

# Section V

Theory  
of  
Operation



## V --- THEORY OF OPERATION (Page 1 of 5)

### A. INTRODUCTION

The UTX2K ULTRA transmitter was designed to meet or exceed all FCC applicable specifications for TV broadcast equipment. Special attention was given to the selection of sub-assemblies and components to achieve maximum reliability and minimum down time. The construction of the UTX2KW ULTRA is BASIC and MODULAR with most components field replaceable. Special emphasis was placed on "KEEPING IT SIMPLE" and returning to more traditional transmitter layouts and instrumentation.

This transmitter was designed for Analog (NTSC) transmission with provisions and options available to convert to Digital Service at a later date if necessary.

Refer to the UTX2K ULTRA block diagram in for an overview of the transmitter architecture. This will give the technician basic information needed to understand the operation of the transmitter and the function of each subassembly.

SEE SECTION VI.A FOR PARTS LIST AND BLOCK DIAGRAM.

### B. ACDIS2 AC & DC DISTRIBUTION

The ACDIS2 is the primary AC power inlet module. The UTX2K ULTRA transmitter was designed to accept 208 to 240 VAC Single Phase using a four (4) wire connection. The four wires are:

- 2 wires for 208 -230 VAC Single Phase
- 1 wire for neutral connection
- 1 wire for safety ground connection

**CAUTION:** Connection to the AC Primary source must be made using all four wires listed above. Follow the wiring instruction given in TRANSMITTER INSTALLATION Section III.3. If not followed, severe damage to the transmitter and, or, electrical shock could result.

The ACDIS2 performs the following functions:

1. Provides a primary AC power breaker point to shutdown the transmitter
2. Provides 208 VAC power to each of the 2 KW DC power supplies with individual breaker points for added safety.
3. Provides 110 VAC circuits for Modulator, ADP500, ABS (as necessary) and AUX Power where needed.
4. Analog metering is provided to monitor the Power Supply voltage and current being applied to the RF Amplifier states.
5. Power supply current sharing test points are provided for checking current sharing between power supply modules.

SEE SECTION VI.B FOR SCHEMATIC AND PARTS LIST

### C. AC2008 2KW POWER SUPPLY MODULE

The UTX2K ULTRA transmitter is designed with over 6 KW of DC power. To achieve this level, the power supply in each transmitter rack is made up of three (3) TWRI6004 (PTI Part # AC2008) power modules mounted into one (1) main frame assembly (PTI Part # AC2009) which are capable of managing three (3) 2 KW modules each.



(CONTINUED) (Page 2 of 5)

The power modules are "HOT PLUGGABLE" and can be removed or installed without turning off the transmitter.

Each power supply module has OVER VOLTAGE, OVER CURRENT AND OVER TEMPERATURE protection as well as a fault signal in the event of a failure.

REFER TO MANUFACTURER'S MANUAL FOR MODEL # TWRI6004 PROVIDED WITH THE UTX2K ULTRA.

#### D. ADP500 AND PAS3 PERFORMANCE MONITOR

The ADP500 AND PAS3 Performance Monitor provides the following functions:

1. Monitors FORWARD AND REFLECTED POWER to the antenna and presents it as a percentage of power rating. The transmitter comes set to 100% P-Sync power based on the ratings of the transmitter.
2. Monitors Aural Power as a percentage of P-Sync rating (5% typical).
3. Provides a HIGH ANTENNA VSWR MONITOR in the event of an antenna or coax failure where the reflected power exceeds 25% the transmitter will shut down. The front panel LED will change from green to red in case of a fault.
4. Provides current monitoring of all the pallets used in the three (3) PA1K power amplifier assemblies. The current levels can be read directly from the multi-meter on the front panel. Individual pallets are selectable on the ADP500 and the PA assemblies are selected using the PAS3. In normal operation, a PA FAULT is indicated by going from green to read. RED indicates that the current level is below 500 ma and a transistor may have failed. To read the actual current, select the appropriate PA Bank using the PAS3. The ADP500 will display status of each pallet in that PA. The multi-meter will read the actual current.
5. A PA INHIBIT switch is provided for failure diagnostic purposes. When activated, this switch allows the technician to monitor the bias currents for each pallet. These readings were recorded at the factory and are found on the Transmitter Test Report, DC Test Report Section. This is the best way to troubleshoot possible transistor problems. When in the PA INHIBIT mode, the RF PWR OFF LED will change from green to red indicating that the "SHUTDOWN LINE" is at TTL 0 state and the output power has been reduced to near zero.
6. An RF MONITOR port (BNC) is available to connect a spectrum analyzer for monitoring the output signal.
7. METER SELECTION SWITCHES

The PAS3 is used to select the appropriate PA module (PA1K) for performance display on the ADP500. PA designations are PA1 starting from the top row left (there is no PA located in the top row right position) with PA3 and 4 located on the bottom row left to right.

The rotary switch on the ADP500 is the detail selector for the multi-meter. The various positions are defined as follows:

PA1 thru PA5..... Reads PA Pallet currents as selected  
Typical reading in INHIBIT MODE 1.5 to 2.5 A  
Typical reading SMPTE BARS 5-7 A for PA1 thru PA4 with normal picture  
Typical reading SMPTE BARS 2-3 A for PA5 with normal picture



(CONTINUED) (Page 3 of 5)

7. METER SELECTION SWITCHES (Continued)

PA6..... No Connection

PS VOLTS..... Reads DC voltage applied to PA stages  
Typical reading would be +29 to 33 VDC

P FWRD..... Reads PA output power in P-Sync percentage of rating  
Full power reading would be 100%

P RFLD..... Reads PA output power being returned from the load and  
displayed as a percentage of forward power. Typical  
reading would be < 5% indicated.

P AURAL..... Reads the AURAL POWER component as a percentage  
of forward power. Typical reading would be 5%

AUX 1 & AUX 2..... Not used in this configuration.

REFER TO SECTION VI.H FOR SCHEMATICS AND PARTS LIST

E. RC8 REMOTE MONITOR AND CONTROL WITH ABS

This equipment is **OPTIONAL** and can be used to satisfy FCC remote control requirements.

The Remote Monitor is used to monitor the operational status of the transmitter and will allow the operator to turn RF on or off and adjust power levels remotely. The following items are monitored or controlled:

1. Transmitter on/off function
2. Power output level monitor and adjust
3. AC Line Voltage status - With ABS you can be notified if there is a power failure at the site.
4. Various other custom options are available. Specify these at the time the transmitter is purchased and they will be included if possible.

Remote monitoring requires a phone line connection. Information can be accessed via a PC Terminal.

The Auxiliary power unit requires a battery connection. A common car battery (12 VDC) can be used with a charger as an ABS. This will run the Monitor and provide access to transmitter status for several hours.

A manual for this equipment is provided by the Manufacturer and is included in the UTX2K ULTRA package shipped with the transmitter. **The manual is only included if this option was purchased for delivery with the transmitter.**

REFER TO INSTRUCTION MANUAL PROVIDED WITH THIS PACKAGE.



(CONTINUED) (Page 4 of 5)

#### F. MA1000 MODULATOR

The heart of any TV Transmitter is the MODULATOR. This equipment receives the video and audio signals as well as any control signals needed. The base band signals are converted to RF with an output on the desired operating channel.

