EXHIBIT 6

SCHLUMBERGER TECHNOLOGY CORPORATION SECTION 25.221 COMPLIANCE REPORT

In response to the Federal Communications Commission (the "Commission" or "FCC") Report and Order establishing the ESV rules,[1] as set forth in Section 25.221 of the FCC's Regulations, the applicant herein, Schlumberger Technology Corporation ("Schlumberger"), submits the following information with respect to the Schlumberger Oilfields UK Plc 2.4 meter C-band reflector antenna, Model No. C24CP (the "Antenna"), for which it seeks authority in this application to transmit Earth Stations on Board Vessels ("ESVs").

Schlumberger has developed and tested a system designed to implement the requirements outlined in Section 25.221 of the FCC's Regulations. A description of this system, along with actual test data, are presented in the attached October 12, 2006, "Test Report for the Schlumberger Oilfields UK Plc 2.4 metre C Band Reflector Antenna (the "Report"). This Report describes how Schlumberger complies with all requirements of Section 25.221 of the FCC's Regulations, as well as with the underlying ESV Order. Following is a list of all the requirements discussed in this Report:

1. Off-Axis EIRP Spectral Density
2. Non-Circular ESV Antennas
3. Pointing Error and Auto Shut-Off
4. U.S. Contact Information
5. Excessive Radiation
6. Coordination Limits
7. Geographic Area
8. Antennas
9. Certification of Compliance

1. OFF-AXIS EIRP SPECTRAL DENSITY

The Antenna specified in this application meets the off-axis EIRP spectral density requirements for co-polarized and cross-polarized signals as required in Section 25.221 of the FCC's Regulations. The Report contains measured test data with -2.7dBW/4 kHz of PSD to antenna feed input that demonstrates that the off-axis spectral density requirements are satisfied for all relevant angles provided that the transmit power density at the Antenna input does not exceed the permissible -6dBW/4 KHz of occupied bandwidth.

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[1] In the *Matter of Procedures to Govern the Use of Satellite Earth Stations on Board Vessels in the 5925-6425 MHz/3700-4200 MHz Bands and 14.0-14.5 GHz/11.7-12.2 GHz Bands,* Report and Order, FCC 204-286, IB-Docket No. 02-10, Adopted December 15, 2004, Released January 6, 2005, *recon.* Order on Reconsideration, FCC 09-63, Adopted July 30, 2009, Released July 31, 2009 ("ESV Order").

2. NON-CIRCULAR ESV ANTENNAS.

As detailed in the Report, the ESV remote specified in this application uses circular antennas or, if slightly asymmetric, the antenna performance power spectral density requirements are met in the minor axis.

3. POINTING ERROR AND AUTO SHUT-OFF

The Antenna has an RF mute function that ensures compliance with Section 25.221 of the FCC's Regulations. The Antenna has the following applicable specifications:

- Pointing Accuracy..<0.2°
  Tx Mute Function
- Maximum angle off boresight when Tx is disabled ....<0.5°
- Maximum angle off boresight when Tx is enabled ....<0.2°

In order to protect adjacent satellites from spurious emissions and interference, the RF mute facility in the Antenna is designed automatically to suppress RF transmissions in the event of malfunction and/or misalignment between the terminal and the object satellite.

Under normal operating conditions, the stabilized Antenna aligns and tracks the object satellite to within a tracking accuracy of ±0.1° RMS. The Antenna employs a suite of highly stable and accurate velocity sensors, inclinometers, and position transducers to maintain satellite tracking and antenna altitude positioning within strict tolerances.

In general terms, these instruments are used to generate two (2) frames of reference for the operation of the platform. The normal frame of reference is derived from the velocity sensors and generates an inertial position for the Antenna reflector. The second frame, called the "instrument frame of reference," is derived from a combination of inclinometer measurements and absolute angular data sourced from the high precision position transducers, mounted directly on the three (3) axes of freedom for the platform.

These frames of reference are used within a digital signal processing algorithm to set up two (2) control loops, the Torque Loop and the Velocity Loop, which are adjusted to optimize the control system with the mechanical assembly. The final drive to the 3 axes stabilized platform is accomplished through the use of low speed dc torque motors, driven by a high frequency PWM dc signal to provide direct proportional precision torque control of each axis. These control features maintain the Antenna attitude to within an accuracy of ±0.1° RMS or 0.2° peak for normal operating conditions.

Under extraordinary, or non-operational, conditions, the tracking accuracy of the Antenna can decrease. This decrease can be caused by a number of unforeseen or unavoidable conditions. For example, heavy seas take the pitch, roll, yaw, and heave of the vessel beyond the specifications for the Antenna. Similarly, such deviations can occur due to mechanical vibration from an external source or due to failure of the terminal sensors or drive motors. Under these conditions, the Antenna control system, which automatically monitors the AGC level from the terminal receiver, immediately engages the RF mute facility at a preset AGC threshold corresponding to an Antenna misalignment angle of 0.5° peak. Hysteresis is deployed within the control loop such that the RF transmissions will not resume until the Antenna attitude returns to within the peak tracking accuracy window of 0.2°. This capability ensures that Schlumberger's ESV operations would be in compliance with Section 25.221 of the FCC's Regulations.

In addition to the instantaneous AGC level, a number of other system parameters are continuously monitored by the Antenna control system to allow immediate alarm and RF mute activation so that operation would cease if the parameters in Section 25.221 of the FCC's Regulations are not being met. These capabilities include monitoring and supervision of the following parameters:

- Modem acquisition and synchronization lock.
- Normal frame of reference angles.
- Comparison between calculated and absolute antenna attitude for vessel latitude, longitude, and heading.
- Accelerometer and heading reference historic data.

In all cases, the RF mute facility is activated within 100ms of the primary alarm condition signaling.

4. U.S. CONTACT INFORMATION

Schlumberger's contact information is as follows:

Schlumberger Technology Corporation Network Operations Center (NOC)
7147 Reynolds Dr.
Sedalia, CO 80135
Phone: (303) 470-2524
Email: cdais@sedalia.oilfield.slb.com
Qualified operators are on duty 24 hours a day, 365 days per year.

Schlumberger has standard escalation procedures in place for all types of incidents. Customers and any regulatory agency may contact the NOC to obtain information about a particular system and to resolve interference issues.

Technical personnel at the NOC (which also is Schlumberger's HUB facility, call sign E960499) have the authority and ability to remotely access equipment on the ESV to terminate emissions in case of suspected interference. All Schlumberger systems are equipped with an out-of-band management system which serves as a backup switching system for increased operational availability. In case the main system should ever go down and the satellite modem must be muted, the satellite modem will be reached via the out-of-band management system.

5. ANTENNA RADIATION GUIDELINES

See Form 312, Q. 28, Exhibit 1. Schlumberger's ESVs will not exceed the radiation guidelines of Section 1.1310 of the FCC's Regulations, as demonstrated in Exhibit 1.

6. COORDINATION LIMITS

Schlumberger shall not seek to coordinate, in any geographic location, more than 36 MHz of uplink bandwidth on each of no more than two (2) GSO FSS satellites.

7. ESV GEOGRAPHIC AREA OF OPERATION

The geographic area where the ESVs will operate is the Gulf of Mexico. As set forth in its response to Q. E29 in Exhibit B of this application, Schlumberger requests authority to operate 30 ESVs in the Gulf of Mexico.

8. ANTENNAS

See Exhibit 4.

9. COMPLIANCE CERTIFICATION

Schlumberger hereby certifies that it will comply with the following requirements:

- For each ESV transmitter, Schlumberger shall maintain a record of the ship location (*i.e.* latitude/longitude), transmit frequency, channel bandwidth, and satellite used. This record shall be time annotated and maintained for a period of not less than one (1) year. Records will be recorded at time intervals no greater than every 20 minutes while the ESV is transmitting. Schlumberger will make these data available upon request to a coordinator, fixed system operator, fixed-satellite system operator, or the Commission within 24 hours of the request.

- When communicating with vessels of foreign registry, Schlumberger shall maintain detailed information on each vessel's country of registry and a point of contact for the relevant administration responsible for licensing ESVs.

- Schlumberger's ESVs, while in motion, shall not claim any interference protection, as set forth in Section 25.221 (a)(10) of the FCC's Regulations.

- Schlumberger shall control all its ESVs by a Hub earth station located in the United States (call sign E960499, located in Sedalia, CO).

- Schlumberger's ESVs shall not operate in the 5925-6425 MHz (Earth-to-space) and 3700-4200 MHz (space-to-Earth) frequency bands on vessels smaller than 300 gross tons.

- Schlumberger's ESVs in the 5925-6425 MHz uplink bands within 200 km from the coastline of the U.S., or within 200 km of a U.S.-licensed fixed services offshore installation, shall complete coordination prior to operation and shall comply with the requirements set forth in Sections 25.221 (a)(10) and (11) of the FCC's Regulations.

ERA TECHNOLOGY

ANTENNA SYSTEMS

Test Report for the Schlumberger Oilfields UK Plc 2.4 metre C Band Reflector Antenna

Frequency: 5.925 – 6.425 GHz
Model No: C24CP

C P Wood and M M Drew

ERA Document No: 12698/TR002
Issue 1
ERA Project 51-ST-12698

Commercial-in-Confidence

Client	:	Schlumberger Stoneywood Park Dyce, Aberdeen
Client Reference	:	PO No: QGBH01856A

ERA Report Checked by:	Approved by:
G Y Philippou Antenna Systems	B Claydon Business Development Manager Antenna Systems

12 October 2006
Ref. 12698/TR002

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ERA Technology Ltd	*1 copy*
Project File	*1 copy*

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1. Introduction

This document describes the laboratory and range measurements undertaken at ERA Technology for the 2.4 metres circularly polarised C band reflector antenna required to demonstrate the performance of the system. The reflector system is a single front fed circularly symmetric configuration with the feed supported at the focus of the reflector by four struts in the diagonal planes. The main reflector is a paraboloid and the feed chain consists of a choked corrugated feed horn, a polariser and a two port Orthomode Transducer (OMT) providing orthogonally circularly polarised transmit and receive functions simultaneously. The mounting of the struts on the main reflector supports the feed chain and the design of this fixture ensures that the feed horn can be precisely integrated with the main reflector in the correct manner.

