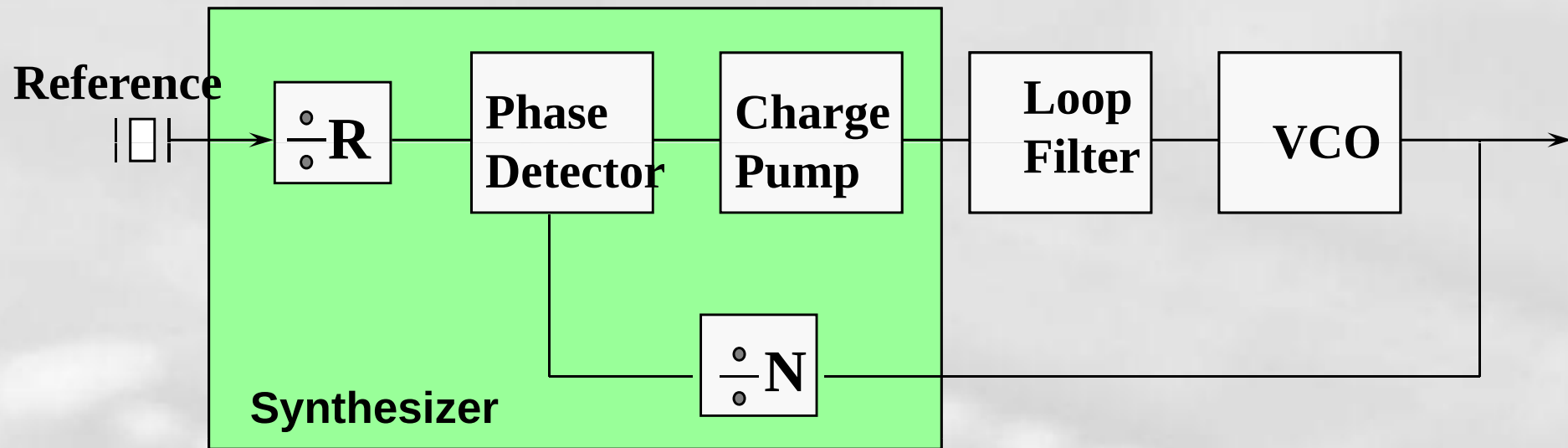


PLL Products



Phase-locked Loop

频综:Hittite

独立频综, 集成VCO射频、微波频综

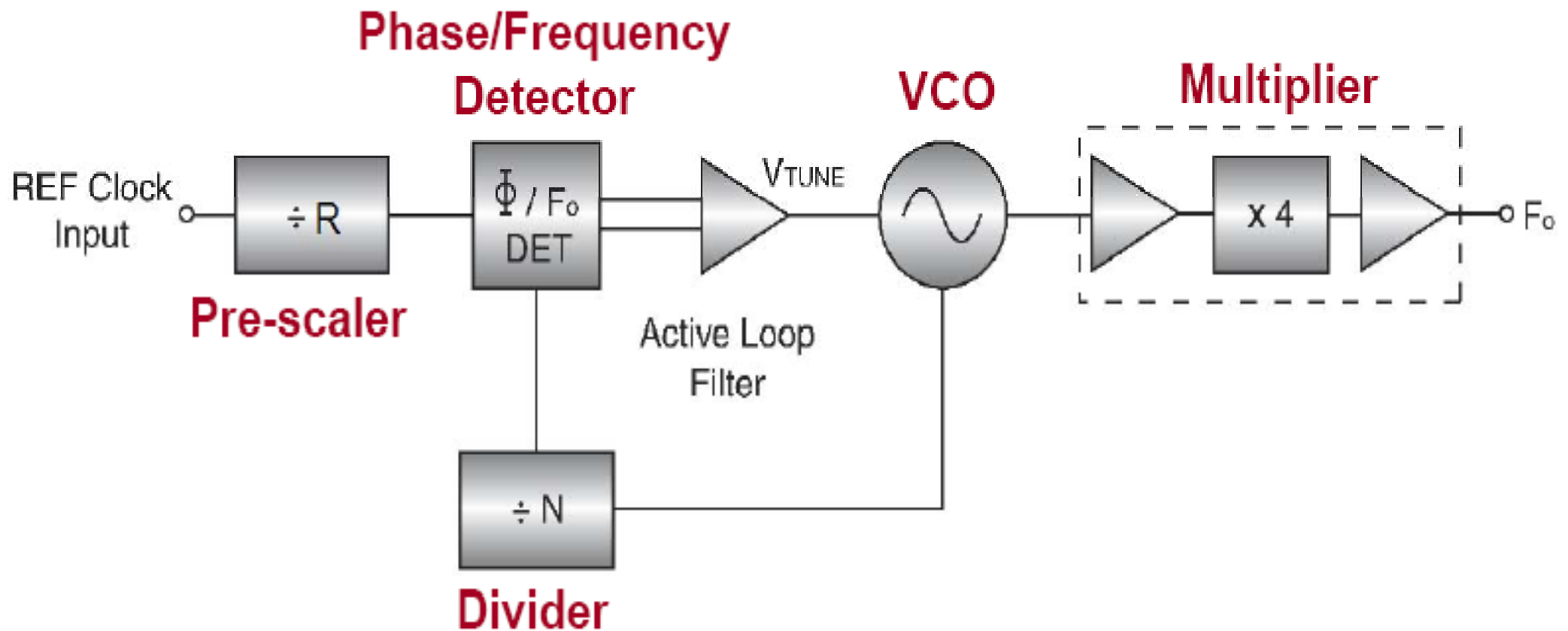
压控振荡器: Hittite, Synergy

窄带、宽带、超宽带

晶振: Greenray

OCXO, TCXO (高可靠性), VCXO

5 Major Product Groups



**Phase-Locked
Loops**

	Frequency GHz	Function	SBB Phase Noise	Max. PFD Frequency (MHz)	Max. Ref. Frequency (MHz)	Bias Supply
HMC700LP4	0.1 – 8.0	Fractional & Integer-N	Int: -108 dBc/Hz Frac:-103 dBc/Hz (注1)	105	200	+5V@95mA
HMC698LP5	0.08 – 7.0	Integer-N N=12-259	-153 dBc/Hz (注2)	1300	1300	+5V@310mA
HMC699LP5	0.08 – 7.0	Integer-N N=56-519	-153 dBc/Hz (注2)	1300	1300	+5V@310mA
HMC440QS16G	0.01 – 2.8	Integer 5bit	-153 dBc/Hz (注3)	1300	1300	+5V@250mA
HMC439QS16G	0.01 – 2.8	PFD, N=1	-153 dBc/Hz (注3)	1300	1300	+5V@96mA

HMC440QS16G内部集成5bit可编程N分频。

对手: ADI, National

**Hittite有频综也有VCO，保证频综和VCO能匹配工作。
而ADI和国半都没有独立的VCO。**

注1: 6GHz VCO, 20kHz offset, 50 MHz fPFD

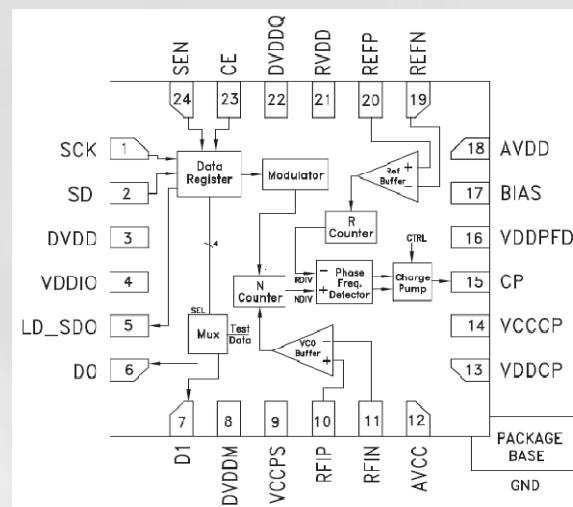
注2: @ 10 kHz Offset @ 100 MHz Square Wave Ref. Input Pin= 0 dBm

注3: @ 10 kHz Offset @ 100 MHz Ref. Input, Pin= 0 dBm

鉴相器是频综的核心部分,一般还包括R分频,N分频和电荷泵,还包含一些寄存器。

Features

- 8 GHz, 16 bit prescaler
- Fractional or Integer Modes
- Ultra Low Phase Noise
6 GHz; 50 MHz Ref.
-103 / -108 dBc/Hz @ 20 kHz
(Frac / Integer)
Figure of Merit (FOM)
-221 / -227 dBc/Hz (Frac / Integer)



