

**Cardinal Components**

**PG-6000 Programmer**

**Operator's Instruction Manual**

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# **PG-6000 Programmer**

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## SECTION 1.0 GETTING STARTED

### 1.1 Introduction

The PG-6000 programmer consists of 3 major components.

1. The PG-6000 Programmer (including adaptor boards).
2. Cables
3. Frequency counter - model BK Precision 1856D (not included)

### 1.2 Software Installation

A PC running Windows 7 or higher is required to use this software. Also required are 2 available USB ports.

Insert the enclosed CD into your computer and locate the PG6000 folder. Copy this folder to the C: drive of your computer.

After the software is loaded, open the PG6000 folder. Then open the Cardinal folder. Find the LynxLite.exe file and copy it to the desktop.



## SECTION 2.0 Connecting the system

### 2.1 Setting up the PG-6000 Programmer

#### 2.1.1 What is in the box?

The following will be used to set up the PG-6000 programmer.

1. RF cable used to connect the frequency counter to the PG-6000.
2. USB to serial adaptor used to connect the computer to the serial extension cable.
3. Serial extension cable used to connect the USB adaptor to the frequency counter model BK Precision 1856D.
4. USB cable, used to connect the PG-6000 to the computer.
5. Power supply for the PG-6000.
6. CD with PG6000 software.

#### 2.1.2 Connecting the frequency counter.

Using the supplied USB to DB9 adaptor, connect the USB end to the USB port on the computer and the DB9 end to the serial extension cable. Connect the other end of the serial extension cable to the back of the frequency counter.

Using the supplied SMA to SMA RF cable, connect one end to the front of the frequency counter channel C and connect the other end to the back of the PG-6000 to the connector marked frequency counter.

Connect the supplied power cord to the back of the frequency counter but do not connect to power at this time.

### 2.1.3 Connecting the PG-6000

Using the supplied USB A to USB A cable, connect one end to the USB port on the computer and connect the other end to the back of the PG-6000 to the connector marked computer.

Using the supplied power supply marked PG-6000, connect the power connector to the back of the PG-6000 to the connector marked power. Do not connect to power at this time.

## SECTION 3.0 Using the PG-6000 Programmer

### 3.1 Introduction

At this point we are ready to connect power to all the equipment. It is recommended to use a surge protected power strip to connect all of the equipment. Plug the frequency counter, computer, and PG-6000 programmer to the power strip and turn it on. Turn on the frequency counter by pressing the power button on the front panel. Turn on the laptop by pressing the on button. The PG-6000 will automatically be powered as indicated by the green led on the back panel.

