Utah Sandar AS

User Manual & Installation Guide

UTAH-100/XHDA SERIES

SD & HD3G Digital Distribution 1:4 & 1:8

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INTRODUCTION

Thank you for choosing a Utah Sandar product.
We are convinced that your choice will prove to be a wise and worthy decision for many years to come.

Your Utah Sandar product has been tested for performance at the factory according to the specifications given for the system in this manual. However, before putting the device into operation we kindly ask you to read this manual, and act according to the information given.

All information given in this document is property of Utah Sandar. To the knowledge of Utah Sandar there are no errors in the manual. Should any errors be discovered, please notify Utah Sandar. Utah Sandar will under no circumstances accept responsibility neither for errors in this manual, nor consequences of such errors.

Utah Sandar

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WARRANTY

This Utah Sandar product is warranted against defects in materials and workmanship for a period of two (2) years from the date of invoice. During the warranty period, Utah Sandar will, at its option, either repair or replace products that prove to be defective.

The warranty shall not apply to defects resulting from improper or inadequate installation or maintenance by buyer, buyer-supplied software or interfacing, unauthorized modification or misuse, operation outside of the environmental specifications for the product, or improper site preparation or maintenance.

If a product needs to be returned for service, please first contact the Utah Sandar Helpdesk to obtain a Return Material Authorization (RMA) number. Make sure the packaging provides sufficient protection against ESD and mechanical damage. Please enclose a note with the RMA, return address, contact person details and a failure symptom description.

DOCUMENT REVISION HISTORY

Rev.	Date	Description
1.1	2009-10-07	Changed Product name
1.0	2009-09-10	Changed login
B	2009-03-11	Change Company name
A	2008-04-16	Preliminary

SAFETY & ENVIRONMENT

General

This product and related documentation must be reviewed for familiarization with safety markings and instructions before operation. This product has been designed and tested in accordance with the relevant international standards.

Safety Symbols

Indicates hazardous voltages.

Indicates earth (ground) terminal.

The **CAUTION** sign denotes a hazard. It calls attention to an operating procedure, practice, or the like, which if not correctly performed or adhered to could result in damage to or destruction of part or all of the product. Do not precede beyond a CAUTION sign until the indicated conditions are fully understood and met.

The **WARNING** sign denotes a hazard. It calls attention to a procedure, practice, or the like, which, if not performed or adhered to could result in personal injury. Do not proceed beyond a WARNING sign until the indicated conditions are fully understood and met.

Safety Earth Ground

This is a Safety Class 1 product (a protective earth terminal (Ch) is provided).
An uninterrupted safety earth ground must be provided from the main power source to the product input wiring terminals, power, cord, or supplied power cord set. Whenever it is likely that the protection has been impaired, the product must be made inoperative and secured against any unintended operation.

Environment

WEEE: All Utah Sandar products delivered after 13. Aug 2005 will comply with the EU Directive 2002/96/EC on Waste from Electrical and Electronic Equipment aka WEEE directive. Please contact your local Sandar sales representative for information about returning these products for safe disposal/recycling. Sandar equipment that complies with the directive will be marked with a WEEE-compliance emblem.

RoHS: All Utah Sandar products delivered after 30. june 2006 will comply with the EU Directive 2002/95/EC on Restriction of Hazardous Substances aka RoHS directive. Thereby not containing above the limits specified in the said directive of any of the banned substances. Sandar equipment that complies with the directive will be marked with a RoHS-compliance emblem.
Exempt: Spare/Expansion parts for older systems are exempt from the directive.

INSTALLATION

Initial Inspections

Check the contents of the shipment for completeness and possible transport damage.
If the contents are incomplete or damaged, contact Utah Sandar AS immediately for repairing or replacement parts of the equipment.

ESD Handling

This product may contain Electrostatic Sensitive Devices (ESD).
Precautions to minimise the risk of damage, due to electrostatic discharge during handling, are recommended. For guidance, refer to British Standard BS CECC 00015, Part 1: BASIC SPECIFICATION FOR PROTECTION OF ELECTROSTATIC SENSITIVE DEVICES

Before Applying Power

Verify that the product is configured to match the available main power source per the input power configuration instructions provided in this manual and product marking.

