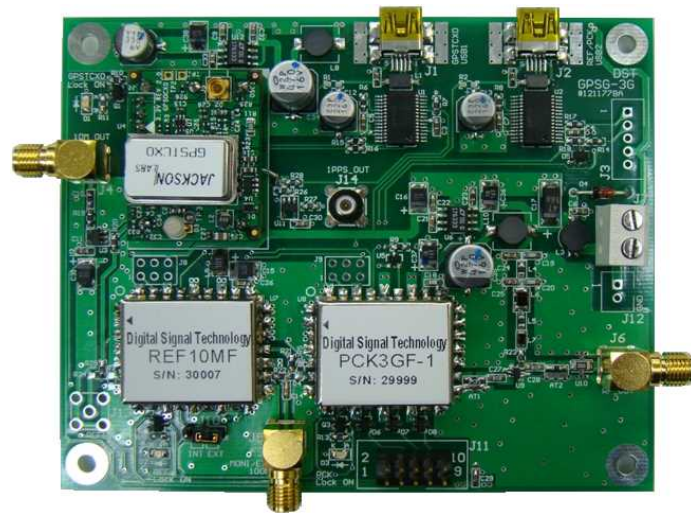


Programmable Frequency Synthesizer

GPS Synchronized Oscillator

GPSG-3G



Features

- GPS synchronized
- Low phase noise
- Wide band 50MHz~3000MHz
- Reference clock : 10MHz and 100MHz
- Temperature compensated TCXO
- 1KHz step



Digital Signal Technology, Inc

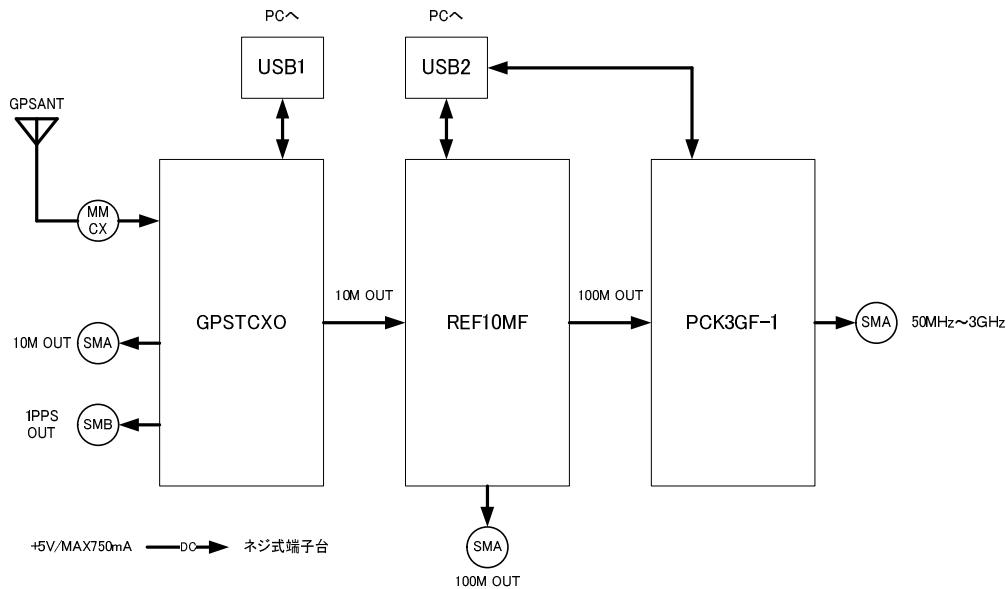
2-9-10, Kitahara, Saitama, 351-0036, Japan

TEL 81-48-470-7030 FAX 81-48-470-7022

<http://www.dst.co.jp/en>

General Description

GPSTC-3G is an open-framed, non-enclosed signal generator board, equipped with PCK3GF-1, REF 10MF and GPS synchronized 10MHz reference clock. GPSTC-3G can generate your desired clock signal with 1 KHz resolution in an extremely wide band of 50MHz~3000MHz.