The feed chain components are all manufactured from aluminium using CNC machining and cast aluminium parts. The complete feed chain is assembled and checked in the laboratory for VSWR and port-to-port isolation.

The Test Plan and procedures undertaken at ERA are consistent with *IEEE Standard Test Procedures for Antennas ANSI/IEEE Std 149-1979.*

2. Objective

The objective of the Tests is to measure the radiation patterns and gain of the 2.4 metres front fed antenna at C band operating in circular polarisation.

3. Testing Site

All testing has been undertaken at the ERA laboratories and outdoor far field range located as follows:

ERA Technology Ltd
Cleeve Road
Leatherhead
Surrey
KT22 7SA
UK

Antenna Systems Business Unit
Head of Business Unit: Dr Robert Pearson
Tel: +44 (0) 1372367129
Fax: +44 (0) 1372367467
e-mail: robert.pearson@era.co.uk

4. Identification of Item for Testing

The item tested consisted of a 2.4 metres circularly symmetric reflector and a C band circularly polarised feed chain at the focus of the reflector. A photograph of the configuration on the ERA far field range is shown in Figure 1, whilst Figure 2 shows detail of the feed chain. The unit is identified by Model No: C24CP.

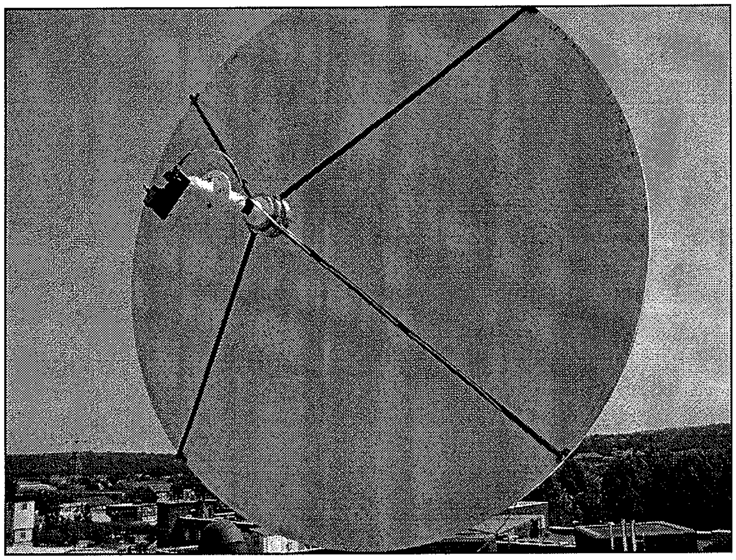

Figure 1: 2.4 metres C band reflector on ERA far field range

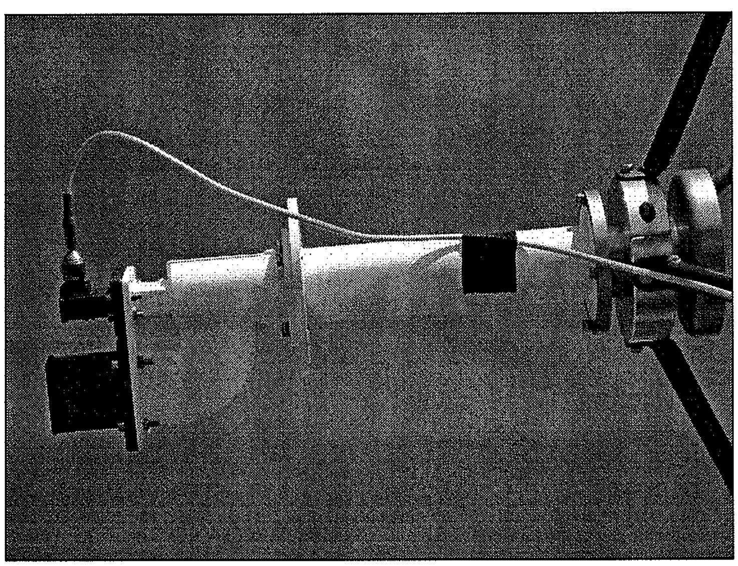

Figure 2:Detail of circularly polarised feed chain of 2.4 metres C band reflector

5. Electrical Specification

The electrical specification for the antenna is given in Table 1. This is consistent with Recommendations ITU-R-S580 and ITU-R-S465.

Table 1: Specification and Measurement Matrix

Parameter	Specification	Measurement
Frequency	Rx: 3.7 – 4.2 GHz Tx: 5.925 – 6.425 GHz	Rx: 3.7 – 4.2 GHz Tx: 5.925 – 6.425 GHz
Polarisation	Circular Orthogonal Tx to Rx	Circular Orthogonal Tx to Rx
Gain	> 41 dBi at 5.925 GHz	41.0 dBi at 5.925 GHz
Full 3dB beamwidth	1.5° (Nominal)	1.5° (mid-band)
Off-axis Co-polar Gain Tx Band (Note 1)	$29-25\log(\theta)$ dBi for $(100\lambda/D)^\circ<\theta<20^\circ$ -3.5 dBi for $20^\circ<\theta<26.3^\circ$ $32-25\log(\theta)$ dBi for $26.3^\circ<\theta<48^\circ$ -10 dBi for $48^\circ<\theta<180^\circ$	Section 7; Patterns plots
On-axis Voltage Axial Ratio, Tx Band	Tx: < 1.09:1	< 1.09:1; Section 7
VSWR Tx Band	1.3:1	1.1:1
Isolation (feed only)	> 30 dB 3.7 – 4.2 GHz > 30 dB 5.925 – 6.425 GHz	> 30 dB 3.7 – 4.2 GHz > 35 dB 5.925 – 6.425 GHz
Tx Waveguide port	WG14/WR137	WG14/WR137

Note 1: In the plane of geostationary orbit, the envelope may be exceeded by no more than 10% of the sidelobes.

6. Quality Control Procedures

ERA Technology Ltd operates a Quality Management System that is registered, by BSI, as complying with BS EN ISO 9001:2000 including the TickIt requirements. (Registration number FM1303). The Company maintains other Quality Management System Accreditations and Certifications that are linked either to a specific market, technology or Client.

Our Quality Management System is defined in general terms by a Quality Manual and in detail by a series of Quality Procedures. These documents, and other relevant material, are provided to all ERA staff via our Intranet. This Quality Management System is implemented so as to meet the specific contractual and technical requirements of each individual project.

The Quality Assurance Manager is responsible to the Managing Director for defining the Quality Management System, maintaining it and, when needed, for continually improving the processes and standards. The Quality Assurance Manager is also responsible for identifying quality problems and initiating effective solutions. Individual Project Quality is devolved down from the Heads of Business Units to the Department Managers and, for day-to-day activities, to Project Managers. Quality Assurance Representatives are appointed from the engineering staff to give local support quality and provide a link between their departments and the Quality Assurance Manager.

Copies of our Quality Manual, ISO 9001 Certification and UKAS Accreditation are available either on request or from our web site http://www.era.co.uk/corporate/qualityassurance.asp. Copies of our other approvals are available on request.

7. Measurements

7.1 Introduction

Measurements of antenna radiation patterns and gain are undertaken using ERA's 220 metres far field test range. The range comprises a remotely controlled primary transmitter unit and a receive facility located in a purpose-built test tower 15 metres in height. The receive facility is equipped with programmable *Scientific Atlanta* positioners, receivers and automatic data logging equipment. The transmitter site is furnished with a series of transmit points to cover the various bands. For C band the transmitter is a reflector about 1200 mm diameter and it utilises a circularly polarised feed chain. In addition, a linearly polarised C band horn, which can be rotated around its axis, is used as the transmitter for the on axis rotating linear measurements of axial ratio. For C band the co-polar and cross-polar patterns are measured in circular polarisation. A switch at the transmitter changes the sense of polarisation from LHCP to RHCP and vice-versa as required. A more accurate value of the cross-polar level on axis is measured by the rotating linear technique using the linearly polarised C band horn. The rotating linear technique for axial ratio measurements is more accurate than the circularly polarised cross-polar patterns since the circularly polarised transmitter on the ERA's 220 metres has only about 25 dB cross-polar isolation, which can interfere with the antenna under test cross-polar component.

Detailed surveys of this test range have been carried out in the most commonly used microwave bands that indicate co-polar reflectivity better than -50 dB.

For the 2.4 metres reflector at C band the far field defined by $2D^2/\lambda$ is approximately 247 metres. The ERA far field range is 220 metres. This is reflected in the measurement uncertainties given in Section 7.4.5. For the gain measurements the feed chain can be displaced to re-focus the antenna at the range at which the measurements are made. Based on the IEEE Standard Test Procedures for Antennas, this displacement is about 5 mm.

7.2 Test Equipment

The test equipment used in the laboratory and test range measurements are listed in Tables 2 and 3 respectively.

