



APOGEE LABS ISA-STG2 TIME CODE BOARD

The ISA-STG2 is a Synchronized Time Generator module for the ISA bus. It can function in a variety of fashions because it contains reconfigurable logic. Prior to operation, the module is loaded with a configuration file which determines the code type (NASA-36 or IRIG-B for example) and the operating mode:

- Stand alone (free running) Generator
- Synchronized Generator
- Tape Time Reader

FEATURES

- Resides on and receives setup from ISA bus
- Reads or synchronizes on IRIG- B, NASA- 36 time code
- Latches times of up to 5 events or interrupts
- Provides 46- bit binary time to computer with 1 microsecond resolution
- Configurable to one of several modes
- Can be configured to provide modulated serial time code output (optional)

REFERENCE CODE INPUT

Format: IRIG- B/ NASA- 36
Carrier: .5 to 10 Volts p- p
Ratio: 2: 1 to 4: 1
Input Imp: 3000 Ohm

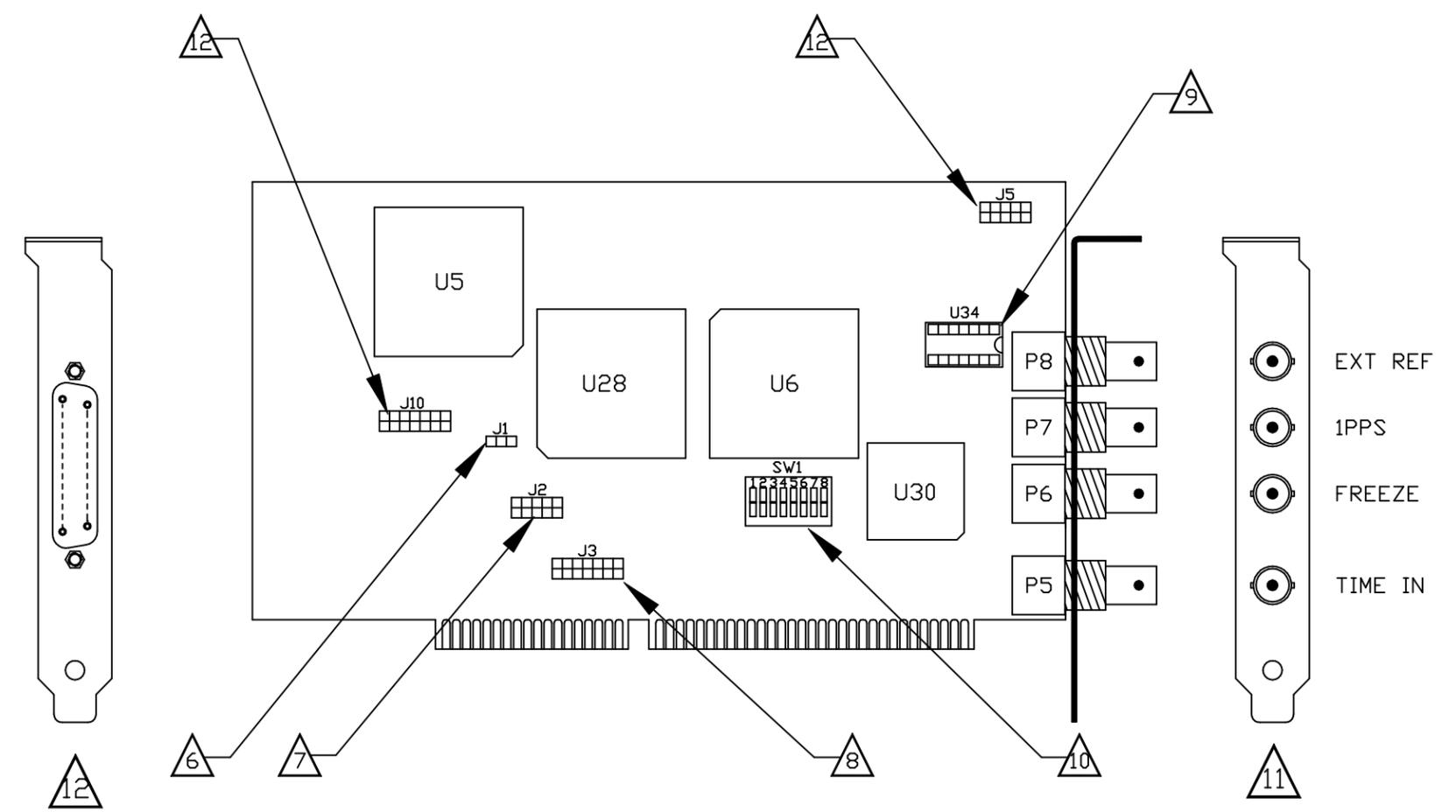
AM TIME OUTPUT

Format: IRIG- B/ NASA- 36
Carrier: Adjustable, 1 to 6 Volts p- p
(Factory set to 6)
Ratio: Adjustable 2: 1 to 4: 1
(Factory set to 3: 1)
Impedance: 50 Ohm

