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Find the *Tait T835-15* at our website: *Click HERE*

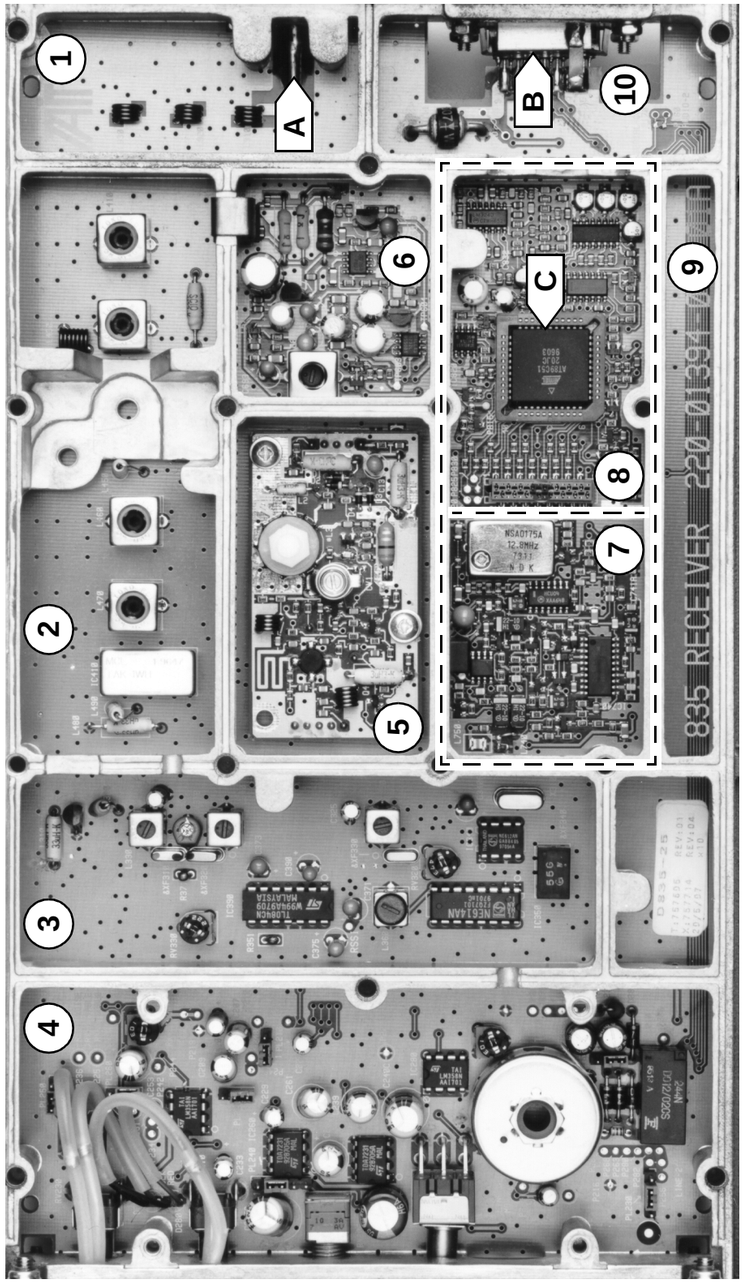
The photograph in Figure 1.1 on the next page will help you to identify the main circuit blocks in the T835.

There is a similar photograph in Figure 4.3 which shows the main tuning and adjustment controls.

Extending both these fold-outs will allow you to refer to both photographs while using the manual.

The photograph in Figure 1.2 on the next page shows the T835 front panel controls.

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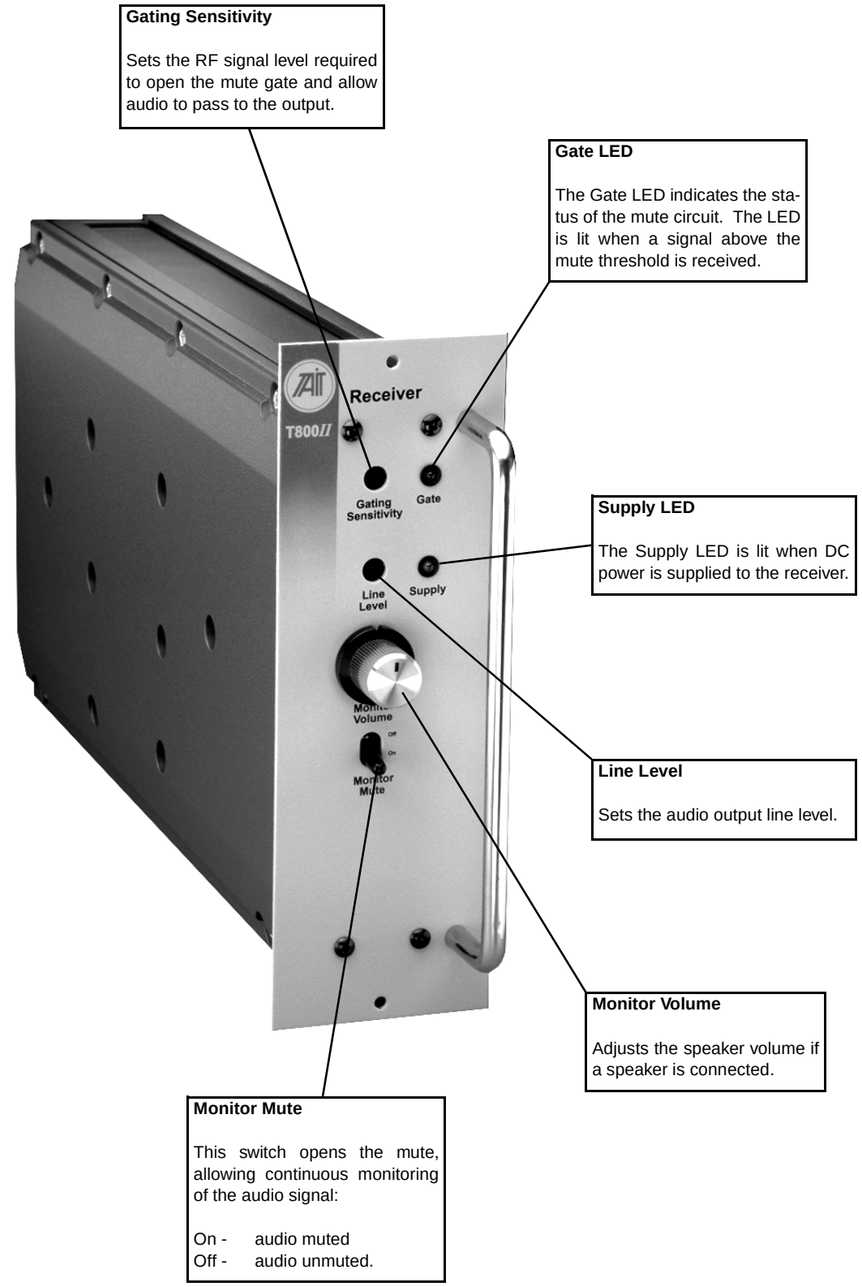


Key:

1 low pass filter
2 receiver front end
3 receiver IF
4 audio processor
5 VCO
6 regulators
7 synthesiser
8 microcontroller and CTCSS
9 duct for cabling to extra D-range (if fitted)
10 D-range

A RF input
B D-range connector ("D-range 1") incl. audio out & DC in (refer to Section 1.2 in Part F)
C microcontroller

Figure 1.1 T835 Main Circuit Block Identification



Gating Sensitivity

Sets the RF signal level required to open the mute gate and allow audio to pass to the output.

