

LIST OF EFFECTIVE CHANGES

CHANGE NO.	DATE	SERIAL NO. AFFECTED
1	17 October 1983	All 377D-2's



LIST OF RESPECTIVE CHARGES

CHARGE NO.	DATE	REMARKS
1	17 October 1953	ALL 117-1's

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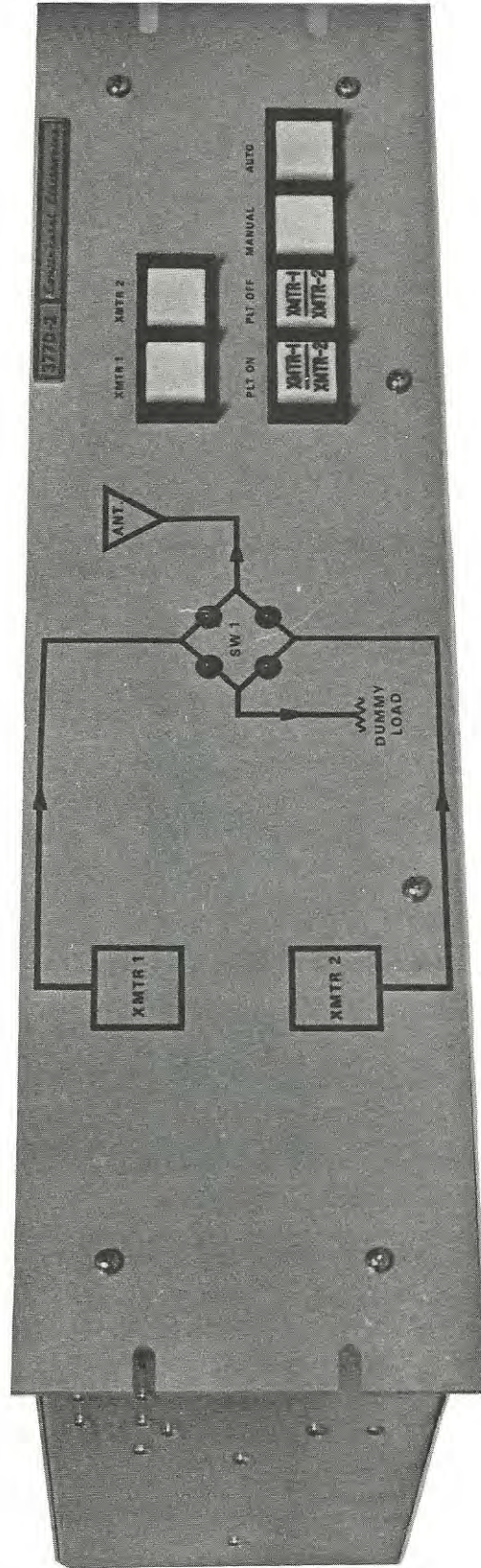
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81-938

Figure 1-1. 377D-2 Transmitter Control

1-1. PURPOSE OF EQUIPMENT

The 377D-2 Transmitter Control (Figures 1-1, 1-2, and 1-3) performs monitoring and control functions for AM or FM transmitter systems that contain two independent transmitters in an alternate/main configuration. The transmitter control automatically places the alternate transmitter on the air in the event of low power output or outright failure of the main (on the air) transmitter. The alternate/main transmitters need not be of the same type or power rating.

1-2. EQUIPMENT DESCRIPTION

1-2/.1 PHYSICAL DESCRIPTION

The 377D-2 Transmitter control consists of two units, the transmitter control unit and either an AM Switch Interface Unit or an FM Switch Interface Unit. The transmitter control unit is housed in a standard 133.35-mm (5.25-inch) high by 482.6-mm (19-inch) wide rack mounted enclosure. The AM Switch Interface Unit is contained on an aluminum panel for omitting near the RF transfer contactor of an associated AM transmitter system. The FM Switch Interface Unit is contained on a 88.9-mm (3.5-inch) high by 482.6-mm (19-inch) wide rack panel that may be mounted in the same rack, near the transmitter control unit or in an associated rack.

1-2.2 ELECTRICAL DESCRIPTION

The operating mode, manual or automatic, of the 377D-2 Transmitter Control is selected at the front panel. When in the automatic mode, the transmitter control monitors the status of the alternate/main transmitters and will automatically place the alternate transmitter on the air in the event of a low power output or failure of the main transmitter.

Control push-buttons and indicators are located on the front panel of the unit. The push-buttons provide for selection of operating mode, transmitter selection, and plate-on and plate-off control of the on-air transmitter. A set of four light-emitting diodes provides visual indication of the status of the transmitters.

Connections for RF sample inputs from each transmitter, control outputs to each transmitter, switch interface inputs, and remote control inputs are located at the rear panel of the transmitter control unit. Control and status circuits are +28 volts, requiring only a momentary closure to +28 volts to initiate a control function.

Control functions to the associated transmitters are furnished as dry contacts for each of interface with transmitters other than Continental manufacture.

The switch interface units provide relay inter face to all commonly used RF transfer switches and contactors.

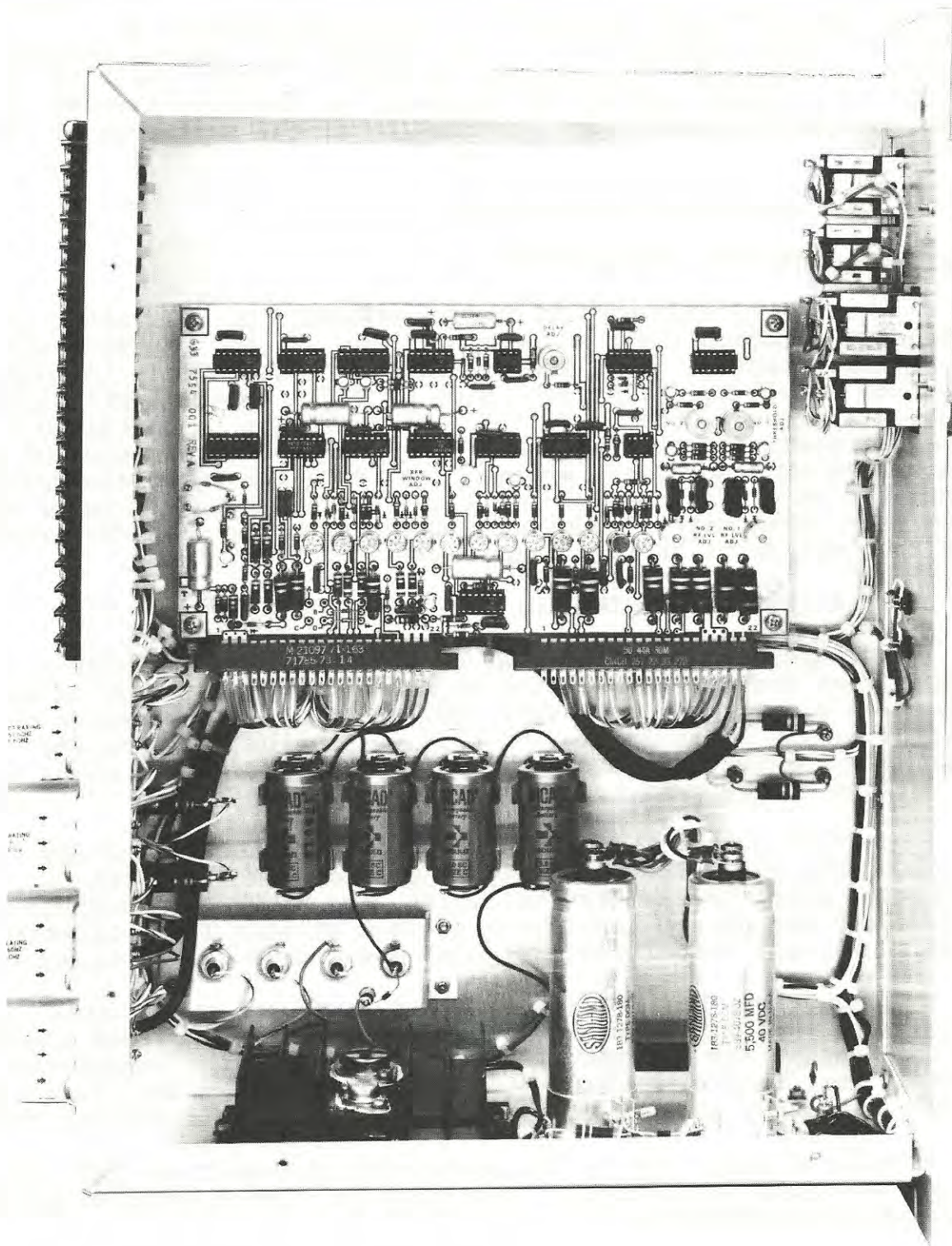
general description

Figure 1-2. 377D-2 Transmitter Control Unit (Top View).

