



## FEATURES

- 21.4 MHz IF Input
- Up To Three Selectable Output Center Frequencies
- Inherent Group Delay Equalization
- 70 or 160 MHz IF Input - Option
- 21.4 and 70 or 160 MHz IF Input - Option
- External Reference - Option
- Reference on Tape - Option
- Compact Half-Rack Size
- TEMPEST - Option

## DESCRIPTION

The Model 384 IF to Tape Converter is a pre-detection converter which, in a small package, provides one, or one of two, input center frequencies and three switch selectable output center frequencies. Output center frequencies are 1.075, 2.150, and 3.225 MHz with corresponding bandwidths of 2, 4, and 6 MHz (nominal). Output bandwidths are inherently group delay equalized, without requiring tuning, by utilizing custom Surface Acoustic Wave (SAW) filters.

A reference on tape signal is optionally available which provides a 100 kHz tone, preset to -10 dBm, superimposed on the output channel. Conversion can be accomplished relative to an internal TCXO ( $1 \times 10^{-6}$ ) or, optionally, a 1 MHz external reference. A unique dual-mode AGC circuit provides outstanding performance with pulse and CW signals over a dynamic range greater than 70 dB.

The Model 384 IF to Tape Converter is packaged in a compact 1-3/4 inch high half-rack chassis. A rack adapter is available to mount a single unit in a standard 19-inch rack, or two units may be fastened together for side-by-side installation in a 19-inch rack. Exceptional EMI/RFI integrity is provided and a TEMPEST option is available.

## SPECIFICATIONS

<b>Input Center Frequency</b>	21.4 MHz - Standard 70 MHz only - Optional 160 MHz only - Optional 21.4 and 70 or 160 MHz - Optional	<b>Output Level</b>	13 dBm (1 Vrms)
<b>Noise Figure</b>	12 dB, nominal	<b>AGC</b>	CW & pulse operation
<b>Input Level Range</b>	-75 dBm to -5 dBm	<b>Threshold</b>	-75 dBm
<b>Output Center Frequency</b>	One - Standard Two or three, switch selectable - Optional Select from: 1.075, 2.150, or 3.225 MHz	<b>Attack Time</b>	100 microseconds (nominal)
<b>Output Bandwidth (3dB)</b>	0.15 to 2, 0.3 to 4, and 0.45 to 6 MHz	<b>Decay Time</b>	100 milliseconds (nominal)
<b>Group Delay Variation (over 90% of the band)</b>	±200 ns (nominal 2 MHz BW) - Standard ±150 ns (nominal 2 MHz BW) - Optional ±100 ns (nominal 4 MHz BW) ±75 ns (nominal 6 MHz BW)	<b>MGC Range</b>	70 dB
<b>Impedance - All Signal Ports</b>	50 ohms	<b>Outputs</b>	Intermediate 21.4 MHz - Optional Dual 1.075, 2.150 or 3.225 MHz - Optional
<b>VSWR - Band Center</b>	1.5:1 max. (14 dB min. return loss)	<b>External Reference</b>	1 MHz input - Optional
<b>Total Harmonic Distortion</b>	-40 dBc	<b>Reference on Tape</b>	100 kHz - Optional
<b>Two-Tone Intermodulation Products*</b>	< -40 dBc	<b>Controls</b>	POWER, AGC/MGC, GAIN, OUTPUT (MHZ) 1.075/2.150/3.225
<b>Spurious Outputs</b>	< -50 dBc (AGC)	<b>Displays/Indicators</b>	
<b>Image Rejection (MGC Mode)</b>	> 40 dB, nominal	<b>LED Meter</b>	POWER, LO UNLOCK, INT REF, RMS VOLTS (Output Level Meter)
		<b>Connectors (Rear Panel)</b>	BNC Female
		<b>Power</b>	115/230 Vac ±10%, 47-420 Hz (28 Vdc Optional), 28 Watts
		<b>Style</b>	Half-rack chassis - 1-3/4 inches high by 20 inches deep Rack Adapter - Optional
		<b>Weight</b>	8 lbs.
		<b>Temperature - (operating)</b>	0 to 50 degrees C
		<b>EMI</b>	Designed to meet TEMPEST requirements - Optional

\*Test tones at 1.6 and 1.8 MHz, input 30 dBm, output +7 dBm max.

Specifications are subject to change and may vary with options selected.

## ORDERING INFORMATION

The standard Model 384 IF to Tape Converter provides a 21.4 MHz input and a single output centered at 1.075, 2.150 or 3.225 MHz (specify).

Two or three switch selectable output center frequencies, input IF's centered at 70 or 160 MHz, or 21.4 and 70 or 160 MHz, +/-150 ns group delay equalization (at 2 MHz output bandwidth), external reference, reference on tape and dual outputs are optional. When ordering, please specify:

<b>384</b>	IF to Tape Converter	<b>Option C06</b>	70 MHz Input Center Frequency only
<b>Option D15</b>	±150 ns Group Delay at 1.075 MHz CF	<b>Option C02</b>	160 MHz Input Center Frequency only

## ORDERING INFORMATION (Continued)

<b>Option C07</b>	21.4 and 70 MHz Input Center Frequencies (selectable)	<b>Option S02</b>	Two Switched Bandwidths (specify two of 2, 4 or 6 MHz, nominal)
<b>Option C01</b>	160 and 21.4 MHz Input Center Frequencies (selectable)	<b>Option S03</b>	Three Switched Bandwidths
<b>Option C23</b>	Intermediate 21.4 MHz Output (with 70 or 160 MHz Input)	<b>Option S04</b>	Switched Reference on Tape (requires Option G05)
<b>Option G02</b>	Dual Outputs for selected output center frequency	<b>Option M02</b>	Log Video
<b>Option E01</b>	External Reference, 1 MHz	<b>Option P02</b>	28 Vdc Power Supply
<b>Option G05</b>	100 kHz Reference on Tape	<b>Option T01</b>	Designed to meet TEMPEST requirements (not available with Option P02)

Rack Mounting: Single units require a rack adapter for installation in a standard 19-inch rack, or two units may be fastened together for side-by-side installation as a full-rack unit.

<b>697-1</b>	Rack Adapter	<b>Option H04</b>	Perforated Covers
<b>Option H03</b>	Solid Covers		

## WARRANTY

All of Reaction Instruments' equipment is warranted for one year, except for damage caused by accident or misuse, provided the equipment is returned for repair to the plant in Herndon, VA

BlackRadios.terryo.org

BlackRadios.terryo.org

BlackRadios.terryo.org

BlackRadios.terryo.org

BlackRadios.terryo.org

BlackRadios.terryo.org

BlackRadios.terryo.org

**Adams  Russell**  
**REACTION INSTRUMENTS, INC.**  
475 Springpark Place, Herndon, VA 22070  
(703) 471-6060 FAX (703) 471-4847

**OCTOBER 1988**