Gate LED

The Gate LED indicates the status of the mute circuit. The LED is lit when a signal above the mute threshold is received.

Supply LED

The Supply LED is lit when DC power is supplied to the receiver.

Line Level

Sets the audio output line level.

Monitor Volume

Adjusts the speaker volume if a speaker is connected.

Monitor Mute

This switch opens the mute, allowing continuous monitoring of the audio signal:

On - audio muted
Off - audio unmuted.

Figure 1.2 T835 Front Panel Controls

Copyright TEL

The photograph printed at right will help you to identify the main controls used in tuning and adjusting the T835.

There is a similar photograph in Figure 1.1 which shows the main circuit blocks.

Extending both these fold-outs will allow you to refer to both photographs while using the manual.

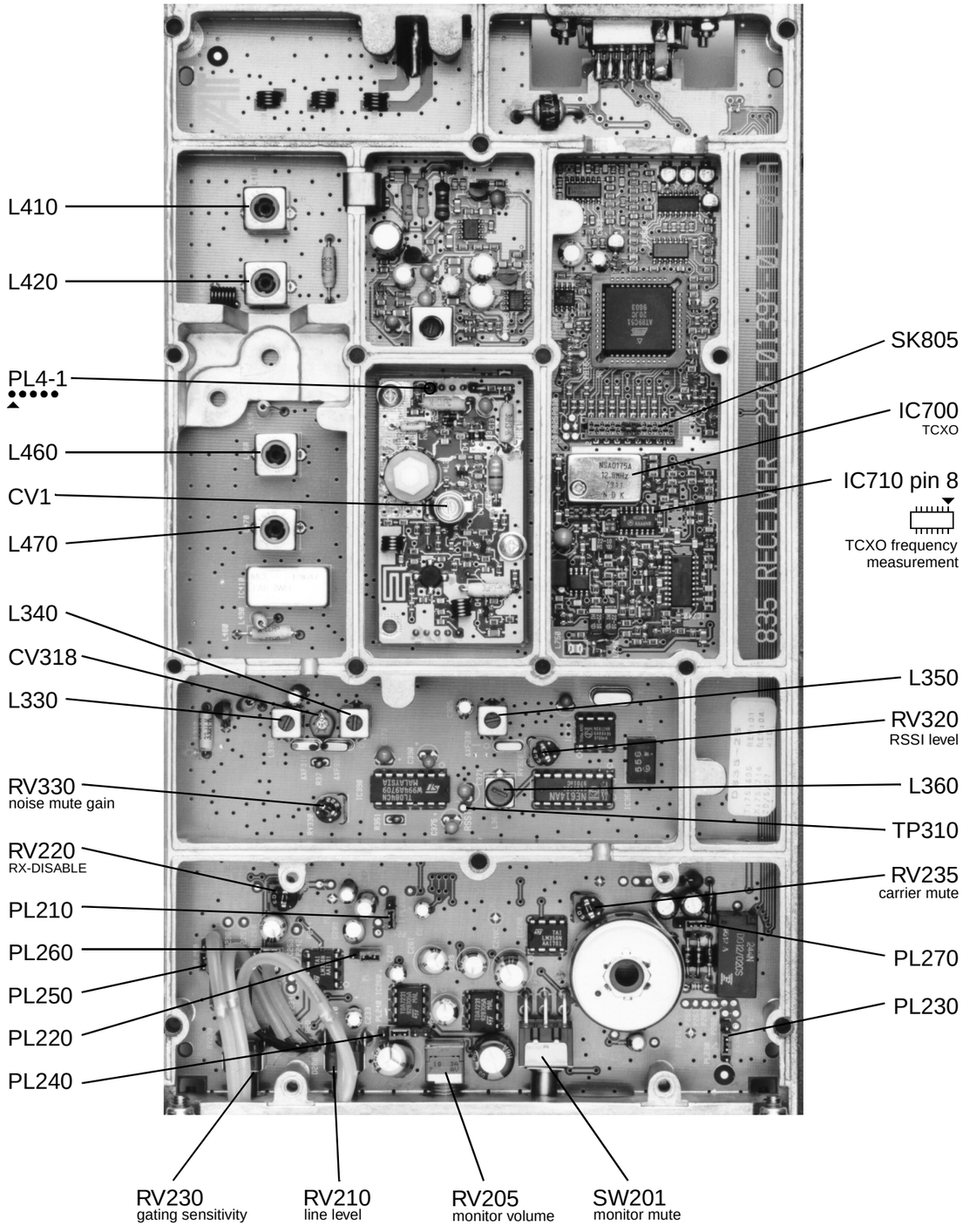


Figure 4.3 T835 Main Tuning & Adjustment Controls

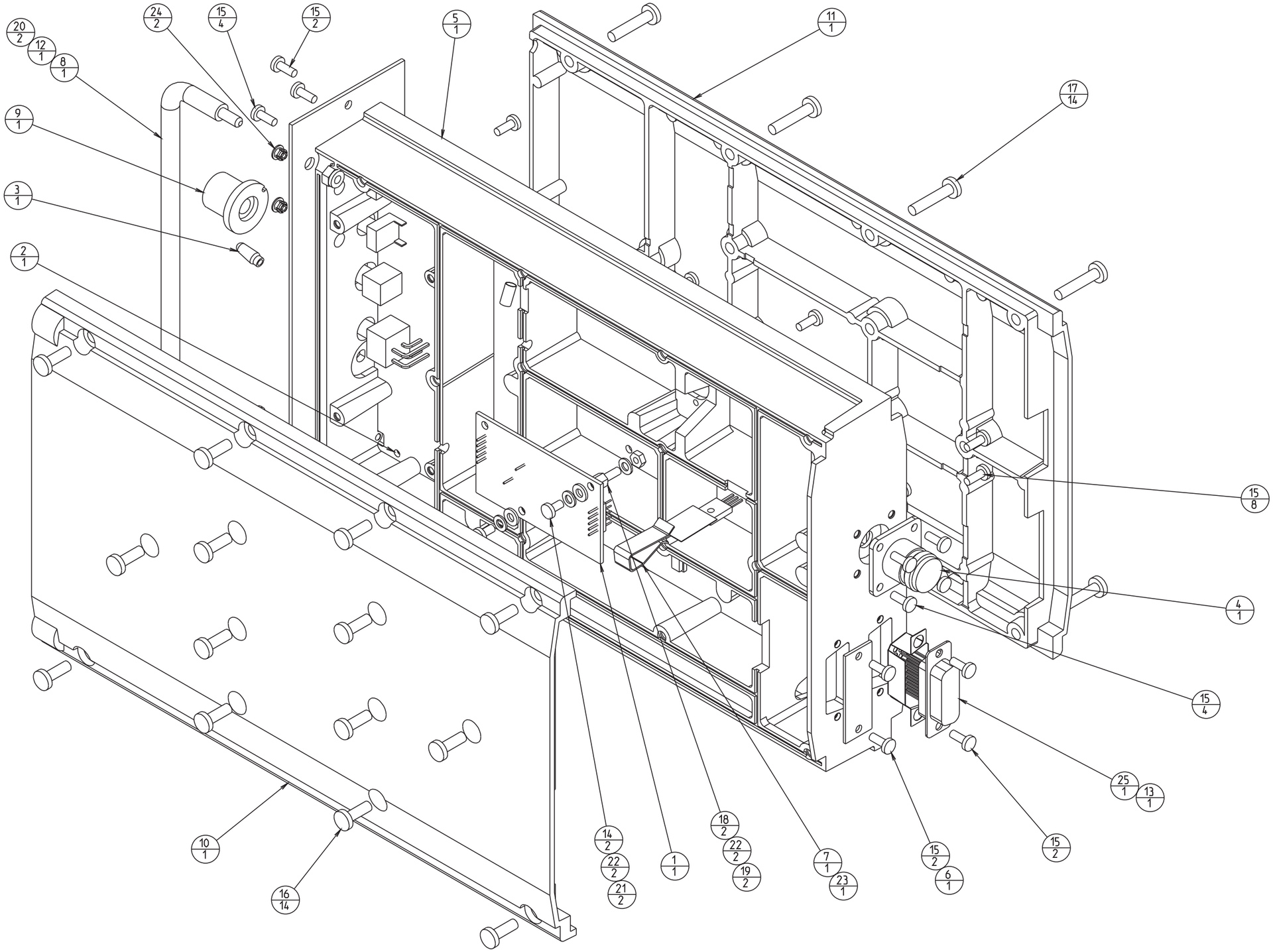
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Key