Detail operation of the Modulator with schematics and parts list are provided by the equipment manufacturer and included in the UTX2K ULTRA package shipped with the transmitter.

REFER TO INSTRUCTION MANUAL PROVIDED WITH THIS PACKAGE.

#### G. UDR100AC 100 WATT DRIVER AMPLIFIER

The RF output from the MA1000 modulator is accepted by the UDR100AC DRIVER AMPLIFIER. This amplifier increases the drive level to that required for each of the PA1K power amplifiers to make rated power. The UDR100AC is powered by 110 VAC.

#### H. US200-3 3-WAY SPLITTER

The US200-3 3-Way Splitter receives the output from the UDR100AC Driver Amplifier and splits it into 3 parts with phase and power levels equal. This unit is an isolated in-phase splitter and will provide some isolation in the event one PA fails.

SEE SECTION VI.F FOR PARTS LIST

#### I. MFA2PA POWER AMPLIFIER HOUSING

The MFA2PA is the main RF Power Amplifier housing which accommodates two (2) PA1K Amplifiers. The housing includes the following:

- 2 each 330 CFM cooling fans
- 2 each Air filter assemblies
- 2 each Front panel status PC boards
- 1 each Main chassis
- 2 each Mechanical slide assemblies
- 1 each AC Filtered inlet for cooling fans

SEE SECTION VI.D FOR SCHEMATICS AND PARTS LIST

#### I-1. PA1K POWER AMPLIFIER

The PA1K is the main RF Power Amplifier Assembly used in the UTX2K ULTRA. Each amplifier assembly is made up of one (1) U250LD power pallet and two (2) U500LDA power pallets. These amplifiers are operated in Class A/AB or sometimes referred to as "HARD AB". This refers to the bias levels to achieve best linearity.



(CONTINUED) (Page 5 of 5)

Each PA1K amplifier assembly includes the following:

- 1 each U250LD power pallets
- 2 each U500LDA power pallets
- 1 each Phase and gain matching circuit
- 1 each 2-Way gain & in-phase splitter
- 1 each 2-Way in-phase combiner
- 1 each Circulator
- 1 each Power distribution module (1A0025)
- 2 each Thermal sensors
- 1 each Remote monitor port (DB9)
- 1 each Front panel status port (Molex)
- 1 each Filtered DC input port
- 1 each Type N Panel mounted RF Input port
- 1 each DIN 7/16 Panel mounted RF Output port

SEE SECTION VI.E. FOR SCHEMATICS AND PARTS LIST

#### J. UC2KW3NDC COMBINER/ DIRECTIONAL COUPLER

The UC2KW3NDC is a 3-Way in-phase combiner. The combiner is specifically designed for the channel designated transmitter frequency. This is a closed unit and cannot be serviced.

SEE SECTION VI.G. FOR PARTS LIST

#### K. BPU3KW UHF BAND PASS FILTER

This Band Pass filter was designed to meet FCC Certification requirements with minimum loss of RF Power. The BPU3KW comes tuned and tested to the operating frequency of the transmitter and should not be adjusted without proper equipment. Replacement filters are available as P/N BPUKW UHF (+CHANNEL NUMBER).

