

# FMT651

## FREQUENCY AGILE WIDE-BAND MODULATORS

This modulator transmits very high quality, wide dynamic range audio programs. Seven models are available for two companding ratios and several operating bands, identified by these suffixes:

FMT651CH - FM carrier band with 3:1 compression.

FMT651CK - FM carrier band with 2:1 compression.

FMT651CN - FM carrier band with no compression.

FMT651SH - FM subcarrier band with 3:1 compression.

FMT651SK - FM subcarrier band with 2:1 compression.

FMT651SN - FM subcarrier band with no compression.

The FM carrier modulators (suffix C) operate between 52-126 MHz in four bands. Suffix C modulators are intended for operation in the FM band, the A-1 and A-2 band of a community cable TV system or coaxial trunk cables, and for SCPC transmission over satellite facilities.

The FM subcarrier modulators (suffix S) operate in the 4.5-14 MHz subcarrier bands. Suffix S modulators are intended for operation at subcarrier frequencies which are ordinarily transmitted along with a video signal on satellite or terrestrial microwave facilities. These modulators may also be operated on the low band of a coaxial trunk cable or the reverse channel of two-way community cable system.

The FM SCPC modulators (suffix Y) operate between 52-88 MHz in three bands. These modulators differ from the suffix C units by the addition of the 3 3/4Hz energy dispersal generator, which may be switched on/off automatically by average program level, or manually switched.

Two-to-one (suffix K) and three-to-one (suffix H) compressors are available for these modulators. These compandors compress the program audio signal prior to transmission over noisy facilities. Matching expandors at the receiving terminal (FMRXXX) restore the original dynamic range, thus suppressing the noise introduced within the transmission facility.

The operating frequency of these modulators may be set in the field by means of the built-in digital phase lock loop (PLL) control system to any frequency within its operating band. Changing bands should be done at the factory.

A carrier on/remote/off switch is provided so that individual units may be activated independently of one another. An alarm output can indicate a carrier-off condition and automatically switch to a backup modulator. Sync In & Out connectors are provided to lock the reference oscillators together when more than one FMT651 is in the system, to essentially eliminate audible beats from third-order inter-modulation products.

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## FREQUENCY AGILE COMPANDED NARROW DEVIATION MODULATOR

### AUDIO INPUT

Average Program Level	0, +4, +8 dBm (+8 dBm std)
Peak Program Level	10 dB higher than APL
Impedance (specify)	Balanced 600 ohm or high-Z
Common Mode Rejection	40 dB
Audio Bandwidth	10, 15, 20, or 50 KHz
Compression (specify)	2:1 (suffix K), 3:1 (suffix H)
Modulation Level Monitor	VU meter & peak flasher

### SPECIFICATIONS

### RF OUTPUT

Suffix C frequency band (specify)	52-70, 65-88, 88-108, 108-126 MHz
Suffix S frequency band (specify)	4.5-6.4 6.4-9, 9-13 MHz
Suffix Y frequency band (specify)	52-70, 65-88, 60-80 MHz
Frequency Stability	.002% Crystal Reference PLL
Output Level (adjustable)	Suffix C,Y: +20 to +50 dBmv Suffix S: +10 to +40 dBmv
Harmonic output	60dB below maximum cxr output
Third order inter-modulation output	60dB below maximum cxr output
Frequency Control System	Digital Phase Lock Loop (PLL)
Impedance	Loop-through on 75 ohm line
Deviation @ 100% modulation	Customer specify (75KHz typ.)
Carrier Switch	Front panel ON/REMOTE/OFF
Energy Dispersal	Front panel ON/AUTO/OFF 3-3/4Hz Dispersion can switch on automatically below 30% modulation

### THROUGHPUT

Frequency Response	< +/- 0.5 dB, +/- .2 nominal
Distortion	< 0.5% THD, 0.2% THD nominal

### CONNECTORS

RF Output	F Connectors (BNC optional)
Audio Input	Barrier strip, screw terminals
Carrier ON/OFF, Alarm	Barrier strip, screw terminals
Reference Synchronization	F Connectors