33/2

The upper number is the component identification number which appears in the "Legend" column of the Mechanical & Miscellaneous Parts on the facing page.

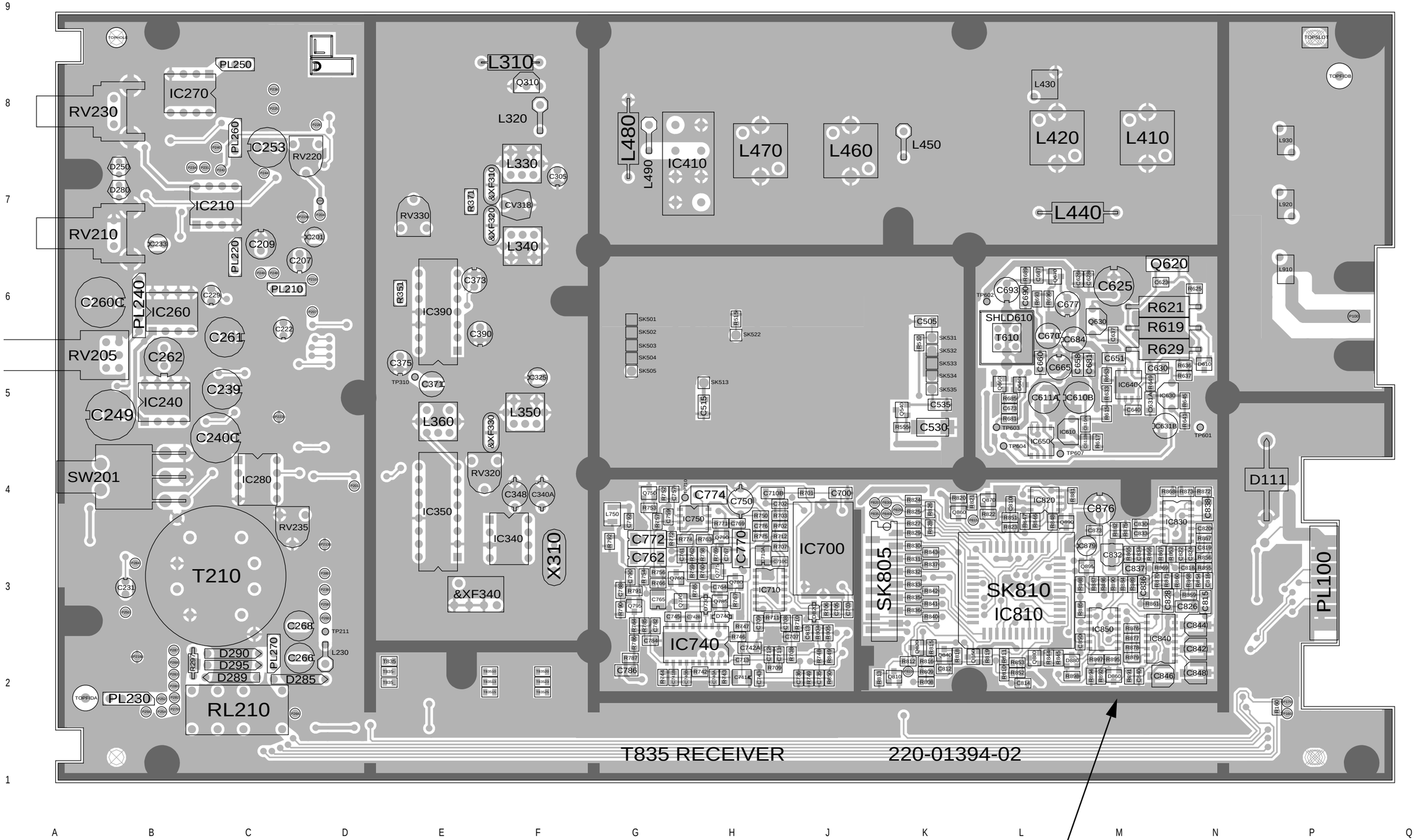
The lower number indicates how many of this component are used in this location or function.



T835 Mechanical Assembly
220-01394-02

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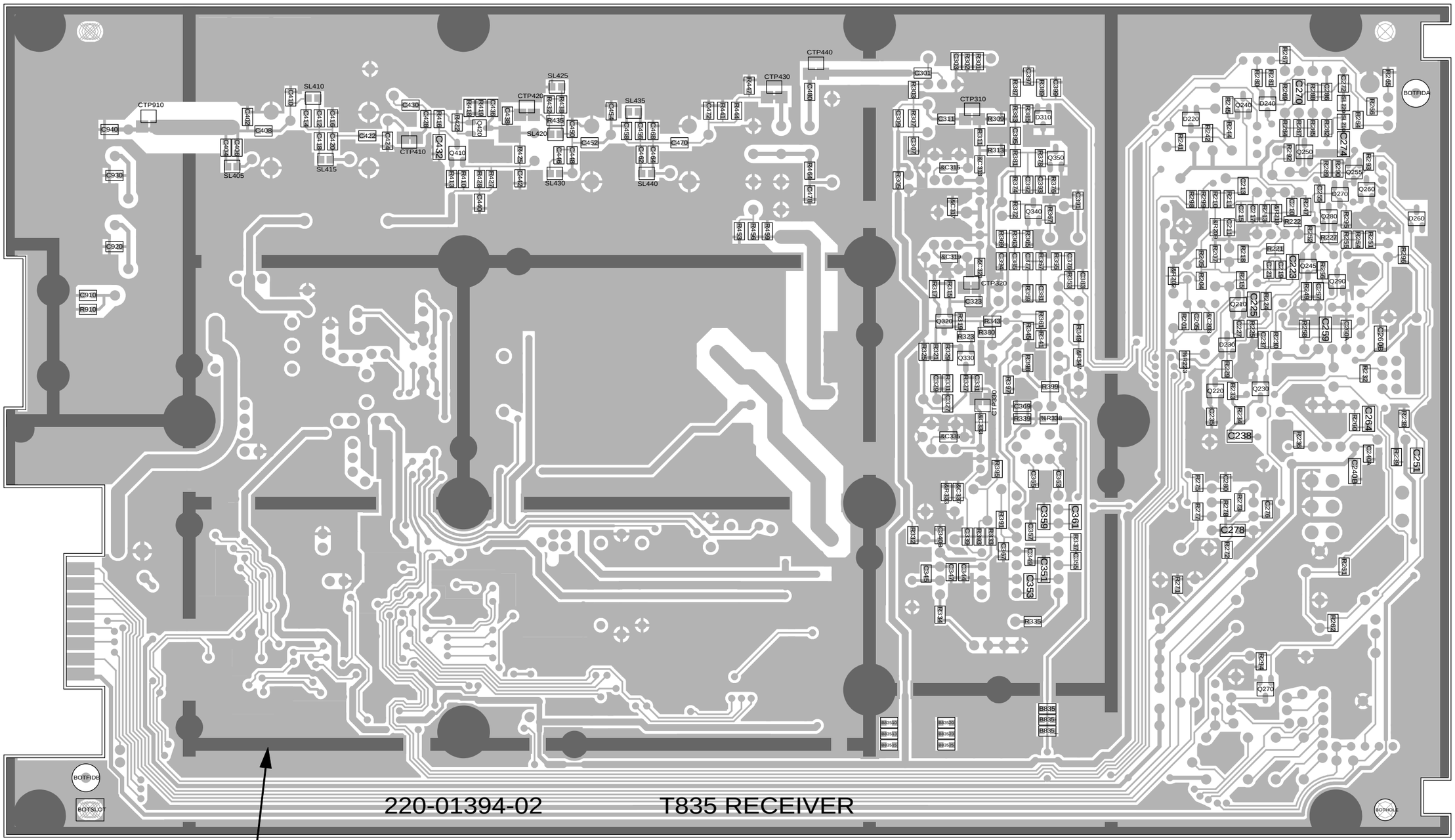
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The darker shading shows the outline of the chassis.

