



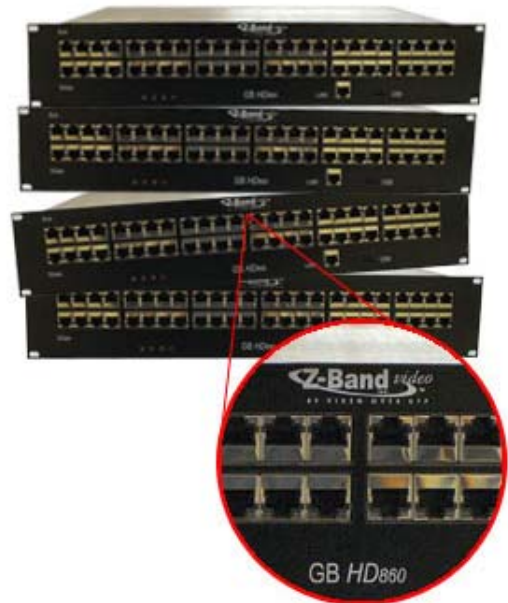
## HDTV Over CAT-6, CAT-7 or Cable UTP

**Provide High Definition Television over CAT-6, CAT-7, or Cable UTP**

### HD GigaBUD (Video Hub)

The 54 MHz to 860 MHz "HD GigaBUD" video hub provides distribution of 134 NTSC analog channels or hundreds of digital channels including 1080 (i&p) High Definition channels over a structured Category cable system. The hub splits, amplifies, slopes and recombines RF broadband signals. It also provides cascading capability for connecting to other hubs in a star topology, and bi-directional capability providing remote/reverse broadcasts from all drops. The "R-Series" hubs provide return channel capability on channels T7-T13 and channels 2-6.

The "HD GigaBUDs" with their intelligent "HD GigaBOBs" are self-adjusting providing an overall plug-and-play distribution system. A 240 MHz pilot tone is controlled by Automatic Gain Control (AGC) circuits and serves as a reference signal to guarantee the consistency and level of output from each hub. The "HD GigaBOB" on the receive end of the horizontal Category cable also adjusts the signal levels to each TV according to their distance from the video hub.



### Ordering Information

- HZ 6001-1** 24 Port Video Hub
- HZ 6001-1R** 24 Port Video Hub *with return path capabilities*
- HZ 6001-2** 12 Port Video Hub
- HZ 6001-2R** 12 Port Video Hub *with return path capabilities*



The "HD GigaBOB"/balun is one of the basic components of Z-Band's high definition video distribution system. It is located at the receive end of the system and permits a TV, Set Top Box/Cable Box or PC with a Tuner Card to be connected to the system for HDTV over CAT 5e or better cable. The balun is not only an impedance matching device, but serves also as a small self-adjusting amplifier and signal conditioner that senses its distance from the hub, and adjusts its output to assure proper signal level to the TV at distances up to 100 meters. The input to the "HD GigaBOB" from a wall outlet is connected via a RJ-45 Jack and its output features an F-Connector and an auxiliary RJ-45 Jack for IP applications.



### Free-Hanging HD GigaBOB (Intelligent Balun)

Available in free-hanging configurations:

- HZ 5002-1** Uni-directional, capability for RF video only
- HZ 5002-2** Bi-directional, capability for video, data, and VOD applications.

### Wall Mount HD GigaBOB (Intelligent Balun)

Available in wall-mount configurations:

- HZ 5004-3** Uni-directional balun for RF video capability
- HZ 5004-4** Bi-directional balun for RF video capability

## HDTV Over CAT-6, CAT-7 or Cable UTP

### High Definition GigaBUD Specifications

#### Physical Description:

- Weight: Approximately 6.5 lbs.
- Size: 12" L x 19" W x 3.5"H standard size enclosure with mounting ears
- Mounts in standard 19" rack / 2U High
- Three status indicator lights: master (red); slave (green); power (red/green)
- Front Panel: two rows of shielded RJ-45 Jacks (24 per row and 12 per row versions)
- Rear Panel: 19 F-Connectors; eight Outbound; eight Inbound; one Cascade In; one Cascade Out; one CATV In.
- UTP outbound RF video on pins 7&8, return RF on pins 4&5, and shared sheath with 10/100 Ethernet on pins 1, 2, 3, & 6.

