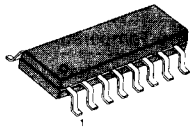
FM ONE CHIP RADIO

The KA22429 is a monolithic integrated circuit designed for Portable FM radio.
It is consisting of a RF input stage, Mixer, IF, Mute control and Loop (earphone drive) AMP.
It is suitable a pocket-size radio.

16 SOP



FUNCTIONS

- RF input stage
- Local osc
- Mixer
- IF amp
- Mute control
- Earphone drive amp.

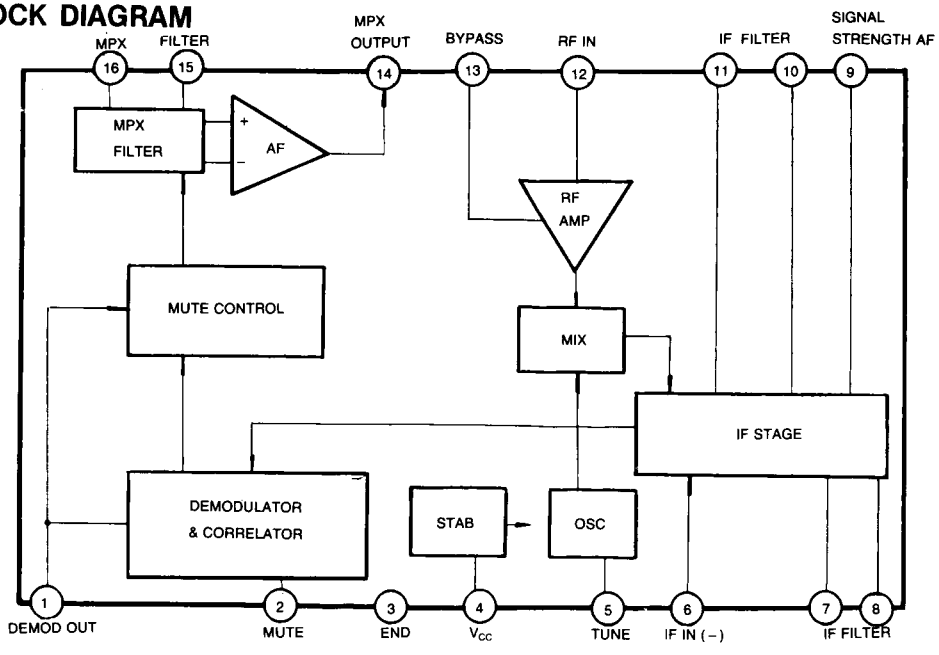
FEATURES

- **Minimum number of external parts required**
- **It is able to a single trimmer tuning**
- **No FM det coil**
- **It is FLL IF detect system (76KHz)**
- **Operating voltage: V_{CC} = 1.8V ~ 6.0V**

ORDERING INFORMATION

Device	Package	Operating Temperature
KA22429D	16 SOP	−10°C ~ +70°C

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

Characteristic	Symbol	Value	Unit
Supply Voltage	V_{CC}	7	V
Oscillator Voltage	V_{OSC}	− 0.5 ~ + 0.5	V
Operating Temperature	T_{OPR}	− 10 ~ + 70	°C
Storage Temperature	T_{STG}	− 55 ~ + 150	°C
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	300	K/W

ELECTRICAL CHARACTERISTIC

MONO CONDITION: f = 98MHz, f_m = 1KHz, Δf = ± 22.5KHz, V_I = 50dBμ, Ta = 25°C, V_{CC} = 3V
STEREO CONDITION: f = 98MHz, f_m = 1KHz, Δf = ± 22.5KHz, V_I = 60dBμ (Modulated with pilot Δf = ± 6.75KHz)

	Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
	Quiescent Circuit Current	I_{CCQ}	V_I = 0		6.3		mA
MONO	Sensitivity	S_{VI1}	− 3dB: Mute Disable		12		dBμ
		S_{VI2}	S/N = 26dB: Mute Enable		17		dBμ
	Signal to Noise Ratio	S/N_1			60		dB
	Total Harmonic Distortion	THD_1	Δf = ± 22.5KHz		0.7		%
		THD_2	Δf = ± 75KHz		2.3		%
	AM Rejection Ratio	AMR	AM: fm = 1KHz, m = 80% FM: fm = 1KHz, Δf = 75KHz		50		dB
	Oscillator Voltage	V_{OSC}			250		mV
	AFC Range	ΔAFC			160		KHz
	Mute Range	MR			120		KHz
	Band Width	BW	ΔV_O = 3dB Pre-Emphasis t = 5KHz		10		KHz
	AM Output Voltage	V_{O1}			90		μV
STEREO	Sensitivity	S_{VI3}	S/N = 46dB		49		dBμ
	Signal to Noise Ratio	S/N_2			53		dB
	Channel Separation	CS			20		dB
	AF Output Voltage	V_{O2}			80		mV

