC	2.0 amps
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Heat Dissipation (nominal): 433 btu/hr.

QUAD (4-SCREEN) FLAT PANEL

The Bloomberg Flat Panel is also available in a 4-screen (Quad) configuration, for an extra monthly charge. This configuration requires the installation of a special video card (provided by Bloomberg) in the desktop workstation.

Quad Screen Display (14" only):

Height:	29.00 in	73.6 cm
Width:	25.25 in	64.1 cm

Depth of Screens & Stand

10 in	25.4 cm
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Weight:

40 lbs.	18 kg
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Operating Temperature Range:

95°F (35°C) at 85% relative humidity

Operating Voltage Range:

+12 VDC	2.0 amps
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Heat Dissipation (nominal): 866 btu/hr.

INSTALLATION GUIDE

ETHERNET HUB

For Local Area Network (LAN) connections, Bloomberg will provide a 16-port, CAT5, 10Mhz Ethernet Hub with the following specs:

Height:	2.25"	5.70 cm
Width:	8.625"	21.91 cm
Depth:	7.125"	18.09 cm
Voltage:	115V/230V	
Frequency:	50/60Hz	
Current:	1A/5A	
Certification:	UL, CSA, VDE	

RJ-45 Twisted pair private label.

DISTRIBUTION PANEL

The distribution panel allows for the connection of the solid CAT5 cable to the Ethernet hub. Our standard panel permits up to 16 connections.

Height:	1.75"	4.45 cm
Width:	19"	48.26 cm

CAT5 16-port RJ-45

110 Connector tool required for terminations.

PRINTING

Printing is done via a closed Ethernet ring with a customer provided printer dedicated to the Bloomberg service. No customer LAN printers are permitted on this configuration.

Note: Alternatively, a printer may be directly connected to the workstation's printer port (LPT1) for individual direct printing.

BLOOMBERG TELEVISION

Bloomberg Television (BTV) delivers simultaneous television coverage of the latest news, sports, weather, lifestyles, and financial markets in a breakthrough multiple-screen format. Each screen continuously updates developing news events and up-to-the-minute stock market, securities and commodities prices.

BTV is typically delivered through a DirecTV™ 18" satellite dish provided by BLP. In some areas of the US, BTV may be available over local cable TV or through radio frequency (RF). Ask your Bloomberg Installation Representative

for details.

Every Bloomberg satellite dish installation will be organized by your Bloomberg Installation Representative. An authorized Bloomberg Field Service Representative will arrange to meet you and your building contact to perform a site survey and to review the dish installation. The site survey will include:

- Finding the satellite in relationship to your building (101° West longitude position)
- Identifying potential mounting sites for the dish; the view must be unobstructed, now and in the future. There can be no trees, buildings, or other physical obstacles obstructing the direct line-of-sight between the dish and the satellite.
- Reviewing cabling needs from the dish to the PC (see the diagram on page 5 and **Cable Specifications**, below).

Note: Each subscriber will be responsible for securing any "Roof Rights", or permits. Each subscriber will also be responsible for meeting other requirements determined by the landlord which are associated with the dish installation. In addition, each subscriber will be responsible for making sure the technician can install the dish within all local, state, or other codes.

CABLE SPECIFICATIONS

The following cable specifications refer to the diagram on page 5. All cable and cable installation costs are borne by the client.

For locations with more than one Desktop PC, a distribution box/amplifier or splitter will be needed at the customer's expense. Also, the cabling cost from the distribution box to each Desktop PC site must be borne by the user.

The cable between the satellite dish and the receiver is an RG6 coaxial cable, with weather-proof "F" connectors on each side. The maximum length is 115' before a line amplifier may be needed. Also, a #10 copper ground wire is needed at the dish to properly ground the dish.

Note: Alternative cabling options are available for large customer installations. Call 1-800-448-5678, X-2431 for more information or talk to your Bloomberg Installation Representative.

EQUIPMENT

Satellite Dish:

Dimensions:	18" x 20" Parabolic	45.7 x 50.8 cm
Height:	34" (with std. stand)	86.4 cm
Weight:	10 lbs.	4.5 kg

DSS Receiver:

Width:	15"	38.1 cm
Height:	3"	7.6 cm
Depth:	11"	27.9 cm
Weight:	6 lbs.	2.7 kg

Remote Control:

