

Part E T820 VCO PCB Information

This part of the manual provides the parts list, grid reference index, PCB layouts and circuit diagram for the T820 VCO PCB. There is a detailed table of contents at the start of Section 2.

Section	Title	IPN	Page
1	Introduction		1.1
2	T820 VCO PCB	220-01180-05	2.1

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

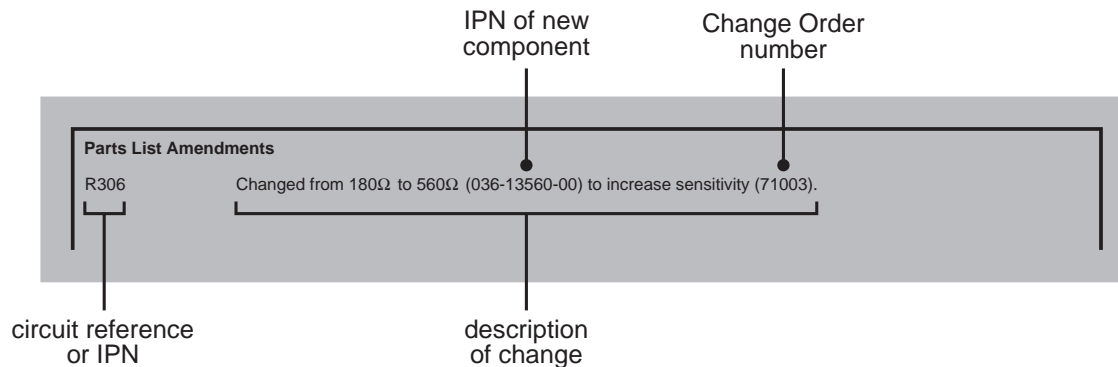
Annotations for the table:

- circuit reference - lists components in alphanumeric order**: Points to the 'Ref' column.
- variant column - indicates that this is a variant component which is fitted only to the product type listed**: Points to the 'Var' column.
- Internal Part Number - order the component by this number**: Points to the 'IPN' column.
- description - gives a brief description of the component**: Points to the 'Description' column.

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).

Grid Reference Index

This section contains a component grid reference index to help you find components and labelled pads on the PCB layouts and circuit diagrams. This index lists the components and pads in alphanumeric order, along with the appropriate alphanumeric grid references, as shown below:

Device	PCB	Circuit
C126	2:A6	2-R7
C127	1:A8	2-P4
C128	2:B7	2-P2
C129	2:C12	2-E3
&C130	2:D8	2-B8
C131	2:C9	2-H6
C132	2:D8	2-B8
C133	2:D6	2-E1

components listed in alphanumeric order

PCB layout reference

circuit diagram reference

component location on the sheet

sheet number

component location on the layer

layer number -
1 = top side layer
2 = bottom side layer

2 T820 VCO PCB

This section contains the following information.

IPN	Section	Page
220-01180-05	Parts List	2.3
	Mechanical & Miscellaneous Parts	2.5
	Grid Reference Index	2.6
	PCB Layout - Bottom Side	2.7
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	Circuit Diagram	2.9

T820 VCO Parts List (IPN 220-01180-05)

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

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

There were no amendments to the parts list at the time of publication.