Table 2: Laboratory Equipment Check List

Project No:	**51-ST-12698**	**Phase:**	**1**	**Engineer:**	MMD
Project Title	**2.4 metres C Band Antenna Testing**				
Measurement:	Tune and Test			**Date:**	3 October 2006

Equipment Used	Serial No.	Calibration Date	Tick Box
Amplitude analyser 8757A	2706A2326	15/09/2005	
Sweep oscillator mainframe 8350B	2649U02154	15/09/2005	
RF plug-in 83550A 8-20 GHz	2741A00528	15/09/2005	
RF plug-in 86260B 10-15.5 GHz	2417A00655	Indication only	
Frequency counter EIP578	374	Indication only	
HP5342A	1916A01711	24/10/2005	
Plotter 7550A	2520A12676	Indication only	
Detector 11664E	02229	15/09/2005	
Detector 11664E	02172	15/09/2005	
Detector 11664E	04878	15/09/2005	
Detector 11664D	00626	14/02/2005	
Detector 11664D	00627	14/02/2005	
Detector 11664D	00632	14/02/2005	
Waveguide coupler WG17132-10	582	Indication only	
Waveguide coupler WG17132-20	220	Indication only	
Waveguide coupler WG17132-20	183	Indication only	
Waveguide to coax transitions WG17094-NF10	53	Indication only	
Waveguide to coax transitions WG17093-NF10	1384	Indication only	
Waveguide to coax transitions WG17093-NF10	1927	Indication only	

Equipment Used	Serial No.	Calibration Date	Tick Box
Test cables used:			
Rosenberger 18 GHz	924201	Indication only	✓
Rosenberger 18 GHz	924202	Indication only	✓
Rosenberger 40 GHz	924701	Indication only	
Rosenberger 40 GHz	924702	Indication only	
Wiltron semi-rigid 3670 K50-2	101003	Indication only	
Wiltron semi-rigid 3670 K50-2	301010	Indication only	
Other: 5061-5359	847015	Indication only	
Vector Network Analyser - Wiltron 360 comprising:			
VNA 800-251	919003	13/12/2005	✓
Source 360Ss69	916002	13/12/2005	✓
Test set 3621A	912012	13/12/2005	✓
HP8753B VNA	2824U04058	13/12/2005	✓
Calibration Kits:			
WG6 Flann 06708	21	Indication only	
WG15 Flann 15708	23	Indication only	
WG16 Maury X7005	Individually marked	Indication only	
WG17 Flann 17708	21	Indication only	
WG18 Flann 18708	21	Indication only	
WG20 Flann 20708	23	Indication only	
WG22 Flann 22708	24	Indication only	
Wiltron Coaxial Kit 3652-1	80024	13/12/2005	✓
HP 7mm Cal Kit 85031B	2541A00868	13/12/2005	
Other Equipment:			
HP "N" type Fixed 6B Attenuator Type 8419B	23557	Indication only	
Flann Waveguide to coax transitions Type 17091	25 and 26	Indication only	

Table 3: Antenna Systems Range Equipment List

Equipment Used	Serial No.	Calibration Date	Tick Box
For range testing of antenna assembly:			
Scientific Atlanta Positioner Az/El/Az 55150A-1	72AG	Indication Only	✓
Scientific Atlanta Positioner Polarisation 56060-18	489	Indication Only	✓
Scientific Atlanta Standard Gain Horn Model No:12-5.8	870	Indication Only	✓
Dell Computer with Midas Software	DTOHZOJ	Indication Only	✓
Agilent 20 GHz Lo Source 83623B	3844A01682	09/02/2006	✓
Agilent 50 GHz RF Source 83650B	3844A01529	09/02/2006	✓
Agilent Receiver 8530A	3901A00722	09/02/2006	✓
Agilent Test Mixer Module 85320A-H50	2944A00942	09/02/2006	✓
Agilent Ref Mixer Module 85320B	2944A00156	09/02/2006	✓
Agilent Lo/IF distribution Unit 85309A	3224A00707	09/02/2006	✓
Orbit Pos. Controller AL-4806-3A	91	Indication Only	✓
Orbit Pos. Controller AL-4906-3A	292	Indication Only	✓

7.3 Laboratory Tests

The feed chain was measured in the laboratory. The return loss measurements were swept frequency over 5.925 - 6.425 GHz, whilst isolation was measured over 3.7 – 6.425 GHz. The following were measured: The following were measured:

i) Return loss at Tx port.

ii) Port-to-port isolation.

When measuring the return loss, the unused port was terminated in a match load and for all measurements the horn was radiating into free-space or suitable anechoic shield.

The measurements are given in Figures 3 and 4 and summarised in Table 4.

Typical measurement accuracy after 12-term vector error correction can be read directly from graphs provided by the analyser manufacturer for reflection coefficient and transmission loss. The errors are Root-Sum-Squares (RSS) calculations of the contributions of residual directivity, load and source match, frequency response, isolation, network analyser dynamic accuracy and connector repeatability. This gives:

i) Return los of 20 dB : Uncertainty (Reflection coefficient) =0.017 dB (RSS)

ii) Return los of 15 dB : Uncertainty (Reflection coefficient) =0.019 dB (RSS)

Table 4: Laboratory Measurements

	Frequency	**Figure**	**Measured Value**	**VSWR**
Return loss	5.925 – 6.425 GHz	Figure 3	-27 dB	1.1:1
Isolation Tx - Rx	3.7 – 4.2 GHz 5.925 – 6.425 GHz	Figure 4	> 30 dB > 35 dB	-

7.4 Antenna Range Measurements

7.4.1 Introduction

The procedures undertaken at ERA are consistent with *IEEE Standard Test Procedures for Antennas ANSI/IEEE Std 149-1979*. The co-polar and cross-polar pattern measurements were undertaken using a circularly polarised C band transmit source. The on-axis axial ratio was measured using a rotating linearly polarised C band horn.

The antenna under test (AUT) was installed on the positioner and the mixer connected to the relative antenna port.

7.4.2 Pattern measurements procedure

For antenna pattern measurements:

i) Select the frequencies; co-polarise the transmitter with the AUT and steer the AUT to receive maximum signal. Set azimuth and elevation indications to zero.

ii) Rotate the required axis and record the co-polar pattern.

iii) Switch transmitter polarisation and record the cross-polar pattern.

iv) Repeat for other frequencies in the band.

All the measurements were taken by rotating in azimuth. For the elevation cut measurements the AUT was rotated by 90° and the measurements taken with the AUT rotated in azimuth. Patterns were taken ±180° or a narrower limited range with the angular increment 0.2° or less, as described in the Range Measurements Plan, Section 7.4.6.

7.4.3 Gain measurements procedure and results

For the gain measurements the feed chain was displaced to re-focus the test antenna at the range at which the measurements were made. For the 2.4 metre antenna and 220 metre range at C band, the feed chain was displaced by about 5 mm.

The antenna gain measurements were performed by comparing with a commercially available linearly polarised Standard Gain Horn (SGH):

i) Locate Standard Gain Horn (SGH) on antenna mount.

ii) Select frequencies; co-polarise the transmitter with the AUT and steer the AUT to receive maximum signal. Set azimuth and elevation indications to zero.

iii) Record the co-polar signal from the AUT.

iv) Record the signal from the SGH vertically and horizontally polarised.

v) Repeat iii) and iv).

The AUT gain was determined by the average of the two measurements taken. The SGH is linearly polarised and the correction (3.01 dB) is also applied. Table 5 gives the gain computations.

Table 5: Measured Gain

Frequency GHz	**5.925**	**6.175**	**6.425**
AUT dB	-22.70	-20.95	-20.53
SGH Vertically polarised dB	-44.76	-43.04	-42.88
SGH Horizontally polarised dB	-45.09	-43.21	-43.19
Diff Vertically Polarised dB	22.06	22.09	22.35
Diff Horizontally Polarised dB	22.39	22.26	22.66
Average difference (-3.01 dB)	19.22	19.17	19.50
SGH Gain dBi	21.77	21.95	22.12
AUT Gain dBi	**40.99**	**41.12**	**41.62**

7.4.4 Axial ratio measurements procedure and results

The antenna on-axis axial ratio measurements were recorded using a rotating linearly polarised horn as the transmitter:

i) Change transmitter to linearly polarised rotating source.

ii) Select frequencies; steer the AUT to receive maximum signal. Set azimuth and elevation indications to zero.

iii) Record the signal from the AUT whilst rotating the transmit source.

Table 6: Axial ratio measurements

Frequency	Axial Ratio dB	Axial Ratio
5.925 GHz	0.78 dB	1.09:1
6.175 GHz	0.52 dB	1.06:1
6.425 GHz	0.66 dB	1.08:1

7.4.5 Far field range measurement uncertainties

Typical far field range measurements uncertainties are given in Table 7.

Table 7: Far field Range measurement uncertainties

Parameter	Value
Mutual Coupling	0.0 dB
Tx Amplitude Taper (0.25 dB)	0.1 dB
Reflections (Elevated Range)	0.01 dB
Frequency Stability	0.01%
Power Level	< ± 0.05 dB
Standard Gain Horn	± 0.25 dB
Spacing Tx to AUT	0.04 dB
Tx isolation	0.01 dB
Total RSS (Root-Sum-Square)	**0.28 dB**

The overall accuracy of the gain measurements undertaken using a commercial Standard Gain Horn is estimated to ±0.28 dB.

7.4.6 Range measurements plan

The Test Plan for the range measurements is given in Table 8. All the measurements were recorded by rotating in azimuth. The elevation cut measurements were recorded by rotating in azimuth after turning the AUT by 90°. Co-polar and cross-polar component patterns were taken for ±180°, ±45° and ±22.5° in θ with angular increment of 0.2°, 0.1° and 0.05° respectively.

All the measurements were recorded as ASCII text files in amplitude (dB) and phase (deg). The data were then processed in Excel spreadsheets in the format required by Anatel and supplied with the Test Report.

The recorded patterns are included in this Test Report and identified by the Pattern Number as given in Table 8. Table 9 summarises the sidelobe level deviations above the specified template.

