



INSTRUCTION MANUAL

651145400K

# AM SERIES

## AGILE AUDIO/VIDEO MODULATORS

AM 60-450 Stock No. 59411

AM 60-550 Stock No. 59412

AM 40-450 Stock No. 59406

 Stock No. 59405



# BLONDER TONGUE

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## DESCRIPTION

### GENERAL

AM Series frequency agile audio/video modulators provide visual and aural RF carrier outputs on any Broadcast or CATV channel over the full 50 to 450 MHz (AM xx-450) or 550 MHz (AM xx-550) frequency range. The Modulators feature a clean output signal with an exceptionally low out of band noise floor that permits the construction of multiple channel headends without auxiliary filtering. They are available in either 60 dBmV (AM 60-xxx) or 40 dBmV (AM 40-xxx) output versions. A selection of options are available to suit the product for a wide range of requirements.

The modulators accept standard (sync negative) polarity video from any common source, such as a satellite receiver, TV demodulator, video tape recorder or TV camera. DIP switches for setting the output frequency are accessible from the front panel as are the level controls and modulation indicators.

An external IF loop-thru enables the replacement of the standard internally generated IF signal with an alternate source of composite IF (such as an "all call" system) or the insertion of IF scrambling equipment.

### ELECTRICAL

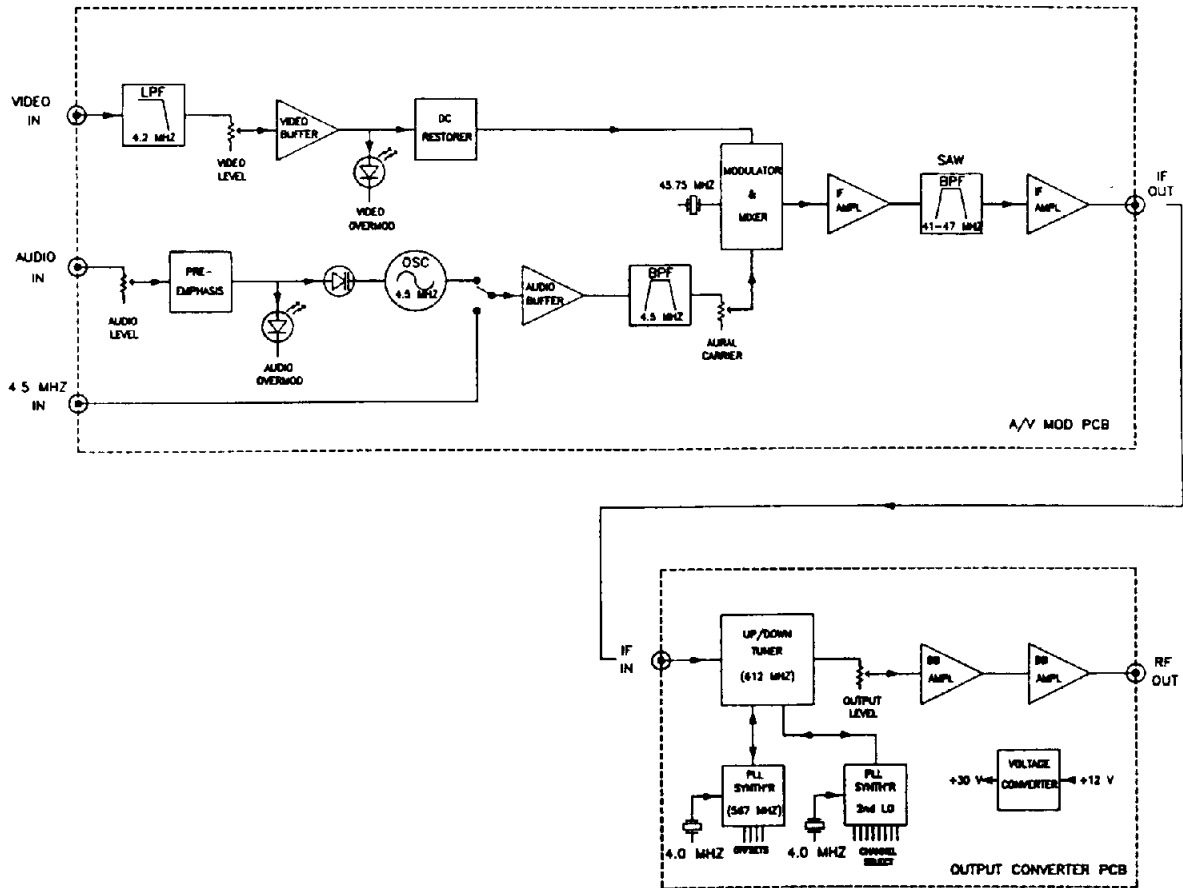
All modulator functions are carried out on two printed circuit boards. The A/V Modulator PCB generates the visual and aural carriers at IF and modulates them with processed video and audio signals. The Output Converter PCB converts the IF signals to the final RF frequency and amplifies the selected channel to the required output level.

