

SOLUTIONS FOR ALL YOUR APPLICATIONS

Stock No. 6264A/6265A 6261A/6262A USER MANUAL

DHDP Series

Digital High Definition Processor Series

Model	Stock No.	Description
DHDC-DV	6264A	Downconverter
DHDC-UV	6265A	Upconverter
DHDC-DH	6261A	Downconverter-Horizontal
DHDC-UH	6262A	Upconverter-Horizontal
DHDP-V	6266B	Vertical Combo Pack (Combo: 6264A + 6265A)
DHDC-H	6263A	Horizontal Combo Pack (Combo: 6261A + 6262A)

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800-523-6049 www.blondertongue.com Instruction Manual

The lightning flash with arrow head symbol within an equilateral triangle is intended to alert you to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electrical shock to persons.



! CAUTION! RISK OF ELECTRIC SHOCK DO NOT OPEN



The exclamation point within an equilateral triangle is intended to alert you to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT REMOVE COVER FROM THIS UNIT. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE

NOTE TO CATV SYSTEM INSTALLER

This reminder is provided to call the CATV System Installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

Safety Instructions



WARNING

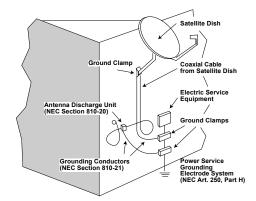
You should always follow these instructions to help ensure against injury to yourself and damage to your equipment.

- Read all safety and operating instructions before you operate the modulator.
- Retain all safety and operating instructions for future reference.
- Heed all warnings on the modulator and in the safety and operating instructions.
- Follow all installation, operating, and use instructions.
- Unplug the modulator from the AC power outlet before cleaning. Use only a damp cloth for cleaning the exterior of the modulator.
- Do not use accessories or attachments not recommended by Blonder Tongue, as they may cause hazards, and will void the warranty.
- Do not operate the modulator in high-humidity areas, or expose it to water or moisture.
- Do not place the modulator on an unstable cart, stand, tripod, bracket, or table. The modulator may fall, causing serious personal injury and damage to the modulator. Install the modulator only in a mounting rack designed for 19" rack-mounted equipment.
- Do not block or cover slots and openings in the modulator. These are provided for ventilation and protection from overheating. Never place the modulator near or over a radiator or heat register. Do not place the modulator in an enclosure such as a cabinet without proper ventilation. Do not mount equipment in the rack space directly above or below the modulator.
- Operate the modulator using only the type of power source indicated on the marking label. Unplug the modulator power cord by gripping the plug, not the cord.

Safety Instructions - continued

- → The modulator is equipped with a three-wire ground-type plug. This plug will fit only into a ground-type power outlet. If you are unable to insert the plug into the outlet, contact an electrician to replace the outlet. Do not defeat the safety purpose of the ground-type plug.
- ➤ Route power supply cords so that they are not likely to be walked on or pinched by items placed upon or against them. Pay particular attention to cords at plugs, convenience receptacles, and the point where they exit from the unit.
- Be sure that the outdoor components of the antenna system are grounded in accordance with local, federal, and National Electrical Code (NEC) requirements. Pay special attention to NEC Sections 810 and 820.

See the example shown in the following diagram:



- ➡ We strongly recommend using an outlet that contains surge suppression or ground fault protection. For added protection during a lightning storm, or when the modulator is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the lines between the modulator and the antenna. This will prevent damage caused by lightning or power line surges.
- ➡ Do not locate the antenna near overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing the antenna, take extreme care to avoid touching such power lines or circuits, as contact with them can be fatal.
- Do not overload wall outlets or extension cords, as this can result in a risk of fire or electrical shock.
- Never insert objects of any kind into the modulator through openings, as the objects may touch dangerous voltage points or short out parts. This could cause fire or electrical shock.
- ➤ Do not attempt to service the modulator yourself, as opening or removing covers may expose you to dangerous voltage and will void the warranty. Refer all servicing to authorized service personnel.
- Unplug the modulator from the wall outlet and refer servicing to authorized service personnel whenever the following occurs:
 - ☐ The power supply cord or plug is damaged;
 - ☐ Liquid has been spilled, or objects have fallen into the modulator;
 - ☐ The modulator has been exposed to rain or water;
 - ☐ The modulator has been dropped or the chassis has been damaged;
 - ☐ The modulator exhibits a distinct change in performance.
- ➡ When replacement parts are required, ensure that the service technician uses replacement parts specified by Blonder Tongue. Unauthorized substitutions may damage the modulator or cause electrical shock or fire, and will void the warranty.
- ▶ Upon completion of any service or repair to the modulator, ask the service technician to perform safety checks to ensure that the modulator is in proper operating condition.