T835 PCB Layout
Top Side
220-01394-02

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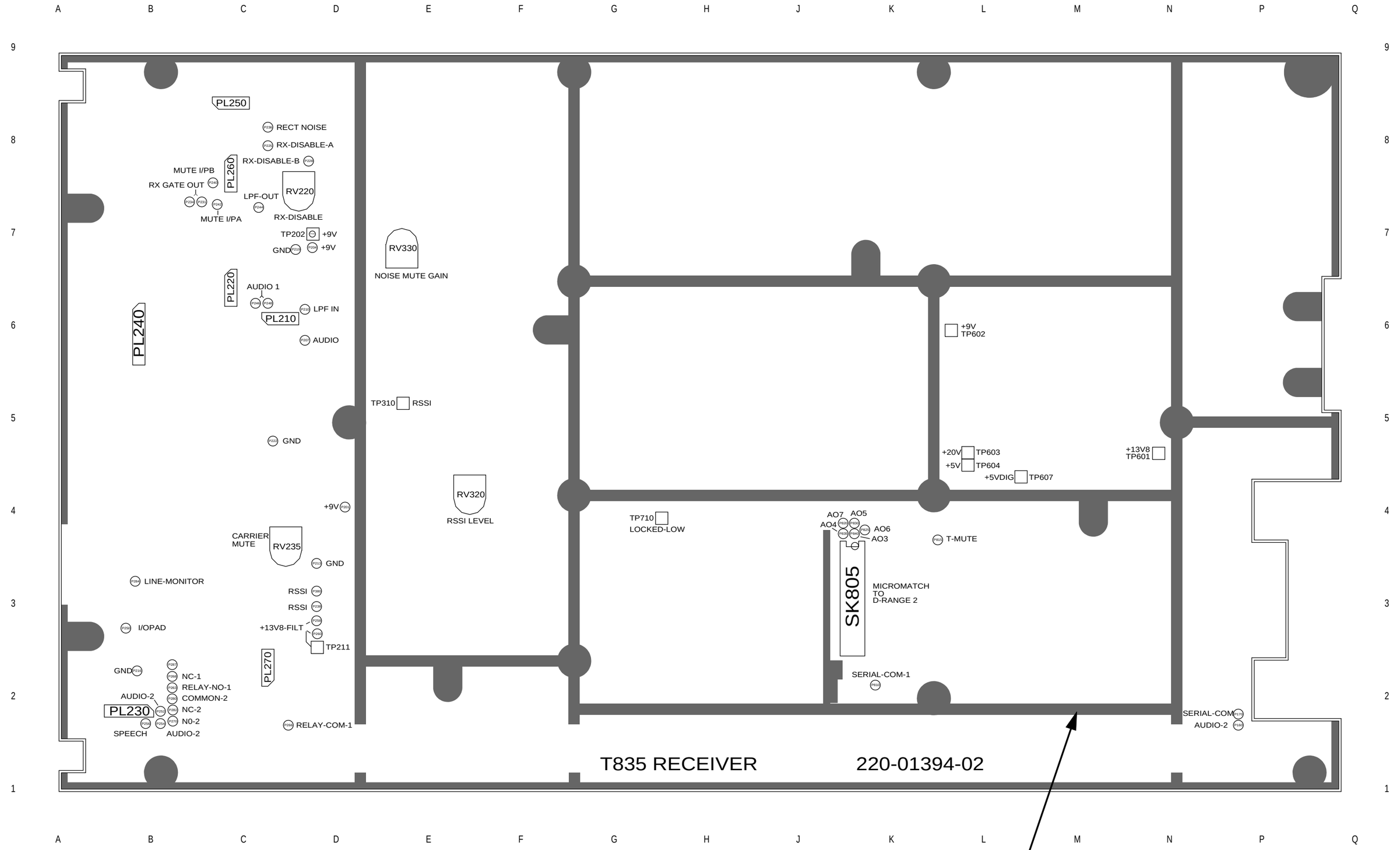


The darker shading shows the footprint of the bottom cover.

T835 PCB Layout
Bottom Side
220-01394-02

30/04/98

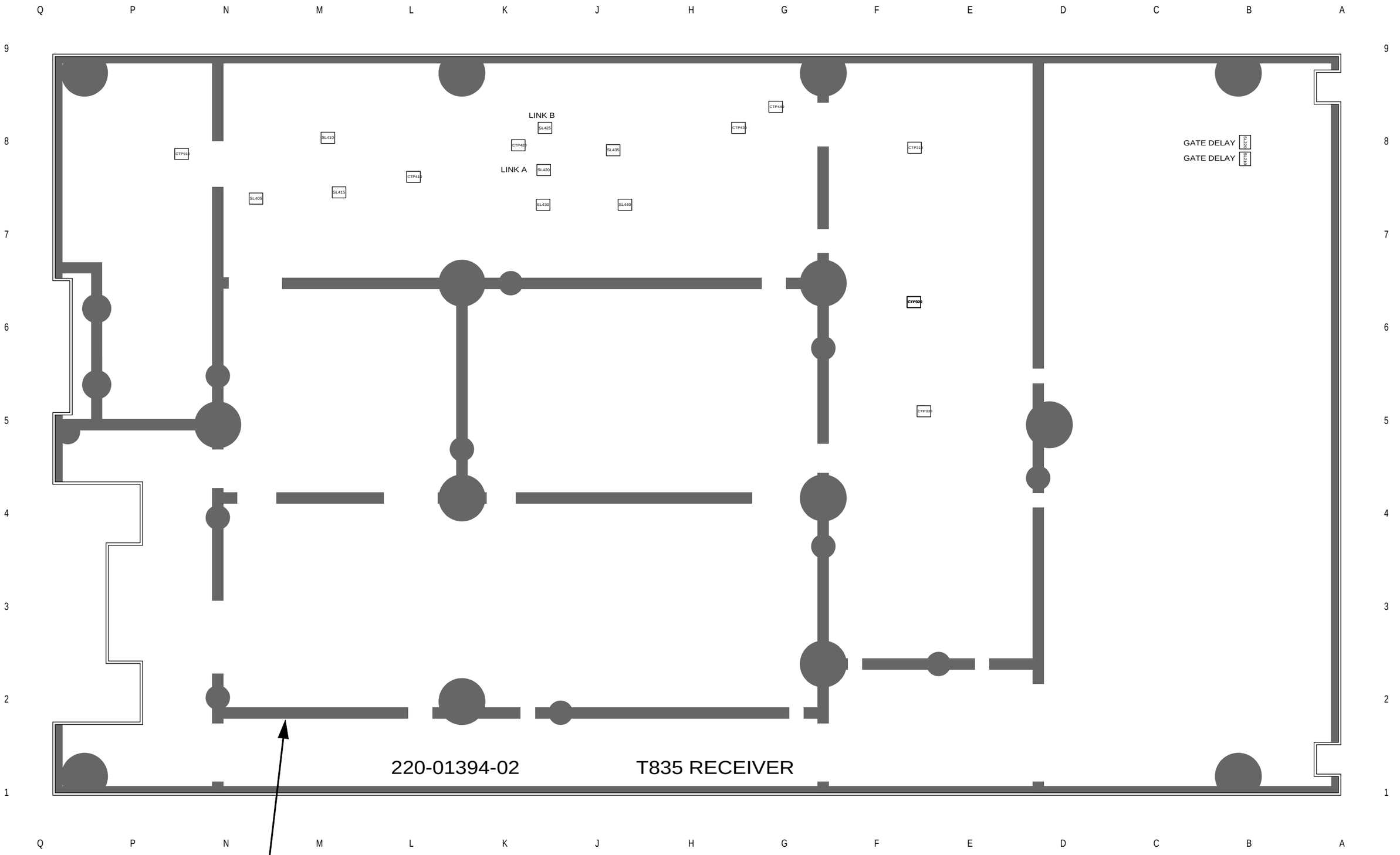
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The dark shading shows the outline of the chassis.