超低相噪, 数据口可写可读。

	Hittite HMC700	ADI ADF4156	National LMX2487E
Max Freq of Operation	8GHz	6GHz	7.5GHz
Phase Noise @6GHz	-103	-88	-87
Figure of Merit	-221	-213	-210
Cycle Slip Prevention	CSP	CSP	CSP
Read/Write Serial Port	Yes	No	No
Power Consumption	95mA	32mA	6mA

HMC700LP4E 8GHz 16-bit Fractional Synthesizer

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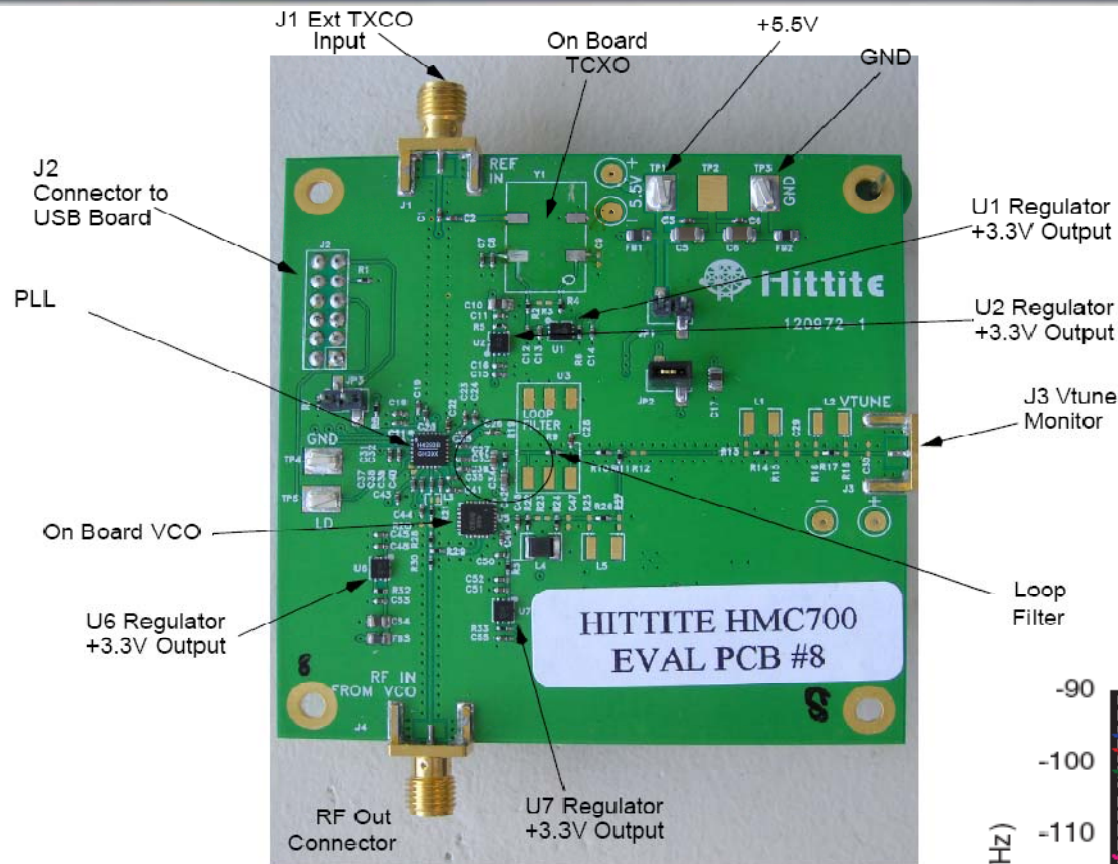


Figure 2. HMC700LP4 Eval Board Major Components - TopSide

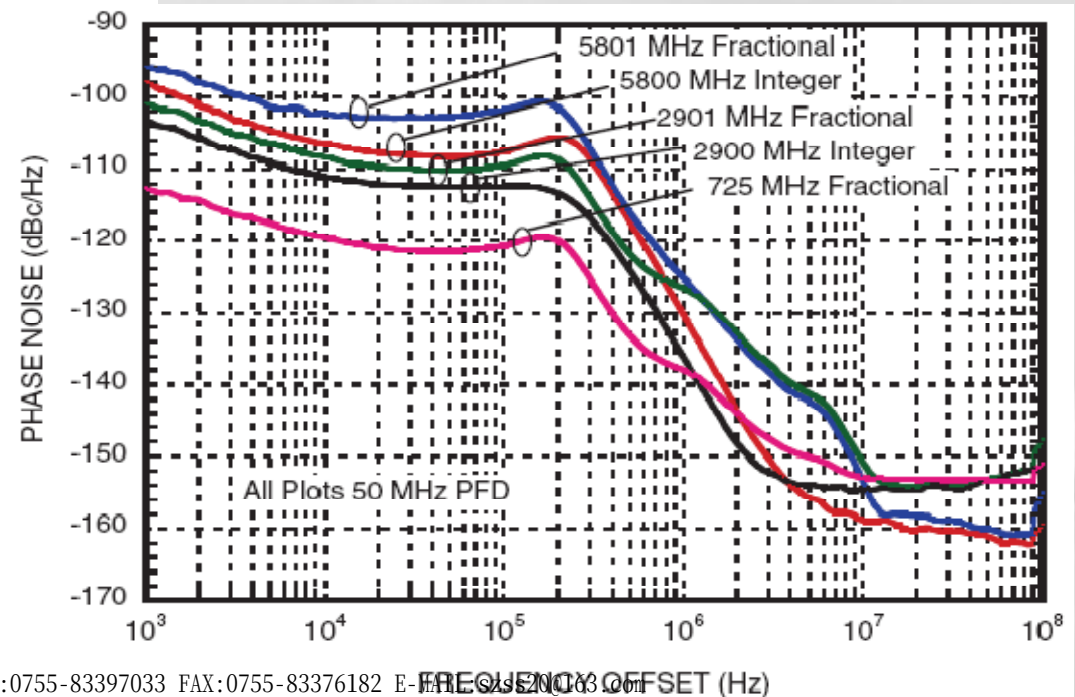
6GHz; 50 MHz PFD,

整数模式: -108 dBc/Hz @ 20 kHz

小数模式: -103 dBc/Hz @ 20 kHz

应用场合:

- ✓ Base Station: GSM、CDMA、3G、Wimax、Point to Point、4G, etc.
- ✓ Instrumentation: Signal Source, etc.
- ✓ Military Radar



HMC701LP6CE 7GHz Fractional/Integer Synthesizer

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Applications

- ✓ WiMAX and Fixed Wireless
- ✓ Infrastructure and Access Points
- ✓ Infrastructure & Subscriber Equipment
- ✓ Point to Point and Point to Multipoint
- ✓ FMCW Sensors

Parameter	Typical	Units
Frequency Range	0.1 to 8GHz	GHz
Divider Range (16bit), steps of 2	36 to 65,531	
Phase Noise (6GHz/40kHz/50MHz PFD) Fractional Mode Integer Mode	-103 -109	dBc/Hz
1Hz FOM (6GHz/50MHz Ref) Fractional 1Hz FOM (6GHz/50MHz Ref) Integer	-221 -227	
Phase Detector Max Freq Ref Divider Max Freq	70 200	MHz MHz
Charge Pump Current Step Size Pump Output Voltage, 5V supply	0.125 to 4 125 0.5 to 4.5	mA uA V
Ref Divider	14	bits
Power Supply	95mA/3.3V 36mA/5V	