Instruction Manual

Description

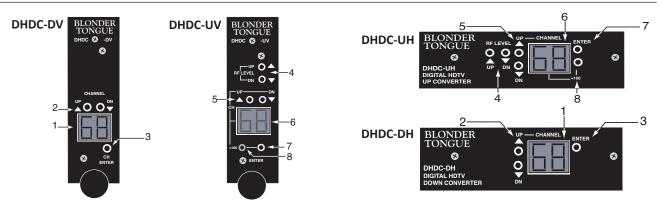
The DHDP Series consists of 2 parts, the DHDC-D (Downconverter) and the DHDC-U (Upconverter). The units are intended to operate as a system in order to process digital & high definition television (HDTV) signals.

Operating Controls and Indicators

Front Panel

- 1. 2-Digit LED Display 2 digit LED Channel display
- 2. Up/Down Channel Buttons Up & down push button controls for setting the channel.
- 3. Enter Button Button used to enter the displayed channel into memory.
- 4. Up/Down RF Level Buttons Up & down push button controls for RF level.
- 5. Up/Down Channel Buttons Up & down push button controls for channel and mode adjustment.
- 6. 2-Digit LED Display 2 digit LED display for Channel, mode and RF level information.
- 7. Enter Button Button used to "enter" channel, mode or RF level selection into memory.
- 8. +100 Channel LED Indicator LED illuminates to indicate CATV channels 100 to 135.

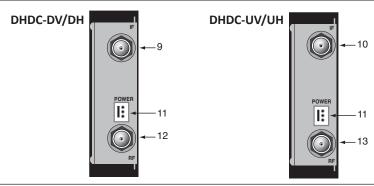
Front Panel Views



Rear Panel

- 9. IF Output "F" Connector
- 10. IF Input "F" Connector
- 11. Power Connector
- 12. RF Input "F" Connector
- 13. RF Output "F" Connector

Rear Panel Views



Specifications

DHDC-D Down Converter

Input Tuning Range (Off-Air 8VSB) (54-216, 470-864 MHz) VHF: CH 2-13, UHF: CH 14-69, CH 70-78 Extended UHF

Operating Input Level Range: -20 to +25 dBmV

Installation Input Range: -15 to +20 dBmV (any undesired channel < +25 dBmV)

Max undesired to desired channel ratio: < +25 dBc Max adjacent to desired channel ratio: < +15 dBc

IF Output Level Digital: +30 dBmV*

Rejection of Adjacent Analog Channels: -70 dB Typical

Power Requirements:

110 mA @ +12 VDC, 370 mA @ +5 VDC

DHDC-U Up Converter

IF Input Level: +30 dBmV Output Frequency Range:

Standard CATV, IRC, HRC & Broadcast 54-864 MHz

RF Output Level Digital: +45 dBmV*

Display Error: ±2 dB

Output Level Adjustment Range: +35 to +45 dBmV

Spurious Output (54-864 MHz): -60 dBc Phase Noise @ 10 kHz Offset: -95 dBc/Hz

Broadband Noise, Out of Channel: -70 dBc (5.5 MHz BW)

Power Requirement:

310 mA @ +12 VDC, 320 mA @ +5 VDC

* Average Measurement

Setting Up the Units

- 1. Place each of the units into the appropriate Blonder Tongue Micromodular chassis by sliding the unit into the retaining rails.
 - a. It is recommended to physically place one Downconverter and one Upconverter next to one another in the chassis.
- 2. Connect the digital or HDTV signal (8VSB format) to the RF 'F' connector on the DHDC-D unit.
- 3. Connect the IF 'F' connector of the DHDC-D to the IF 'F' connector of the DHDC-U.
- 4. Connect the RF 'F' connector of the DHDC-U to the appropriate combining device.
- 5. Connect each unit to the power supply using one of the power supply cables.