T835 Test Points & Options Connections
Top Side
220-01394-02

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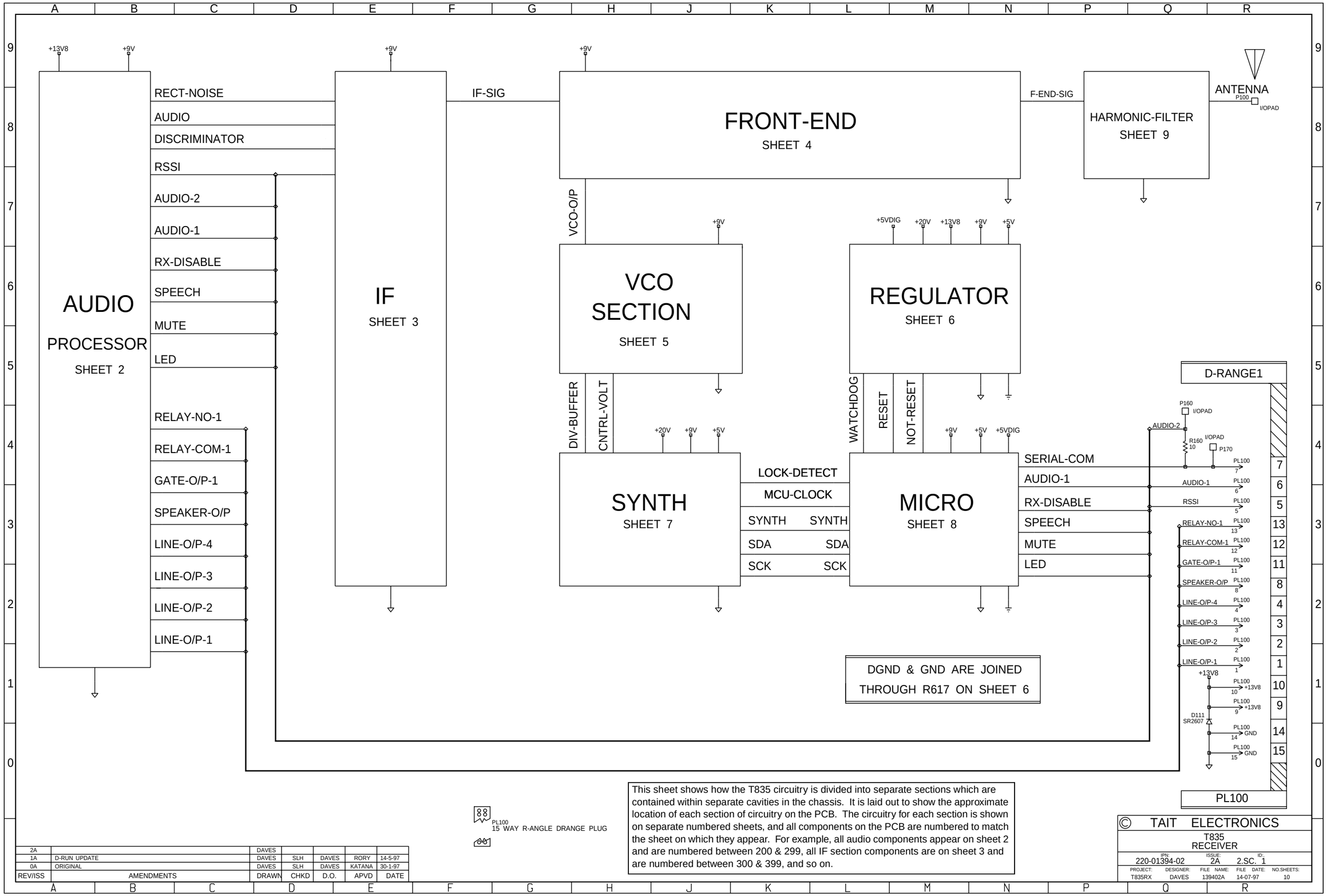


The dark shading shows the footprint of the bottom cover.

T835 Test Points & Options Connections
Bottom Side
220-01394-02

30/04/98

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PL100
15 WAY R-ANGLE DRANGE PLUG

This sheet shows how the T835 circuitry is divided into separate sections which are contained within separate cavities in the chassis. It is laid out to show the approximate location of each section of circuitry on the PCB. The circuitry for each section is shown on separate numbered sheets, and all components on the PCB are numbered to match the sheet on which they appear. For example, all audio components appear on sheet 2 and are numbered between 200 & 299, all IF section components are on sheet 3 and are numbered between 300 & 399, and so on.

REV/ISS	AMENDMENTS	DRAWN	CHKD	D.O.	APVD	DATE
2A		DAVES				
1A	D-RUN UPDATE	DAVES	SLH	DAVES	RORY	14-5-97
0A	ORIGINAL	DAVES	SLH	DAVES	KATANA	30-1-97