8 7 6 5 4 3 2 1

REVISIONS			
ZONE	LTR	DESCRIPTION	DATE

- NOTES:
- THE FOLLOWING DOCUMENT SUPPLEMENTS THE CONFIGURATION FILE. SEE THE CONFIGURATION FILE FOR SPECIFIC SETTING BASED ON SLOT LOCATION.
 - THE FOLLOWING DOCUMENT PROVIDES DETAILED INFORMATION ON HOW TO CONFIGURE THE APOGEE ISA-STG2 TIME GENERATOR. THIS DOCUMENT IN ADDITION WILL BE A SINGLE SOURCE OF REFERENCE FOR SWITCH SETTINGS, JUMPER CONFIGURATIONS, AND PROVIDE THE INSTALLER WITH CONNECTOR INTERFACE PINOUTS.
 - CAUTION - THIS ITEM CONTAINS PARTS SENSITIVE TO DAMAGE BY ELECTROSTATIC DISCHARGE (ESD). USE PRECAUTIONARY PROCEDURES WHEN TOUCHING, REMOVING, OR INSERTING PARTS OR ASSEMBLIES.
 - REFERENCE DESIGNATIONS ARE USED IN PLACE OF FIND NUMBERS FOR LOCATING COMPONENTS WHERE APPLICABLE.
 - SQUARE PAD DENOTES PIN 1.
 - CONFIGURE J1 JUMPERS AS SHOWN ON SHEET 2. FOR ADDITIONAL SETTINGS, REFER TO THE MANUFACTURERS USERS MANUAL.
 - CONFIGURE J2 JUMPERS AS SHOWN ON SHEET 2. FOR ADDITIONAL SETTINGS, REFER TO THE MANUFACTURERS USERS MANUAL.
 - CONFIGURE J3 JUMPERS AS SHOWN ON SHEET 2. FOR ADDITIONAL SETTINGS, REFER TO THE MANUFACTURERS USERS MANUAL.
 - CONFIGURE U34 JUMPERS AS SHOWN ON SHEET 2. FOR ADDITIONAL SETTINGS, REFER TO THE MANUFACTURERS USERS MANUAL.
 - CONFIGURE SWITCH, SW1, SETTINGS AS SHOWN ON SHEET 2.
 - THE BNC CONNECTOR I/O PINOUTS ARE SHOWN ON SHEET 2.
 - THE DB25 CONNECTOR I/O PINOUTS ARE SHOWN ON SHEET 2. CONNECTION TO THE PWB IS MADE THROUGH TWO CONNECTORS TO J10 AND J5 AS DETAILED IN THE TABLE ON SHEET 2.



PRIMARY SIDE (COMPONENT SIDE)

FOR DETAILED PWB LAYOUT AND ADDITIONAL SETTINGS, SEE USERS MANUAL

ITEM NO.	QTY REQD	QTY REQD	QTY REQD	QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	SPECIFICATION	NOMENCLATURE OR DESCRIPTION	REF DESIG	NOTE NO.
	-4	-3	-2	-1						
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES						CONTR NO.		AVTEC SYSTEMS		
TOLERANCES:						DR. Myron P. Szot		10530 ROSEHAVEN STREET, SUITE 300		
2 PLACES DEC. ±.01						12/23/1998		FAIRFAX, VA 22030		
3 PLACES DEC. ±.005						DWG SUP		TITLE:		
ANGLES ±						CHK		APOGEE ISA-STG2		
MATERIAL:						ENGR		CONFIG. AND INSTALL		
FINISH:						PROJ APPD		SIZE D		REV -
N/A						N/A		CAGE		DWG NO. PTP-8020-CI
								SCALE: NONE		SHEET 1 OF 2

TYPE DOCUMENT	IDENT NO.	DESCRIPTION
REFERENCED DOCUMENTS		

8 7 6 5 4 3 2 1

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPD

6

J1 JUMPER SETTINGS	
JUMPER POSITION	SETTING TO USE
P6	FREEZE BNC
SRC SEL	IRQ/EXT EVENTS AS SET PER J2

FIGURE 3: J1 JUMPER SETTINGS

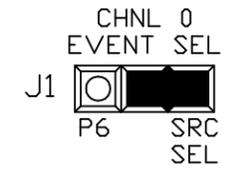
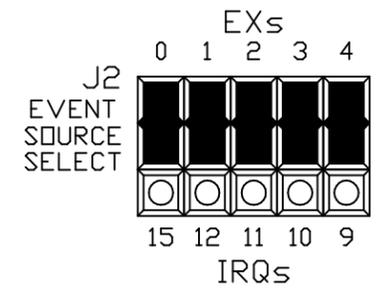


