CueServer Mini Family I/O Port Specifications

Introduction

This document describes the electrical connections for the various ports on the CueServer Mini family, which include the CS-810, CS-820 and CS-PCB.

I/O Expansion Port

The CueServer Mini family uses a standard high-density Female DB-44 connector to provide access to CueServer's Power, Digital I/O, DMX and Serial Port signals. Use a high-density Male DB-44 to make your own attachment to this connector. Note that the DB-44 has the same physical size as a DB-25 connector, but it has three rows of pins instead of two.

DB-44 Pin	CueServer Signal	DB-44 Pin	CueServer Signal	DB-44 Pin	CueServer Signal
1	Contact 1 Input	16	Ground	31	Contact 2 Input
2	Contact 3 Input	17	Ground	32	Contact 4 Input
3	Contact 5 Input	18	Ground	33	Contact 6 Input
4	Contact 7 Input	19	Ground	34	Contact 8 Input
5	Digital Output 1	20	Ground	35	Digital Output 2
6	Digital Output 3	21	Ground	36	Digital Output 4
7	Digital Output 5	22	*Reserved*	37	Digital Output 6
8	Digital Output 7	23	*Reserved*	38	Digital Output 8
9	RS-232 TxA	24	RS-232 TxB	39	DMX Output Data+
10	RS-232 RxA	25	RS-232 RxB	40	DMX Output Data-
11	+5V DC Output	26	Ground	41	DMX Output Ground
12	+5V DC Output	27	Ground	42	DMX Input Data+
13	+V Input (12V typ.)	28	Ground	43	DMX Input Data-
14	+V Input (12V typ.)	29	Ground	44	DMX Input Ground
15	+V Input (12V typ.)	30	Ground	-	-

+V Input
> This is the power input, which is typically 12V DC, 500mA minimum. These pins are connected internally to the 2.1mm DC Power Input jack on the opposite side of the CueServer. Either the DC Power Jack or the +V pins may be used to power the CueServer. Input voltages from 6 to 30 VDC will properly power CueServer.

Ground
> This is the voltage ground. The power input, and all I/O signals (except for the DMX signals, which have their own grounds) are referenced from this ground. There are several ground pins available on the I/O Expansion Port.

DMX Input / Output
> The DMX Input and Output each have three signals, Data+, Data- and Ground, which make up the DMX network. Internally, these 6 signals are connected to the DMX Input and Output RJ45 jacks on either side of the I/O Expansion Port. Do not connect DMX signals to the I/O Expansion Port and the RJ45 jacks at the same time.

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Contact Closure Inputs

The Contact Closure inputs on CueServer are designed to accept a dry contact (a simple switch) wired between the input and Ground. The input itself incorporates a weak pull-up to 3.3V. When the switch closes, the voltage on the input drops to 0V (Ground), which triggers the input. Alternately, any relay or transistor output of another device (that pulls to ground) can be directly wired to each of the CueServer inputs. More specifically, the inputs will trigger when the input voltage drops below about 0.9V and disengage when the voltage rises above about 2.3V. Each input may receive any voltage between +/- 36V and are internally de-bounced.

Digital Outputs

The Digital Outputs on CueServer are transistor-based pull-to-ground outputs, which are capable of handing up to 500mA each. When an output is activated, or "on", it is connected to ground through a transistor. This state can complete a circuit to turn on an indicator LED, a relay, a buzzer or any other small electrical device. When an output is "off", there is no electrical connection to ground, which turns off any connected electrical device.

RS-232 Serial Ports

CueServer Mini provides two standard RS-232 ports. The signals marked TxA and RxA are the transmit and receive data lines for the primary serial port. The TxB and RxB signals are for the secondary serial port. External RS-232 equipment will also need a ground signal. There are several grounding points in the DB-44 connector.

+5V DC Output

CueServer Mini provides a regulated +5V DC output, which can be used to power small indicator LEDs or relays attached to the digital output signals. The total current drawn from the +5V output pins is limited to 200mA.

Reserved Pins

These pins are for future expansion. Do not connect anything to these pins.

DMX Input / Output Jacks

The CueServer Mini family has two RJ45 (CAT5 type) connectors for DMX Input and DMX Output. These jacks can be directly connected to DMX equipment that uses standard CAT5 wiring for DMX or depending on the model of CueServer Mini purchased you may use the included or optional RJ45 to 5-pin XLR adaptors to connect to DMX equipment. CueServer Mini uses the approved ESTA standard for DMX over CAT5 cabling as described in the following table:

RJ45 Jack	DMX Standard	CueServer Usage	CAT-5 Pair
1	DMX Data +	DMX Data +	White/Orange
2	DMX Data -	DMX Data -	Orange
3	Alt. Data +	-	White/Green
4	-	-	Blue
5	-	-	White/Blue
6	Alt. Data -	-	Green
7	DMX Ground	DMX Ground	White/Brown
8	Alt. Ground	-	Brown

DC Power Input Jack

The CueServer Mini family has a 2.1mm DC Power Input Jack. Power may be applied to this jack or the corresponding pins of the I/O Expansion Port to provide power to CueServer. The center pin of this jack is positive and the sleeve is negative. CueServer is typically powered by 12V DC at 500mA minimum, however CueServer will run properly with any input voltage from 6 to 30 VDC.

Ethernet Jack

The CueServer Mini family has a standard RJ45 Ethernet jack. This jack is used to connect to a local Ethernet network.

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