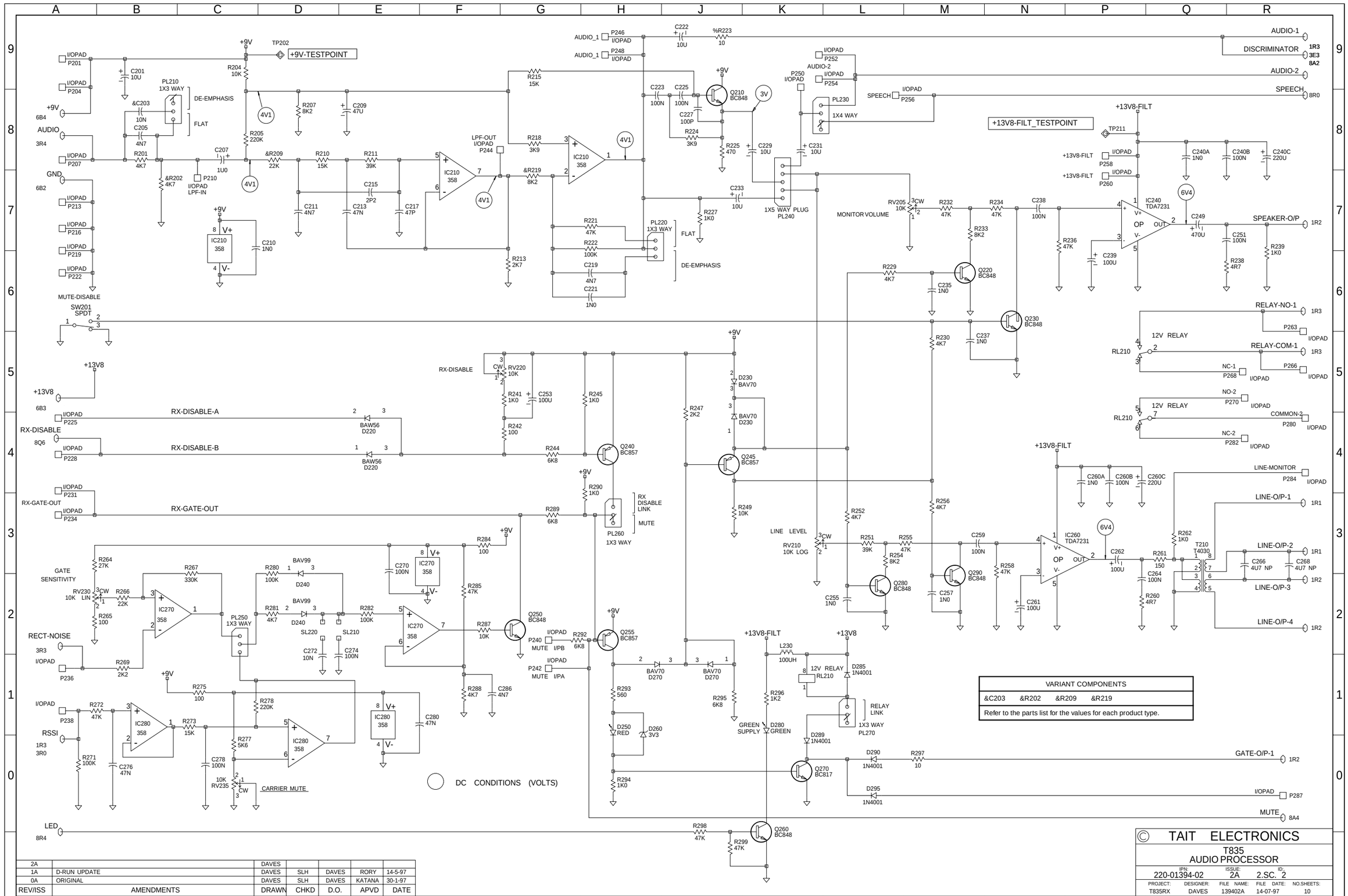
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T835
RECEIVER

IPN:	ISSUE:	ID:
220-01394-02	2A	2.SC. 1

PROJECT:	DESIGNER:	FILE NAME:	FILE DATE:	NO.SHEETS:
T835RX	DAVES	139402A	14-07-97	10

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REV/ISS	AMENDMENTS	DRAWN	CHKD	D.O.	APVD	DATE
2A		DAVES				
1A	D-RUN UPDATE	DAVES	SLH	DAVES	RORY	14-5-97
0A	ORIGINAL	DAVES	SLH	DAVES	KATANA	30-1-97

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T835
AUDIO PROCESSOR

IPN:	ISSUE:	ID:
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T835RX	DAVES	139402A	14-07-97	10

Sheet 2 T835 Audio Processor - 220-01394-02

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VARIANT COMPONENTS					
&C313	&C319	&C335	&R333	&XF310	&XF330
&C315	&C321	&C337	&R347	&XF320	&XF340
&C317	&C333				
Refer to the parts list for the values for each product type.					

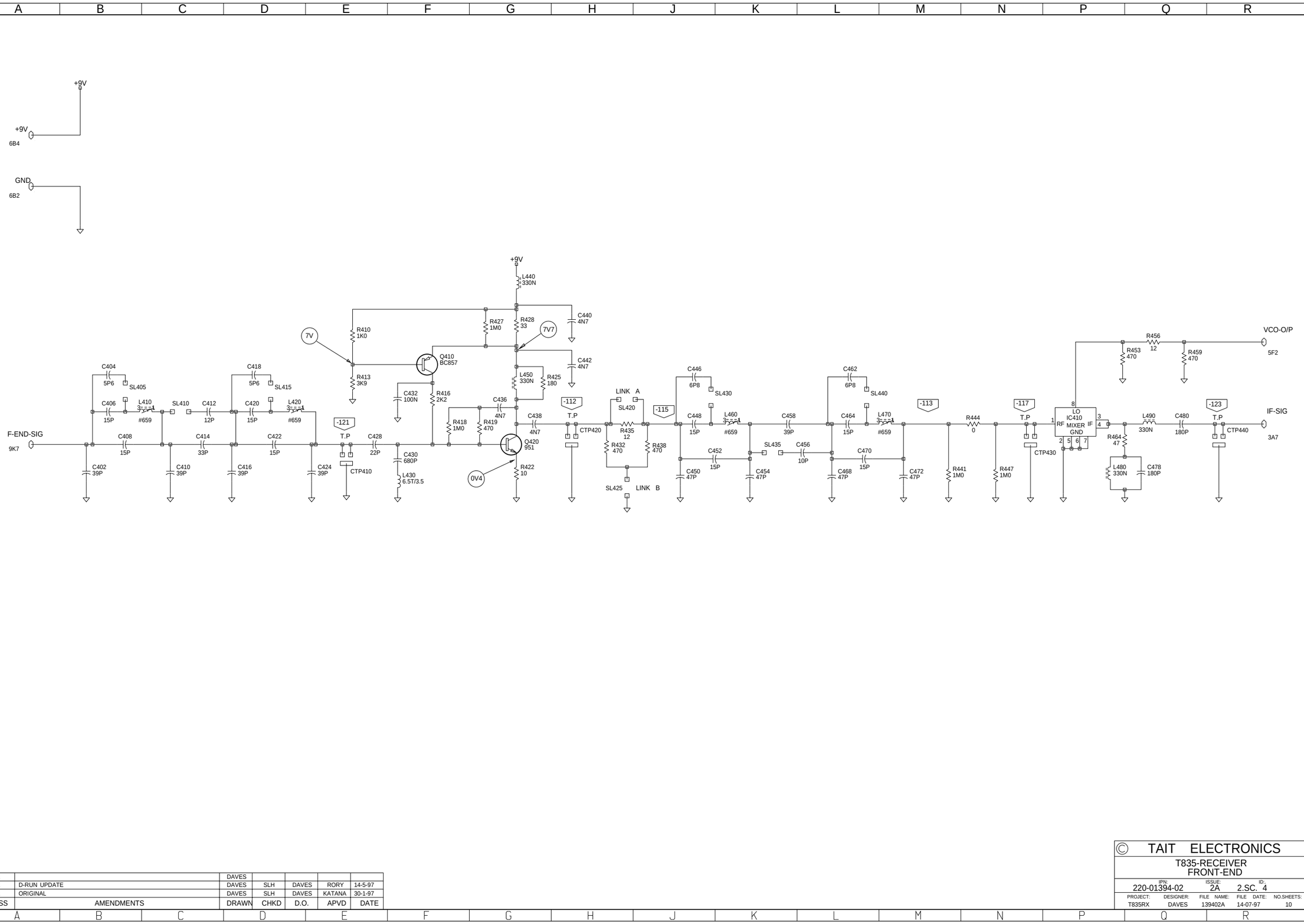
REV/ISS	AMENDMENTS	DRAWN	CHKD	D.O.	APVD	DATE
2A		DAVES				
1A	D-RUN UPDATE	DAVES	SLH	DAVES	RORY	14-5-97
0A	ORIGINAL	DAVES	SLH	DAVES	KATANA	30-1-97