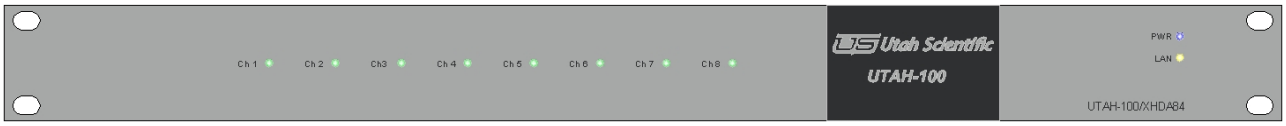
Service

Servicing, adjustments, maintenance or repair of this product may be performed by qualified personnel only. Adjustments described in this manual may be performed with power supplied to the product while protective covers are removed. Energy available at many points may, if contacted, result in personal injury. Capacitors inside this product may still be charged even when disconnected from their power source.

GENERAL DESCRIPTION

The UTAH-100/XHDA HD3G Distribution frame comes in two versions. The 1:4 x 8 contain 8 separate 1:4 digital wideband distribution amplifiers. The 1:8 x 4 contains 4 separate 1:8 digital wideband distribution amplifiers. The data rates supported by reclocking are 143, 177, 270, 360, 540, 1483.5, 1485 Mbps and 3Gbps. These units are well suited for all digital Broadcast and Telecom distribution systems. With Automatic Cable Equalizer supporting up to 300m (SD-SDI) cable, auto detect reclockings supporting all known digital broadcast standards and proper Cable Drivers on the outputs. The Ethernet (SNMP/HTTP/SanEth) interface gives possibilities for monitoring voltage, temperature and signal types.
The UTAH-100/XHDA is delivered with a standard off-the-shelf universal AC/DC Power Supply. To reduce the possibility of power interrupt the unit is equipped with two DC connectors for redundancy powering. Extra Power Supply is an option and is not delivered as standard.

The 19" wide, 1RU high and 60 millimetres deep frame houses the switch, local control unit and Ethernet remote control interface. Two 12 VDC 2,1mm power input connectors enable use of redundant power supplies.



External Power Supply

The external Power Supply is an AC/DC Switch Mode desktop power supply module with compact design. The power supply has a universal input voltage, with 3 pins IEC 320 connector. The output voltage is 12V DC and is short circuit proof and deliver up to 40W. One secondary cable with the modular connector in the one end connects to the power supply and the other end with a 5.5/2.1mm jack connects to the UTAH-100/XHDA frame. Utah Sandar recommends the Power Supply 9920 from Mascot A/S, but other types of Power Supplies may be used with similar specifications. ***Mains cord is not included.***
Mounting bracket is available.

POWER INPUT

Power Connection

The UTAH-100/XHDA units have two 2.1mm DIN 12VDC connector with + at centre.

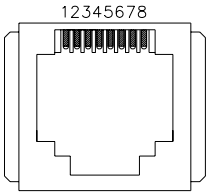
The power unit supplied with the UTAH-100/XHDA is a 13.2 VDC with a max rating of 3A (40W)

CONTROL INTERFACE

Port Pin Orientation

Ethernet Port

The Ethernet port is an 8-pin RJ-45 jack meeting the requirements of ISO 8877 for 10/100Base-T.

Ethernet Pin Assignment		
Pin	**Signal Name**	**Figure RJ-45**
1	TxD+ (Transmit Data)	
2	TxD- (Transmit Data)	
3	RxD+ (Receive Data)	
4	Not used	
5	Not used	
6	RxD- (Receive Data)	
7	Not used	
8	Not used	

START UP

- Connect power to the unit
- The device is configured with a static IP address for network connectivity
- Connect the (not supplied) crossed cable between the device and a PC to change the network configuration to suit your LAN. The default IP address is 192.168.125.123.
- For configuration and monitoring, open the web browser and go to the address http://[IP address].
- For protected sites, use login name “admin” and the default password “password”

Web interface
Figure 1 shows the front page of the web interface. Temperature and voltages from two sensor devices are monitored at the top. In the “Misc” box the connection status is either connected or disconnected which tells whether the web browser has contact to the device or not. From the drop-down box the frequency at which the status is updated can be selected (default every 5 seconds).

