2.12 Received Signal Strength Indicator (RSSI)

(Refer to the T800-04-0000 RSSI PCB circuit diagram in Section 6.2 and the IF section circuit diagram (sheet 3) in Section 6.3.)

The RSSI option PCB plugs directly into the main PCB (support circuitry being fitted as standard). It is fitted to the T855 whenever receiver signal strength monitoring is required, e.g. trunking or voting. Its function is to provide a DC voltage proportional to the signal level at the receiver input. The DC voltage is available at D-range 1 (PL100 pin 5).

The RSSI also provides the capability for high level signal strength muting, which may be selected on PL250 (refer to Section 3.5). The mute threshold may be set between -115dBm and -70dBm by RV235.

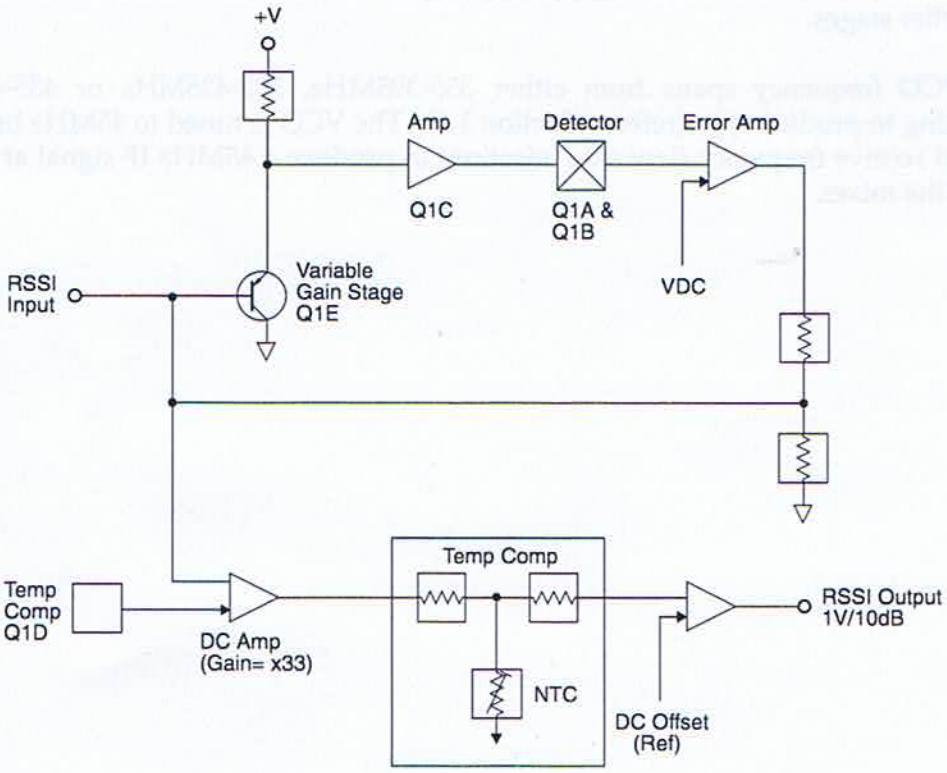


Figure 2.7 T855 RSSI Block Diagram (T800-04-0000 RSSI PCB)

The variable gain stage (Q1A) is a common emitter amplifier with its emitter grounded and the AGC control loop voltage applied to its base. Since the AGC loop will maintain a constant signal level at the collector, the gain of Q1 must be proportional to the incoming 455kHz signal level. The gain of Q1 is linearly proportional to its collector current which itself is exponentially related to the base-emitter voltage. Thus there is a logarithmic relationship between the base-emitter voltage and the gain. The circuit therefore produces a feedback voltage, and an output voltage, logarithmically related to the RF input signal.

The AGC loop is followed by a DC amplifier which provides level shifting, temperature compensation and gain to give a nominal 1V/10dB at the RSSI output. RV320 on the main PCB is used to set the RSSI voltage to a fixed value at a given RF input signal strength.

6.2 T800-04-0000 RSSI PCB

This section contains the following information.

T800-04-0000 Parts List (IPN 220-01138-00)

How To Use This Parts List

The components listed in this parts list are divided into two main types: those with a circuit reference (e.g. C2, D1, R121, etc.) and those without (miscellaneous and mechanical).

