**Innovator In Spectroscopy Equipment**

# LS2116

Windows



# LINUX SERVER
# MODEL LS2116

LAN  USB  USB

CATALOG

MISC

MISCELLANEOUS

FREE DOWNLOAD

# LINUX SERVER

# MODEL LS2116

## Features

- iMX6 Solo, 0.8GHz ARM Cortex A9 SoC
- 1GB DDR3 1GHz RAM
- Ones SD card for OS and one SD card for user data and programs
- OS loading from SD card 1 and executing in Memory including root file system

- 10/100 Ethernet, 7 USB-2 host ports, 1 USB-OTG
- Real-time clock with battery
- 2 SPI buses
- JTAG interface to iMX6 SoC
- Receiving shut down request from external power management system
- 1W Idle power

**LAN**  **USB**  **USB**

## Low Power Linux Server Supporting

## Data Acquisition via USB

## Description

The LS2116 comes with a minimal Linux Debian-based installation, using kernel 3.19. All hardware description is made using the modern method of a 'device tree', which greatly simplifies kernel to hardware linking over previous methods. On power on, uboot loads the OS from the Linux boot SD-card (SD1) and unzips it into memory. From then on, the entire operating system (OS) including its root file system run in memory. Whatever changes are being made to the OS will be undone once the system reboots. SD-card 1 is used as a read-only device and cannot be corrupted by power failure. During operation, Linux writes and updates a great many files, which would wear out an SD-card in the long run. This is not a problem when using a RAM-based root file system. However, there are a few configurations that need to be persistent across power cycling and reboots. Those are stored in files that are implemented as symbolic links directed at the user SD card (SD3). The most important such configuration concerns Ethernet connectivity. This and others can be altered by editing a file on the user SD-card.

CFP's application software, including the the USB-Base Data Server and the all PHP code are stored on the user SD-card and can be updated by simply copying updates into the relevant /CFP sub directories. By the same token, user applications can be stored on and launched from the user SD-card. Applications can store intermediate data in a /var/run directory on the RAM disk and avoid possible damage or early wear-out of the user SD-card.

The hardware has been designed with robustness and longevity in mind. NXP/Freescale guarantee that the iMX6 Solo will be available for 12 more years and the DDR3 memory we use is an industry standard template part made by many manufacturers, which guarantees it will be available for a very long time. All other parts are less critical and can be replaced with functional equivalents according to CFP's principle of avoiding product obsolescence through product evolution.

The MDC is designed for an industrial temperature range of -40°C to 80°C and has been tested from -20°C to 60°C environmental temperature. A for any embedded computer, it is important to carefully consider the thermal performance of the immediate enclosure.

## Specifications

| Input/Output | |
|---|---|
| USB | |
| 4 Ports (USB2.0) | |
| LAN | |
| RJ45 Port | |
| Power | |
| Power Jack 5V, 2PIN | |
| Debug | |
| 8PIN Hirose for serial debugging | |
| **Controls** | |
| Debug | |
| Serial standard Linux debugging port | |
| LAN, USB | |
| Control and communication | |
| **Operating System** | |
| OS | |
| Linux Debian-based installation, Kernel 3.19 | |
| SD cards 1 | |
| Read-only, reserved for operating system | |
| SD cards 2 | |
| Used for user applications | |

## Electrical and Mechanical

| Power required | |
|---|---|
| DC - 5V – 2A | |
| Physical | |
| Dimensions | 128 x 172 x 33mm (W x L x H) |
| Weight | 260g |
| Storage temperature | -40°C to 80°C |
| Operating temperature | -40°C to 80°C. |

## Application

- Connecting to measurement devices and receiving data
- Real-time monitoring and analysis systems
- Server applications
- Network monitoring
- Security systems
- I&C

## Software

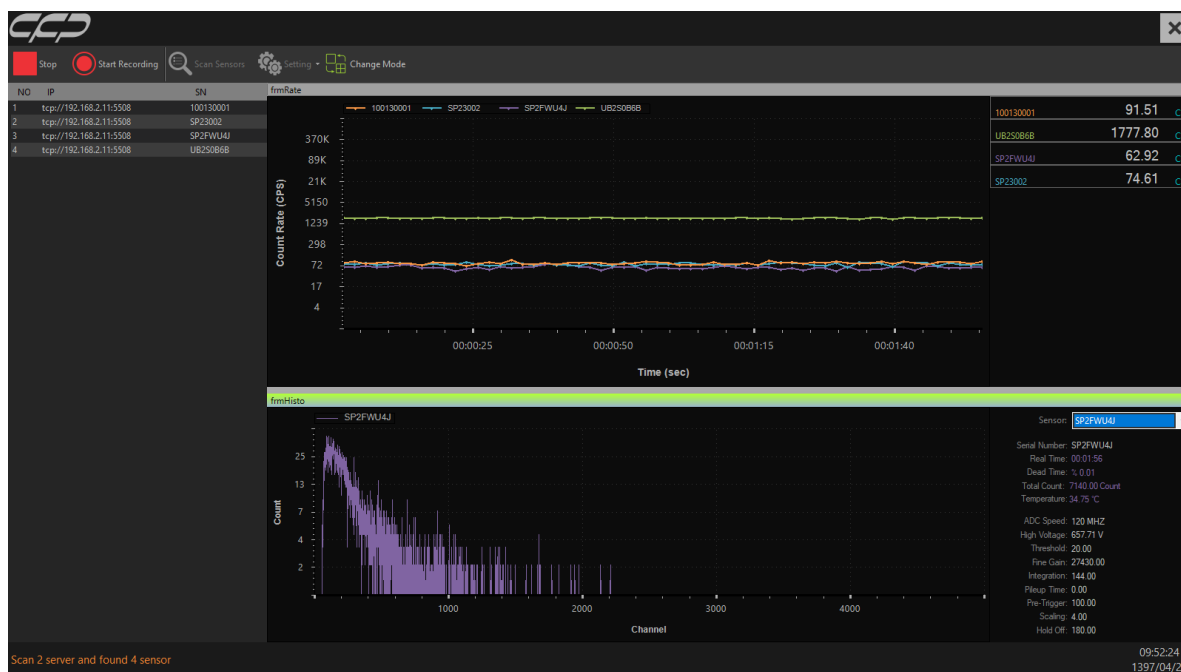LS2116 software including software splash, main window, count window and save window.

Main window is used for software startup, connecting to measurement devices, start measurements, etc.

Count window shows the sensor data in real-time manner.

Save window could be used to save data in SD card.



Software splash



Software main window

Software count window



Software save window

## Ordering info

**Standard package includes**

| Part # | Image | Description |
|---|---|---|
| LS2116 main | | Includes the main body of device |
| ACCE2116001 | | DC power Adaptor 5V |
| ACCE2116002 | | CD User guide (1 Pack) |
| ACCE2116003 | | box with foam inserted (1 Pack) |

**Optional accessories and services**

| Part # | Image | Description |
|---|---|---|
| ACCE2116004 | | installation |
| ACCE2116005 | | Training |