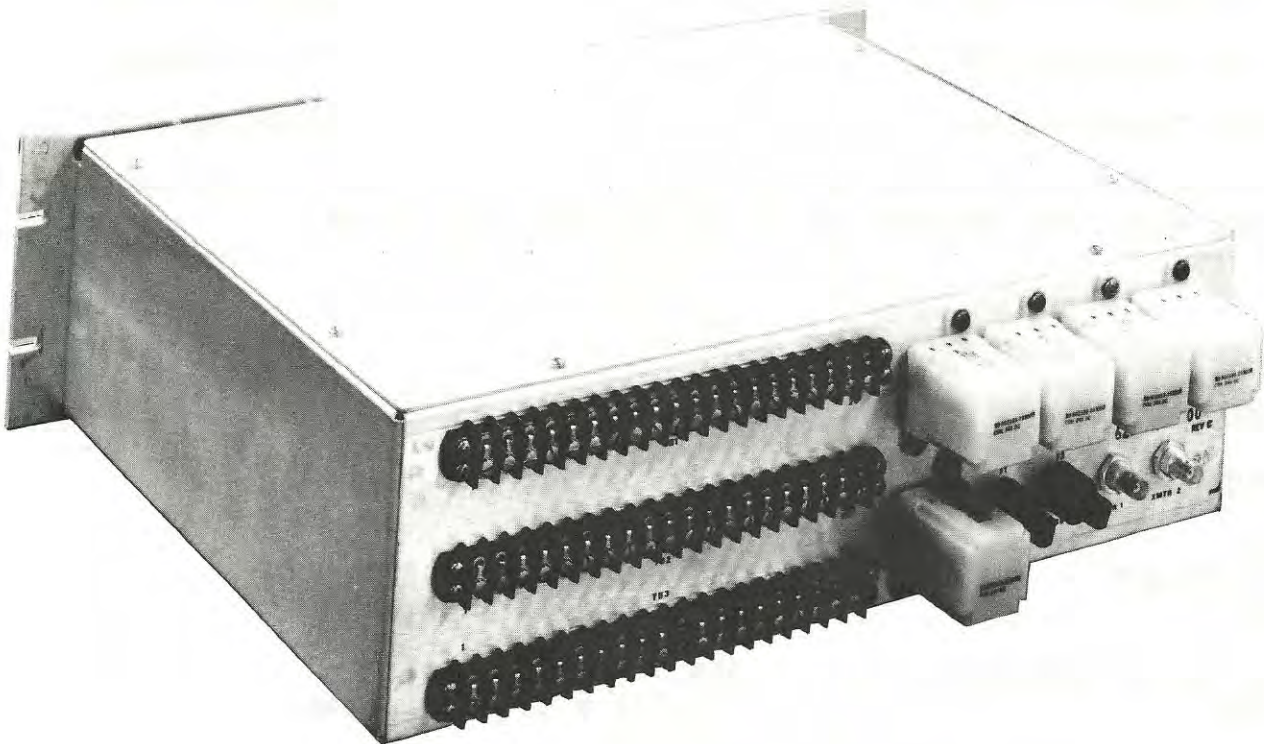


Figure 1-3. 377D-2 Transmitter Control Unit
(Rear View)

Power to the transmitter control unit is derived from the +28 volt control systems of the associated transmitters or from a suitable +28 volt DC power supply that is capable of supplying 2 amperes or more. A rechargeable battery system is provided to supply power to the logic circuits in the event of a power failure.

1-3. EQUIPMENT SUPPLIED

Table 1-1 lists equipment supplied as part of the 377D-2 Transmitter Control.

1-4. EQUIPMENT REQUIRED BUT NOT SUPPLIED

When used with either AM or FM Transmitters that are not capable of supplying +28 volts DC at approximately 2 amperes, one +28 volt, 2 ampere, DC power supply is required.

TABLE 1-1. EQUIPMENT SUPPLIED

EQUIPMENT DESCRIPTION	QTY	CEC PART NO.
377D-2 Transmitter Control Unit	1	622-2319-001
AM Switch Interface Unit	*	636-1415#001
FM Switch Interface Unit	*	636-1390-001

*One Unit supplied, determined by system type, AM or FM.

1-5. EQUIPMENT SPECIFICATIONS

1-5.1 MECHANICAL

Weight	4.536 kg (10 lb)
Size:	
Mainframe Unit	133.4 x 482.6 x 381 mm (5.25 x 19 x 15 inches)
AM Switch Interface Unit	266.7 x 254 x 101.6 mm (10.5 x 10 x 4 inches)
FM Switch Interface Unit	88.9 x 482.6 x 76.2 mm (3.5 x 19 x 3 inches)

Ambient Temperature Range: 0 to +50°C

1-5.2 ELECTRICAL

Power Requirement	28 volts DC at 2 amperes (from associated transmitter or power supply)
RF Input:	4 to 8 Volts RMS: 50 ohms nominal
Control Inputs:	Momentary closure to +28 volts DC, any function
Status Outputs:	Low, True (referenced to +28 volts DC): or Lamps

Control Outputs:

Transmitters

Plate-off: normally closed
Plate-on, normally open
Interlock, closed when valid

RF Switches

AM Switch Interface, 120/240 Volts AC, 20 amperes
FM Switch Interface, 120 Volts AC, 2

SECTION 2 - PRINCIPLES OF OPERATION

2-1. GENERAL (Refer to Figure 2-1.)

The 377D-2 Transmitter Control consists of a transmitter control unit and either an AM or an FM switch interface unit. The transmitter control unit contains a plug-in logic card that provides all preprogrammed logic required by the control system. The transmitter control may be operated automatically or manually.

In the automatic mode of operation, RF detectors in the plug-in logic card monitor the status of the associated transmitters and provide control commands to a trigger circuit via gate circuits. One gate is open at any given time, dependent on which associated transmitter is selected for on-the-air service.

When a failure indication is received by the sensor, it is applied to the trigger circuit which causes the switch circuit to change states. Simultaneously, the plate-off control circuit is actuated and the transmitter interlocks are opened to shut down the transmitters. With no RF signal at the input, AC power is applied to the RF switch. The switch changes to a new mode, based on information received from the switch circuits. After switching is complete, the interlock circuit information from the RF switch is compared with the programmed interlock logic from the switch circuit. If the information is valid, the interlocks are restored and the plate-on circuit is momentarily closed to the main transmitter. The standby transmitter is connected to a dummy load and the standby transmitter interlock circuits are connected to the dummy load cooling system. If the interlock information from the RF switch does not agree with the programmed information, an alarm circuit will flash the XMTR 1 and XMTR 2 push-button lamps on the front panel. No interlocks will restore, and no plate-on commands will be generated.

2-2. CIRCUIT FUNCTIONS (Refer to Figures 5-1 through 5-4.)

2-2.1 TRANSMITTER CONTROL UNIT

The transmitter control unit consists of a mainframe that houses the major components of the system, as well as the logic card. All controls and indicators are located on the front panel of the unit.

Switches S1 through S6 provide operating mode commands and status indications which are duplicated on terminal board TB1 for remote control purposes.

Light-emitting diodes CR19 through CR22, positioned in the diagram on the front panel, provide a visual status display of the system RF connections.

Five relays mounted inside the mainframe provide dry contact interface with the transmitter control systems as follows:

- K1 - Transmitter 1, plate on
- K2 - Transmitter 2, interlock
- K3 - Both transmitters, plate off
- K4 - Transmitter 2, plate on
- K5 - Transmitter 2, interlock

Relays K1, K3, and K4 are normally de-energized during operation, and relays K2 and K5 are normally energized.

Batteries BT1 through BT4, mounted inside the mainframe, provide standby power to the logic circuit in the event of power failure. Charging current to the batteries is supplied by transistor Q1 and its associated components.

Regulator U1, mounted inside the mainframe, supplies a regulated 5 volts to the logic card.

2-2.2 SWITCH INTERFACE

Interfacing for the system RF transfer switch is provided by either an AM Switch Interface Unit, for FM transmitters.

The AM Switch interface Unit is compatible with any of the common push-pull solenoid actuated type RF transmitter switches that are designed for medium-wave AM use.

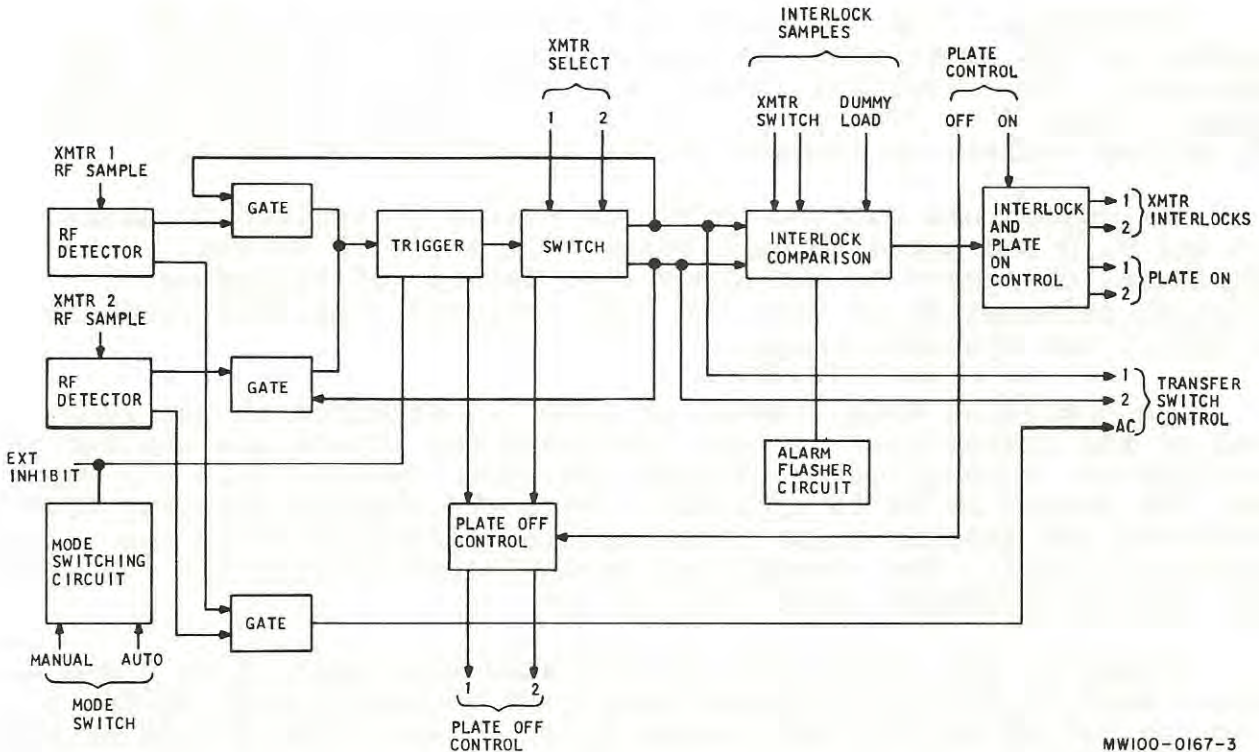
The FM Switch Interface Unit is compatible with any of the common coaxial 4-port RF switches that are designed for FM or HF use.

2-2.3 LOGIC CARD

The plug-in logic card provides all preprogrammed logic for the control system.

The logic card contains two RF detectors, gates for the trigger circuit, a trigger circuit, a switching circuit, and a circuit for interlock comparison.

