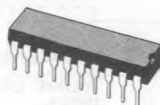


MULTISTANDARD AM AND FM SOUND IF CIRCUIT FOR TV

The TDA8192 integrated circuit performs the following functions :

- A 2-STAGE GAIN CONTROLLED AMPLIFIER, PROVIDING COMPLETE IF GAIN ; (AM SECTION)
- A PEAK DETECTOR AND INTEGRATION WHICH PROVIDES AGC-VOLTAGE ; (AM SECTION)
- A 6-STAGE LIMITING AMPLIFIER FOLLOWED BY A SYNCHRONOUS DEMODULATOR AND DEEMPHASIS NETWORK ; (FM SECTION)
- AN AUDIO PREAMPLIFIER
- A CIRCUIT PROVIDING AM/FM SWITCHING AND MUTE FACILITIES
- AN EXTERNAL AUDIO INPUT CIRCUIT WITH SWITCHING FACILITIES TO DELIVER EITHER THE DEMODULATED IF, OR THE EXTERNAL AUDIO SIGNAL AT THE OUTPUT FULLY COMPATIBLE WITH THE SCART EUROPEAN NORM EN50 049
- A DC CONTROLLED VOLUME CIRCUIT

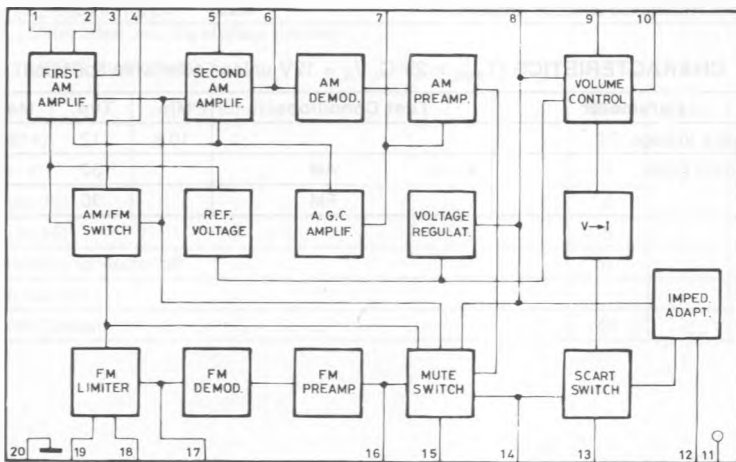
The demodulated IF signal is always available at a low impedance output.



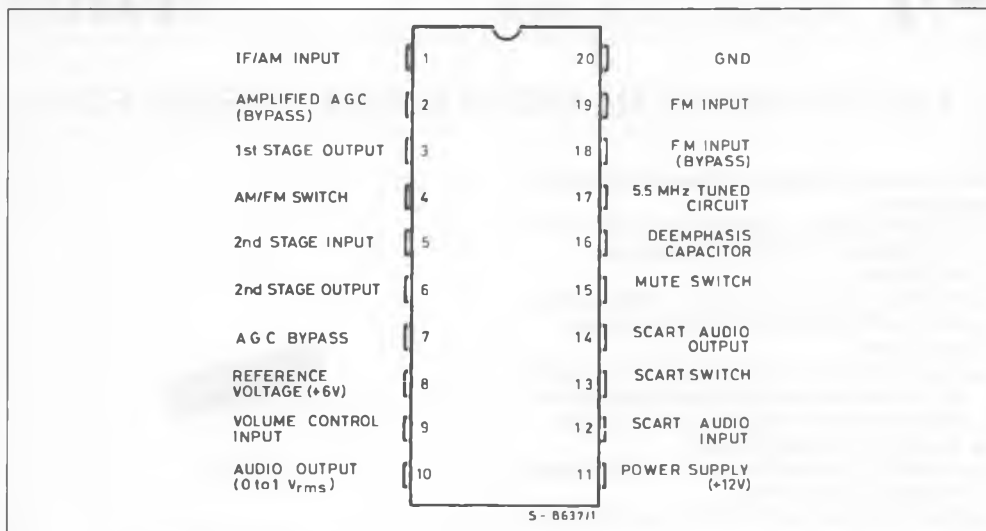
DIP-20

ORDER CODE : TDA8192

BLOCK DIAGRAM



PIN CONNECTIONS



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_S	Supply Voltage	16	V
P_{Tot}	Total Power Dissipation at $T_{amb} \leq 70^\circ\text{C}$	800	mW
T_{Op}	Operating Temperature	0 to 70	$^\circ\text{C}$
T_{Stg}, T_J	Storage and Junction Temperature	- 55 to 150	$^\circ\text{C}$

THERMAL DATA

$R_{th j-amb}$	Thermal Resistance Junction-ambient	Max.	100	$^\circ\text{C/W}$
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ELECTRICAL CHARACTERISTICS ($T_{amb} = 25^\circ\text{C}$, $V_S = 12\text{V}$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_S	Supply Voltage		10.8	12	13.2	V
I_d	Current Drain	$V_i = 0$ AM		30		mA
		FM		30		

ELECTRICAL CHARACTERISTICS (continued)AM SECTION ($f_i = 39.2\text{MHz}$, $V_i = 1\text{mV}$, $m = 0.8$, $f_m = 1\text{KHz}$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_i	Input Sensitivity	$S/N = 26\text{dB}$		35		μV
$\frac{S+N}{N}$	Signal to Noise Ratio	$V_i = 0.1\text{mV}$ $m = 0.3$ $V_i = 1\text{mV}$ $V_i = 10\text{mV}$		36 50 56		dB
V_i	AGC Range	$\Delta V_{\text{OUT}} = -1\text{to} +1\text{dB}$		66		dB
V_o	Recovered Audio Signal			1		V
d	Distortion (1)				3	%
d	Distortion (2)				3	%
R_i	Input Resistance between Pins 1 and 2	$m = 0$	2			$\text{K}\Omega$
C_i	Input Capacitance between Pins 1 and 2	$m = 0$		18		pF