The image in the middle represents the front side of the UTAH-100/XHDA. In addition to the LEDs which turn on if a signal is present, the signal type is also written below. If the mouse pointer is moved over each of the channel names on the front panel, the box at the bottom is showing. This box shows the signal path and the signal types detected by the different internal reclockers. Also an image of the back side is provided to display the actual BNCs that are in use for the current channel.

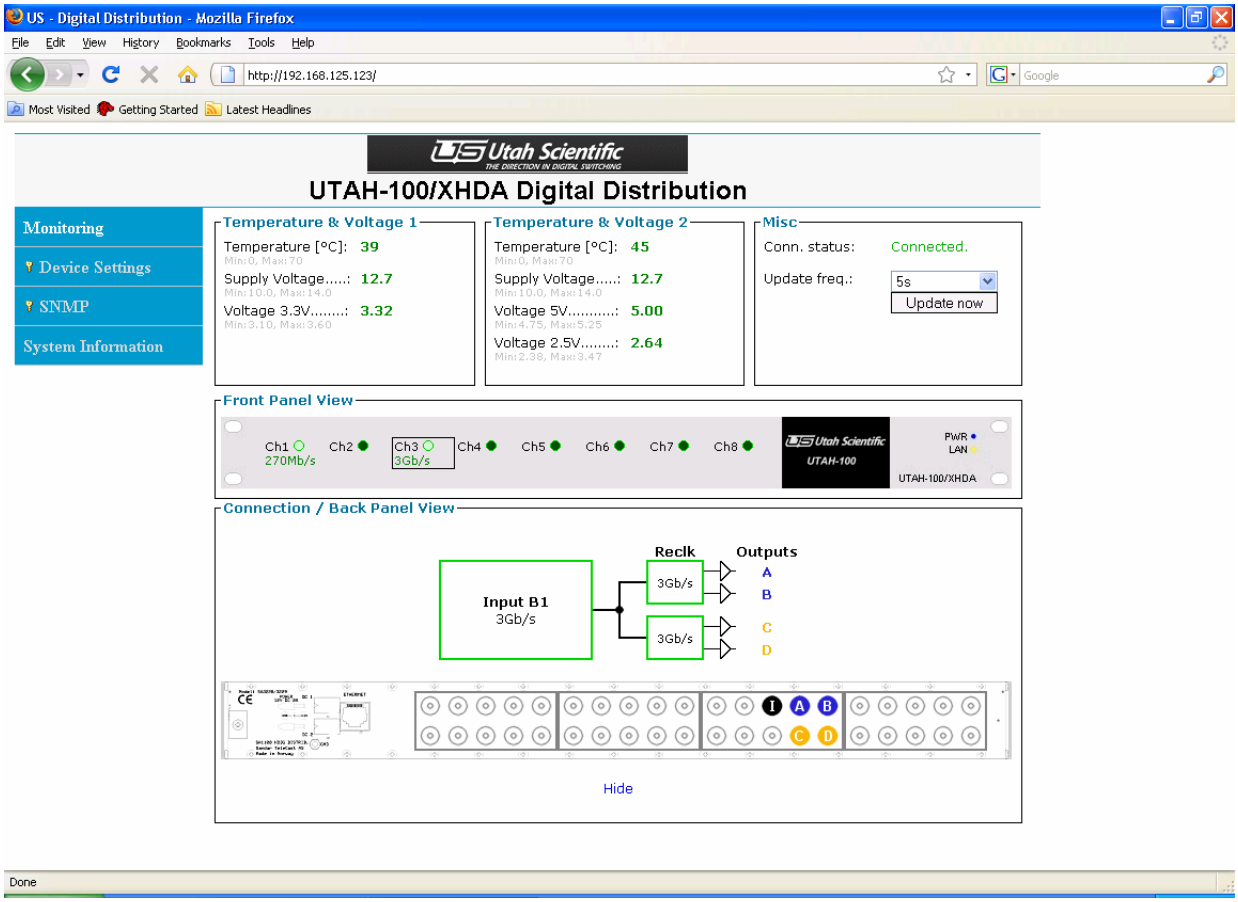
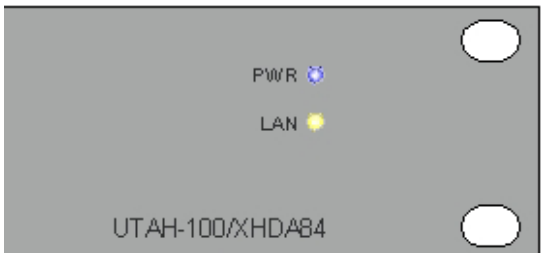