Those with a circuit reference are grouped in alphabetical order and then in numerical order within each group. Each component entry comprises three columns: the circuit reference, IPN and description. Static sensitive devices are indicated by an (S) at the start of the description column.

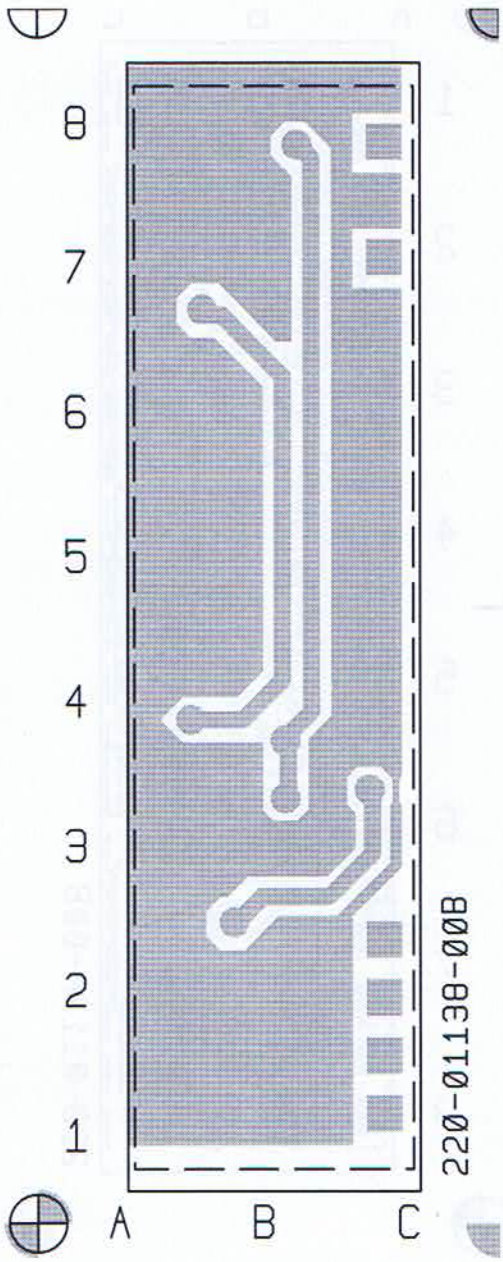
The miscellaneous and mechanical parts are listed in IPN order at the end of the parts list.

The Parts List Amendments box below lists component changes that took place after the parts list and diagrams in this section were compiled. These changes (e.g. value changes, added/deleted components, etc.) are listed by circuit reference in alphanumeric order and supersede the information given in the parts list or diagrams. Components without circuit references are listed in IPN order.