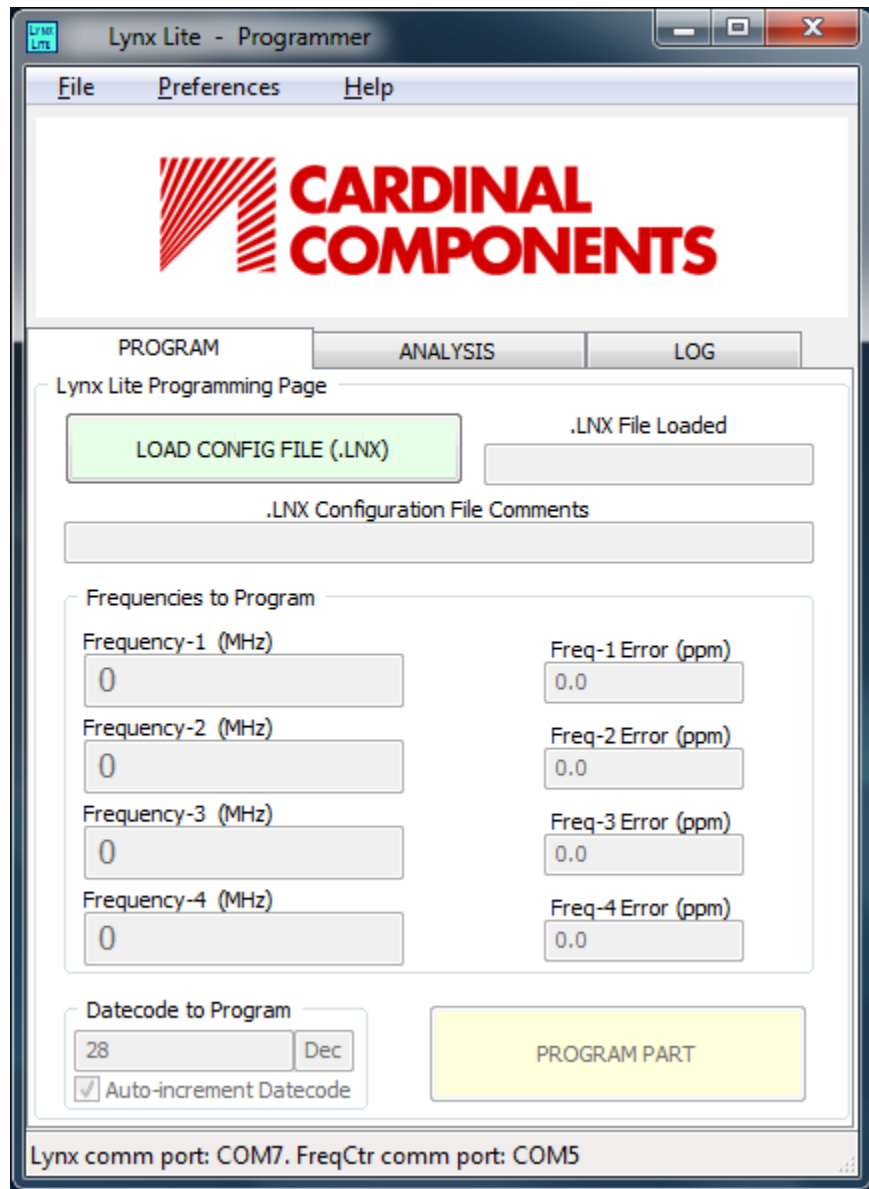
### 3.2 Running the Lynx Lite Program

#### 3.2.1 Setup

Double click on the Lynx Lite icon to start the application.