Figure 1

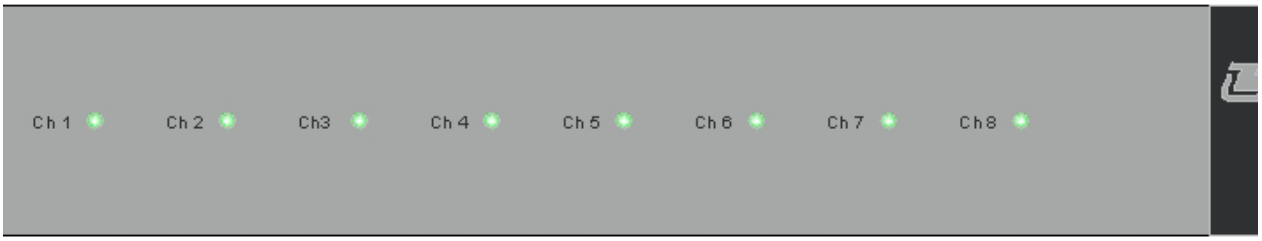
Password, network settings and SNMP settings can be configured using the menu at the left. These are protected sites which require username and password. At the top of each of these pages there is a link to a help page for further assistance.

OPERATION

The units are monitored through the Ethernet interface (SNMP/Web/Sandar Protocol).



PWR: Blue LED indicate power on
LAN: Blinking yellow LED indicate network activity



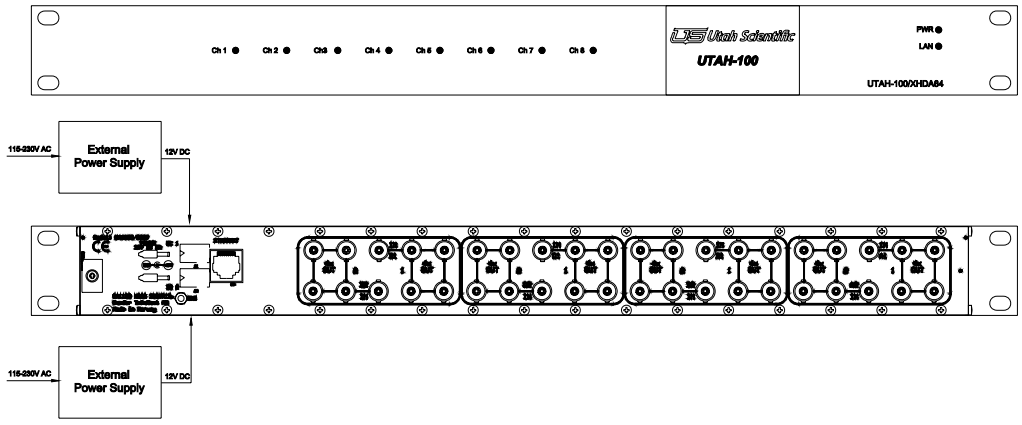
Ch1 – Ch8: Eight green LEDs in the front indicate presences of signal on the outputs (model UTAH-100/XHDA84). Four green LEDs on model UTAH-100/XHDA48.

