

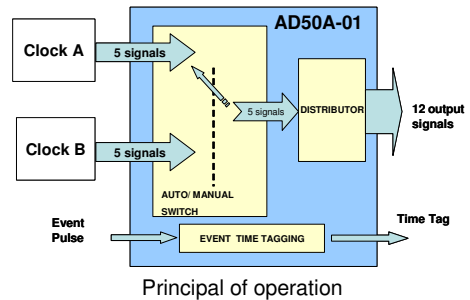
Redundancy Switch & Distributor

AD50A-01

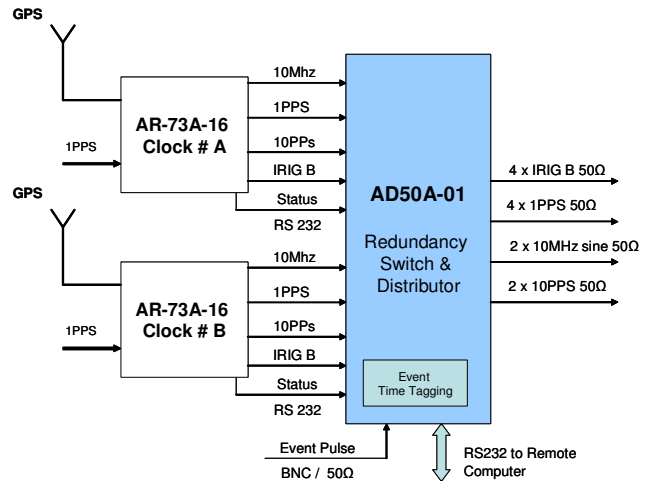
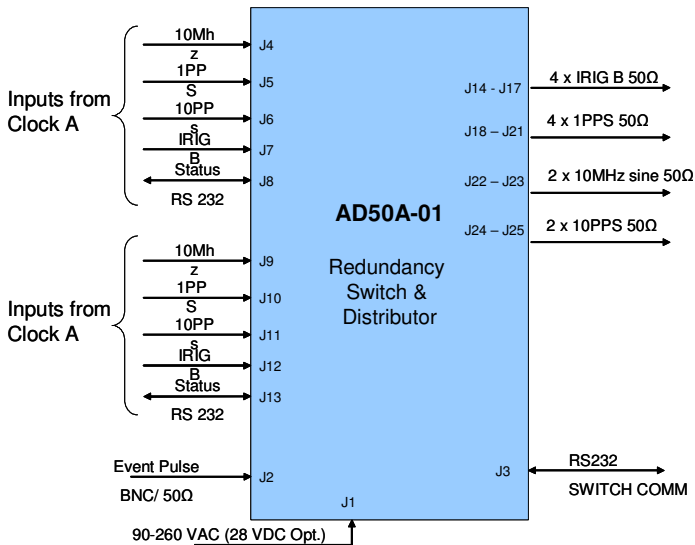
Switch & Distribution System for Time & Frequency Multi inputs, Multi outputs, Event Time Tagging

Key Features

- ❖ Accepts 2 sets of signals from 2 clocks selection
- ❖ Selects one clock
- ❖ Distributes 12 outputs from the selected clock
- ❖ Automatic or Manual selection
- ❖ Event Time Tagging
- ❖ RS-232 Control Port
- ❖ 90-260 VAC 47-63 Hz (standard); 28 VDC (optional)
- ❖ 19" x 2U Rack Mount



Description



AD50A-01 is a smart switching, monitoring and distribution system, packaged in a 2U rack mount enclosure. It accepts a dual set of 5 inputs signals (10MHz, 1PPS, 10PPS, IRIG-B, RS232) from two different clocks A and B. The unit selects the signals coming from one of the clocks and distributes it to 12 outputs (standard output configuration is 4xIRIG-B, 4x1PPS, 2x10MHz, 2x10PPS. Contact factory for other configurations).

The **AD50A-01** has a selector switch with three states: CLOCK A, CLOCK B and AUTO. When CLOCK A is selected the unit distributes the input signals coming from clock A when clock B is selected the unit distributes the signals from clock B. When selecting the AUTO mode, the unit chooses the clock based on two RS232 status signals coming from clock A and B. When the two clocks are functional the default choice is clock A. When the unit detects a problem with Clock A, it will switch automatically to the signals from clock B.

Additional function of the unit is **Event Time Tagging**. The unit includes an Event Input. When an event arrives (pulse) it is assigned tag that is kept in memory. The event tag is read via RS232 connection and CLI command. The time accuracy is less than 100ns and time resolution is nanosecond range.