Table 8: Range measurements Test Plan

				Pattern Number		
Angular scale degrees	**Scale dB**	**Cut**	**Component**	**Tx Frequency GHz**		
				5.925	**6.175**	**6.425**
±22.5	60	Azimuth	Co & Cross	1	2	3
±22.5	60	Elevation	Co & Cross	4	5	6
±45	60	Azimuth	Co & Cross	7	8	9
±45	60	Elevation	Co & Cross	10	11	12
±180	80	Azimuth	Co & Cross	13	14	15
±180	80	Elevation	Co & Cross	16	17	18
Gain			Co	✓	✓	✓
Axial Ratio				✓	✓	✓

Table 9: Sidelobe level deviations

	Frequency					
	5.925 GHz		6.175 GHz		6.425 GHz	
Range	**Azimuth**	**Elevation**	**Azimuth**	**Elevation**	**Azimuth**	**Elevation**
0° – 90°	0.0 dB	0.9 dB	1.2 dB	2.8 dB	0.4 dB	0.4 dB
90° – 180°	3.3 dB	5.1 dB	2.9 dB	4.8 dB	4.1 dB	4.8 dB

7.4.7 Antenna range Test Log Sheet

ANTENNA RANGE TEST LOG SHEET			
TITLE:	Schlumberger 2.4m Reflector	OPERATOR:	MMD
PROJECT NO:	12698	DATE:	12 October 2006
DESCRIPTION:	2.4m Reflector	FREQUENCIES:	5.925, 6.175, 6.425 GHz
TEST PLAN:	As test Plan 12698/TP002	DATAFILE DIRECTORY:	Data/Schlumberger_12698

DATA FILE NAME		
PATTERN	CO-POLAR	CROSS-POLAR
±22.5° 60 dB Co & X Azimuth	schlum 45	schlum 46
±22.5° 60 dB Co & X Elevation	schlum 55	schlum 56
±45° 60 dB Co & X Azimuth	schlum 47	schlum 48
±45° 60 dB Co & X Elevation	schlum 53	schlum 54
±178.6° 80 dB Co & X Azimuth	schlum 49	schlum 50
±178.6° 80 dB Co & X Elevation	schlum 51	schlum 52

SET-UP FILE NAMES:		DIRECTORY:	
PROCESSED DATA FILE NAMES:		AZ/EL ALIGNMENT:	Yes
TX EQUIPMENT USED:			
COMMENTS: .			

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360 NETWORK ANALYZER

MODEL:		DATE: 3/10/06		Page 1
DEVICE ID:		OPERATOR: MMD		

SWEEP DATA

START:	3.5000 GHz	GATE START:	-	ERROR CORR:	12 - TERM
STOP:	6.5000 GHz	GATE STOP:	-	AVERAGING:	1 PTS
STEP:	0.0180 GHz	GATE:	-	IF BNDWDTH:	REDUCED
		WINDOW:	-		

	------------CH3------------
PARAMETER:	S11
NORMALIZATION:	OFF
REFERENCE PLANE:	0.0000 mm
SMOOTHING:	0.0 PERCENT
DELAY APERTURE:	-

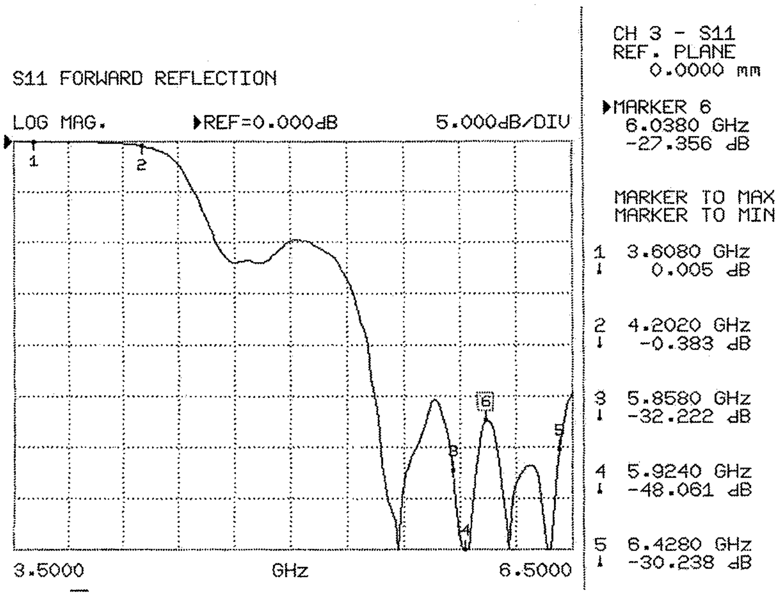

Figure 3: Measured return Loss

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360 NETWORK ANALYZER

MODEL:		DATE:	3/10/06		Page 1
DEVICE ID:		OPERATOR:	MMD		

SWEEP DATA

START:	3.5000 GHz	GATE START:	-	ERROR CORR:	12 - TERM
STOP:	6.5000 GHz	GATE STOP:	-	AVERAGING:	1 PTS
STEP:	0.0180 GHz	GATE:	-	IF BNDWDTH:	REDUCED
		WINDOW:	-		