# Section VI

Schematic  
and  
Parts List

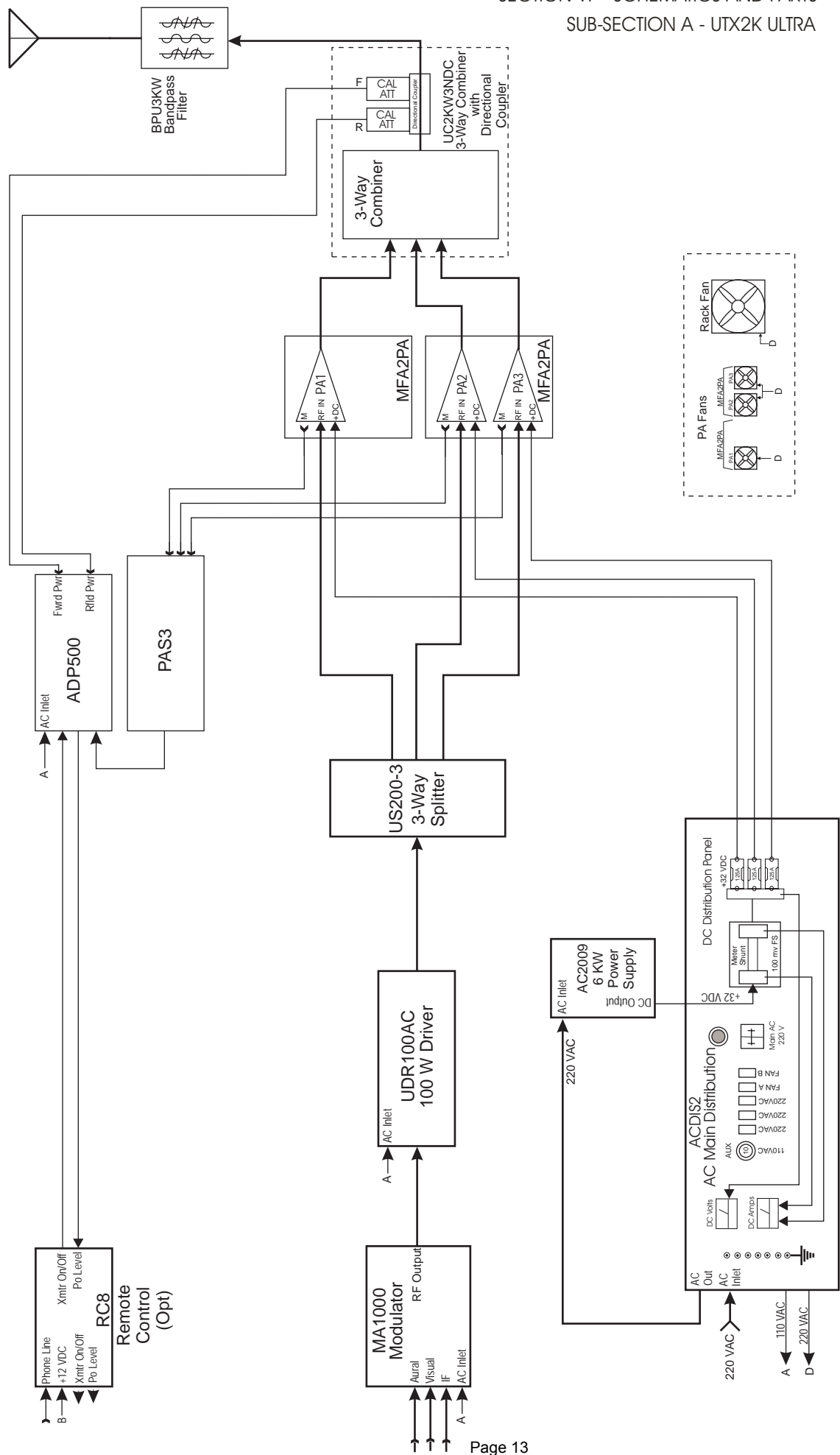


**A. UTX2K ULTRA Parts Assy**

Item	Qty	Type	P/N	Title	Detail
Top		CAT	UTX2K ULTRA	UHF TV XMTR 2 KW P-SYNC	STD 19 IN RACK 6 FT
1	1	PS	BPU3KW	BP FITER 3 KW BAND IV	COM-TECH FC4E110C
2	1	PS	HL200	1 5/8 U-LINK 6.5 IN FLANGED	UNPAINTED
3	1	PS	HL201	1 5/8 LINE SECTION FLG-FLG	12 INCHES UN PAINTED
4	1	PS	HL202	1 5/8 ANCHOR PLATE	UN PAINTED
5	1	PS	MFR40RU	40 RU ASSEMBLIED RACK	BLACK CONTEMPRA 2 WELDED
6	1	PL	AC2009	6KW 3EA PWR SUPPLY MAIN FRAME	UNIPOWER RRS2U
7	3	PS	AC2008	2 KW 31 VDC PWR SUPPLY	UNI-PWR TRS6000-406
8	1	PS	AC8100	AC WIREMOLD 120 VAC 19 IN RACK MTG	1 X 4 OUTLETS 6 FT CORD
9	1	PS	AC8220	AC WIRE MOLD 220 VAC	19 IN RACK MT
10	1	CAT	ADP500	DISPLAY PANEL, ANALOG	SEL SW AND METER
11	1	PL	ACDIS2	AC & DC DISTRIBUTION	UTX2KWA TRANSMITTERS
12	1.5	PL	MFA2PA	2KW MAIN FRAME W/U500LD AMPS	UHF/VHF ASSEMBLIES
13	1	CAT	PAS3	PA SEL SW FOR ADP500	3 POSITIONS W/1 OUTPUT
14	3	PS	1A7052	CABLE ASSEMBLY RG-223	BNC-M TO N-M 52 INCHES LONG
15	3	PS	PAC0005	DB9 MALE TO MALE 6 FT LONG	PA MONITOR CABLE
16	1	PL	1A6003	DC CABLE SET 5KW	HIGH CURRENT ASSEMBLY
17	1	CAT	UDR100AC	UHF DRIVER AMP 100W W/AC SUPPLY	U250LD AND UDR100 AMPS
18	1	PS	MFR44RU-BB	GROUNDING BAR CU	MIDDLE ATLANTIC BB-44-1
19	.5	PS	MFR44RU-HP5	10-32 MTG SCREWS	BLACK
20	3	PL	1A7065	CABLE ASSEMBLY LDF4-50	UTX SERIES XMTR 7/16 DIN TO N M
21	1	PS	MA1000	M369 CADCO MODULATOR	MODIFIED TO PTI SPECS
23	25	PS	INHOUSE_LABOR	PTI LABOR	LOADED
24	12	PS	INHOUSE-ENG TEST	ENG TESTING AND FIXIT	LOADED
26	1	PS	MFS102	RU24/40 RACK TOP COVER	HOLDS 2 FANS AND OUTPUT CONN.
27	2	PS	851040	FAN, AC 220 V	CARAVEL CLE 3T2 W/O FG
28	7	PS	MF9283	EQUIPMENT SUPPORT	14 GA GAL-XC (LEFT & RIGHT)
29	1	CAT	US200-3	UHF 3 WAY SPLITTER	TYPE N I/O



SECTION VI – SCHEMATICS AND PARTS  
SUB-SECTION A - UTX2K ULTRA



Pineapple Technology, Inc.  
Rocklin, CA

UTX2K ULTRA  
BLOCK DIAGRAM

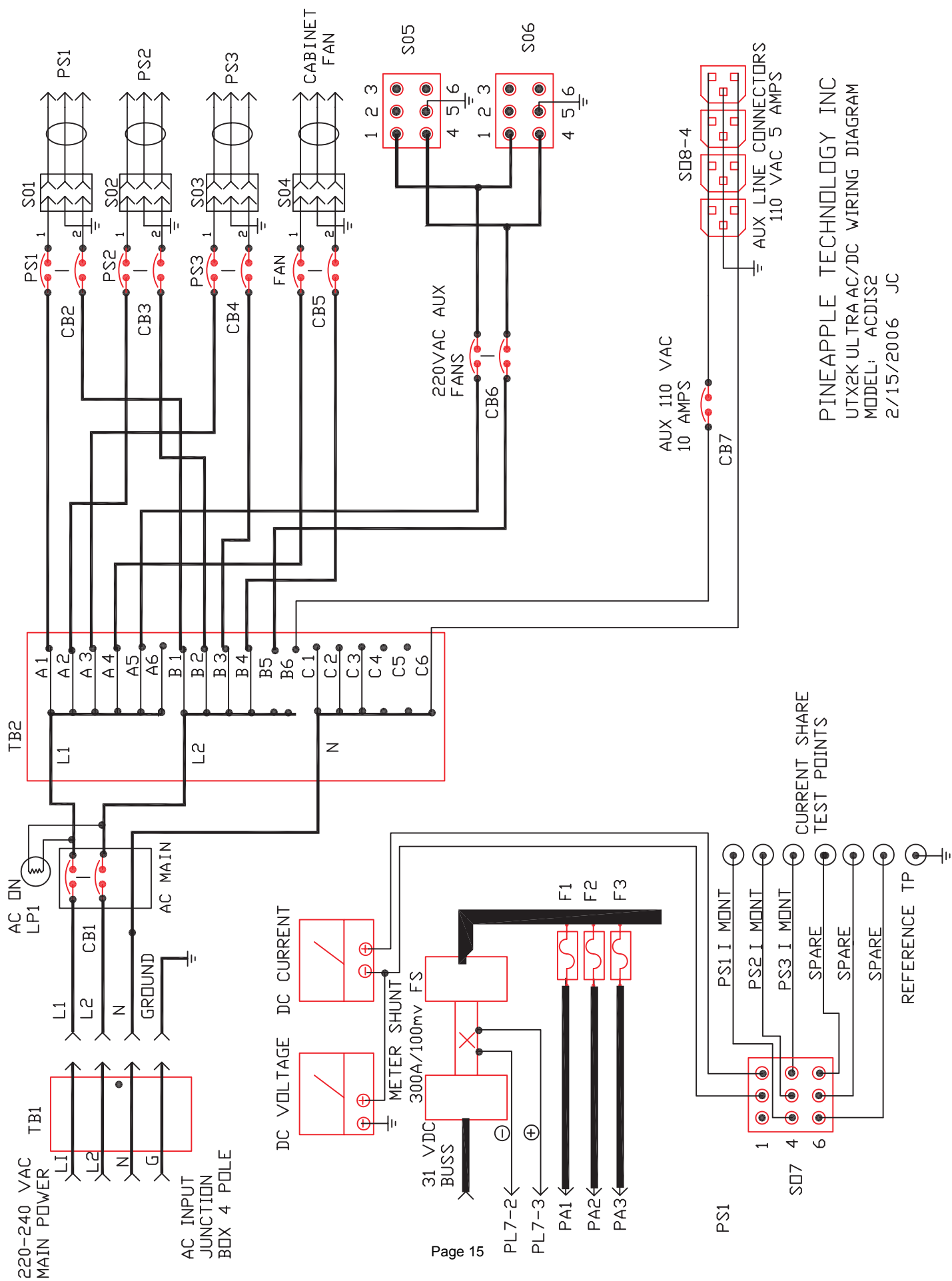
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SCALE	FIT				