On the A/V Modulator PCB the video signal is passed thru a low pass filter, buffered and DC restored. A LED overmodulation indicator lights if the video signal exceeds a calibrated preset level, corresponding to 87.5% modulation. The audio signal is first pre-emphasized (to 75 microseconds) and then it frequency-modulates a 4.5 MHz oscillator. A preset comparator samples the audio and lights a LED when a level required for 25 KHz deviation is reached. A high quality MC 1374 modulator chip generates a crystal controlled 45.75 MHz visual carrier that is modulated with the processed video signal in an integral balanced modulator. Concurrently the visual carrier and the 4.5 MHz audio subcarrier create a 41.25 frequency-modulated aural IF carrier. The combined IF carriers are amplified and passed thru a SAW filter that produces a near-ideal bandpass response for a true vestigial sideband output.

In the Output Converter PCB the IF signal is applied to a CATV type up/down converter. There is a 1st LO (nominally held at 567 MHz by a PLL, but capable of small frequency offsets, set by DIP switches) produces a 612 MHz IF. A 2nd PLL oscillator, also controlled by DIP switches, then converts the signal to the selected output frequency. An appropriate broadband amplifier gives the final RF output level.

## OPTIONS

- 01 4.5 MHz Aural Carrier Input
- 02 Video Input Connector - BNC 75 Ohm
- 03 Separate Aural and Visual IF Loops
- 04 LAN Low Band, 7 - 200 MHz
- 07 Video AGC
- 08 Switchable Visual and Aural Carrier Inversion
- 09 600-Ohm Balanced Audio Input
- 10 Composite Video and 4.5 MHz Aural Carrier Input
- 11 Output Frequency Phase Lock
- 16 ZTAC
- 18 CATV Package (Opt. 3, 9,  $\pm 500$  Hz Int. Carr. Stability)
- 19 Digital Control - Parallel Input
- 20 Digital Control - Serial RS232 / TTL Loop



BLOCK DIAGRAM

## SPECIFICATIONS (Typical)

### RF

Output Frequency Range:	
AM xx-450:	All channels 50 through 445.25 MHz (channel YY)
AM xx-550:	All channels 50 through 547.25 MHz (channel PPP) (Channels Selectable by front panel DIP switch in .25 MHz increments)
F.C.C. Offset:	+12.5 KHz and +25 KHz. (Selectable by front panel DIP switch)
Output Level:	
AM 60-xxx:	+60 dBmV
AM 40-xxx:	+40 dBmV
Output Level Range:	≥10 dB, continuously adjustable by the front panel output level control
Aural/Visual Carrier Ratio Control:	-9 dB to -30 dB, continuously adjustable by the front panel A/V ratio control
Video Frequency Response ( $F_V - .5$ to $F_V + 4.2$ MHz):	±1 dB
Spurious Outputs:	≥58 dB below output of visual carrier level
Carrier to Out-of-Channel Noise:	75 dB, more than 73 dB in a 4.0 MHz bandwidth
Frequency Accuracy/Stability (meets FCC Docket 21006 Specifications):	±5 KHz Aeronautical offsets, ±20 KHz Non-offsets
Aural Inter-carrier Stability:	4.5 MHz settable within ±1 KHz

### IF

IF Loop Output:	+28 dBmV @ 45.75 MHz
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### VISUAL

Video Input for 87.5% depth of modulation:	Factory set for 87.5% modulation for a video input of 1.0 V P-P
Differential Gain @ 87.5% Modulation:	0.5 dB
Differential Phase @ 87.5% Modulation:	1.5°
P-P Video to RMS Hum Ratio:	60 dB
Visual Carrier to Noise Ratio in 4 MHz Inband Bandwidth:	68 dB
Video Modulation Depth Indicator:	Set @ 87.5%, adjustable to 90%

### AURAL

Audio Input for 25 KHz Peak Deviation:	140 mV RMS
Input Impedance:	Hi - Z
Audio Frequency Response 20 Hz to 20 KHz:	±0.75 dB Ref. to Std. 75 μsec pre-emphasis (exceeds 100 KHz with pre-emphasis defeated)
BTSC Stereo/Mono (*):	Field defeatable audio pre-emphasis for BTSC baseband inputs
Aural Overmodulation LED Indicator:	25 KHz ±2 KHz

### GENERAL

Power Requirements:	105 - 125 VAC, 60 Hz, 3/8 A Fuse, Slow Blow
Temperature Range:	0° C to 50° C

### MECHANICAL

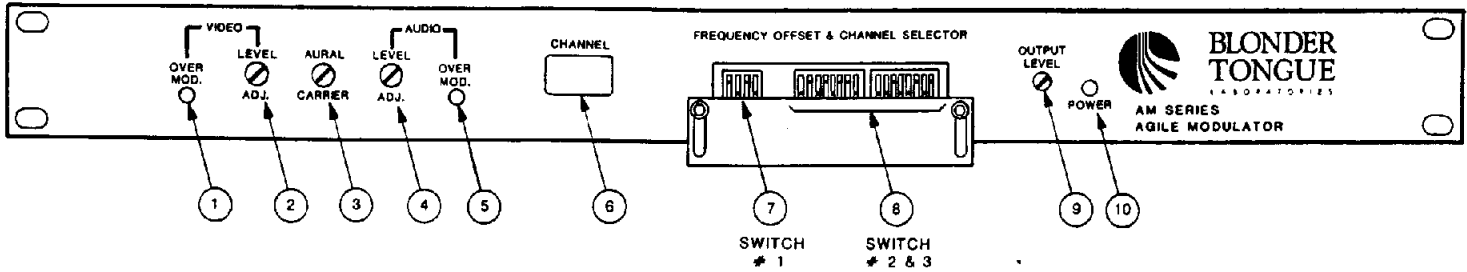
Dimensions:	19" W x 1-3/4" H x 14-1/4" D (AM60), 19" W x 1-3/4" H x 9-1/2" D (AM40)
Shipping Weight:	7 lbs. (Approximate)
Signal Connectors	
RF Output:	Type "F"
IF Input:	Type "F"
IF Output:	Type "F"
Audio Input:	Phono Jack
Video Input:	Type "F"

