

Part E T850 VCO PCB Information

This part of the manual provides the parts list, PCB layouts and circuit diagram for the T850 VCO PCB. There is a detailed table of contents at the start of Section 2.

Section	Title	IPN	Page
1	Introduction		1.1
2	T850 VCO PCB	220-01145-02 220-01145-03 ^a	2.1 2.1

- a. The PCB information provided for issue 220-01145-02 of the VCO PCB can also be used for issue 220-01145-03 as the two PCBs are electronically identical. The only difference between the two issues of PCB is a minor mechanical change which is described in the Parts List Amendments on page 2.3.

1 Introduction

PCB Identification

All PCBs are identified by a unique 10 digit “internal part number” (IPN), e.g. 220-12345-00, which is screen printed onto the PCB (usually on the top side), as shown in the example below:



The last 2 digits of this number define the issue status, which starts at 00 and increments through 01, 02, 03, etc. as the PCB is updated. Some issue PCBs never reach full production status and are therefore not included in this manual. A letter following the 10 digit IPN has no relevance in identifying the PCB for service purposes.

Note: It is important that you identify which issue PCB you are working on so that you can refer to the appropriate set of PCB information.

Parts Lists

The 10 digit numbers (000-00000-00) in this Parts List are “internal part numbers” (IPNs). We can process your spare parts orders more efficiently and accurately if you quote the IPN and provide a brief description of the part.

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 or four columns, as shown below:

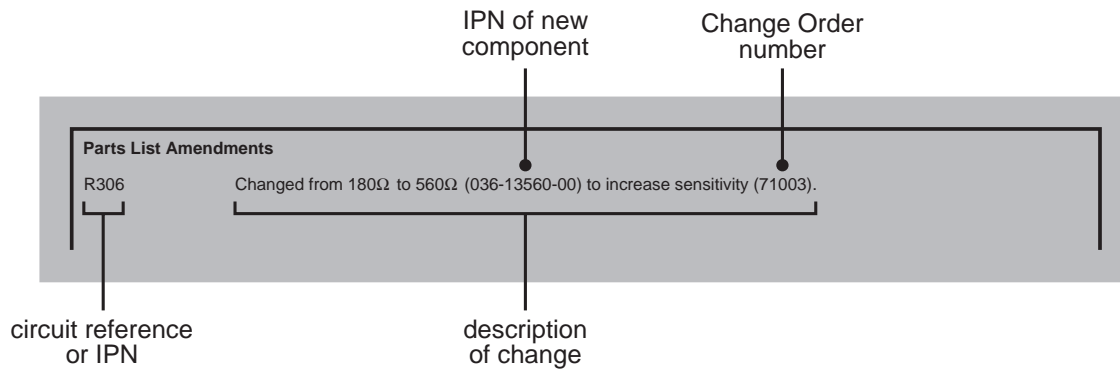
Ref	Var	IPN	Description
C126		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C127		020-09220-01	CAP ELECT RADL 220M 16V 10X12.5MM
C128		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
C129		015-06100-08	CAP CER 1206 CHIP 100N 10% X7R 50V
&C130	10	015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
&C130	15	015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
&C130	20	015-25100-08	CAP CER 0805 CHIP 10N 10% X7R 50V
&C130	25	015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C131		015-24100-08	CAP CER 0805 CHIP 1N 10% X7R 50V
C132		015-24470-08	CAP CER 0805 CHIP 4N7 10% X7R 50V
C133		015-05470-08	CAP CER 1206 CHIP 47N 10% X7R 50V

circuit reference - lists components in alphanumeric order
 variant column - indicates that this is a variant component which is fitted only to the product type listed
 description - gives a brief description of the component
 Internal Part Number - order the component by this number

The mechanical and miscellaneous section lists the variant and common parts in IPN order.

Parts List Amendments

At the front of the parts list is the Parts List Amendments box (an example of which is shown below). This box contains a list of component changes which 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. The number in brackets at the end of each entry refers to the Tait internal Change Order document.



Variant Components

A variant component is one that has the same circuit reference but different value or specification in different product types. Variant components have a character prefix, such as "&", "=", or "#", before the circuit reference (e.g. &R100).

2 T850 VCO PCB

This section contains the following information.

