

**SPECIFICATION****DVBT + PIF - TUNER****1.SCOPE**

This Specification Covers Digital Terrestrial Tuner in compliance with the European standard DVB-T that intended to use in STB RF AGC voltage in controlled inside tuner.

2.GENERAL SPECIFICATIONS

2-1. RECEIVING FREQUENCY RANGE :146MHz~858MHz(I²C PLL CONTROLLER FROM OUTSIDE)

2-2. SUPPLY VOLTAGE :B1,B2 B+ 5V +/- 0.1

2-3. CONSUMPTION CURRENT :B1 5V 59 mA
B2 5V 83 mA

2-4. OPERATION AND STORAGE TEMPERATURE 0~50°C
CONDITIONS FOR GUARANTEE HUMIDITY 85% OR LESS

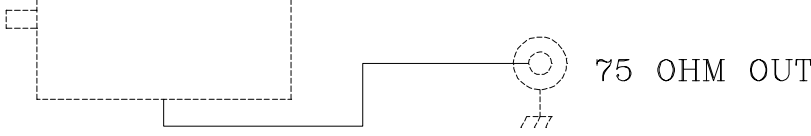
3.TEST CONDITIONS**3-1. TESTING AMBIENT CONDITIONS**

DEFINED AS TEMPERATURE OF 25+/-2 °C AND HUMIDITY OF 65+/-5 % RH.

NOTE : THAT TEMPERATURES OF 5~30 °C AND HUMIDITY OF 45 ~ 85 % MAY BE REGARDED AS STANDARD.

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NO	ITEM	CONDITION	MIN	TYP	MAX	NOTES
1.	GENERAL SPECIFICATIONS					
1.1	Receiving frequency range	UHF SEE table8-12 VHF HIGH SEE table8-12	428.1 145.1		858 428	MHz
1.2	Mergin frequency	UHF VHF HIGH	-6 -5		+3 +2	MHz
1.3	RF input impedance	F CONNECTOR 75 OHM				
1.5	L.O PLL synthesizer IC	TUA6034 Address 0xC0				
1.6	PLL synthesizer crystal	+/- 50 ppm		4.0		MHz
1.7	1st intermediate frequency			36.167		MHz
	3dB BW	P2=1		8		MHz
		P2=0		7		MHz
1.8	AGC voltage input external	0V to 5V	0V min gain 5V max gain			Current 20uA max
2	Operating Voltage	Supply voltage 5V +/- 5%				
2.2	Humidity	Operating	less than 85%			
		Storage	less than 95%			
2.3	Temperature	Operation	0 °C to 55 °C			
		Storage	-20 °C to 75 °C			

Circuit block diagram

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NO.	ITEM	CONDITION	MIN.	TYP.	MAX.	NOTES
TEST CONDITION						
3.	Supply voltage Ambient humidity Ambient temperature	B1,B2+5V IF AGC 3.3V 20°C to 30°C 60% to 70%				
3.1	Test circuit					
3.2	Noise Figure	UHF VHF HIGH		7 6	10 9	dB dB
3.3	RF AGC Range AGC voltage 3.3V to 0.5V see table 8-9	UHF VHF HIGH	35 40	55 65		dB dB dB
3.4	Power gain RF AGC max gain IF AGC Voltage 3.3v	UHF VHF HIGH		80 80		dB dB
3.5	Gain taper				8	dB
3.6	VSWR	UHF VHF HIGH		2 2		dB dB
3.7	IF Rejection	UHF VHF HIGH	60 60	75 80		dB dB
3.8	Image Rejection	UHF VHF HIGH	40 30	50 40		dB dB
3.9	RF input oscillator leakage	<890 MHz <1800 MHz			34 40	dBuV dBuV
3.10	Phase noise offset 1KHz offset 10KHz offset 100KHz	UHF VHF HIGH UHF VHF HIGH UHF VHF HIGH		-58 -60 -75 -75 -95 -95		dBc/Hz dBc/Hz dBc/Hz dBc/Hz dBc/Hz dBc/Hz
3.2	1% cross modulation input Channel +/-2Channel level 60dBuV	UHF VHF HIGH	80 80			dBuV dBuV
3.3	IF AGC Range IF AGC 5V~0V			50		dB

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TABLE 8-8 feferencr divider ratios

Reference divider ratios	PLL 4MHz quartz	Mode	T2	T1	REA	RSB
80	50KHz	normal	0	0	0	0
128	31.25KHz	normal	0	0	0	1
24	166.67KHz	X	X	X	1	0
64	62.5KHz	X	X	X	1	1
32	125KHz	extended	1	1	0	0
28	142.86KHz	extended	1	1	0	1

TABLE 8-9 AGC Take-over point

IF output level symmetrical mode	A2	A1	A0
118 dBuV	0	0	0
115 dBuV	0	0	1
112 dBuV	0	1	0
109 dBuV	0	1	1
106 dBuV	1	0	0
103 dBuV	1	0	1

TABLE 8-11 charge pump current

Charge pump current	mode	CP	T2	T1	T0
50uA	normal	0	0	0	x
250uA	normal	0	0	0	x
50uA 48~132 MHz 145.1~349 MHz 428.1~659 MHz	extended	0	1	1	0
125uA 132.1~145 MHz 349.1~397 MHz 659.1~759 MHz	extended	0	1	1	1
250uA 397.1~428 MHz 759.1~858 MHz	extended	1	1	1	0
650uA	extended	1	1	1	1

note :x=don't care.

Analog signal charge pump=50uA ,Digital signal charge=50uA~250uA

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TABLE 8-12 3-band selection and S / W switch

	P0	P1	P3	P2
VHF HI	1	0	0	X
UHF	0	0	1	X
8M	X	0	X	1
7M	X	0	X	0

I2C BUS Timing Diagram and telegram examples