(\*) NOTE : Clip out of R4 on A/V Modulator Board defeats pre-emphasis for stereo capability.

## CONTROLS AND CONNECTIONS

### OPERATING CONTROLS

All operating controls and indicators for the modulator are located on, or are accessible from the front panel.

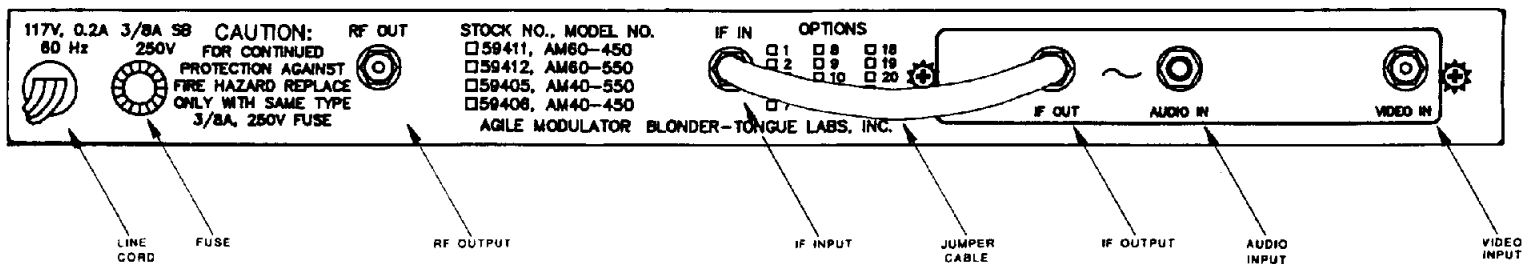


### FRONT PANEL VIEW

1. VIDEO OVERMODULATION LED - Lights when modulation is above 87.5%.
2. VIDEO MODULATION LEVEL - Adjusts percentage of modulation.
3. AURAL-TO-VISUAL CARRIER RATIO - Controls amplitude of aural RF carrier relative to visual RF carrier.
4. AUDIO LEVEL - Adjusts aural carrier modulation.
5. AUDIO OVERMODULATION LED - Lights when peak deviation of aural carrier is over 25 KHz.
6. CHANNEL NUMBER MARKER - attached by user for reference.
7. FREQUENCY OFFSET SELECTOR SWITCHES - Select 0, +12.5 or +25.0 KHz.
8. FREQUENCY SELECTOR SWITCHES - Select visual carrier frequency in Standard, HRC, or IRC assignments.
9. OUTPUT LEVEL - Simultaneously adjusts amplitude of aural and visual carriers.
10. "POWER-ON" INDICATOR LIGHT

### CONNECTIONS

All connections to the unit are made at the rear panel



### REAR PANEL VIEW

## UNPACKING AND INSTALLATION

### NOTE TO CATV SYSTEM INSTALLER

This reminder is provided to call the CATV System Installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

### UNPACKING AND HANDLING

Each Modulator is shipped with all equipment assembled, wired, factory-system tested, and then packaged in an appropriate shipping container.

Ensure that all accessories are removed from the container and packing material before they are discarded.

### MECHANICAL INSPECTION

Inspect the front and rear of the equipment for shipping damage. Make sure that the equipment is clean and no wires, cables or connectors are broken, damaged or loose.

### DAMAGE IN SHIPMENT

Should any damage be discovered after unpacking the unit, immediately file a claim with the carrier. A full report of the damage shall be made and a copy forwarded to Blonder-Tongue Laboratories Inc. The company will then advise what disposition is to be made of the equipment.

### PRECAUTIONS

Adherence to the initial precautions outlined in Table 1 will help prevent problems arising during initial installation and ensure optimum service of the Modulator.

PRECAUTION	REQUIREMENT
Avoid Heat Buildup.	Allow (1) EIA rack space (1-3/4") between modulators in the equipment racks.
Ensure Easy Access to Rack Wiring.	Allow a minimum of 18" clearance behind equipment rack(s).
Faciliate Servicing and Maintenance.	Allow a minimum of 36" clearance in front of equipment rack(s).
Avoid Direct Heating or Air Conditioning.	If unavoidable, use deflector plates.
AC Power Source Outlets.	Locate equipment near enough to outlets to provide power for test equipment and power tools.
Rack Support.	Make certain rack supports are sufficiently rigid to support rack(s).
Building Leakage.	Beware of dripping water onto equipment from leaky roofs, waveguide roof entries, and cold water pipe condensations.