SPECIFICATIONS

Type	High Definition Serial Digital Video
Standard	SMPTE 292M, 424M
Data Rate	Auto Reclocking at 270 Mb/s, 1.483 Gb/s,.1.485 Gb/s, 2.966 Gb/s, 2.97 Gb/s
Number of In/Out UTAH-100/XHDA84 UTAH-100/XHDA48	1 Input, 4 Outputs x 8 1 Input, 8 Outputs x 4
Impedance	75 Ohm
Cable Equalization	380m Belden 1694A at 270 Mb/s 180m Belden 1694A at 1.5 Gb/s 80m Belden 1694A at 3 Gb/s
Output level	800 mV ±10%
Return Loss Input/Output 5 MHz to 3 GHz	≥ 15dB
Output Rise/Fall Time (HD)	≤ 135ps
Output Overshoot	≤ 10%
Output Alignment Jitter	≤ 0.15UIpp
Connector	BNC
Ethernet	
Type	10/100 Base T
Standard	IEEE 802.3
Connector	RJ45
Power	
DC input	12 VDC (Range 10 - 14 VDC)
DC Connector	DC Jack 2.1mm x 2
DC Power	19 W
Operating Temperature Range	0 °C - +40 °C
Humidity	90 % non condensing
External Power Supply	Vin: Universal 100-240 VAC, 50/60Hz, Vout: 13.2 VDC, 40W Recommended type: 9920 Mascot
Frame	
Dimensions	W: 482.6mm (19”) H: 43.6mm (1U) D: 52mm + Connectors
Weight	0.87 kg

Utah Sandar AS reserves the right to change specifications without prior notice.

DRAWING – PRODUCT FRONT & REAR



DIMENSIONS	* W: 482.6mm (19") * D: 50mm + Connectors * H: 43.60mm (1U) * Weight: 0.8kg
POWER	DC1/DC2: 12V DC, 12W
External Power Supply	100–264V AC, 50–60Hz, 40W
Redundant Power Supply	OPTION

