**Application**
The Comtech EF Data (CEFD) UT-4518 Up Converter is the ultimate in high-performance and cost effective Ku-Band frequency conversion. The UT-4518 can be used for SCPC, DAMA, and TDMA, as well as full transponder HDTV and analog TV. Spectral purity and stability characteristics fully meet or exceed the requirements of all domestic, international, and regional commercial satellite networks, including the Eutelsat Hotbird™ family.

**High Gain**
The UT-4518 has +10 dBm minimum output level at the 1 dB compression point and 35 dB of gain as a standard. This capability permits longer cable runs to the modem rack or compensates for elaborate splitting networks without adding expensive options such as external line amplifiers.

**Low Phase Noise**
The phase noise performance of the UT-4518 exceeds the Intelsat phase noise mask for IBS and IDR services by more than 6 dB. This allows phase dependent demodulators to perform better. The close-in phase noise is very low, making the converter ideal for low bit rate digital circuits such as those used in DAMA hub earth stations.

**Daisy Chain Redundancy Switching**
The converter uses our patented "Daisy Chain" integrated switching technology. The Daisy Chain design removes the relays associated with a centralized protection switch tray and distributes them across the individual converters. Daisy Chain technology successfully eliminates a central switching chassis, two power supplies, a microprocessor, and several long, costly cables. Widely accepted in the industry, CEFD’s Daisy Chain provides both pricing and marketing advantages.

**1:N Redundant Configuration Diagram with IOM-XX and TSM-XX Installed**

www.comtechefdata.com
Remote Control
The remote control interface is selectable between EIA-232 and EIA-485, as well as full Ethernet including Telnet, SNMP and pre-loaded HTML GUI. All configuration control, status retrieval, and adjustments are available as simple ASCII commands through the serial interface or through the front panel menu. As a cost option, the remote control command structure can be customized in order to accommodate existing network software.

Detachable RF/IF Connector Module
Each UT-4518 is equipped with a detachable I/O Module (IOM) that establishes input and output connections for the RF and IF paths. The module inserts into a rear compartment of the converter, and requires no additional outside space. The module includes a SMA connector for the RF path and a BNC connector at 50 or 75 Ω for the IF path.

Minimum Rack Space
Due to its small rack height (1.75 inches) and the elimination of the space penalty paid for a separate 1+N switch chassis, the UT-4518 and the Daisy Chain switch architecture provide the most compact and cost effective converter subsystem available. The units are ideal for the construction of transportable systems such as “flyaways,” and high capacity earth stations where space utilization and economy are prime considerations.

Specifications
<table>
<thead>
<tr>
<th>Frequency Range</th>
<th>UT-4518</th>
<th>UT-4518/E</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.30 to 18.10 GHz</td>
<td>17.30 to 18.40 GHz</td>
<td></td>
</tr>
</tbody>
</table>

Conversion
Dual, No Inversion

Step Size
125 KHz standard, 1 kHz optional

Preset Channels
32 Frequencies and Gains

Stability Over Time
± 1 x 10⁻⁷/Day

Stability Over Temperature
± 1 x 10⁻⁷ 0 to 50°C

IF Input
Noise Figure 13 dB Maximum at 0 dB Attenuation
Level -35 dBm Typical
Range 52 to 88 or 104 to 176 MHz
Optional 50 to 90 MHz or 100 to 180 MHz
(Contact factory with specific requirements)
Impedance 50 or 75 Ω
Return Loss 23 dB Minimum with I/O Module or Switch Module

RF Output
Output Level +10 dBm at 1 dB Compression
Intermodulation -38 dBc at 0 dBm Output SCL
Carrier Mute -70 dBc
Non-Carrier Spurious -80 dBm
Carrier Spurious -65 dBc at 0 dBm Output
AM to PM 0.1°/dB at -5 dBm Out
Return Loss 20 dB Minimum with I/O Module
18 dB Minimum with Switch Module
Impedance 50 Ω

Transfer
Gain 35 dB ± 2 dB
Attenuation Adjust 0 to 25 in 0.25 dB Steps
0.1 dB Steps Optional
Gain Stability ± 0.25 DB/Day
Ripple ± 0.25 dB (± 18 MHz) Optional ± 20 MHz
0.75 dB (± 36 MHz) Optional ± 40 MHz
(Contact factory with specific requirements)
Slope 0.05 dB/MHz
IF Bandwidth 36 or 72 MHz, Optional 40 or 80 MHz
(Contact factory with specific requirements)

External Reference
Input, either 5 or 10 MHz Option @ +3 dBm
Optional 10 MHz Rear Panel Reference Output

Group Delay
Linear 0.03 ns/MHz
Parabolic 0.01 ns/MHz²
Ripple 1.0 ns Peak-to-Peak

Phase Noise
<table>
<thead>
<tr>
<th>Limit (dB/Hz)</th>
<th>Typical (dB/Hz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 Hz</td>
<td>-66</td>
</tr>
<tr>
<td>1 KHz</td>
<td>-76</td>
</tr>
<tr>
<td>10 KHz</td>
<td>-86</td>
</tr>
<tr>
<td>100 KHz</td>
<td>-96</td>
</tr>
<tr>
<td>1 MHz</td>
<td>-106</td>
</tr>
</tbody>
</table>

Remote Control (Rear Panel)
Comm Port RS-485 or RS-232C, RJ-45 for Ethernet

Indicators (Front Panel)
Power On Green LED
Mute Yellow LED
Remote Yellow LED
Reference Yellow LED
Stored Fault Red LED
Fault Red LED

Test Points (Front Panel)
RF Sample SMA, -20 dBc Nominal
IF Sample BNC, -20 dBc Nominal
Optional L.O. Sample

Power
Voltage 90 to 250 VAC Auto ranging, optional -48 VDC
Frequency 47 to 63 Hz
Dissipation 60 W

Environmental
Temperature 32 to 122°F (0 to 50°C)
Altitude 10,000 Feet MSL
Humidity 0 to 95% Relative Humidity

Physical
Dimensions (1RU) 1.75” x 19” x 22”
(weight x width x depth) 4.45 x 48.30 x 55.90 cm
Weight 15 lbs (7.0 kg)

MTBF
49,740 hrs (calculated)
> 100,000 hrs. (field experience)

Summary Alarm
Relay Closure Form C