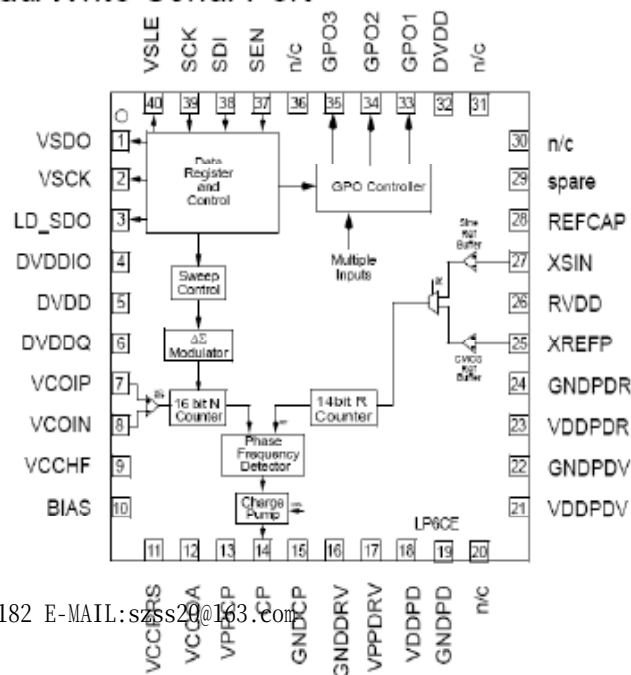
Unless otherwise specified: T = +25°C, RF = 6000 MHz.
(67372) (pcf0407005)

ECCN Code: 3A001.a.11.b

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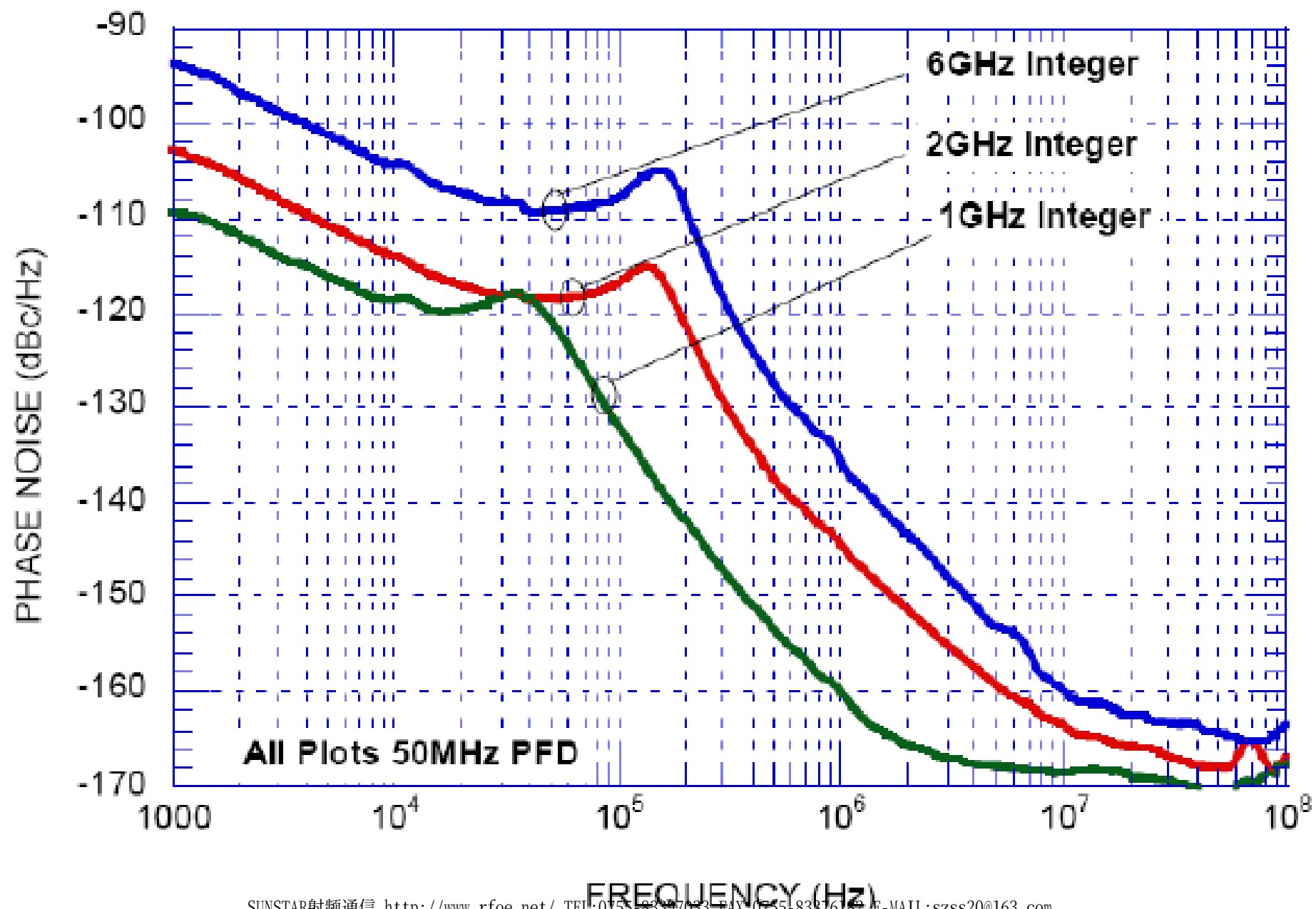
Features

- ✓ 7 GHz Fractional or Integer Modes
- ✓ 6GHz Phase Noise:
Integer Mode -109 dBc/Hz @ 40kHz
Fractional Mode -103 dBc/Hz @ 40kHz
- ✓ 24bit step size, typ 3Hz
- ✓ Auto Tuning Support
- ✓ Auto Sweeper
- ✓ Ultra Fine Phase Step
- ✓ Phase Coherent Freq Hopping
- ✓ Multi-VCO Support
- ✓ Auxiliary Clocks, Temp Sensor
- ✓ Cycle Slip Reduction
- ✓ Read/Write Serial Port



