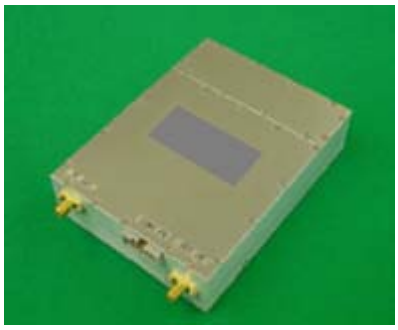
RADITEK INC.

Synthesizer, 430-900MHz, 12dBm, 12Volts

code-L1

UHF Band Frequency Synthesizer for Digital TV Broadcasting transmitter
Exceeds the requirements of European Standard DTV-B
RSYNTH-L503-430-900M-1Hz-Sf-12d12V-L1



Raditek's L503 Series is a state-of-art UHF (430-900 MHz) Wideband digital frequency synthesizer with a phase noise performance exceeded the requirement of European Standard DVB-T, specifically designed and developed for digital TV broadcasting applications. The product incorporate Raditek's unique technologies and accumulated development experience to achieve one hertz frequency resolution with extremely low phase noise less than -145 dBc at one megahertz offset. One 10 MHz reference input is used. One Hz step is controlled by a DDS. Raditek's two high performance VCOs are used within the phase lock loop to control and achieve extremely low phase noise of this Synthesizer.

Features:

- **Wide Frequency Range …….430 ~ 900 MHz**
- **High Frequency Resolution ……..Min. step = 1 Hz**
- **Compact Size, Attractive Price , Short Lead Time……..92Wx90Lx29Hmm**

Order Examples: RSYNTH-L503-430-900M-1Hz-Sf-12d12V-L1

Electrical Performance		Units
Frequency Range :	430 ~ 900	MHz
Different models also available for VHF Band and Microwave Band: 2.4 to 3GHz		
Frequency Resolution	Step=1	Hz
Output Power :	+12dBm ±2dB @50 ohm	dBm
RF Output Power , Off Conditions	-20	dBm Max
Phase Noise		
• 10Hz offset	-80	dBc/Hz Max
• 100 Hz offset :	-95	dBc/Hz Max
• 1 kHz offset :	-100	dBc/Hz Max
• 10 kHz offset :	-100	dBc/Hz Max
• 100 kHz offset :	-120	dBc/Hz Max
• 1 MHz offset	-145	
Spurious		
• Harmonics	-20	dBc/Hz Max
• Non-Harmonics (F > 100Hz)	-65	dBc/Hz Max
External Reference In.		
• Frequency	10	MHz
• Level	+0 ±3	dBm @ 50 ohm
• Phase Noise	< -140	dBc/Hz @ 100Hz offset
Frequency Control	3- Wire Serial TTL Binary 29 Bits Data Clock and Enable	

WORLD HQ: 1702L Meridian Ave. Suite 127, San Jose, Ca 95125, U.S.A.
Telephone: (408) 266-7404 FAX: (408) 266-4483
WEB: www.raditek.com , E-mail: sales@raditek.com

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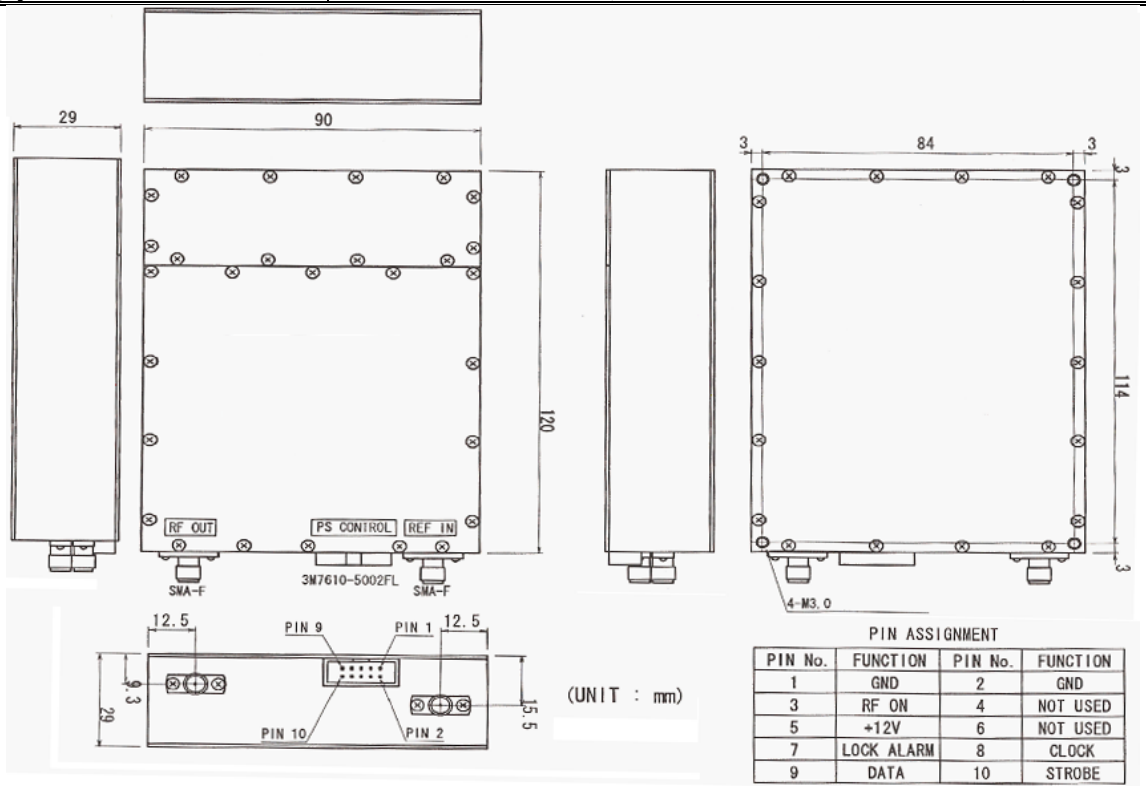
Electrical Performance		Units
Alarm Out		
• Lock	TTL-Hi	
• Un-Lock :	TTL-Lo	
Lock up Time	300	msec
Power Supply	+12 V ±-0.5V DC @ 400mA Max with <5mVp–p Ripple	
Environmental Conditions		
• Operating Temp. Range •	Normally ;0 to +50 -20 ~ +70	°C °C Optional
• Storage Temp. Range	-30 ~+70	°C
• Dimensions	90x92x29	mm
• Connectors RF Output ,Reference Input Power Supply, Control, Alarm	SMA (F) 3M7610-5002FL,10pin (Protected Dual row 0.1 in. Header)	



