

P/N 5004-0940A REV. B
SEPTEMBER 1996

**MODEL EAS 940A
TRANSMITTER/PROGRAM INTERRUPT UNIT
USER'S GUIDE**

TFT, INC
3090 OAKMEAD VILLAGE DRIVE
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GENERAL INFORMATION

About This Guide

This User's Guide contains instructions for unpacking, setting up, operating, and routine maintenance of the TFT Model EAS 940A Transmitter/Program Interrupt Unit. It is recommended that the user read this Guide, and follow the pre-installation checkout on Page 7 and the steps on Page 8 for installation and operation.

Equipment Description

The EAS 940A Program/Transmitter Interrupt Unit enables a station's audio program to be interrupted and the audio output from the TFT EAS 911 to be inserted automatically. Unattended operation can be easily accomplished to meet the requirements of Parts 11 and 73 of FCC Rules by using the EAS 940A in conjunction with the EAS 911 and the optional EAS 941A Remote Control/Status Module. Figure 1-1 is a signal flow diagram of the unit.

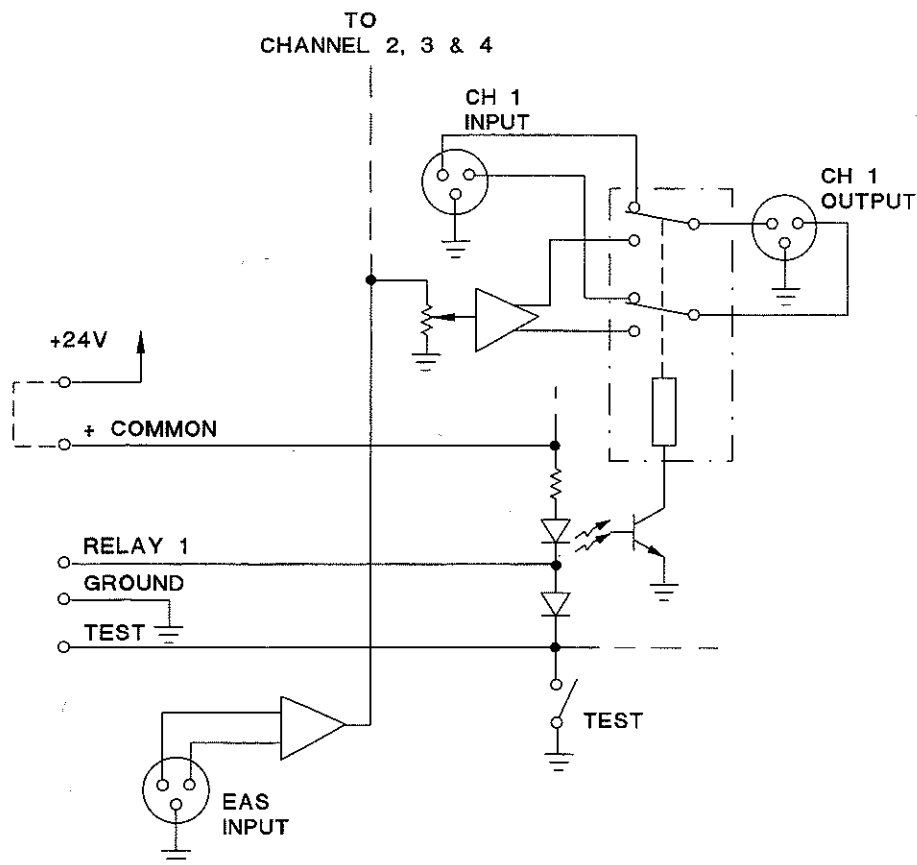


Figure 1. EAS 940A Signal Flow Diagram

GENERAL INFORMATION

The EAS 940A operates in either of two modes: Normal or EAS. In the Normal or "Straight Through" mode, user audio of up to four channels is routed directly through the unit to four corresponding output connectors. The channels can be selected individually or in any combination by external wiring or contact closure of the EAS 911 On-Air relay. When an input contact closure is sensed at RELAYS 1 through 4, the unit is switched to EAS mode in which relays K1 through K4 energize to route EAS audio to the selected output channels. The front panel TEST switch or the rear panel TEST contact can also be used to switch all four channels of the unit to the EAS mode.

Specifications

The EAS 940A performance and physical specifications are listed in Table 1.

Table 1

SPECIFICATIONS

PERFORMANCE

EAS Audio Input Level	+8 dBm maximum
EAS Output Level (Channel 1 through 4)	+8 dBm maximum
EAS Gain Adjust	-10 dB to +10 dB
Channel Switching	One DPDT relay per channel
Power Fail Relay State	Straight through
Relay Inputs	Optoisolated
Output Isolation	90 dB
Input Power, AC	120 VAC, 50-60 Hz, 10 watts

PHYSICAL AND ENVIRONMENTAL

Outside Dimensions	1.75" H x 19" W x 13" D (approx. 3.75 behind panel)
Mounting	1U 19" rack mount
Operating Temperature	0° to 50° C
Net Weight	3 lbs.

GENERAL INFORMATION

Warranty Information

The following warranty policy and limitations are applicable to the Model EAS 940A Transmitter/Program Interrupt Unit.