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T835-RECEIVER
IF

IPN:	ISSUE:	ID:
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PROJECT:	DESIGNER:	FILE NAME:	FILE DATE:	NO.SHEETS:
T835RX	DAVES	139402A	14-07-97	10



REV/ISS	AMENDMENTS	DRAWN	CHKD	D.O.	APVD	DATE
2A		DAVES				
1A	D-RUN UPDATE	DAVES	SLH	DAVES	RORY	14-5-97
0A	ORIGINAL	DAVES	SLH	DAVES	KATANA	30-1-97

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T835-RECEIVER
FRONT-END

IPN:	ISSUE:	ID:	
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T835RX	DAVES	139402A	14-07-97	10

Sheet 4 T835 Front End - 220-01394-02

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CNTRL-VOLT
7R3
R510
680
C505
100N
+9V
+9V
6B4
GND
6B2
1 SK501 GND
1 WAY SOCKET
2 SK502 GND
1 WAY SOCKET
3 SK503 GND
1 WAY SOCKET
4 SK504 GND
1 WAY SOCKET
5 SK505 RF-OUT VCO-O/P
1 WAY SOCKET
4R5
+9V
C515
100N
SK513
1 WAY SOCKET
VCO-BUFFER
DIV-BUFFER
7R0
SK522
1 WAY SOCKET
DIV-BUFFER
R515
56
CV-OUT SK531
1 WAY SOCKET
1 GND SK532
1 WAY SOCKET
2 GND SK533
1 WAY SOCKET
3 GND SK534
1 WAY SOCKET
4 +9V-VCO SK535
1 WAY SOCKET
5
+9V
Q540
BC848
R555
1K0
C530
10U
TANT
C535
100N

The circuit diagram for the VCO PCB is in Part E.

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2A		DAVES				
1A	D-RUN UPDATE	DAVES	SLH	DAVES	RORY	14-5-97
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VCO SECTION

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+5VDIG-SUPPLY

+5VDIG TESTPOINT

DGND CONNECTS GND THROUGH R617

+13V8-TESTPOINT

+9V-TESTPOINT

+5V REGULATOR

+5V TESTPOINT

+9V REGULATOR

CAN TO SHIELD T610

10MM SQ * 11MM SHLD610

240KHz 24vpp

+20V SUPPLY

+20V TESTPOINT

IC640 SPARE GATE

REV/ISS	AMENDMENTS	DRAWN	CHKD	D.O.	APVD	DATE
2A		DAVES				
1A	D-RUN UPDATE	DAVES	SLH	DAVES	RORY	14-5-97
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T835
REGULATORS

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T835RX	DAVES	139402A	14-07-97	10

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+5V
R701 22
R702 1M0
C700 100N
IC700 12.8M (VCC, FM, GND, OUT)
C702 1N0
R703 1M0
C703 1N0
+5V
R712 10
C710A 4U7 TANT
C710B 100N
IC710 74HCU04T (14 V+, 7 V-)
C710C 10N
12.8MHz
C705 8P2
R707 100K
IC710
R708 100
R709 100
C711 100P
C712 100P
C713 10N
R706 15K
IC710 74HCU04T
IC710 74HCU04T
MCU-CLOCK
8A3
R710 100
R711 100
IC710 74HCU04T
IC710 74HCU04T
+5V
6B4
C707 47P
C708 47P
C709 10P
+5V
+9V
6B4
+9V
R747 22
R743 150
+20V
+20V
6B2
C740A 1N0
R742 150
C741A 4U7 TANT
R744 22
C742A 100N
R746 22
GND
6B2
C740B 10N
C741B 10N
C742B 10N
SDA
8R4
SCK
6B6 8R4
SYNTH
8R5
IC740 145191
(VDD, VCC, VPD, PDOUT, DATA, CLK, ENABLE, OUT A, OUT B, TEST2, FIN, REF IN, REF OUT, LD, OR, OM, RX, TEST1, FIN, GND)
+5V
R748 47K
C735 47P
C736 47P
R749 47K
C743 47P
C745 1N0
+20V
R750 22
IC750 33078D (8 V+, 4 V-)
C750 10U TANT
3V3
LOCK-DETECT TESTPOINT
0V2
TP710
LOCKEDLOW
LOCK-DETECT
LOCK-DETECT
8A7
IC750 33078D
R752 22
C757 10N
+5V
R756 470K
2V8
C759 10N
R757 470K
R753 1M0
5V
Q750 BC807
R754 1K0
+9V
R762 100
R763 100
R758 1K2
R759 330
C761 10N
C762 22U TANT
R760 180
C769 1N0
C770 22U TANT
Q775 BC857
+5V
R766 1K0
R769 180
Q790 BFR31
Q760 BC848
Q780 BC848
C767 1N0
R765 680
C764 10N
4U7 C765 TANT
R767 680
D740 BAT65
Q785 BC857
R771 8K2
R774 8K2
6V6
R772 22K
C772 22U TANT
+5V TO +15V LOCKED
IC750 33078D
CNTRL-VOLT
5B9
R775 5K6
C774 330N
C776 15N
+5V
0V
50ns WHEN LOCKED
+5V
0V
50ns WHEN LOCKED
D730 BAT65
Q770 BC857
+9V
R787 10
R786 10
8V5
R784 68
R785 3K3
C784 1N0
C786 100N
2V
C782 1N0
Q795 MMBR571
C792 1N0
DIV-BUFFER
5J5
1V4
C788 1N0
R790 220
R791 100
C790 1N0
R792 1K0
L750 68NH

SPARE GATES
IC710
IC710 74HCU04T (1, 2)

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2A		DAVES			
1A	D-RUN UPDATE	DAVES	SLH	RORY	14-5-97
0A	ORIGINAL	DAVES	SLH	KATANA	30-1-97
		DAVES	D.O.	DAVES	14-5-97

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CHANNEL SELECT TO MICRO BUS

MICROMATCH TO D-RANGE2 CONNECTIONS

MICROMATCH PIN	D-RANGE2 PIN
1	1
3	2
5	3
7	4
9	5
11	6
13	7
6	11
16	NC
14	15
12	14
10	13
4	10
8	12
2	9
15	8

CH-SLCT-0 R829 2K2 SK805 CH-SLCT-0 1
CH-SLCT-1 R830 2K2 SK805 CH-SLCT-1 3
CH-SLCT-2 R831 2K2 SK805 CH-SLCT-2 5
CH-SLCT-3 R832 2K2 SK805 CH-SLCT-3 7
CH-SLCT-4 R833 2K2 SK805 CH-SLCT-4 9
CH-SLCT-5 R835 2K2 SK805 CH-SLCT-5 11
CH-SLCT-6 R836 2K2 SK805 CH.SLCT-6 13
CH-SLCT-7 R837 2K2 SK805 CH-SLCT-7 6