Ref	Var	IPN	Description	Ref	Var	IPN	Description
C1		015-24100-08	CAP CER 0805 1N 10% X7R 50V				
&C2	RX	015-22560-01	CAP CER 0805 56P 5% NPO 50V				
&C2	TX	015-23100-01	CAP CER 0805 100P 5% NPO 50V				
&C3	RX	015-22100-01	CAP CER 0805 10P+-1/2P NPO 50V				
&C3	TX	015-21820-02	LJCAP 0805 8P2 15 NPO 50V				
&C4	RX	015-22180-01	CAP CER 0805 18P 5% NPO 50V				
&C4	TX	015-22120-01	CAP CER 0805 12P 5% NPO 50V				
C5		015-24100-08	CAP CER 0805 1N 10% X7R 50V				
C6		015-24100-08	CAP CER 0805 1N 10% X7R 50V				
C8		015-24100-08	CAP CER 0805 1N 10% X7R 50V				
C9		015-24100-08	CAP CER 0805 1N 10% X7R 50V				
C10		015-21100-01	CAP CER 0805 1PO+-1/4P NPO 50V				
C11		015-24100-08	CAP CER 0805 1N 10% X7R 50V				
C12		015-24100-08	CAP CER 0805 1N 10% X7R 50V				
C13		015-22390-01	CAP CER 0805 39P 5% NPO 50V				
C14		015-22820-01	CAP CER 0805 82P 5% NPO 50V				
C15		015-24100-08	CAP CER 0805 1N 10% X7R 50V				
C16		015-24100-08	CAP CER 0805 1N 10% X7R 50V				
C17		015-25470-08	CAP CER 0805 47N 10% X7R 50V				
C18		015-24100-08	CAP CER 0805 1N 10% X7R 50V				
C19		015-24100-08	CAP CER 0805 1N 10% X7R 50V				
C20		015-24100-08	CAP CER 0805 1N 10% X7R 50V				
C21	RX	015-21330-01	CAP CER 0805 3P3+-1/4P NPO 50V				
C21	TX	015-22560-01	CAP CER 0805 56P 5% NPO 50V				
C22	RX	015-21470-01	CAP CER 0805 4P7+-1/4P NPO 50V				
C22	TX	015-22270-01	CAP CER 0805 27P 5% NPO 50V				
C23	RX	015-24470-08	CAP CER 0805 4N7 10% X7R 50V				
C23	TX	015-24100-08	CAP CER 0805 1N 10% X7R 50V				
C24		014-08100-00	CAP TANT CHIP 10M 16VW +-20%				
&C25	RX	015-22180-01	CAP CER 0805 18P 5% NPO 50V				
&C25	TX	015-22270-01	CAP CER 0805 27P 5% NPO 50V				
&C26	RX	015-22270-01	CAP CER 0805 27P 5% NPO 50V				
&C26	TX	015-22390-01	CAP CER 0805 39P 5% NPO 50V				
D1		001-10043-90	S) DIODE SMD BB439 VCAP SOD323				
D2		001-10043-90	S) DIODE SMD BB439 VCAP SOD323				
D3		001-10043-90	S) DIODE SMD BB439 VCAP SOD323				
D4		001-10043-90	S) DIODE SMD BB439 VCAP SOD323				
D5		001-10043-90	S) DIODE SMD BB439 VCAP SOD323				
D6		001-10043-90	S) DIODE SMD BB439 VCAP SOD323				
L1		056-14330-02	(L) IND SMD 3.3UH				
L2		056-14330-02	(L) IND SMD 3.3UH				
L3		056-14330-02	(L) IND SMD 3.3UH				
L4		056-14330-02	(L) IND SMD 3.3UH				
L5		056-10100-02	(L) IND SMD 100NH				
L6		056-10033-00	IND FXD SMD 33NH 3.2*2.5*1.6				
L7	RX	056-10330-02	(L) IND SMD 330NH				
L7	TX	056-10100-02	(L) IND SMD 100NH				
L8	RX	056-10068-02	(L) IND SMD 68NH				
L8	TX	056-10100-02	(L) IND SMD 100NH				
&L9	RX	055-01005-00	COIL TROID 280NH 22P 18T T82X				
&L9	TX	055-01005-00	COIL TROID 280NH 22P 18T T82X				
Q1		000-10003-10	S) XSTR SMD BFJ310 JFET UHF				
Q2		000-10057-10	S) XSTR SMD BR571 NPN SOT23				
Q3		000-10057-10	S) XSTR SMD BR571 NPN SOT23				
Q4		000-10008-57	S) XSTR SMD BCW70 PNP SOT23 SS				
Q5		000-10050-00	S) XSTR SMD BLT50 UHF SOT22				
R1		036-12220-00	RES M/F 0805 22E 5%				
R2		036-12560-00	RES M/F 0805 56E 5%				
R3		036-13560-00	RES M/F 0805 560E 5%				
R4		036-14270-00	RES M/F 0805 2K7 5%				
R5		036-14100-10	RES M/F 0805 1K 1%				
R6		036-14100-10	RES M/F 0805 1K 1%				
R7		036-12220-00	RES M/F 0805 22E 5%				
R8		036-12220-00	RES M/F 0805 22E 5%				
R9		036-13180-00	RES M/F 0805 180E 5%				
R10		036-12100-00	RES M/F 0805 10E 5%				
R11		036-12560-00	RES M/F 0805 56E 5%				
R12		036-13180-00	RES M/F 0805 180E 5%				
R13		036-12270-00	RES M/F 0805 27E 5%				
R14		036-13180-00	RES M/F 0805 180E 5%				
R15	RX	036-14560-00	RES M/F 0805 5K6 5%				
R15	TX	036-14680-10	RES M/F 0805 6K8 1%				
R16		036-14120-00	RES M/F 0805 1K2 5%				
R17		036-14100-10	RES M/F 0805 1K 1%				
R18		036-12100-00	RES M/F 0805 10E 5%				
R19		036-12100-00	RES M/F 0805 10E 5%				
R20		036-13330-00	RES M/F 0805 330E 5%				
R21		036-12560-00	RES M/F 0805 56E 5%				
R22		036-13470-00	RES M/F 0805 470E 5%				
R23		036-12560-00	RES M/F 0805 56E 5%				
&VC1-RX	RX	028-02341-08	CAP TRIM 1-30P PISTON TRONSER				
&VC1-TX	TX	028-02400-02	CAP TRM SMD 5/40P JZ400				