SPECIFICATIONS (continue)

All specs are at room temperature, quiescent conditions, sea level ambient unless otherwise specified

Inputs /Outputs		
Inputs from Clock A/ B	1 x 10MHz sine wave, 5±2dBm/50Ω	
	1 x 1PPS TTL/50Ω	
	1 x 10 PPS TTL/50Ω	
	1 x IRIG B, 50Ω	
	1 x BIT Status via RS 232 9600 Baud	
Event Input	See table below " Time Tagging Specifications"	
Clock Selection Mode	Mechanical selector of 3 states: CLOCK A, CLOCK B, AUTO	
Output	4 x IRIG B, 50Ω	Contact factory for other outputs configurations
	4 x 1PPS TTL/50Ω	
	2 x 10PPS TTL/50Ω	
	2 x 10MHz sine wave, 5±2dBm/50Ω	
RS232	9600 Baud, 8 bit, No Parity, 1 stop	

Time Tagging Specifications		
Event Pulse Specification	Maximum input rate:	Min time between two events > 10ms
	Buffer size:	1 event
	Input pulse height:	+2 to 15 volts
	Minimum pulse width:	200 nanosecond
	Triger level:	Positive edge at about +1.6 Vdc
	Input Impedance:	50 ohms
	Input Connector:	BNC
Time tag resolution	10ns	
Time tag accuracy	< 100ns relative to input clock	
Software Command from remote PC	TTPA	Clear Time Tag Buffer
	TTTA	Request of Available Time Tag
	TTRT	Request Time Tag Report
	BIT	Report BIT (Factory use)

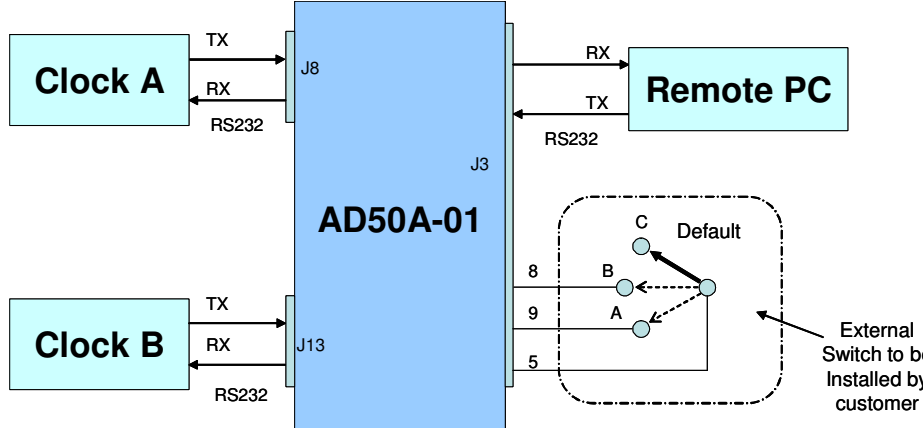
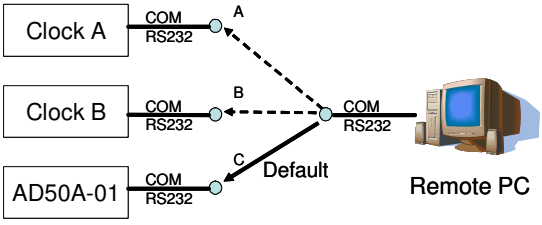
Power Supply	
AC	90-260 VAC 47-63 Hz (standard) <10W
DC	28 VDC (optional)

Environmental			
Temperature	Operating	-25°C to 60 °C	<u>Option (only for DC power supply):</u> -40 °C to +70 °C
	Non-operating	-25 °C to +70 °C	
Humidity (non-condensing)	Operating:	20% to 90%	
	Non-operating:	10% to 95%	

Dimensions & Weight		
19" x 2U Rack Mount	Size	86 x 348 x 482 mm ; (19",2U) 3.3 x 13.7 x 19.0 inch
	Wight	< 5 kg (11.1 lbs.)