	CH3
PARAMETER:	S21
NORMALIZATION:	OFF
REFERENCE PLANE:	0.0000 mm
SMOOTHING:	0.0 PERCENT
DELAY APERTURE:	-

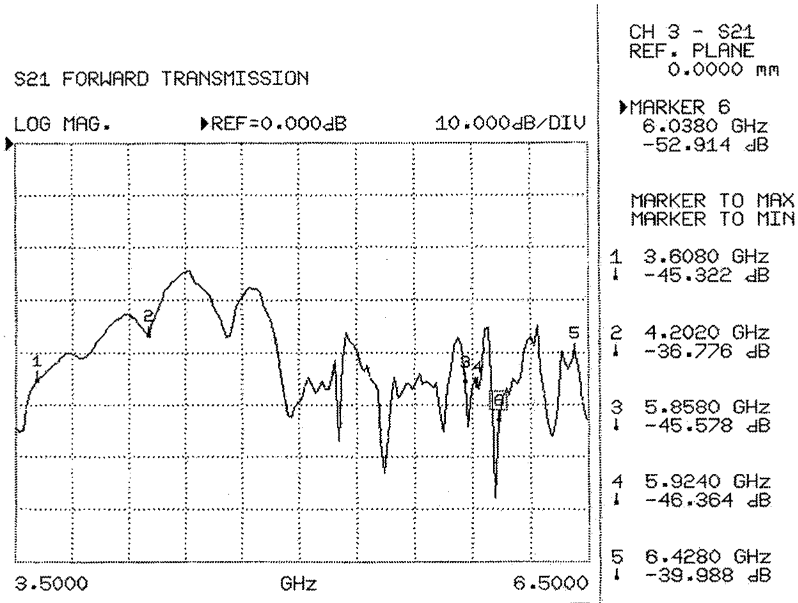

Figure 4: Measured Port to Port isolation

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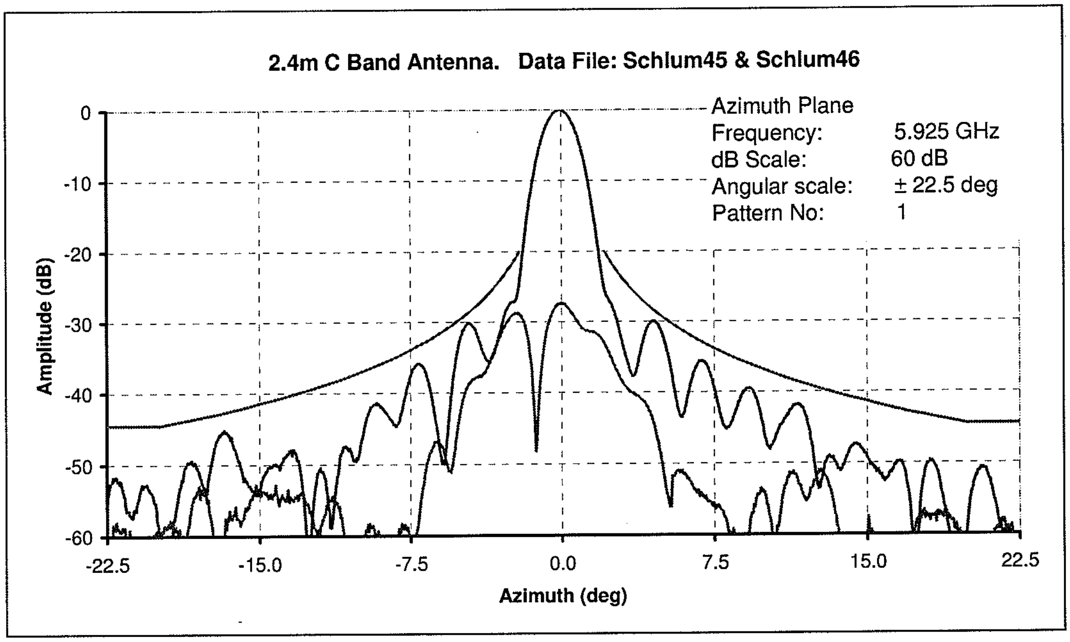
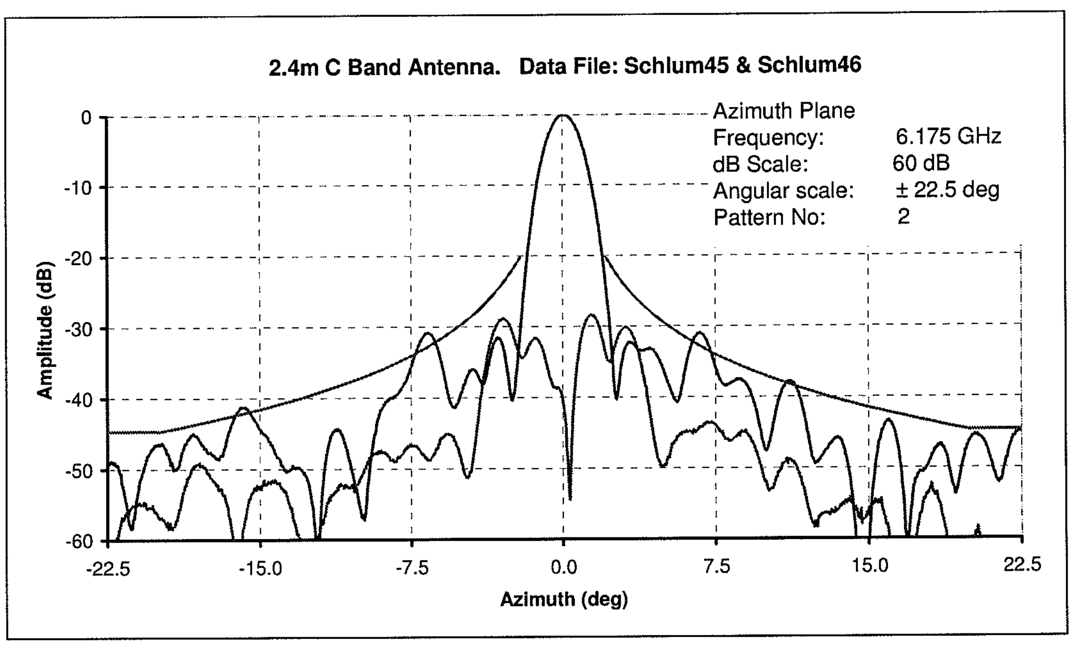
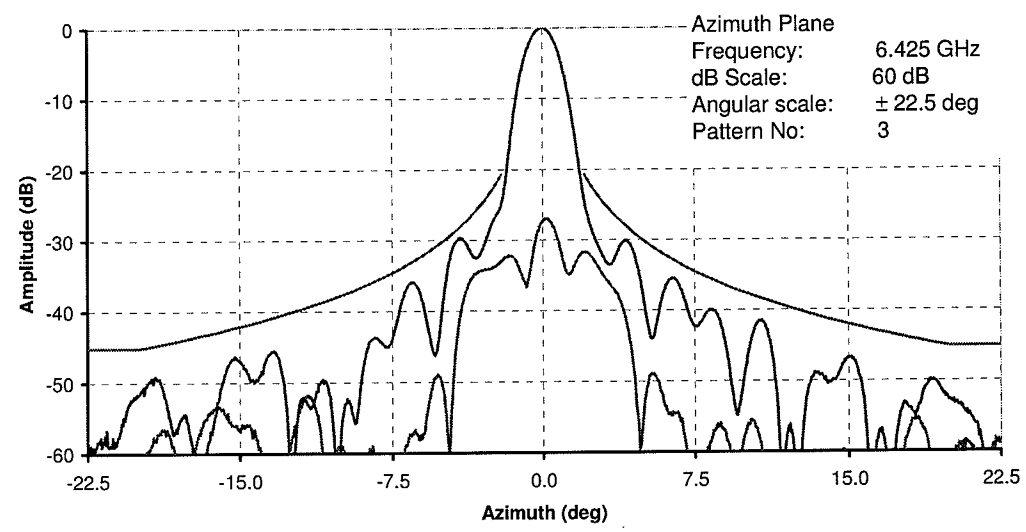
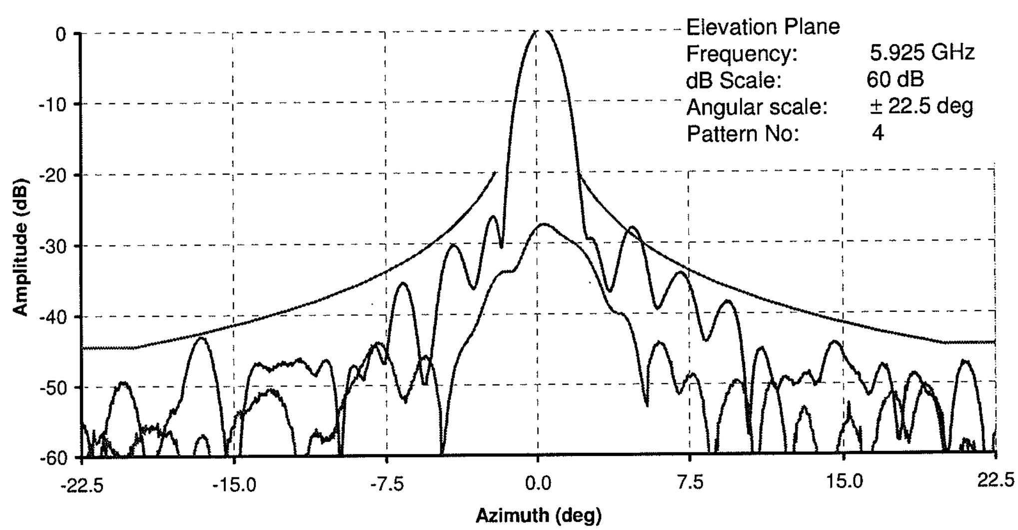

2.4m C Band Antenna. Data File: Schlum45 & Schlum46
Azimuth Plane
Frequency: 5.925 GHz
dB Scale: 60 dB
Angular scale: ± 22.5 deg
Pattern No: 1
Amplitude (dB)
0
-10
-20
-30
-40
-50
-60
-22.5
-15.0
-7.5
0.0
7.5
15.0
22.5
Azimuth (deg)


2.4m C Band Antenna. Data File: Schlum45 & Schlum46
Azimuth Plane
Frequency: 6.175 GHz
dB Scale: 60 dB
Angular scale: ± 22.5 deg
Pattern No: 2
Amplitude (dB)
0
-10
-20
-30
-40
-50
-60
-22.5
-15.0
-7.5
0.0
7.5
15.0
22.5
Azimuth (deg)

