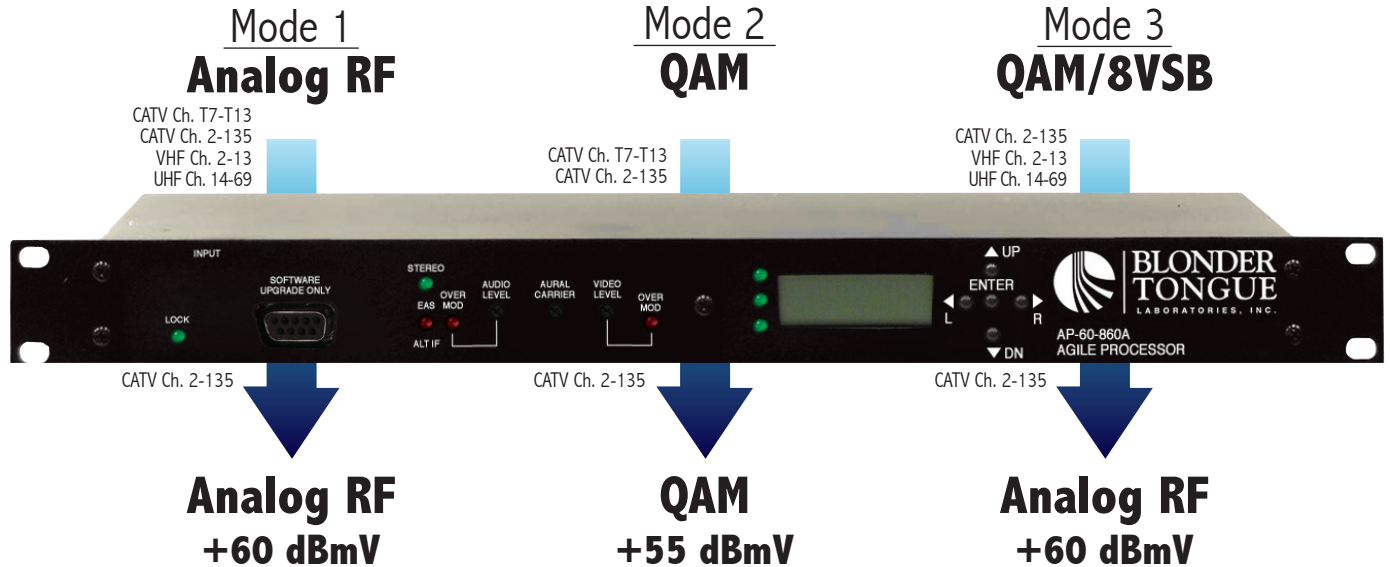


The AP-60-860A (Agile Digital/Analog Processor) operates in one of the three following modes:

**Mode 1:** Analog Heterodyne Processor (Analog RF **IN** > Analog RF **OUT**)

**Mode 2:** Digital Heterodyne Processor (QAM **IN** > QAM **OUT**)

**Mode 3:** Digital-to-Analog Processor (8VSB or QAM **IN** > Analog RF **OUT**)



## FEATURES

- As an agile analog heterodyne processor: accepts one Analog RF input (CATV sub-band channels T7-T13, CATV standard channels 2-135, VHF channels 2-13, and UHF channels 14-69) and delivers one Analog RF output (CATV standard channels 2-135)
- As an agile digital heterodyne processor: accepts one Digital Cable QAM input (CATV sub-band channels T7-T13, and CATV standard channels 2-135) and delivers one Digital Cable QAM output (CATV standard channels 2-135)
- As an agile digital-to-analog processor: accepts one Digital Off-air 8VSB or Digital Cable QAM input (CATV standard channels 2-135, VHF channels 2-13, and UHF channels 14-69) and delivers one Analog RF output (CATV standard channels 2-135)
- Equipped with EAS interface which can also be used as an IF (Intermediate Frequency) input
- Supports Closed Captioning (EIA-608)

## ORDERING INFORMATION

Model	Stock #	Description
AP-60-860A	59819	Agile, Processor, +60 dBmV, 54-860 MHz output

## RELATED PRODUCTS

Model	Description
DAP	Digital-to-Analog Processor; 1 RU
AP Series	Agile Heterodyne Processor; 1 RU

# SPECIFICATIONS

## INPUT

<b>Connector:</b>	"F" Female
<b>Analog Mode (1)</b> <b>Standard:</b> <b>Tuning:</b> <b>Bandwidth:</b> <b>Power Level:</b>	NTSC CATV 2-135, Broadcast 2-69, Sub T7-T13 6 MHz -20 to +30 dBmV
<b>QAM Mode (2)</b> <b>Standard:</b> <b>Tuning Range:</b> <b>Data Rate:</b> <b>Bandwidth:</b> <b>Power Level:</b>	ITU-T J.83 - Annex B (64 and 256 QAM) CATV Ch. 2-135 T7-T13 38.8 Mbps (QAM 256); 26.97 Mbps (QAM 64) 6 MHz -20 to +30 dBmV
<b>QAM/8VSB Mode (3)</b> <b>Standard:</b> <b>Tuning Range:</b> <b>Data Rate:</b> <b>Bandwidth:</b> <b>Power Level:</b>	8VSB ATSC Digital Television A/53E QAM ITU-T J.83 - Annex B (64 and 256 QAM) 8VSB VHF (NTSC Ch. 2-13), UHF (NTSC Ch. 14-69) QAM CATV Ch. 2-135 T7-T13 8VSB 19.392 Mbps QAM 38.8 Mbps (QAM 256); 26.97 Mbps (QAM 64) 6 MHz -20 to +30 dBmV