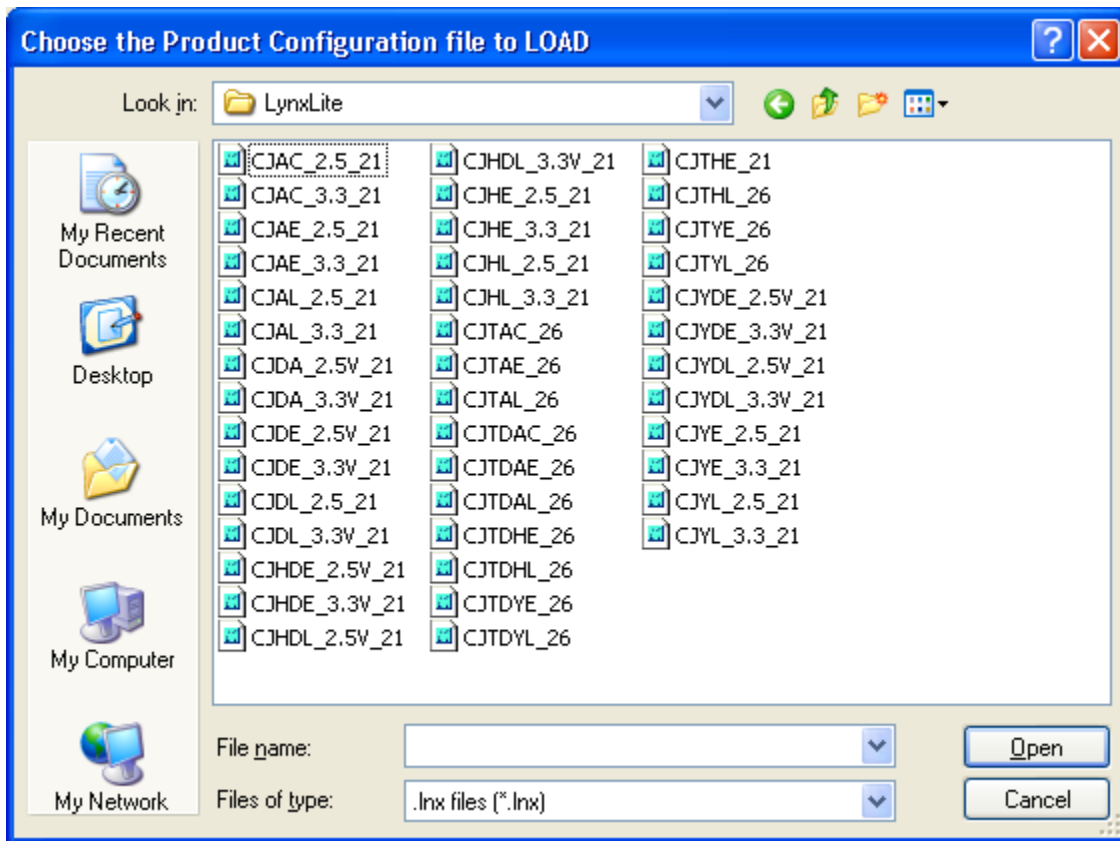


The screen will look like this:



### 3.2.2 Loading a configuration file for programming.

Before you can program a part, a configuration file must be loaded into the programmer. Select Load Config File. The screen will look like this.



The correct configuration file must be selected in order to program the part correctly.

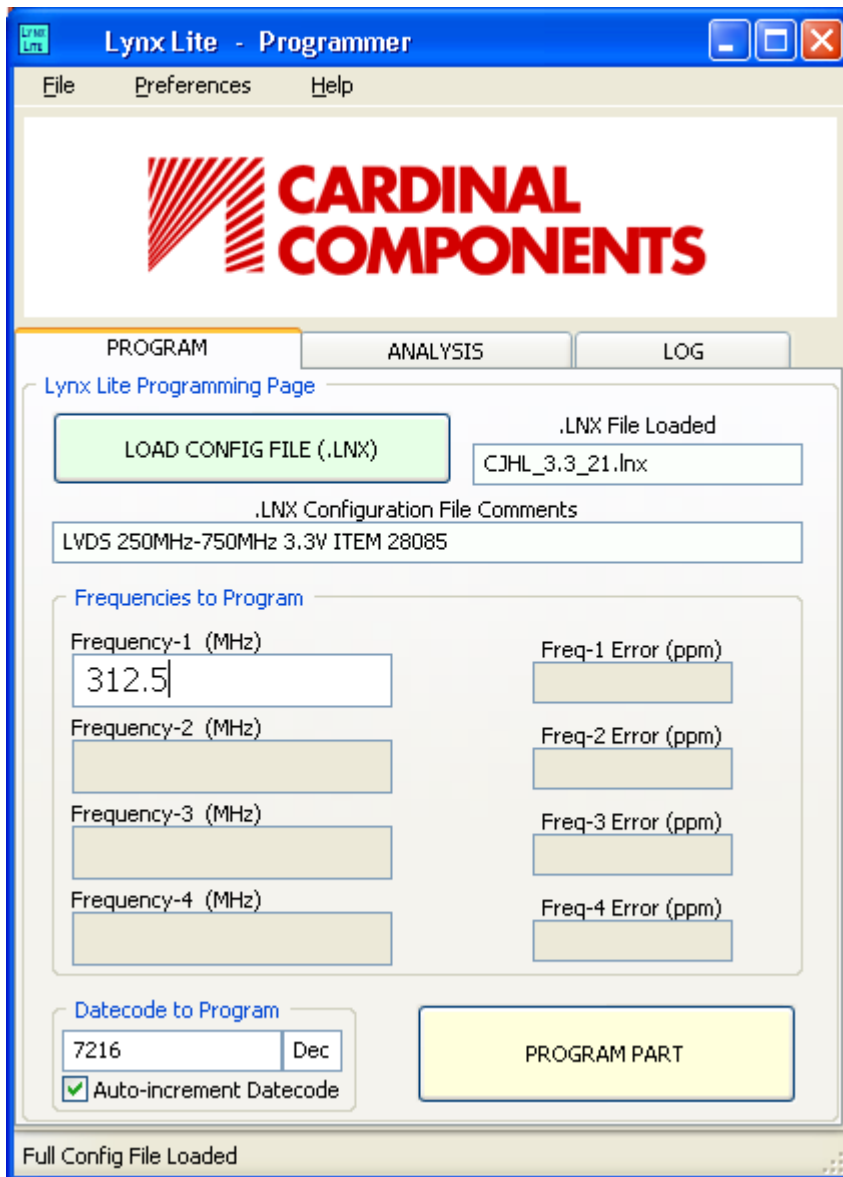


For example, to program a 312.5 MHz 3.3 Volt LVDS part, select the configuration file named CJHL\_3.3V\_21. This configures the programmer for LVDS and 250 MHz to 750 MHz.

