

TDA7515

RF-FRONTEND FOR AM/FM-DSP-CARRADIOS WITH IF SAMPLING

PRODUCT PREVIEW

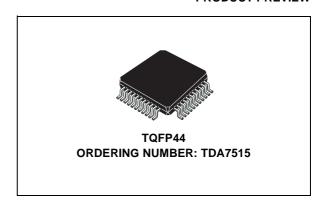
- RF AGC generation by RF and IF detection
- I/Q Mixer for FM IF 10.7MHz with image rejection and programmable IF tank adjust for FM and AM
- Preamplifier and mixer for IF 10.7MHz AM upconversion
- VCO and programmable divider for "world receiver"
- Programmable controlled IF-gain stage

Additional features:

- High performance fast PLL for RDS-system
- Electronic alignment for the preselection stages
- All functions bus-controlled

DESCRIPTION

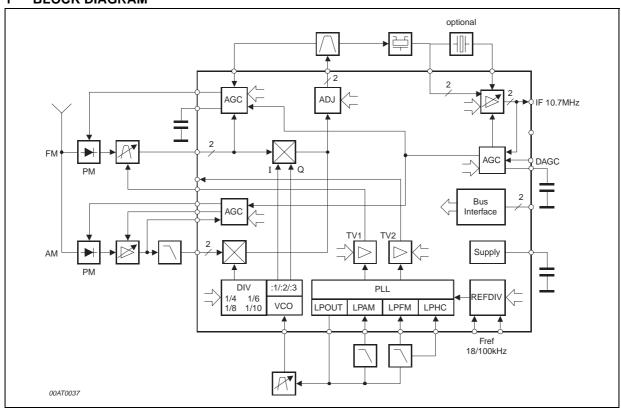
The frontend is a high performance tuner circuit for



AM/FM - DSP carradios with 10.7MHz - IF sampling. It contains mixer and IF amplifiers for AM and FM, VCO and PLL synthesizer on a single chip.

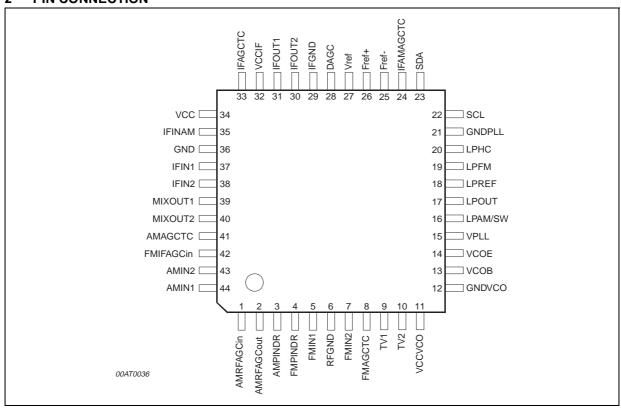
Use of BICMOS technology allows the implementation of several tuning functions and a minimum of external components.

1 BLOCK DIAGRAM



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2 PIN CONNECTION



3 PIN DESCRIPTION

Pin No.	Pin Name	Function		
1	AMRFAGCin	AM AGC Input for RF detection		
2	AMRFAGCout	AM AGC output for RF AGC		
3	AMPINDR	AM AGC PIN-diode driver		
4	FMPINDR	FM AGC Pindiode driver		
5	FMIN1	FM Mixer Input 1		
6	RFGND	RF Ground		
7	FMIN2	FM Mixer Input 2		
8	FMAGCTC	FM AGC time constant		
9	TV1	Tuning voltage 1 output		
10	TV2	Tuning voltage 2 output		
11	VCCVCO	Supply Voltage VCO		
12	GNDVCO	VCO Ground		
13	VCOB	Base VCO		
14	VCOE	Emitter VCO		
15	VPLL	PLL Supply Voltage		
16	LPAM/SW	OP AMP Input to PLL Loop Filter AM / switch output (optional)		
17	LPOUT	OPAMP output to PLL Loop Filter		
18	LPREF	Voltage Reference for PLL		
19	LPFM	OP AMP Input to PLL Loop Filter FM		
20	LPHC	High Current PLL Loop Filter		