WARRANTY

TFT, Inc. warrants each manufactured Model EAS 940A Transmitter/Program Interrupt Unit to meet published specifications and to be free from defects in material and workmanship. TFT will repair or replace, at its expense, for a period of one (1) year from the date of shipment of equipment, all parts which are defective from faulty material or workmanship. This Warranty does not cover equipment which has been misused and/or altered by the user. Units found to be defective during the warranty period shall be returned to TFT with transportation charges prepaid by the BUYER. It is expressly agreed that replacement and repair shall be the sole remedy of the SELLER with respect to any non-conforming equipment and parts thereof, and shall be in lieu of any other remedy available by applicable law. All returns to the factory must be authorized in advance by TFT. Upon examination by the factory, if any EAS 940A equipment is found to be defective, the unit will be repaired and returned to the BUYER with transportation charges prepaid by TFT during the warranty period. Transportation charges for the units found to be defective within the first 30 days of the warranty period will be paid both ways by TFT. Transportation charges for warranty returns wherein failure is found not to be the fault of TFT or one year after the delivery of the equipment shall be paid both ways by the BUYER. This warranty does not apply to equipment which, in the opinion of the SELLER, has been altered or misused.

NO OTHER WARRANTY IS EXPRESSED OR IMPLIED. TFT IS NOT LIABLE FOR ANY CONSEQUENTIAL DAMAGES.

Claims for Damage in Shipment

Your instrument should be inspected and tested as soon as it is received using the method given in **Pre-Installation Checkout** on Page 8 of this guide. If the instrument is damaged in any way or fails to operate properly due to transportation damage, file a claim with the carrier or, if insured separately, with the insurance company.

TECHNICAL SUPPORT

OUR EMERGENCY SERVICE IS AVAILABLE 24 HOURS A DAY. PLEASE CALL US IF YOU NEED ASSISTANCE WITH ANY TFT PRODUCT.

TFT, INC.

3090 OAKMEAD VILLAGE DRIVE
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GETTING TO KNOW YOUR EAS 940A

Unpacking and Inspection

Upon receiving your EAS 940A, inspect the packing box for signs of shipping damage. Report any damage to the transportation company.

Open the shipping box, and verify that it contains the following items:

- Model EAS 940A Transmitter/Program Interrupt Unit
- Power Cord
- EAS 940A Installation and Operation Guide
- Terminal Block, 8-pin female
- Warranty Card

After unpacking, check the instrument in accordance with the procedures given on Page 8 of this guide. If the instrument is damaged or fails to operate properly due to transportation damage, file a claim with the transportation company or, if insured separately, with the insurance company.

Front Panel Controls and Indicators

Front panel controls and indicators are shown in Figure 2. Numbered items in this figure are explained in Table 2.

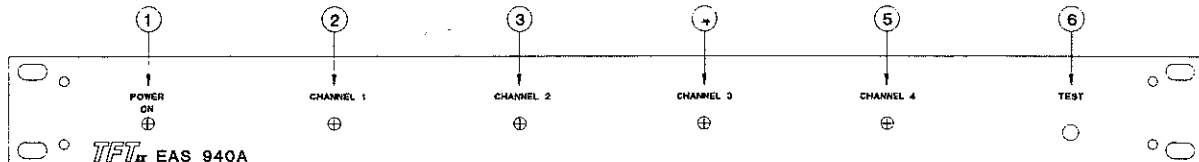


Figure 2. Front Panel Controls and Indicators

Table 2. Front Panel Controls and Indicators

ITEM	TITLE	FUNCTION
1	POWER ON	Yellow LED indicator. Lights when primary power is applied to unit.
2	CHANNEL 1	Red LED indicator. Lights when Channel 1 is in the EAS mode.
3	CHANNEL 2	Red LED indicator. Lights when Channel 2 is in the EAS mode.
4	CHANNEL 3	Red LED indicator. Lights when Channel 3 is in the EAS mode.
5	CHANNEL 4	Red LED indicator. Lights when Channel 4 is in the EAS mode.
6	TEST	Toggle switch. Switches unit to EAS mode for test purposes.

Rear Panel Connectors

Rear panel connectors are shown in Figure 3. Numbered items in this figure are explained in Table 3.

Figure 3. Rear Panel Connectors

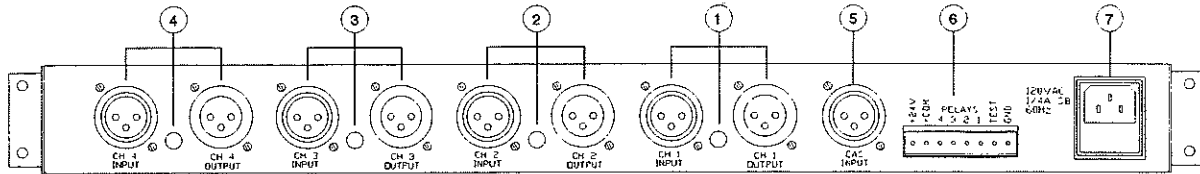


Table 3. Rear Panel Connectors

ITEM	TITLE	FUNCTION
1	CHANNEL 1	Input: Female XLR connector. Audio from user's equipment. Gain Control: Adjusts EAS gain from -10 dB to +10 dB. Output: Male XLR connector. Audio output to user's equipment.
2	CHANNEL 2	Input, Gain Control and Output identical to Channel 1.
3	CHANNEL 3	Input, Gain Control and Output identical to Channel 1.
4	CHANNEL 4	Input, Gain Control and Output identical to Channel 1.
5	EAS INPUT	Female XLR connector. Accepts audio from EAS 911.
6	ON-AIR CONTROLS	8-pin connector for On-Air relay control from EAS 911 or EAS 941A. +24V: Provides current-limited 24V for LEDs of optoisolated inputs. +COM: Common connection of four LED anodes. RELAY 1: Channel 1 LED cathode. Closure to ground puts Channel 1 in EAS mode. RELAY 2, 3, AND 4: Identical to Channel 1. TEST: Closure to ground puts all four channels in EAS mode.
7	120 VAC 60Hz	IEC 3-prong primary power connector.