T820 VCO Mechanical & Miscellaneous Parts (220-01180-05)

IPN	Description
220-01180-05	PCB T820 VCO SI/SII
240-00026-32	PLUG 32WAY 1ROW PC MTG HARWIN
345-00040-10	SCRW M3*6MM P/POZ ST BZ
345-00060-08	SCRW M5 X 16 CH SLOT PLASTIC
350-00016-42	SPACER 5MM HI 8MM ST 2.5MM HO
352-00010-14	NUT M5 HEX PLASTIC T800 TOROID
353-00010-10	WSHR M3 FLAT 7MM*0.6MM ST BZ
353-00010-13	WSHR M3 S/PROOF INT BZ
353-00010-41	WSHR M6 NYLON BULTE LOCK

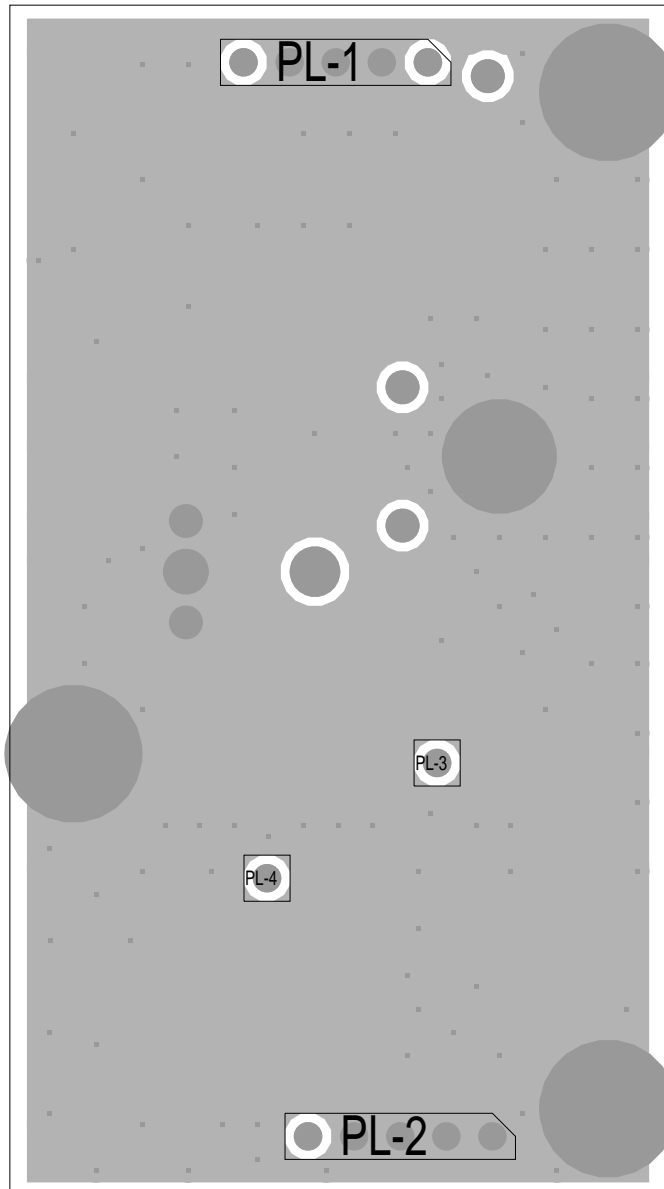
T820 VCO Grid Reference Index (IPN 220-01180-05)

