

T820 Series
Base Station Equipment
Service Manual

Issue 100

July 1996

M820-00-100



**Head Office
New Zealand**

Tait Electronics Ltd
558 Wairakei Road
P.O. Box 1645
Christchurch
New Zealand
Phone: 64 3 358-3399
Fax: 64 3 358-3636

Radio Infrastructure Division

535 Wairakei Road
P.O. Box 1645
Christchurch
New Zealand
Phone: 64 3 358-3399
Fax: 64 3 358-2825

Australia

Tait Electronics (Aust) Pty Ltd
275 Toombul Road
Northgate 4013
P.O. Box 679
Virginia
Queensland 4014
Australia
Phone: 61 7 3260-7799
Toll Free: 1800 077-112
Fax: 61 7 3260-7990

Canada

Tait Mobile Radio Inc.
Unit 5, 158 Anderson Avenue
Markham
Ontario L6E1A9
Canada
Phone: 1 905 472-1100
Toll Free: 1 800 890-8248
Fax: 1 905 472-5300

France

Tait France Sarl
2 Avenue de la Cristallerie
92 316 Sèvres, Cedex
France
Phone: 33 1 41 14-05-50
Fax: 33 1 41 14-05-55

Germany

Tait Mobilfunk GmbH
Willstätterstraße 50
D-90449 Nürnberg 60
Germany
Phone: 49 911 96 746-0
Fax: 49 911 96 746-79

Hong Kong

Tait Mobile Radio (HK) Ltd
Room 703A
New East Ocean Centre
9, Science Museum Road
Tsim Sha Tsui East
Hong Kong
Phone: 852 2369-3040
Fax: 852 2369-3009

New Zealand

Tait Communications Ltd
Unit 4, 75 Blenheim Road
P.O. Box 1185
Christchurch
Phone: 64 3 348-3301
Fax: 64 3 343-0558

Singapore

Tait Electronics (Far East) Pte Ltd
4 Leng Kee Road
SIS Building #05-11A
Singapore 159088
Phone: 65 471-2688
Fax: 65 479-7778

Taiwan

Tait Electronics (Taiwan) Ltd
1104, No. 142 Chung Hsiao E. Rd
Sec. 4
Taipei
Taiwan
Phone: 886 2 731-1290
Fax: 886 2 711-6351

United Kingdom

Tait Mobile Radio Ltd
Ermine Business Park
Ermine Road
Huntingdon
Cambridgeshire PE18 6YA
United Kingdom
Phone: 44 1480-52255
Fax: 44 1480-411996

USA

Tait Electronics (USA) Inc.
9434 Old Katy Road
Suite 110
Houston
Texas 77055
USA
Phone: 1 713 984-8684
Toll Free: 1 800 222-1255
Fax: 1 713 468-6944

About This Manual

Scope

This manual contains general, technical and servicing information on T820 25W and 50W base stations which comprise the following equipment:

25W base station	T825 receiver T826 25W transmitter
50W base station	T825 receiver T827 exciter T828 50W power amplifier

Format

We have published this manual in a ring binder so that "revision packages" containing additional information pertaining to new issues of PCBs can be added as required.

Revision Packages

Revision packages will normally be published to coincide with the release of information on a new PCB, and may also contain additions or corrections pertaining to other parts of the manual.

If you return the registration form at the front of this manual, you will be notified when revision packages containing new PCB information and/or text are available. You may then order as many packages as you require from your local Tait Company. Revision packages are supplied ready-punched for inclusion in your manual.

Revision Control

Each page in this manual has a date of issue. This is to comply with various Quality Standards, but will also serve to identify which pages have been updated and when. Each page and its publication date is listed in the "List of Effective Pages", and a new list containing any new/revised pages and their publication dates will be sent with each revision package.



Any portion of text that has been changed is marked by a vertical line (as shown at left) in the outer margin of the page. Where the removal of an entire paragraph means there is no text left to mark, an arrow (as shown at left) will appear in the outer margin. The number beside the arrow will indicate how many paragraphs have been deleted.