### 3.2.3 Setting frequency to be programmed

In the Frequency 1 box, type 312.5.

The screen will look like this.



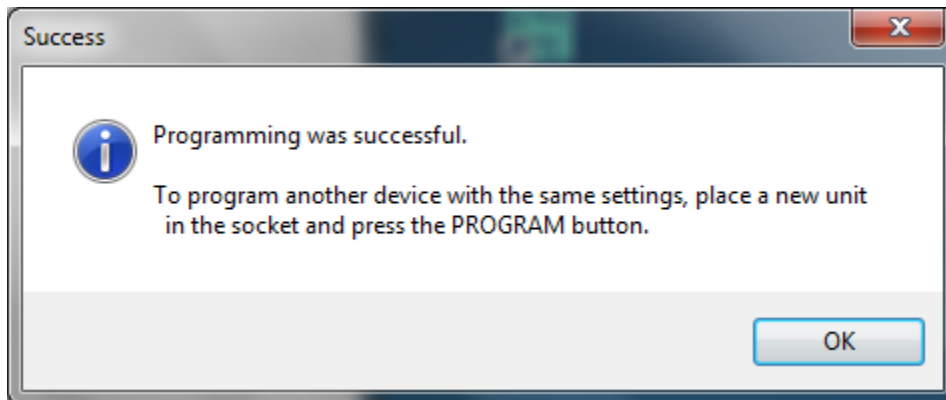
The correct configuration file has now been loaded and is set for the target frequency.

**PLEASE NOTE: PARTS ARE VERY SENSITIVE TO STATIC DISCHARGE. PLEASE USE PROPER HANDLING. A GROUND STRAP MUST BE USED AT ALL TIMES WHEN HANDLING PARTS OR USING THE PROGRAMMER.**

### 3.2.4 Programming a part.

Insert a blank part into the programming socket (DUT), observing proper orientation of the part, and click on the PROGRAM PART button.

After programming, the following screen will appear.



### 3.2.3 The Log File.

If the Log tab is selected, any errors will be listed. This list may assist with troubleshooting if the part cannot be programmed.

The log can also be saved or cleared by selecting the Save Log or Clear Log buttons.

### 3.3 In Case of Problems.

If parts cannot be programmed or a communication error appears try the following.

Make sure that there is a blank part in the programming socket.

Check that the part is inserted correctly

Check that all cables are connected.

If you still have problems, disconnect the power plug from the PG6000 programmer. Wait 30 seconds then reconnect. This will reset the USB ports.

If there is a communication error, open the Control Panel on your computer. Then select Device Manager. Look for connected USB devices and make note of the USB port connected to the Frequency Counter and the PG-6000. The programmer's settings must match these port numbers. To see the programmer settings, click the preferences tab, then the Set Com Ports tab. You can now modify the settings.

### 3.4 List of Configuration Files

#### CJ Series Configuration Files

The following is a list of configuration file names. Please refer to this list when loading a file for programming.

Part to be Programmed	Blank Item Number	Configuration File Name	Comments
CJAC 2.5V	28083	CJAC_2.5V_21	CMOS 2.5V 10-250 MHz
CJAC 3.3V	28083	CJAC_3.3V_21	CMOS 3.3V 10-250 MHz
CJAL 2.5V	28084	CJAL_2.5V_21	LVDS 2.5V 10-250 MHz
CJAL 3.3V	28084	CJAL_3.3V_21	LVDS 3.3V 10-250 MHz
CJAE 2.5V	28084	CJAE_2.5V_21	LVPECL 2.5V 10-250 MHz
CJAE 3.3V	28084	CJAE_3.3V_21	LVPECL 3.3V 10-250 MHz
CJHL 2.5V	28085	CJHL_2.5V_21	LVDS 2.5V 250-750 MHz
CJHL 3.3V	28085	CJHL_3.3V_21	LVDS 3.3V 250-750 MHz
CJHE 2.5V	28085	CJHE_2.5V_21	LVPECL 2.5V 250-750 MHz
CJHE 3.3V	28085	CJHE_3.3V_21	LVPECL 3.3V 250-750 MHz
CJYL 2.5V	28086	CJYL_2.5V_21	LVDS 2.5V 750-1.5 GHz
CJYL 3.3V	28086	CJYL_3.3V_21	LVDS 3.3V 750-1.5 GHz
CJYE 2.5V	28086	CJYE_2.5V_21	LVPECL 2.5V 750-1.5 GHz
CJYE 3.3V	28086	CJYE_3.3V_21	LVPECL 3.3V 750-1.5 GHz