PRE-INSTALLATION CHECKOUT

The EAS 940A should be tested before installation to ensure that the unit is operating properly. Proceed as follows:

1. At the rear panel of the unit, connect a jumper wire between the +24V and +COM pins.
2. Apply 120 VAC primary power to the unit. Verify that the POWER ON indicator is lit and that the CHANNEL 1 through CHANNEL 4 indicators are not lit.
3. Operate the front panel TEST switch to the TEST (up) position. Verify that the CHANNEL 1 through CHANNEL 4 indicators are lit when the switch is in the TEST position. Return the TEST switch to its normal (down) position.
4. At the rear panel of the unit, connect a jumper wire between the GROUND and TEST pins. Verify that the CHANNEL 1 through CHANNEL 4 indicators are lit with the jumper wire connected.
5. Remove the jumper wire from the TEST Pin and connect it to RELAY 1. The CHANNEL 1 indicator should light. Repeat for RELAY 2, 3 AND 4. The indicators for CHANNEL 2, 3 and 4 should light, respectively.
6. Remove the jumper wires.
7. The EAS 940A is now ready for installation and use.

SYSTEM INSTALLATION

Typical system installation of the EAS 940A is shown in Figure 4.

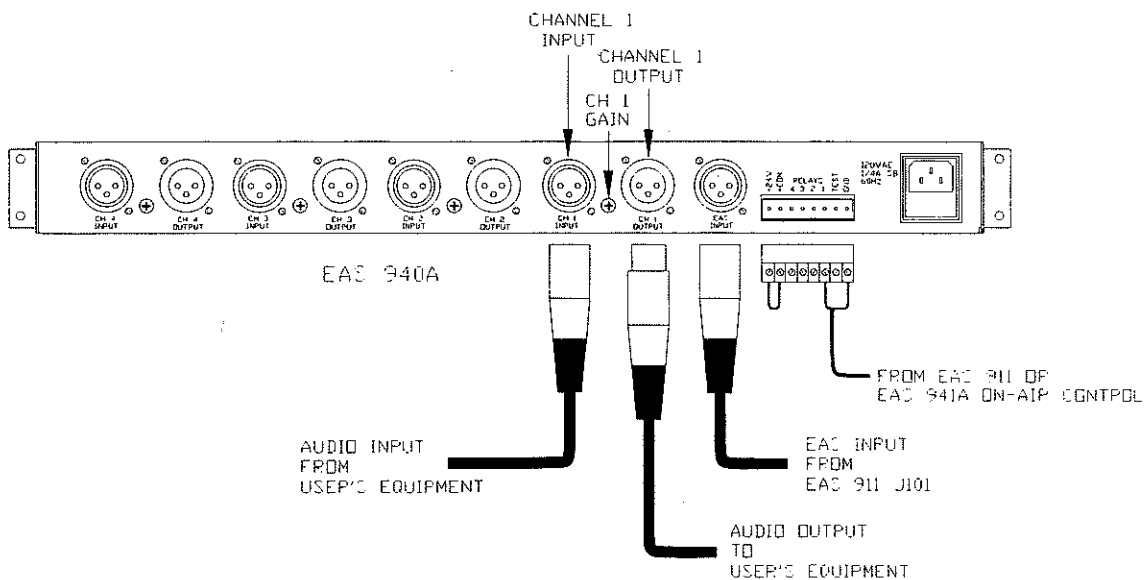


Figure 4. EAS 940A System Wiring Diagram

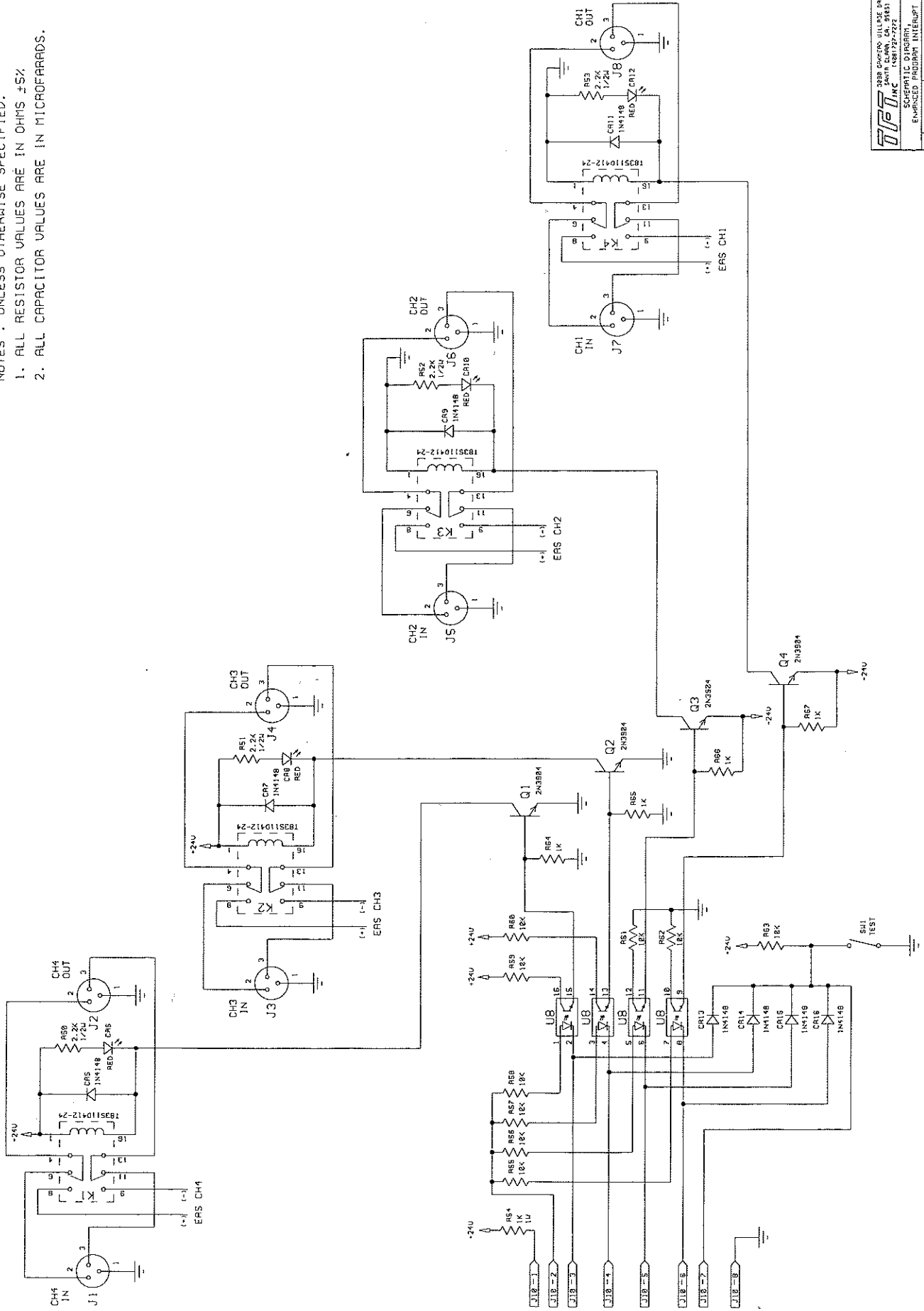
ENGINEERING DRAWINGS

Engineering drawings and parts lists for the EAS 940A are supplied on the following pages. Contents of these drawings are as follows:

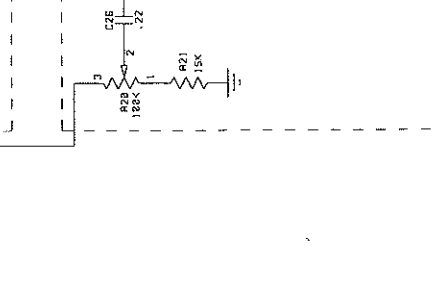
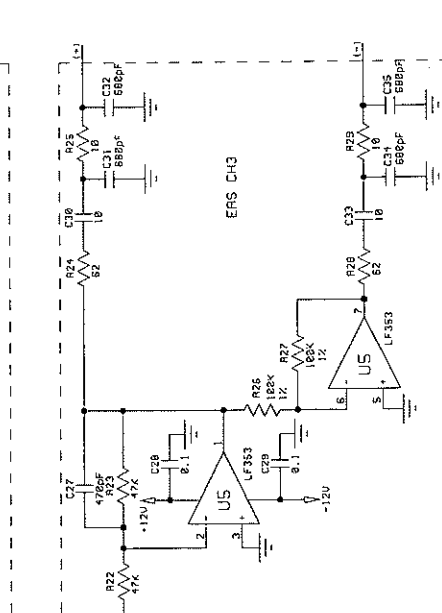
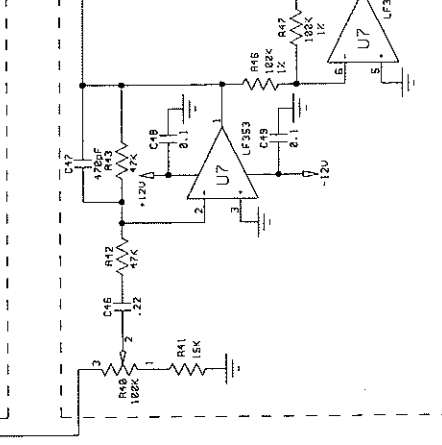
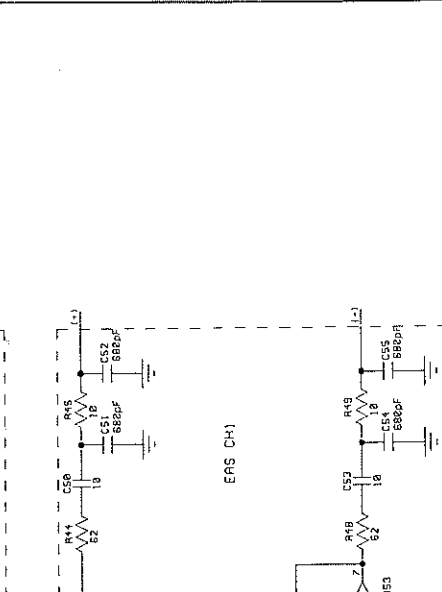
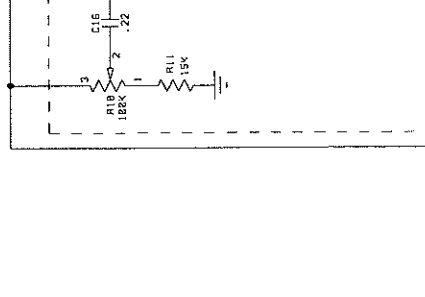
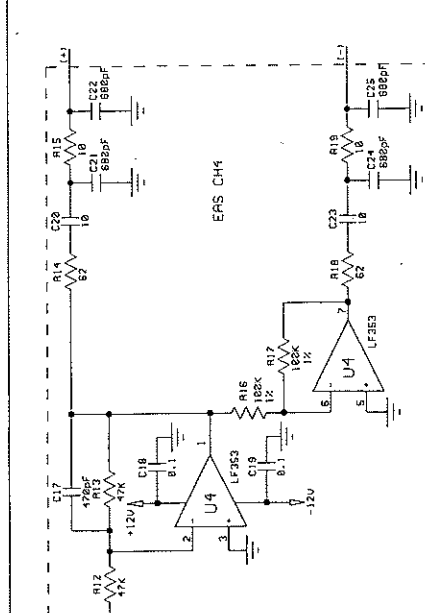
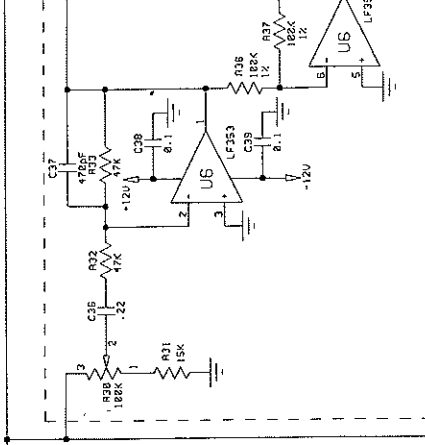
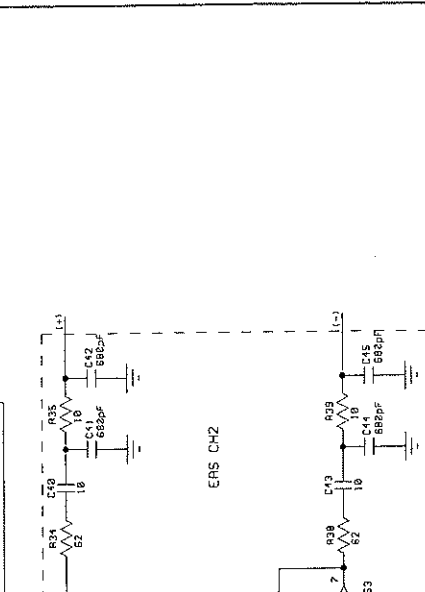
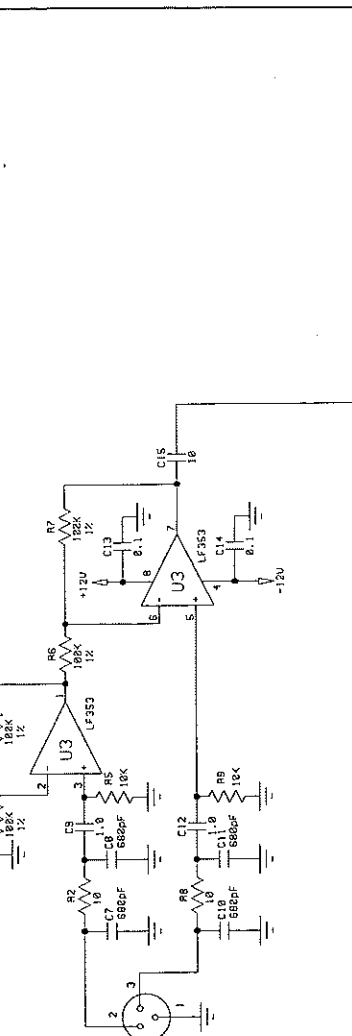
Figure No.	Title	Drawing
A-1	Transmitter/Program Interrupt Board, Schematic	6601-4040
A-2	Transmitter/Program Interrupt Board, PCB Assy.	6608-4040
A-3	Transmitter/Program Interrupt Board, Parts List.	6608-4040

NOTES : UNLESS OTHERWISE SPECIFIED.