TABLE 1 Installation Precautions

## UNIT MOUNTING

Mount the unit securely in a standard 19 inch EIA rack, ensuring access to rear connections and front controls. Make sure adequate ventilation exists in the vicinity of the unit.

## PREPARATION FOR USE

Plug in the 3-prong connector of the AC power cord into a suitable 117 V 60 Hz AC outlet of adequate current carrying capacity. Use appropriate cables (75 Ohm coaxial) to connect the program source to the video and audio input connectors and the RF output of the unit to the system input.

## OPERATION

### CHANNEL SELECTION

Gently pull both access door retaining clips simultaneously to expose the offset and channel selector switches. Using an appropriate tool (or a ballpoint pen) set each individual switch of all three DIP switches (a total of 20) either "UP" or "DOWN" according to one of the two channel charts (Standard or HRC) in this manual. A miniature abbreviated channel chart for Standard channels is also attached to the rear of the access door. Resecure the access door to prevent inadvertent tampering with the channel setting and ingress of dust and dirt.

### ADJUSTMENTS

- VIDEO LEVEL -** With the intended signal source connected and a representative video program present turn the Video Level Adjust control clockwise until the Video Over Modulation light just flashes, then back off slightly. Alternatively, while watching the picture on a good TV monitor, adjust the control to the highest (clockwise) level that does NOT cause the highlights (white portions of the picture) to become "washed out".
- AUDIO LEVEL -** Turn the Audio Level Adjust control clockwise until the Audio Overmodulation light just flashes slightly on the loudest peaks of the audio program material.
- OUTPUT LEVEL -** Connect a suitable RF indicator such as a Field Strength Meter (tuned to the visual carrier frequency) or a Spectrum Analyzer to the RF output of the modulator or a system monitor point and adjust the Output Level control to the desired reading of the visual carrier.
- AV CARRIER RATIO -** To adjust the aural-to-visual carrier ratio, tune the RF indicator device to the aural carrier frequency and adjust the Aural Carrier control to obtain the desired aural carrier level. Recommended ratio is -15 dB.

# AM Switch Settings, Standard

CH	EIA CH	NOMINAL PIX	OFFSET PIX	L.O.	0 = DOWN, 1 = UP																			
					1-1	1-2	1-3	1-4	2-1	2-2	2-3	2-4	2-5	2-6	2-7	2-8	3-1	3-2	3-3	3-4	3-5	3-6	3-7	3-8
2	2	55.25		668	0	1	1	1	0	0	1	1	1	0	0	1	0	1	0	0	0	1	1	0