+5VDIG SK805 AUX-OUT-3 16
R840 2K2 SK805 AUX-OUT-2 14
R841 2K2 SK805 AUX-OUT-1 12
R842 2K2 SK805 AUX-OUT-0 10
R843 2K2 SK805 CTCSS-DISABLE 4
SK805 SERIAL-COM-1 8
SK805 RX-DISABLE 2
SK805 GND 15

R824 2K2 P820 AUX-OUT-7 I/OPAD
R825 2K2 P825 AUX-OUT-6 I/OPAD
R826 2K2 P830 AUX-OUT-5 I/OPAD
R827 2K2 P835 AUX-OUT-4 I/OPAD
R828 2K2 P840 AUX-OUT-3 I/OPAD

+5VDIG 6B4
0V
RESET 6B5
+5V
R804 47K
LOCK-DETECT 7R5
D820 BAT65
R805 470
SYNTH_LOCK_DETECT
+5VDIG
R810 4K7
R809 4K7
Q820 BC857
R811 4K7
SERIAL-COM 1R4
R808 10
R812 4K7
Q810 BC817
R813 4K7
5V
SERIAL-COM-1 I/OPAD P810
+9V
T-MUTE
P815 I/OPAD
R820 47K
Q860 BC857
R821 47K
MUTE 2R0
Q870 BC848
R823 47K
R822 47K
MCU-CLOCK 7A6
12.8MHz
CH-SLCT-0 CH-SLCT-1 CH-SLCT-2 CH-SLCT-3 CH-SLCT-4 CH-SLCT-5 CH-SLCT-6 CH-SLCT-7

SK810 80C51
RST 10 VCC 44
P1.7 9 P1.6 8 P1.5 7 P1.4 6 P1.3 5 P1.2 4 P1.1 3 P1.0 2
P0.7 36 P0.6 37 P0.5 38 P0.4 39 P0.3 40 P0.2 41 P0.1 42 P0.0 43
P3.7/RD 19 P3.6/WR 18 P3.5/T1 17 P3.4/T0 16 P3.3/INT1 15 P3.2/INT0 14 P3.1/TXD 13 P3.0/RXD 11
EA 35 ALE 33 PSEN 32
P2.7 31 MUTE_OUT
P2.6 30 WATCHDOG
P2.5 29 SYNS
P2.4 28 SDA
P2.3 27 SCK
P2.2 26 CTCSS_LSB
P2.1 25 CTCSS_RX
P2.0 24 CTCSS_MSB
VSS 22
XTL1 21 XTL2 20
C810 10N
C813 1N0

+5VDIG Q840 BC857 R818 4K7 R819 4K7 Q850 BC848
C812 100P
R815 47K
R816 150K
DCS_INPUT
CTCSS_ENABLE
LED_FLASH
SERIAL_COM-1
MUTE_OUT

+5VDIG R846 4K7 R847 4K7
Q880 BC848 R845 150K R844 47K
2A4
+5VDIG IC820 24C16 A0 A1 A2 GND SCL SDA WP +V
R848 470 WATCHDOG 6B6
R849 470 SYNTH 7A2
R850 470 SDA 7A2
R851 470 SCK
NOT-RESET 6B6
+5VDIG R852 4K7
R853 470 LED 2A0
C814 1N0

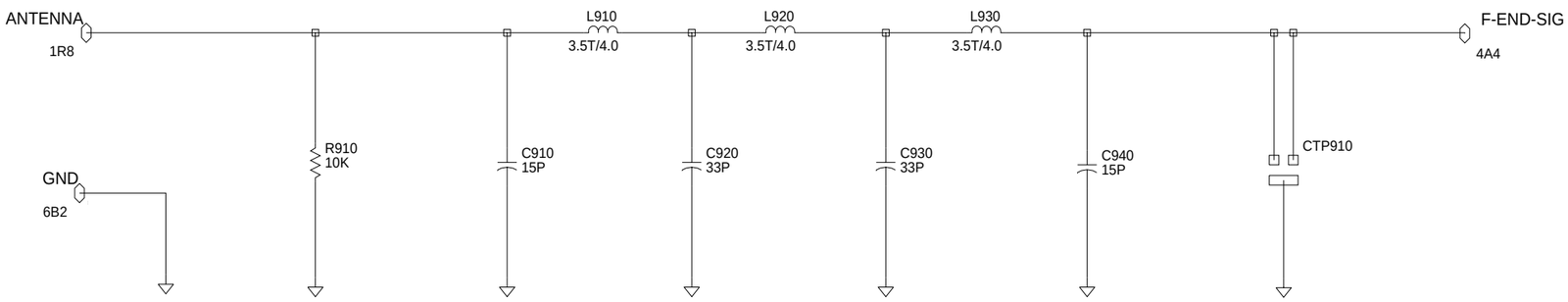
+4V2
R884 150K C873 22N C876 100U R885 150K
R886 10K 1% R887 1K0 1% R888 8K2 1%
3V8
+9V
IC850 LM324D
BAV70 D880 BAV70 D880
R898 470K R897 10K
Q895 BC848
R889 100K R890 150K
R891 100K
R895 10K 3V7 WHEN DETECTING TONE
R894 4K7 C879 10U
R892 330K BAV70 D860 BAV70 D860

Q890 BC848 R882 47K R881 47K
IC850 LM324D
IC840 4053BD
R876 100K R877 100K R878 100K R879 100K
C840 47N
C842 1U0 C844 1U0 C846 1U0 C848 1U0
SPEECH 2R8

+5VDIG IC850 LM324D C850 47N

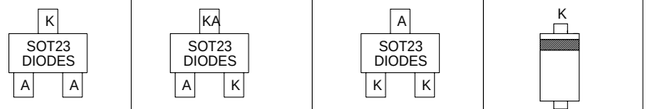
AUDIO-1 1R3 2R9 2R9 3E3
C816 10N C815 10N
R855 47K R856 150K R857 150K R854 330K
C822 22N C824 47N C819 33P C818 10N C820 220P
R858 27K 1% R859 1M2 1% R860 820K 1%
C826 10N C828 10N
IC830 LM324D
R863 4K7
C832 1U0 R865 2K7
C834 10N R866 820K
C833 22N R867 820K R869 27K 1% R870 1M2 1% R871 820K 1% R875 4K7
C836 10N C837 10N C838 10N
R861 5K1 1%
R872 5K1 1%
R868 4K7
R873 2K2
4V2
+5V 6B4
+9V 6B4
DGND 6B0
GND 6B2

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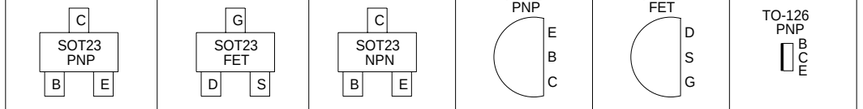


HARMONIC-FILTER

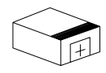
DIODE PHYSICAL PIN-OUTS



TRANSISTOR PHYSICAL PIN-OUTS



TANTALUMS



CHIP
TANTALUMS

REV/ISS	AMENDMENTS	DRAWN	CHKD	D.O.	APVD	DATE
2A		DAVES				
1A	D-RUN UPDATE	DAVES	SLH	DAVES	RORY	14-5-97
0A	ORIGINAL	DAVES	SLH	DAVES	KATANA	30-1-97

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T835
HARMONIC-FILTER

IPN:	ISSUE:	ID:
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PROJECT:	DESIGNER:	FILE NAME:	FILE DATE:	NO.SHEETS:
T835RX	DAVES	139402A	14-07-97	10

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