



## QQP860 QAM to QAM Processor



*Advanced Applications include:*

*Channel Translation of DOCSIS data...  
Regenerating a clean QAM signal from a noisy link...HellHell  
Translating a QAM signal to a new RF output channel...  
VSB to QAM Transcoding with no rate change...*

The R. L. Drake model QQP860 is a professional quality, digital headend product that tunes and demodulates digital QAM signals utilizing forward error correction (FEC) to correct errors. After error correction, the recovered transport stream is re-encoded with new FEC and QAM modulated. A built-in upconverter upconverts to the new QAM output channel. The output channel may be the same channel as the input channel if desired.

The QQP860 can also demodulate an 8VSB or 16VSB input and convert it to a QAM output.

The QQP860 does not alter the transport stream in any way. Timing and null packet locations are not changed. This allows the product to be used for either DOCSIS data or digital video applications. The model DQT860 is recommended if full packet processing or rate changes are required or if multiplexing of ATSC input signals is desired.

- Front panel display and buttons allow easy setup and monitoring of operating mode and parameters.
- High output, 61 dBmV, agile QAM modulator and upconverter are built in.
- Front Panel Display of input S/N and Error Rate.
- Input tuner/demodulator tunes off-air or CATV channels between 54 and 860 MHz and provides demodulation of 8VSB, 16VSB, or QAM modes from 16QAM to 256QAM.
- ITUA (DVB), or ITUB (DigiCipher® II) FEC modes are supported in the QAM modulator..

- 61 dBmV QAM low phase noise output is agile on channels from 54 to 860 MHz.
- High MER output signal quality.
- Meets or exceeds DOCSIS 2.0 Downstream output specifications.
- 1U tall package with internal power supply conserves rack space.
- Manufactured in the USA.

### Drake Digital QQP860 Technical Specifications

<b>Demodulator Input</b>	
Input Frequency Range:	54 - 864 MHz. Off-air channels 2-69, CATV channels 2-135.
Menu Selectable Channel Plans:	Standard CATV, HRC, IRC or Broadcast.
Input Channel Bandwidth:	6 MHz.
Input RF Level Range:	-28 dBmV to +30 dBmV.
Minimum Input Level per Mode:	8VSB: -28 dBmV, 16VSB: -25 dBmV, 64QAM: -20 dBmV, 256QAM: -15 dBmV.
Maximum Input Power (sum of all channels):	Not to exceed -16 dBm.
Input Impedance:	75 Ohms with Return Loss typically 8 dB.
Noise Figure:	Less than 12 dB.
Image Rejection:	40 dB.
Adjacent Channel Rejection:	60 dB.
Local Oscillator Leakage to Input:	Less than -12 dBmV.
Demodulation Modes:	ATSC: 8VSB or 16VSB ITU-A: 16QAM, 32QAM, 64QAM, 128QAM, or 256QAM. ITU-B: 64QAM or 256QAM.
Symbol Rates:	Commonly used presets and user programmable.
<b>QAM Modulator</b>	
Modulation Modes:	16QAM, 32QAM, 64QAM, 128QAM or 256QAM.
Symbol Rate:	1 Ms/S to 7 Ms/S.

Forward Error Correction (FEC):	ITU-A (DVB) or ITU-B (DigiCipher® II).
I/Q Phase Error:	Less than 1 degree.
Carrier Suppression:	45 dB.
Channel Amplitude Error:	Less than 1dB.
MER:	Greater than 38 dB with blind equalizer.
<b>Analog EAS IF Input</b>	
Input Impedance:	75 Ohms with a return loss of 20 dB.
Operating Input Level:	+30 dBmV $\pm$ 5 dB @ 45.75 MHz.
Auto Switching Level:	+20 dBmV minimum.
<b>RF Output</b>	
Output Frequency Range	54 MHz to 864 MHz.
Channel Plan:	Standard CATV, HRC, IRC or Broadcast.
FCC Offsets:	Automatic, +12.5 or +25 kHz.
Frequency Stability:	$\pm$ 5 ppm.
Maximum Output Level:	+61 dBmV minimum, adjustable downward.
Minimum Output Level:	+45 dBmV.
Output Level Accuracy:	$\pm$ 1 dB.
Output Impedance:	75 Ohms with return loss better than 14 dB (within output filter passband).
Spurious Outputs:	-60 dBc from 40 MHz to 1000 MHz.
Broadband Noise:	Less than -12 dBmV (6 MHz bandwidth @ $\pm$ 12 MHz).
Phase Noise:	-95 dBc @ 10 kHz offset, -OR- 1 kHz to 10 kHz: Less than -36 dBc double sideband noise power. 10 kHz to 50 kHz: Less than -54 dBc double sideband noise power. 50 kHz to 3 MHz: Less than -54 dBc double sideband noise power.
<b>General</b>	
Power:	90-260 VAC, 47-63 Hz, 38 W.
Weight:	7 lbs. (3.2 Kg.)
Size:	19" (48.3 cm) W x 1.75" (4.45 cm) H x 11.5" (29.2 cm) D

Operating Temperature:	0° C (32° F) to 50° C (122° F)
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Specifications, price, and availability are subject to change without notice or obligation.



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