## IF (INTERMEDIATE FREQUENCY)

<b>Connector:</b>	"F" Female Input / "F" Female Output
<b>Impedance:</b>	75 $\Omega$ Input / 75 $\Omega$ Output
<b>Return Loss:</b>	16 dB Input / 15 dB Output
<b>EAS/ALT IF</b> <b>Input Level:</b> <b>Switch Isolation:</b>	+38 dBmV @ 45.75 MHz Greater than 60 dB
<b>Standby Carrier</b>	+35 dBmV (RF Input <-25 dBmV)

### Modes 1 & 3

<b>Aural Frequency:</b>	41.25 MHz
<b>Visual Frequency:</b>	45.75 MHz
<b>Composite Loop Output</b> <b>Aural Carrier Level:</b> <b>Visual Carrier Level:</b>	+20 dBmV +35 dBmV

### Mode 2

<b>Center Frequency:</b>	44 MHz
<b>Output Level:</b>	+30 dBmV

## GENERAL

<b>Dimensions (W x D x H):</b>	19.0 x 18.625 x 1.75 inches (483 x 473 x 44 mm)
<b>Power:</b>	110 VAC/60 Hz (Fuse: 1 amp, 250 VDC, SloBlo)
<b>Power Dissipation:</b>	36 W
<b>Weight:</b>	7 lbs (3.2 kg)
<b>Operating Temperature:</b>	32 to 122 °F (0 to 50 °C)
<b>Storage Temperature:</b>	-13 to 158 °F (-25 to 70 °C)
<b>Operating Humidity:</b>	0 to 95% RH @ 35 °C max, non-condensation
<b>Storage Humidity:</b>	0 to 95% RH @ 35 °C max, non-condensation

## OUTPUT

### Modes 1 & 2

<b>Connector</b> <b>RF Output:</b>	"F" Female
<b>RF Output</b> <b>Frequency Range:</b> <b>Channels:</b> <b>Power Level:</b> <b>Power Level Range:</b> <b>Broadband Noise:</b> <b>Spurious:</b> <b>Impedance:</b> <b>Return Loss:</b> <b>Aural/Visual Carrier Ratio (Mode 1):</b> <b>Frequency Tolerance</b> <b>Adjacent Channel Rejection:</b>	Analog RF or QAM 54 to 864 MHz UHF, VHF, CATV (Standard, HRC, & IRC) Mode 1 (Analog) +60 dBmV Mode 2 (QAM) +55 dBmV Mode 1 (Analog) +50 to +62 dBmV (in 0.2 dB increments) Mode 2 (QAM) +45 to +57 dBmV (in 0.2 dB increments) Mode 1 (Analog) -77 dBc (@ +60 dBmV output level, 4 MHz bandwidth) Mode 2 (QAM) -75 dBc (@ +55 dBmV output level, 6 MHz bandwidth) -63 dBc 75 $\Omega$ 15 dB -15 dB $\pm$ 2 $\pm$ 20 kHz; 32 to 122 °F (0 to 50 °C) 65 dB

### Mode 3

<b>Connector</b> <b>RF Output:</b>	"F" Female
<b>RF Output</b> <b>Frequency Range:</b> <b>Channels:</b> <b>Power Level:</b> <b>Power Level Range:</b> <b>Broadband Noise:</b> <b>Spurious:</b> <b>Impedance:</b> <b>Return Loss:</b> <b>Aural/Visual Carrier Ratio:</b>	Analog RF 54 to 864 MHz UHF, VHF, CATV (Standard, HRC, & IRC) +60 dBmV +50 to +62 dBmV (in 0.2 dB increments) -77 dBc (@ +60 dBmV output level, 4 MHz bandwidth) -63 dBc 75 $\Omega$ 15 dB -15 dB $\pm$ 5
<b>Visual</b> <b>Frequency Tolerance</b> <b>Standard Channels:</b> <b>FCC Aeronautical Channels:</b> <b>Video</b> <b>Frequency Response:</b> <b>Video-to-RMS Hum Ratio:</b> <b>Signal-to-Noise Ratio:</b> <b>Differential Gain:</b> <b>Differential Phase:</b> <b>Over-mod. Indicator:</b> <b>Chrom./Luminance Delay:</b>	$\pm$ 20 kHz; 32 to 122 °F (0 to 50 °C) $\pm$ 5 kHz; 32 to 122 °F (0 to 50 °C) 1.5 dB Peak-to-Valley (fv-0.5 to fv+4.2 MHz) 65 dB 58 dB (Weighted) 2.0% @ 87.5% 1.0 degree 87.5% $\pm$ 2.5 Per FCC Requirements
<b>Audio</b> <b>Frequency Response:</b> <b>Frequency Range:</b> <b>Signal-to-Noise Ratio:</b> <b>Total Harmonic Distortion:</b> <b>Over-mod. Indicator:</b>	$\pm$ 1.0 dB 50 Hz to 15 kHz 59 dB 1.0% @ 55 kHz Deviation 55 kHz $\pm$ 2
<b>4.5 MHz Audio</b> <b>Carrier Tolerance:</b>	$\pm$ 150 Hz 32 to 122 °F (0 to 50 °C)

## ALARMS/MONITORING/CONTROL

<b>Indicators:</b>	Lock (Green LED) Stereo Audio (Green LED) EAS or Alternate IF activated (Red LED) Audio Over-modulation (Red LED) Video Over-Modulation (Red LED)
<b>Local Monitoring:</b> <b>Local Control:</b>	Front-panel, 16-character, 2-line LCD screen Front-panel Navigational Key-pad Audio & Video Modulation Adjustment Aural Carrier Adjustment