The manual issue and revision status are indicated by the last three digits of the manual IPN. These digits start at 100 and will increment through 101, 102, 103, etc., as revision packages are published, e.g:

issue status 1 0 3 revision status

Thus, Issue 103 indicates the third revision to issue 1 and means that three packages should have been added to the manual. The issue digit will only change if there is a major product revision,

or if the number of revision packages to be included means that the manual becomes difficult to use, at which point a new issue manual will be published in a new ring binder.

PCB Information

PCB information is provided for all current issue PCBs, as well as all previous issue PCBs manufactured in production quantities, and is grouped according to PCB. Thus, you will find the parts list, grid reference index (if necessary), PCB layouts and circuit diagram(s) for each individual PCB grouped together.

Errors

If you find an error in this manual, or have a suggestion on how it might be improved, please do not hesitate to contact the Technical Writer, Tait Radio Infrastructure Division, Tait Electronics Ltd, P.O. Box 1645, Christchurch, New Zealand.

Technical Information

Any enquiries regarding this manual or the equipment it describes should be addressed in the first instance to your nearest approved Tait Dealer or Service Centre. Further technical assistance may be obtained from the Customer Support Group, Radio Infrastructure Division, Tait Electronics Ltd, Christchurch, New Zealand.

Updating Equipment And Manuals

In the interests of improving performance, reliability or servicing, Tait Electronics Ltd reserve the right to update their equipment and/or manuals without prior notice.

Copyright

All information contained in this manual is the property of Tait Electronics Ltd. All rights are reserved. This manual may not, in whole or part, be copied, photocopied, reproduced, translated stored or reduced to any electronic medium or machine readable form without prior written permission from Tait Electronics Ltd.

Ordering Tait Service Manuals

Service Manuals should be ordered from your nearest Tait Branch or approved Dealer. When ordering, quote the Tait Internal Part Number (IPN) and, where applicable, the version.

Date Of Issue

IPN M820-00-100 T820 Series Service Manual
Issue 100 published July 1996

Table Of Contents

This manual is divided into eight parts as listed below, with each part being further subdivided into sections. There is a detailed table of contents at the start of each part and/or section.

Part	Title
A	Introduction To Servicing
B	T825 Receiver
C	T826 Transmitter & T827 Exciter
D	T828 Power Amplifier
E	T800 Memory & T820 VCO PCB Information
F	Installation
G	System Configurations
H	T800 Ancillary Equipment

List Of Effective Pages

The total number of pages in this Manual is 304, as listed below.

Page	Issue Date	Page	Issue Date
1	30/04/96	Part B	
2	30/04/96	I	30/04/96
3	30/04/96	II	30/04/96 (blank)
4	30/04/96	1.1	30/04/96
5	30/04/96	1.2	30/04/96 (blank)
6	30/04/96	1.3	30/04/96
7	30/04/96	1.4	30/04/96
8	30/04/96	1.5	30/04/96
9	30/04/96	1.6	30/04/96
10	30/04/96 (blank)	1.7	30/04/96
		1.8	30/04/96 (blank)
Part A		2.1	30/04/96
I	30/04/96	2.2	30/04/96 (blank)
II	30/04/96 (blank)	2.3	30/04/96
1.1	30/04/96	2.4	30/04/96
1.2	30/04/96	2.5	30/04/96
2.1	30/04/96	2.6	30/04/96
2.2	30/04/96 (blank)	2.7	30/04/96
3.1	30/04/96	2.8	30/04/96
3.2	30/04/96	2.9	30/04/96
4.1	30/04/96	2.10	30/04/96
4.2	30/04/96 (blank)	2.11	30/04/96
5.1	30/04/96	2.12	30/04/96 (blank)
5.2	30/04/96 (blank)	3.1	30/04/96
6.1	30/04/96	3.2	30/04/96
6.2	30/04/96 (blank)	3.3	30/04/96
7.1	30/04/96	3.4	30/04/96
7.2	30/04/96	3.5	30/04/96
7.3	30/04/96	3.6	30/04/96
7.4	30/04/96 (blank)	3.7	30/04/96
8.1	30/04/96	3.8	30/04/96
8.2	30/04/96 (blank)	3.9	30/04/96
		3.10	30/04/96
		3.11	30/04/96
		3.12	30/04/96
		4.1	30/04/96
		4.2	30/04/96 (blank)
		4.3	30/04/96
		4.4	30/04/96
		4.5	30/04/96
		4.6	30/04/96

