

**HANDBOOK  
FOR  
YAGI ANTENNA  
TM7 SERIES  
HANDBOOK NO 49.70035**

# RADIO FREQUENCY SYSTEMS

Pty. Limited  
A.C.N. 004 886 087

12 WADDIKEE ROAD  
LONSDALE 5160  
SOUTH AUSTRALIA

Australia

MINISTRY OF COMMERCE  
COMMUNICATIONS DIVISION  
PO BOX 2847  
WELLINGTON  
NEW ZEALAND

DELIVERED TO

MINISTRY OF COMMERCE  
7TH FLOOR, 33 BOWEN STREET  
WELLINGTON. NEW ZEALAND  
ATTN: TONY BROWN

## INVOICE

27/5/94 501268

TRANSACTION	CUSTOMER ORDER REFERENCE	DELIVERY DATE	QUANTITY ORDERED	QUANTITY DELIVERED	UNIT PRICE	DISCOUNT	VALUE
	001631						

PART NUMBER	DESCRIPTION	QUANTITY ORDERED	QUANTITY DELIVERED	UNIT PRICE	DISCOUNT	VALUE
4.30005	TM7S CH10 YAGI ANTENNA		1			AUD 1,390.00
9.70035	HBTM7 SERIES HANDBOOK FOR ABOVE POLAR RANGE PLOTS (E & H) INCLUDED WITH ANTENNA		2			N/C
						500.00
						1,890.00
						530.00
						2,420.00
						C&F

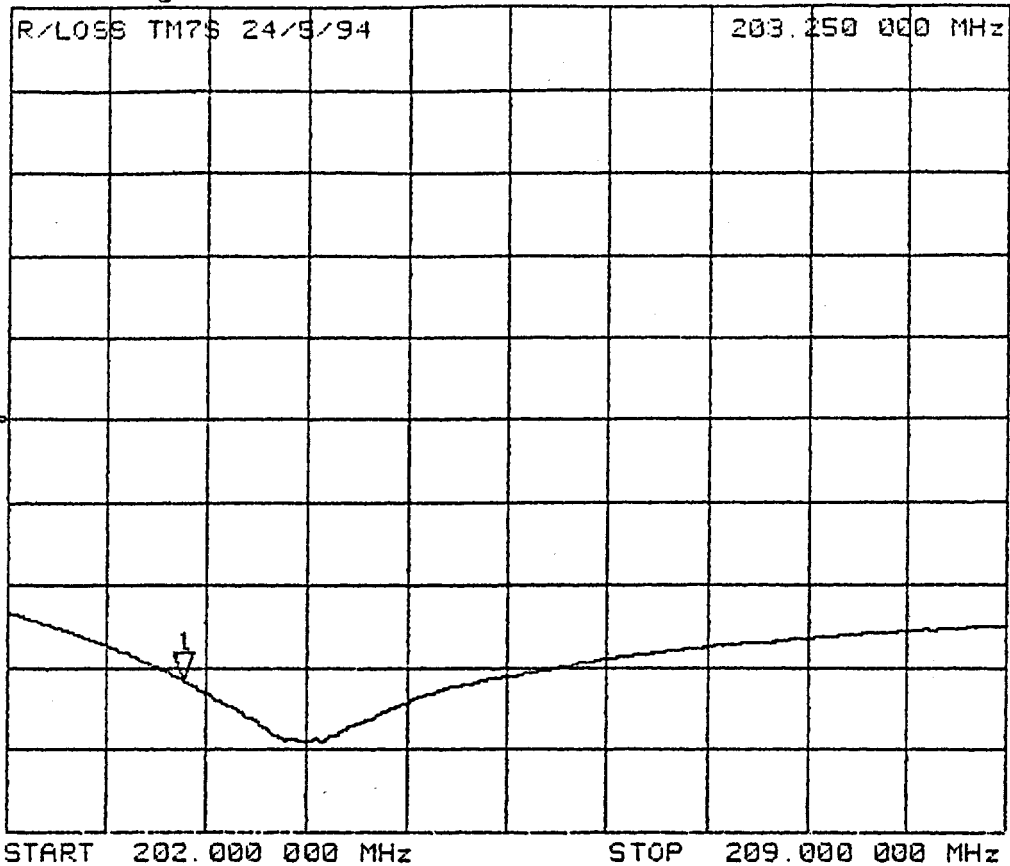
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MARGARET A DIXON, ADMIN MANAGER