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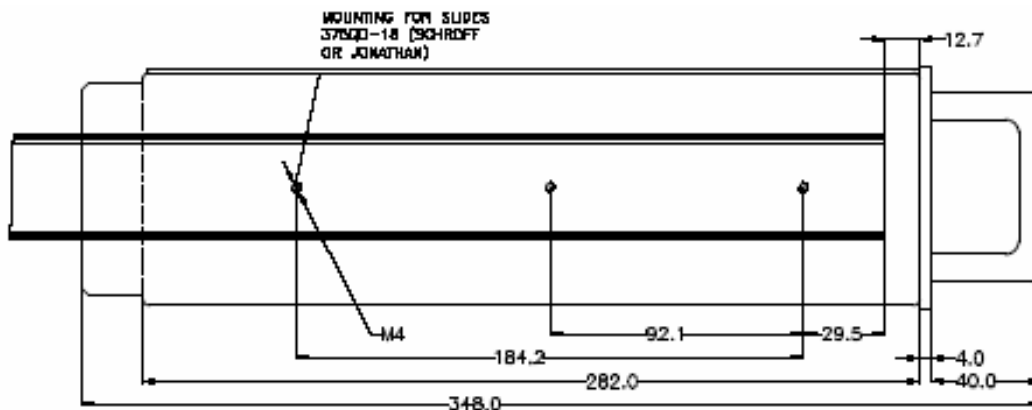
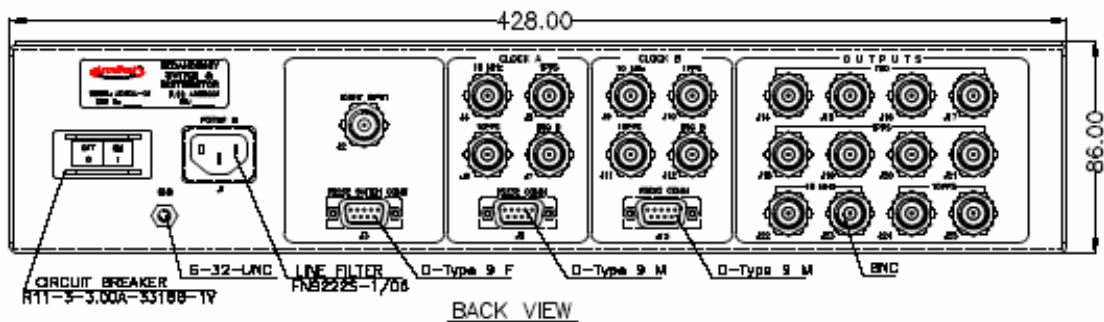
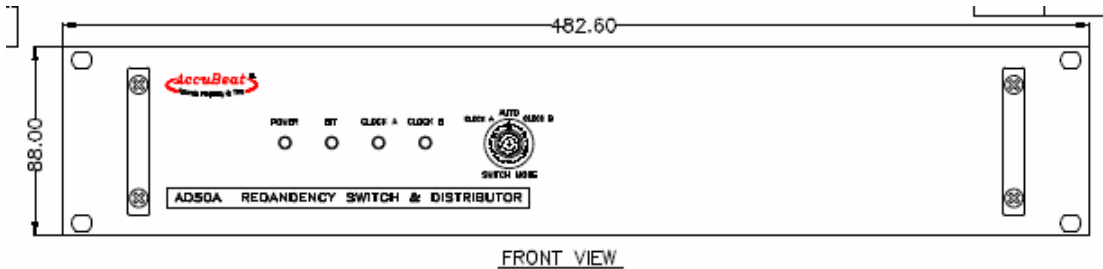
Remote Control & Diagnostics										
4 LEDs on front panel	Power	Green – Power is OK								
	BIT Status	Green – All outputs are valid								
	Clock A	Off – Clock isn't connected Green – Clock is OK and selected								
	Clock B	Orange – Clock is OK but not selected Red – Clock isn't OK								
Remote Monitor & Control	As a default the remote PC is connected to AD50A-01 but it can also be connected to Clock A and Clock B via the AD50A-01 by adding an external switch (see the diagram below)									
										
										
<table border="1" style="border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: left;">Mechanical Switch States</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">A</td> <td>Remote PC is connected to CLOCK A</td> </tr> <tr> <td style="text-align: center;">B</td> <td>Remote PC is connected to CLOCK B</td> </tr> <tr> <td style="text-align: center;">C</td> <td>Remote PC is connected to AD50A-01 (default)</td> </tr> </tbody> </table>			Mechanical Switch States		A	Remote PC is connected to CLOCK A	B	Remote PC is connected to CLOCK B	C	Remote PC is connected to AD50A-01 (default)
Mechanical Switch States										
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Electrical ICD					
I/O	Connector	Panel	Description	Standard Type	Optional
Input	J1	Power in	AC power in (110V/220V)	Standard Inlet IEC 320 C14	
Input	J2	Event input	Event input	BNC, Female	
Input/Output	J3	RS-232 SWITCH COMM	9600 Baud	D-Type, Female	
Input	J4	CLOCK A 10MHz	10MHz sine wave, 5±2dBm/50Ω	BNC, Female	
	J5	CLOCK A 1PPS	1PPS, TTL/50Ω		
	J6	CLOCK A 10PPS	10PPS, TTL/50Ω		
	J7	CLOCK A TOD	IRIG B, 0.5V ÷ 2V P-P @ 50Ω		
Input/Output	J8	CLOCK A	9600 Baud	D-Type, Male	
Input	J9	CLOCK B 10MHz	10MHz sine wave, 5±2dBm/50Ω	BNC, Female	
	J10	CLOCK B 1PPS	1PPS, TTL/50Ω		
	J11	CLOCK B 10PPS	10PPS, TTL/50Ω		
	J12	CLOCK A TOD	IRIG B, 0.5V ÷ 2V P-P @ 50Ω		
Input/Output	J13	CLOCK B	9600 Baud, See Par. 5 for pin out	D-Type, Male	
Output	J14-J17	TOD	IRIG B, 50Ω	BNC, Female	
	J18-J21	1PPS	1PPS, TTL/50Ω		
	J22-J23	10MHz	10MHz sine wave, 5±2dBm/50Ω		
	J24-J25	10PPS	10PPS, TTL/50Ω		

SPECIFICATIONS (continue)

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Mechanical ICD



HOW TO ORDER

DESCRIPTION	AccuBeat P/N:
Standard AD50A-01 unit	AD50001
Other Input/Output t configuration	Contact Factory
Operating Temperature -40 °C to +70 °C	
28VDC	
PGS Antenna, Cables	

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