Programming the Unit

The DHDC-D unit is intended to accept any digital UHF or VHF signal and convert it to IF. The DHDC-U unit is intended to accept any digital IF signal and process it to any channel from 54-864 MHz. The unit has 4 valid operating modes, STD CATV, IRC, HRC & Broadcast UHF/VHF. It comes factory set to operate in Standard CATV Mode. If you wish to change the operating mode skip to the Operating Mode Selection section.

Programming the DHDC-D

- 1. Navigate to the desired channel number by depressing the CH ▲ UP and ▼ DN buttons.
 - a. Press and hold the CH ▲ UP or ▼ DN arrow button for fast scrolling.
- 2. Press the ENTER button when you reach the desired channel setting. This will tune the downconverter input to the corresponding frequency for this entry.
 - a. The LED display will blink continuously during the channel programming process and will not change the channel until the ENTER button is depressed.
 - b. The unit has a special feature that alerts an operator of an inadvertent or desired change to the unit by flashing LED readout. The LED will continue to flash for 30 seconds if the ENTER button is not depressed and if no additional entries are made then the readout will return to the display of the previously programmed channel entry setting.

Programming the DHDC-U

The DHDC-U unit comes factory set to operate in the Standard CATV mode. The unit has 4 valid operating modes: STD, CATV, IRC, HRC & Broadcast UHF/VHF (see the operating mode selection section for programming information).

Programming a Channel

- 1. Navigate to the desired channel number by depressing the CH ▲ UP and ▼ DN buttons.
 - a. Continue past 99 for channels 100-135, the +100 LED will illuminate.
 - b. Press and hold the CH ▲ UP or ▼ DN arrow button for fast scrolling.
- 2. Press the ENTER button when you reach the desired channel setting. This will tune the upconverter output to the corresponding frequency for this entry.
 - a. The LED display will blink continuously during the channel programming process and will not change the output channel until the ENTER button is depressed.
 - b. The unit has a special feature that alerts an operator of an inadvertent or desired change to the unit by flashing LED readout. The LED will continue to flash for 30 seconds if the ENTER button is not depressed and if no additional entries are made then the readout will return to the display of the previously programmed channel entry setting.

Instruction Manual

Programming the DHDC-U (Continued)

Programming RF Level

- 1. Depress the RF Level ▲ UP or ▼ DN buttons to increment or decrement the RF output level to the desired setting.
 - a. The unit has a specified adjustment range of +35 dBmV to +45 dBmV output. The unit software however, will permit entries from +33 to +47 dBmV, the out of range entries of 33-34 & 46-47 dBmV are meant for usage to correct any display error, allowing the unit to be operated in the specified range.

ATTENTION!

It is also recommended to set the output level to +45 dBmV for optimum noise performance and externally attenuate down to a desired level.

- 2. Press the ENTER button when you reach the desired RF Level setting. This will tune the upconverter output to the corresponding level entry.
 - a. The LED display readout will also flash continuously during the RF Level programming process. The LED display will continue to flash for 30 seconds if the ENTER button is not depressed and then will return to the display of the previously programmed channel entry setting.

Operating Mode Selection

The unit has 4 valid operating modes: STD CATV, IRC, HRC & Broadcast UHF/VHF.

The DHDC-U unit comes factory set to operate in the Standard CATV mode.

