

UTC7607/7611

LINEAR INTEGRATED CIRCUIT

FM IF /AM TUNER SYSTEM

DESCRIPTION

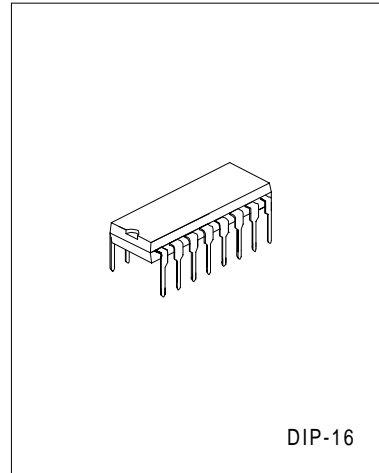
The UTC7607/7611 is a monolithic integrated circuit designed for the VIF stage in color and B/W television receivers.

The UTC7607 is used for Reverse AGC Type.

The UTC7611 is used for Forward AGC Type.

FUNCTIONS

- *Three controlled IF amplifier stages
- *Video demodulator controlled by picture carrier
- *Black noise and white noise inverter
- *Peak AGC
- *DC amplifier for RF AGC output
- *Quadrature detector for AFT
- *DC amplifier for AFT

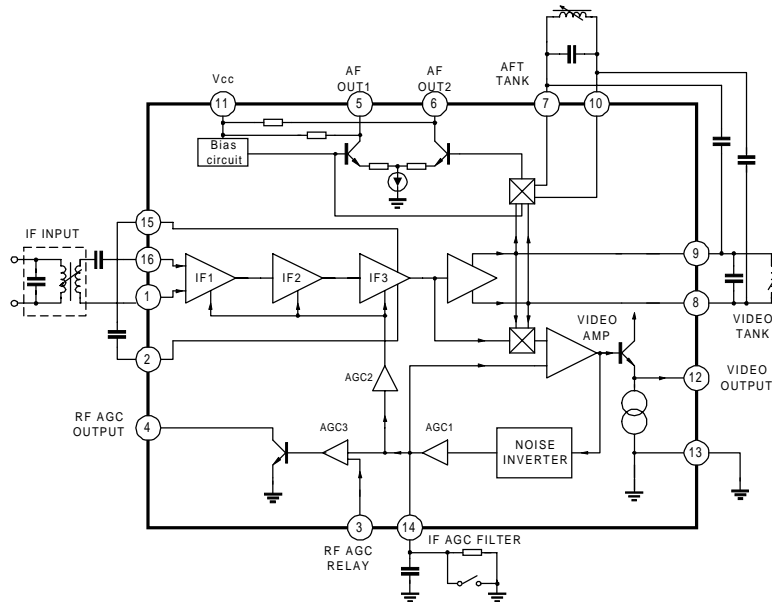


FEATURES

- *High gain wide band IF amplifier
- *Gain reduction with excellent stability
- *Excellent DG/DP and S/N characteristics

- *Negative video output signal
- *Fast AGC action due to noise inverter and peak AGC
- *Switch off the video part VTR S

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS($T_a=25^{\circ}\text{C}$)

Characteristic	Symbol	Value	Unit
Supply Voltag	Vcc	15	V
Open Loop Voltag	V4	15	V
Video DC output current (note)	V12	6	V
Operating Temperatur	Topr	-20 to +65	$^{\circ}\text{C}$
Storage Temperatur	Tstg	-55 to 155	$^{\circ}\text{C}$
Power dissipation	Pd	1.4	W

