Compact (7.5 inches wide) IP Gateways for Reliable Delivery of any bitstream – MPEG-2, H.264, H.265, data, compressed or uncompressed video, or audio over private or public wired or wireless Internet. Ideal for content distribution from hub to affiliates who wish to carry your content. Works well to correct packet loss and jitter across wireless IP links. Cost effective alternative to satellite content delivery. Ideal technology for CDN Operators or mobile network operators who are deploying any kind of traffic across long distances. Sold in pairs or point-to-multipoint. Works with DOZER Link™ encoders and decoders. Also available in 1 RU and software license versions.

Features

- Completely corrects packet loss and jitter in transmission path
- Available with Failover Option
- Protocol eliminates packet loss and corrects for internet jitter and packet reordering
- Underlying traffic is AES128 encrypted
- Inputs/Outputs: 2 each Gig/E ports or optional 4 Ethernet ports
- Supports IP UDP unicast and multicast, in or out, or both
- Will not examine the transport stream. It merely forwards all packets.
- IP address and ports can be remapped to different ones if necessary in the remote network
- Configurable destination port on listener for firewall traversal
- Can be configured for point-to-point or point-to-multipoint functionality
- Supports up to four destinations in primary/backup or split transmission configuration for redundant or load balanced setups
- Each device can be configured as a sender, a receiver, or both
- One DOZERbox transmitter can send 50+ channels to 32 DOZERbox receivers
- Each receiver device can output UDP on a local network to one or many different devices using second Ethernet port on unit
- Also available: Rack mount 1 RU – DOZER™ Rack IP/IP
- Now deployed across the world with 500+ customers

Applications

- Streaming live news and sports programming over congested wired or wireless LANs or WANs
- Backup to Dedicated IP for Video Delivery with delivery over Public Internet, including studio-to-transmitter links
- Replacing satellite backhaul and dedicated point-to-point lines with DOZERboxes at end points
- Protecting point to point traffic with strong AES128 encryption
- Eliminating packet loss and jitter across Metro WDM and other long haul backbones
- Works well with DOZER Link™ Encoders and Decoders
- Point to Multipoint Content or Data Delivery

Overview

The world is now awash with affordable bandwidth. Video delivery over IP is rapidly overtaking Satellite and Microwave. Pretty soon many inanimate objects and appliances will have their own IP addresses. The only problem is that the Ethernet/internet protocol was not designed with video packets in mind. The issue is that video packets must arrive at their destination within a set time otherwise they "expire" like spoiled food and are discarded. The other issue with video is that the UDP protocol does not do well with traffic congestion.

ARQ based DOZER is a proven packet loss correction technology that enables reliable delivery of UDP traffic across WANs and LANs. It corrects for packet loss, fixes jitter, and encrypts your traffic with AES 128. It is interesting that low level of packet loss can be found even across dedicated TELCO lines due to TCP packet contention. DVEO's DOZER operates at layer II of the OSI stack. This makes our technology more resilient and suitable for video and VoIP over wired or wireless links.

The DOZERbox is designed for compressed video but accepts almost any bitstream with any protocol, with any kind of content. A growing list of customers are using it to transfer VoIP traffic, and others use it to send uncompressed (SMPTE 292) or lightly compressed digital video (NewTek™ NDI®) across public or private networks and LANs. The DOZER technology can be adapted for any kind of “bit” delivery task as long as there is a two-way connection.
Content Distribution to Cable and IPTV Head-ends via DOZER ARQ Equipped Origination and End Points

