

User Manual V2.3
for
CG50
50MHz, 1PPM Precision Clock Generator

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1.0 Hardware Installation

Your CG50 Clock Generator card package should include:

- 1) CG50 Clock Generator card in an anti-static package
- 2) (2) software diskettes containing
 - A) Drivers for DOS/Win95/98/NT
 - B) Windows 95 GUI (includes "Setup.exe" installation)
- 3) Product Brochure and this Installation Guide

Installing the CG50 Clock Generator Card:

The CG50 Clock Generator card fits any half-sized 8-bit ISA expansion slot in a 286 based (or better) personal computer (PC).

Before you install:

To avoid damage from static: Turn off your computer. Touch the computer's metal frame to discharge static before you remove the card from its anti-static package, then start the installation.

- 1) With your computer turned off, unscrew and slide the cover off your computer.
- 2) Unscrew and remove the bracket/slot cover from an empty ISA expansion slot.
- 3) Check the address jumper. Verify it is set to an available address. The factory set default address is: 220H.
- 4) Grasp the card by its top edge and press it firmly into the expansion slot. Use a gentle rocking motion to seat the card properly.
- 5) Secure the card's bracket with the slot cover screw.

Leave the computer cover off until after you install the software. Use care when the cover is off.

- 6) Reattach any cables you may have removed.

2.0 Software Installation

DOS Setup and Operation

If you are running DOS, insert the setup diskette, then copy the contents of the diskette into a convenient directory.

Running from DOS

Typing "CG50B" without any parameters causes the command syntax and jumper configuration information is displayed to the user:

```
CG50B Command Line Driver Version 2.22
Copyright (c) 1996-1998 Chase Scientific Company
Syntax => CG50B <Desired_Frequency> <Input_Frequency> <Base_Address>
          <Xstal_Override - used in case crystal auto-detect fails>
where
  Desired_Frequency = 1 to 50000000 [0 = Sleep]
  Input_Frequency = 1000000 to 50000000 (optional parameter)
  Base_Address = 220,240,260,280,290,2A0,330,350 (optional parameter)
  Xtal_Override = 1000000 to 50000000 (optional crystal value override)
```

Use "-" as optional parameter placeholder => program ignores this parameter

Jumper Configurations:

```
220=open,open,open,open
240=open,open,jmpr,open
260=open,jmpr,open,open
280=open,jmpr,jmpr,open
290=jmpr,open,open,open
2A0=jmpr,open,jmpr,open
```

330=jmpr,jmpr,open,open
350=jmpr,jmpr,jmpr,open

Jumper configurations are setup as follows;

Address jumper 1 jumper 2 jumper 3 jumper 4

Where *Address* is the desired address. Jumpers are added depending on the selected address. For example, address 240h requires a jumper in the *jumper 3* position. Jumpers are viewed with the BNC connectors facing to the right. *jumper J* is on the far left position of JXX. *jumper 4* is on the far right position of JXX.

Note: THIS DRIVER TO BE USED ONLY WITH CG50 REV B BOARDS.

2.1 Command Line Examples

Example 1:

cg50 30000000 {Uses internal ref clock; outputs 30 MHz clocks}

Example 2:

cg50 15000000 - 240 {Must also add jumper to use address 240h - 220h default}
{Note "-" is used as placeholder}

Example 3:

cg50 27000000 20000000 {uses input clock of 20MHz to generate 27MHz}

Example 4:

cg50 10000000 - - 12888000 {overrides on-board clock oscillator auto-detection}

Note: 12.888MHz is the frequency of the on-board oscillator

2.2 Windows 95 Software GUI Installation

- 1) Place diskette labeled Windows 95/NT GUI into drive.
- 2) Run setup file "setup95.exe" to setup application for Windows 95 or file "setupNT.exe" to setup application for Windows NT.
- 3) After installation see "readme.txt" file for latest information.

2.4 Windows 95/NT DLL Driver Information (Readme.txt)

Content of "CG50 Drivers: DOS, Win95/98/NT" diskette:

```
----- D I R E C T O R I E S -----
BASE_DIR
|
| readme.txt           // This file.
| cg50_manual_v2.2.pdf // Manual in PDF format.
|
| CG50B_GUI_95_NT
| | Cg50revb.exe       // Windows 95 GUI for CG50.
| | Cg50.ini           // Contains last settings.
|
| CG50B_DLL_95_NT
| | CG50b_DLL_95.dll   // Windows 95 DLL (also works for NT).
| | CG50.ini           // Contains last settings.
| | CG50b_DLL_Tester.exe // Test GUI that uses CG50b_DLL_95.dll.
| |                   // Use to verify that DLL is functioning.
| |                   // Also works for NT.
|
| CG50B_DRV_95_NT
| | Vichw11.vxd        // Windows 95 Device driver - copy this
| |                   // to c:\<windows95>\system\
| | Vichw11.sys        // Windows NT Driver - copy this virtual driver
| |                   // to c:\<winNT>\system32\drivers\
|
| | tvichw32.ini       // run "regini.exe tvichw32.ini" to install
| | regini.exe         // proper registry keys for NT ONLY.
|
|
|
| DOS_Cmd_Line_EXE
| | Readme.txt         // Read this file for information on DOS program.
| | Cg50b.exe          // DOS Command Line executable.
```

DLL INFORMATION

CALLING CONVENTION: cdecl (default for Microsoft Visual C++)

SYNTAX (pascal example):

```
Run_CG50_95(DesiredFreq, InputFreq, Address, OverrideFreq: longint);
```

```
where DesiredFreq = 1 to 50000000
      InputFreq = 10000000 to 50000000 (optional parameter) [0 = sleep]
      Address = 220,240,260,280,290,2A0,330,350 (optional parameter)
      OverrideFreq = 10000000 to 50000000 (optional crystal value override)
```

Use "-1" as optional parameter placeholder => program ignores this parameter

Jumper Configurations:

```
-----
220h = open,open,open,open
240h = open,open,jmpr,open
260h = open,jmpr,open,open
280h = open,jmpr,jmpr,open
290h = jmpr,open,open,open
2A0h = jmpr,open,jmpr,open
330h = jmpr,jmpr,open,open
350h = jmpr,jmpr,jmpr,open
```

```
Run_CG50_95(15000000, -1, 576, -1)
{Must also add jumper to use address 240h; Note 220h is default}
```

```
Run_CG50_95(27000000, 20000000, 576, -1)
{uses input clock of 20MHz to generate 27MHz}
```

2.41 Windows 95/NT DLL Usage

Calling Convention: cdecl (default for Microsoft Visual C++)

SYNTAX (pascal example):

Run_CG50_95(DesiredFreq, InputFreq, Address, OverrideFreq: longint);

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OverrideFreq = 10000000 to 50000000 (optional crystal value override)

Use "-1" as optional parameter placeholder => program ignores this parameter

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280h = open,jmpr,jmpr,open
290h = jmp,open,open,open
2A0h = jmp,open,jmpr,open
330h = jmp,jmpr,open,open
350h = jmp,jmpr,jmpr,open

Jumper Configurations

Address jumper 1 jumper 2 jumper 3 jumper 4

Where *Address* is the desired address. Jumpers are added depending on the selected address. For example, address 240h requires a jumper in the *jumper 3* position. Jumpers are viewed with the BNC connectors facing to the right. *jumper J* is on the far left position of JXX. *jumper 4* is on the far right position of JXX.

DLL Examples

Example 1:

Run_CG50_95(15000000, -1, 576, -1)

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Run_CG50_95(27000000, 20000000, 576, -1)

{Uses input clock of 20MHz to generate 27MHz}

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