TEST CIRCUIT

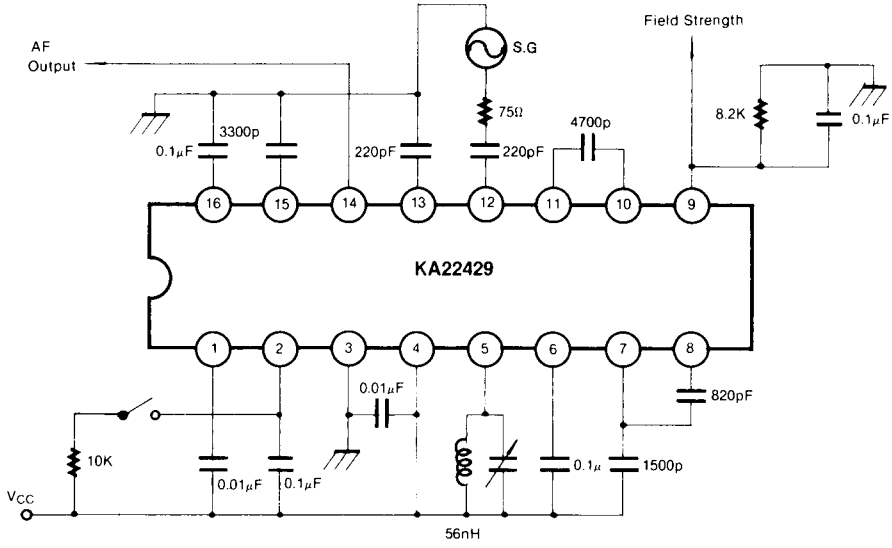


Fig. 1 Test Circuit for Mono Operation

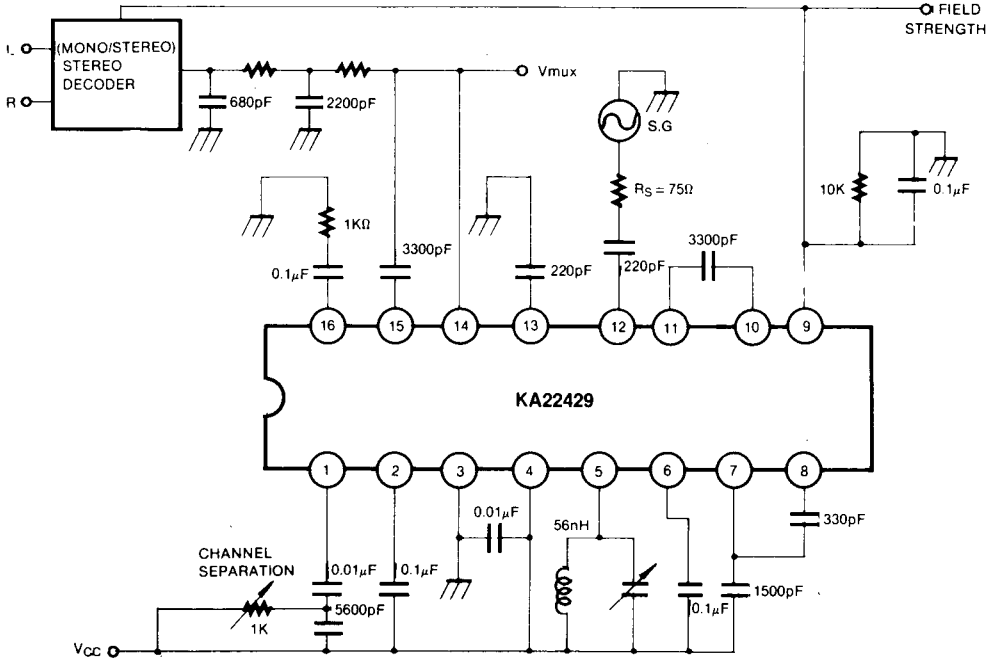


Fig. 2 Test Circuit for Stereo Operation

APPLICATION CIRCUIT