How To Use This Grid Reference Index

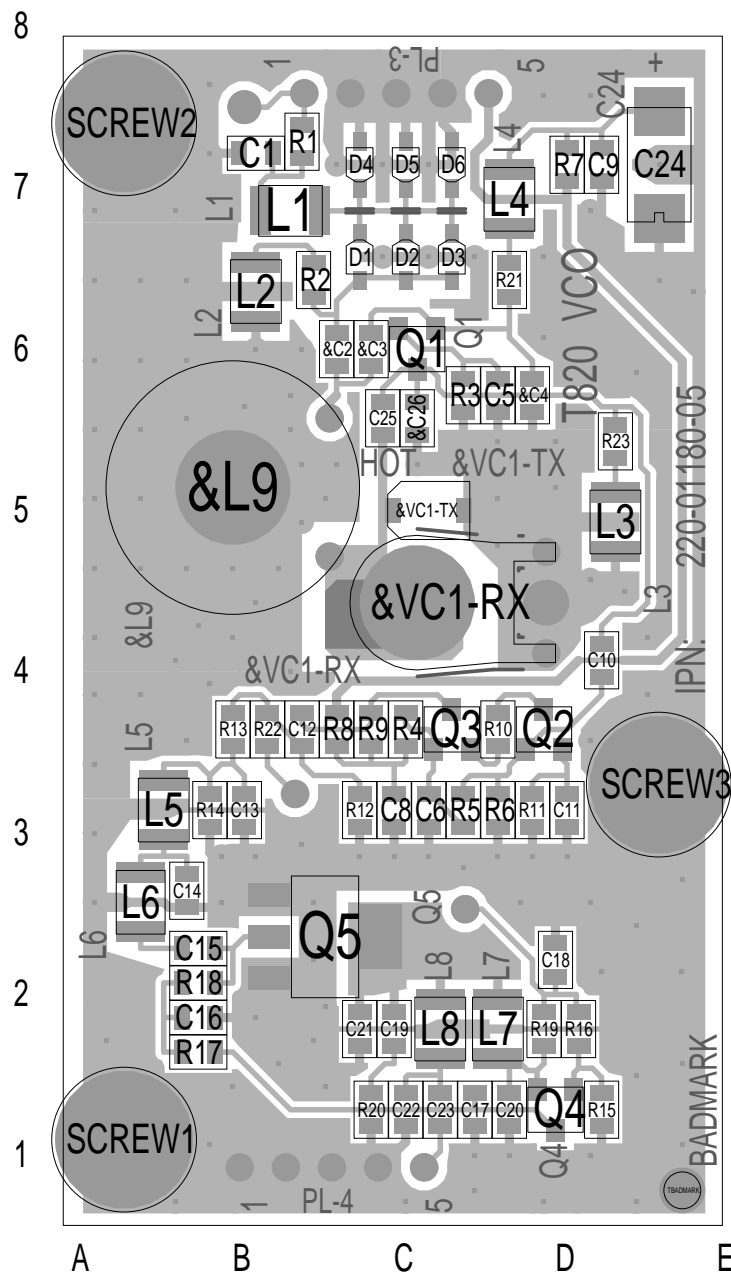
The first digit in the PCB layout reference is a "1" or "2", indicating the top or bottom side layout respectively, and the last two characters give the location of the component on that diagram.