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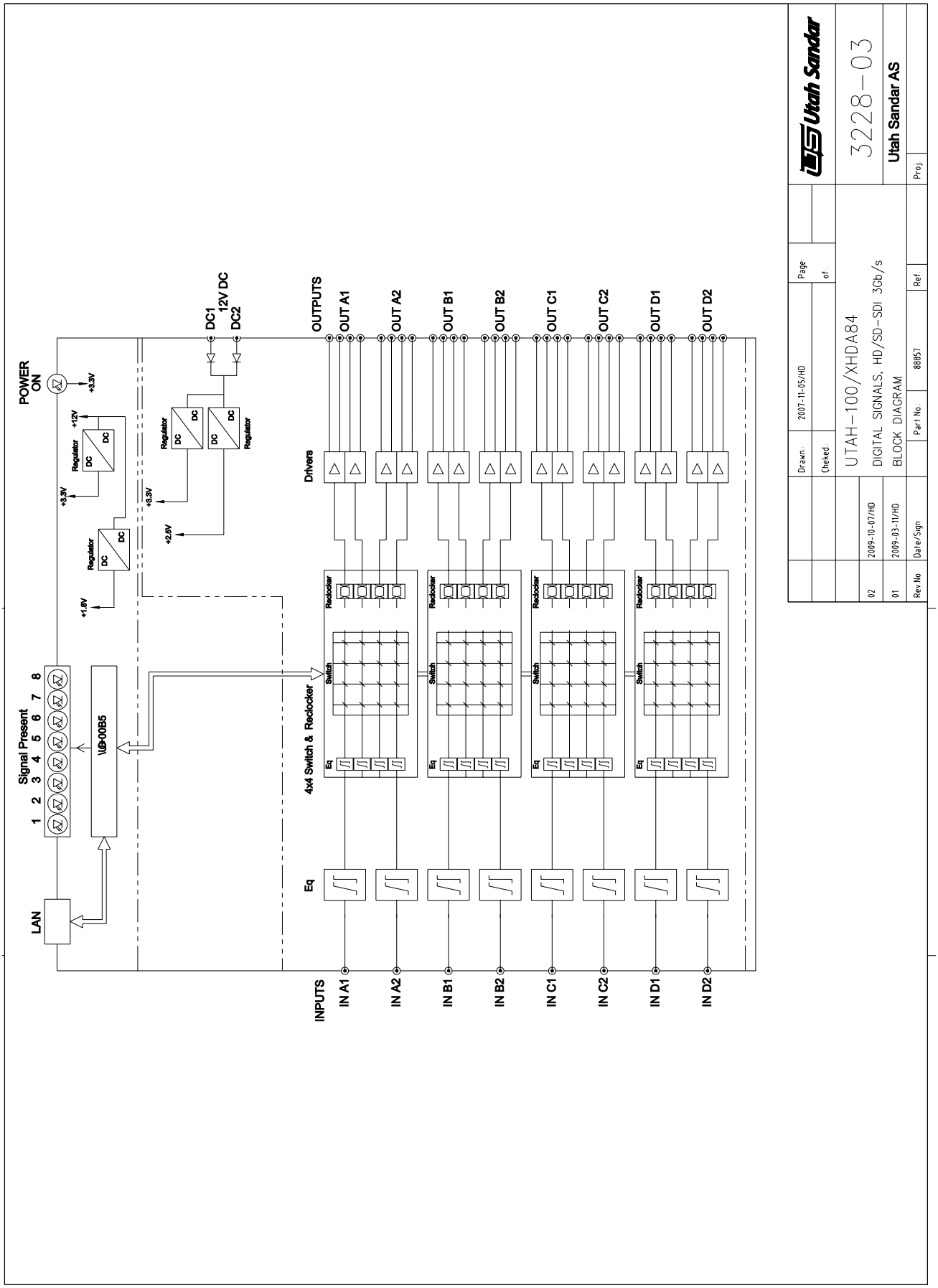
		UTAH–100/XHDA84				3228–01	
02	2009-10-07/HD	DIGITAL SIGNALS, HD/SD–SDI 3Gb/s					
01	2009-03-11/HD	FRONT & REAR				Utah Sandar AS	
Rev.No	Date/Sign		Part No.:		Ref.	Proj.	