IPN	Section	Page
220-01145-02	Parts List	2.3
	PCB Layout - Bottom Side	2.5
	PCB Layout - Top Side	2.6
	Circuit Diagram	2.7

T850 VCO Parts List (IPN 220-01145-02)

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).

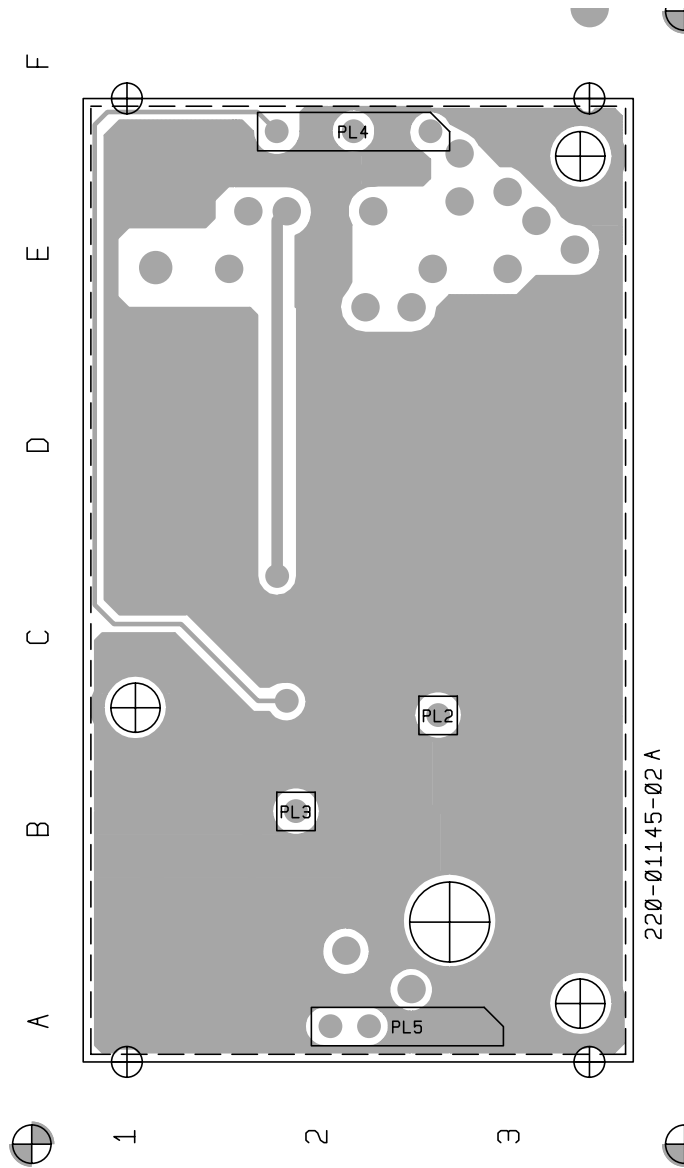
Those with a circuit reference are grouped in alphabetical order and then in numerical order within each group. Each component entry comprises three or four columns: the circuit reference, variant (if applicable), IPN and description. A letter in the variant column indicates that this is a variant component which is fitted only to the product type listed. 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.