To change the operating mode

- 1. Simultaneously depress the RF Level ▲ UP and ▼ DN buttons for approximately 5 seconds.
- 2. The Channel LED display will switch to the operating mode selection.
- 3. Use the RF Level ▲ UP and ▼ DN buttons to select the desired mode:
 - a. C = STD CATV
 - b. H = HRC
 - c. I = IRC
 - d. U = Broadcast (VHF/UHF)
- 4. After selecting the desired mode depress the ENTER button to set the mode.
- 5. The unit will return to the channel display mode.
 - a. Programming will reflect the mode chosen See Appendix for detailed frequency plans.
 - b. The operating mode will also flash continuously during the mode selection process. The LED display will continue to flash for 30 seconds if the ENTER button is not depressed and then will return to the display of the previously programmed channel & mode entry setting. NOTE: THE MODE PRESENTLY IN MEMORY WILL BE DISPLAYED WITHOUT FLASHING DURING THE MODE SELECTION PROCESS.

Trouble Shooting

A continuously flashing Channel Display indicates an Error Condition detected by the unit microcontroller.

Sample conditions include:

- Channel Selector Entry does not match the channel number on which the unit is operating, the display will flash for 30 seconds and then revert back to the previous CH entry
- E1 is displayed if the Input VCO is Not Locked
- E2 is displayed if the Output VCO is Not Locked

Correction Suggestion

The User should perform the following steps to correct an Error Condition:

- 1. Check that the Channel Display is set to the desired channel & reset as appropriate.
- 2. Check that the unit is set to the appropriate desired operating mode.
- 3. Verify the unit output on a spectrum analyzer.
- 4. Disconnect and reconnect power to the unit.

If an error condition continues to be displayed, unit should be replaced and serviced.

Appendix A DHDC-D Input & DHDC-U Output Center Frequencies

Appendix B DHDC-U Output Center Frequencies

VHF Broadcast Channels				
Channel	(MHz)			
2	57			
3	63			
4	69			
5	79			
6	85			
7	177			
8	183			
9	189			
10	195			
11	201			
12	207			
13	213			
UHF Broadca	st Channels			
Channel	(MHz)			
14	473			
15	479			
16	485			
17	491			
18	497			
19	503			
20	509			
21	515			
22	521			
23	527			
24	533			
25	539			
26	545			
27	551			
28	557			
29	563			
30	569			
31	575			
32	581			
33	587			
34	593			
35	599			
36	605			
37	611			
38	617			
39	623			
40	629			
41	635			
42	641			
43	647			
44	653			
45	659			
46	665			
47	671			
48	677			
49	683			
50	689			
51	695			
52	701			
53	707			
54	713			
55	719			
56	725			
57	731			
58	737			
	743			
59	749			
59 60				
60				
60 61	755			
60 61 62	755 761			
60 61 62 63	755 761 767			
60 61 62 63 64	755 761 767 773			
60 61 62 63 64 65	755 761 767 773 779			
60 61 62 63 64 65 66	755 761 767 773 779 785			
60 61 62 63 64 65 66	755 761 767 773 779 785 791			
60 61 62 63 64 65 66	755 761 767 773 779 785			

EIA Chan.	Standard CATV	Incremental (IRC)	Harmonic (HRC)
2	57	57	55.75
3	63	63	61.75
4	69	69	67.75
1 5	79	75 81	73.75
5	79 85	87	79.75 85.75
95	93	93	91.75
96	99	99	97.75
97	105	105	103.75
98	111	111	109.75
99	117	117	115.75
14 15	123 129	123 129	121.75 127.75
16	135	135	133.75
17	141	141	139.75
18	147	147	145.75
19	153	153	151.75
20	159	159	157.75
21 22	165	165	163.75
7	171 177	171 177	169.75 175.75
8	183	183	181.75
9	189	189	187.75
10	195	195	193.75
11	201	201	199.75
12 13	207 213	207	205.75 211.75
23	219	213 219	211.75
24	225	225	223.75
25	231	231	229.75
26	237	237	235.75
27	243	243	241.75
28 29	249 255	249 255	247.75 253.75
30	261	261	259.75
31	267	267	265.75
32	273	273	271.75
33	279	279	277.75
34	285 291	285	283.75
35 36	297	291 297	289.75 295.75
37	303	303	301.75
38	309	309	307.75
39	315	315	313.75
40	321	321	319.75
41 42	327 333	327 333	325.75 331.75
43	339	339	337.75
44	345	345	343.75
45	351	351	349.75
46	357	357	355.75
47	363	363	361.75
48 49	369 375	369 375	367.75 373.75
50	381	381	373.75
51	387	387	385.75
52	393	393	391.75
53	399	399	397.75
54 55	405 411	405 411	403.75 409.75
56	417	417	409.75 415.75
57	423	423	421.75
58	429	429	427.75
59	435	435	433.75
60	441	441	439.75
61 62	447 453	447 453	445.75 451.75
U2	700	700	₹51.75

