

# MODEL 388A

IF to Tape/Baseband Converter

Data Sheet



intelligentRF solutions

## FEATURES

- **Three Fixed Frequency IF Inputs: 21.4, 70 and 160 MHz Standard**
- **Variable Frequency Input: 10 to 250 MHz**
- **Output Bandwidths: 2, 4, 6, 8, 10, 20, 50, 80 MHz**
- **Increased Carrier-to-Noise Ratio**
- **Variable Output Center Frequency: 100 kHz to 80 MHz**
- **RS-232 Control, Optional Ethernet**
- **Group Delay Equalization**
- **Compact, Half-Rack Package**
- **Selectable Output Level for Compatibility with Both Analog & Digital Recorders**



## DESCRIPTION

The Model 388A IF to Tape/Baseband Converter provides the features necessary to meet today's wide range of signal down-conversion applications from conventional IF-to-tape conversion to high speed A/D signal recording. The unit offers maximum user flexibility and improved performance while maintaining a compact mechanical package. Features include the capability to process up to a 80 MHz signal bandwidth, tunable input and output center frequencies, and RS-232 or optional Ethernet 10/100BaseT control of all functions.

The Model 388A contains three fixed frequency IF inputs which are dedicated to center frequencies of 21.4 MHz, 70 MHz, and 160 MHz. Additionally, a fourth unfiltered input allows the user to define an input over the frequency range of 10 MHz to 250 MHz with 1 kHz resolution.

Standard tape center frequencies of 1.075, 2.150, 3.225, and

This equipment does not contain provisions for the installation of an intelligence database (i.e. threat signal parametric data).

This equipment may be subject to U.S. Government export controls. Consult factory for details.

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4.300 MHz are dedicated center frequencies and are not part of the preset functions. Additionally, the user can set the output center frequency from 100 kHz to 80 MHz in 1 kHz steps via the front panel or RS-232 control.

The delay-equalized output bandwidth is automatically selected from on-board equalizer and lowpass filter circuits. The baseband bandwidth is automatically set to one of the eight output filters depending upon the selected output center frequency.

A selectable Reference-On-Tape signal is available which provides a 100 kHz tone, preset to -10 dBm, superimposed on the output channel.

## SPECIFICATIONS

<b>IF inputs</b>	21.4 MHz, fixed 70 MHz, fixed 160 MHz, fixed 10 to 250 MHz, variable
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<b>Noise figure</b>	12 dB, max. (at maximum gain)
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<b>Input signal range</b>	-75 dBm to +5 dBm
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<b>Output center frequency</b>	1.075, 2.150, 3.225 and 4.300 MHz are dedicated frequencies: Variable - 100 kHz to 80 MHz in 1 kHz steps
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<b>Output bandwidth (1 dB nominal)</b>	2, 4, 6, 8, 10, 20, 50, 80 MHz; Automatically selected based upon output frequency; or user selectable
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<b>Differential group delay Variation (over 85% of the nominal BW)</b>	400 nsec, p-p 2 MHz BW 200 nsec, p-p 4 MHz BW 133 nsec, p-p 6 MHz BW 100 nsec, p-p 8 MHz BW 80 nsec, p-p 10 MHz BW 40 nsec, p-p 20 MHz BW 20 nsec, p-p 50 MHz BW 10 nsec, p-p 80 MHz BW
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<b>Image rejection</b>	40 dB, minimum 45 dB, typical over full 80 MHz BW
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<b>Impedance - all signal ports</b>	50 $\Omega$
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<b>VSWR</b>	$\leq 1.5:1$ , max. (14 dB return loss) Fixed inputs $\leq 1.75:1$ , (11.5 dB return loss) WB input 1.5:1, max. $\leq 50$ MHz output 1.75:1, max. $\leq 80$ MHz
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The 388A accepts an external 1 MHz, 2 MHz, 5 MHz, or 10 MHz reference input.

The Model 388A is provided with a full-function front panel, and RS-232 or optional Ethernet 100BaseT remote control capability. Remote control functions include ROT, output level, BIT data, output bandwidth, level meter, etc. The baseband output is provided on two BNC connectors.

The Model 388A IF to Tape/Baseband Converter is packaged in a compact, 1.75-inch high half-rack chassis. Two units can be mounted side-by-side in a standard 19-inch rack. Rack Adapters are available for mounting of a single unit.

<b>Carrier-to-noise ratio</b>	>60 dB, 50 MHz BW >65 dB, 20 MHz BW
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<b>Two-tone intermodulation products</b>	-40 dBc maximum for two output tones at +7 dBm
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<b>Spurious outputs</b>	<-60 dBc, typical
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<b>Rated output level (AGC/MGC)</b>	+13 dBm (1.0 Vrms) +12 dBm (2.5 Vp-p) +10 dBm (2.0 Vp-p) +9 dBm (1.8 Vp-p) +7 dBm (0.5 Vrms) +4 dBm (1.0 Vp-p) +3 dBm 0 dBm
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<b>Output passband flatness</b>	$\pm 0.5$ dB maximum over 90% of the output bandwidth
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<b>Dual-mode AGC</b>	Peak Mode/Average Mode 100 usecs attack time 50 msec release time Peak mode limits clipping of digitizer inputs
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<b>MGC range</b>	80 dB
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<b>MGC accuracy</b>	$\pm 1$ dB, typical
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<b>Baseband outputs</b>	Dual Tape/Baseband Outputs (Separately buffered, identical output signals)
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<b>Output level monitoring</b>	Peak voltage meter: Indicated output level from 0% to 150% of rated output level. Provides accurate peak level indication for pulsed signals.
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True RMS meter:  
Indicates output level in dB relative to rated level over range from -30 dBm to +20 dBm

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**External reference input** 1, 2, 5 or 10 MHz @ -5 to +10 dBm, sine input.

**Reference on tape output** 100 kHz @ -10 dBm, nominal switchable (at +13 dBm rated output level)

**Front panel controls** Input IF, Output Center Frequency, Gain, AGC/MGC, ROT On/Off, Power On/Off, BIT, Configuration

**Remote control functions** RS-232 or optional Ethernet 100BaseT  
Duplicates front panel controls

**Front panel displays/indicators** External Reference LED, Status LED, Output Level Meter, Power On/Off Indicator

**Rear panel connectors** Input/Output: BNC-female, RS-232: 9-pin "D"  
Optional Ethernet: RJ-45

**Power** 90-240 VAC, 47-420 Hz, 35 watts, maximum

**Operating temperature** 0° - 50° C

**Dimensions** Half-rack chassis, 1.75 "H x 8.5 x 20" deep (4.5 x 12.6 x 50 centimeters). EIA rack adapter available.

**Weight** 8 lb (3.6 kg) max

Specifications subject to change without notice.

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**Model 388A Rear Panel with Ethernet Option**

### WARRANTY

All [intelligentRFsolutions](http://www.intelligentRFsolutions.com) 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 Sparks, Maryland U.S.A

### [intelligentRFsolutions](http://www.intelligentRFsolutions.com)

14600 York Road  
Sparks, MD 21152 U.S.A.  
Phone 443-595-8500  
FAX 443-595-8506  
e-mail: [engage@irf-solutions.com](mailto:engage@irf-solutions.com)  
[www.iRF-Solutions.com](http://www.iRF-Solutions.com)