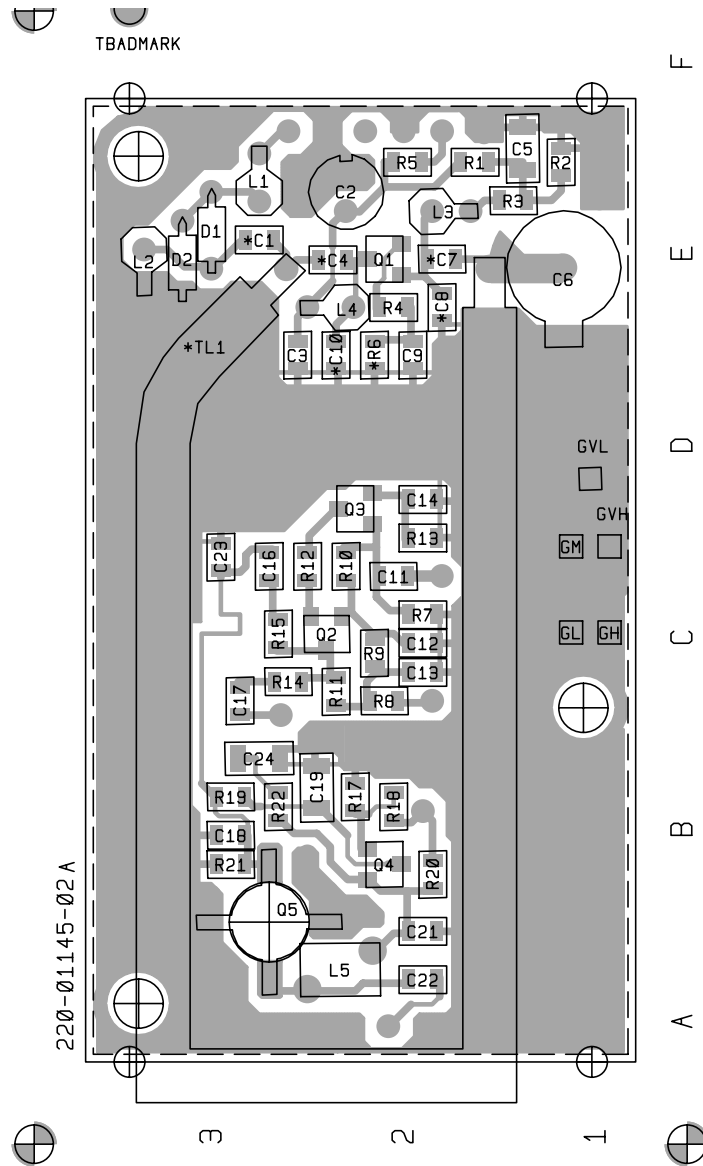
The Parts List Amendments box below lists component changes that took place after the parts list and diagrams in this section were compiled. These changes (e.g. value changes, added/deleted components, etc.) are listed by circuit reference in alphanumeric order and supersede the information given in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

Parts List Amendments

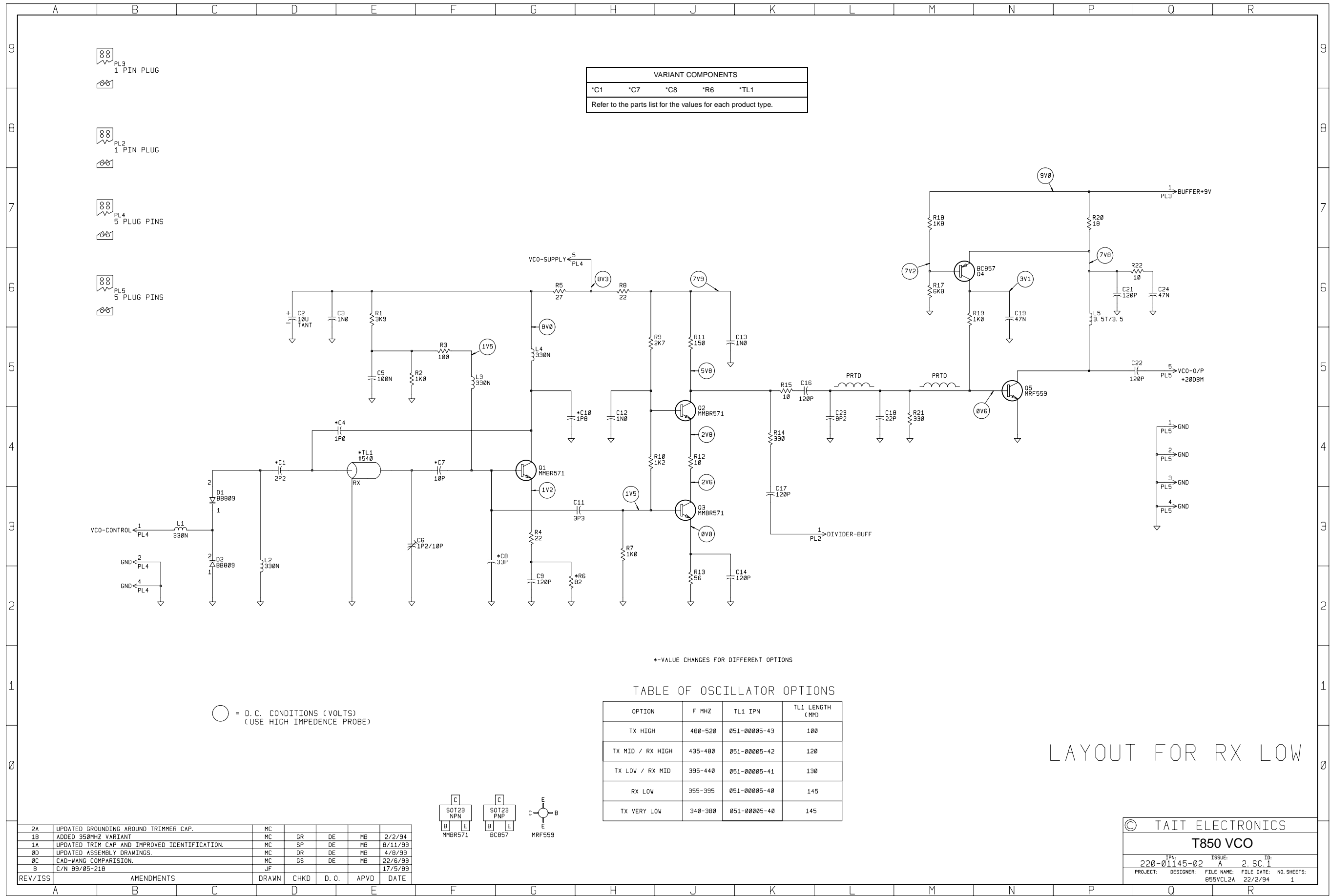
Capacitor IPN Change	The IPN of the 8p2 chip capacitors used in the T850 VCO has been changed from 015-21820-01 to 015-21820-02. The components themselves have not changed (780047/48/49/50).
*C1, C4, *C7 *C8, C10, C11	Rx mid/low/high: component values unchanged but tolerances changed to $\pm 0.1p$ to ensure consistent low noise performance from oscillators and to improve selectivity (710286, 710287, 710288).
C6	A length of 0.5mm tinned copper wire was soldered from the PCB via at the rear of the trimcap to the trimcap body to improve selectivity and signal-to-noise ratio (9/98).
R6	Rx low: changed from 120Ω (IPN 036-13120-00) to 82Ω (IPN 036-12820-00) to reduce the VCO noise floor (97/04-7078). Rx mid/high: changed from 82Ω (IPN 036-12820-00) to 68Ω (IPN 036-12680-00) to ensure consistent low noise performance from oscillators and to improve selectivity (710286, 710287).
Mechanical Modification	Two plated-through holes were added to the PCB either side of C6 to allow earth straps to be fitted to improve transient adjacent channel power. PCB IPN updated to 220-01145-03 (760076).