Page	Issue Date	Page	Issue Date
4.7	30/04/96	1.3	30/04/96
4.8	30/04/96 (blank)	1.4	30/04/96
		1.5	30/04/96
5.1	30/04/96	1.6	30/04/96
5.2	30/04/96	1.7	30/04/96
5.3	30/04/96	1.8	30/04/96 (blank)
5.4	30/04/96		
5.5	30/04/96	2.1	30/04/96
5.6	30/04/96	2.2	30/04/96 (blank)
5.7	30/04/96	2.3	30/04/96
5.8	30/04/96	2.4	30/04/96
5.9	30/04/96	2.5	30/04/96
5.10	30/04/96	2.6	30/04/96
5.11	30/04/96	2.7	30/04/96
5.12	30/04/96	2.8	30/04/96
5.13	30/04/96	2.9	30/04/96
5.14	30/04/96	2.10	30/04/96
		2.11	30/04/96
6.1.1	30/04/96	2.12	30/04/96
6.1.2	30/04/96 (blank)		
6.1.3	30/04/96	3.1	30/04/96
6.1.4	30/04/96	3.2	30/04/96
		3.3	30/04/96
6.2.1	30/04/96	3.4	30/04/96
6.2.2	30/04/96 (blank)	3.5	30/04/96
6.2.3	30/04/96	3.6	30/04/96
6.2.4	30/04/96	3.7	30/04/96
6.2.5	30/04/96	3.8	30/04/96
6.2.6	30/04/96	3.9	30/04/96
6.2.7	30/04/96	3.10	30/04/96
6.2.8	30/04/96 (blank)	3.11	30/04/96
6.2.9	30/04/96	3.12	30/04/96
6.2.10	30/04/96	3.13	30/04/96
6.2.11	30/04/96	3.14	30/04/96 (blank)
6.2.12	30/04/96 (blank)		
6.2.13	30/04/96 (fold-out)	4.1	30/04/96
6.2.14	30/04/96 (fold-out)	4.2	30/04/96 (blank)
6.2.15	30/04/96 (fold-out)	4.3	30/04/96
6.2.16	30/04/96 (fold-out)	4.4	30/04/96
6.2.17	30/04/96 (fold-out)	4.5	30/04/96
6.2.18	30/04/96 (fold-out)	4.6	30/04/96
6.2.19	30/04/96 (fold-out)		
6.2.20	30/04/96 (fold-out)	5.1	30/04/96
		5.2	30/04/96 (blank)
		5.3	30/04/96
Part C		5.4	30/04/96
		5.5	30/04/96
I	30/04/96	5.6	30/04/96
II	30/04/96 (blank)	5.7	30/04/96
		5.8	30/04/96
1.1	30/04/96	5.9	30/04/96
1.2	30/04/96 (blank)	5.10	30/04/96