Specification

PCK3GF-1

Output Frequency Range	50~3000MHz	
Frequency Resolution	1KHz	
Phase Noise 3GHz (typical)	-46 dBc/Hz	@ 10 Hz
	-86 dBc/Hz	@ 100 Hz
	-104 dBc/Hz	@ 1 KHz
	-109 dBc/Hz	@ 10 KHz
	-106 dBc/Hz	@ 100 KHz
	-135 dBc/Hz	@ 1 MHz
	-156 dBc/Hz	@ 10 MHz
Spurious	Max -65dBc	(Except harmonics)
Output Harmonic Level	Max -8dBc	
Output Level	More than+10dBm	
Lock Output	Lock: High level	unlock: Low level
	3.3V CMOS level	
Lock time	Max 40m sec	
Interface	(1) USB2.0 (Shared REF10MF)	
	(2) SPI serial	3.3V CMOS level
		3 bytes date (24 bits)

REF10MF

Output Frequency	100MHz	
Output Level	> 0dBm	
Output Harmonic Level	max -8dBc	
Phase Noise 100MHz(typical)	-77 dBc/Hz	@ 10 Hz
	-119 dBc/Hz	@ 100 Hz
	-142 dBc/Hz	@ 1 KHz
	-154 dBc/Hz	@ 10 KHz
	-160 dBc/Hz	@ 100 KHz
	-162 dBc/Hz	@ 1 MHz
Spurious	max -70dBc (except harmonic)	
Output Unlock	lock: High level	unlock: Low level
	3.3V CMOS level	
Interface	USB2.0 (shared with PCK3GF-1)	

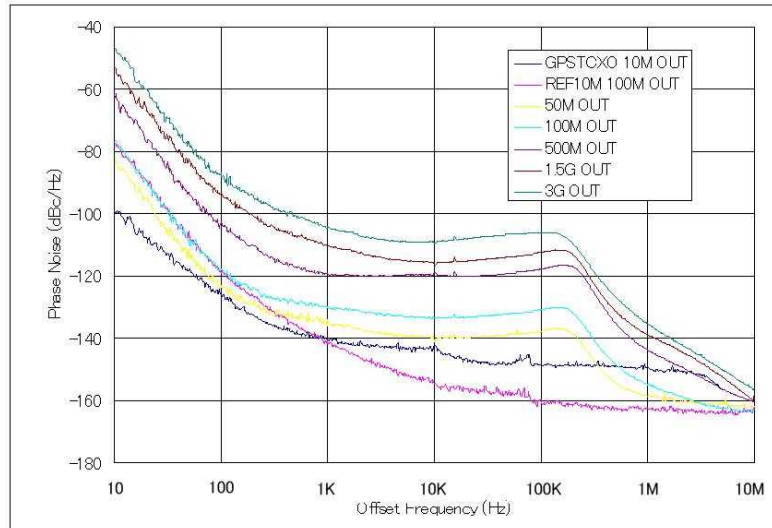
GPSTCXO

Output Frequency	10MHz square wave	
10MHz Retrace	$\pm 2E-08$ After 1 Hour @+25°C (no GPS)	
Frequency Stability	$\pm 1.5e-07$ (no GPS), $<5E-12$ over 24hrs (with GPS)	
Output Level	3.3Vpp open end	
	1.5Vpp 50 Ω terminated	
Phase Noise	-99 dBc/Hz	@ 10 Hz
@10MHz typical	-126 dBc/Hz	@ 100 Hz
	-140 dBc/Hz	@ 1 KHz
	-142 dBc/Hz	@ 10 KHz
	-149 dBc/Hz	@ 100 KHz
	-150 dBc/Hz	@ 1 MHz
1PPS Output Level	3.3V CMOS	
1PPS Accuracy	+/-75ns to UTC RMS(1-Sigma) GPS Locked (<20ns typ)	
GPS Lock Time	After power-on about 30minutes-1hour	
Interface	USB2.0	

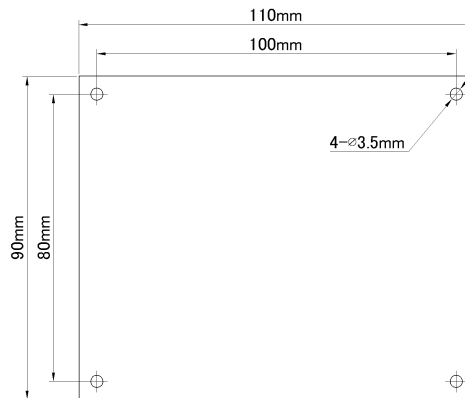
Common Specification

Supply Voltage	+5V+/-5% max 750mA		
Dimensions	110 x 90 (mm)		
Operating Temperature Range	0 - +60 degree C		
Storage Temperature Range	-30 - +70 degree C		
Accessory	GPS antenna (with BNC connector)	10m	1
	MMCX/BNC adapter cable	15cm	1
	USB cable	1.5m	2