SUNDRIES	ORDER VALUE	TOTAL DISCOUNT	TOTAL	AMOUNT DUE
				AUD 2,420.00

36 Garden Street  
Kilsyth Victoria 3137 Australia  
Tel: 61 3 728 1777  
Fax: 61 3 728 4544  
Quality Endorsed  
Company  
AS 3901/ISO 9001  
Lic. 038

CH1 A/R log MAG 10 dB/ REF 0 dB 1: -31.461 dB



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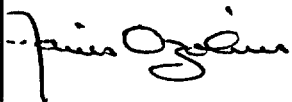
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**AUTHORISATION FOR ISSUE**

**This document has been compiled and authorised for issue as follows.**

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**QUALITY ASSURANCE**

**This product and its instruction manual have been produced in compliance with AS 3903**

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**AMENDMENT RECORD**

AMENDMENT NO	AMENDMENT DETAIL	AMENDED BY	DATE
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**YAGI ANTENNA  
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**SECTION 1  
DESCRIPTION**

The TM7 Series antennas are seven element Yagis designed for single TV channel operation on Band 3.

The antennas are designed for single pole mounting on a 50NB tube. The TM7 is also supplied with a brace kit.

TM7 Series antennas are of stainless steel construction.

The TM7P antenna is fitted with a 7/8 inch EIA input connector, which allows pressurisation.

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**SECTION 2  
SPECIFICATIONS**

**2.1 Electrical Data**

Frequency Range	Specified Single Channel (174-230MHz)
Bandwidth	7MHz
3dB Beamwidth (E)	44 degrees
3dB Beamwidth (H)	46 degrees
Front/Back Ratio	20dB
Gain	11dBd
Maximum Power	500W
Return Loss	greater than 20dB over specified channel
Connector - TM7	N type female
Connector - TM7P	7/8 inch EIA

**2.2 Mechanical Data**

The following data is typical , but may vary slightly with design frequency.

Frequency (MHz)	176
Weight (kg)	8
Boom Length (m)	2.82
Reflector Length (m)	0.9
Effective are (m <sup>2</sup> )	0.38
Wind Rating (km/hr)	200

**2.3 Pressurisation (TM7P only)**

Test	100kPa
Operational	20 to 35kPa (50kPa max)



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**SECTION 3  
INSTALLATION**

**3. General**

Swing reflector bars into their final position (ie arms perpendicular to boom), and secure.

Mount the antenna to the support pole using supplied hardware.

Install fiberglass bracing rod.

**3.1 N Type Input**

After installation, the connector assembly should be coated with a layer of "Denso Tape 510" to prevent ingress of moisture.

**3.2 7/8 inch EIA Input**

Ensure mating surfaces are not damaged and are clean and dry. O-rings must be smeared with silicone grease to provide a good seal.

Ensure that inner connectors (bullets) are a tight fit in the receptacle. If the components mate with little or no insertion force, check for damage.

Flange bolts must be tightened a little at a time, working around alternate bolts.

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**SECTION 4  
TUNING**

The antenna is supplied tuned to the customer's specified channel.

Field tuning to a frequency other than that specified is possible with the use of suitable measuring equipment. Consult RFS for further details.