HMC701LP6CE 7GHz Fractional/Integer Synthesizer

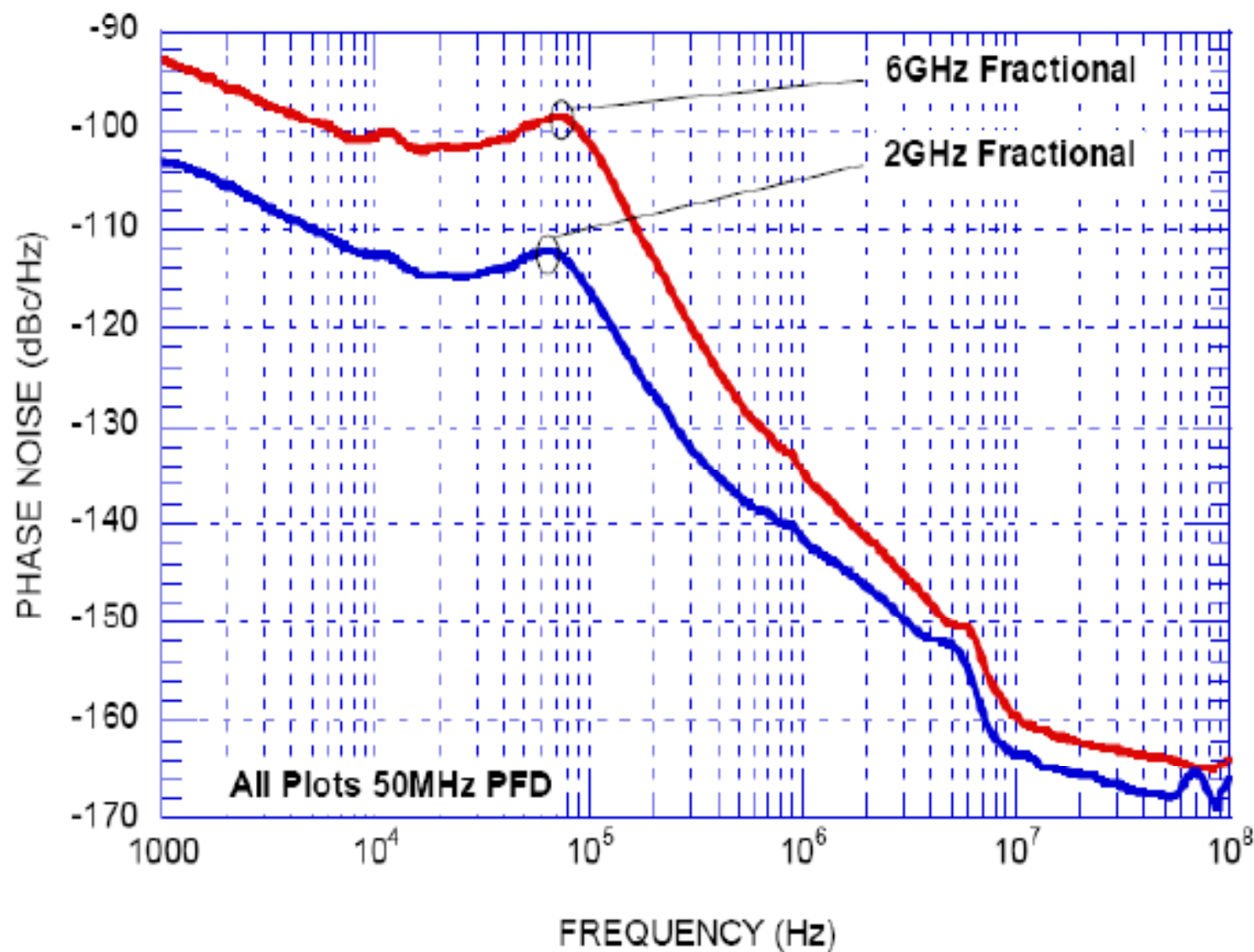
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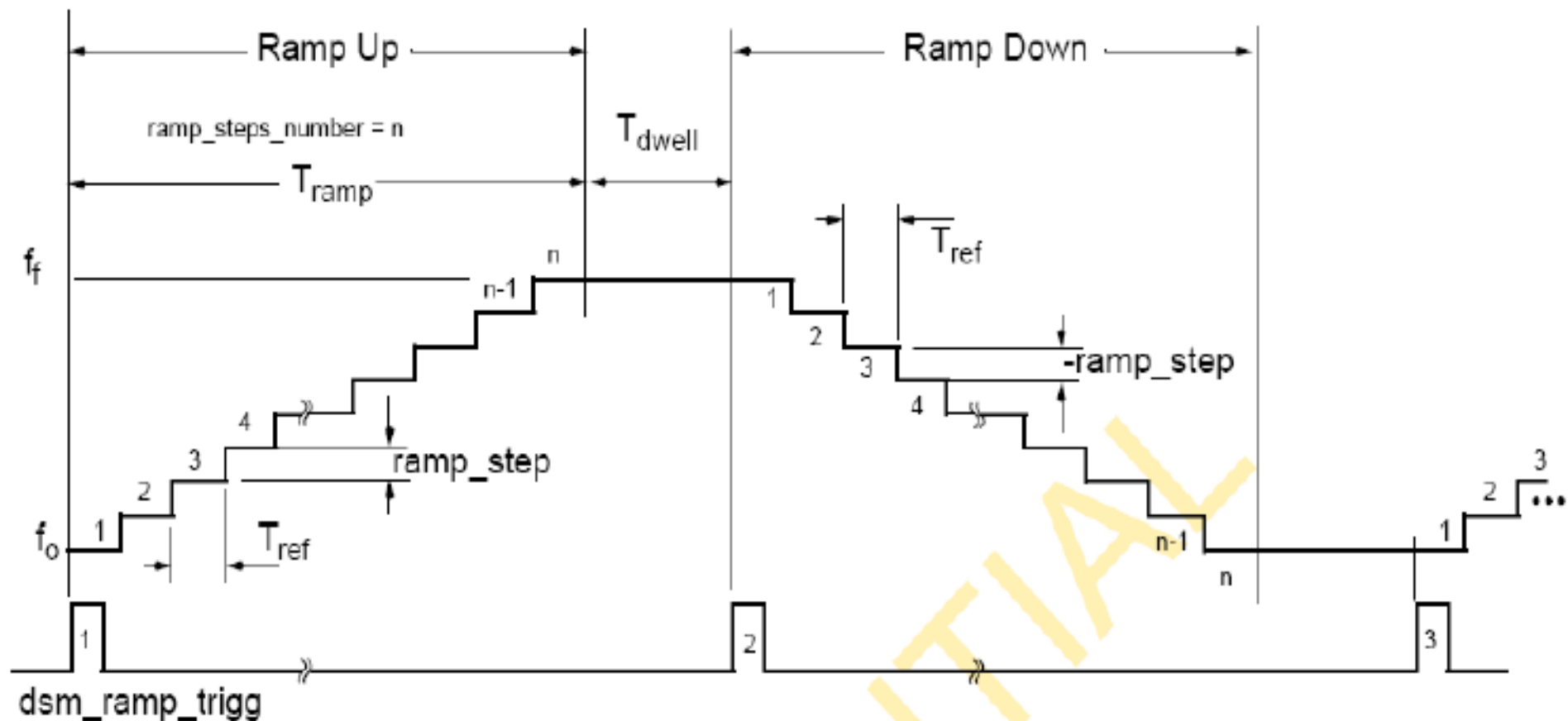
HMC701LP6CE 7GHz Fractional/Integer Synthesizer

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HMC701LP6CE 7GHz Fractional/Integer Synthesizer

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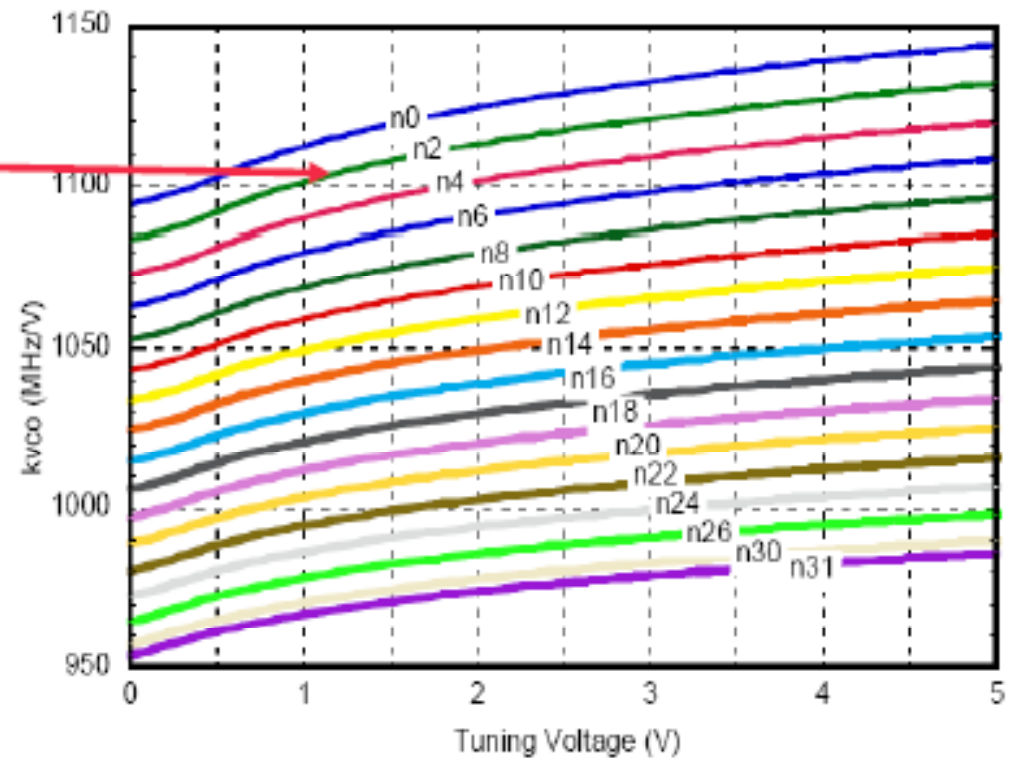
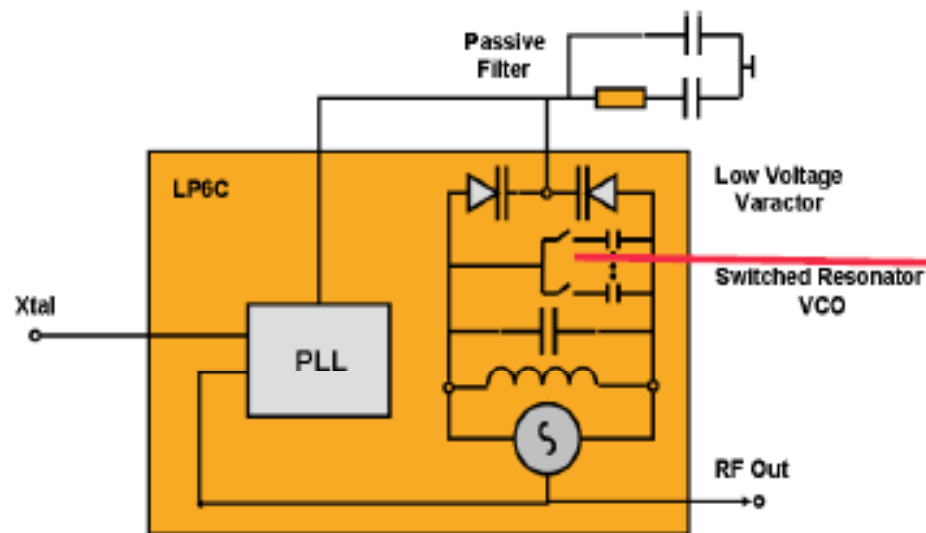