## CJ Series Configuration Files (continued)

The following is a list of configuration file names. Please refer to this list when loading a file for programming.

Part to be Programmed	Blank Item Number	Configuration File Name	Comments
CJDA 2.5V	28091	CJDA_2.5V_21	CMOS DUAL 2.5V 10-250 MHz
CJDA 3.3V	28091	CJDA_3.3V_21	CMOS DUAL 3.3V 10-250 MHz
CJDL 2.5V	28092	CJDL_2.5V_21	LVDS DUAL 2.5V 10-250 MHz
CJDL 3.3V	28092	CJDL_3.3V_21	LVDS DUAL 3.3V 10-250 MHz
CJDE 2.5V	28092	CJDE_2.5V_21	LVPECL DUAL 2.5V 10-250 MHz
CJDE 3.3V	28092	CJDE_3.3V_21	LVPECL DUAL 3.3V 10-250 MHz
CJHDL 2.5V	28093	CJHDL_2.5V_21	LVDS DUAL 2.5V 250-750 MHz
CJHDL 3.3V	28093	CJHDL_3.3V_21	LVDS DUAL 3.3V 250-750 MHz
CJHDE 2.5V	28093	CJHDE_2.5V_21	LVPECL DUAL 2.5V 250-750 MHz
CJHDE 3.3V	28093	CJHDE_3.3V_21	LVPECL DUAL 3.3V 250-750 MHz
CJYDL 2.5V	28094	CJYDL_2.5V_21	LVDS DUAL 2.5V 750-1.5 GHz
CJYDL 3.3V	28094	CJYDL_3.3V_21	LVDS DUAL 3.3V 750-1.5 GHz
CJYDE 2.5V	28094	CJYDE_2.5V_21	LVPECL 2.5V DUAL 750-1.5 GHz
CJYDE 3.3V	28094	CJYDE_3.3V_21	LVPECL 3.3V DUAL 750-1.5 GHz

## CJ Series Configuration Files (continued)

The following is a list of configuration file names. Please refer to this list when loading a file for programming.

Part to be Programmed	Blank Item Number	Configuration File Name	Comments
CJTAC	28095	CJTAC_26	CMOS 3.3V TCXO 10-250 MHz
CJTAL	28096	CJTAL_26	LVDS 3.3V TCXO 10-250 MHz
CJTAE	28096	CJTAE_26	LVPECL 3.3V TCXO 10-250 MHz
CJTHL	28097	CJTHL_26	LVDS 3.3V TCXO 250-750 MHz
CJTHE	28097	CJTHE_26	LVPECL 3.3V TCXO 250-750 MHz
CJTYL	28098	CJTYL_26	LVDS 3.3V 750-1.5 GHz
CJTYE	28098	CJTYE_26	LVPECL 3.3V 750-1.5 GHz
CJTDAC	28099	CJTDAC_26	CMOS DUAL 3.3V TCXO 10-250 MHz
CJTDAL	28100	CJTDAL_26	LVDS DUAL 3.3V TCXO 10-250 MHz
CJTDAE	28100	CJTDAE_26	LVPECL DUAL 3.3V TCXO 10-250 MHz
CJTDHL	28101	CJTDHL_26	LVDS DUAL 3.3V TCXO 250-750 MHz
CJTDHE	28101	CHTDHE_26	LVPECL DUAL 3.3V TCXO 250-750 MHz
CJTDYL	28102	CHTDYL_26	LVDS DUAL 3.3V TCXO 750-1.5 GHz
CJTDYE	28102	CHTDYE_26	LVPECL DUAL 3.3V TCXO 750-1.5 GHz