These upconverters are designed for use with an analog or digital video modulator. The upconverters are IESS-308/309 compliant. An internal synthesizer provides frequency tuning. Level control is available via the front panel or the remote control interface.

OPTIONS
- Higher stability reference
- Remote RS422, RS232, IEEE-488 or contact closure interface
SPECIFICATIONS

Type ..................................................... Dual conversion
Tunability ............................................... Second local oscillator only
Frequency sense .................................... No inversion

IF characteristics
- Frequency ......................................... 70 ±20 MHz
- Impedance ........................................ 75 ohms
- Return loss ....................................... 26 dB minimum
- Signal monitor ................................... -20 dBc nominal

RF characteristics
- Frequency ......................................... 5.845–6.430 GHz (UVE-9673-125K),
  14.0–14.5 GHz (UVE-9676-125K)
- Impedance ........................................ 50 ohms
- Return loss ....................................... 20 dB minimum
- Power output (1dB compression) ......... +10 dBm minimum

Transfer characteristics
- Gain (minimum attenuation) ................. 30 dB nominal (UVE-9673-125K),
  26 dB nominal (UVE-9676-125K)
- Image rejection.................................... 80 dB minimum
- Level stability .................................... ±0.25 dB/day maximum at constant temperature
- Noise figure ...................................... 20 dB typical, 25 dB maximum
- Amplitude response ......................... ±0.25 dB/±20 MHz,
  ±0.20 dB/±18 MHz
- Group delay (±18 MHz) ....................... 1 ns peak-to-peak maximum
- Intermodulation distortion
  (third order) ..................................... At -10 dBm output signals, 60 dBc minimum
- AM/PM conversion ......................... 0.1°/dB maximum to +5 dBm output
- Gain slope ..................................... 0.02 dB/MHz maximum

Spurious outputs
- Signal related ..................................... 65 dBc minimum (UVE-9673-125K),
  60 dBc minimum (UVE-9676-125K)
- Signal independent ......................... -70 dBm maximum (UVE-9673-125K),
  -75 dBm (UVE-9676-125K)
- Gain adjustment ................................. 30 dB, local and remote control
- Gain adjustment step size ................... 0.2 dB
- Frequency stability ......................... ±2 x 10^-8, 0 to 50°C (higher stability options available),
  ±5 x 10^-9/day typical (fixed temperature after 24 hour on time)
- Upconverter mute .............................. 60 dB

TYPICAL PHASE NOISE CHARACTERISTICS
(1.0 Hz BANDWIDTH)

![Phase Noise Graph](image-url)
6. Redundant operation. Refer to separate data sheet for switchover unit with auto/manual and local/remote control features.

   A. ±1 x 10^-8, 0–50°C, 5 x 10^-9/day typical (fixed temperature after 24 hour on time).
   B. ±5 x 10^-9, 0–50°C, 1 x 10^-9/day typical (fixed temperature after 24 hour on time).
   C. ±2 x 10^-9, 0–50°C, 1 x 10^-9/day typical (fixed temperature after 24 hour on time).

17. Remote control.
   A. RS422.
   B. RS485 (supplied as standard).
   C. RS232.
   D. Contact closure selection of up to sixteen preprogrammed frequencies.
   F. IEEE-488.
   G. BCD contact closure.

Notes: Missing option numbers are not applicable for this product.

For literature describing local control (front panel) and remote control (bus protocols), refer to MITEQ's Technical Note 25T009.

The MITEQ Video Exciter combines a high-quality video modulator with a dual-conversion, data-quality synthesized upconverter. The video modulator meets or exceeds RS-250C short-haul and IESS-306 standards. The modulator is compatible with NTSC, PAL/SECAM and MAC video formats. A wide selection of optional features allows the modulator to be compatible with D2-MAC, B-MAC, SIS, IRDETO and encrypted PAL/NTSC video formats. All operating parameters (except IF frequency and level) are fully programmable from the front panel or optional remote interface port, without the need for test equipment and manual adjustments. The upconverter is IESS-308/309 compliant.

FEATURES
- Fully programmable front panel or optional remote interface
- Supports full 1:N redundant multiformat configurations, with remote options
- Supports multiple transponder settings of video, audio, dispersal and IF variables
- Adaptable to a wide variety of video formats
- DC-coupled circuitry
- Multiple preemphasis selection for video and audio
- Average AFC enable/disable select
- Front panel audio, video, and IF monitor points
- Individual and summary alarm contact closure outputs
- One IF filter and one video filter
- IF level adjust
- Programming resolution:
  0.1 MHz for video and dispersal deviation
  10 kHz for audio subcarrier frequency
  1 kHz for audio deviation
  0.1 dB for audio subcarrier level
- Upconverter IF input monitor
- Upconverter muting
- Upconverter tuning in 125 kHz step size
- Up to four switchable IF filters
- Two switchable video filters
- Gated/averaging AFC for NTSC, PAL/SECAM, with external synchronization for B-MAC or D2-MAC video formats
- Automatic external ED synchronization for IRDETO or encrypted PAL/SECAM and NTSC video formats
- Video polarity
- Baseband mute
- Front panel programmable Automatic Transmitter Identification System (ATIS)
- RS232, RS485, RS422 remote interface
- Remote/local IF level programming:
  0.5 dB programming resolution
- IF loop interface
- 10 dBm IF output
- High-stability frequency reference for upconverter
## C BAND AND Ku BAND SYNTHESIZED UPCONVERTERS FOR VIDEO EXCITER APPLICATIONS

### PRIMARY POWER REQUIREMENTS

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Requirement Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td>100, 120, 220, 230/240 VAC +10%, -13%</td>
</tr>
<tr>
<td>Frequency</td>
<td>47–63 Hz</td>
</tr>
<tr>
<td>Power consumption</td>
<td>120 W typical</td>
</tr>
</tbody>
</table>

### SUMMARY ALARM

- Contact closure/open for DC voltage alarm
- Contact closure/open for DC voltage and/or LO alarm

### PHYSICAL

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Requirement Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>20 pounds nominal</td>
</tr>
<tr>
<td>Overall dimensions</td>
<td>19&quot; x 1.75&quot; panel height x 22&quot; maximum (chassis depth 20&quot;)</td>
</tr>
<tr>
<td>RF connectors</td>
<td>N female (UVE-9673-125K), SMA female (UVE-9676-125K)</td>
</tr>
<tr>
<td>IF connectors</td>
<td>BNC female</td>
</tr>
<tr>
<td>IF signal monitor</td>
<td>BNC female</td>
</tr>
<tr>
<td>Summary alarm</td>
<td>DE-9P</td>
</tr>
<tr>
<td>Redundancy alarm</td>
<td>DE-9P</td>
</tr>
<tr>
<td>LO frequency/power monitor</td>
<td>SMA female</td>
</tr>
</tbody>
</table>

### ENVIRONMENTAL

#### Operating

- Ambient temperature     | 0 to 50°C         |
- Relative humidity       | Up to 95% at 30°C |
- Atmospheric pressure    | Up to 10,000 feet |

#### Nonoperating

- Ambient temperature     | -50 to +70°C      |
- Relative humidity       | Up to 95% at 40°C |
- Atmospheric pressure    | Up to 40,000 feet |
- Shock and vibration     | Normal handling by commercial carriers |

For converter requirements:
**TEL.: (516) 436-7400, ext. 120 • FAX: (516) 436-7431**

For video modulator requirements:
**TEL.: (516) 436-7400, ext. 130 • FAX: (516) 436-9219**

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**D-158C**

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