



## Ctek G6200 Series Device Server Getting Started May 26 2010

### Introduction:

**Note:** Ctek suggests that you check for updates to this document periodically on [http://www.ctekproducts.com/V2\\_SupportCenter/V2\\_Documentation.shtm](http://www.ctekproducts.com/V2_SupportCenter/V2_Documentation.shtm)

We at Ctek want to thank you for selecting this G6200 Series product. We realize that for many of you this will be your first exposure to Ctek's product line. Our goal with this manual is exactly as the title suggests, helping you get started. As a first read we believe that the information found here will serve as a useful quick start and as a pointer to some of the more in depth documentation that you may need down the road.

### Powering Up

**NOTE** - The G6200 device server ships from the factory with an easily removable Mylar tab isolating the real time clock battery from its electrical contacts. The Mylar tab is used to protect the battery from discharge during storage. Prior to commissioning the G6200 the Mylar tab which is found over the green terminal block (J6) should be removed to enable the battery backup feature of the real time clock.

Your package should contain a G6200 device server and a power supply. The power supply connects to pins 1 & 2 of the green connector, pin 1 being the outermost pin on the connector. Pin 1 is positive and pin 2 is negative. Supplied power supply is DC so it is polarity sensitive. See figure 1 below.

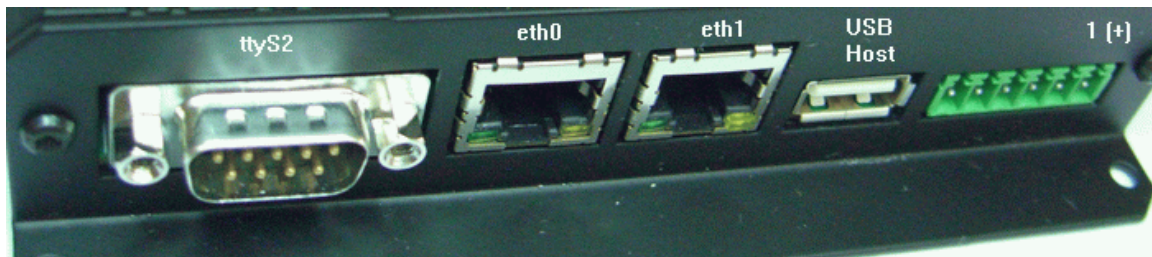


Figure 1



Figure 2



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**Getting Connected**

The G6200 ships with all communications interfaces active, ttyS1 and ttyS2 are configured for 38.4 kbps 8 bits, no parity. The RS485 connections, designated ttyS3 and ttyS4 are available on pins 3 – 6 of the green connector and are configured for 38.4 kbps, 8 bits, no parity and half duplex two wire mode. To use the RS485 devices in a four-wire installation you will transmit on one tty device (ttyS3 for example) and receive on the other. In the four-wire case either tty device can be used for transmit or receive but not both. All four serial connections have a getty process assigned that will run a shell (bash). To log into the server use the user ID **root** and the pass word **pass**.

**Green Connector J6**

Pin	6	5	4	3	2	1
Signal	TxRx-	TxRx+	TxRx-	TxRx+	-12VDC	+12VDC
Device	ttyS4		ttyS3			

Ethernet devices eth0 and eth1 are also active. eth0 is addressed as 192.168.1.10 and eth1 is addressed as 192.168.0.10. A gateway address has not been set. The services VFTP (FTP), telnet, and SSH are available on the G6200.

Console port ttyS0 is available using a special cable available from Ctek. Using jumpers JP4 and JP5 (see jumpers below), modem control pin 4 (RTS) and pin 6 (DTR) on J5 (ttyS2) are repurposed to become the console port Tx and Rx respectively. The special wye cable offered by Ctek then connects these signals to the appropriate pins on a dual DB9 terminated cable that can then be used for both ttyS2 and console port ttyS0.

**Jumpers**

The jumpers described are located on the circuit board within the G6200's case. To locate a specific jumper refer to the component layout drawing found in Appendix A.

<b>Jumper</b>	<b>Description</b>	<b>Factory Default</b>
JP1	Battery backup for real time clock. When connected 2->3 this jumper supplies battery voltage to the RTC so that it will maintain time through power outages and restarts. The unit ships with the battery disabled for long term storage. In most cases when the unit is initially commissioned this jumper should be moved to the battery position.	Disabled (1->2)
JP2	Enable serial data flash	Enabled (1>2)
JP3	Enable Nand flash	Enabled (1>2)
JP4	Enable console port – Connects ttyS0 Tx to ttyS2 (J5) pin 4	Enabled (1>2)
JP5	Enable console port – Connects ttyS0 Rx to ttyS2 (J5) pin 6	Enabled



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### Creating a development environment

There are a number of precursor steps required to get your G6200 NetServer development environment up and running. Ctek uses Subversion (SVN) as a distribution and management tool.

