

Analog Signal Processing

CMTS

Commander™ Multichannel Television Sound
BTSC Stereo Encoder



The CMTS encoder provides a cost-effective solution to stereo transmission in cable systems. It allows a system operator to easily encode both stereo and secondary audio programming (SAP) for transmission and includes dbx noise reduction circuitry to ensure a quality signal.

The CMTS encoder generates a linear, non-filtered composite spectrum for optimum stereo separation without requiring phase adjustment. This encoder/modulator transforms baseband stereo and SAP input (optional plug-in module) into BTSC multichannel sound which is then modulated to both a 4.5 MHz subcarrier output and a 41.25 MHz IF output. The integral precision 4.5 MHz crystal phase locked voltage-to-frequency converter included in the CMTS encoder provides unmatched linearity and minimum phase noise while the 41.25 MHz crystal upconverter is provided for interfacing with non-stereo compatible modulators

The CMTS is a rack-mounted unit within a 1.75 inch high chassis, enabling the operator to easily locate the unit even in most space-restricted configurations. It provides front panel access to all audio input level controls and includes bar graph indicators on the front panel for left, right and SAP channels. The bar graph indicators provide a true peak deviation metering of incoming audio signals, helping ensure that subscribers are receiving a high quality audio signal. In addition, the CMTS encoder includes automatic non-clipping over-modulation protection on all channels; a video lock indicator; and offers remote-controllable A/B input for automatic commercial insertion.

The Commander Multichannel Television Sound (CMTS) BTSC stereo encoder enables cable operators to provide true stereo TV sound.

BENEFITS INCLUDE:

- BTSC encoding of baseband audio
- 4.5 MHz and 41.25 MHz output standard for maximum flexibility
- Automatic non-clipping over-modulation protection
- Second audio program (SAP) option for bi-lingual transmission
- Compact design for ease of installation



SPECIFICATIONS

Audio Characteristics

Audio Input Range (for full deviation)	-10 to +10 dBm (600 Ohms Balanced)
Frequency Response	(50 Hz to 14.5 kHz) ± 1 dB
Left, Right	57 kHz Minimum
-3 dB Point	(50 Hz to 10 kHz) ± 1 dB
SAP	>26 dB from 50 Hz to 100 Hz
Channel Separation	>30 dB from 100 Hz to 8 Hz
	>26 dB from 8 kHz to 14.5 kHz
Total Harmonic Distortion	
Left, Right	<0.2%
SAP	<0.5%
Dynamic Range	75 dB Minimum
Common Mode Hum Rejection	>75 dB
Crosstalk	>60 dBc
Composite BTSC Output Level	0 dBm Typical (600 Ohms Balanced)
L-R Carrier Suppression	>60 dB

Output Characteristics

Video Level (Video Loop-Thru)	1 Volt p-p ± 6 dB
4.5 MHz Output:	
Output Level	+40 dBmV nominal into 75 Ohms
Spurious	-60 dBc from 4.5 MHz
41.25 MHz Output:	
Output Level	+15 to +30 dBmV variable into 75 Ohms
Spurious	-60 dBc from 41.25 MHz

Note: Accepts vestigial video IF in and provides composite IF out.

Model Number	Description
CMTS	BTSC stereo encoder (no SAP)
CMTS/S	BTSC stereo encoder (w/SAP)
MTS/S	SAP option board (to add SAP to a CMTS)