- Auto-Sweep
- Single Ramp Sweep, triggered hop-back
- Single Step-Sweep
- Hardware or software triggers
- Sweep Busy Flag

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Part Number	Function	Freq(MHz)	Output Power	Phase Noise (dBc/Hz)	FOM Integer/Frac.	Supply (V/mA)	Package
HMC820LP6C	Frac./Integer	1095~1275	10dBm	-100@1k	-226/-220dBc	+5/5	LP6
		2190~2550	6dBm	-105@10k		+5/92	
		4380~5100	-4dBm	-142@1M		+3.3/52	
HMC821LP6C	Frac./Integer	860~1040	10dBm	-100@1k	-226/-220dBc	+5/5	LP6
		1720~2080	6dBm	-105@10k		+5/92	
		3440~4160	-4dBm	-142@1M		+3.3/52	
HMC822LP6C	Frac./Integer	665~825	10dBm	-101@1k	-226/-220dBc	+5/5	LP6
		1330~1650	6dBm	-105@10k		+5/92	
		2660~3300	-4dBm	-142@1M		+3.3/52	
HMC824LP6C	Frac./Integer	780~870	10dBm	-102@1k	-227/-225dBc	+5/5	LP6
				-105@10k		+5/92	
				-143@1M		+3.3/52	
HMC826LP6C	Frac./Integer	990~1105	10dBm	-102@1k	-227/-225dBc	+5/5	LP6
				-102@10k		+5/92	
				-143@1M		+3.3/52	
HMC828LP6C	Frac./Integer	1285~1415	10dBm	-102@1k	-227/-225dBc	+5/5	LP6
				-102@10k		+5/92	
				-143@1M		+3.3/52	
HMC831LP6C	Frac./Integer	1815~2010	6dBm	-100@1k	-227/-225dBc	+5/5	LP6
				-102@10k		+5/92	
				-142@1M		+3.3/52	
HMC836LP6C	Frac./Integer	3265~3750	10dBm	-100@1k	-227/-225dBc	+5/5	LP6
				-102@10k		+5/92	
				-142@1M		+3.3/52	

► Changing a Switch steps the VCO Tuning Curve by a few MHz



Part Number	Freq Band (GHz)	Phase Noise (dBc/Hz) @10kHz Offset *Integer Mode FPFD=50MHz BW=100kHz	Phase Noise (dBc/Hz) @1MHz Offset, Open Loop VCO	Pout (dBm)
HMC764 LP6CE	7.3 - 8.2	-102	-140	15
HMC765 LP6CE	7.8 - 8.5	-102	-139	13
HMC783 LP6CE	11.5 -12.5	-100	-134	11
HMC807 LP6CE	12.4 - 13.4	-98	-134	8

压控振荡器 (VCO)

- ◆ Hittite
- ◆ Synergy

Hittite VCO内部集成了谐振，负压发生电路，可变电容电路，无须外围电路。

VOLTAGE CONTROLLED OSCILLATORS*

	Fo Frequency (GHz)	Function	Fo Output Power (dBm)	10 kHz SSB Phase Noise (dBc/Hz)	100 kHz SSB Phase Noise (dBc/Hz)	Bias Supply	Package	ECCN Code	Part Number
Wideband VCOs									
	4 - 8	Wideband VCO	5	-75	-100	+5V @ 55mA	LC4B	EAR99	HMC586LC4B
	5 - 10	Wideband VCO	5	-65	-95	+5V @ 55mA	LC4B	EAR99	HMC587LC4B
NEW!	6 - 12	Wideband VCO	1	-65	-95	+5V @ 57mA	LC4B	EAR99	HMC732LC4B
	8 - 12.5	Wideband VCO	5	-65	-93	+5V @ 55mA	LC4B	EAR99	HMC588LC4B
NEW!	10 - 20	Wideband VCO	3	-60	-90	+5V @ 70mA	LC4B	EAR99	HMC733LC4B

* HMC VCOs integrate resonator, negative resistance generator and tuning varactor circuits on-chip. No external components are required.

Typical Applications

Low Noise wideband MMIC VCO is ideal for:

- Industrial/Medical Equipment
- Test & Measurement Equipment
- Military Radar, EW & ECM

Features

Wide Tuning Bandwidth

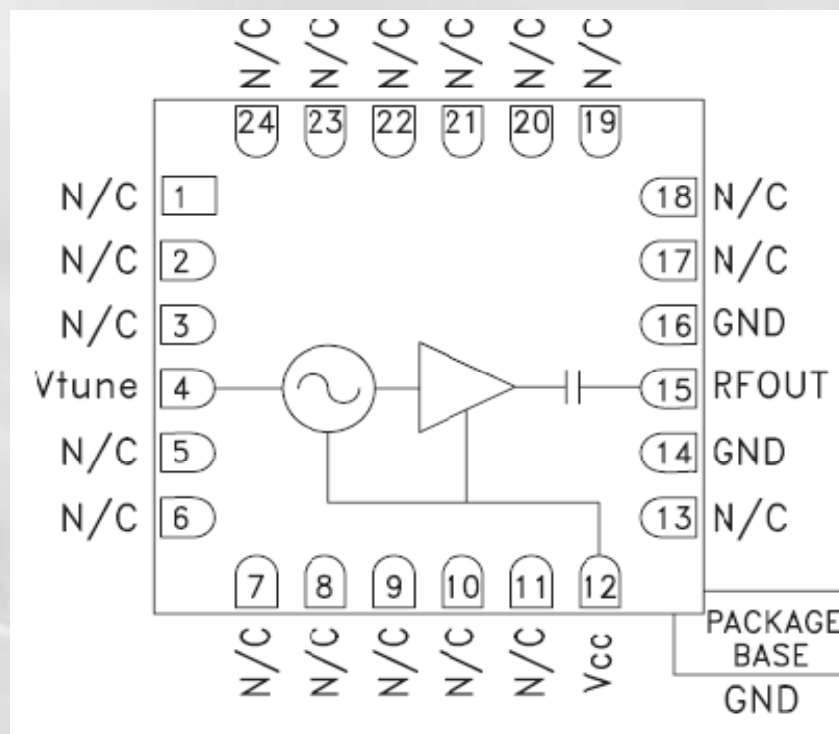
Pout: +5 dBm

Low SSB Phase Noise: -100 dBc/Hz @100 kHz

No External Resonator Needed

Single Positive Supply: +5V @ 55 mA

RoHS Compliant 4 x 4 mm SMT Package



Typical Applications

Low noise MMIC VCO w/Half Frequency, for:

- VSAT Radio
- Point to Point/Multi-Point Radio
- Test Equipment & Industrial Controls
- Military End-Use