The RF detectors consist of diodes CR1 and CR2 and their associated components for the XMTR 1 input, and diodes CR3 and CR4 and their associated components for the XMTR 2 input. RF samples of 4 to 6 volts RMS from the associated transmitter are applied to the RF detectors where they are rectified and filtered. The outputs of the detectors are DC signals, proportional to the power level of the transmitters. The detector outputs are applied to transistors Q1, Q2, Q3 and Q4. Transistors Q1 and Q3 function as gates, preventing application of AC power to the RF contactor when RF is present at the detector input, and preventing switching under power. Resistors R3 (XMTR 1) and R13 (XMTR 2) are set to drive transistors Q1 and Q3 into saturation at approximately 10 percent of the normal operating power of the transmitters.



MW100-0167-3

FIGURE 2-1. 377D-2 TRANSMITTER CONTROL UNIT, BLOCK DIAGRAM

NO. 1 THRESHOLD ADJ R8 (XMTR 1) and NO. 2 THRESHOLD ADJ R18 are adjusted to initiate a switching action, through gates U1 and U2A and J2B at the desired transmitter power level. The power level may be monitored at U1, pin 8 for transmitter 1 and at U1, pin 6 for transmitter 2. The output of the gate U1 is low when a transmitter is operating normally. Gates U2A and U2B determine which detector circuit is allowed to operate the trigger circuit.

The trigger circuit consists of timer U3, one-shot U4, and gate U9C. If the on-air transmitter (assume transmitter 1) fails or is turned off, a pulse is generated that triggers timer U3. An adjustable delay is provided with U3 to allow for transient overloads and automatic restoration of the on-air transmitter. The delay is adjustable from approximately 1 to 30 seconds by DELAY control R23. When the period of delay has elapsed, one-shot U4 generates a pulse which is applied to gate U9C. If the transmitter has not returned to operation, the pulse continues to the switching circuit.

The switching circuit consists of flip-flop U5, timers U8 and U10, and gate U12A. The pulse from the trigger circuit causes flipflop U5 to change states. Timer U8 generates a plate-off pulse and timer U10 generates a transfer pulse. Gate U12A compares the transfer pulse and the states of transistor Q1 in the detector circuit. If Q1 is not saturated (no RF at the transmitter 1 input), AC power is then applied to the RF transfer switch, and transmitter 2 is placed on the air. The length of the transfer pulse generated by U10 is adjustable from approximately 2 to 10 seconds by XFR WINDOW ADJ control R59. Switch commands from U5 are routed to transistors Q14 and Q15 to control a relay in the switch interface unit.

Information from U5, along with information from the RF transfer switch interlocks, is applied to gates U12B and U12C for comparison. The resulting signal initiates interlock closure and triggers timer U14. The output of U14 is applied to gates U7A and U7B, giving a plate-on command to the transmitter on the air.

The dummy load cooling interlock status is applied to gates U11C and U11D and gated through gates U11A and U11B to the transmitter connected to the dummy load. Receipt of erroneous interlock information at U11C and U11D triggers timer U13 to flash the XMTR-1 and the XMTR-lamps.

The operating mode, MANUAL or AUTO, is selected at the front panel of the transmitter control. The selected inputs are applied to flip-flop U6, through gates U9A and U9B. When operating in the manual mode, the output of U6 is applied to gate U9C through inverter U2D, inhibiting the trigger pulse from reaching flip-flop U5 in the switching circuit. The circuit may be inhibited by applying +28 volts DC at the EXT OVERRIDE input, TB1 pin 16.

Normally, the logic card is furnished with strap A to B and strap C to D in place, allowing manual and automatic mode selection using the PLT ON and PLT OFF pushbuttons. Pressing the PLT ON selects the automatic mode, and pressing the PLT OFF pushbutton selects the manual mode.

SECTION 3 - INSTALLATION

3-1. PLACEMENT OF UNITS

The 377D-2 control unit should be located in a convenient location as near as possible to the operator's position in attended installations, or near the transmitter control equipment in remote control installations.

The switch interface unit should be located near the RF transfer switch.

3-2. INTERCONNECTING CABLES

Refer to Figure 5-6, System Interconnections, for explanation of the following cables:

Cable 1	Seven-conductor 22 AWG stranded, connects 377D-2 control unit to switch interface unit.
Cable 2(FM)	Seven-conductor 22 AWG stranded, connects switch interface unit to transfer switch.
Cable 2(AM):	Three-conductor 14 AWG stranded, and four-conductor 22 AWG stranded, connects switch interface unit to transfer switch.
Cable 3:	Ten-conductor 20 AWG stranded, connects 377D-2 control unit to transmitter 1.
Cable 4:	Ten-conductor 20 AWG stranded, connects 377D-2 control unit to transmitter 2.
Cable 5:	RG-223 coaxial cable, connects RF sample from transmitter 1 to 377D-2 control unit.
Cable 6:	RGF-223 coaxial cable, connects RF sample from transmitter 2 to 377D-2 control unit.

Space lugs (CEC part number 304-0414-000) are used to connect the cables to the control unit and switch interface unit barrier strips.

BNC connectors (CEC part number 357-9292-000) are used to connect the coaxial cables to the control unit.

3-3. 377D-2 TRANSMITTER CONTROL UNIT CONNECTIONS

Refer to Tables 3-1, 3-2, and 3-3 for control unit connections.

TABLE 3-1. 377D-2 TRANSMITTER CONTROL UNIT, REMOTE
CONTROL CONNECTIONS

 TERMINAL BOARD
 (TB1) TERMINAL

FUNCTION

1	Common connections (+28 volts DC)
2	Manual mode control
3	Manual mode tally
4	Automatic mode control
5	Automatic mode tally
6	Plate-off control
7	Plate-off tally, transmitter 1
8	Plate-off tally, transmitter 2
9	Plate-on control
10	Plate-on tally, transmitter 1
11	Plate-on tally, transmitter 2
12	Not used
13	Not used
14	Not used
15	Not used
16	Transmitter 1 select
17	Transmitter 1 select
17	Transmitter 1 tally
18	Transmitter 2 select
19	Transmitter 2 tally
20	Common ground

TABLE 3-2. 377D-2 TRANSMITTER CONTROL UNIT,
TRANSMITTER INTERFACE CONNECTIONS

TERMINAL BOARD (TB3) TERMINAL	FUNCTION
1	Plate-on control, transmitter 1
2	Plate-on control, transmitter 1
3	Interlock, transmitter 1
4	Interlock, transmitter 1
5	Plate-on tally, transmitter 1
6	Plate-off tally, transmitter 1
7	Ground
8	+28 volts DC, from transmitter 1
9	Plate-off control, transmitter 1
10	Plate-off control, transmitter 1
11	Plate-on control, transmitter 2
12	Plate-on control, transmitter 2
13	Interlock, transmitter 2
14	Interlock, transmitter 2
15	Plate-on tally, transmitter 2
16	Plate-off tally, transmitter 2
17	Ground
18	+28 volts DC, from transmitter 2
19	Plate-off control, transmitter 2
20	Plate-off control, transmitter 2

TABLE 3-3. 377D-2 TRANSMITTER CONTROL UNIT, RF TRANSFER SWITCH INTERFACE CONNECTIONS

TERMINAL BOARD	FUNCTION(TB2) TERMINAL
1	Common connection (+28 volts DC)
2	Common ground return
3	AC control relay
4	Not used
5	Not used
6	Not used
7	Mode 2 control
8	Not used
9	Not used
10	Not used
11	Not used
12	Switch position 1 interlock
13	Switch position 2 interlock
14	Not used
15	Dummy load interlock
16	External override
17	Exciter mute
18	+5 volts out
19	+28 volts out
20	Common connection

NOTE

All control switches and tally lamp connections are referenced to TB1 pin 1, +28 volts DC. Switching action requires momentary contact closure to +28 volts DC.

3-4. RF TRANSFER SWITCH CONNECTIONS

The RF transfer switch may be any of the common coaxial 4-port transfer switches for AM or HF use or any of the common push-pull solenoid actuated types for medium-wave AM use.

Interlock contacts of the dry type are required in a DPDT configuration for proper operation of the 377D-2 control unit. The transfer switch should be connected in such a manner that the transmitter 1 interlock (TB2-12) is closed to +28 volts (TB2-1) and the transmitter 2 interlock (TB2-13) is closed to ground (TB2-2) when transmitter 1 is on the air. These conditions should reverse when transmitter 2 is on the air. That is, transmitter 2 interlock (TB2-13) should connect to +28 volts (TB2-1) and transmitter 1 interlock (TB2-12) should connect to ground (TB2-2). These conditions apply to both AM and FM systems regardless of the type of RF transfer switch used.

SECTION 4 - PARTS LIST

4-1. GENERAL

This section contains a list of all repairable/replaceable electrical, electronic, and critical mechanical parts for the 377D-2 Transmitter Control.

4-2. SYMBOL

This column contains the electrical symbols of all parts that have been assigned to schematics or wiring diagrams, and/or index numbers for all parts for which symbols have not been assigned. When a symbol, within a series of symbols, has not been assigned a part number, the unassigned symbol will be reflected as NOT USED in the DESCRIPTION column.

4-3. DESCRIPTION

This column contains the identifying noun or its name followed by a brief description. The description for electrical/electronic parts includes the applicable ratings and tolerances. For consecutively listed identical parts within an assembly, SAME AS--is reflected in the description of subsequent listing, referencing to the first listing within the assembly.

4-4. CEC PART NUMBER

The CEC Specification or drawing number, for each item in the parts list, is reflected in this column.