The first digit in the circuit diagram reference is the sheet number, and the last two characters give the location of the component on that sheet.

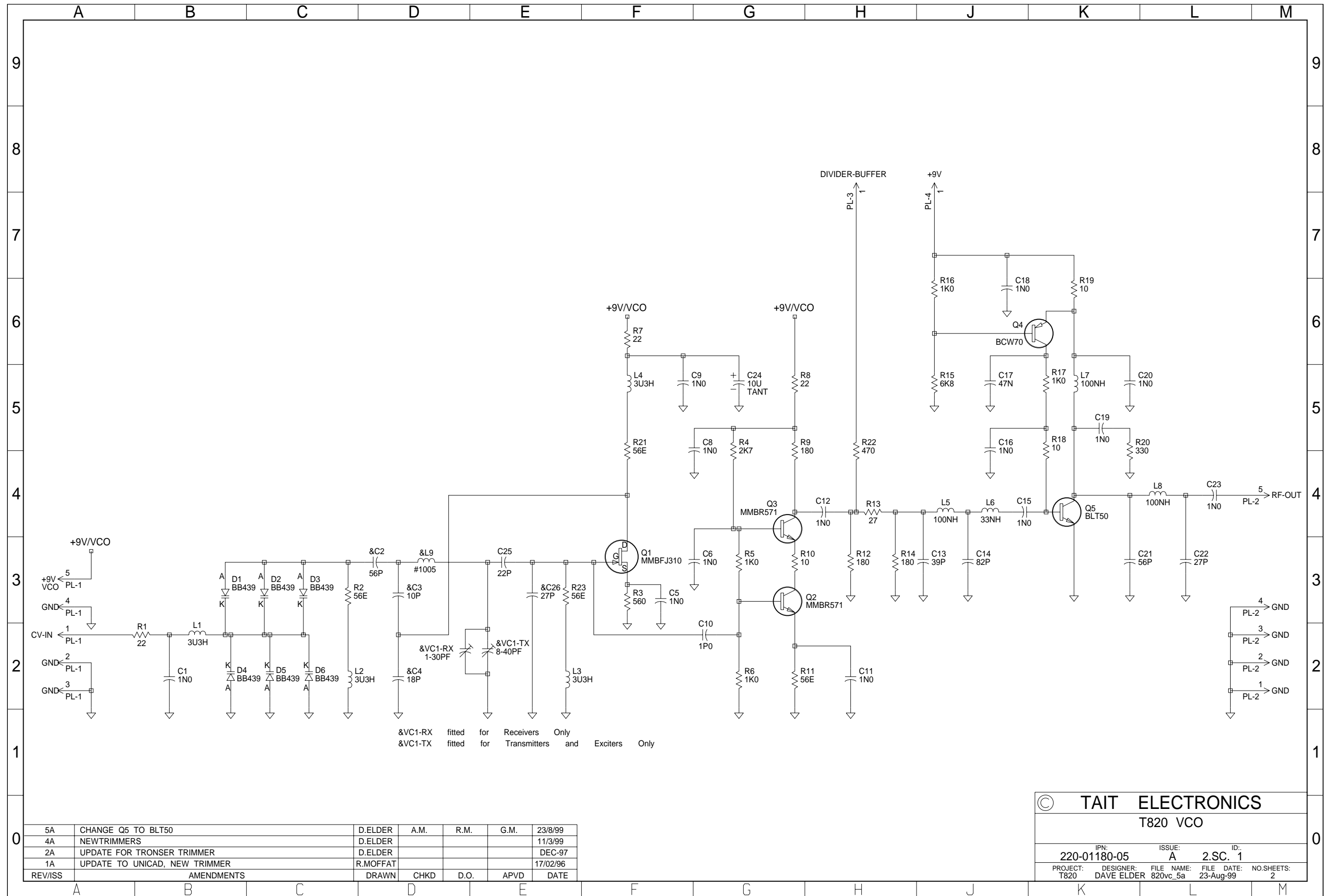
<u>Device</u>	<u>PCB</u>	<u>Circuit</u>	<u>Device</u>	<u>PCB</u>	<u>Circuit</u>	<u>Device</u>	<u>PCB</u>	<u>Circuit</u>	<u>Device</u>	<u>PCB</u>	<u>Circuit</u>
C1	1:B7	1-B2	R6	1:D3	1-G2						
&C2	1:C6	1-D3	R7	1:D7	1-F6						
&C3	1:C6	1-D3	R8	1:C4	1-G5						
&C4	1:D6	1-D2	R9	1:C4	1-G5						
C5	1:D6	1-F3	R10	1:D4	1-G3						
C6	1:C3	1-G3	R11	1:D3	1-G2						
C8	1:C3	1-G5	R12	1:C3	1-H3						
C9	1:D7	1-F5	R13	1:B4	1-H4						
C10	1:D4	1-G2	R14	1:B3	1-H3						
C11	1:D3	1-H2	R15	1:D1	1-J5						
C12	1:B4	1-H4	R16	1:D2	1-J6						
C13	1:B3	1-J3	R17	1:B2	1-K5						
C14	1:B3	1-J3	R18	1:B2	1-K5						
C15	1:B2	1-J4	R19	1:D2	1-K6						
C16	1:B2	1-J5	R20	1:C1	1-K5						
C17	1:D1	1-J5	R21	1:D6	1-F5						
C18	1:D2	1-J6	R22	1:B4	1-H5						
C19	1:C2	1-K5	R23	1:D5	1-E3						
C20	1:D1	1-K5									
C21	1:C2	1-K3	&VC1-RX	1:D4	1-D2						
C22	1:C1	1-L3	&VC1-TX	1:C5	1-E2						
C23	1:C1	1-L4									
C24	1:E7	1-G5									
C25	1:C6	1-E3									
&C26	1:C6	1-E3									