1. ALL RESISTOR VALUES ARE IN OHMS ±5%
2. ALL CAPACITOR VALUES ARE IN MICROFARADS.



REV	NO.	DESCRIPTION	DATE	BY
A	1	PRODUCTION RELEASE	7-23-55	
	1	RE CHANGED CAPN. NO.5	9-1-55	



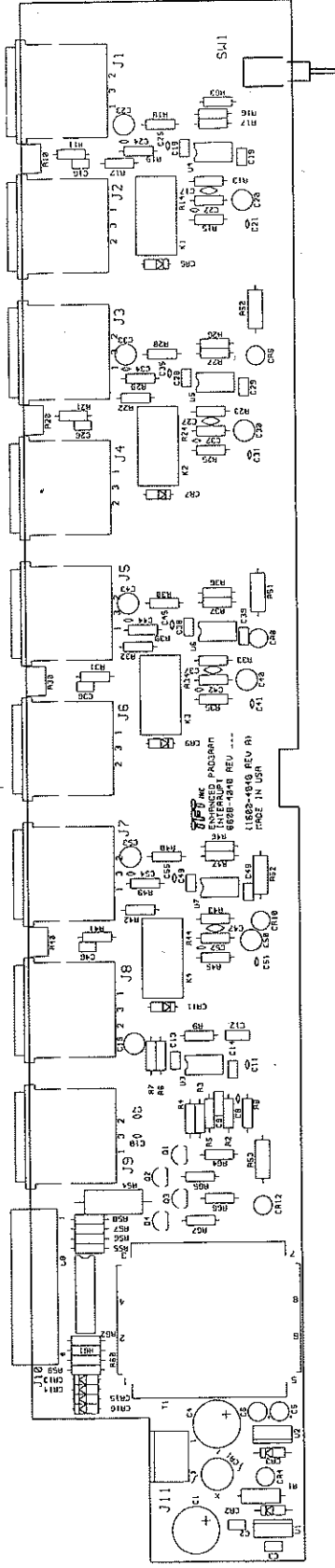
REV	NO.	DESCRIPTION	DATE	BY
A	1	PRODUCTION RELEASE	7-23-55	
	1	RE CHANGED CAPN. NO.5	9-1-55	

REV	NO.	DESCRIPTION	DATE	BY
A	1	PRODUCTION RELEASE	7-23-55	
	1	RE CHANGED CAPN. NO.5	9-1-55	

REV	NO.	DESCRIPTION	DATE	BY
A	1	PRODUCTION RELEASE	7-23-55	
	1	RE CHANGED CAPN. NO.5	9-1-55	

REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED
	A	PRODUCTION RELEASE	7-23-95	



- NOTES:
1. ALL CAPS TO BE FLUSH TO PCB.
 2. MAXIMUM LEAD HEIGHT NOT TO EXCEED .075".

APPROVALS		DATE
DESIGN	JO ANN	7-23-95
CHECKED		
ENGR.		
FRG.		
S.A.		
EAS9-08 6608-4010		
MODEL NEXT ASSY		
APPLICATION		
3898 DAKTARD VILLAGE DR. SANTA CLARA, CA. 95051		
TPT INC (408)727-7272		
ASSEMBLY DRAWING, ENHANCED PROGRAM INTERRUPT		
SIZE	FSCH NO.	REV
C	6608-4010	A
SCALE	NONE	SHEET 1 OF 1

CKT REF	DESCRIPTION	TFT PART NO.
C001	CAP ELECT 1000UF 35V RADIAL	1010-0113EAS
C002	CAP CER .22MF CK06BX224K	1015-0003CEAS
C003	CAP CER 0.1MF CK05BX K	1015-0001CEAS
C004	CAP ELECT 1000UF 35V RADIAL	1010-0113EAS
C005	CAP TANT 2.2UF 35V	1008-0024EAS
C006	CAP TANT 2.2UF 35V	1008-0024EAS
C007	CAP MONO CER 680PF	1016-0681CEAS
C008	CAP MONO CER 680PF	1016-0681CEAS
C009	CAP CER DISC 1MFD	1005-0001CEAS
C010	CAP MONO CER 680PF	1016-0681CEAS
C011	CAP MONO CER 680PF	1016-0681CEAS
C012	CAP CER DISC 1MFD	1005-0001CEAS
C013	CAP CER 0.1MF CK05BX K	1015-0001CEAS
C014	CAP CER 0.1MF CK05BX K	1015-0001CEAS
C015	CAP ELEC 10MFD 25V NP V MT	1010-0013CEAS
C016	CAP CER .22MF CK06BX224K	1015-0003CEAS
C017	CAP CER 470PF CK05B	1015-0470CEAS
C018	CAP CER 0.1MF CK05BX K	1015-0001CEAS
C019	CAP CER 0.1MF CK05BX K	1015-0001CEAS
C020	CAP ELEC 10MFD 25V NP V MT	1010-0013CEAS
C021	CAP MONO CER 680PF	1016-0681CEAS
C022	CAP MONO CER 680PF	1016-0681CEAS