FIGURE 4: J2 JUMPER SETTINGS



11

BNC FRONT PANEL CONNECTOR ASSIGNMENTS		
CONNECTOR NUMBER	SCHEMATIC MNEMONIC	SIGNAL DESCRIPTION
P5	TIME	EXTERNAL TIME BASE INPUT, FORMAT SINEWAVE IRIG-B/NASA-36
P6	J2IN	EXTERNAL FREEZE INPUT
P7	J3IN	EXTERNAL 1PPS REFERENCE INPUT, FORMAT TTL
P8	J4IN	10MHZ EXTERNAL REFERENCE INPUT

FIGURE 5: J3 JUMPER SETTINGS

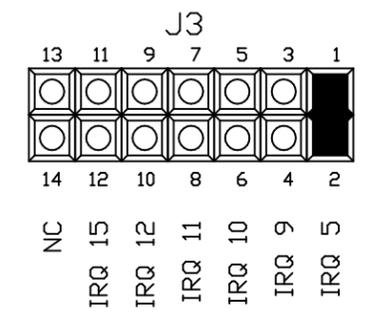
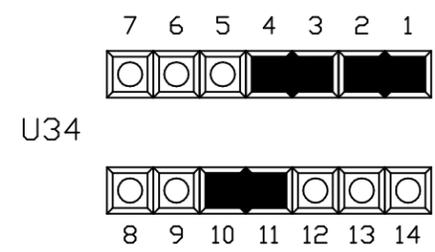


FIGURE 6: U34 JUMPER SETTINGS



12

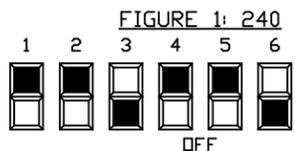
DB25 CONNECTOR PIN ASSIGNMENTS			
CONNECTOR PIN NO.	SCHEMATIC MNEMONIC	SIGNAL DESCRIPTION	CONNECTOR PIN ASSIGNMENT
1	GND	SIGNAL GROUND	J10-1
2	GND	SIGNAL GROUND	J10-3
3	GND	SIGNAL GROUND	J10-5
4	GND	SIGNAL GROUND	J10-7
5	GND	SIGNAL GROUND	J10-9
6	GND	SIGNAL GROUND	J10-11
7	GND	SIGNAL GROUND	J10-13
8	-	-	
9	AUX1	REFERENCE CODE INPUT 1, FORMAT IRIG-B/NASA-36	J5-2
10	AUX2	REFERENCE CODE INPUT 2, FORMAT IRIG-B/NASA-36	J5-4
11	AUX3	REFERENCE CODE INPUT 3, FORMAT IRIG-B/NASA-36	J5-6
12	AUX4	REFERENCE CODE INPUT 4, FORMAT IRIG-B/NASA-36	J5-8
13	-	-	
14	EX4	EXTERNAL EVENT INPUT 4, FORMAT TTL SIGNAL	J10-2
15	EX3	EXTERNAL EVENT INPUT 3, FORMAT TTL SIGNAL	J10-4
16	EX2	EXTERNAL EVENT INPUT 2, FORMAT TTL SIGNAL	J10-6
17	EX1	EXTERNAL EVENT INPUT 1, FORMAT TTL SIGNAL	J10-8
18	EX0	EXTERNAL EVENT INPUT 0, FORMAT TTL SIGNAL	J10-10
19	GND	SIGNAL GROUND	J10-12
20	TCOUT	AM TIME OUTPUT, FORMAT IRIG-B/NASA-36	J10-14
21	GND	SIGNAL GROUND	J5-1
22	GND	SIGNAL GROUND	J5-3
23	GND	SIGNAL GROUND	J5-5
24	GND	SIGNAL GROUND	J5-7
25	-	-	

NOTE: A "--" INDICATES NO CONNECTION

10

SW1 DIP SWITCH SETTINGS										
DIP SWITCH								ADDRESS BITS		ASSOCIATED FIGURE
8	7	6	5	4	3	2	1	BINARY	HEX	
D/C	D/C	OFF	ON	ON	OFF	ON	ON	--100100	240	
D/C	D/C	OFF	OFF	ON	ON	ON	ON	--110000	300	FIGURE 2

* D/C - DON'T CARE



ROCKER UP IS ON
ROCKER DOWN IS OFF