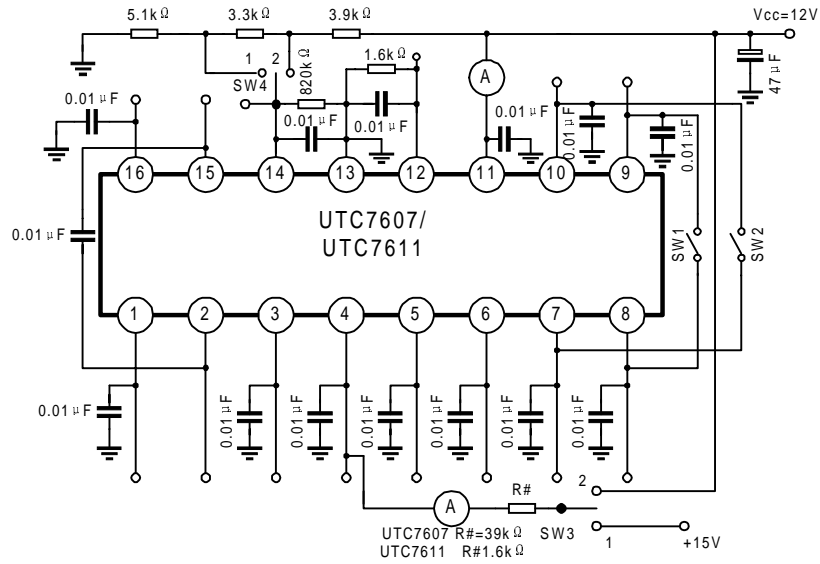
ELECTRICAL CHARACTERISTICS($T_a=25^{\circ}\text{C}$, $V_{cc}=12\text{V}$, $f_o=45.75\text{MHz}$, unless otherwise specified)

Characteristic	Symbol	Test Condition	Min	Typ.	Max	Unit
Recommended Supply Voltag	Vcc		10.8	12	13.2	V
Quiescent circuit current	IccQ		42	51	63	mA
Video DC output	V12		5.2	5.5	5.8	V
AFT DC Output Voltag	V5, V6	SW1:ON SW2:ON	5.3	6.8	8.3	V
AFT Output offset Voltag	V5-V6	SW1:ON SW2:ON	-1.5	0	1.5	V
RF AGC Residual Output Voltag	V4(sat)	UTC7611 SW4→1 UTC7607 SW3→2 SW4→2			0.5	V
RF AGC Leak Current	I4(leak)	UTC7611 SW4→1 UTC7607 SW3→1 SW4→2			1	μA
Video Sensitivity	Sv1	V12=0.8Vp-p, fo=45.75MHz, AM=30%	100	200	300	μV_{Rm}
AGC Rang	VAGC(IF)	fo=45.75MHz, V14=11.5V→4.0V	60	64		dB
Sync Tip Level Voltage(pin12)	Vsync		2.3	2.5	2.7	
Maximum IF Input Voltag	V1(MAX)		100	120		mV _{Rm}
White Noise Threshold(pin12)	VWTH		5.8	6.2	6.6	V
White Noise Clamp Level(pin12)	VWCL		3.7	4.1	4.5	V
Black Noise Threshold(pin12)	VBTH		1.4	1.6	1.8	V
Black Noise Clamp Level(pin12)	VBCL		2.9	3.3	3.7	V
Video Frequency Response	Gv(IF)	Input 45.75Mhz, Sweep generator	4.5	5.5		MHz
Suppression of Carrier	CL	SG1=100mVrms SG2, SG3 →OFF	40	50		dB
Suppression of 2 nd Carrier	I2nd	SG1=100mVrms SG2, SG3 →OFF	40	50		dB
920kHz Beat level	I920	SG1=100mVrms SG2=SG3=32mVrms	33	38		dB
Differential Gain	DG			7	10	dB
Differential Phas	DP			3.5	5	degree
Input Impedanc	RIN	fo=45.75MHz, between pin16~1	3.0	4.5	6.0	k
	CIN			2.0	5.0	pF
AFT Output Upper Voltag	V5, V6(UP)		11.7	11.9	12.0	V
AFT Output Lower Voltag	V5, V6(Low)		1.8	2.3	2.8	V
Maximum Available Current	I4(MAX)	UTC7607	0.3			mA
		UTC7611	7			mA
AFT Sensitivity	SAFT			16		kHz/V