## B. ACDIS2 Assy Tree

Item	Qty	Type	P/N	Title	Detail
Top		PL	ACDIS2	AC & DC DISTRIBUTION	UTX2KWA TRANSMITTERS
1	1	PS	660110	DC PANEL METER 50 V FS	HOYT MODEL 3115 1-1/2 ANA PANEL
2	1	PS	660113	DC AMP METER 300 A FS	HOYT 3115 100mv FS
3	1	PS	670300	SHUNT, METER 100 mv FS	Lightweight shunt, 100 Millivolt, 300 amp.
4	1	PS	AC3110	AC CKT BREAKER	115 VAC 10 AMPS RS TYPE
5	1	PS	AC8000	AC POWER DISTRIBUTION BLOCK	3 POLE 840 A 600 VAC
6	1	PS	AC5105	AC PANEL MTG OUTLET	4 POSITION "GANGED" 15A 115VAC
8	4	PS	AC4111	AC POWER PLUG 220AC 16A	POWER INLET SCHURTER 4300.0922
9	2	PS	480461	MOLEX CRIMP TERM PLUG	PLUG HOUSING 6 POLE
10	4	PS	480462	MOLEX CAP STRAIN RELIEF	ACDIS SUBASSEMBLIES
11	2	PS	480460	MOLEX CRIMP TERM 6 POLE	CAP HOUSING PANEL MTG
12	12	PS	480463	MOLEX PIN CONTACTS LRG	CONN PIN 14-20 AWG TIN CRIMP
13	12	PS	480464	MOLEX SOCKET CONTACTS	CONN SOCKET 14-20 AWG TIN CRIMP
14	1	PS	480465	MOLEX PLUG HOUSING	9 POLE MATE-LOC
15	1	PS	480466	MOLEX CAP HOUSING	9 POLE
16	2	PS	480467	MOLEX STRAIN RELIEFS	9 POLE
17	4	PS	471380	FUSE FAST ACTING 80 AMP	USE WITH LFFB0001 HOLDER
18	4	PS	460190	FUSE HOLDER 400A	LITTELFUSE LFFB001
19	5	PS	AC3315	AC CKT BKR ELUMINATED	U600LPA 220 15 A 2 POLE
20	1	PS	MF9312	ACDIS MAIN CHASSIS	AL 090 MATERIAL ALODYNE/W SILK
21	1	PS	MF9313	ACDIS MAIN COVER	1 & 2 KW 090 AL ALODYNE
23	1	PS	MF9311	PLATE, FRONT ACDIS2	
24	1	PS	AC3250	AC CKT BRKR	50 AMP 2-POLE 220V
25	2	PS	453000	HW, TIP JACK	RED, Insulated standard TIP JACK
26	2	PS	453001	HW TIP JACK	WHITE, Insulated standard TIP JACK
27	1	PS	453002	HW, TIP JACK	BLACK, Insulated standard TIP JACK
28	2	PS	453003	HW, TIP JACK	BLUE, Insulated Standard TIP JACK
29	1	PS	AC4302	AC CORD GRIP	0.98 OD CABLE 1.3 HOLE MTG

SECTION VI - SCHEMATIC AND PARTS LISTS  
SUB-SECTION B - UTX2K ULTRA



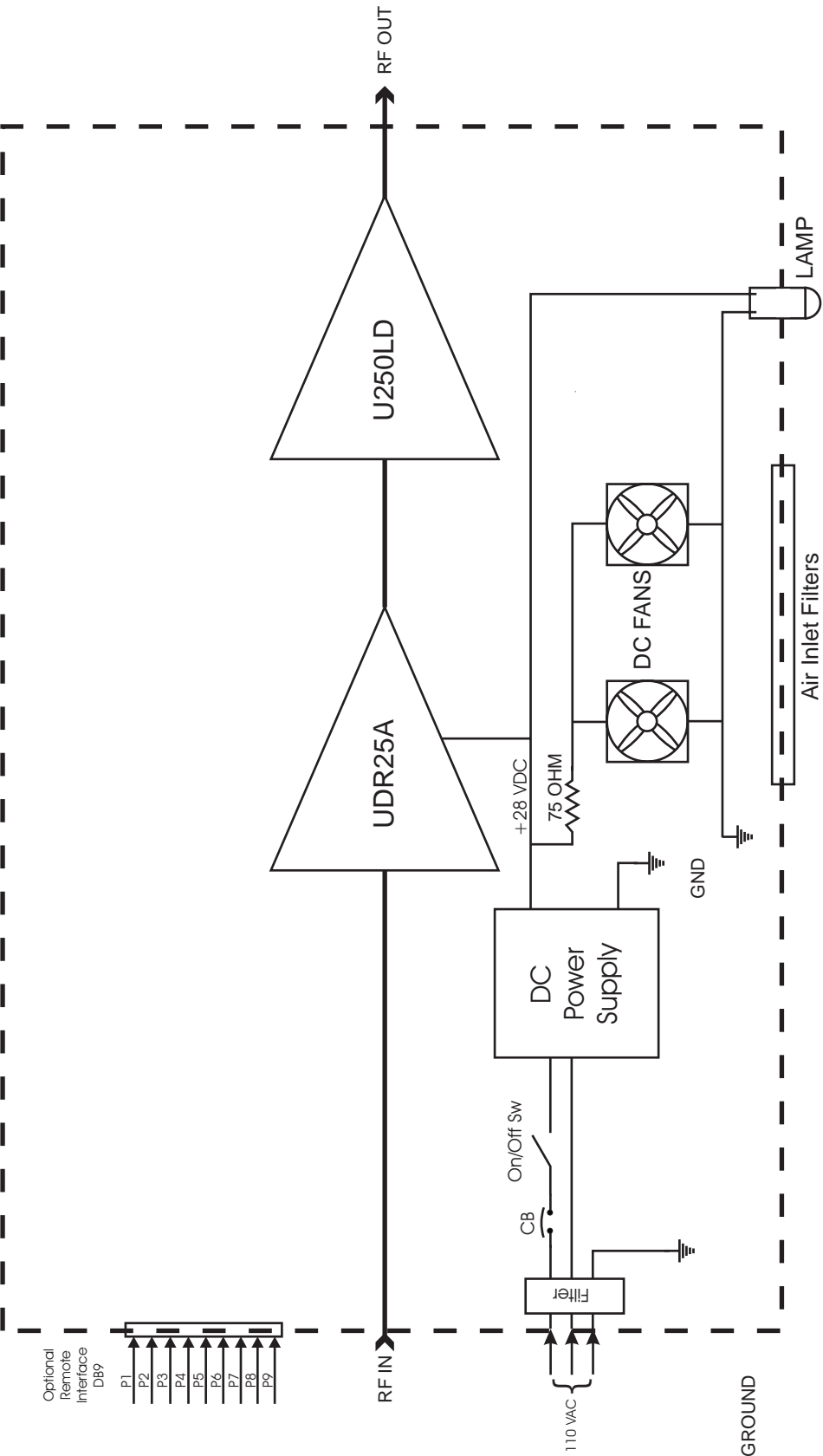
PINEAPPLE TECHNOLOGY INC  
UTX2K ULTRA AC/DC WIRING DIAGRAM  
MODEL: ACDIS2  
2/15/2006 JC