VCO多路输出，可反馈到频综组成PLL，也可在系统中做多个本振使用。

Fo Frequency (GHz)	Fo/2 Frequency (GHz)	Function	Fo Output Power (dBm)	100 kHz SSB Phase Noise (dBc/Hz)	Bias Supply	Package	Part Number
6.65 - 7.65	3.325 - 3.825	VCO with Fo/2	13	-115	+5V @ 230mA	LP5	HMC507LP5E
7.3 - 8.2	3.65 - 4.1	VCO with Fo/2	15	-116	+5V @ 240mA	LP5	HMC508LP5E
7.8 - 8.8	3.9 - 4.4	VCO with Fo/2	13	-115	+5V @ 250mA	LP5	HMC509LP5E
9.05 - 10.15	4.525 - 5.075	VCO with Fo/2	13	-115	+5V @ 265mA	LP5	HMC511LP5E
8.45 - 9.55	4.225 - 4.775	VCO with Fo/2 & ÷4	13	-116	+5V @ 315mA	LP5	HMC510LP5E
9.5 - 10.8	4.75 - 5.4	VCO with Fo/2 & ÷4	11	-110	+5V @ 350mA	LP5	HMC530LP5E
9.6 - 10.8	4.8 - 5.4	VCO with Fo/2 & ÷4	9	-111	+5V @ 330mA	LP5	HMC512LP5E
10.43 - 11.46	5.215 - 5.73	VCO with Fo/2 & ÷4	7	-110	+3V @ 275mA	LP5	HMC513LP5E
10.6 - 11.8	5.3 - 5.9	VCO with Fo/2 & ÷4	11	-110	+5V @ 350mA	LP5	HMC534LP5E
11.1 - 12.4	5.55 - 6.2	VCO with Fo/2 & ÷4	9	-110	+5V @ 350mA	LP5	HMC582LP5E
11.17 - 12.02	5.585 - 6.01	VCO with Fo/2 & ÷4	7	-110	+3V @ 275mA	LP5	HMC514LP5E
11.5 - 12.5	5.75 - 6.25	VCO with Fo/2 & ÷4	10	-110	+5V @ 200mA	LP5	HMC515LP5E
11.5 - 12.8	5.75 - 6.4	VCO with Fo/2 & ÷4	11	-110	+5V @ 350mA	LP5	HMC583LP5E
12.4 - 13.4	6.2 - 6.7	VCO with Fo/2 & ÷4	8	-110	+5V @ 260mA	LP5	HMC529LP5E
12.5 - 13.9	6.25 - 6.95	VCO with Fo/2 & ÷4	10	-110	+5V @ 330mA	LP5	HMC584LP5E
13.6 - 14.9	6.8 - 7.45	VCO with Fo/2 & ÷4	7	-110	+5V @ 260mA	LP5	HMC531LP5E
14.25 - 15.65	7.125 - 7.825	VCO with Fo/2 & ÷4	9	-107	+5V @ 350mA	LP5	HMC632LP5E
NEW! 20.9 - 23.9	10.45 - 11.95	VCO with Fo/2 & ÷16	9	-95	+5V @ 200mA	LP4	HMC738LP4E
NEW! 23.8 - 26.8	11.9 - 13.4	VCO with Fo/2 & ÷16	8	-93	+5V @ 192mA	LP4	HMC739LP4E

Typical Applications

Low noise MMIC VCO w/Half Frequency, for:

- VSAT Radio
- Point to Point/Multi-Point Radio
- Test Equipment & Industrial Controls
- Military End-Use

VCO多路输出，可反馈到频综组成PLL，也可在系统中做多个本振使用。

Fo Frequency (GHz)	Fo/2 Frequency (GHz)	Function	Fo Output Power (dBm)	100 kHz SSB Phase Noise (dBc/Hz)	Bias Supply	Package	Part Number
6.65 - 7.65	3.325 - 3.825	VCO with Fo/2	13	-115	+5V @ 230mA	LP5	HMC507LP5E
7.3 - 8.2	3.65 - 4.1	VCO with Fo/2	15	-116	+5V @ 240mA	LP5	HMC508LP5E
7.8 - 8.8	3.9 - 4.4	VCO with Fo/2	13	-115	+5V @ 250mA	LP5	HMC509LP5E
9.05 - 10.15	4.525 - 5.075	VCO with Fo/2	13	-115	+5V @ 265mA	LP5	HMC511LP5E
8.45 - 9.55	4.225 - 4.775	VCO with Fo/2 & ÷4	13	-116	+5V @ 315mA	LP5	HMC510LP5E
9.5 - 10.8	4.75 - 5.4	VCO with Fo/2 & ÷4	11	-110	+5V @ 350mA	LP5	HMC530LP5E
9.6 - 10.8	4.8 - 5.4	VCO with Fo/2 & ÷4	9	-111	+5V @ 330mA	LP5	HMC512LP5E
10.43 - 11.46	5.215 - 5.73	VCO with Fo/2 & ÷4	7	-110	+3V @ 275mA	LP5	HMC513LP5E
10.6 - 11.8	5.3 - 5.9	VCO with Fo/2 & ÷4	11	-110	+5V @ 350mA	LP5	HMC534LP5E
11.1 - 12.4	5.55 - 6.2	VCO with Fo/2 & ÷4	9	-110	+5V @ 350mA	LP5	HMC582LP5E
11.17 - 12.02	5.585 - 6.01	VCO with Fo/2 & ÷4	7	-110	+3V @ 275mA	LP5	HMC514LP5E
11.5 - 12.5	5.75 - 6.25	VCO with Fo/2 & ÷4	10	-110	+5V @ 200mA	LP5	HMC515LP5E
11.5 - 12.8	5.75 - 6.4	VCO with Fo/2 & ÷4	11	-110	+5V @ 350mA	LP5	HMC583LP5E
12.4 - 13.4	6.2 - 6.7	VCO with Fo/2 & ÷4	8	-110	+5V @ 260mA	LP5	HMC529LP5E
12.5 - 13.9	6.25 - 6.95	VCO with Fo/2 & ÷4	10	-110	+5V @ 330mA	LP5	HMC584LP5E
13.6 - 14.9	6.8 - 7.45	VCO with Fo/2 & ÷4	7	-110	+5V @ 260mA	LP5	HMC531LP5E
14.25 - 15.65	7.125 - 7.825	VCO with Fo/2 & ÷4	9	-107	+5V @ 350mA	LP5	HMC632LP5E
NEW! 20.9 - 23.9	10.45 - 11.95	VCO with Fo/2 & ÷16	9	-95	+5V @ 200mA	LP4	HMC738LP4E
NEW! 23.8 - 26.8	11.9 - 13.4	VCO with Fo/2 & ÷16	8	-93	+5V @ 192mA	LP4	HMC739LP4E

Synergy YIG Replacement Oscillators

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FEATURES

- » Octave & Higher Than Octave Tuning
- » High Spectral Purity Signal
- » Low Power Consumption
- » Wide Modulation Bandwidth
- » Low Microphonic Effects
- » Low Cost Than YIG
- » Excellent Tuning Linearity
- » Extended Temperature Range
- » Exceptional Phase Noise Performance
- » Low Post Thermal Drift
- » High Reliability
- » High Immunity To EMI & Phase Hits
- » Compact Size: 0.5" x 0.5" & 0.75" x 0.75"
- » Rel-Pro® (Patent Pending) Technology

Model #	Frequency (MHz)	Tuning Voltage (VDC)	DC Bias VDC @ I (Typ)	Minimum Output Power (dBm)	Typical Tuning Sensitivity (MHz/V)	Typical Harmonic Suppression (dB)	Typical Frequency Pulling (MHz)	Typical Frequency Pushing (MHz/V)	Typical Phase Noise @ 10 kHz (dBc/Hz)	Package
DCYR2060-5	200 - 600	0.5 - 28	+5 @ 60 mA	+5	14 - 28	12	3	1	-119	320I F
DCYR3097-5	300 - 970	0.5 - 28	+5 @ 38 mA	+4	15 - 45	25	3	1	-112	320LF
DCYR50125-10	500 - 1250	0.5 - 24	+10 @ 43 mA	+1	15 - 90	7	5	4	-110	320I F
DCYS100200-12	1000 - 2000	0.5 - 28	+12 @ 33 mA	+4	12 - 60	20	5	5	-105	278LF
DCYS160360-5	1600 - 3600	0.5 - 20	+5 @ 47 mA	0	75 - 225	15	4	2	-90	278LF
DCYS200400-5	2000 - 4000	0.5 - 16	+5 @ 45 mA	+1	150 - 250	15	4	4	-90	278LF
DCYS200400P-5	2000 - 4000	0.5 - 22	+5 @ 45 mA	+1	40 - 200	15	4	4	-95	278LF
DCYS250500-5	2500 - 5000	0.5 - 14	+5 @ 45 mA	-3	150 - 370	15	4	7	-75	278LF
DCYS275550-5	2750 - 5550	0.5 - 22	+5 @ 43 mA	0	150 - 220	10	5	7	-77	278LF
DCYS300600-5	3000 - 6000	0.3 - 17	+5 @ 43 mA	-1	70 - 330	25	6	8	-77	278LF



278LF: 0.5" x 0.5" (12.5 x 12.5 mm)