3	3	61.25		674	0	1	1	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	1	0
4	4	67.25		680	0	1	1	1	0	0	0	1	0	1	0	1	0	1	0	0	0	1	1	0
A-8	1	73.25		686	0	1	1	1	0	1	1	1	0	1	0	1	0	1	0	0	0	1	1	0
5	5	77.25		690	0	1	1	1	0	1	0	0	1	1	0	1	0	1	0	0	0	1	1	0
IRC5	5	79.25		692	0	1	1	1	0	0	1	0	1	1	0	1	0	1	0	0	0	1	1	0
6	6	83.25		696	0	1	1	1	0	0	0	1	1	1	1	0	1	0	1	0	0	1	1	0
IRC6	6	85.25		698	0	1	1	1	0	1	0	1	1	1	1	0	1	0	1	0	0	1	1	0
A-5	95	91.25		704	0	1	1	1	0	0	0	0	0	0	1	1	0	1	0	0	0	1	1	0
A-4	96	97.25		710	0	1	1	1	0	1	1	0	0	0	1	1	0	1	0	0	0	1	1	0
A-3	97	103.25		716	0	1	1	1	0	0	1	1	0	0	1	1	0	1	0	0	0	1	1	0
A-2	98	109.25	109.2750	722	1	1	0	1	0	1	0	0	1	0	1	1	0	1	0	0	0	1	1	0
A-1	99	115.25	115.2750	728	1	1	0	1	0	0	0	1	1	0	1	1	0	1	0	0	0	1	1	0
A	14	121.25	121.2625	734	1	0	1	1	0	1	1	1	1	0	1	1	0	1	0	0	0	1	1	0
B	15	127.25	127.2625	740	1	0	1	1	0	0	1	0	0	1	1	1	0	1	0	0	0	1	1	0
C	16	133.25	133.2625	746	1	0	1	1	0	1	0	1	0	1	1	1	0	1	0	0	0	1	1	0
D	17	139.25		752	0	1	1	1	0	0	0	0	1	1	1	1	0	1	0	0	0	1	1	0
E	18	145.25		758	0	1	1	1	0	1	1	0	1	1	1	1	0	1	0	0	0	1	1	0
F	19	151.25		764	0	1	1	1	0	0	1	1	1	1	1	1	0	1	0	0	0	1	1	0
G	20	157.25		770	0	1	1	1	0	1	0	0	0	0	0	0	1	1	0	0	0	1	1	0
H	21	163.25		776	0	1	1	1	0	0	0	1	0	0	0	0	1	1	0	0	0	1	1	0
I	22	169.25		782	0	1	1	1	0	1	1	1	0	0	0	0	1	1	0	0	0	1	1	0
7	7	175.25		788	0	1	1	1	0	0	1	0	1	0	0	0	1	1	0	0	0	1	1	0
8	8	181.25		794	0	1	1	1	0	1	0	1	1	0	0	0	1	1	0	0	0	1	1	0
9	9	187.25		800	0	1	1	1	0	0	0	0	0	1	0	0	1	1	0	0	0	1	1	0
10	10	193.25		806	0	1	1	1	0	1	1	0	0	1	0	0	1	1	0	0	0	1	1	0
11	11	199.25		812	0	1	1	1	0	0	1	1	0	1	0	0	1	1	0	0	0	1	1	0
12	12	205.25		818	0	1	1	1	0	1	0	0	1	1	0	0	1	1	0	0	0	1	1	0
13	13	211.25		824	0	1	1	1	0	0	0	1	1	1	0	0	1	1	0	0	0	1	1	0
J	23	217.25		830	0	1	1	1	0	1	1	1	1	1	0	0	1	1	0	0	0	1	1	0
K	24	223.25		836	0	1	1	1	0	0	1	0	0	0	1	0	1	1	0	0	0	1	1	0
L	25	229.25	229.2625	842	1	0	1	1	0	1	0	1	0	0	1	0	1	1	0	0	0	1	1	0
M	26	235.25	235.2625	848	1	0	1	1	0	0	0	0	1	0	1	0	1	1	0	0	0	1	1	0
N	27	241.25	241.2625	854	1	0	1	1	0	1	1	0	1	0	1	0	1	1	0	0	0	1	1	0
O	28	247.25	247.2625	860	1	0	1	1	0	0	1	1	1	0	1	0	1	1	0	0	0	1	1	0
P	29	253.25	253.2625	866	1	0	1	1	0	1	0	0	0	1	1	0	1	1	0	0	0	1	1	0
Q	30	259.25	259.2625	872	1	0	1	1	0	0	0	1	0	1	1	0	1	1	0	0	0	1	1	0
R	31	265.25	265.2625	878	1	0	1	1	0	1	1	1	0	1	1	0	1	1	0	0	0	1	1	0
S	32	271.25	271.2625	884	1	0	1	1	0	0	1	0	1	1	1	0	1	1	0	0	0	1	1	0
T	33	277.25	277.2625	890	1	0	1	1	0	1	0	1	1	1	1	0	1	1	0	0	0	1	1	0
U	34	283.25	283.2625	896	1	0	1	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	1	0
V	35	289.25	289.2625	902	1	0	1	1	0	1	1	0	0	0	0	1	1	1	0	0	0	1	1	0
W	36	295.25	295.2625	908	1	0	1	1	0	0	1	1	0	0	0	1	1	1	0	0	0	1	1	0