2.4m C Band Antenna. Data File: Schlum45 & Schlum46



2.4m C Band Antenna. Data File: Schlum55 & Schlum56



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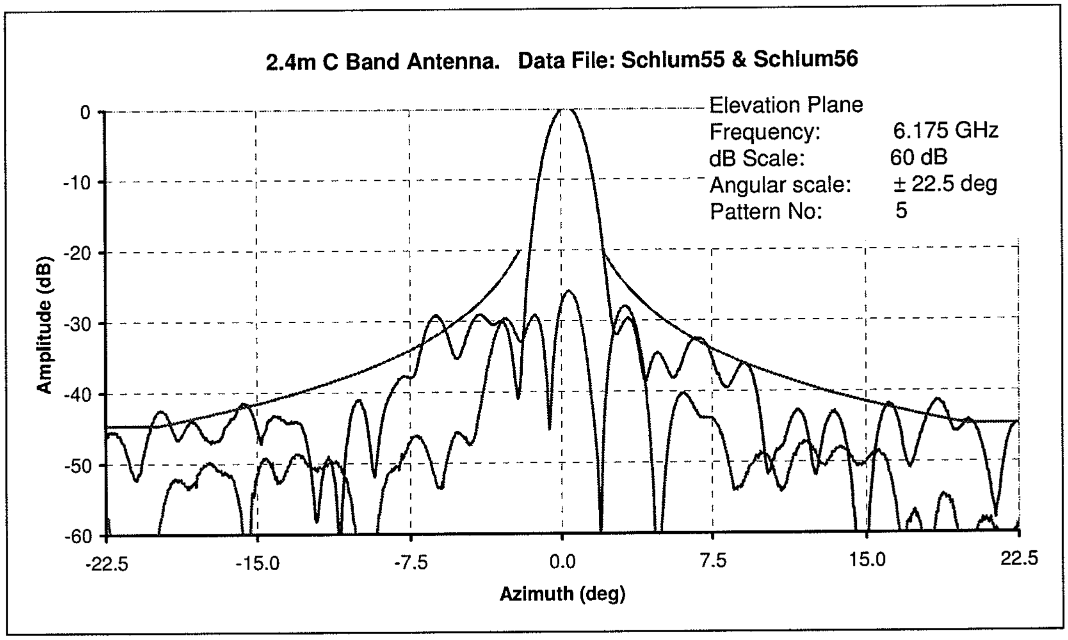
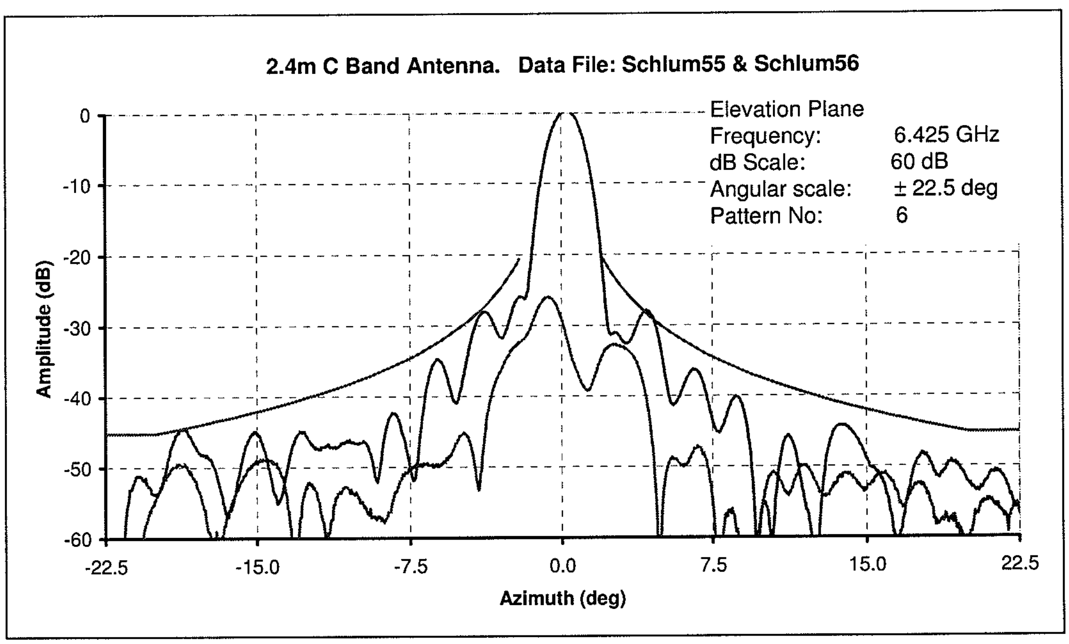
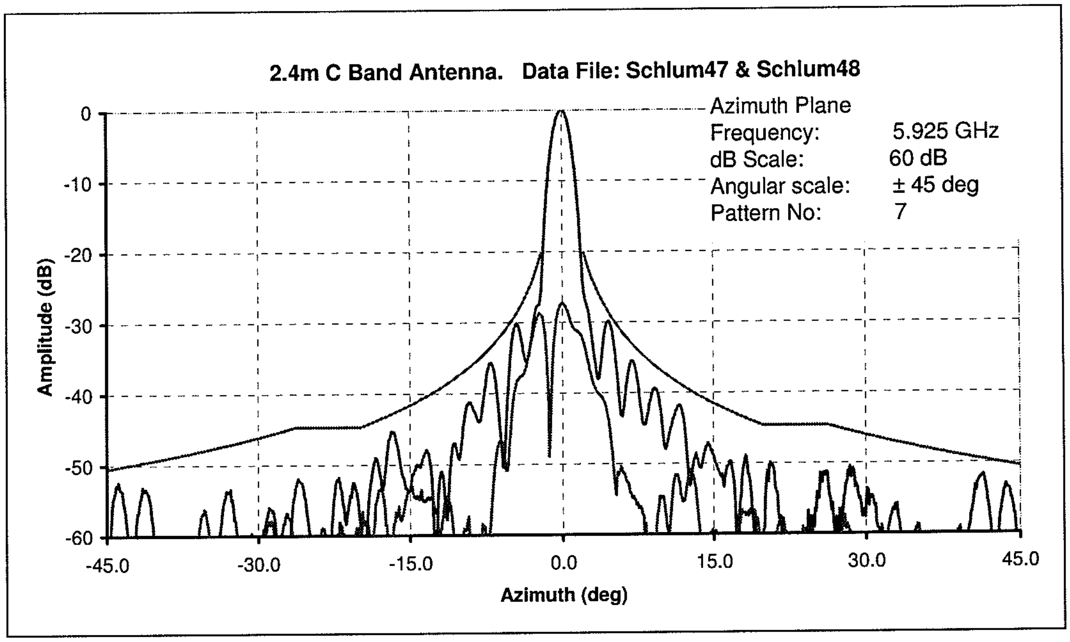
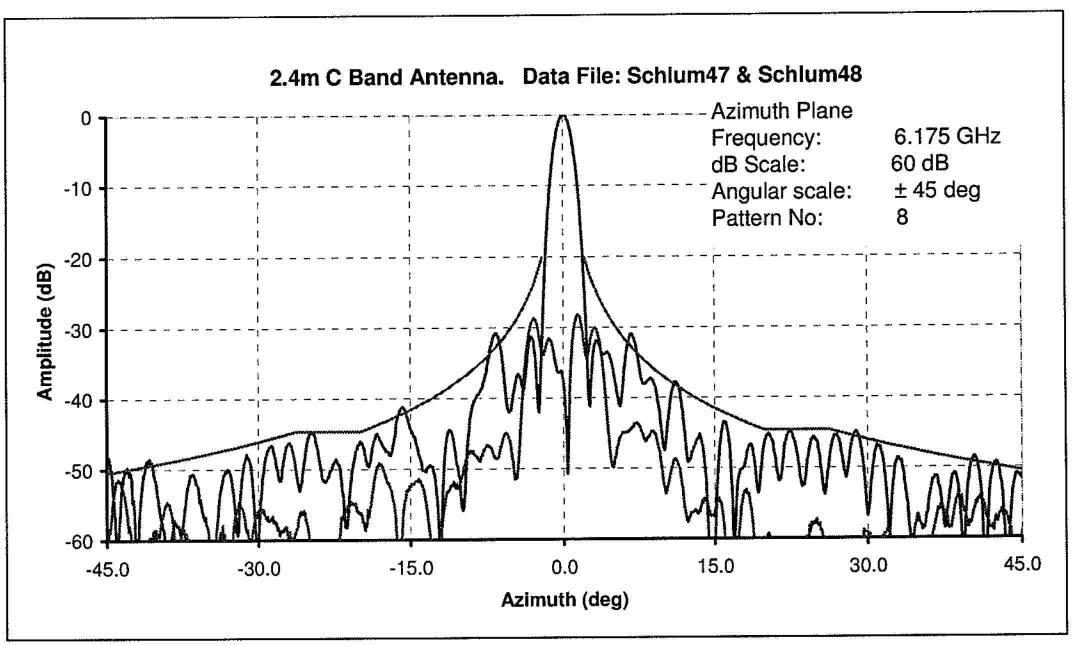
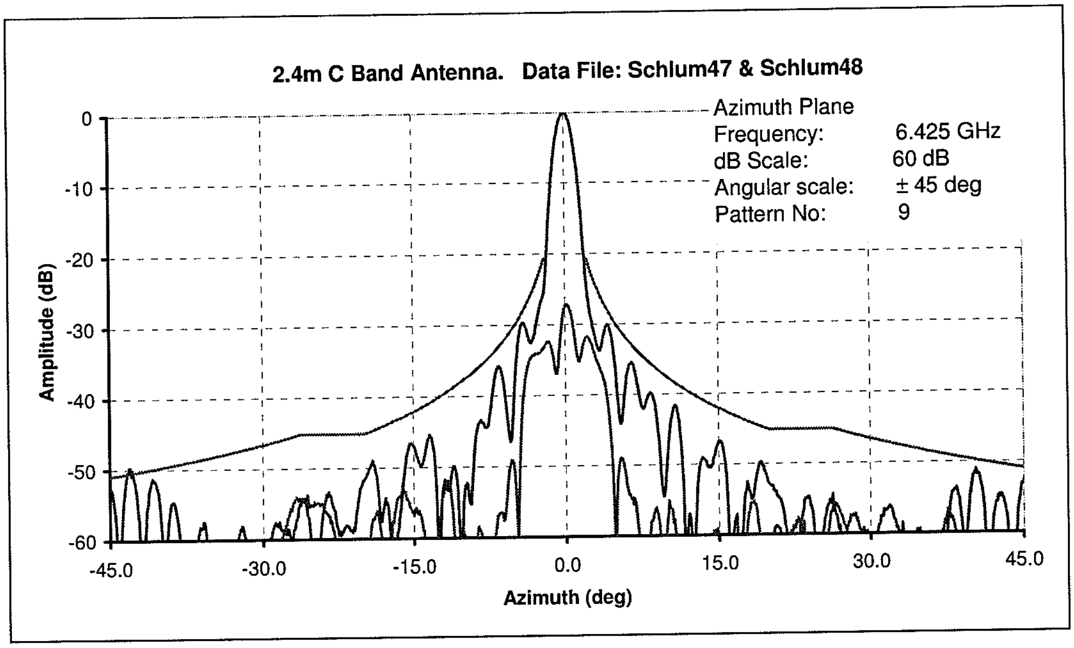


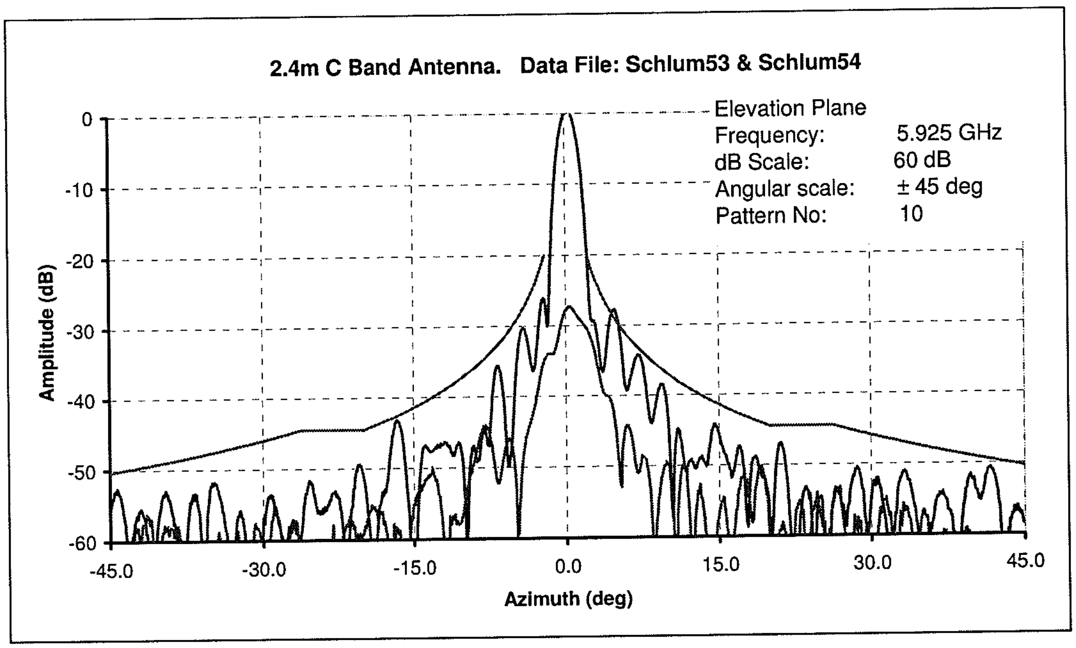


ERA TECHNOLOGY

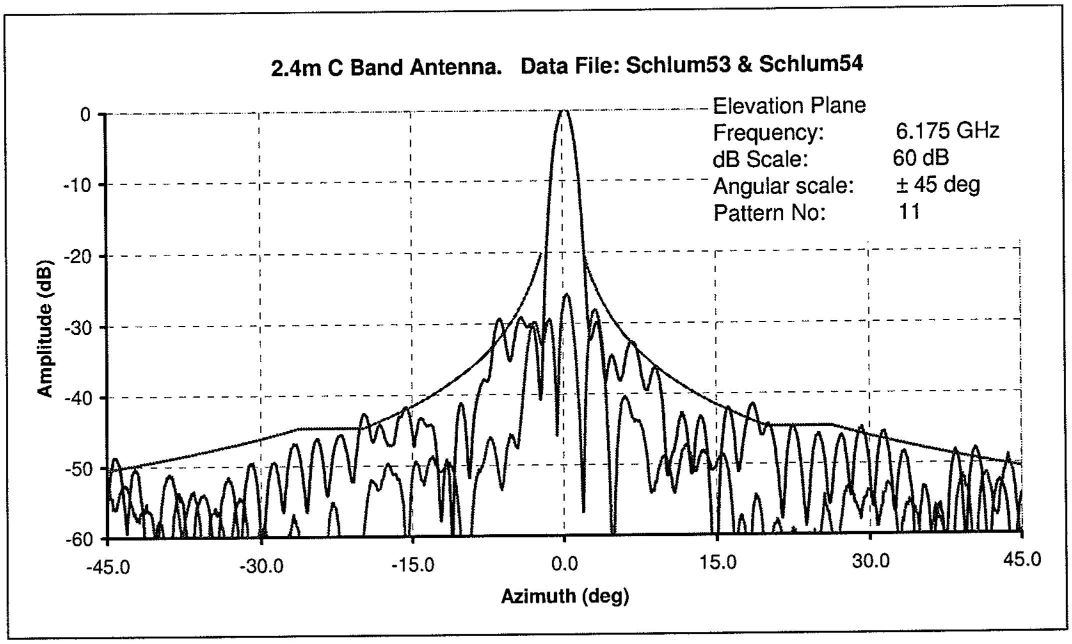

2.4m C Band Antenna. Data File: Schlum47 & Schlum48
Azimuth Plane
Frequency: 5.925 GHz
dB Scale: 60 dB
Angular scale: ± 45 deg
Pattern No: 7
Amplitude (dB)
0
-10
-20
-30
-40
-50
-60
-45.0
-30.0
-15.0
0.0
15.0
30.0
45.0
Azimuth (deg)