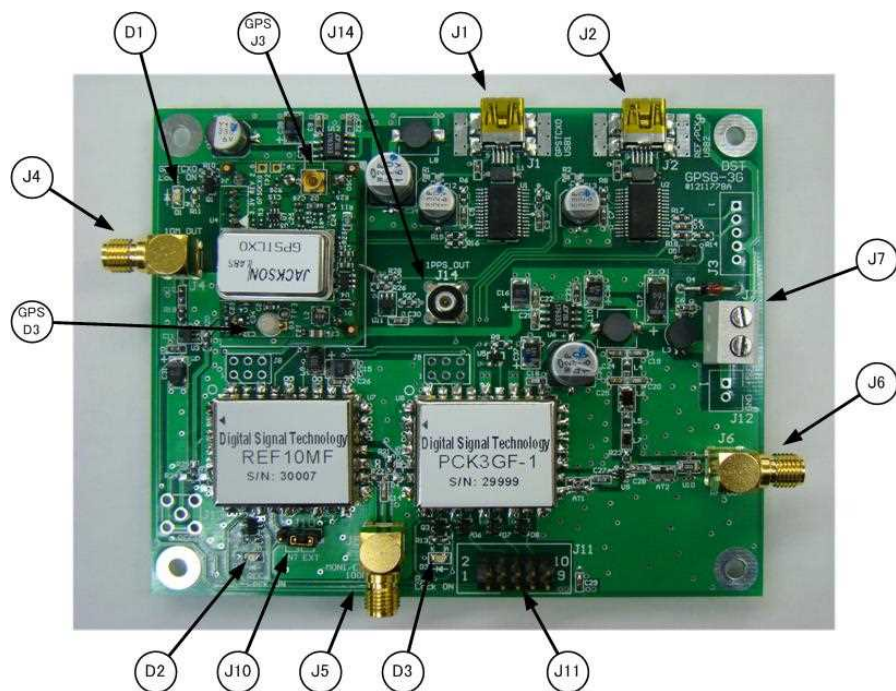
Phase noise (typ value)



Outer Dimensions



Appearance



● Name and description for each part

No.	Name	Description
J1	USB1	USB communications interface pin for GPSTCXO Connector : USB-Mini-B
J2	USB2	USB communications interface pin for REF10MF, PCK3GF-1 Connector : USB-Mini-B
J4	10MHz OUT	10MHz Output terminal of 10MHz GPSTCXO Levels : 3.3V CMOS(open end) Connector : SMA-J
J5	MONI/EXT	Monitor output for 100Mhz reference clock of REF10MF Output Level : more than 0dBm (50 Ω terminated) Connector : SMA-J
J6	REF OUT	Signal output Connector : SMA-J Output impedance : 50 Ω
J7	PWR	+5V power supply pin 2 pin screw terminal Connector Part Number : ML-35A-2P (Sato Parts)
J10	EXT/INT	Internal and external switching pin of REF10MF
J11	HEADER interface	SPI Control, unlock signal, power supply pin 2.54mm pitch 5x2 pin header connector Connector Part Number : PS-10PE-D4T1-PN1 (JAE)
J14	1PPS OUT	1PPS output terminal of GPSTCXO Connector : SMB-J level : 3.3 COMOS
GPS_J3	GPS ANT IN	GPS antenna input pin of GPSTCXO Connector : MMCX Connect GPS antenna with 15cm MMCX-BNCJ conversion cable
D1	GPSLOCK1	LED lights when synchronized to GPS
D2	REFLOCK	LED lights when synchronized to an external 10MHz clock LED doesn't light in case of the internal clock because VCO is free-run
D3	PCKLOCK	LED lights when synchronized to an external 100MHz clock
GPS_D3	GPSLOCK2	Red LED and Green LED Both of them lights for a second and soon goes off when the power is turned on. As soon as the Red LED begins to blink, the internal TCXO stars to lock to UTC. After 30 minutes to 1 hour, Green LED light..

● J11 Connector and pin assignment

No.	Name	Description
1	GND	Power Supply/signal GND
2	GND	Power Supply/signal GND
3	+5V	Power input +5V Not using the PWR connector The power can be supplied from here
4	+5V	The same as above
5	LOCK	PLL lock status output of PCK3GF-1

3.3V CMOS

6	/CS	Chip select under SPI mode Input low active 3.3V CMOS Internally pulled up
7	LOCK	PLL lock status output of REF 10MF 3.3V CMOS
8	SDI	Serial data input under SPI mode 3.3V CMOS
9	LOCK	GPS signal output of GPSTCXO 3.3V CMOS
10	CLK	Serial clock input under SPI mode 3.3V CMOS

● Option : Desk Top type