# AM Switch Settings, Standard

CH	EIA CH	NOMINAL PIX	OFFSET PIX	L.O.	0 = DOWN, 1 = UP																			
					1-1	1-2	1-3	1-4	2-1	2-2	2-3	2-4	2-5	2-6	2-7	2-8	3-1	3-2	3-3	3-4	3-5	3-6	3-7	3-8
AA	37	301.25	301.2625	914	1	0	1	1	0	1	0	0	1	0	0	1	1	1	0	0	0	1	1	0
BB	38	307.25	307.2625	920	1	0	1	1	0	0	0	1	1	0	0	1	1	1	0	0	0	1	1	0
CC	39	313.25	313.2625	926	1	0	1	1	0	1	1	1	1	0	0	1	1	1	0	0	0	1	1	0
DD	40	319.25	319.2625	932	1	0	1	1	0	0	1	0	0	1	0	1	1	1	0	0	0	1	1	0
EE	41	325.25	325.2625	938	1	0	1	1	0	1	0	1	0	1	0	1	1	1	0	0	0	1	1	0
FF	42	331.25	331.2750	944	1	1	0	1	0	0	0	0	1	1	0	1	1	1	0	0	0	1	1	0
GG	43	337.25	337.2625	950	1	0	1	1	0	1	1	0	1	1	0	1	1	1	0	0	0	1	1	0
HH	44	343.25	343.2625	956	1	0	1	1	0	0	1	1	1	1	0	1	1	1	0	0	0	1	1	0
II	45	349.25	349.2625	962	1	0	1	1	0	1	0	0	0	0	1	1	1	1	0	0	0	1	1	0
JJ	46	355.25	355.2625	968	1	0	1	1	0	0	0	1	0	0	1	1	1	1	0	0	0	1	1	0
KK	47	361.25	361.2625	974	1	0	1	1	0	1	1	1	0	0	1	1	1	1	0	0	0	1	1	0
LL	48	367.25	367.2625	980	1	0	1	1	0	0	1	0	1	0	1	1	1	1	0	0	0	1	1	0
MM	49	373.25	373.2625	986	1	0	1	1	0	1	0	1	1	0	1	1	1	1	0	0	0	1	1	0
NN	50	379.25	379.2625	992	1	0	1	1	0	0	0	0	0	1	1	1	1	1	0	0	0	1	1	0
OO	51	385.25	385.2625	998	1	0	1	1	0	1	1	0	0	1	1	1	1	1	0	0	0	1	1	0
PP	52	391.25	391.2625	1004	1	0	1	1	0	0	1	1	0	1	1	1	1	1	0	0	0	1	1	0
QQ	53	397.25	397.2625	1010	1	0	1	1	0	1	0	0	1	1	1	1	1	1	0	0	0	1	1	0
RR	54	403.25		1016	0	1	1	1	0	0	0	1	1	1	1	1	1	1	0	0	0	1	1	0
SS	55	409.25		1022	0	1	1	1	0	1	1	1	1	1	1	1	1	1	0	0	0	1	1	0
TT	56	415.25		1028	0	1	1	1	0	0	1	0	0	0	0	0	0	0	1	0	0	1	1	0
UU	57	421.25		1034	0	1	1	1	0	1	0	1	0	0	0	0	0	0	1	0	0	1	1	0
VV	58	427.25		1040	0	1	1	1	0	0	0	0	1	0	0	0	0	0	1	0	0	1	1	0
WW	59	433.25		1046	0	1	1	1	0	1	1	0	1	0	0	0	0	0	1	0	0	1	1	0
XX	60	439.25		1052	0	1	1	1	0	0	1	1	1	0	0	0	0	0	1	0	0	1	1	0
YY	61	445.25		1058	0	1	1	1	0	1	0	0	0	1	0	0	0	0	1	0	0	1	1	0
ZZ	62	451.25		1064	0	1	1	1	0	0	0	1	0	1	0	0	0	0	1	0	0	1	1	0
AAA	63	457.25		1070	0	1	1	1	0	1	1	1	0	1	0	0	0	0	1	0	0	1	1	0
BBB	64	463.25		1076	0	1	1	1	0	0	1	0	1	1	0	0	0	0	1	0	0	1	1	0
CCC	65	469.25		1082	0	1	1	1	0	1	0	1	1	1	0	0	0	0	1	0	0	1	1	0
DDD	66	475.25		1088	0	1	1	1	0	0	0	0	0	0	1	0	0	0	1	0	0	1	1	0
EEE	67	481.25		1094	0	1	1	1	0	1	1	0	0	0	1	0	0	0	1	0	0	1	1	0
FFF	68	487.25		1100	0	1	1	1	0	0	1	1	0	0	1	0	0	0	1	0	0	1	1	0
GGG	69	493.25		1106	0	1	1	1	0	1	0	0	1	0	1	0	0	0	1	0	0	1	1	0
HHH	70	499.25		1112	0	1	1	1	0	0	0	1	1	0	1	0	0	0	1	0	0	1	1	0
III	71	505.25		1118	0	1	1	1	0	1	1	1	1	0	1	0	0	0	1	0	0	1	1	0
JJJ	72	511.25		1124	0	1	1	1	0	0	1	0	0	1	1	0	0	0	1	0	0	1	1	0
KKK	73	517.25		1130	0	1	1	1	0	1	0	1	0	1	1	0	0	0	1	0	0	1	1	0
LLL	74	523.25		1136	0	1	1	1	0	0	0	0	1	1	1	0	0	0	1	0	0	1	1	0
MMM	75	529.25		1142	0	1	1	1	0	1	1	0	1	1	1	0	0	0	1	0	0	1	1	0
NNN	76	535.25		1148	0	1	1	1	0	0	1	1	1	1	1	0	0	0	1	0	0	1	1	0
OOO	77	541.25		1154	0	1	1	1	0	1	0	0	0	0	0	1	0	0	1	0	0	1	1	0
PPP	78	547.25		1160	0	1	1	1	0	0	0	1	0	0	0	1	0	0	1	0	0	1	1	0