Limited Warranty

Blonder Tongue Laboratories, Inc. (BT) will at its sole option, either repair or replace (with a new or factory reconditioned product, as BT may determine) any product manufactured by BT which proves to be defective in materials or workmanship or fails to meet the specifications which are in effect on the date of shipment or such other specifications as may have been expressly agreed upon in writing (i) for a period of one (1) year from the date of original purchase (or such shorter period of time as may be set forth in the license agreement specific to the particular software being licensed), with respect to iCentralTM (hardware and software) and all other software products (including embedded software) licensed from BT, (ii)) for a period of one (1) year from the date of original purchase, with respect to all MegaPort, IPTV products and fiber optics receivers, transmitters, couplers and integrated receivers/distribution amplifiers (including TRAILBLAZERTM, RETRO-LINXTM and TWIN STARTM products) as well as for VideoCipher® & DigiCipher® satellite receivers, and (iii) for a period of three (3) years from the date of original purchase, with respect to all other BT products. Notwithstanding the foregoing, in some cases, the warranty on certain proprietary sub-assembly modules manufactured by third party vendors and contained in BT products and on certain private-label products manufactured by third parties for resale by BT are of shorter duration or otherwise more limited than the standard BT limited warranty. In such cases, BT's warranty with respect to such third party proprietary sub-assembly modules and private-label products will be limited to the duration and other terms of such third party vendor's warranty. In addition, certain products, that are not manufactured but are resold by BT, carry the original OEM warranty for that product. The limited warranty set forth in this paragraph does not apply to any product sold by BT, which at the time of sale constituted a Closeout Product.

BT will at its sole option, either repair or replace (with a new or factory reconditioned product, as BT may determine) any product sold by BT which at the time of sale constituted a refurbished or closeout items ("Refurbished Product" and "Closeout Product"), which proves to be defective in materials or workmanship or fails to meet the specifications which are in effect on the date of shipment or such other specifications as may have been expressly agreed upon in writing, for a period of ninety (90) days from the date of original purchase. Notwithstanding the foregoing, in some cases, the warranty on third party software and on certain proprietary sub-assembly modules manufactured by third party vendors and contained in BT products and on certain private-label products manufactured by third parties for resale by BT are of shorter duration or otherwise more limited than the BT limited warranty for Closeout Products. In such cases, BT's warranty for Closeout Products constituting such third party software, third party proprietary sub-assembly modules and private-label products will be limited to the duration and other terms of such third party vendor's warranty. In addition, notwithstanding the foregoing, (i) certain Closeout Products that are not manufactured (but are resold) by BT, carry the original OEM warranty for such products, which may be longer or shorter than the BT limited warranty for Refurbished or Closeout Products. All sales of Refurbished or Closeout Products are final.

To obtain service under this warranty, the defective product, together with a copy of the sales receipt or other satisfactory proof of purchase and a brief description of the defect, must be shipped freight prepaid to: Blonder Tongue Laboratories, Inc., One Jake Brown Road, Old Bridge, New Jersey 08857.

This warranty does not cover damage resulting from (i) use or installation other than in strict accordance with manufacturer's written instructions, (ii) disassembly or repair by someone other than the manufacturer or a manufacturer-authorized repair center, (iii) misuse, misapplication or abuse, (iv) alteration, (v) lack of reasonable care or (vi) wind, ice, snow, rain, lightning, or any other weather conditions or acts of God.

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