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**SECTION 5  
ILLUSTRATIONS**

Description

TM7S Yagi Antenna

TM7SP Yagi Antenna

Measured Radiation patterns at 203.25MHz

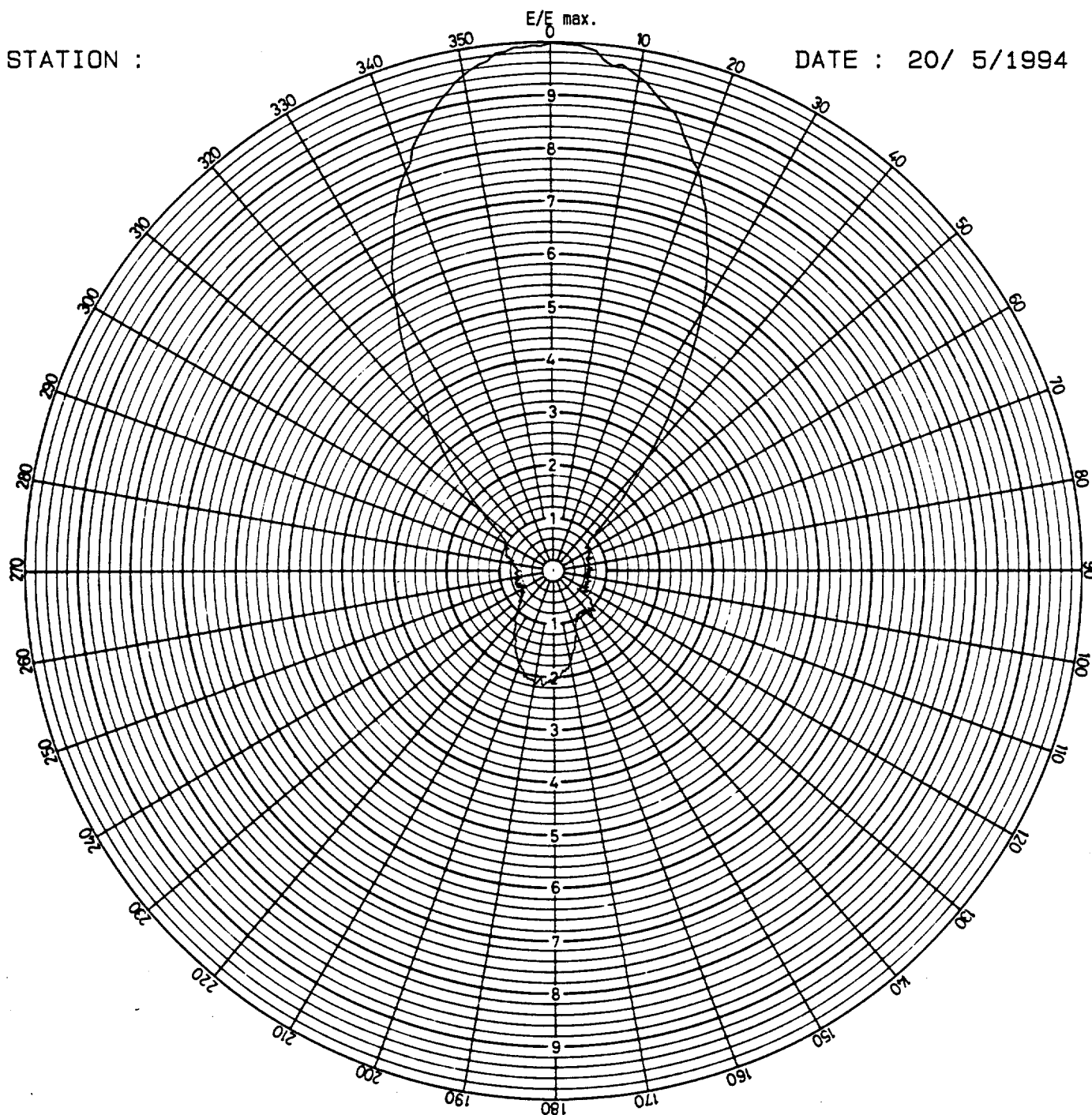


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## MEASURED HORIZONTAL RADIATION PATTERN

STATION :

