



The **A2020** Agile Television Modulator offers performance, flexibility and reliability to meet the most demanding requirements. It accepts video and audio baseband inputs and provides a modulated visual and aural carrier on any NTSC or PAL channel in the 45 to 550 MHz or the 550 to 850 MHz range.

Features

- Versions available for NTSC, PAL B/G, PAL I and PAL D/K
- VHF version covers 45 to 550 MHz; UHF version covers 550 to 850 MHz
- RF Level output +50 dBmV
- Front panel DIP switch control
- T7 to T13 (7 to 43 MHz) channel operation (VHF version only)
- Fully quartz synthesized video and audio carriers exceed FCC required intercarrier stability
- SAW filtering ensures broadcast quality RF performance
- Carrier to Noise (CNR) does not degrade with decreased RF level adjustment
- Defeatable audio pre-emphasis or aural carrier for BTSC stereo compatibility
- Frequency offsets automatically selected for FCC/DOC requirements (fully synthesized)
- Ultra low noise performance -72/-92 dBc (see specifications)
- 80 channels system noise performance > 55 dBc/4 MHz
- Microprocessor based diagnostic routines ensure specifications for correct operation
- Low cost
- Space efficient - 8 modulators require only 4U (7") of rack height
- High reliability design using MMIC, microstrip and surface mount technology
- Durable design is reflected in stainless steel chassis

VIDEO

Input Level	1V peak to peak (typical)
Modulation Level	Adjustable from 60 to 95%
Differential Gain	< 5%
Differential Phase	< 3%
Input Impedance	75 Ω
Video Frequency Response	± 1 dB

AUDIO

Audio Input Level	250 mV RMS for 25 kHz peak deviation
Audio Distortion	< 0.5% @ 25 kHz peak deviation
Pre-emphasis	75 or 50 ms, 50 Hz to 15 kHz
Audio Frequency Response	± 1 dB pre-emphasis curve
BTSC Compatibility	
Pre-emphasis bypass Method	Pre-emphasis may be bypassed with an internal jumper
External Aural Carrier Injection Method	Aural carrier may be disabled with an internal jumper

RF

Frequency Range of Video Carrier	45 to 550 MHz & 7 to 43 MHz for channels (Option 2F1) 550 to 850 MHz (Option 2F9)
Output Level	+50 dBmV
Level Control Range	> 10 dB adjustable
Spurious Output	
45 to 550 MHz	-60 dBc, Channel 2 to 78 NTSC CATV
550 to 850 MHz	-60 dBc, Channel 79 to 133 NTSC CATV
A/V Carrier Ratio	-12 to -20 dB (factory set to -16 dB)
Visual Carrier Frequency Accuracy	5 kHz (+10 to +40°C; Option 2F1) 8 kHz (+10 to +40°C; Option 2F9)
Aural/Visual Frequency Accuracy	500 Hz (+10 to +40°C; Options 2F1 & 2F9)
Aural Carrier Disable	Programmable by internal jumper
Frequency Offset Adjustment	Automatic FCC offset enabled via front panel control (0, +12.5 and +25 kHz synthesized)
Offset Frequency Accuracy	± 500 Hz
Broadband Noise	
50 MHz to 2xCh Frequency	-72 dBc in 4 MHz bandwidth
2xCh Frequency to 550 MHz	-90 dBc/Hz typical

GENERAL

DC Power Input	+11.5 to +14 VDC, 600 mA
Operating Temperature	+10 to +40°C (+50 to +104°F)
Dimensions	5.5" x 1.5" x 11.5" (14 x 4 x 29 cm)
Mounting	Vertical Rack Mounting (8 Modulators in 4U Rack, 7" Height)
Weight	3 lbs. (1.4 kg)

OPTIONS

2F1	VHF - Frequency agile RF output from 45-550 MHz (video carrier)
2F9	UHF - Frequency agile RF output from 550-850 MHz (video carrier)
3C1	NTSC Configuration (IF 45.75 MHz)
3C5	PAL B/G Configuration
3C6	PAL D Configuration
3C8	PAL I Configuration
6L1	Video IF loop through, before SAW (video)
6L2	Video IF loop through, after SAW (composite)
6XA	Over modulation LEDs (audio/video)



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