C023	CAP ELEC 10MFD 25V NP V MT	1010-0013CEAS
C024	CAP MONO CER 680PF	1016-0681CEAS
C025	CAP MONO CER 680PF	1016-0681CEAS
C026	CAP CER .22MF CK06BX224K	1015-0003CEAS
C027	CAP CER 470PF CK05B	1015-0470CEAS
C028	CAP CER 0.1MF CK05BX K	1015-0001CEAS
C029	CAP CER 0.1MF CK05BX K	1015-0001CEAS
C030	CAP ELEC 10MFD 25V NP V MT	1010-0013CEAS
C031	CAP MONO CER 680PF	1016-0681CEAS
C032	CAP MONO CER 680PF	1016-0681CEAS
C033	CAP ELEC 10MFD 25V NP V MT	1010-0013CEAS
C034	CAP MONO CER 680PF	1016-0681CEAS
C035	CAP MONO CER 680PF	1016-0681CEAS
C036	CAP CER .22MF CK06BX224K	1015-0003CEAS
C037	CAP CER 470PF CK05B	1015-0470CEAS
C038	CAP CER 0.1MF CK05BX K	1015-0001CEAS
C039	CAP CER 0.1MF CK05BX K	1015-0001CEAS
C040	CAP ELEC 10MFD 25V NP V MT	1010-0013CEAS
C041	CAP MONO CER 680PF	1016-0681CEAS
C042	CAP MONO CER 680PF	1016-0681CEAS
C043	CAP ELEC 10MFD 25V NP V MT	1010-0013CEAS
C044	CAP MONO CER 680PF	1016-0681CEAS
C045	CAP MONO CER 680PF	1016-0681CEAS
C046	CAP CER .22MF CK06BX224K	1015-0003CEAS
C047	CAP CER 470PF CK05B	1015-0470CEAS
C048	CAP CER 0.1MF CK05BX K	1015-0001CEAS
C049	CAP CER 0.1MF CK05BX K	1015-0001CEAS
C050	CAP ELEC 10MFD 25V NP V MT	1010-0013CEAS
C051	CAP MONO CER 680PF	1016-0681CEAS
C052	CAP MONO CER 680PF	1016-0681CEAS
C053	CAP ELEC 10MFD 25V NP V MT	1010-0013CEAS
C054	CAP MONO CER 680PF	1016-0681CEAS
C055	CAP MONO CER 680PF	1016-0681CEAS
CR01	1.5A BRDG RECT RB-151	1284-0151EAS
CR02	DIO 1N4002 RECT	1284-4002CEAS
CR03	DIO 1N4002 RECT	1284-4002CEAS
CR04	LED 4719QT YELLOW T-1 3/4 PKG	1285-4719EAS
CR05	1N4148 DIODE	1281-4148CEAS
CR06	LED HP5082-4403 RED	1285-4403CEAS
CR07	1N4148 DIODE	1281-4148CEAS
CR08	LED HP5082-4403 RED	1285-4403CEAS
CR09	1N4148 DIODE	1281-4148CEAS
CR10	LED HP5082-4403 RED	1285-4403CEAS
CR11	1N4148 DIODE	1281-4148CEAS
CR12	LED HP5082-4403 RED	1285-4403CEAS
CR13	1N4148 DIODE	1281-4148CEAS
CR14	1N4148 DIODE	1281-4148CEAS
CR15	1N4148 DIODE	1281-4148CEAS