**Playout Server**
- Playout Server
- IP in
- HD-SDI

**Origination Point 1**
- DOZERbox
- IP in
- IP w/DOZER

**Origination Point 2**
- DOZER Link HD-SDI IP Encoder w/DOZER
- IP w/DOZER
- HD-SDI/RF out
- IP out

**Origination Point 3**
- DOZER Link ASI Gateway w/DOZER
- IP w/DOZER
- ASI out
- HD-SDI out

**Origination Point 4**
- DOZER Link 8VSB/QAM/DVB-T2 Encoder w/DOZER
- IP w/DOZER
- RF in

The Internet or other wired or wireless IP Networks

**End Point 2**
- DOZER Link ASI Gateway w/DOZER
- IP w/DOZER

**End Point 3**
- DOZER Link IP HD-SDI Decoder w/DOZER
- IP w/DOZER

**End Point 4**
- DOZERbox
- IP w/DOZER

**End Point 5**
- Atlas II Packaging Server w/DOZER
- IP w/DOZER
- IP out

**NOTES**
- Typical H.264 encoder bitrates = 5 Mbps
- DOZER Link: Input + Output: IP or ASI
- Each destination will need 5 Mbps
- Up to 32 end points per “encoder”
- All DOZER connections encrypted w/AES-128
- Gearbox: Up to 16 inputs via IP, RF or HD-SDI

**ENCODER INPUT**
- SDI, HD-SDI
- ASI
- QAM
- 8VSB
- DVB-T2
- ISDB-T
- Etc.

**DECODER/END POINT OUTPUT**
- HD-SDI
- IP
- ASI

Title: Content Distribution – Cable & IPTV Head-ends
Project: DOZER Link & DOZER – Origination & End Points
Date: February 20, 2019
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Benefits

- Smooth Error Free Delivery of Compressed Video Across Public Internet with Guaranteed Upload and Download
- Transits Most Firewalls
- Saves Money versus Private Point to Point Connections
- Can be added to most of our products and others' products
- All Content is Encrypted with AES128 between units
- Linux® based reliability
- Can eliminate need for satellite delivery of point-to-point

Specifications

<table>
<thead>
<tr>
<th>IP Inputs: Any Digital Bitstream Connection Between DOZERs</th>
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<tbody>
<tr>
<td>IP protocols: UDP with AES128</td>
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<table>
<thead>
<tr>
<th>Administration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access: Web interface, ssh interface, with passwords</td>
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<tr>
<td>SNMP: Monitoring and alerts</td>
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<tr>
<td>UPTIMETM: Optional Failover software</td>
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<table>
<thead>
<tr>
<th>CPU and Operating System</th>
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<tbody>
<tr>
<td>CPU: Intel® Core i3</td>
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<tr>
<td>OS: DVEO embedded Linux® on SSD</td>
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<tr>
<td>Hard Drive: 8 GB RAM</td>
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<tr>
<td>Memory: 120 GB SSD Intel</td>
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<table>
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<tr>
<th>Other</th>
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<tr>
<td>Latency: About six times the Ping Time</td>
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<tr>
<td>Bandwidth Overhead: 7% typical, but depends on network issues</td>
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<thead>
<tr>
<th>Physical &amp; Power</th>
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<tbody>
<tr>
<td>Size: 7.5 x 6.5 x 1.7 inches (W x D x H)</td>
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<tr>
<td>190 x 165 x 43 mm (W x D x H)</td>
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<tr>
<td>Weight: 3 lbs. (1.36 kg)</td>
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<tr>
<td>Shipping Weight: 5 lbs. (2.27 kg)</td>
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<tr>
<td>Power: External 90W fanless power adapter</td>
</tr>
<tr>
<td>Input: 100–240V AC, 50/60 Hz</td>
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<tr>
<td>Output: 19V DC, 4.74A</td>
</tr>
<tr>
<td>Power Consumption: Maximum 90 watts</td>
</tr>
<tr>
<td>Operating Temperature: 0°C to 50°C</td>
</tr>
<tr>
<td>Processor Cooling: Heat pipe processor cooling with two 60 mm fans on the upper side of the chassis</td>
</tr>
<tr>
<td>Relative Humidity: 10% to 90% non-condensing</td>
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<tr>
<td>Conformities: UL, BSMI, FCC, CE, RoHS, C-Tick, CB, ETL</td>
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<tr>
<th>Security</th>
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<tr>
<td>Ports security scanned to MIL requirements prior to shipment</td>
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</table>

Ordering Information

DOZERbox IP/IP + AES128 (typically sold in pairs)
Also Available:
Rackmountable 1 RU – DOZER Rack IP/IP (typically sold in pairs)
DOZER Link HD IP – DOZERIZED Encoder or Decoder