T850 VCO PCB (IPN 220-01145-02) - Bottom Side



T850 VCO PCB (IPN 220-01145-02) - Top Side



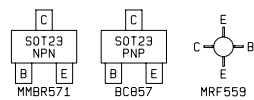
VARIANT COMPONENTS				
*C1	*C7	*C8	*R6	*TL1
Refer to the parts list for the values for each product type.				

*-VALUE CHANGES FOR DIFFERENT OPTIONS

TABLE OF OSCILLATOR OPTIONS

OPTION	F MHZ	TL1 IPN	TL1 LENGTH (MM)
TX HIGH	480-520	051-00005-43	100
TX MID / RX HIGH	435-480	051-00005-42	120
TX LOW / RX MID	395-440	051-00005-41	130
RX LOW	355-395	051-00005-40	145
TX VERY LOW	340-380	051-00005-40	145

○ = D.C. CONDITIONS (VOLTS)
(USE HIGH IMPEDENCE PROBE)



LAYOUT FOR RX LOW

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T850 VCO
 IPN: 220-01145-02 ISSUE: A 2, SC. 1
 PROJECT: DESIGNER: FILE NAME: FILE DATE: NO. SHEETS:
 B55VCL2A 22/2/94 1

REV/ISS	AMENDMENTS	DRAWN	CHKD	D. O.	APVD	DATE
2A	UPDATED GROUNDING AROUND TRIMMER CAP.	MC	GR	DE	MB	2/2/94
1B	ADDED 350MHZ VARIANT	MC	SP	DE	MB	8/11/93
1A	UPDATED TRIM CAP AND IMPROVED IDENTIFICATION.	MC	DR	DE	MB	4/8/93
0D	UPDATED ASSEMBLY DRAWINGS.	MC	GS	DE	MB	22/6/93
0C	CAD-WANG COMPARISON.	JF				17/5/89
B	C/N 89/05-21B					