### C. UDR100AC Assy Tree

Item	Qty	Type	P/N	Title	Detail
Top		CAT	UDR100AC	UHF DRIVER AMP 100W W/AC SUPPLY	U250LD AND UDR100 AMPS
1	1	CAT	U250LD	UHF TV 250 W P-SYNC PALLET	470-810 MHz ZINGER COMBINER
2	1	CAT	UDR25A	DRIVER, 25W LINEAR 470-815 MHz	LDMOS DUAL PACKS PALLET MTG
3	1	PS	MF9337B	PANEL, FRONT	DRV100DC
4	1	PS	MF9338F	CHASSIS	DRV100-3
5	1	PS	MF9339B	DIVIDER AIR FLOW	DRV100DC
6	1	PS	MF9340B	TOP COVER DRV100DC	
7	1	PS	MF9341	DRV100 HEAT SINK	ALL DRV TYPES
8	2	PS	851005	FAN DC 24 V 80X25mm	COMAIR-ROTRON
9	2	PS	990201	FILTER & FINGER GUARD	80X25mm FAN 30 PPI
10	1	PS	631001	INDICATOR LAMP LED	GREEN 24 VDC 1/2 IN MTG HOLE
11	1	PS	484001	SW, ON/OFF ROCKER AC	CW IND. NAA-211-B121-00
12	1	PS	AC1003	FILTER, AC LINE	110/220 AC PLUG
13	1	PS	AC3110	AC CKT BREAKER	115 VAC 10 AMPS RS TYPE
14	1	PS	451004	HW TER BLOCK	#6 2X6 ROW
15	5	PS	451010	TERM BLOCK JUMPERS	2 POLE
16	1	PS	AC2010	DC POWER SUPPLY 115/220 VAC	320 WATTS 27-31 VDC
17	2	PS	CC316-NPF-PT-21	CABLE ASSEMBLY RG316/	1 N-FM PANEL MT WITH PIGTAIL
18	1	PS	481100	CON 9 P D-SUB MALE	MALE 9P SOLDER CUP
19	1	PS	140010	RES 2W 10 OHM	10 OHM
20	1	PS	140012	RES AXIAL TH 2 WATT	75 OHM METAL OXIDE

SECTION VI-PARTS AND VENDORS  
SUB-SECTION C - UTX2K ULTRA



Pineapple Technology, Inc. Rocklin, CA			
UDR100AC AMP/DRIVER BLOCK DIAGRAM			
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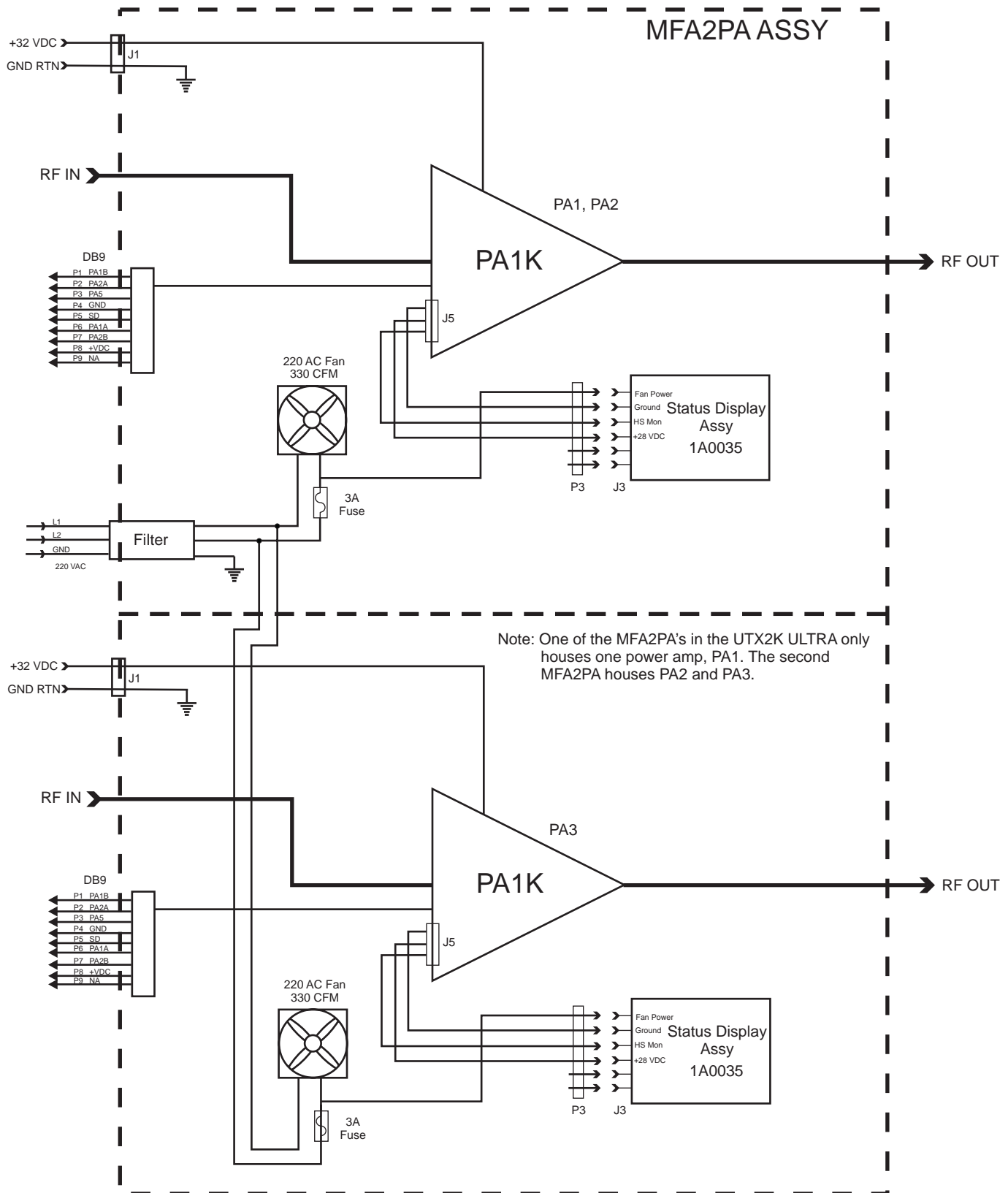


#### D. MFA2PA Parts Assy

Item	Qty	Type	P/N	Title	Detail
Top		PL	MFA2PA	2KW MAIN FRAME W/U500LD AMPS	UHF/VHF ASSEMBLIES
1	1	PS	MF9100E	MAIN CHASSIS	MFA1KW
2	1	PS	MF9101D	DIVIDER, PLENUM	MFA1KW
3	1	PS	MF9102C	DIVIDER, FAN	MFA1KW
5	1	PS	MF9104B	COVER, TOP	MFA1KW
10	4	PS	MF9139	SLED GUIDE	U600LP & MFA1KW
11	1	PS	MF9123D	FRONT PANEL, PAINTED	MFA1KW
14	2	PS	990199	FILTER, AIR DRY	FF-5 MFA/PS FP
16	2	PS	MF9127	MTG BRACKET, MOLEX FEMALE	MFA1KW
17	6	PS	480472	MOLEX CRIMP TERM MFA1KW	MOLEX MFG 39-00-0041
18	2	PS	480400	MOLEX PLUG 6 TERM MFA1KW	MOLEX 15-06-0065 MINI-FIT BMI
19	2	PS	460150	FUSE HOLDER PANEL MTG	3AG TYPE QC CON
20	2	PL	1A0035	PA STATUS BOARD	PC9061H
22	4	PS	INHOUSE_LABOR	PTI LABOR	LOADED
24	2	PS	MF9308	FAN FINGER GUARD	MFA1KW & U600LPA
25	2	PS	MF9310	AC FAN INLET HOLDER	MFA1KW
27	2	PS	MF9258	BRACKET FILTER MTG PAINTED	U600LPA & MFA1KW
28	1	PS	MF9197B	DIVIDER PA	MFA1KW
29	2	PS	851025	FAN, AC 220 V	COMAIR ROTRON TN3A2
30	2	PS	AC5110	AC FAN PLUG & CORD	FEMALE PLUG 24 IN CORD
31	2	PS	451080	TERM BLOCK EU STYLE	4 POLE 12-24 GAGE
32	0.1	PS	H-TAPE_TFE	TEFLON TAPE, SLIDES	1 INCH X 56 INCHS
33	2	PL	PA1K	UHF 1KW PA ASSEMBLY U500LD	DIN OUTPUT W/CAPTOR FILTERS
34	.2	PS	INHOUSE-ENG TEST	ENG TESTING AND FIXIT	LOADED