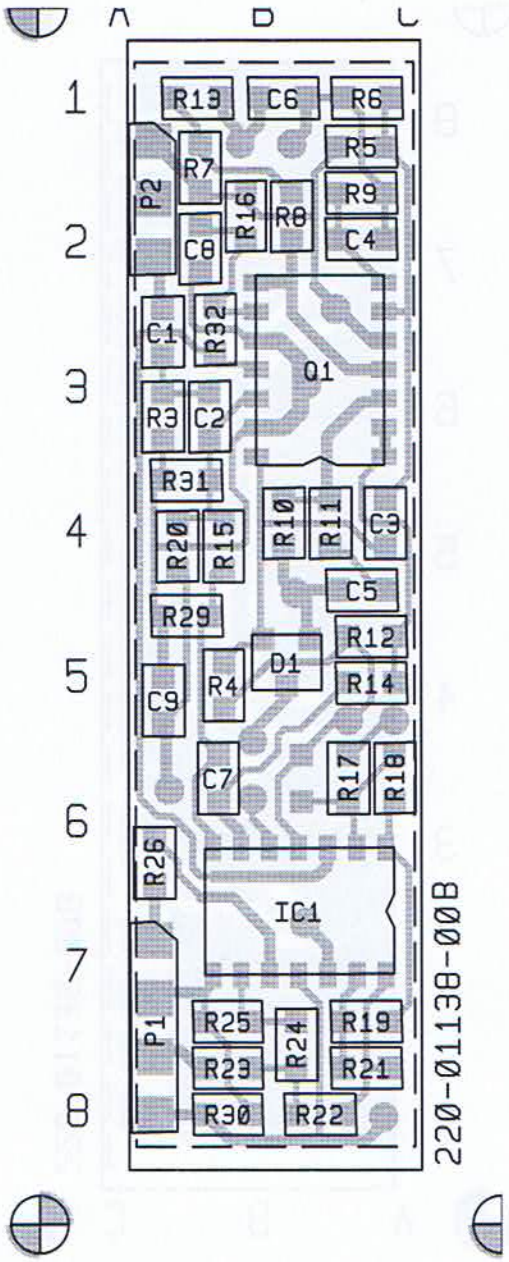
Parts List Amendments

PCB Issues 01, 02 & 03	The T800-04-0000 RSSI PCB has been updated from issue 00 to 01 (720371), 01 to 02 (740091) and from 02 to 03 (770177). However, these updates involved mechanical changes only - there were no electronic or component changes. You can therefore use this issue 00 PCB information for issue 01, 02 and 03 PCBs.