DATE : 20/ 5/1994



MODEL : TM7S

PATTERN FILE : TMCH8HP

FREQ (MHz): 203.25

DIR (dB) : 8.3

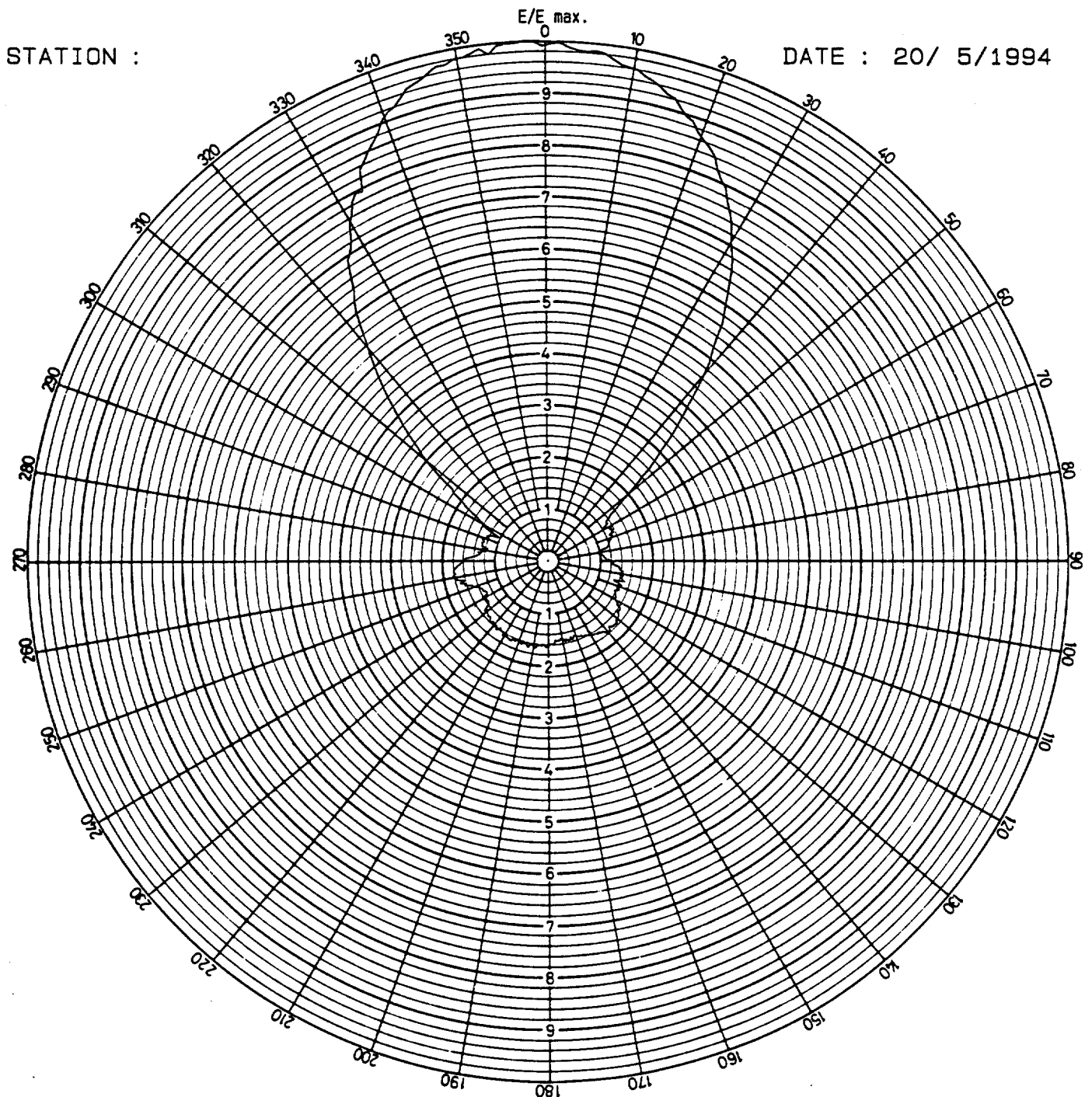
POLARIZATION : HORIZONTAL

ENGINEER : DP



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## MEASURED HORIZONTAL RADIATION PATTERN



MODEL : TM7S

PATTERN FILE : A: TMCHBVP1

FREQ (MHz): 203.25

DIR (dB) : 7.3

POLARIZATION : VERTICAL

ENGINEER : DP