377D-2

SYMBOL	DESCRIPTION	CEC PART NUMBER

	377D-2 TRANSMITTER CONTROL	622-2319-001

BT1 - BT4	BATTERY	221-0036-150
C1, C2	CAPACITOR, 5500 UF, 40V	183-1278-180
C3	CAPACITOR, 0.1 UF	913-3813-000
CR1 - CR5	DIODE, 1N4003	353-6442-030
CR6, CR7	DIODE, 1N1202	353-1889-000
CR8	SAME AS CR1	
CR9	SAME AS CR6	
CR10	SAME AS CR6	
CR11 - CR18	NOT USED	
CR19, CR20	DIODE	353-0293-010
CR21, CR22	DIODE	353-3725-070
F1, F2	FUSE, SLOW BLOW, 2 AMPERES	264-0297-000
J1, J2	CONNECTOR	M39012/19-0101
J3, J4	CONNECTOR	372-7502-200
K1 - K5	RELAY	970-2454-270
Q1	TRANSISTOR, 2N3741	352-0695-020
R1 - R4	NOT USED	
R5, R6	RESISTOR, 1500 OHMS, 2 WATTS	RCR42G152JS

CHANGE 1

4-2

SYMBOL	DESCRIPTION	PART NUMBER

	377D-2. TRANSMITTER CONTROL - Cont.	622-2319-001

R7	RESISTOR, 220 OHMS, 1/2 WATT	RCR20G221JS
R8	RESISTOR, 2200 OHMS, 1 WATT	RCR32G222JS
R9	RESISTOR, 15 OHMS, 26 WATTS	747-1770-000
S1, S2	SWITCH, PUSH-BUTTON	266-7509-020
S3, S4	SWITCH, PUSH-BUTTON	266-7509-010
S5	SAME AS S1	
S6	SAME AS S1	
S9	SWITCH	266-5321-200
TB1-TB3	TERMINAL BOARD	367-0028-000
U1	INTEGRATED CIRCUIT REGULATOR, 7805 KC	351-1120-080
VR1	DIODE, 1N4735A	353-6481-151
VR2	DIODE, 1N3997A	353-6233-000
XBT1-XTB5	HOLDER, BATTERY	139-2699-030
XF1, XF2	FUSE HOLDER	265-1241-040
XK1, XK5	SOCKET, RELAY	220-1399-010
XQ1	SOCKET, TRANSISTOR	220-0968-020
XU1	SOCKET, INTEGRATED CIRCUIT	220-0968-010
	MISCELLANEOUS PARTS	
	LAMP	262-0179-010
	-QTY 10-	

SYMBOL	DESCRIPTION	PART NUMBER
	LOGIC CARD	633-3001-000
C3	CAPACITOR, 33 UF, 15V	184-9103-410
CR, C5 C6	SAME AS C1 SAME AS C3	
C7 - C10 C11	CAPACITOR, 1 UF CAPACITOR, 180 UF, 25V	913-3810-000 184-9103-590
C12 - C14 C15	SAME AS C7 CAPACITOR, 100 UF, 25V	184-9103-570
C16 - C26 C27 C28	SAME AS C7 SAME AS C11 CAPACITOR, 22 UF, 25V	184-9103-550
C29 - C35 C36 C37 - C41	SAME AS C7 SAME AS C28 SAME AS C7	
CR1 - CR28	DIODE, 1N4148	353-3763-000
Q1 - Q9 Q10 - Q22	TRANSISTOR, 2N2222 TRANSISTOR, 2N3053	352-0661-020 352-0613-010
R1	RESISTOR, 27 OHMS 2 WATTS	RCR42G270JS
R2	SAME AS R1	
R3	RESISTOR, VAR, 1000 OHMS	380-3761-040
R4, R5	RESISTOR, 2200 OHMS 1/4 WATT	RCR07G222JS
R6	RESISTOR, 4700 OHMS, 1/4 WATT	RCR07G472JS
R7	RESISTOR, 1000 OHMS, 1/4 WATT	RCR07G102JS
R8	RESISTOR, VAR, 10 KILOHMS	380-3761-070
R9	SAME AS R7	
R10	RESISTOR, 4700 OHMS 1/4 WATT	RCR07G472JS
R11, R12	SAME AS R1	
R13	SAME AS R3	
R14, R15	SAME AS R4	
R16	SAME AS R6	
R17	SAME AS R7	
R18	SAME AS R8	
R19	SAME AS R7	
R20-R22	SAME AS R10	
R23	RESISTOR, VAR, 100 KILOHMS	380-3761-100
R24	RESISTOR, 10 KILOHMS	RCR07G103JS

CHANGE 1

SYMBOL
DESCRIPTION

PART NUMBER

LOGIC CARD - Cont.633-7554-001

R25 - R28U	SAME AS R10	
R29	SAME AS R7	
R30	RESISTOR, 10 KILOHMS, 1/2 WATT	RCR20G103JS
R31	SAME AS R7	
R32	RESISTOR, 470 OHMS, 1/4 WATT	RCR07G471JS
R33	SAME AS R7	
R34	RESISTOR, 2200 OHMS, 1/2 WATT	RCR20G222JS
R35	SAME AS R34	
R36	RESISTOR, 220 OHMS, 1/2 WATT	RCR20G221JS
R37	SAME AS R36	
R38, R39	SAME AS R7	
R40, R41	RESISTOR, 39 OHMS, 1/2 WATT	RCR20G390JS
R42	RESISTOR, 2700 OHMS, 1 WATT	RCR32G272JS
R43	SAME AS R4	
R44	SAME AS R30	
R45 - R47	SAME AS R7	
R48	SAME AS R24	
R49	RESISTOR, 220 OHMS, 1/4 WATT	RCR07G221JS
R50, R51	RESISTOR, 1000 OHMS, 1 WATT	RCR32G102JS
R52	SAME AS R49	
R53 - R55	SAME AS R7	
R56, R57	SAME AS R4	
R58	SAME AS R24	
R59	RESISTOR, VAR, 25 KILOHMS	380-3761-080
R60	RESISTOR, 8200 OHMS, 1/4 WATT	RCR07G822JS
R61, R63	SAME AS R49	
R64, R65	SAME AS R4	
R66 - R68	RESISTOR, 1000 OHMS, 2 WATTS	RCR42G102JS
R69, R70	SAME AS R10	
R71	SAME AS R24	
R72	SAME AS R10	
R73	SAME AS R30	
R74	SAME AS R32	
R75, R76	SAME AS R7	
R77, R78	SAME AS R40	
R79	SAME AS R7	
R80	SAME AS R4	
R81	RESISTOR, 330 KILOHMS, 1/4 WATT	RCR07G334JS
R82	RESISTOR, 680 KILOHMS, 1/4 WATT	RCR07G684JS
R83	SAME AS R32	
R84	SAME AS R7	

DESCRIPTION	SYMBOL	PART NUMBER
----- LOGIC CARD - Cont.		633-7554-001
U1	INTEGRATED CIRCUIT, SN7404N	351-7630-010
U2	INTEGRATED CIRCUIT, SN7400N	351-7629-010
U3	INTEGRATED CIRCUIT, NE555V	351-1137-020
U4	INTEGRATED CIRCUIT, SN74121N	351-7645-010
U5, U6	INTEGRATED CIRCUIT, SN7476N	351-7702-010
U7	INTEGRATED CIRCUIT, SN7402A	351-7628-010
U8	SAME AS U4	
U9	SAME AS U7	
U10	SAME AS U4	
U11	SAME AS U2	
U12	INTEGRATED CIRCUIT, SN7410N	351-7635-010
U13	SAME AS U3	
U14	SAME AS U4	
U15	SAME AS U2	
XQ1 - XQ9	NOT USED	
XQ10 - XQ22	INSULATOR DISK	352-9552-110
XU1, XU2	SOCKET, INTEGRATED CIRCUIT, 14 PINS	220-0049-010
XU3	SOCKET, INTEGRATED CIRCUIT, 8 PINS	220-0001-060
XU4	SAME AS XU1	
XU5, XU6	SOCKET, INTEGRATED CIRCUIT, 16 PINS	220-0049-020
XU7 - XU12	SAME AS XU1	
XU13	SAME AS XU3	
XU14, XU15	SAME AS XU1	
----- AM SWITCH INTERFACE UNIT		636-1415-001
CR1, CR2	DIODE, 1N4003	353-6442-030
K1, K2	RELAY	970-2426-070
TB1	TERMINAL BOARD	367-0918-000
TB2	TERMINAL BOARD	367-0916-000

CHANGE 1

SYMBOL	DESCRIPTION	PART NUMBER

	FM SWITCH INTERFACE UNIT	636-1390-001

	BOARD ASSEMBLY	636-1381-001
F1	FUSE, SLOW BLOW, 2 AMPERES	264-0297-000
XF1	FUSE HOLDER	265-1171-000

	BOARD ASSEMBLY	636-1381-001

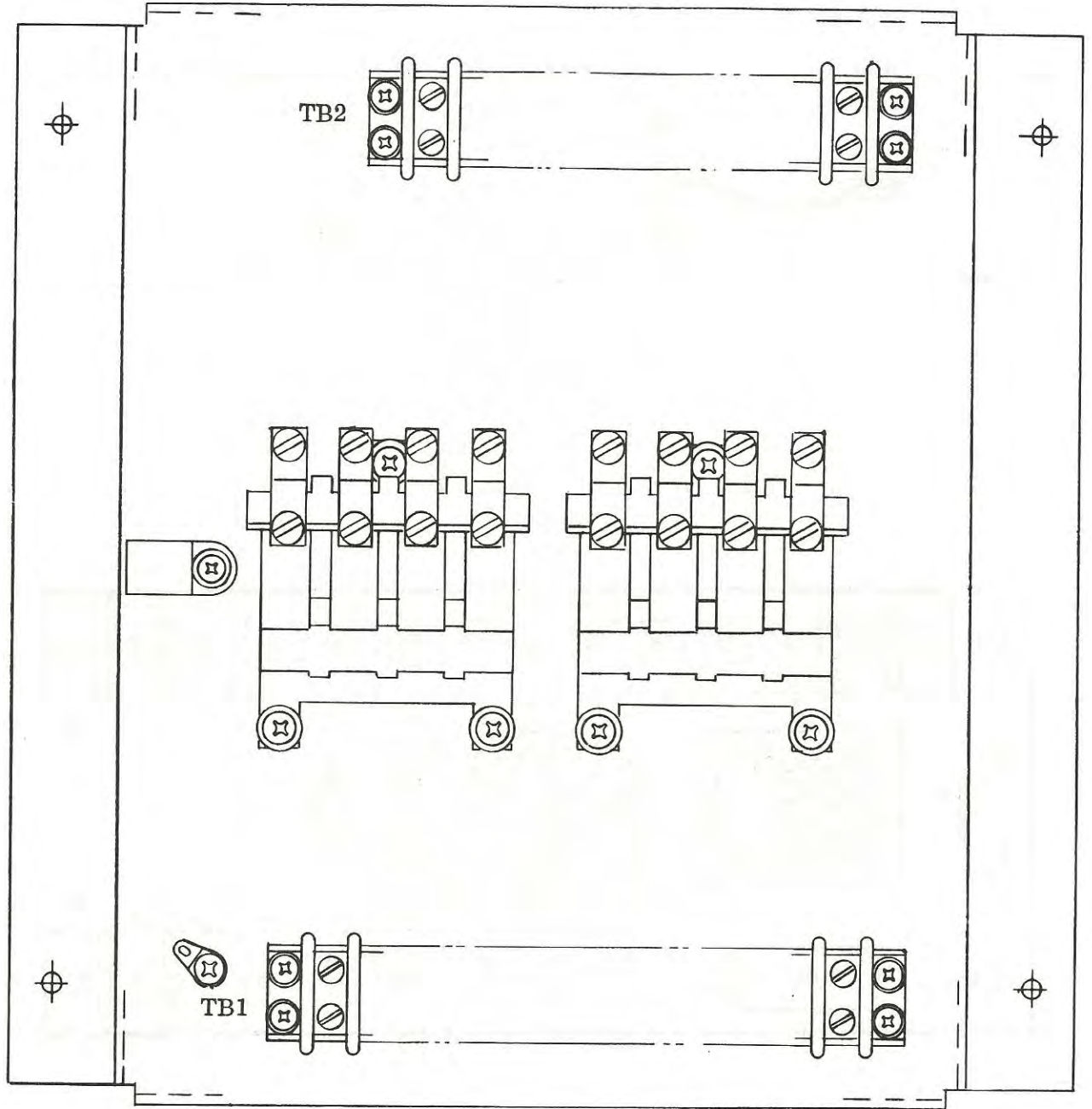
CR1, CR2	DIODE, 1N4003	353-6442-030
K1, K2	RELAY	970-0002-030
R1	RESISTOR, 100 KILOHMS, 2 WATTS	RCR42G104JS
TB1	TERMINAL BOARD	367-1888-180
TB2	TERMINAL BOARD	367-1888-170
XK1, XK2	SOCKET, RELAY	220-1582-010