Page	Issue Date	Page	Issue Date
5.11	30/04/96	Part D	
5.12	30/04/96		
5.13	30/04/96	I	30/04/96
5.14	30/04/96 (blank)	II	30/04/96 (blank)
6.1.1	30/04/96	1.1	30/04/96
6.1.2	30/04/96 (blank)	1.2	30/04/96 (blank)
6.1.3	30/04/96	1.3	30/04/96
6.1.4	30/04/96	1.4	30/04/96
		1.5	30/04/96
		1.6	30/04/96
6.2.1	30/04/96	2.1	30/04/96
6.2.2	30/04/96 (blank)	2.2	30/04/96 (blank)
6.2.3	30/04/96	2.3	30/04/96
6.2.4	30/04/96	2.4	30/04/96
6.2.5	30/04/96	2.5	30/04/96
6.2.6	30/04/96	2.6	30/04/96
6.2.7	30/04/96	2.7	30/04/96
6.2.8	30/04/96 (blank)	2.8	30/04/96 (blank)
6.2.9	30/04/96		
6.2.10	30/04/96	3.1	30/04/96
6.2.11	30/04/96	3.2	30/04/96 (blank)
6.2.12	30/04/96 (blank)	3.3	30/04/96
6.2.13	30/04/96 (fold-out)	3.4	30/04/96
6.2.14	30/04/96 (fold-out)	3.5	30/04/96
6.2.15	30/04/96 (fold-out)	3.6	30/04/96
6.2.16	30/04/96 (fold-out) (blank)	3.7	30/04/96
6.2.17	30/04/96 (fold-out)	3.8	30/04/96
6.2.18	30/04/96 (fold-out)		
6.2.19	30/04/96 (fold-out)	4.1	30/04/96
6.2.20	30/04/96 (fold-out)	4.2	30/04/96 (blank)
6.3.1	30/04/96	4.3	30/04/96
6.3.2	30/04/96 (blank)	4.4	30/04/96
6.3.3	30/04/96	4.5	30/04/96
6.3.4	30/04/96	4.6	30/04/96
6.3.5	30/04/96	4.7	30/04/96
6.3.6	30/04/96 (blank)	4.8	30/04/96 (blank)
6.3.7	30/04/96		
6.3.8	30/04/96 (blank)	5.1.1	30/04/96
6.3.9	30/04/96	5.1.2	30/04/96 (blank)
6.3.10	30/04/96	5.1.3	30/04/96
6.3.11	30/04/96 (fold-out)	5.1.4	30/04/96
6.3.12	30/04/96 (fold-out)		
6.3.13	30/04/96 (fold-out)	5.2.1	30/04/96
6.3.14	30/04/96 (fold-out) (blank)	5.2.2	30/04/96 (blank)
6.3.15	30/04/96 (fold-out)	5.2.3	30/04/96
6.3.16	30/04/96 (fold-out)	5.2.4	30/04/96
6.3.17	30/04/96 (fold-out)	5.2.5	30/04/96
6.3.18	30/04/96 (fold-out) (blank)	5.2.6	30/04/96 (blank)
		5.2.7	30/04/96
		5.2.8	30/04/96

Page	Issue Date	Page	Issue Date
5.2.9	30/04/96 (fold-out)	1.1	30/04/96
5.2.10	30/04/96 (fold-out)	1.2	30/04/96
5.2.11	30/04/96 (fold-out)		
5.2.12	30/04/96 (fold-out)	2.1	30/04/96
		2.2	30/04/96
Part E		3.1	30/04/96
		3.2	30/04/96 (blank)
I	30/04/96	4.1	30/04/96
II	30/04/96 (blank)	4.2	30/04/96
1.1	30/04/96		
1.2	30/04/96	5.1	30/04/96
		5.2	30/04/96
2.1	30/04/96		
2.2	30/04/96		
2.3	30/04/96	Part H	
2.4	30/04/96	I	30/04/96
2.5	30/04/96 (fold-out)	II	30/04/96 (blank)
2.6	30/04/96 (fold-out) (blank)		
3.1	30/04/96	1	30/04/96
3.2	30/04/96	2	30/04/96
3.3	30/04/96	3	30/04/96
3.4	30/04/96 (blank)	4	30/04/96
3.5	30/04/96	5	30/04/96
3.6	30/04/96	6	30/04/96 (blank)
3.7	30/04/96 (fold-out)		
3.8	30/04/96 (fold-out) (blank)		
Part F			
I	30/04/96		
II	30/04/96 (blank)		
1.1	30/04/96		
1.2	30/04/96		
1.3	30/04/96		
1.4	30/04/96 (blank)		
2.1	30/04/96		
2.2	30/04/96		
2.3	30/04/96		
2.4	30/04/96 (blank)		
Part G			
I	30/04/96		
II	30/04/96		