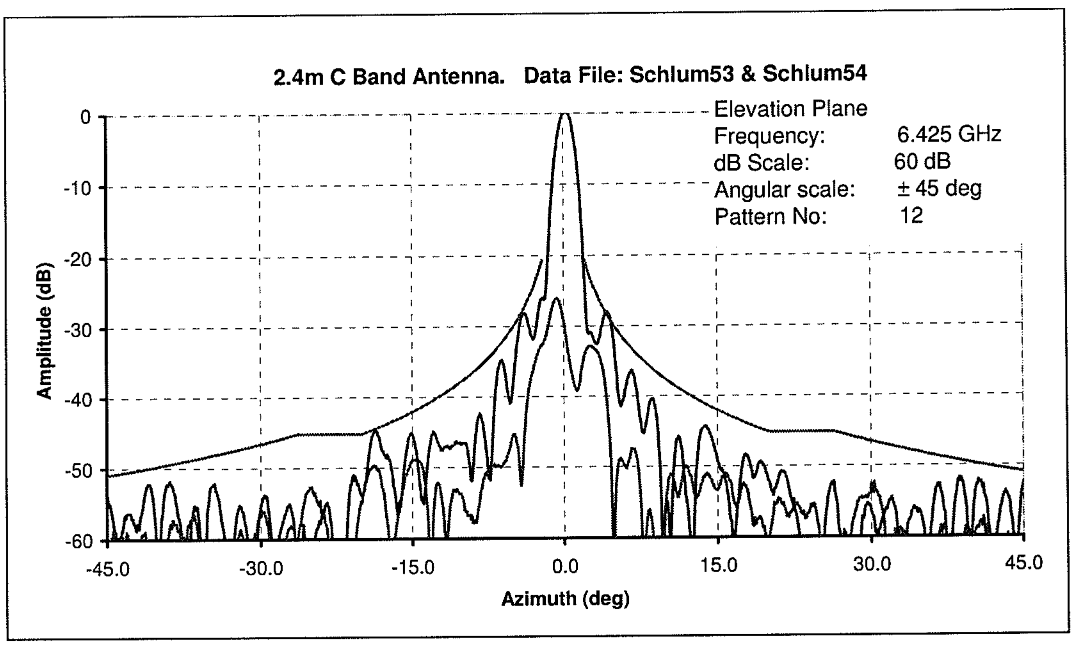

2.4m C Band Antenna. Data File: Schlum47 & Schlum48
Azimuth Plane
Frequency: 6.175 GHz
dB Scale: 60 dB
Angular scale: ± 45 deg
Pattern No: 8
Amplitude (dB)
0
-10
-20
-30
-40
-50
-60
-45.0
-30.0
-15.0
0.0
15.0
30.0
45.0
Azimuth (deg)