CHANGE 1

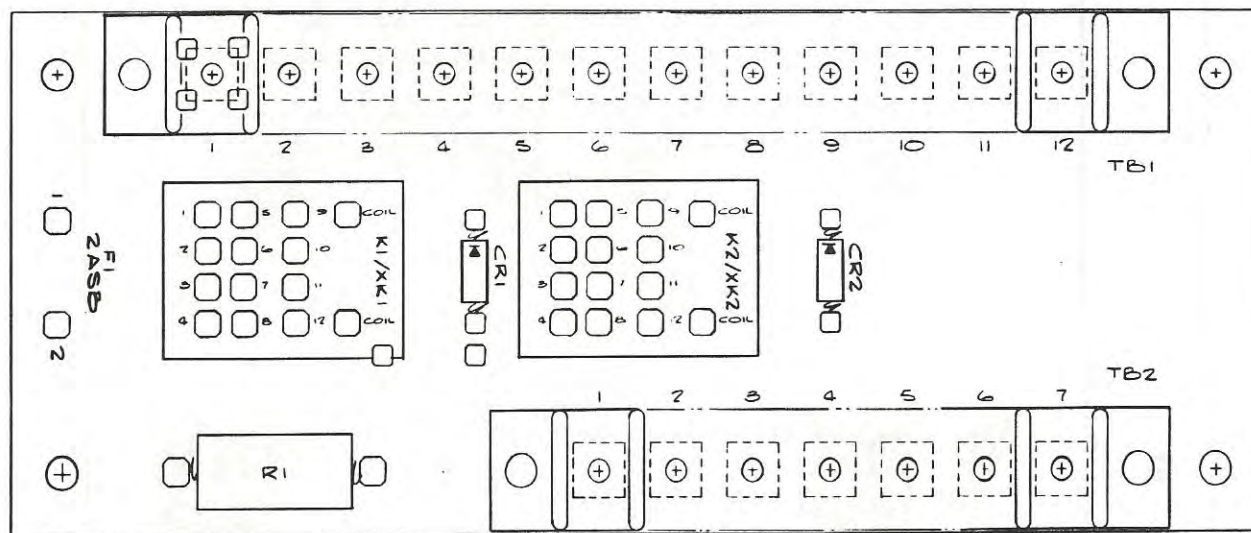
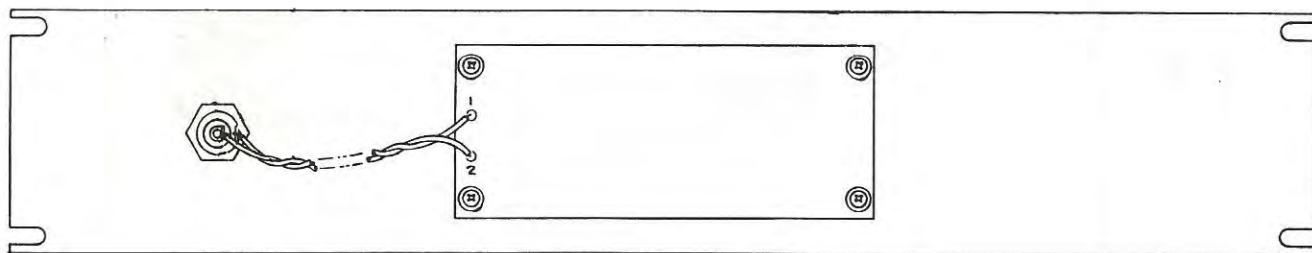
SECTION 5 - SCHEMATICS & DRAWINGS

5-1. SCHEMATICS AND DRAWINGS LIST

FM Switch Interface Schematic	C147072
AM Switch Interface Schematic	C147073
System Interconnect Schematic	D147071
System Interconnect Schematic 816R Main/Alternate	180037
System Interconnect Schematic 816R Main/Collins 831E,F,G Series Alternate	180038
Mainframe Schematic	D147069
Logic Card Schematic	E147070
AM Switch Interface Unit Component Location	-
FM Switch Interface Unit Component Location	-
Logic Card Component Location	-



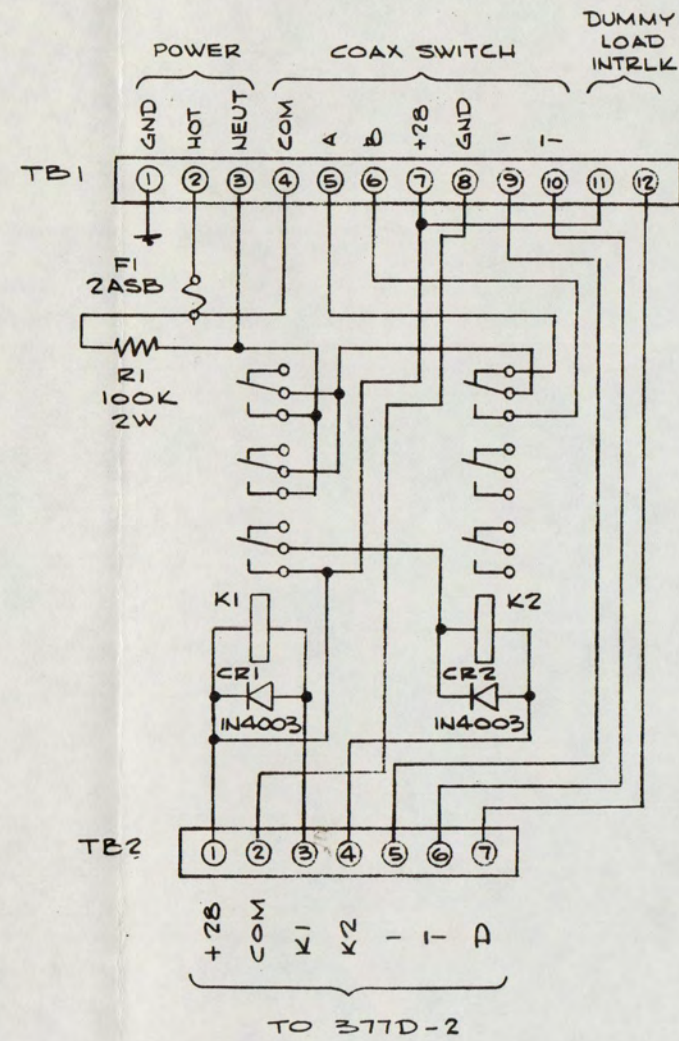
AM Switch Interface Unit, Component Location.



FM Switch Interface Unit, Component Location.

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REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



QTY REQD PER DASH NO.	ITEM	ZONE	PART OR IDENTIFYING NO.	DWG SIZE	NOMENCLATURE OR DESCRIPTION	CODE IDENT
-----------------------	------	------	-------------------------	----------	-----------------------------	------------

UNLESS OTHERWISE SPECIFIED		
TOLERANCE ON:	FRAC	-
2 PLACE DEC	3 PLACE DEC	ANGLES
±	±	±
MACHINED SURFACE FINISH 125/		
ALL DIMENSIONS ARE IN INCHES AND INCLUDE APPLIED FINISH.		
REMOVE ALL BURRS AND SHARP EDGES.		
NEXT ASSY	DWG SIZE	USED ON