D1	1:C7	1-B3									
D2	1:C7	1-C3									
D3	1:C7	1-C3									
D4	1:C7	1-B2									
D5	1:C7	1-C2									
D6	1:C7	1-C2									
L1	1:B7	1-B2									
L2	1:B6	1-C2									
L3	1:D5	1-E2									
L4	1:D7	1-F5									
L5	1:B3	1-J4									
L6	1:A3	1-J4									
L7	1:D2	1-K5									
L8	1:C2	1-L4									
&L9	1:B5	1-D3									
PL-1	2:C8	2-G4									
PL-2	2:C1	2-G4									
PL-3	2:B3	2-G3									
PL-4	2:C3	2-H3									
Q1	1:C6	1-F3									
Q2	1:D4	1-G3									
Q3	1:C4	1-G4									
Q4	1:D1	1-K6									
Q5	1:C2	1-K4									
R1	1:B7	1-B2									
R2	1:C6	1-C3									
R3	1:C6	1-F3									
R4	1:C4	1-G5									
R5	1:C3	1-G3									



T820 VCO PCB - Bottom Side
220-01180-05



T820 VCO PCB - Top Side
220-01180-05



5A	CHANGE Q5 TO BLT50	D.ELDER	A.M.	R.M.	G.M.	23/8/99
4A	NEWTRIMMERS	D.ELDER				11/3/99
2A	UPDATE FOR TRONSER TRIMMER	D.ELDER				DEC-97
1A	UPDATE TO UNICAD, NEW TRIMMER	R.MOFFAT				17/02/96
REV/ISS	AMENDMENTS	DRAWN	CHKD	D.O.	APVD	DATE

TAIT ELECTRONICS					
T820 VCO					
PROJECT:	DESIGNER:	FILE NAME:	FILE DATE:	NO.SHEETS:	
T820	DAVE ELDER	820vc_5a	23-Aug-99	2	
IPN:	ISSUE:	ID:			
220-01180-05	A	2.SC. 1			