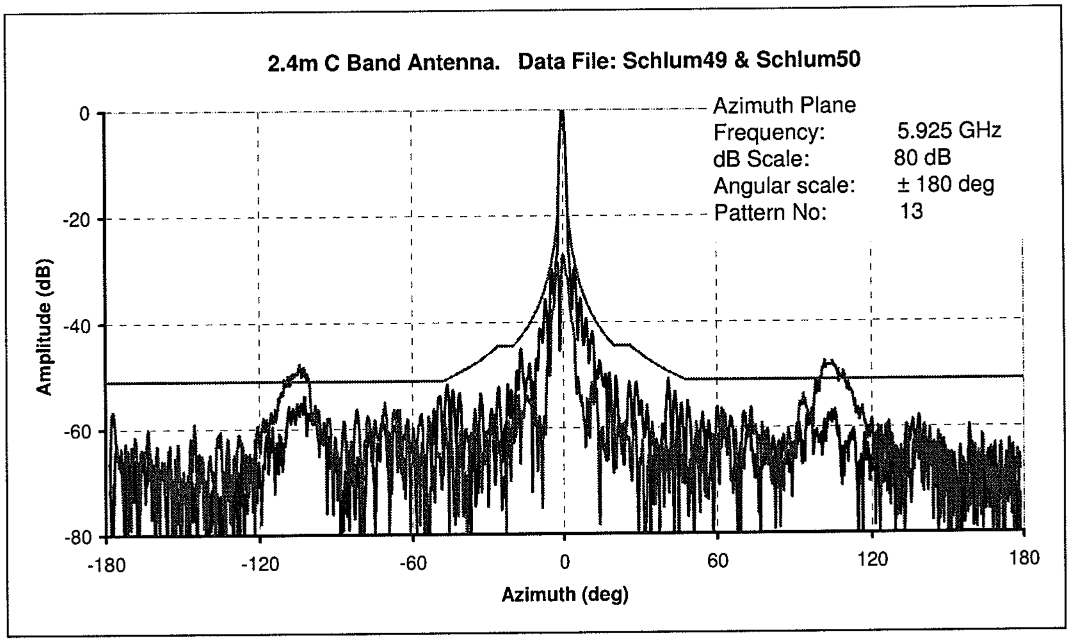


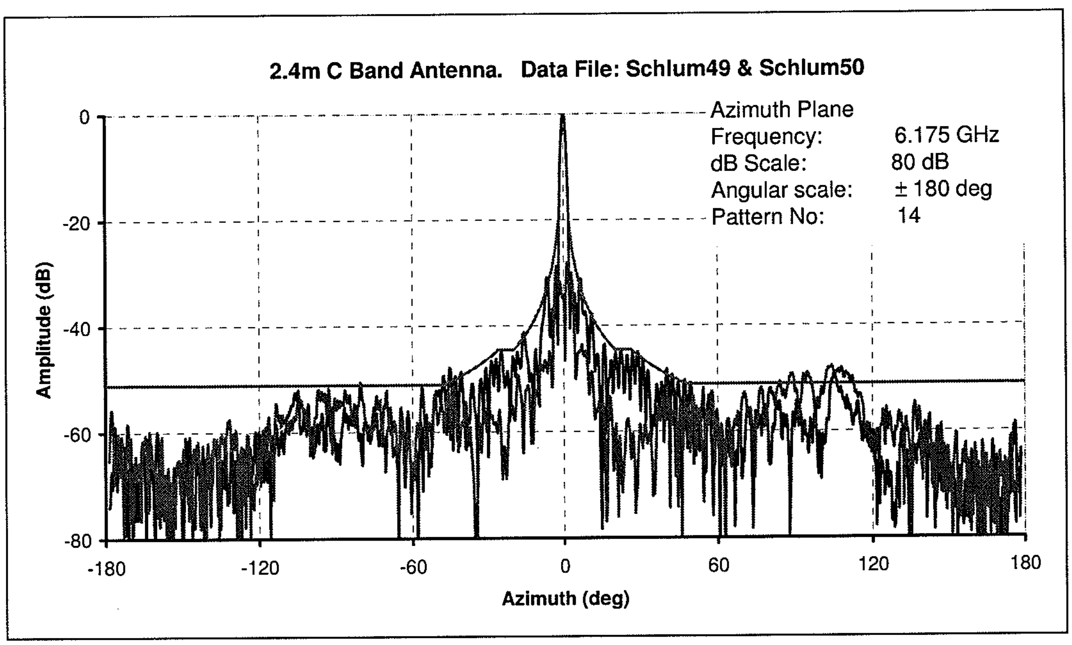


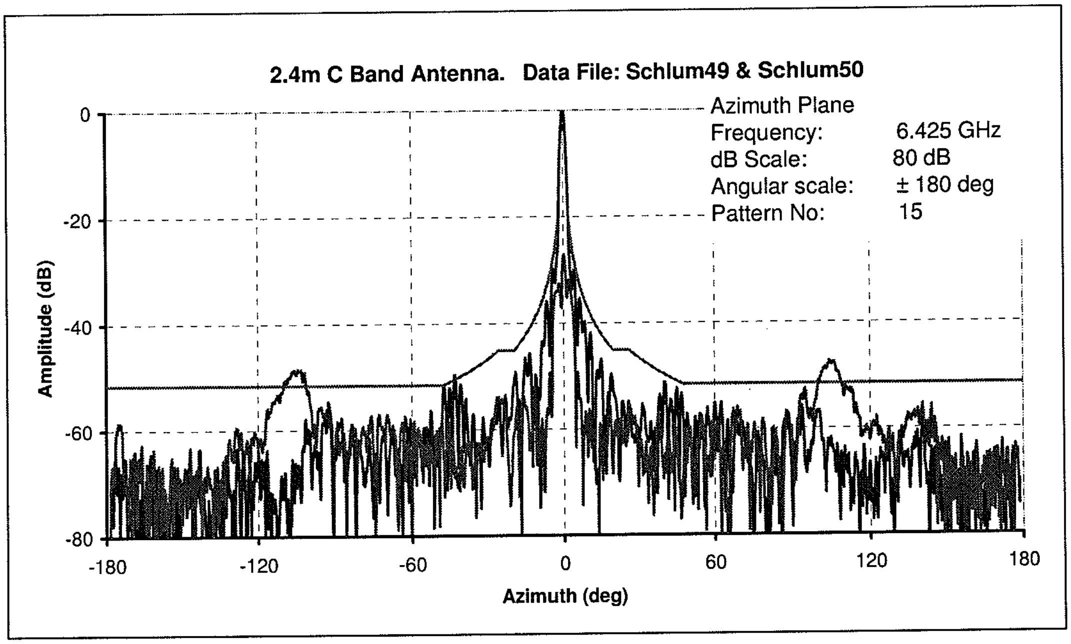
ERA TECHNOLOGY

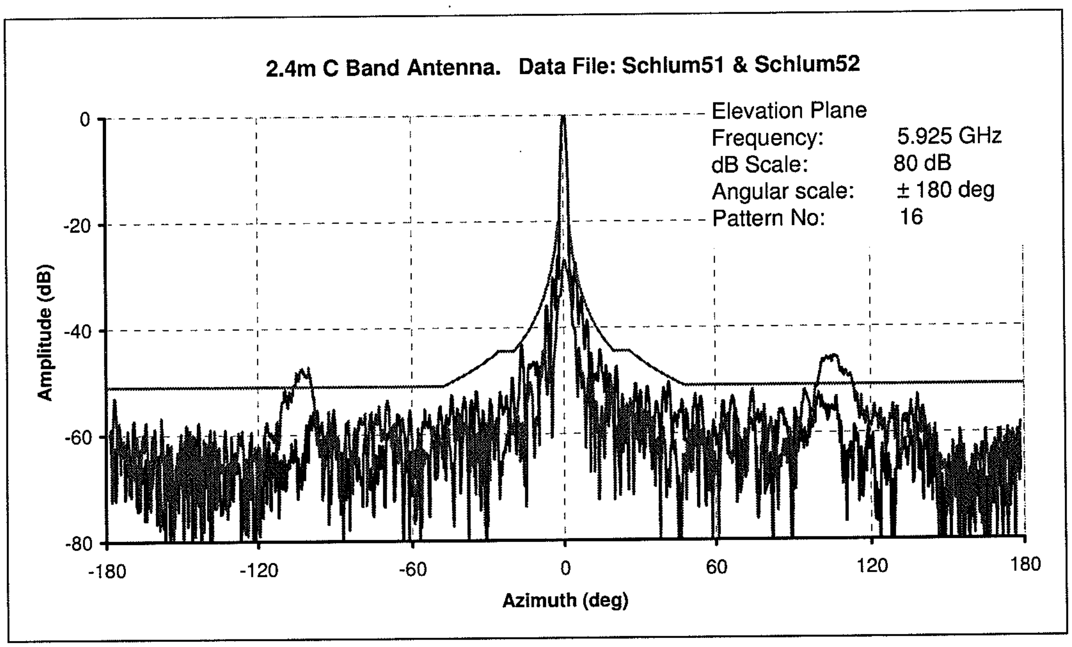

2.4m C Band Antenna. Data File: Schlum53 & Schlum54
Elevation Plane
Frequency: 6.175 GHz
dB Scale: 60 dB
Angular scale: ± 45 deg
Pattern No: 11
Amplitude (dB)
0
-10
-20
-30
-40
-50
-60
-45.0
-30.0
-15.0
0.0
15.0
30.0
45.0
Azimuth (deg)


2.4m C Band Antenna. Data File: Schlum53 & Schlum54
Elevation Plane
Frequency: 6.425 GHz
dB Scale: 60 dB
Angular scale: ± 45 deg
Pattern No: 12
Amplitude (dB)
0
-10
-20
-30
-40
-50
-60
-45.0
-30.0
-15.0
0.0
15.0
30.0
45.0
Azimuth (deg)

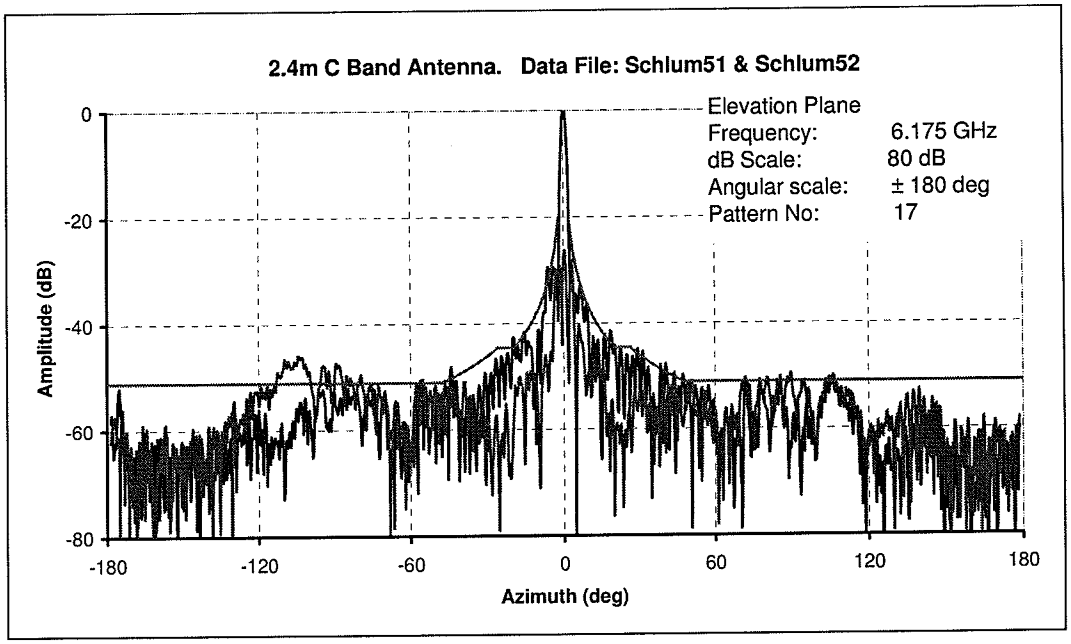

2.4m C Band Antenna. Data File: Schlum49 & Schlum50
Azimuth Plane
Frequency: 5.925 GHz
dB Scale: 80 dB
Angular scale: ± 180 deg
Pattern No: 13
Amplitude (dB)
0
-20
-40
-60
-80
-180
-120
-60
0
60
120
180
Azimuth (deg)

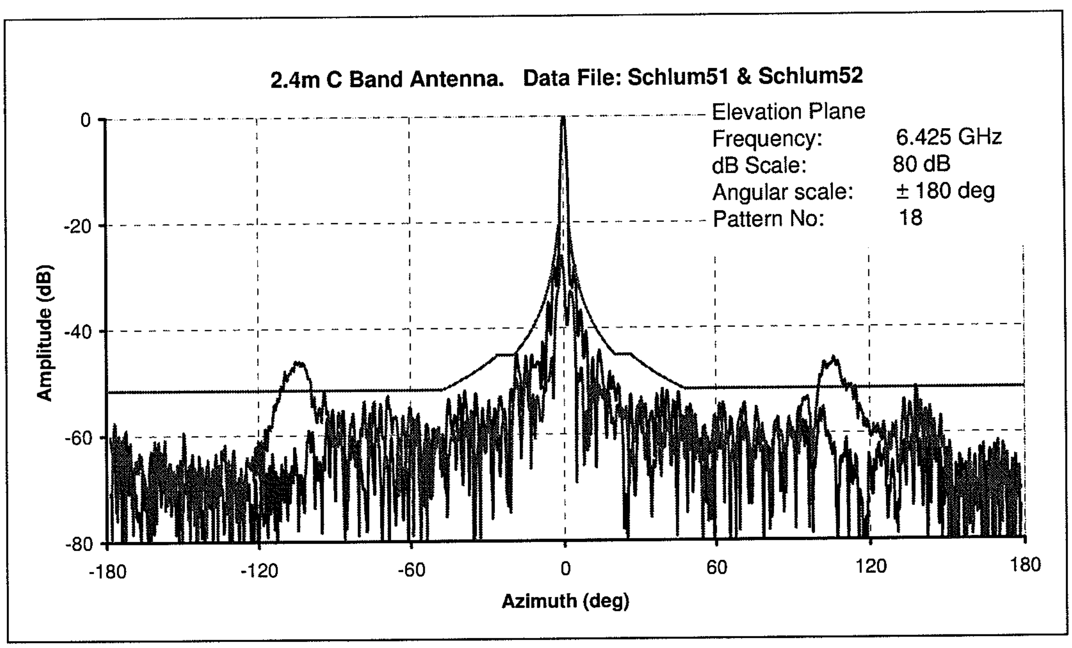

2.4m C Band Antenna. Data File: Schlum49 & Schlum50
Azimuth Plane
Frequency: 6.175 GHz
dB Scale: 80 dB
Angular scale: ± 180 deg
Pattern No: 14
Amplitude (dB)
0
-20
-40
-60
-80
-180
-120
-60
0
60
120
180
Azimuth (deg)





ERA TECHNOLOGY


2.4m C Band Antenna. Data File: Schlum51 & Schlum52
Elevation Plane
Frequency: 6.175 GHz
dB Scale: 80 dB
Angular scale: ± 180 deg
Pattern No: 17
Amplitude (dB)
0
-20
-40
-60
-80
-180
-120
-60
0
60
120
180
Azimuth (deg)


2.4m C Band Antenna. Data File: Schlum51 & Schlum52
Elevation Plane
Frequency: 6.425 GHz
dB Scale: 80 dB
Angular scale: ± 180 deg
Pattern No: 18
Amplitude (dB)
0
-20
-40
-60
-80
-180
-120
-60
0
60
120
180
Azimuth (deg)

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