

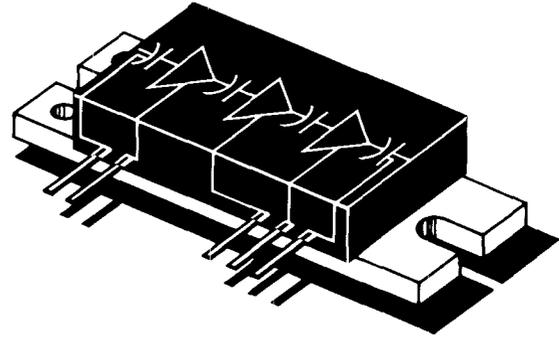
# RF Communications Circuits

## Hybrid Amplifier Modules

<b>MHW808A1</b> (806–870 MHz)	<b>MHW808A2</b> (806–890 MHz)	<b>MHW808A3</b> (870–950 MHz)
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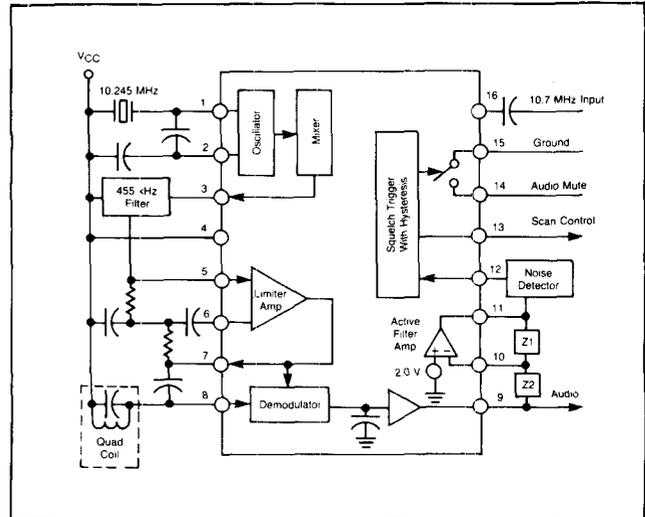
Hybrid Amplifier Modules. Motorola three-stage hybrid amplifier modules are fully characterized for 800 MHz cellular mobile radio applications. All have a typical output power of 7.5 W, a typical power gain up to 25 dB, and automatic gain control over a 35 dB range in output power. Type number variations reflect small differences in bandwidth and power gain. Also available in two-stage lower gain versions as MHW808-1, -2, -3.

These modules are indicative of a range of similar hybrid amplifiers for different frequency bands and with power output ranging from 1.5 W to 20 W. For details, see page 221.



## Low-Power Narrow-Band FM IF

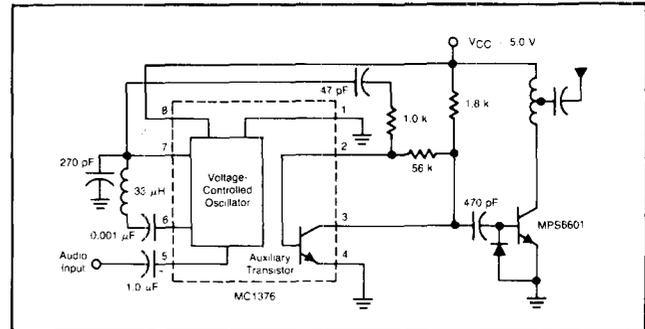
**MC3357** These FM IF circuits are used principally in noise-activated band-scanning receivers.  
**MC3359**  
**MC3361** The input frequency (e.g. 10.7 MHz) is mixed with an oscillator signal to provide a 455 kHz IF. The audio is recovered with a conventional quadrature FM detector and the "noise," which indicates the absence of an input signal, is used to control scanning. The MC3357 has an input limiting voltage of 5.0  $\mu\text{V}$  (typical); the MC3359 is similar, but adds a limiting IF stage for a sensitivity of 2.0  $\mu\text{V}$ . The MC3361 is a low-voltage version of the MC3359, operating from a  $V_{CC}$  voltage as low as 1.8 V compared with a 4.0 V minimum for the other circuits.



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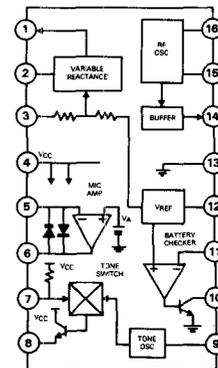
## FM Modulator Circuit

**MC1376** This voltage-controlled oscillator/modulator circuit was designed for the base-station transmitter of a cordless telephone operating at 1.76 MHz. Its frequency range of 1.4 to 14 MHz, however, makes it equally suitable as a 4.5 or 5.5 MHz intercarrier sound modulator for TV signal generation. The MC1376 also works well as a low-cost FM IF (10.7 MHz) signal source for the production line or laboratory.



## Low-Power FM Transmitter

**MC2831A** The circuit includes mic amplifier, pilot tone oscillator, VCO and battery checker. MC2831A is ideal for hand-set use, where low component count is important.



## CONSUMER AND AUTOMOTIVE APPLICATIONS (continued)

### Radio Communication, Cordless Telephone, Pager & Citizenband

#### FM-IF Receiver

Function	Gain At 10.7MHz dB TYP	3dB limiting At 10.7MHz uV (RMS) TYP	AMR dB TYP	Recovered Audio output $f = \pm 75\text{KHz}$ mV (RMS)	Power Supply Volts Max	Case	Type
Low-Power FM-IF for dual conversion scanning receivers	—	5.0	50	350 ( $f = \pm 3.0\text{KHz}$ )	8.0	648	MC3357
Hi-gain low-Power narrow band FM	100	2.0	40	700	12	701-01	MC3359
Low voltage low-Power narrow band IF	—	2.0	55	150	8.0	648	MC3361

#### FSK Receiver

Function	Features	Case	Device
Wideband FSK receiver for digital data communication	Includes oscillator, mixer, limiting IF amplifier, quadrature detector, audio buffer, squelch, meter drive, squelch status output, and data shaper comparator.	738	MC3356

#### Dual Conversion Receiver

Function	Features	Case	Device
FM Receiver	6 stage limiter, quad detector, data slicer, S.S. indicator with carrier detect logic, 1st and 2nd L.O. outputs.	724	MC3362
FM Receiver	RF amp, 1st mixer, 6 stage limiter, quad detector, data slicer, S.S. indicator with carrier detect logic audio mute.	SO-28L	MC3363

#### FM Front End

Function	Features	Case	Device
VHF FM Tuner	Common base preamp, low pass filter, AGC, mixer, oscillator regulator, oscillator buffer. 2nd source of TDA1062S.	648	MC13062

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#### FM Transmitter

Function	Features	Case	Device
FM Modulator with MIC amplifier	Includes FM oscillator and Modulator, MIC Amplifier and low Battery Voltage Detector	648	MC2831A

#### VHF LAN Receiver

Function	Features	Case	Device
Wideband FSK Receiver	FM-IF, quadrature detector, signal strength detector, data shaper.	648	MC13055

#### Modulator

Function	Features	Case	Device
FM Modulator	Includes FM oscillator and modulator. Ideal for base station/cordless telephone (1.4 to 14 MHz) applications.	626	MC1376