# AM Switch Settings, HRC

CH.	EIA CH	NOMINAL PIX	OFFSET PIX	L.O.	0 = DOWN, 1 = UP																			
					1-1	1-2	1-3	1-4	2-1	2-2	2-3	2-4	2-5	2-6	2-7	2-8	3-1	3-2	3-3	3-4	3-5	3-6	3-7	3-8
2	2	54		667	0	1	1	1	1	1	0	1	1	0	0	1	0	1	0	1	0	1	0	
3	3	60		673	0	1	1	1	1	0	0	0	0	1	0	1	0	1	0	1	0	1	1	0
4	4	66		679	0	1	1	1	1	1	1	0	0	1	0	1	0	1	0	1	0	1	1	0
A-8	1	72		685	0	1	1	1	1	0	1	1	0	1	0	1	0	1	0	1	0	1	1	0
5	5	78		691	0	1	1	1	1	1	0	0	1	1	0	1	0	1	0	1	0	1	1	0
6	6	84		697	0	1	1	1	1	0	0	1	1	1	0	1	0	1	0	1	0	1	1	0
A-5	95	90		703	0	1	1	1	1	1	1	1	1	1	0	1	0	1	0	1	0	1	1	0
A-4	96	96		709	0	1	1	1	1	0	1	0	0	0	1	1	0	1	0	1	0	1	1	0
A-3	97	102		715	0	1	1	1	1	1	0	1	0	0	1	1	0	1	0	1	0	1	1	0
A-2	98	108	108.0250	721	1	1	0	1	1	0	0	0	1	0	1	1	0	1	0	1	0	1	1	0
A-1	99	114	114.0250	727	1	1	0	1	1	1	1	0	1	0	1	1	0	1	0	1	0	1	1	0
A	14	120	120.0125	733	1	0	1	1	1	0	1	1	1	0	1	1	0	1	0	1	0	1	1	0
B	15	126	126.0125	739	1	0	1	1	1	1	0	0	0	1	1	1	0	1	0	1	0	1	1	0
C	16	132	132.0125	745	1	0	1	1	1	0	0	1	0	1	1	1	0	1	0	1	0	1	1	0
D	17	138		751	0	1	1	1	1	1	1	1	0	1	1	1	1	0	1	0	1	0	1	0
E	18	144		757	0	1	1	1	1	0	1	0	1	1	1	1	1	0	1	0	1	0	1	0
F	19	150		763	0	1	1	1	1	1	0	1	1	1	1	1	1	0	1	0	1	0	1	0
G	20	156		769	0	1	1	1	1	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0
H	21	162		775	0	1	1	1	1	1	1	0	0	0	0	0	0	1	1	0	1	0	1	0
I	22	168		781	0	1	1	1	1	0	1	1	0	0	0	0	0	1	1	0	1	0	1	0
7	7	174		787	0	1	1	1	1	1	0	0	1	0	0	0	0	1	1	0	1	0	1	0
8	8	180		793	0	1	1	1	1	0	0	1	1	0	0	0	0	1	1	0	1	0	1	0
9	9	186		799	0	1	1	1	1	1	1	1	1	0	0	0	0	1	1	0	1	0	1	0
10	10	192		805	0	1	1	1	1	0	1	0	0	1	0	0	1	1	0	1	0	1	1	0
11	11	198		811	0	1	1	1	1	1	0	1	0	1	0	0	1	1	0	1	0	1	1	0
12	12	204		817	0	1	1	1	1	0	0	0	1	1	0	0	1	1	0	1	0	1	1	0
13	13	210		823	0	1	1	1	1	1	1	0	1	1	0	0	1	1	0	1	0	1	1	0
J	23	216		829	0	1	1	1	1	0	1	1	1	1	0	0	1	1	0	1	0	1	1	0
K	24	222		835	0	1	1	1	1	1	0	0	0	0	1	0	1	1	0	1	0	1	1	0
L	25	228	228.0125	841	1	0	1	1	1	0	0	1	0	0	1	0	1	1	0	1	0	1	1	0
M	26	234	234.0125	847	1	0	1	1	1	1	1	1	0	0	1	0	1	1	0	1	0	1	1	0
N	27	240	240.0125	853	1	0	1	1	1	0	1	0	1	0	1	0	1	1	0	1	0	1	1	0
O	28	246	246.0125	859	1	0	1	1	1	1	0	1	1	0	1	0	1	1	0	1	0	1	1	0
P	29	252	252.0125	865	1	0	1	1	1	0	0	0	0	1	1	0	1	1	0	1	0	1	1	0
Q	30	258	258.0125	871	1	0	1	1	1	1	1	0	0	1	1	0	1	1	0	1	0	1	1	0
R	31	264	264.0125	877	1	0	1	1	1	0	1	1	0	1	1	0	1	1	0	1	0	1	1	0
S	32	270	270.0125	883	1	0	1	1	1	1	0	0	1	1	1	0	1	1	0	1	0	1	1	0
T	33	276	276.0125	889	1	0	1	1	1	0	0	1	1	1	1	0	1	1	0	1	0	1	1	0
U	34	282	282.0125	895	1	0	1	1	1	1	1	1	1	1	1	0	1	1	0	1	0	1	1	0
V	35	288	288.0125	901	1	0	1	1	1	0	1	0	0	0	0	1	1	1	0	1	0	1	1	0
W	36	294	294.0125	907	1	0	1	1	1	1	0	1	0	0	0	1	1	1	0	1	0	1	1	0