POWER ON
+3.3V
+12V
Regulator
DC
+3.3V
+1.8V
+2.5V
DC1
12V DC
DC2
OUTPUTS
OUT A1
OUT A2
OUT B1
OUT B2
OUT C1
OUT C2
OUT D1
OUT D2
Drivers
Reclocker
Switch
Eq
4x4 Switch & Reclocker
Signal Present
1 2 3 4 5 6 7 8
LAN
INPUTS
IN A1
IN A2
IN B1
IN B2
IN C1
IN C2
IN D1
IN D2
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Utah Sandar AS
UTAH-100/XHDA84
DIGITAL SIGNALS, HD/SD-SDI 3Gb/s
BLOCK DIAGRAM
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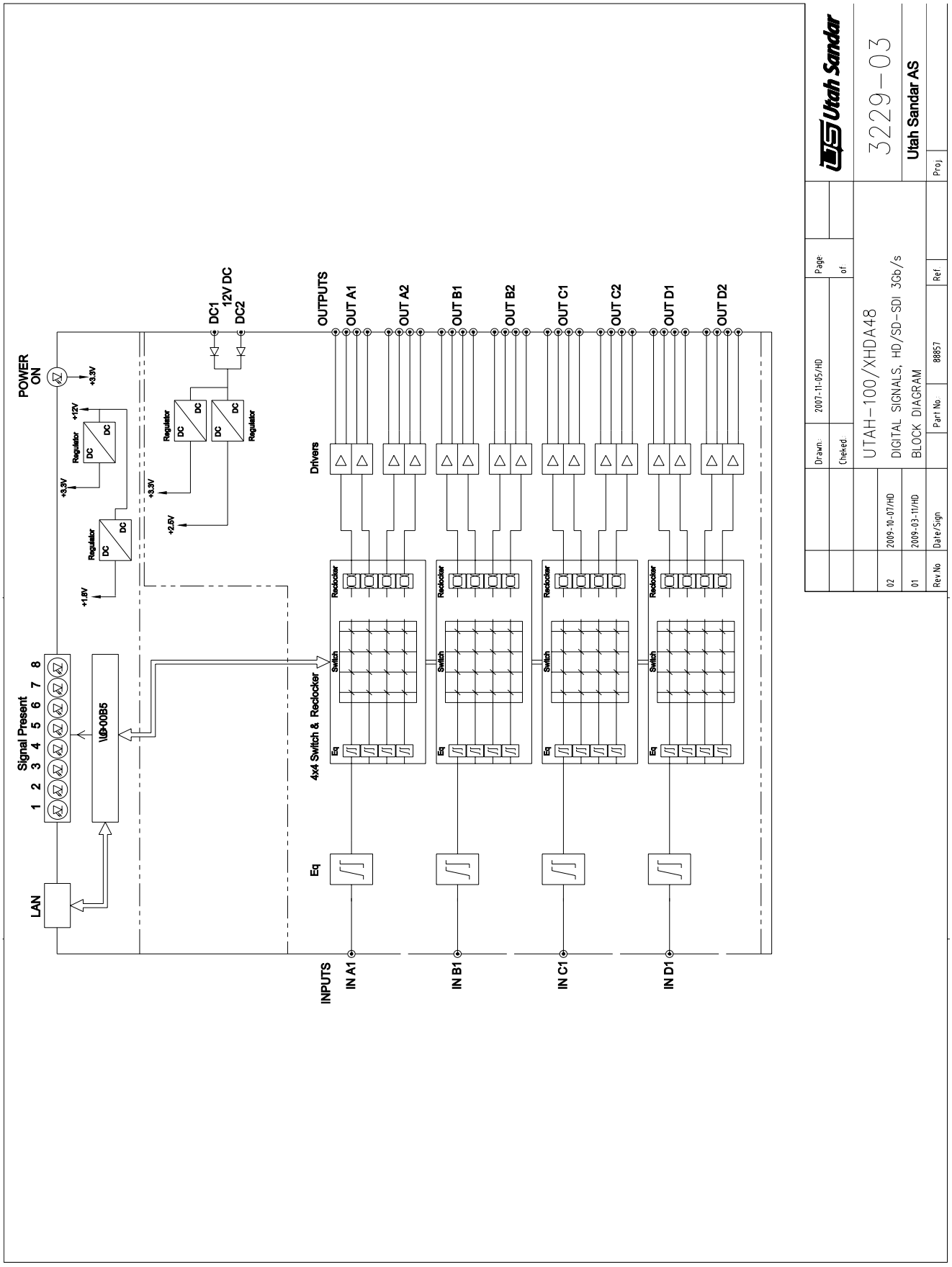
Rev No Date/Sign


POWER ON
DC1
12V DC
DC2
OUTPUTS
OUT A1
OUT A2
OUT B1
OUT B2
OUT C1
OUT C2
OUT D1
OUT D2
Drivers
Regulator
+3.3V
+12V
+2.5V
+1.8V
Signal Present
1 2 3 4 5 6 7 8
LED-00B5
LAN
4x4 Switch & Reclocker
Reclocker
Switch
Eq
INPUTS
IN A1
IN B1
IN C1
IN D1
Utah Sandar
3229-03
Utah Sandar AS
UTAH-100/XHDA48
DIGITAL SIGNALS, HD/SD-SDI 3Gb/s
BLOCK DIAGRAM
Drawn: 2007-11-05/HD
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