CKT REF	DESCRIPTION	TFT PART NO.
CR16	1N4148 DIODE	1281-4148CEAS
J001	PGG3FRA112 3PIN R/A FEMALE CON	2220-3702CEAS
J002	PGG3MRA112 3 PIN R/A MALE PC CO	2220-3701CEAS
J003	PGG3FRA112 3PIN R/A FEMALE CON	2220-3702CEAS
J004	PGG3MRA112 3 PIN R/A MALE PC CO	2220-3701CEAS
J005	PGG3FRA112 3PIN R/A FEMALE CON	2220-3702CEAS
J006	PGG3MRA112 3 PIN R/A MALE PC CO	2220-3701CEAS
J007	PGG3FRA112 3PIN R/A FEMALE CON	2220-3702CEAS
J008	PGG3MRA112 3 PIN R/A MALE PC CO	2220-3701CEAS
J009	PGG3FRA112 3PIN R/A FEMALE CON	2220-3702CEAS
J010	8 PIN .200 CTR PLUG CONN	1700-1008EAS
J011	PLUG LOCKING 3 PIN	2250-6003CEAS
K001	RELAY 24V DPDT	1880-0040EAS
K002	RELAY 24V DPDT	1880-0040EAS
K003	RELAY 24V DPDT	1880-0040EAS
K004	RELAY 24V DPDT	1880-0040EAS
PCB1	PROGRAM INTERRUPT PCB	1600-4040EAS
Q001	2N3904 NPN (TO-92) TRANSISTOR	1271-3904CEAS
Q002	2N3904 NPN (TO-92) TRANSISTOR	1271-3904CEAS
Q003	2N3904 NPN (TO-92) TRANSISTOR	1271-3904CEAS
Q004	2N3904 NPN (TO-92) TRANSISTOR	1271-3904CEAS
R001	RES 2.2K 1/2W CAR 5%	1067-0221EAS
R002	RES CAR FILM 1/4W 5% 10 OHM	1065-0010CEAS
R003	RES MT FLM 1/8W 1% 100K	1061-1003CEAS
R004	RES MT FLM 1/8W 1% 100K	1061-1003CEAS
R005	RES CAR FILM 1/4W 5% 10K	1065-1002CEAS
R006	RES MT FLM 1/8W 1% 100K	1061-1003CEAS
R007	RES MT FLM 1/8W 1% 100K	1061-1003CEAS
R008	RES CAR FILM 1/4W 5% 10 OHM	1065-0010CEAS
R009	RES CAR FILM 1/4W 5% 10K	1065-1002CEAS
R010	100K 1T SIDE ADJ CERMET POT 3362X	1072-1103EAS
R011	RES CAR FILM 1/4W 5% 15K	1065-1502CEAS
R012	RES CAR FILM 1/4W 5% 47K	1065-4702CEAS
R013	RES CAR FILM 1/4W 5% 47K	1065-4702CEAS
R014	RES CAR FILM 1/4W 5% 62	1065-0062CEAS
R015	RES CAR FILM 1/4W 5% 10 OHM	1065-0010CEAS
R016	RES MT FLM 1/8W 1% 100K	1061-1003CEAS
R017	RES MT FLM 1/8W 1% 100K	1061-1003CEAS
R018	RES CAR FILM 1/4W 5% 62	1065-0062CEAS
R019	RES CAR FILM 1/4W 5% 10 OHM	1065-0010CEAS
R020	100K 1T SIDE ADJ CERMET POT 3362X	1072-1103EAS
R021	RES CAR FILM 1/4W 5% 15K	1065-1502CEAS
R022	RES CAR FILM 1/4W 5% 47K	1065-4702CEAS
R023	RES CAR FILM 1/4W 5% 47K	1065-4702CEAS
R024	RES CAR FILM 1/4W 5% 62	1065-0062CEAS
R025	RES CAR FILM 1/4W 5% 10 OHM	1065-0010CEAS
R026	RES MT FLM 1/8W 1% 100K	1061-1003CEAS
R027	RES MT FLM 1/8W 1% 100K	1061-1003CEAS
R028	RES CAR FILM 1/4W 5% 62	1065-0062CEAS
R029	RES CAR FILM 1/4W 5% 10 OHM	1065-0010CEAS
R030	100K 1T SIDE ADJ CERMET POT 3362X	1072-1103EAS
R031	RES CAR FILM 1/4W 5% 15K	1065-1502CEAS
R032	RES CAR FILM 1/4W 5% 47K	1065-4702CEAS
R033	RES CAR FILM 1/4W 5% 47K	1065-4702CEAS
R034	RES CAR FILM 1/4W 5% 62	1065-0062CEAS
R035	RES CAR FILM 1/4W 5% 10 OHM	1065-0010CEAS
R036	RES MT FLM 1/8W 1% 100K	1061-1003CEAS
R037	RES MT FLM 1/8W 1% 100K	1061-1003CEAS
R038	RES CAR FILM 1/4W 5% 62	1065-0062CEAS
R039	RES CAR FILM 1/4W 5% 10 OHM	1065-0010CEAS
R040	100K 1T SIDE ADJ CERMET POT 3362X	1072-1103EAS
R041	RES CAR FILM 1/4W 5% 15K	1065-1502CEAS
R042	RES CAR FILM 1/4W 5% 47K	1065-4702CEAS
R043	RES CAR FILM 1/4W 5% 47K	1065-4702CEAS
R044	RES CAR FILM 1/4W 5% 62	1065-0062CEAS
R045	RES CAR FILM 1/4W 5% 10 OHM	1065-0010CEAS
R046	RES MT FLM 1/8W 1% 100K	1061-1003CEAS
R047	RES MT FLM 1/8W 1% 100K	1061-1003CEAS
R048	RES CAR FILM 1/4W 5% 62	1065-0062CEAS
R049	RES CAR FILM 1/4W 5% 10 OHM	1065-0010CEAS