#### NOTE:

SVN allows users to retrieve and build with the very latest source files drawn in from development projects on the network. **However, Ctek can only support the pre-established baseline found in the current tar distribution archive.** When this tar archive is expanded in the buildroot hierarchy the make process will use files from the tar rather than pulling in potentially updated files from the network. For this reason it is **critical** that the tar file is used to establish a fully operational buildroot using the Ctek distribution archive prior to introducing any new code into the buildroot environment.

- 1) On your Linux development system create a user `svn_ro`. On Ubuntu you may wish to use the alternate user `svn-ro`. The buildroot environment will be created with `svn_ro` or `svn-ro` as its owner. This means that you will probably want to make `svn_ro` or `svn-ro` a member of the group that your normal working account is in.
- 2) Go to [www.linux4sam.org](http://www.linux4sam.org) and review or familiarize yourself with with Buildroot.
- 3) Under the Prerequisites heading review all of the package dependencies and make sure that your Linux system has all of them. Load all prerequisites as described at <http://www.at91.com/linux4sam/bin/view/Linux4SAM/BuildRootBuild>. Failure to correctly install the prerequisites is a common source of problems.
- 4) Connect to Ctek's SVN server and create the buildroot using the following command line:  
**`svn co svn+ssh://support.ctekproducts.com/home/svn/ck801/buildroot/trunk ck801`**  
The board design in the G6200 is called a ck801 which is the reason the root of checkout is called ck801.

#### NOTE:

The user ID and password for ssh on the remote (Ctek) server is `svn_ro` or `svn-ro`. During normal operation you will be prompted for this login more than once.



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- 5) Go to the Ctek ftp site ([support.ctekproducts.com](http://support.ctekproducts.com)) and download a standard distribution of packages from the ck801 directory. The Ctek ftp site can be accessed using a browser at <ftp://support.ctekproducts.com> or by using an FTP client with user and password both entered as anonymous. Distribution `dl_dist_1_00_01.tar.bz2` is current but from time to time the version will be updated. Distribution update announcements will be posted in the Ctek developer's newsgroup at to [ctek-devlist@list.ctekproducts.com](mailto:ctek-devlist@list.ctekproducts.com) or <http://list.ctekproducts.com:8080/read/?forum=ctek-devlist>.  
The contents of this file should be extracted to your buildroot base directory (CK801/buildroot-v23434) where it will create a directory call dl. You will need to use the `bzip2` option on the tar extract.
- 6) In the buildroot hierarchy created with svn you will find a directory named buildroot-vnnnnn where nnnnn is a version number. You will also find a directory named tools. Each of these directories contains a README file with detailed instructions to complete your development environment. Perform the steps required by the README in tools first and then the steps described in the README found under the buildroot-vnnnnn directory.
- 7) The remaining steps are covered in the README.txt as well.
- 8) Perform the command ***make menuconfig*** (see note below)
- 9) Perform the command ***make BOARD=AT91 getconfig*** (see note below)
- 10) Perform the command ***make*** (see note below)

### NOTE:

- The first command will create an initial config file. Once you are in menuconfig, just exit and save to create the initial configuration file.
- The second command will install the the standard CK801/G6200 configuration file in BuildRoot.
- The third command will build the entire environment.

- 11) In the buildroot hierarchy you will find a Linux version of the sam-ba utility which allows you to flash your board over USB. You will need to have a USB cable to go from your computer to the Micro USB connector of the G6200.

### NOTE:

The G6200 buildroot environment includes drivers for every hardware interface on the board.

- 12) For assistance contact Ctek at [service@ctekproducts.com](mailto:service@ctekproducts.com)



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13) Don't forget to register at ctek-devlist. Instructions follow:

To subscribe to the list using email send a blank email to [subscribe-ctek-devlist@list.ctekproducts.com](mailto:subscribe-ctek-devlist@list.ctekproducts.com) using the email address that you wish to receive group messages on. You will receive an acknowledgement email that must be responded to. Posting or replying to the group is as easy as sending an email to [ctek-devlist@list.ctekproducts.com](mailto:ctek-devlist@list.ctekproducts.com).

For those wishing to have web access subscription is at [http://list.ctekproducts.com/read/all\\_forums/subscribe?name=ctek-devlist](http://list.ctekproducts.com/read/all_forums/subscribe?name=ctek-devlist) and the list may be viewed and responded to at <http://list.ctekproducts.com:8080/read/?forum=ctek-devlist>.

## **Flashing Firmware**

System firmware is flashed through the USB client connection shown in Figure 2. The sam-ba software tool provided with the Ctek distribution is used to accomplish firmware flashing. See the README\_sam-ba.txt file in the tools directory under your build environment.



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# Appendix A

CTEK INC. CK801 Rev. B