Small hand-held unit

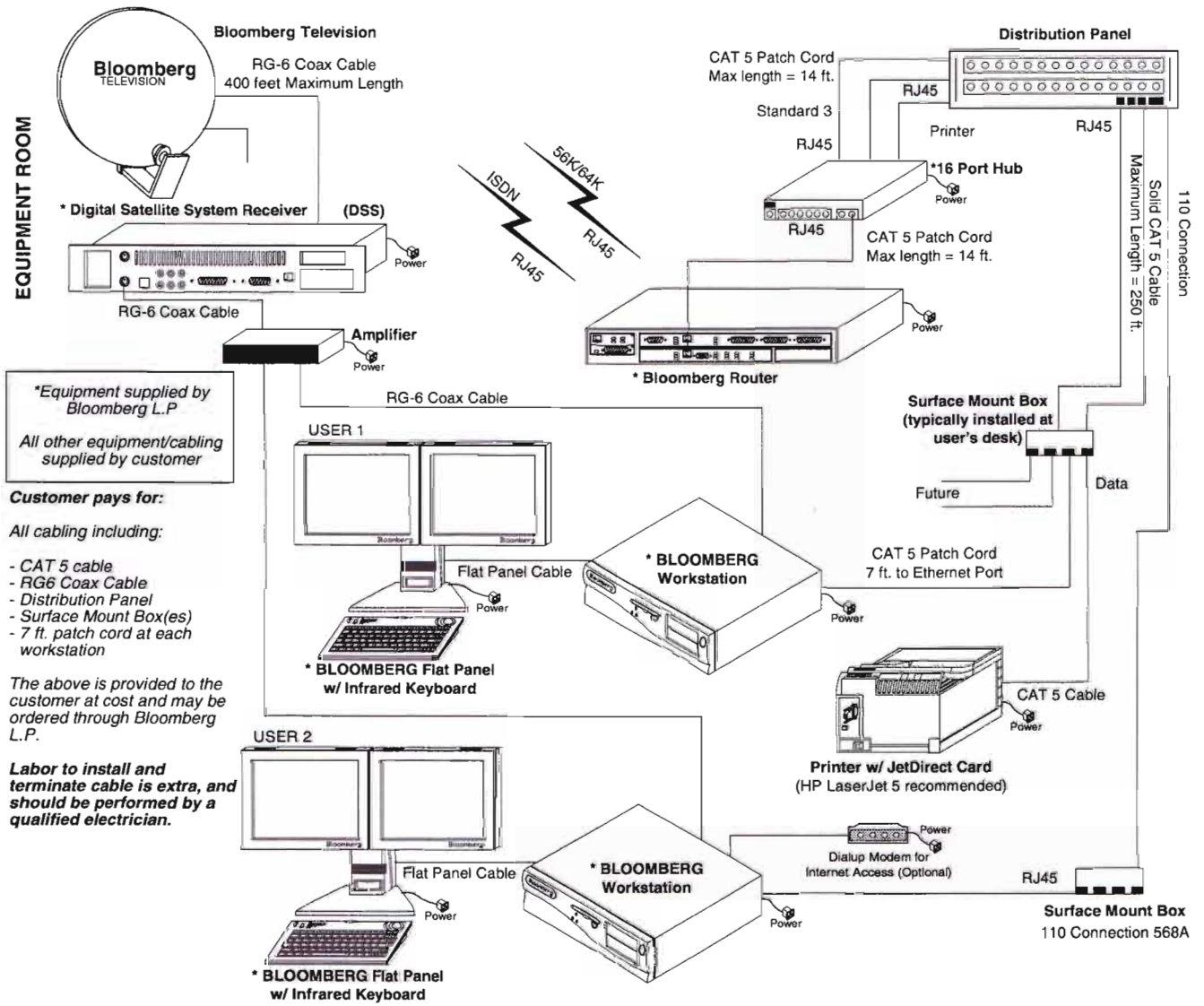
INSTALLATION

After all permits and/or "Roof Rights" have been secured by the customer, and the coaxial cable has been installed by the customer, BLP will ship the satellite dish and mount (if required) to the customer's site. The Field Service Representative who performed the site survey will return to install and "aim" the dish; and finally to install the satellite receiver near the Bloomberg provided router(s).

BLOOMBERG TELEVISION ON YOUR TERMINAL

Once the hardware is installed, your Bloomberg Installation Representative will call DirecTV™ to enable your receiver to deliver BTV. BTV will then be available on your PC or workstations through only one satellite dish/receiver. For locations with more than one PC or Workstation, a modulator/amplifier or splitter will be needed.

TYPICAL INSTALLATION



**Equipment supplied by Bloomberg L.P.
 All other equipment/cabling supplied by customer*

Customer pays for:

All cabling including:

- CAT 5 cable
- RG6 Coax Cable
- Distribution Panel
- Surface Mount Box(es)
- 7 ft. patch cord at each workstation

The above is provided to the customer at cost and may be ordered through Bloomberg L.P.

Labor to install and terminate cable is extra, and should be performed by a qualified electrician.

ANALYTICS DESK

<HELP> <HELP>

FRANKFURT

49 69 920410

HONG KONG

852 2977 6000

LONDON

44 171 330 7500

NEW YORK

212 318 2200

PRINCETON

609 279 3000

SAN FRANCISCO

415 912 2960

SÃO PAULO

5511 3048 4500

SINGAPORE

65 226 3000

SYDNEY

61 2 9777 8686

TOKYO

813 3201 8900

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