#### Return Path:

- HZ 6001-1, HZ6001-2 NO
- HZ 6001-1R, HZ6001-2R YES

#### Electrical Power:

- Input Voltage: 90-264 VAC auto sensing
- Input Current: 1.5/115 VAC, 1A/230 VAC (fused 2A)
- Input Frequency: 47 HZ to 63 HZ
- DC Power: Maximum 75 Watts
- Meets all safety standards: UL/CSA Listed
- UTP Outbound Power: 8 VDC / 0.5 watts are supplied to each UTP outbound port on pins 7&8. Power is switched to each individual port only when impedance signature from "HD GigaBOB" is recognized

#### Electrical Radio Frequency:

- Bandwidth  
Forward: 54 MHz to 860 MHz  
DOCSIS/FSK modem return compatible: 5 MHz to 42 MHz  
"R-Series" Video Return: 5 MHz to 88 MHz

- Pilot Tone  
Frequency: 240 MHz  
Output Level: +23dBmV on all eight coax Outbound ports on rear panel
- Automatic Gain Control (AGC)  
Detect Frequency: 240 MHz  
Frequency Adjustment Range: 5 MHz to 860 MHz

#### System Performance:

- C/N: >43 dB
- CTB: >50 dB (134 channel loading)
- CSO: >51 dB (134 channel loading)
- UTP Output Launch Level  
29 to 38 dBmV (54 MHz to 860 MHz) analog signals  
23 to 32 dBmV for digital signals
- MER: >32 dB
- CATV Input: +23 dBmV flat NTSC; +17dBmV flat ATSC/QAM; and +20 dBmV flat QAM for Cable Box applications only
- Standard reverse upstream path accomodates RF modem or remote T-Channel video return from 5 MHz to 42 MHz
- "R-Series": reverse upstream path accomodates RF video return from 5 MHz to 88 MHz, channels T7-T13 and channels 2-6

#### Environmental

- Operating Temperature: 0 to 55°C
- Relative Humidity: 5 to 95% non-condensing
- Storage Temperature: -40 to 70°C
- BTU/HR: Approx. 200

#### Agency Standards

- UL/CSA Listed
- FCC Regulations, Part 15 Compliant
- TIA/EIA 568 (A or B)

### High Definition GigaBOB Specifications

#### Physical Description:

##### Free-Hanging

- Less than 6 ounces
- Size: 2.8"L x 2.4"W x 1.0" H
- F-Connector (bottom)
- (2) RJ-45 Jacks (top)
- LED distance indicators (bottom)

##### Wall Mount

- Fits into a Single Gang Box
- F-Connector (top front)
- (1) RJ-45 Jack (bottom)
- 3" CAT 6 jumper (included)

#### Electrical Radio Frequency:

- Impedance matching 100 ohm to 75 ohm with signature protection to avoid accidental data connection
- Forward 54 MHz to 860 MHz (pins 7&8)  
Assures proper TV receive level (0 to +15 dBmV) for analog signals and  $\pm 10$  dBmV for digital
- Return Path: 5 MHz to 42 MHz

- Return loss >14 dB
- C/N >43 dB
- MER >32 dB

#### Electrical Power

- 8 Vdc at 1/2 watt supplied remotely on RJ-45 pins 7&8 via HD GigaBUD video hub (no local power required)

#### Electrical Control:

- Response Level: 14 dBmV
- Response Time: 10 micro seconds

#### Environmental:

- Operating Temperature: 0 to 55°C
- Relative Humidity: 5 to 95% non-condensing
- Storage Temperature: -40 to 70°C

#### Agency Standards

- UL/CSA Listed
- FCC Regulations, Part 15 compliant
- TIA/EIA 568 (A or B)