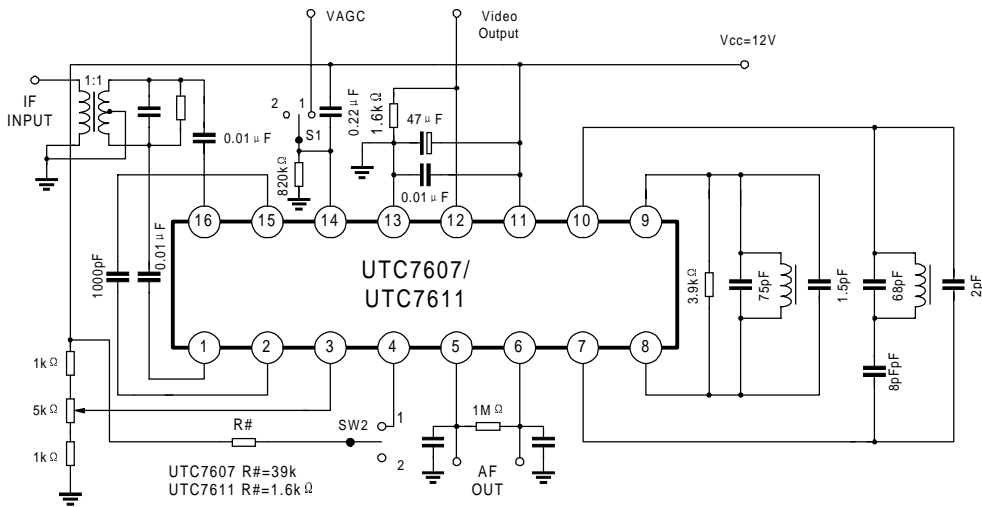
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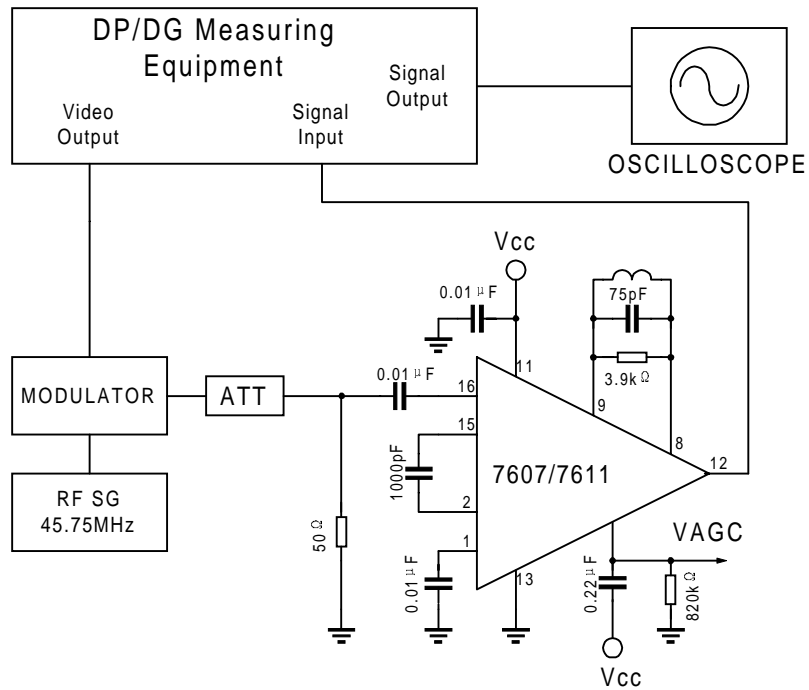
TEST CIRCUIT 1



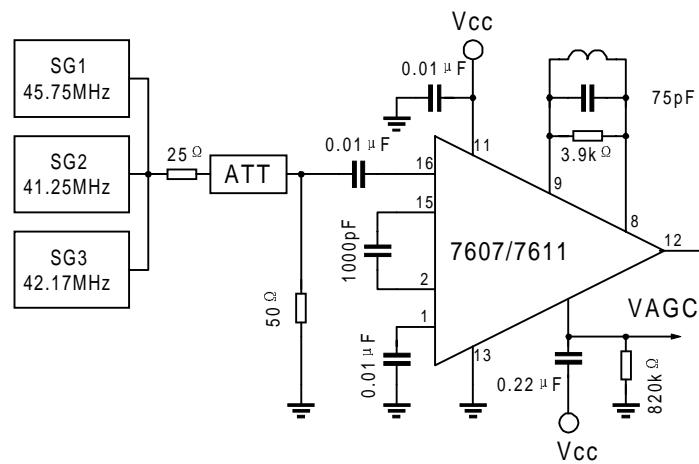
TEST CIRCUIT 2



TEST CIRCUIT 3



TEST CIRCUIT 4



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TYPICAL APPLICATION CIRCUIT