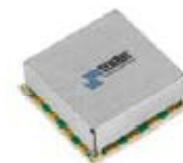
320LF: 0.75" x 0.75" (18.75 x 18.75 mm)



同轴器件，型号前加K，如KDCYS300600-5
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FEATURES

- » Octave & Higher Than Octave Bandwidth
- » Exceptional Phase Noise Performance
- » Very Low Post Thermal Drift
- » Simplifies design...better value
- » Power efficient
- » Compact Size: 0.5" x 0.5" & 0.91" x 0.91"
- » Rel-Pro® (Patent Pending) Technology



277



278LF

278LF: 0.5" x 0.5" (12.5 x 12.5 mm)
320LF: 0.91" x 0.91" (22.75 x 22.75 mm)

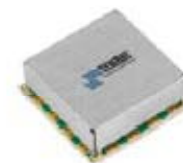
Model	Frequency MHz	Vtune (Vdc)	Bias Supply	Output Power(dBm)	Sensitivity (MHz/V)	Phase Noise @10kHz (dBc/Hz)	Package
DCFO35105-5	350-1050	0.5-25	+5V@51mA	+7	27-54	-112	277
DCMO60170-5	600-1700	0.5-25	+5V@35mA	+3	25-80	-100	278LF
DCMO110250-5	1100-2500	0.5-28	+5V@25mA	+6	30-90	-100	278LF
DCMO150318-5	1500-3200	0.5-20	+5V@24mA	+7	40-160	-93	278LF
DCMO190410-5	1900-4100	0.5-16	+5V@45mA	+2	100-200	-90	278LF
DCMO200430-5	2000-4300	0.5-17	+5V@50mA	+3	60-260	-89	278LF
DCMO250512-5	2500-5125	0.5-14	+5V@51mA	-3	130-375	-76	278LF

同轴器件，型号前加K，如KDCYS300600-5



FEATURES

- » Octave & Higher Than Octave Bandwidth
- » Exceptional Phase Noise Performance
- » Very Low Post Thermal Drift
- » Simplifies design...better value
- » Power efficient
- » Compact Size: 0.5" x 0.5" & 0.91" x 0.91"
- » Rel-Pro® (Patent Pending) Technology



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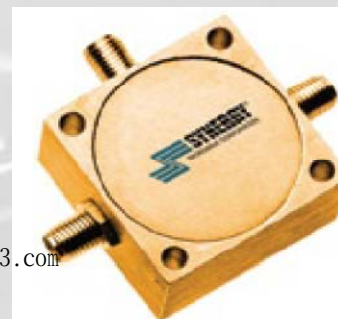


278LF

278LF: 0.5" x 0.5" (12.5 x 12.5 mm)
320LF: 0.91" x 0.91" (22.75 x 22.75 mm)

Model	Frequency MHz	Vtune (Vdc)	Bias Supply	Output Power(dBm)	Sensitivity (MHz/V)	Phase Noise @10kHz (dBc/Hz)	Package
DCFO35105-5	350-1050	0.5-25	+5V@51mA	+7	27-54	-112	277
DCMO60170-5	600-1700	0.5-25	+5V@35mA	+3	25-80	-100	278LF
DCMO110250-5	1100-2500	0.5-28	+5V@25mA	+6	30-90	-100	278LF
DCMO150318-5	1500-3200	0.5-20	+5V@24mA	+7	40-160	-93	278LF
DCMO190410-5	1900-4100	0.5-16	+5V@45mA	+2	100-200	-90	278LF
DCMO200430-5	2000-4300	0.5-17	+5V@50mA	+3	60-260	-89	278LF
DCMO250512-5	2500-5125	0.5-14	+5V@51mA	-3	130-375	-76	278LF

同轴器件，型号前加K，如KDCYS300600-5



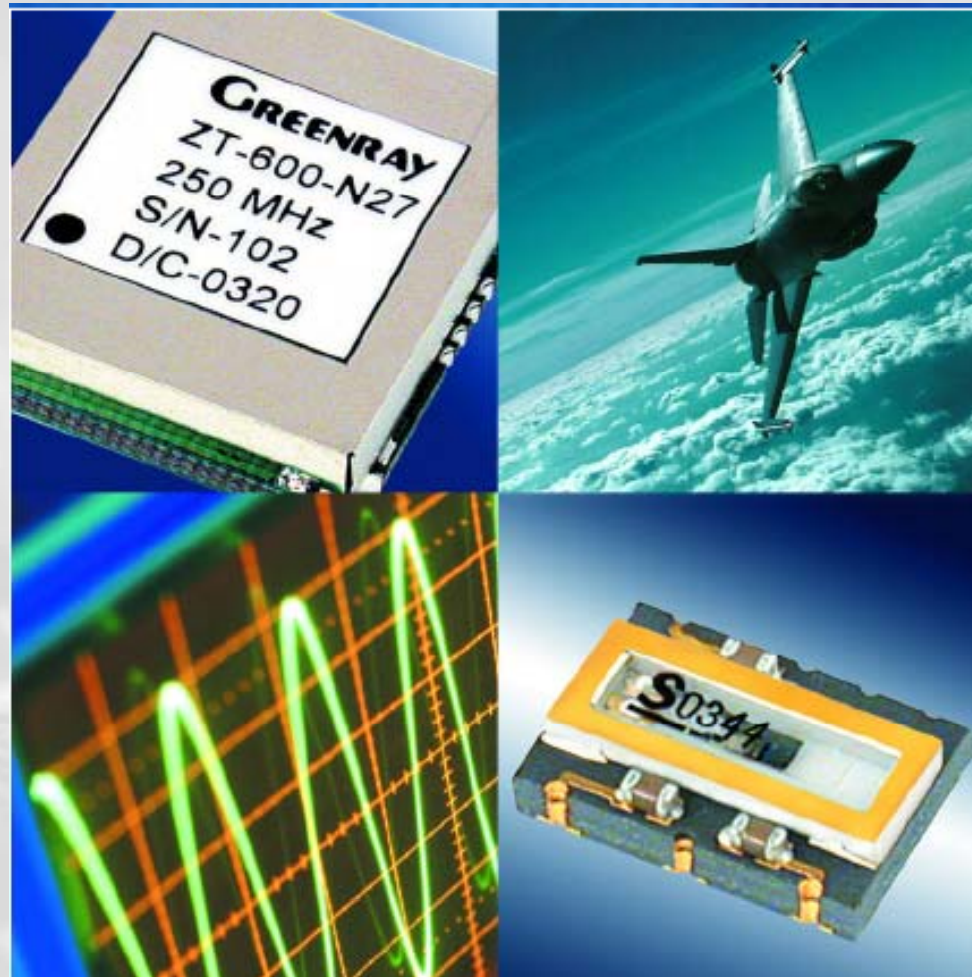
Synergy VCO:

- 1、超宽带；Ultra Wideband Oscillator
- 2、窄带优化；Optimized Band Oscillator
- 3、低频率。

ULTRA WIDEBAND OSCILLATORS

									277	278LF
Model #	Frequency (MHz)	Tuning Voltage (VDC)	DC Bias VDC @ I (Typ)	Minimum Output Power (dBm)	Typical Tuning Sensitivity (MHz/V)	Typical Harmonic Suppression (dB)	Typical Frequency Pulling (MHz)	Typical Frequency Pushing (MHz/V)	Typical Phase Noise @ 10 kHz (dBc/Hz)	Package
DCMO92200-12	925 - 2000	0.5 - 18	+12 @ 35 mA	+5	50 - 100	15	4	4	-101	278LF
DCMO100230-5	1000 - 2300	0.5 - 24	+5 @ 35 mA	+3	50 - 100	10	3	2	-98	278LF
DCMO100230-12	1000 - 2300	0.5 - 24	+12 @ 33 mA	+3	50 - 100	10	3	2	-101	278LF
DCMO110250-5	1100 - 2500	0.5 - 28	+5 @ 25 mA	+6	30 - 90	18	5	5	-100	278LF
DCMO110250-8	1100 - 2500	0.5 - 28	+8 @ 30 mA	+4	30 - 90	15	5	5	-102	278LF
DCMO130275-5	1300 - 2750	0.5 - 24	+5 @ 20 mA	+3	20 - 150	10	4	4	-93	278LF
DCMO135270-8	1350 - 2700	0.5 - 20	+8 @ 36 mA	+4	45 - 150	15	8	5	-93	278LF
DCMO150318-10	1500 - 3100	0.5 - 22	+10 @ 32 mA	+7	45 - 120	10	12	5	-96	278LF
DCMO150318-5	1500 - 3200	0.5 - 20	+5 @ 24 mA	+7	40 - 160	10	10	5	-93	278LF
DCMO150320-5	1500 - 3200	0.5 - 18	+5 @ 33 mA	0	100 - 225	12	12	2	-92	278LF
DCMO170340-3	1700 - 3400	0.5 - 20	+3.5 @ 18 mA	0	30 - 180	15	12	8	-85	278LF
DCMO170345-5	1700 - 3450	0.5 - 16	+5 @ 43 mA	+4	120 - 200	15	14	12	-88	278LF
DCMO172332-5	1720 - 3320	0.5 - 24	+5 @ 22 mA	+5	20 - 150	18	5	5	-94	278LF
DCMO190410-5	1900 - 4100	0.5 - 16	+5 @ 45 mA	+2	100 - 200	10	4	4	-90	278LF
DCMO200430-5	2000 - 4300	0.5 - 17	+5 @ 50 mA	+3	60 - 260	10	10	5	-89	278LF
DCMO250512-5	2500 - 5125	0.5 - 14	+5 @ 51 mA	-3	130 - 375	15	14	7	-76	278LF

晶振: Greenray



Model Number	Frequency Range (MHz)	Input Power (W)	Input Voltage (Vdc)	Widest Temp. Range (°C)	Best Freq. vs. Temp. Stability	Output Signal	Aging per Day	Phase Noise @ 10MHz(dBc/Hz)	10Hz - 100Hz - Floor	Package Drawing
YH1320	10 - 100	< 2.5	12	-55 to +85	$\pm 5 \times 10^{-9}$	HCMOS	$\pm 3 \times 10^{-10}$	125	- 150 - 165	A
YH1321	10 - 100	< 2.5	12	-55 to +85	$\pm 5 \times 10^{-9}$	10dBm Sine	$\pm 3 \times 10^{-10}$	125	- 150 - 165	A
YH1322	10 - 100	< 2.5	12 - 20	-55 to +85	$\pm 5 \times 10^{-9}$	10dBm Sine	$\pm 3 \times 10^{-10}$	125	- 150 - 168	D
YH1350	5 - 100	< 1.7	12 - 20	-55 to +85	$\pm 1 \times 10^{-8}$	HCMOS	$\pm 3 \times 10^{-10}$	110	- 135 - 155	B
YH1351	5 - 100	< 1.7	12 - 20	-55 to +85	$\pm 1 \times 10^{-8}$	10dBm Sine	$\pm 3 \times 10^{-10}$	125	- 145 - 165	B
YH1310	10 - 30	< 1.4	3.3 - 15	-40 to +85	$\pm 5 \times 10^{-9}$	5dBm Sine	$\pm 3 \times 10^{-10}$	120	- 140 - 150	C
YH1330	10 - 30	< 1	5	-20 to +70	$\pm 1 \times 10^{-7}$	Sine	$\pm 2 \times 10^{-9}$	110	- 115 - 145	E
YH1410	5 - 100	< 1	3.3 - 15	-55 to +85	$\pm 1 \times 10^{-9}$	10dBm Sine	$\pm 3 \times 10^{-10}$	130	- 145 - 165	F
YH1420	10 - 50	< 1	3.3 - 15	-40 to +85	$\pm 5 \times 10^{-8}$	HCMOS	$\pm 1 \times 10^{-9}$	90	- 120 - 150	I
YH1421	10 - 50	< 1	3.3 - 15	-40 to +85	$\pm 5 \times 10^{-8}$	Sine	$\pm 1 \times 10^{-9}$	95	- 125 - 155	I
YH1440	10 - 100	< 2	3.3 - 15	-40 to +85	$\pm 5 \times 10^{-8}$	ACMOS	$\pm 1 \times 10^{-9}$	105	- 125 - 155	G
YH1441	10 - 100	< 2	3.3 - 15	-40 to +85	$\pm 5 \times 10^{-8}$	0dBm Sine	$\pm 1 \times 10^{-9}$	105	- 125 - 155	G
YH1460	10 - 100	< 2	3.3 - 15	-40 to +85	$\pm 5 \times 10^{-9}$	Sine	$\pm 3 \times 10^{-10}$	120	- 140 - 155	F
YH1461	10 - 100	< 2	3.3 - 15	-40 to +85	$\pm 5 \times 10^{-9}$	ACMOS	$\pm 3 \times 10^{-10}$	120	- 140 - 155	F
ZYH1000	10 - 50	< 0.2	3.3 or 5	-40 to +85	$\pm 1 \times 10^{-7}$	CMOS/Sine	$\pm 1 \times 10^{-9}$	95	- 125 - 150	L
ZYH1002	10 - 50	< 0.2	3.3 or 5	-40 to +85	$\pm 1 \times 10^{-7}$	CMOS/Sine	$\pm 1 \times 10^{-9}$	95	- 125 - 150	I



TCXO系列:

SUNSTAR微波光电 <http://www.rfoe.net/> TEL:0755-83396822 FAX:0755-83376182 E-MAIL:szss20@163.com

❑ 小体积, 5mm*3mm (T53等)

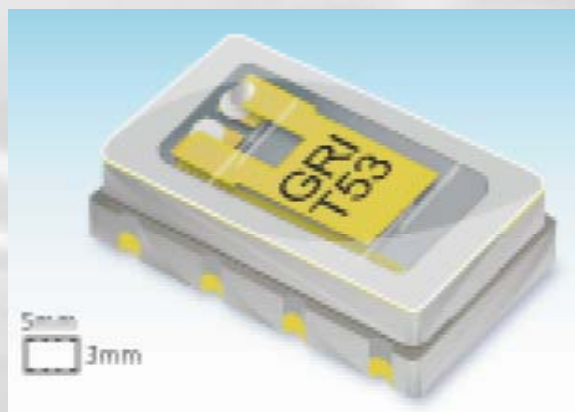
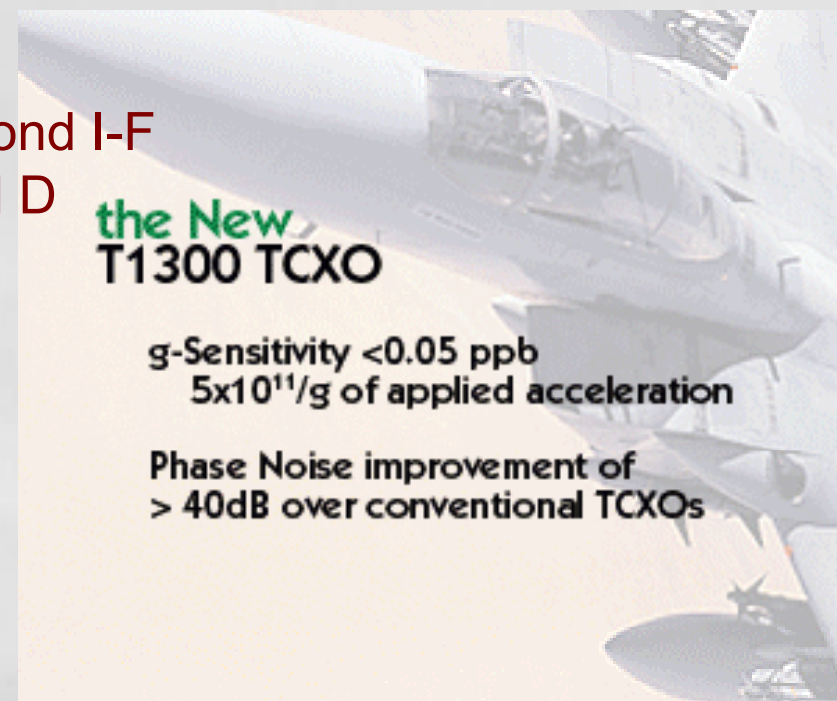
❑ 高可靠性 (T53等)

Vibration – per MIL-STD-202G, Meth 214, Cond I-F

Shock - per MIL-STD-202G, Meth 213, Cond D

❑ 极低加速度灵敏度 (T1300等)

G-Sensitivity $< 5 \times 10^{-11}/g$, total gamma



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