## AM Switch Settings, HRC

CH.	EIA CH	NOMINAL PIX	OFFSET PIX	L.O.	0 = DOWN, 1 = UP																						
					1-1	1-2	1-3	1-4	2-1	2-2	2-3	2-4	2-5	2-6	2-7	2-8	3-1	3-2	3-3	3-4	3-5	3-6	3-7	3-8			
AA	37	300	300.0125	913	1	0	1	1	1	0	0	0	1	0	0	1	1	1	0	1	0	1	1	0	1	1	0
BB	38	306	306.0125	919	1	0	1	1	1	1	1	0	1	0	0	1	1	1	0	1	0	1	1	0	1	1	0
CC	39	312	312.0125	925	1	0	1	1	1	0	1	1	1	0	0	1	1	1	0	1	0	1	1	0	1	1	0
DD	40	318	318.0125	931	1	0	1	1	1	1	0	0	0	1	0	1	1	1	0	1	0	1	1	0	1	1	0
EE	41	324	324.0125	937	1	0	1	1	1	0	0	1	0	1	0	1	1	1	0	1	0	1	1	0	1	1	0
FF	42	330	330.0250	943	1	1	0	1	1	1	1	1	0	1	0	1	1	1	0	1	0	1	1	0	1	1	0
GG	43	336	336.0125	949	1	0	1	1	1	0	1	0	1	1	0	1	1	1	0	1	0	1	1	0	1	1	0
HH	44	342	342.0125	955	1	0	1	1	1	1	0	1	1	1	0	1	1	1	0	1	0	1	1	0	1	1	0
II	45	348	348.0125	961	1	0	1	1	1	0	0	0	0	0	1	1	1	1	0	1	0	1	1	0	1	1	0
JJ	46	354	354.0125	967	1	0	1	1	1	1	1	0	0	0	1	1	1	1	0	1	0	1	1	0	1	1	0
KK	47	360	360.0125	973	1	0	1	1	1	0	1	1	0	0	1	1	1	1	0	1	0	1	1	0	1	1	0
LL	48	366	366.0125	979	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	1	0	1	1	0	1	1	0
MM	49	372	372.0125	985	1	0	1	1	1	0	0	1	1	0	1	1	1	1	0	1	0	1	1	0	1	1	0
NN	50	378	378.0125	991	1	0	1	1	1	1	1	1	1	0	1	1	1	1	0	1	0	1	1	0	1	1	0
OO	51	384	384.0125	997	1	0	1	1	1	0	1	0	0	1	1	1	1	1	0	1	0	1	1	0	1	1	0
PP	52	390	390.0125	1,003	1	0	1	1	1	1	0	1	0	1	1	1	1	1	0	1	0	1	1	0	1	1	0
QQ	53	396	396.0125	1,009	1	0	1	1	1	0	0	0	1	1	1	1	1	1	0	1	0	1	1	0	1	1	0
RR	54	402		1,015	0	1	1	1	1	1	1	0	1	1	1	1	1	1	0	1	0	1	1	0	1	1	0
SS	55	408		1,021	0	1	1	1	1	0	1	1	1	1	1	1	1	1	0	1	0	1	1	0	1	1	0
TT	56	414		1,027	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	1	0
UU	57	420		1,033	0	1	1	1	1	0	0	1	0	0	0	0	0	0	0	1	1	0	1	1	0	1	0
VV	58	426		1,039	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	1	1	0	1	1	0	1	0
WW	59	432		1,045	0	1	1	1	1	0	1	0	1	0	0	0	0	0	0	1	1	0	1	1	0	1	0
XX	60	438		1,051	0	1	1	1	1	1	0	1	1	0	0	0	0	0	0	1	1	0	1	1	0	1	0
YY	61	444		1,057	0	1	1	1	1	0	0	0	0	1	0	0	0	0	0	1	1	0	1	1	0	1	0
ZZ	62	450		1,063	0	1	1	1	1	1	1	0	0	1	0	0	0	0	0	1	1	0	1	1	0	1	0
AAA	63	456		1,069	0	1	1	1	1	0	1	1	0	1	0	0	0	0	0	1	1	0	1	1	0	1	0
BBB	64	462		1,075	0	1	1	1	1	1	0	0	1	1	0	0	0	0	0	1	1	0	1	1	0	1	0
CCC	65	468		1,081	0	1	1	1	1	0	0	1	1	1	1	0	0	0	0	1	1	0	1	1	0	1	0
DDD	66	474		1,087	0	1	1	1	1	1	1	1	1	1	1	0	0	0	0	1	1	0	1	1	0	1	0
EEE	67	480		1,093	0	1	1	1	1	0	1	0	0	0	1	0	0	0	0	1	1	0	1	1	0	1	0
FFF	68	486		1,099	0	1	1	1	1	1	0	1	0	0	1	0	0	0	0	1	1	0	1	1	0	1	0
GGG	69	492		1,105	0	1	1	1	1	0	0	0	1	0	1	0	0	0	0	1	1	0	1	1	0	1	0
HHH	70	498		1,111	0	1	1	1	1	1	1	0	1	0	1	0	0	0	0	1	1	0	1	1	0	1	0
III	71	504		1,117	0	1	1	1	1	0	1	1	1	0	1	0	0	0	0	1	1	0	1	1	0	1	0
JJJ	72	510		1,123	0	1	1	1	1	1	0	0	0	1	1	0	0	0	0	1	1	0	1	1	0	1	0
KKK	73	516		1,129	0	1	1	1	1	0	0	1	0	1	1	0	0	0	0	1	1	0	1	1	0	1	0
LLL	74	522		1,135	0	1	1	1	1	1	1	1	0	1	1	0	0	0	0	1	1	0	1	1	0	1	0
MMM	75	528		1,141	0	1	1	1	1	0	1	0	1	1	1	0	0	0	0	1	1	0	1	1	0	1	0
NNN	76	534		1,147	0	1	1	1	1	1	0	1	1	1	1	0	0	0	0	1	1	0	1	1	0	1	0
OOO	77	540		1,153	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	1	0
PPP	78	546		1,159	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	1	0	1	1	0	1	0

NOTE: Channels AAA Through PPP Available on Models AM XX-550 Only