# SECTION VI - SCHEMATICS AND PARTS

## SUB-SECTION D - UTX2K ULTRA



Pineapple Technology, Inc. Rocklin, CA			
MFA2PA BLOCK DIAGRAM			
SIZE B	FSM NO.	DWG NO.	REV A
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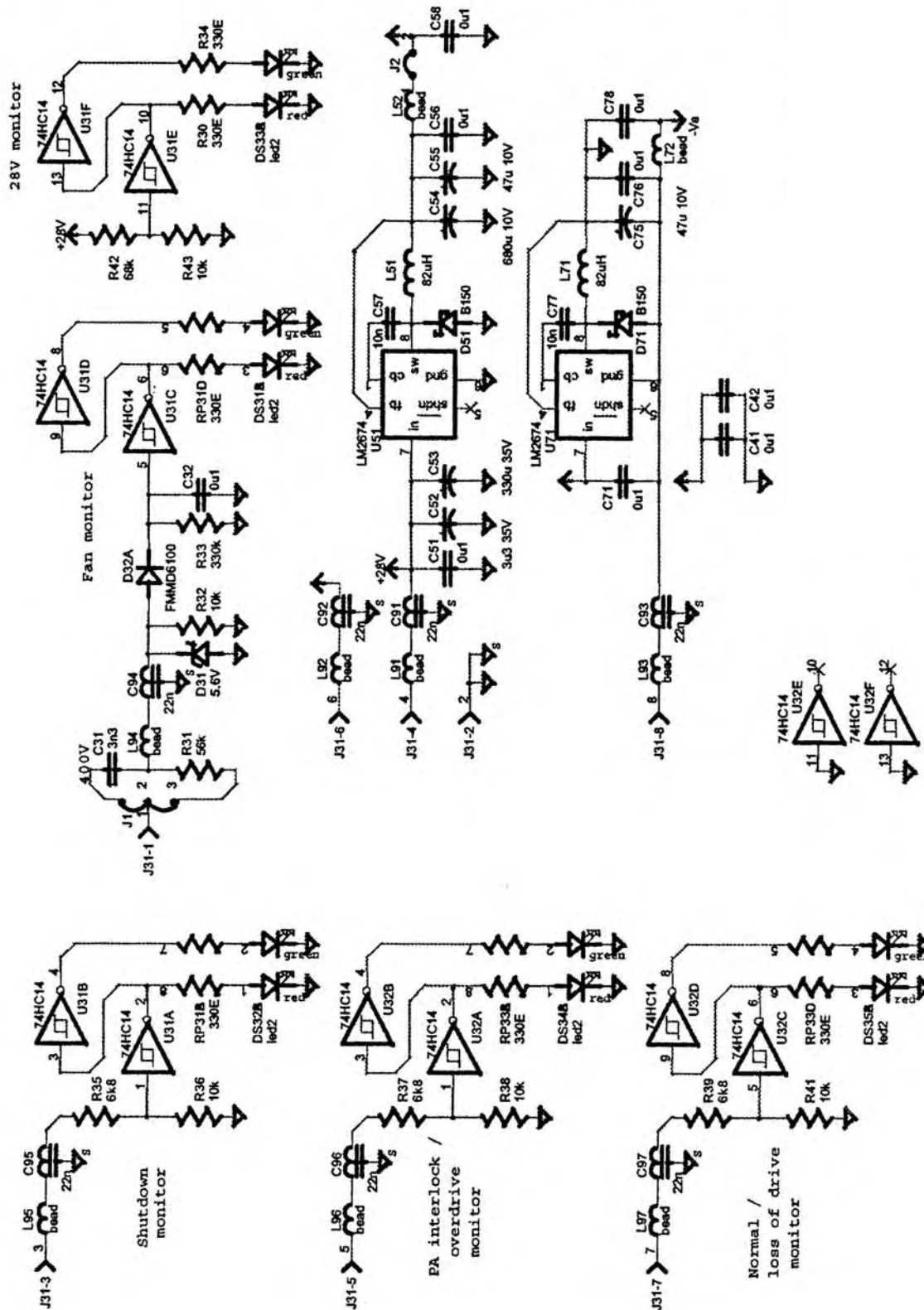


**D. MFA2PA POWER AMPLIFIER**  
**1. 1A0035 STATUS BOARD PARTS LIST**

Item	Qty	Type	P/N	Title	Detail
Top		PL	1A0035	PA STATUS BOARD	PC9061H
1	2	PS	114330	RES ARRAY, SMT	330 OHMS
2	5	PS	115103	RES CHIP 0805	10K OHM SMT 0805
3	1	PS	115334	RES CHIP 0805	330 K OHM SMT
4	1	PS	115563	RES CHIP 0805	56K OHM 0805 SM
5	3	PS	115682	RES CHIP 0805	6.8 K OHM SMT
6	6	PS	21X005	CAP CHIP 0805	100NF 10% XTR 0805 CASE
7	1	PS	21X008	CHIP CAP 0805	10NF 50 V 0805 SM
8	1	PS	240109	CAP TH POLYPROPYLENE	3N3 600 WVDC .033UF
9	1	PS	240110	CAP TAN SMD	3.3 UFD 35 V
10	1	PS	240111	CAP TAN SMD	47 UF 10 V TAN
11	1	PS	241300	CAP RADIAL TH	330 UF 35 VDC
12	1	PS	241301	CAP RADIAL TH	680 UF 10 V ELECTROLYTIC
13	6	PS	27022N	FT CAP 22N SM	AVX OR MURRATA PART
14	1	PS	480500	CON MICRO-FIT HEADER 3.0	8 PIN PC MTG
15	1	PS	520230	SEMI DIODE SHOTTKEY	1.5 A 60 VDC D-64
16	1	PS	520275	SEMI, DIODE DUAL	SW CC 70V SOT-23
17	2	PS	530350	HEX SCHMITH TRIG	74HD14
18	1	PS	538150	IC SWITCHER SIMPLE	SO8 PAK
19	5	PS	630200	IND LED DUAL COLOR	RED/GREEN T1-3/4 CLR
20	8	PS	750001	FERRITE BEAD SMT	0805 EMI FERRITE BEAD
21	1	PS	830510	IND, W/W	82 UH .58A PWR SMD
22	1	PS	PC9061H	PA STAUS BRD	FR4 060 1/1 CBR
23	2	PS	115331	RES CHIP 0805	330 OHM SMT
24	1	PS	520120	SEMI ZENER	5.6 V MELF
25	1	PS	115683	RES CHIP 0805	68K SM
26	0.2	PS	OS_AES_1A0025	OUTSIDE ASS'Y 1A0025	ASS'Y WORK
27	0.1	PS	INHOUSE_LABOR	PTI LABOR	
28	0.1	PS	INHOUSE-ENG TEST	ENG TESTING AND FIXIT	
29	1	PS	480510	RECEPTACLE	8 CKT RECEPT MOLEX
30	1	PS	115333	RES CHIP 0805	33K OHM SMT
31	1	PS	1155112	RES 0805 CASE	51.1 K OHM 1%