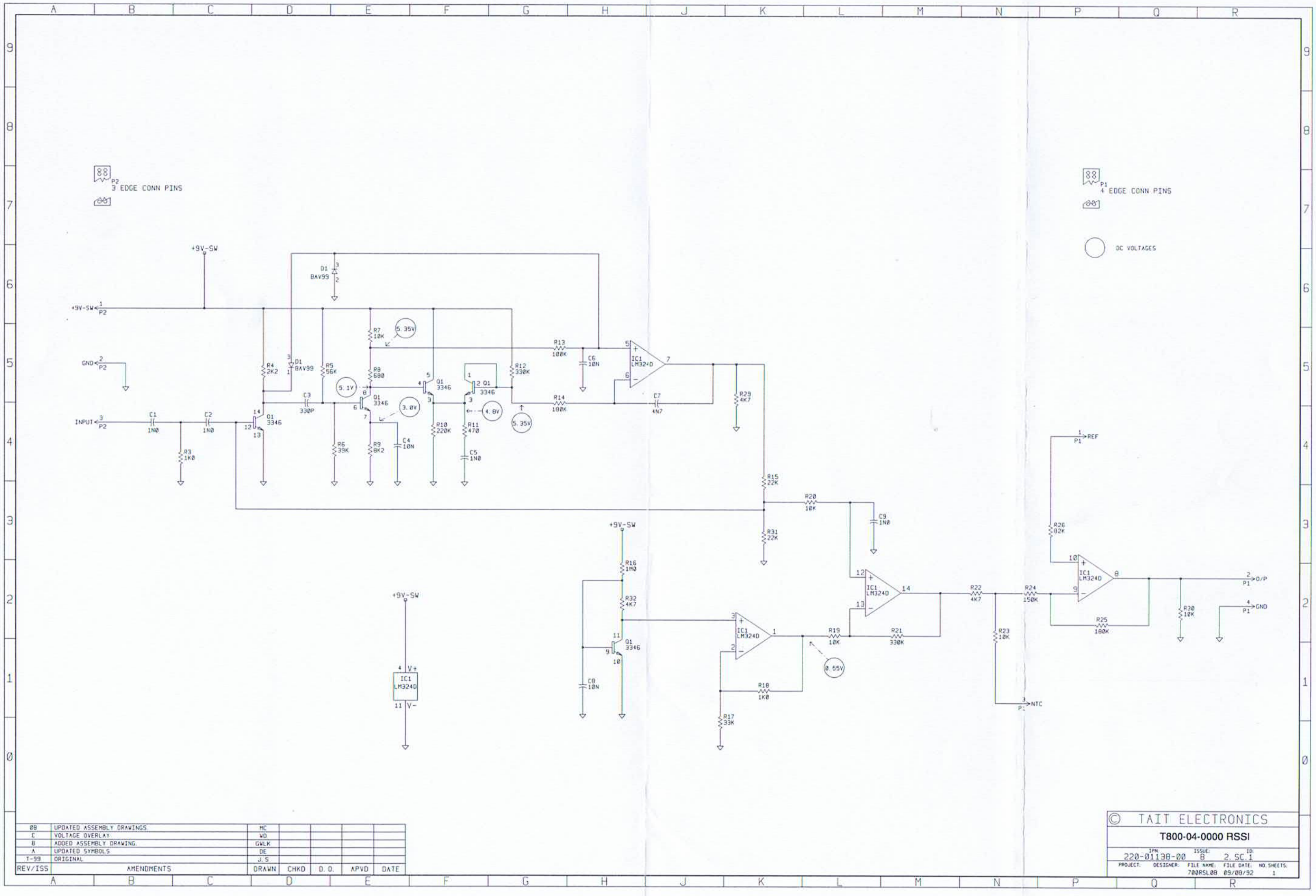
Ref	Var	IPN	Description
C1		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C2		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C3		015-23330-08	CAP CER 0805 CHIP 330P 10% X7R 50V
C4		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
C5		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C6		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
C7		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C8		015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
C9		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
D1		001-10000-99	(S) DIODE SMD BAV99 DUAL SWTCH SOT23
IC1		002-10003-24	(S) IC SMD 324 QUAD OP AMP SO14
Q1		002-10033-46	(S) IC SMD MC3346D XSTR ARRAY SO14
R3		036-14100-00	RES M/F 0805 CHIP 1K 5%
R4		036-14220-00	RES M/F 0805 CHIP 2K2 5%
R5		036-15560-00	RES M/F 0805 CHIP 56K 5%
R6		036-15390-00	RES M/F 0805 CHIP 39K 5%
R7		036-15100-00	RES M/F 0805 CHIP 10K 5%
R8		036-13680-00	RES M/F 0805 CHIP 680E 5%
R9		036-14820-00	RES M/F 0805 CHIP 8K2 5%
R10		036-16220-00	RES M/F 0805 CHIP 220K 5%
R11		036-13470-00	RES M/F 0805 CHIP 470E 5%
R12		036-16330-00	RES M/F 0805 CHIP 330K 5%
R13		036-16100-00	RES M/F 0805 CHIP 100K 5%
R14		036-16180-00	RES M/F 0805 CHIP 180K 5%
R15		036-15220-00	RES M/F 0805 CHIP 22K 5%
R16		036-17100-00	RES M/F 0805 CHIP 1M 5%
R17		036-15330-00	RES M/F 0805 CHIP 33K 5%
R18		036-14100-00	RES M/F 0805 CHIP 1K 5%
R19		036-15100-00	RES M/F 0805 CHIP 10K 5%
R20		036-15100-00	RES M/F 0805 CHIP 10K 5%
R21		036-16330-00	RES M/F 0805 CHIP 330K 5%
R22		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R23		036-15100-00	RES M/F 0805 CHIP 10K 5%
R24		036-16150-00	RES M/F 0805 CHIP 150K 5%
R25		036-16180-00	RES M/F 0805 CHIP 180K 5%
R26		036-15820-00	RES M/F 0805 CHIP 82K 5%
R29		036-14470-00	RES M/F 0805 CHIP 4K7 5%
R30		036-15100-00	RES M/F 0805 CHIP 10K 5%
R31		036-15220-00	RES M/F 0805 CHIP 22K 5%
R32		036-14470-00	RES M/F 0805 CHIP 4K7 5%
		220-01138-00	PCB T700 RSSI
		356-00010-52	PIN EDGE MTG 0.8MM PCB WAKO



T800-04-0000 PCB (IPN 220-01138-00) - Top Side



T800-04-0000 PCB (IPN 220-01138-00) - Bottom Side



REV/ISS	AMENDMENTS	DRAWN	CHKD	D. O.	APVD	DATE
00	UPDATED ASSEMBLY DRAWINGS.	MC				
C	VOLTAGE OVERLAY.	WD				
B	ADDED ASSEMBLY DRAWING.	GWLK				
A	UPDATED SYMBOLS	DE				
T-99	ORIGINAL	J.S				

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T800-04-0000 RSSI

IPN	ISSUE:	ID.
220-01138-00	B	2.SC.1

PROJECT:	DESIGNER:	FILE NAME:	FILE DATE:	NO. SHEETS:
		700RSL00	09/00/92	1

T800-04-0000 RSSI
220-01138-00