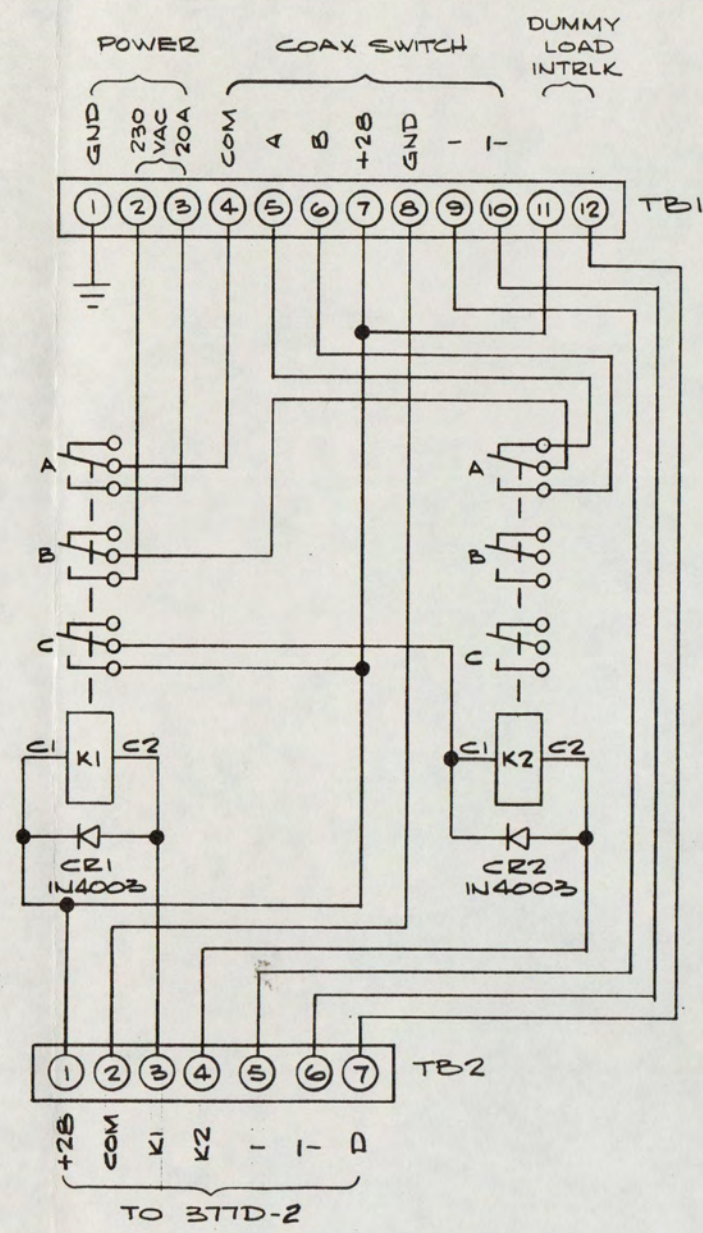
DRAWN	DATE
CHECKED	
MECH DSGN	
ELEC ENGR	
APPROVED	

Continental Electronics MFG. CO. DALLAS TEXAS		
FM SWITCH INTERFACE 377D-2		
SIZE	CODE IDENT NO.	
C	52151	147072
SCALE:	WT	SHEET OF

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REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



QTY REQD PER DASH NO.	ITEM	ZONE	PART OR IDENTIFYING NO.	DWG SIZE	NOMENCLATURE OR DESCRIPTION	CODE IDENT

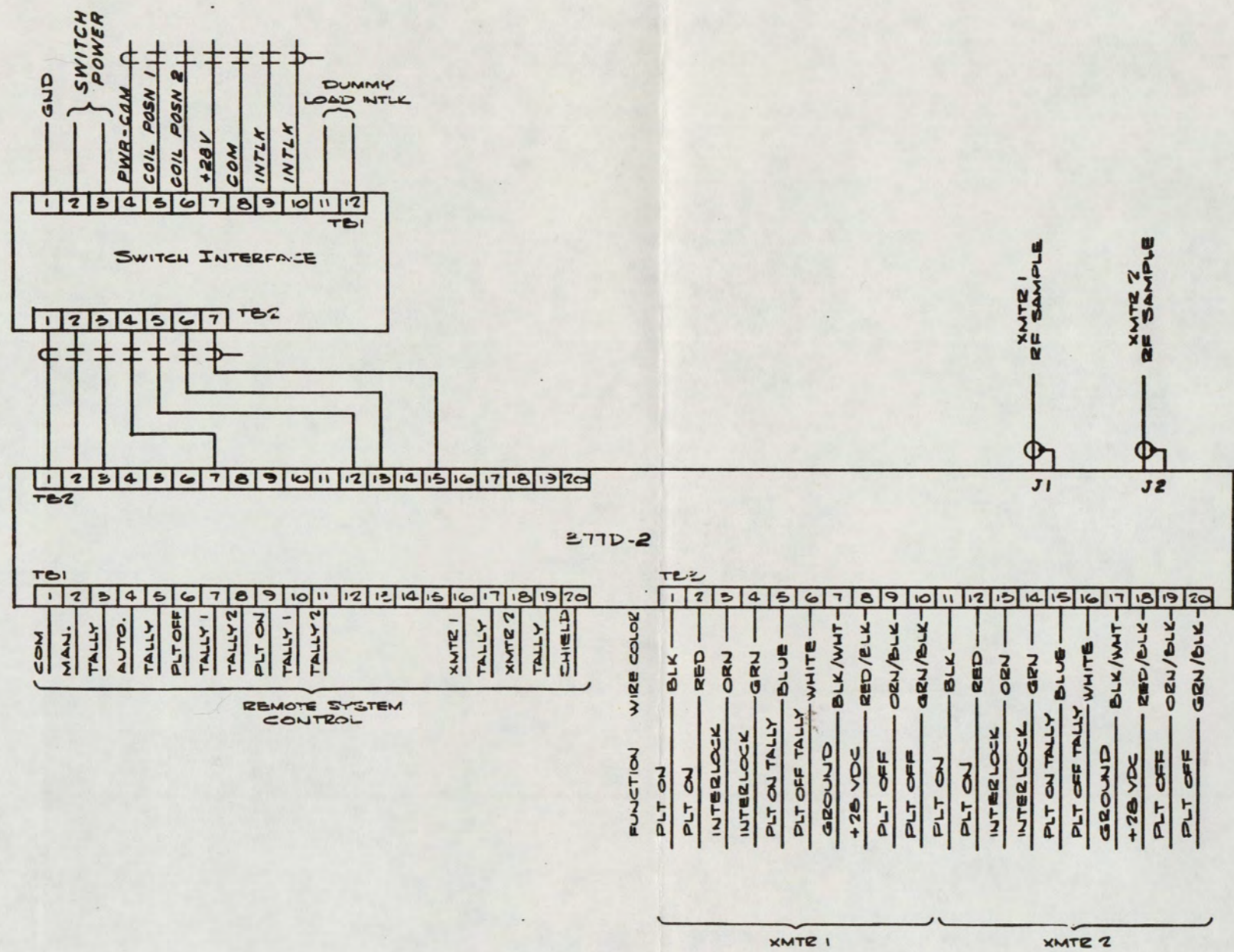
UNLESS OTHERWISE SPECIFIED			DRAWN		DATE
TOLERANCE ON:	FRAC	:	CHECKED		
2 PLACE DEC	3 PLACE DEC	ANGLES	MECH DSGN		
=	=	=	ELEC ENGR	JSS	9/25/74
MACHINED SURFACE FINISH 125/	AND		APPROVED		
ALL DIMENSIONS ARE IN INCLUDE APPLIED FINISH. REMOVE ALL BURRS AND SHARP EDGES.					
NEXT ASSY	DWG SIZE	USED ON			

Continental Electronics MFG. CO. DALLAS TEXAS		
AM SWITCH INTERFACE 377D-2		
SIZE	CODE IDENT NO	
C	52151	147073
SCALE:	WT	SHEET / OF /