SECTION VI - SCHEMATICS AND PARTS  
SUB-SECTION D.1 - UTX2K ULTRA



C:\PTI Folders\PTI Block Diagrams\S10-6 5KW Block Diagram

Pineapple Technology, Inc.  
Rocklin, CA

1A0035 STATUS BOARD  
CIRCUIT DIAGRAM

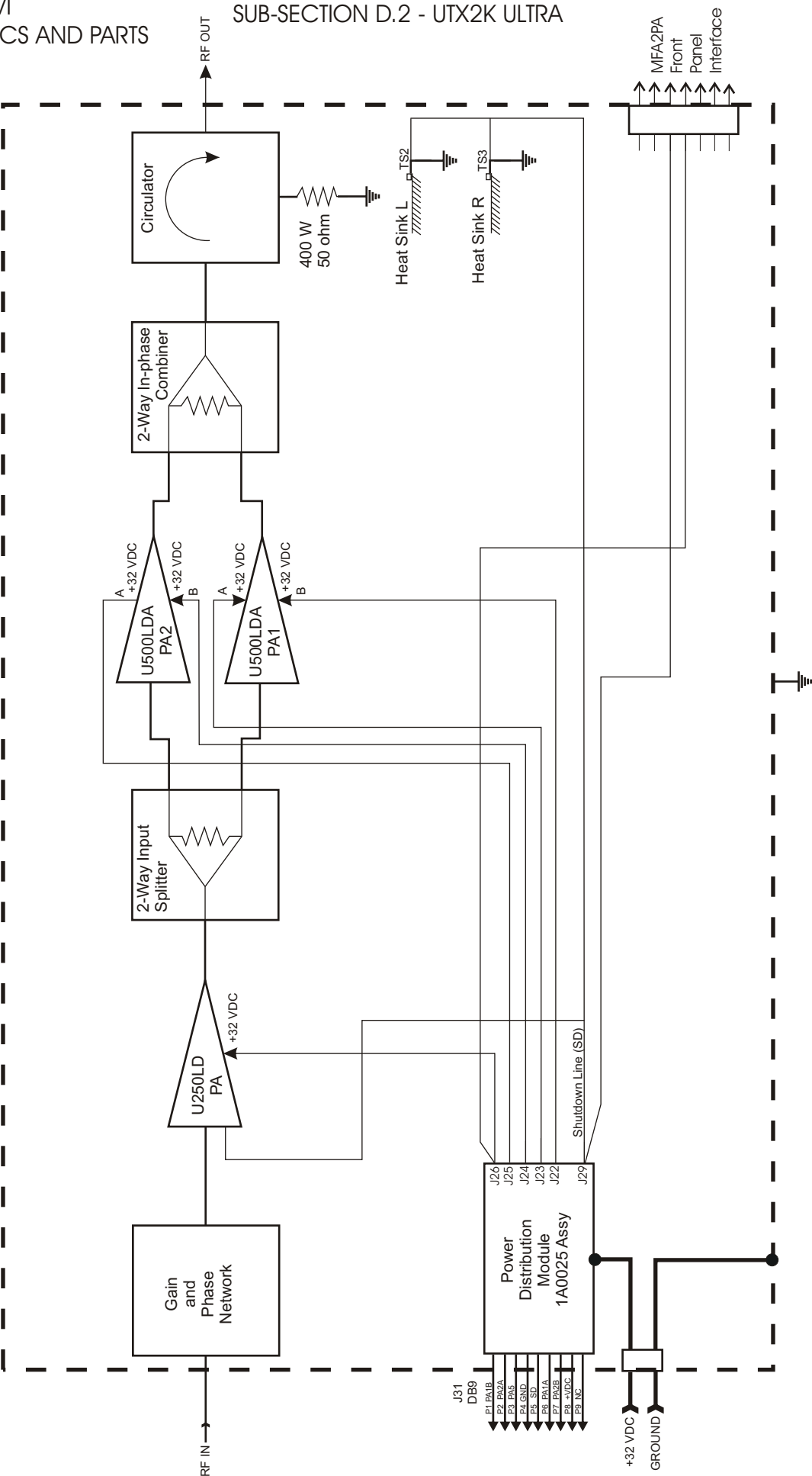
SIZE	FSCM NO.	DWG NO.	REV
SCALE			SHEET



## D. MFA2PA POWER AMPLIFIER

### 2. PA1K ASSEMBLY TREE

Item	Qty	Type	P/N	Title	Detail
Top		PL	PA1K	UHF 1KW PA ASSEMBLY U500LD PAs	DIN OUTPUT W/CAPTOR FILTERS
1	1	PL	MF9525	HS RT SIDE U500LD ASSEMBLY	BLF872 LDMOS
2	1	PL	MF9526	HS LEFT SIDE U500LD	BLF872 DEVICES
3	1	PL	MF9539	ISOLATOR & 2-WAY COMB PLATE	U1KWPA ASSEMBLY W/BLF872A
4	2	PL	U500LDA	500W 470-810 MHz POWER PALLET	RGR 4003 032 MATERIAL BLF872
5	1	PL	1A0025	DC ISO/MONITOR CKT	REPLACED CB99
6	1	PS	CT-1326A	CIR W/TABS CH 26 TO 44	Circulator 542-656 MHz
7	1	PS	270600	FT CAP CAPTOR 9 NF 500V	5/16 TERMINALS
8	1	PS	MF9126C	MOLEX BRACKET MTG PLATE	U600LD ALL
9	1	PS	MF9309	REAR PANEL WITH SILK	090 AL ALODYNE
10	1	PS	MF9203 B1	1A0025 PCB MTG PLATE	SM 09 AL W/MTG
11	1	PS	MF9137E	SLED	U500L AL
12	1	PS	454001	HANDLE, REAR	BLK NYLON
13	1	CAT	U250LD	UHF TV 250 W P-SYNC PALLET	470-810 MHz ZINGER COMBINER
14	1	PS	PC9022A_B2	PC BOARD COMB	2-WAY INPHASE 060 1/1 RG
15	1	PL	PC9518A	PCB SET OF (3) BRDS OUTPUT COMB	U1KWPA ASS'Y
16	2	PS	INHOUSE_LABOR	PTI LABOR	
17	.4	PS	INHOUSE-ENG TEST	ENG TESTING AND FIXIT	
18	1	PS	CA4000	COAXIAL ASSEMBLY W/7_16 DIN CON	COAX IS SUPPER FLEX