FM SECTION ($f_i = 5.5\text{MHz}$, $V_i = 1\text{mV}$, $\Delta f = \pm 50\text{KHz}$, $f_m = 1\text{KHz}$, unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_i	Input Limiting Voltage	- 3dB Limiting Point		30		μV
AMR	Amplitude Modulation	$V_i = 30\text{mV}$ $m = 0.3$		55		dB
$\frac{S+N}{N}$	Signal to Noise Ratio	$V_i = 1\text{mV}$	60			dB
d	Distortion (3)				1.5	%
d	Distortion (4)			2		%
V_o	Recovered Audio Signal			1		V
R_i	Input Resistance	$\Delta f = 0$	2			$\text{K}\Omega$
C_i	Input Capacitance	$\Delta f = 0$		14		pF
C_T	Crosstalk AM/FM			70		dB

(1) 50% volume setting, $V_i = 1\text{mV}$ (2) 50% volume setting, $V_i = 10\text{mV}$ (3) $V_i = 1\text{mV}$, $f_m = 100$ to 10.000Hz (4) $V_i = 1\text{mV}$, $\pm 20\text{KHz}$ offset (detuning of phase shift filter).**AM/FM AND MUTE SWITCHING**

Parameter	Min.	Typ.	Max.	Unit
FM "on" (pin. 4)	2.5		V_S	V
AM "on" (pin 4)	0		0.8	V
Mute "on" (pin 15)	0		1	V
Mute "off" (pin 15)	5		V_S	V
Signal Attenuation for Mute "off"	70			dB
Mute Switch Current			50	μA
AM/FM Switch Current	50		250	μA

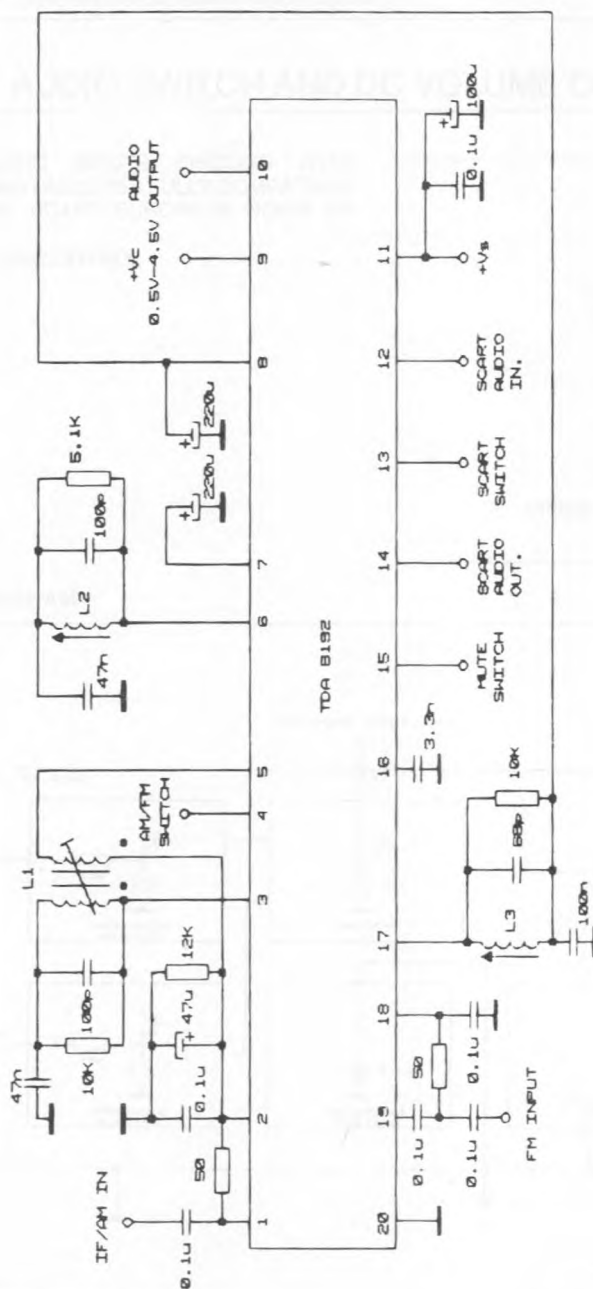
ELECTRICAL CHARACTERISTICS (continued)**SCART SWITCHING**

Parameter	Min.	Typ.	Max.	Unit
Mode Selection Voltage : TV Selected (pin. 13)	0		5	V
Mode Selection Voltage : Scart Selected (pin 13)	8		12	V
Scart Switch Input Resistance	10			K Ω
Scart Audio Input Amplitude (pin 12)		0.5	2	V _{rms}
Crosstalk Between Switched Inputs (TV scart)		80		dB

DC VOLUME CONTROL

Parameter	Min.	Typ.	Max.	Unit
Audio Output Impedance (pin 10)			1	K Ω
Control Range		90		dB
Output/input Gain for Maximum Gain Control		0		dB
Gain Control Voltage	0.5		4.5	V
Noise Level (DIN 45405)		25		μ V _{rms}

TEST CIRCUIT



(TOKO HBKOC-KES07 CF)
(TOKO BKAC-K1B40 FM)

L1 = L2 : $\omega = 95$ at $f_0 = 39.2$ MHz with $C_0 = 100$ pF
L3 : $\omega = 80$ at $f_0 = 5.5$ MHz with $C_0 = 68$ pF

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