PIN ASSIGNMENT

PIN No.	FUNCTION	PIN No.	FUNCTION
1	GND	2	GND
3	RF ON	4	NOT USED
5	+12V	6	NOT USED
7	LOCK ALARM	8	CLOCK
9	DATA	10	STROBE

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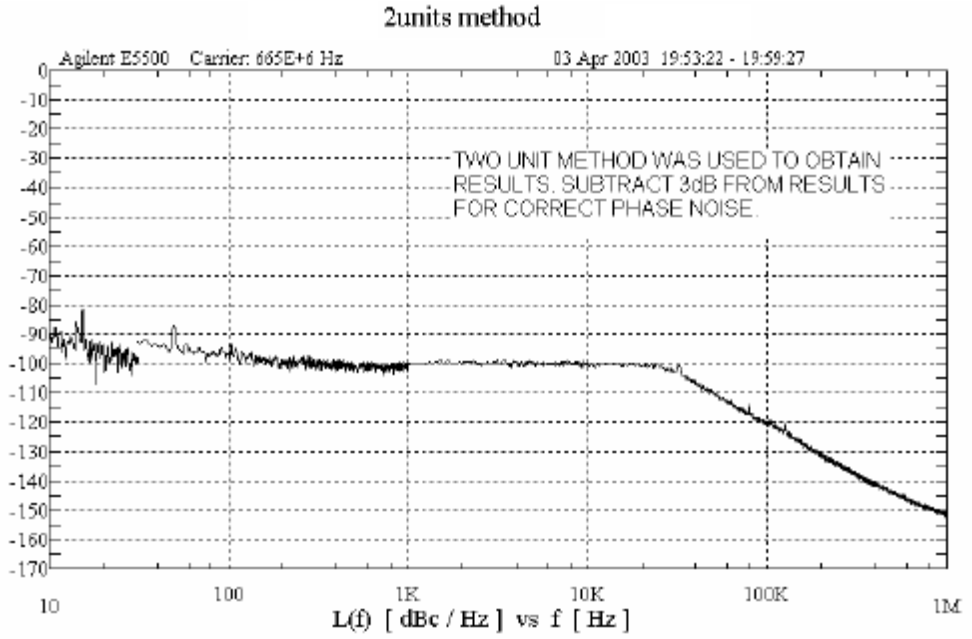

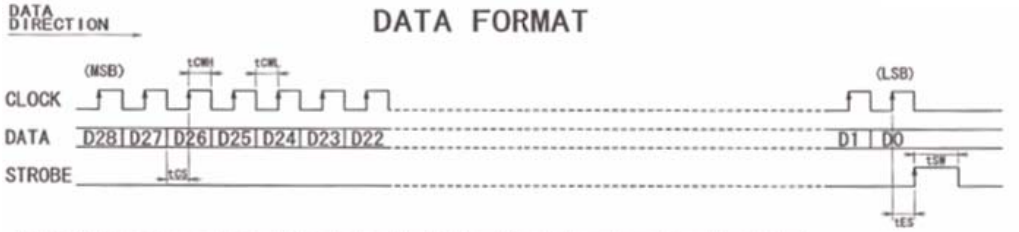

tCWH	Clock pulse width high	5 uS min	tES	Clock to strobe set up time	5 uS min
tCWL	Clock pulse width low	5 uS min	tCS	Data to Clock setup time	5 uS min
tSW	Strobe pulse width	10 uS min			

OUTPUT FREQUENCY	CHANNEL NUMBER	MSB D28	D27	D26	D25	D24	D23	D22	D21	D20	D19	D18	D17	D16	D15	D14	D13	D12	D11	D10	D9	D8	D7	D6	D5	D4	D3	D2	D1	LSB D0
430.000000MHz	0	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
430.000001MHz	1	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	H
430.000002MHz	2	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	H	L
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
899.999996MHz	469999996	H	H	H	L	L	L	L	L	L	L	H	H	H	L	H	L	L	L	L	H	L	H	H	H	H	H	L	L
899.999997MHz	469999997	H	H	H	L	L	L	L	L	L	L	H	H	H	L	H	L	L	L	L	H	L	H	H	H	H	H	L	H
899.999998MHz	469999998	H	H	H	L	L	L	L	L	L	L	H	H	H	L	H	L	L	L	L	H	L	H	H	H	H	H	H	L
899.999999MHz	469999999	H	H	H	L	L	L	L	L	L	L	H	H	H	L	H	L	L	L	L	H	L	H	H	H	H	H	H	H
900.000000MHz	470000000	H	H	H	L	L	L	L	L	L	L	H	H	H	L	H	L	L	L	L	H	H	L	L	L	L	L	L	L

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