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3 PIN DESCRIPTION (continued)

Pin No.	Pin Name	Function		
21	GNDPLL	PLL Ground		
22	SCL	Bus connection (IIC clock)		
23	SDA	Bus connection (IIC data)		
24	IFAMAGCTC	Time constant for AM IF AGC		
25	Fref-	Reference frequency input		
26	Fref+	Reference frequency input		
27	Vref	Reference voltage 5V		
28	DAGC	Digital keying AGC input		
29	IFGND	IF Ground		
30	IFOUT2	IF amplifier output		
31	IFOUT1	IF amplifier output		
32	VCCIF	Supply voltage for IF output		
33	IFAGCTC	IF AGC time constant		
34	VCC	Supply voltage		
35	IFINAM	IF input for narrowband AM		
36	GND	Ground		
37	IFIN1	IF Input - signal		
38	IFIN2	IF Input - blocked		
39	MIXOUT1	Mixer Output		
40	MIXOUT2	Mixer Output		
41	AMAGCTC	AM AGC time constant		
42	FMIFAGCin	IF input for FM AGC		
43	AMIN2	AM RF Input		
44	AMIN1	AM RF Input		

4 THERMAL DATA

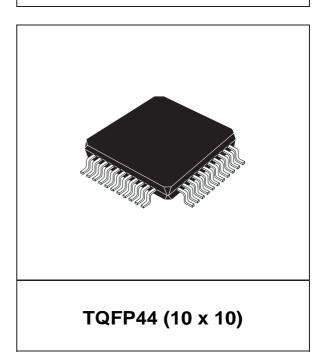
Symbol	Parameter	Values			Unit
	Farameter		Тур.	Max.	Oilit
R _{th(j-a)}	Thermal resistance			85	°C/W
T _{amb}	Ambient temperature	-40		85	°C
T _{stg}	Storage temperature	-55		150	°C

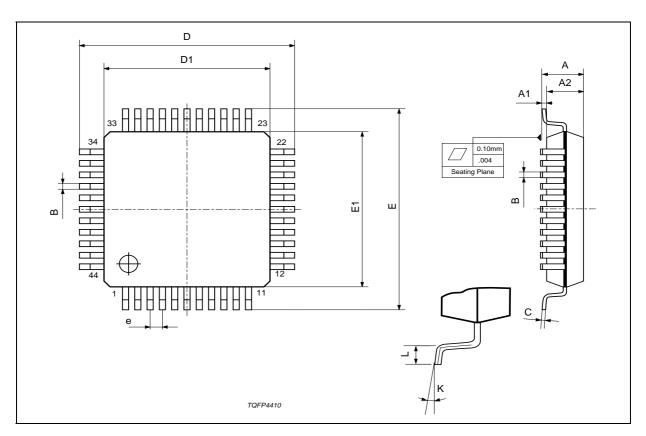
5 ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V _{CCIF}	Supply voltage for IF-interface	12	V
V _{PLL}	PLL supply voltage	12	V
Vccvco	VCO supply voltage	12	V
Vcc	Supply voltage	12	V
V _{MIXOUT1/2}	Open collector voltage	12	V

DIM.	mm			inch		
Dilvi.	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
Α			1.60			0.063
A1	0.05		0.15	0.002		0.006
A2	1.35	1.40	1.45	0.053	0.055	0.057
В	0.30	0.37	0.45	0.012	0.014	0.018
С	0.09		0.20	0.004		0.008
D		12.00			0.472	
D1		10.00			0.394	
D3		8.00			0.315	
е		0.80			0.031	
Е		12.00			0.472	
E1		10.00			0.394	
E3		8.00			0.315	
L	0.45	0.60	0.75	0.018	0.024	0.030
L1		1.00			0.039	
K	0°(min.), 3.5°(typ.), 7°(max.)					

OUTLINE AND MECHANICAL DATA





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