

# Hardware Guide

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Version: .1  
Los Gatos, CA, USA

## MODELS: XD Product Line

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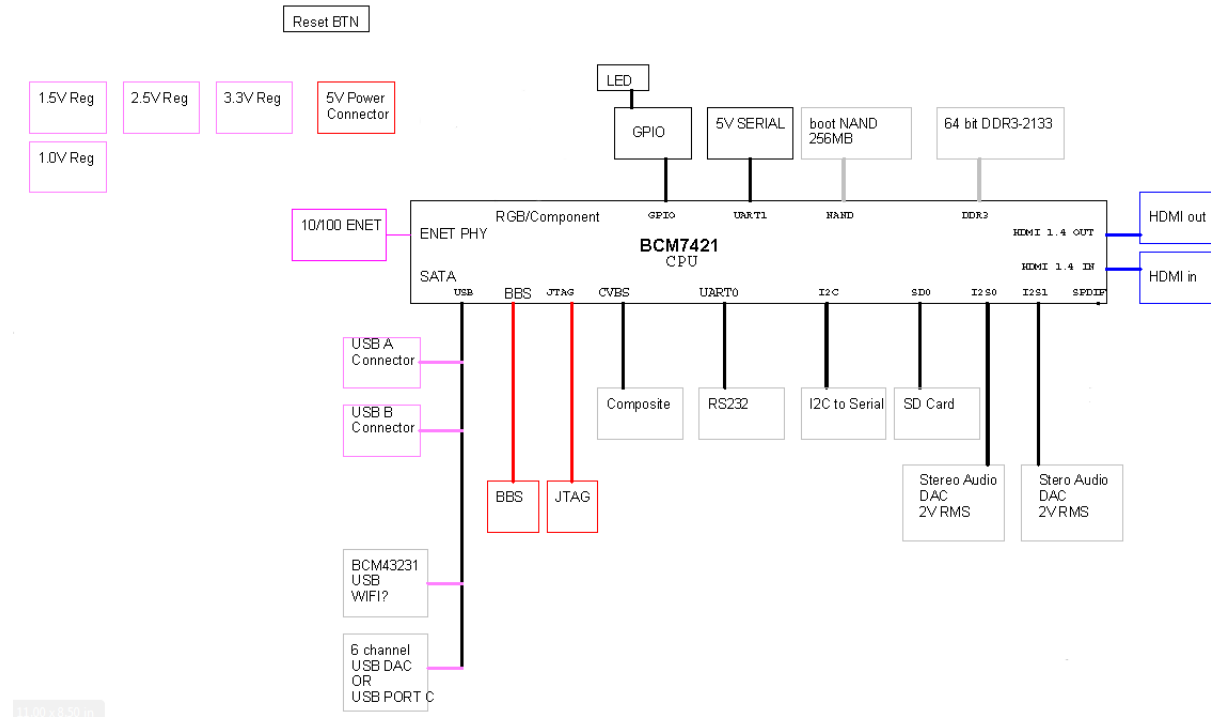
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## Overview

This hardware reference manual specifies the hardware interfaces on the XD series of BrightSign digital signage players: XD230, XD1030, and XD1230. This manual will not describe any software functions. XD units are devices that can be used to drive a variety of multimedia applications. The XD line supports two zones of HD video, as well as multiple zones of images, audio, and RSS text. XD units are designed to be connected to video displays (LCD displays, flat-screen monitors, etc.) and/or audio hardware (stereo speakers, PA systems, etc.). Some XD models also offer versatile networking capabilities through Ethernet or WiFi.

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## Block Diagram



## Ports

### XD230

1. 1x power connector
2. 1x SDHC/SDXC slot
3. 1x MicroSD SDXC slot, internal
4. 1x 3.5mm IR out
5. 1x RJ45 Ethernet with BrightSign Network Support
6. 1x 3.5mm Audio Out
7. 1x VGA port
8. 1x HDMI port
9. 1x Reset and Debug buttons

### XD1030

1. 1x power connector
2. 2x USB ports
3. 1x GPIO port
4. 1x RS-232 serial port
5. 1x 3.5 mm IR out
6. 1x RJ45 Ethernet with BrightSign Network Support
7. 1x SDHC/SDXC slot

8. 1x MicroSD SDXC slot, internal
9. 1x 3.5mm audio out
10. 1x VGA port
11. 1x HDMI port
12. 1x S/PDIF port
13. 1x Reset and Debug buttons

## XD1230

1. 1x power connector
2. 2x USB ports
3. 1x GPIO port
4. 1x RS-232 serial port
5. 1x 3.5mm IR out
6. 1x ATSC tuner
7. 1x RJ45 Ethernet with BrightSign Network Support
8. 1x SDHC/SDXC slot
9. 1x MicroSD SDXC slot, internal
10. 1x 3.5mm audio out
11. 1x VGA port
12. 2x HDMI port (In/Out)
13. 1x S/PDIF port
14. 1x Reset and Debug buttons

## Power Connector

The power connector for the XD series is rated for 12V @ 3A. The plug for the connector is a keyed and locking 4-pin connector. It is right side positive.

## Ethernet

The XD series has a standard RJ45 connector for 10/100 base-T Ethernet. The maximum cable length is 100 Meters. The pinout of the RJ45 is as follows:

pin	Description	pin	Description
1	TX+	2	TX-
3	RX+	4	RC to ground
5	RC to ground	6	RX
7	RC to ground	8	RC to ground

## USB

The XD1030 and XD1230 players have two high speed (480 mbit) USB host ports. The maximum cable length is 5 Meters. The ports have the following pinout:

pin	Description	pin	Description
1	VBUS	2	D-
3	D+	4	Ground

## SD Slot

The XD series has one SDHC/SDXC slot capable of transferring a 25 Mbit/sec video stream, one 5.1 AC3 stream (pass-through), and three stereo PCM tracks simultaneously. There is no inherent limit on the storage capacity of cards used for XD-series players.

## MicroSD card slot

The XD series has one internal MicroSD card slot capable of transferring a 25 Mbit/sec video stream, one 5.1 AC3 stream (pass-through), and three stereo PCM tracks simultaneously. There is no inherent limit on the storage capacity of cards used for XD-series players.

## 3.5mm Audio Out

All XD models have a stereo Mini Jack for variable, stereo analog audio output at line level. When playing content at line level, the full-scale output is 2V rms at >1K ohms source impedance.

## Power usage

The XD Series has a 36W 12V @ 3A power supply.

The user should not connect any combination of peripherals that will exceed 2A draw. If more than 2A is drawn, then the external power supply may shut down due to overcurrent conditions. The unit will not be damaged, but it may reboot or to not operate properly until the overload is removed.

This 2A can be shared any way on the following connectors:

Ethernet – Approximately 180mA when transferring data

USB – 1500mA max over 2 connectors

Each of 4 LED outputs on DB25 – up to 24mA each

## Cable Length

Unless otherwise specified, BrightSign recommends that all cable lengths be 10 meters or less. The customer may be able to use longer cables in specific cases, but the customer must test the cable to see if it will work. Generally, higher quality cables with lower capacitances can be run longer than cheaper cables.

## Environmental

The XD Series is designed to be used between the temperatures of 0 to 40C with 90% maximum relative humidity, non-condensing.