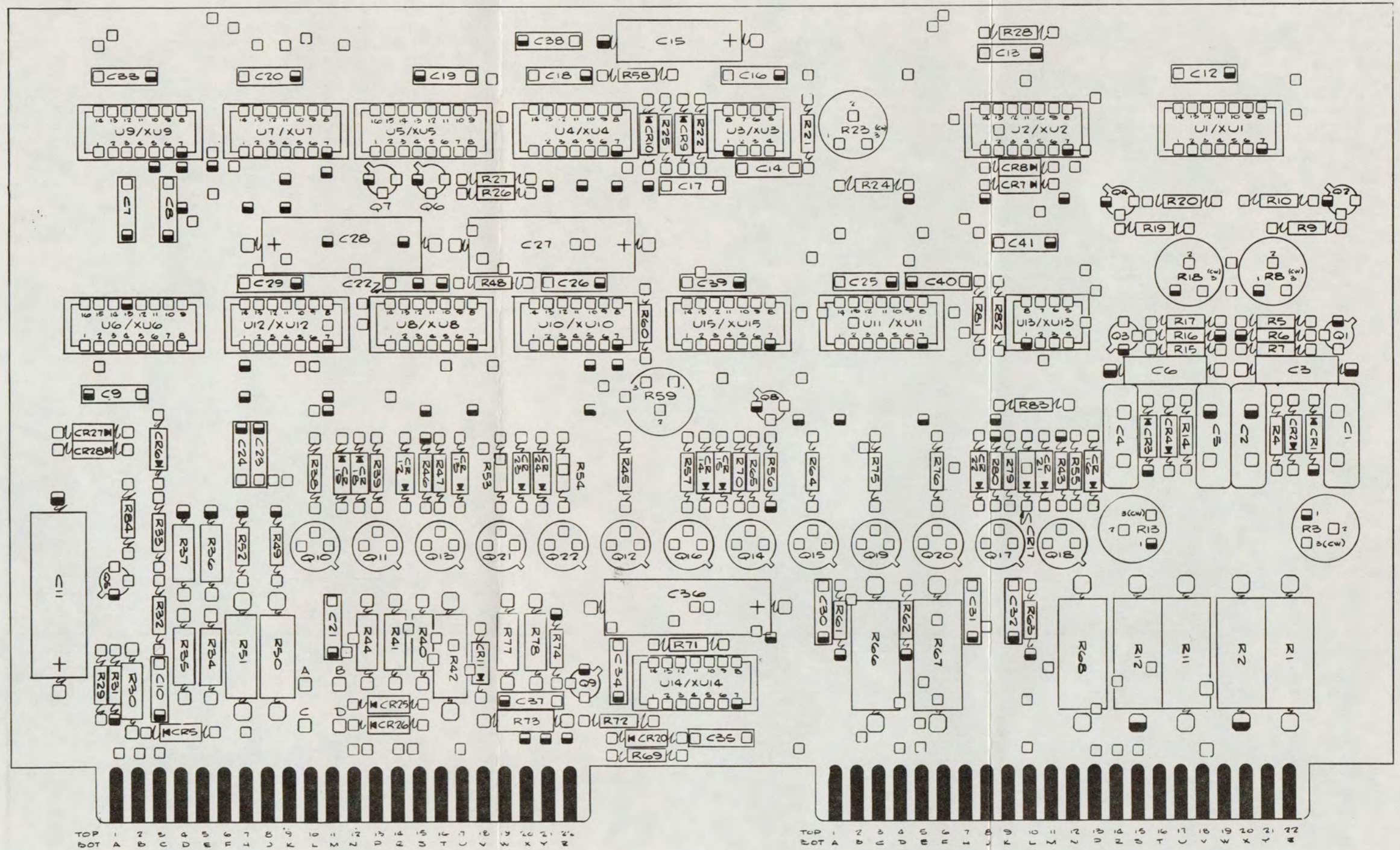
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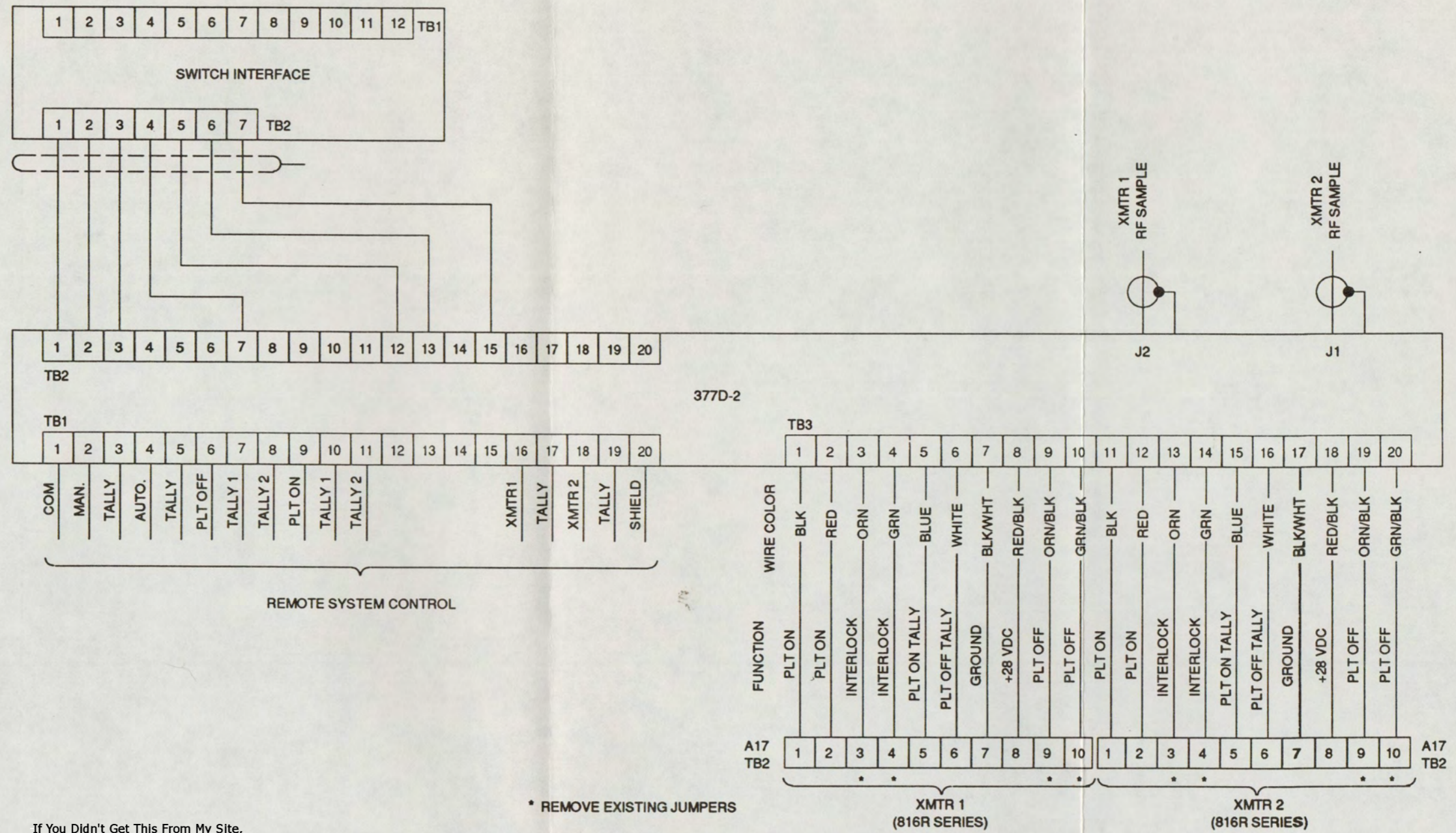
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



ITEM	ZONE	PART OR IDENTIFYING NO	QTY REQD PER DASH NO	QTY	DATE	DESCRIPTION	CODE IDENT
UNLESS OTHERWISE SPECIFIED							
TOLERANCE ON		FRAC	DRAWN: <i>W. H. W.</i> DATE: <i>2/6/61</i>				
2 PLACE DEC		3 PLACE DEC	ANGLES	MECH DSGN			
MACHINED SURFACE FINISH 125		AND	ELEC ENGR				
ALL DIMENSIONS ARE IN		INCLUDE APPLIED FINISH	APPROVED				
REMOVE ALL BURRS AND SHARP EDGES		Continental Electronics MFG CO DALLAS TEXAS 377D-2 SYSTEM INTERCONNECT					
SIZE	COOL IDENT NO	147071					
D	52151	SCALE					
NEXT ASSY	DATE USED ON	BY					



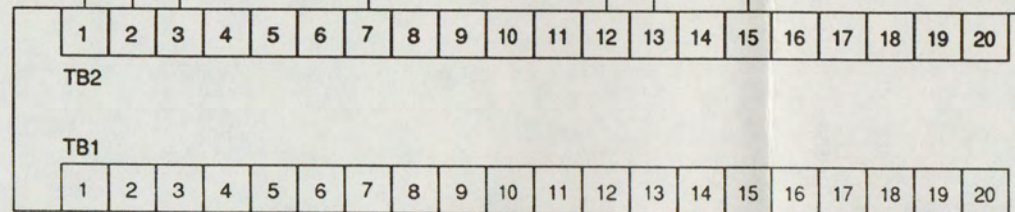
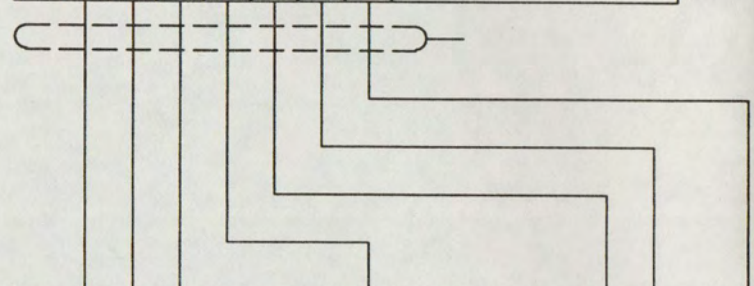
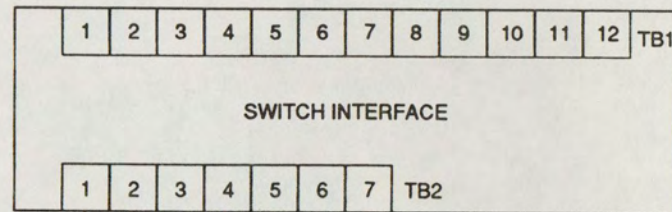
Logic Card, Component Location.



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* REMOVE EXISTING JUMPERS

377D-2 SYSTEM INTERCONNECT 816R MAIN/ALTERNATE

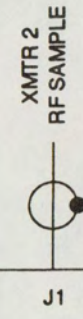
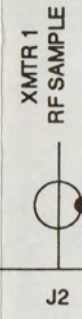


1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
COM	MAN.	TALLY	AUTO.	TALLY	PLT OFF	TALLY 1	TALLY 2	PLT ON	TALLY 1	TALLY 2					XMTR1	TALLY	XMTR 2	TALLY	SHIELD

REMOTE SYSTEM CONTROL

*** PLATE OFF CONNECTIONS**

1. THERE ARE TWO EXISTING WIRES IN THE "PLATE OFF" CIRCUIT CONNECTED TO A17TB1-6. ONE OF THESE WIRES GOES TO THE CONTROL PANEL A1TB1-6 AND THE OTHER WIRE GOES TO THE REMOTE CONTROL INTERFACE RELAY A2A1K4. REMOVE EITHER OF THESE TWO WIRES (LEAVE ONE CONNECTED) AND SPLICE IT TO A WIRE THAT CONNECTS TO THE 377D-2 TB3-20.
2. CONNECT WIRE FROM 377D-2 TB3-19 TO TRANSMITTER A17TB1-6 AS SHOWN.
3. MAKING THESE CONNECTIONS WILL PUT THE 377D-2 IN SERIES WITH THE PLATE OFF CIRCUITS IN THE TRANSMITTER.