Pineapple Technology, Inc.  
Rocklin, CA

PA1K Amplifier Assy  
BLOCK DIAGRAM

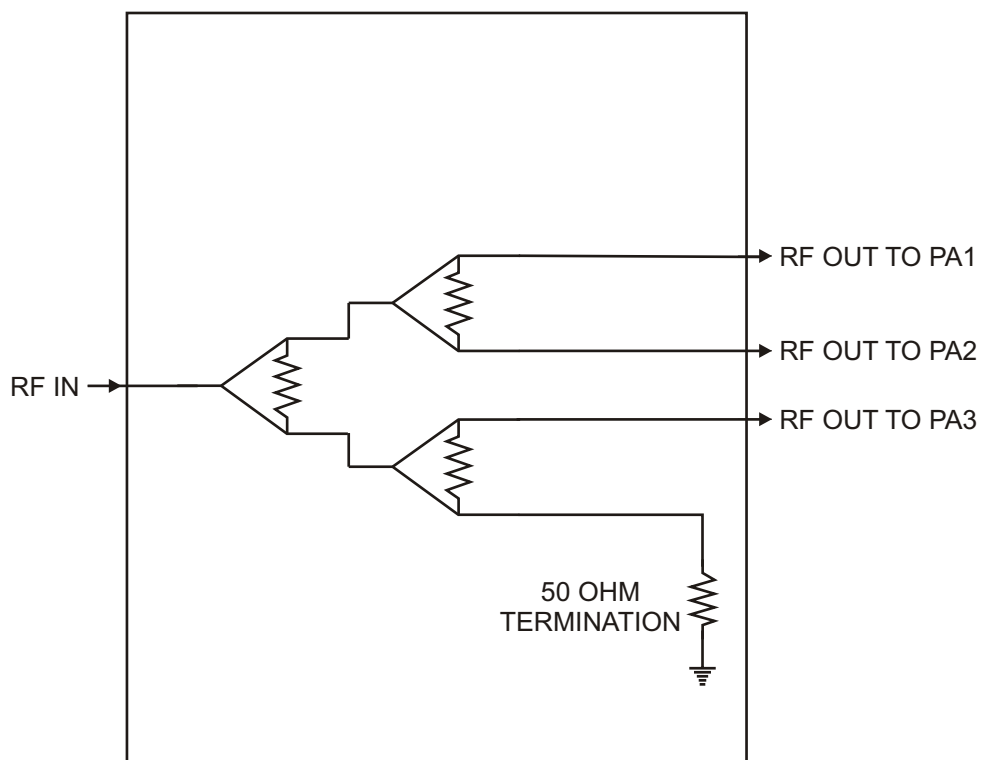
SIZE	FSCM NO.]	DWG NO.]	REV]	A
B				
SCALE	FIT	SHEET		1 of 1



**E. US200-3 Assy Tree**

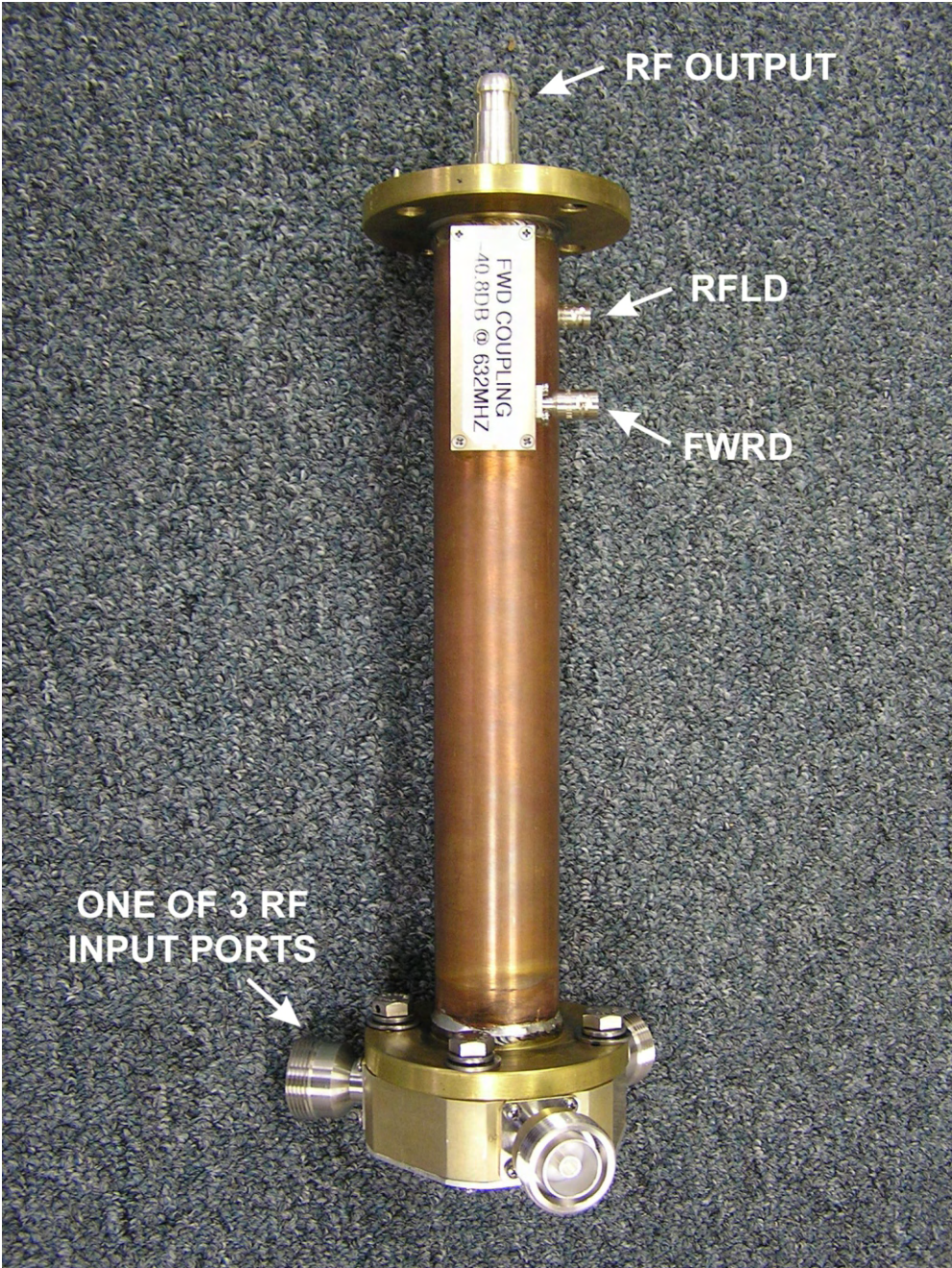
Item	Qty	Type	P/N	Title	Detail
Top		CAT	US200-3	UHF 3 WAY SPLITTER	

SECTION VI - SCHEMATICS AND PARTS  
SUB-SECTION E - UTX2K ULTRA



Pineapple Technology, Inc. Rocklin, CA			
US200-3 3-WAY SPLITTER BLOCK DIAGRAM			
SIZE	FSM NO.	DWG NO.	REV
SCALE	SHEET		





No Serviceable Parts

Pineapple Technology, Inc.			
Rocklin, CA			
UC2KW3NDC 3-WAY COMBINER & DIRECTIONAL COUPLER			
SIZE	FSM NO.	DWG NO.	REV
SCALE	SHEET		