CKT REF	DESCRIPTION	TFT PART NO.
R050	RES 2.2K 1/2W CAR 5%	1067-0221EAS
R051	RES 2.2K 1/2W CAR 5%	1067-0221EAS
R052	RES 2.2K 1/2W CAR 5%	1067-0221EAS
R053	RES 2.2K 1/2W CAR 5%	1067-0221EAS
R054	RES 1K 1W CAR COMP	1067-0101EAS
R055	RES CAR FILM 1/4W 5% 10K	1065-1002CEAS
R056	RES CAR FILM 1/4W 5% 10K	1065-1002CEAS
R057	RES CAR FILM 1/4W 5% 10K	1065-1002CEAS
R058	RES CAR FILM 1/4W 5% 10K	1065-1002CEAS
R059	RES CAR FILM 1/4W 5% 10K	1065-1002CEAS
R060	RES CAR FILM 1/4W 5% 10K	1065-1002CEAS
R061	RES CAR FILM 1/4W 5% 10K	1065-1002CEAS
R062	RES CAR FILM 1/4W 5% 10K	1065-1002CEAS
R063	RES CAR FILM 1/4W 5% 10K	1065-1002CEAS
R064	RES CAR FILM 1/4W 5% 1K	1065-1001CEAS
R065	RES CAR FILM 1/4W 5% 1K	1065-1001CEAS
R066	RES CAR FILM 1/4W 5% 1K	1065-1001CEAS
R067	RES CAR FILM 1/4W 5% 1K	1065-1001CEAS
SW01	TOGGLE SW SPDT VER RIGHT ANGLE	1800-7103EAS
T001	TRANSFORMER 34VCT 170MA	1500-8610EAS
U001	I/C POS 12V TO-220 7812CT	1100-7812CEAS
U002	I/C MC7912	1100-7912CEAS
U003	I/C LF353N DUAL J FET OP AMP	1100-0353CEAS
U004	I/C LF353N DUAL J FET OP AMP	1100-0353CEAS
U005	I/C LF353N DUAL J FET OP AMP	1100-0358CEAS
U006	I/C LF353N DUAL J FET OP AMP	1100-0353CEAS
U007	I/C LF353N DUAL J FET OP AMP	1100-0353CEAS
U008	QUAD OPTOISOLATOR PS2501-4	1099-0005EAS