TB3										A17																				
1	2	3	4	5	6	7	8	9	10	TB2-1	TB2-2	TB2-3	TB2-4	TB2-5	TB2-6	TB2-7	TB2-8	TB2-9	TB2-10	TB1-4	TB1-5	TB4-23	TB4-24	TB1-19	TB1-20	TB4-35	TB4-36	TB1-6	A17	
WIRE COLOR	BLK	RED	ORN	GRN	BLUE	WHITE	BLK/WHT	RED/BLK	ORN/BLK	GRN/BLK	BLK	RED	ORN	GRN	BLUE	WHITE	BLK/WHT	RED/BLK	ORN/BLK	GRN/BLK	BLK	RED	ORN	GRN	BLUE	WHITE	BLK/WHT	RED/BLK	ORN/BLK	GRN/BLK
FUNCTION	PLT ON	PLT ON	INTERLOCK	INTERLOCK	PLT ON TALLY	PLT OFF TALLY	GROUND	+28 VDC	PLT OFF	PLT OFF	PLT ON	PLT ON	INTERLOCK	INTERLOCK	PLT ON TALLY	PLT OFF TALLY	GROUND	+28 VDC	PLT OFF	PLT OFF	PLT ON	PLT ON	INTERLOCK	INTERLOCK	PLT ON TALLY	PLT OFF TALLY	GROUND	+28 VDC	PLT OFF	PLT OFF

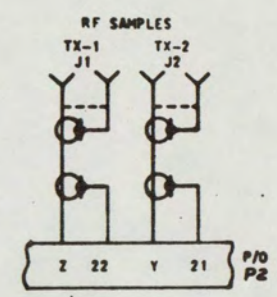
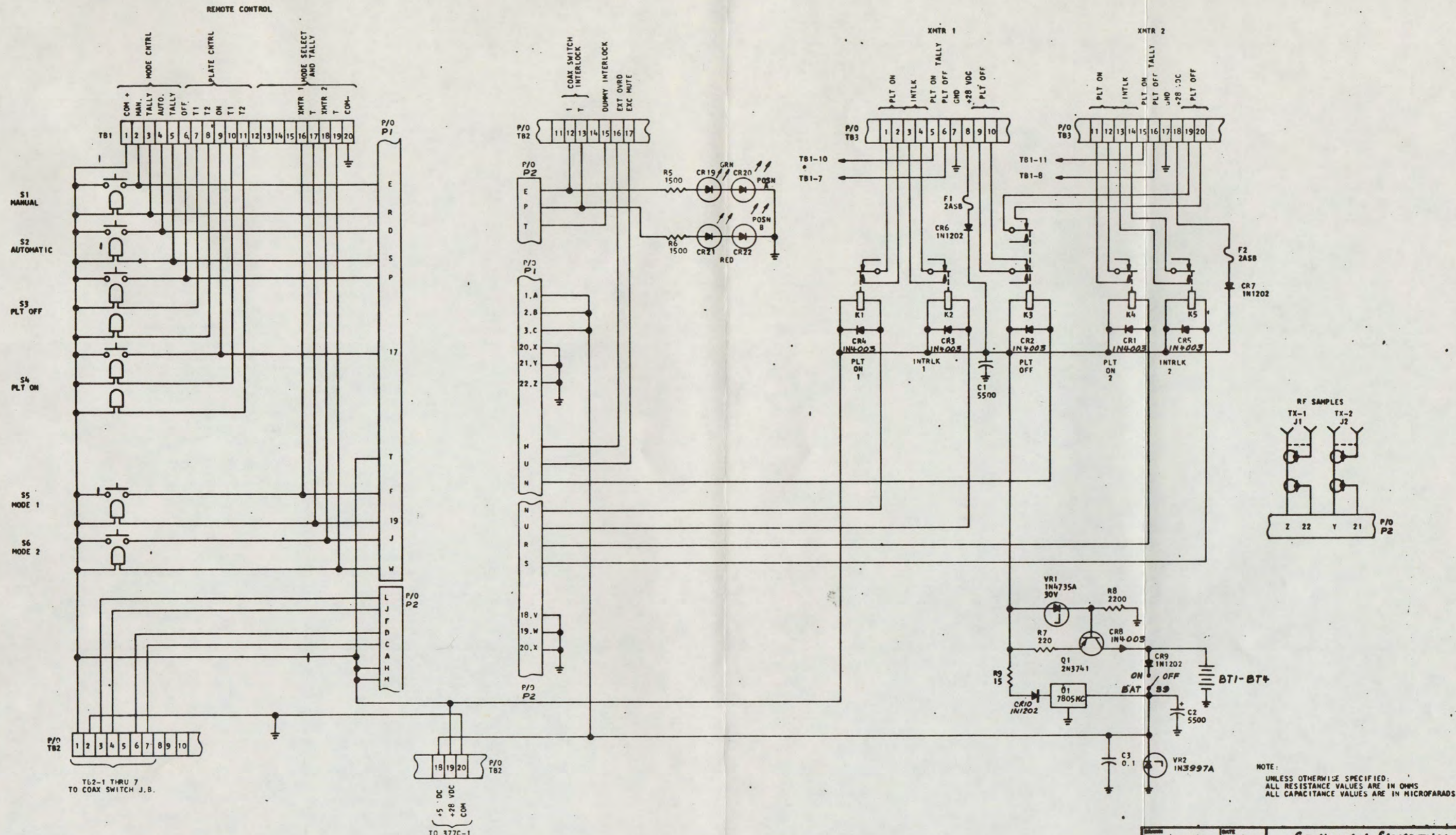
XMTR 1 (816R SERIES)

XMTR 2 (COLLINS 813E, F, G SERIES))

* REMOVE ALL JUMPERS AT TERMINALS THAT CONNECT TO 377D-2

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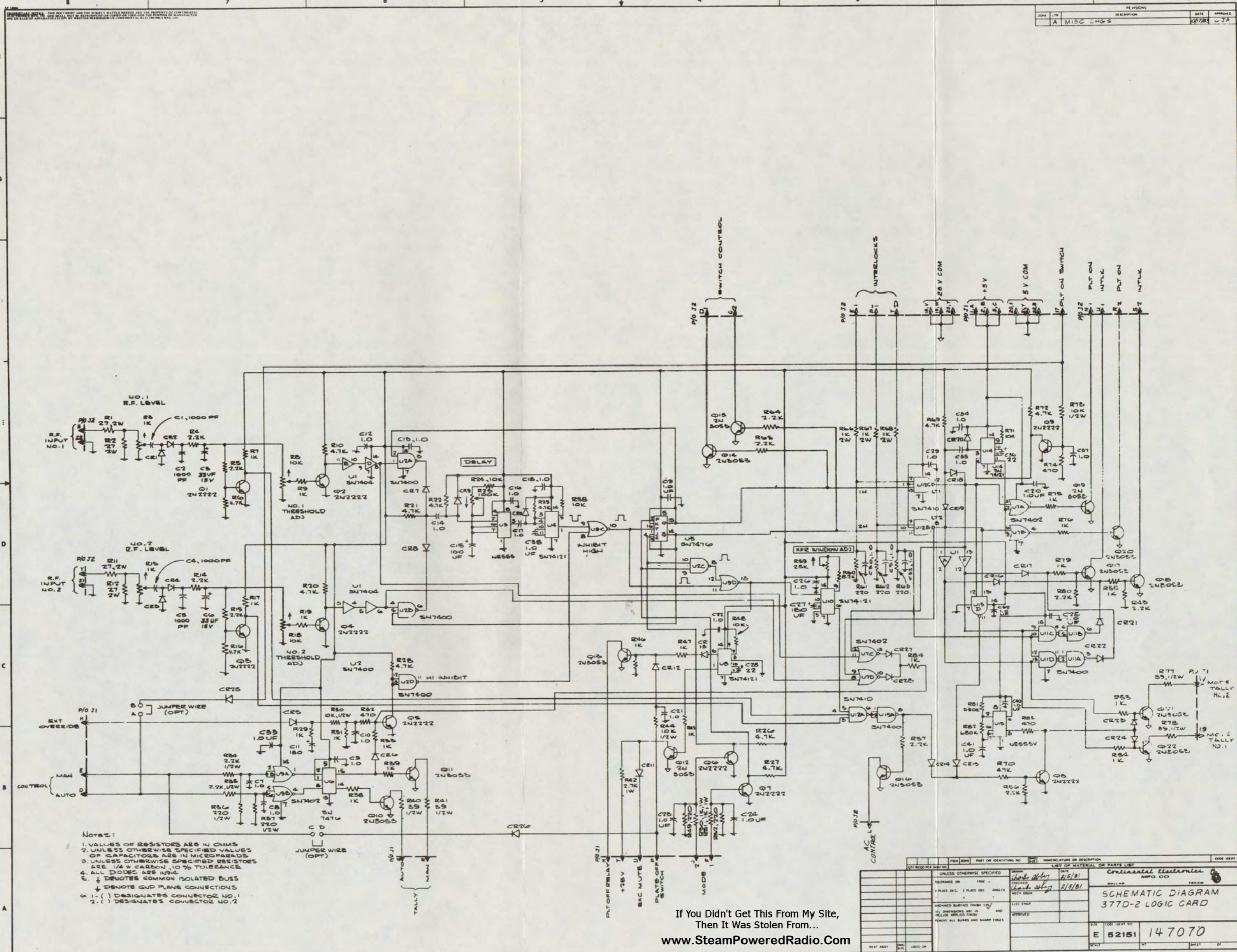
377D-2 SYSTEM INTERCONNECT 816R MAIN/831E, F, G ALTERNATE



NOTE:
UNLESS OTHERWISE SPECIFIED:
ALL RESISTANCE VALUES ARE IN OHMS
ALL CAPACITANCE VALUES ARE IN MICROFARADS

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DESIGNED <i>Charles Abney</i>	DATE 2/5/61	Continental Electronics MFG. CO. DALLAS, TEXAS
CHECKED <i>Charles Abney</i>	DATE 2/5/61	
SCHEMATIC DIAGRAM 377D-2 MAINFRAME		
APPROVED	CODE IDENT. NO. D 52151	147069
SCALE	BY	SHEET 1 OF 1



- NOTES:
1. VALUES OF RESISTORS ARE IN OHMS
 2. UNLESS OTHERWISE SPECIFIED VALUES OF CAPACITORS ARE IN MICROFARADS
 3. UNLESS OTHERWISE SPECIFIED RESISTORS ARE 1/8 W CARBON, 10% TOLERANCE
 4. ALL DIODES ARE 1N914
 5. (+) DENOTES COMMON ISOLATED BUSS
 6. (-) DENOTES GND PLANE CONNECTIONS
 7. (.) DESIGNATES CONNECTOR NO. 1
 8. (.) DESIGNATES CONNECTOR NO. 2

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REV	DATE	DESCRIPTION	APPROVED
1	2/5/81	SCHEMATIC DIAGRAM 377D-2 LOGIC CARD	
2	2/5/81		

QTY	REQD PER SH-NO	NEW QTY	PART OR IDENTIFYING NO.	MANUFACTURE OR DESCRIPTION	DATE
				UNLESS OTHERWISE SPECIFIED	
				RESISTANCE OHM	
				1 PLACE DEC. 3 PLACE DEC. ANGLES	
				FINISHED SURFACE FINISH 100	
				ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED	
				REWORK ALL BARRS AND SHARP EDGES	

REV	DATE	DESCRIPTION
E	52151	147070

REV	DATE	DESCRIPTION	APPROVED
A	2/7/81	MISC CHGS	