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345723

Report 11157
June 1998

GENCORP
AEROJET

Integrated Advanced Microwave Sounding Unit-A (AMSU-A)

Performance Verification Report

METSAT 3 A2 Assembly, Serial Number 107

AMSU-A2 Antenna Assembly, P/N 1331210-3-SPN, S/N 03

Contract No. NAS 5-32314
CDRL 208

Submitted to:

National Aeronautics and Space Administration
Goddard Space Flight Center
Greenbelt, Maryland 20771

Submitted by:

Aerojet
1100 West Hollyvale Street
Azusa, California 91702

Aerojet

Report No. 11157
June 1998

Integrated Advanced Microwave Sounding Unit-A (AMSU-A) Verification Test Report METSAT 3 A2 Assembly Serial Number 107

TEST ITEM: AMSU-A2 ANTENNA ASSEMBLY P/N 1331210-3-SPN SERIAL NUMBER 03

Submitted To:

National Aeronautics and Space Administration
Goddard Space Flight Center
Greenbelt, Maryland 20771

Submitted By:

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1100 West Hollyvale Street
Azusa, California 91702

AMSU-A2 VERIFICATION TEST REPORT

Test Item:	AMSU-A2 Antenna Assembly, P/N 1331210-3-SPN S/N F03
Level of Assembly:	Subassembly
Type Hardware:	Antenna Assembly
Verification Procedure No.	AE-26002/4J
Initial Test:	Start Date: 5/27/98
Applicable Verification Plan:	Verification Plan, Report No. 10360
Facility Description:	AESD Compact Antenna Range

D. H. Brent
Test Engineer

6/04/98
Date

1.0 SUMMARY

The Flight Model AMSU-A2 Antenna Assembly, P/N 1331210-3, was acceptance tested per AES Test Procedure AE-26002/4J. The tests included beamwidth, beam pointing, beam efficiency and a comprehensive set of antenna patterns as required in Paragraph 6.2.6 of the AMSU-A Performance and Operation Specification, S-480-80.

The AMSU-A2 Antenna Assembly satisfactorily passed all requirements of the S-480-80 specification.

During beam pointing tests, the window channel means for beam positions 1 and 15 exceeded the allowable limit of $0.0° \pm 0.2°$. The reflector assembly, P/N 1355835-1, S/N 06, was replaced with the next available reflector assembly, S/N 07. Beam pointing tests were repeated and the reflector satisfactorily met all requirements.

2.0 REASON FOR TEST

The Acceptance Test Procedure, AE-26002/4J, consists of tests designed to show compliance of the antenna assemblies with Paragraphs 3.7 and 6.2.6 of the S-480-80 specification. The tests reported herein demonstrate the acceptability of the AMSU-A antenna assemblies.

3.0 ABSTRACTS, CONCLUSIONS AND RECOMMENDATIONS

Abstracts containing descriptions of analyses used to derive beam pointing angle, beam efficiency and antenna return loss from measured data are provided in Section 3.4 of the AE-26002/4J test procedure.

4.0 RESULTS OF TESTS

The results of the tests required in AES Test Procedure AE-26002/4J are presented in the following section as test data. As shown on the test data sheets the measured data passed all requirements.

5.0 TEST DATA

Test data for the AMSU-A2 antenna assembly is attached. The data sheet number, type of tests and antenna-under-test is shown in Table 1. Also attached is a complete set of principal plane, co-polar antenna patterns for the AMSU-A2 unit.

TABLE 1

DATA SHEET	TEST	ANTENNA
5	Derivation of Window Channel Mean	A2
16	Laser Alignment System Verification	A2
18	Dynamic Range/Amplitude Accuracy Test	A2
19	Beamwidth Test	A2
20	Crosstrack Alignment	A2
21	Downtrack Alignment	A2
23	Beam Efficiency Test	A2

TEST DATA SHEET 5

Derivation of Window Channel Mean (A1 and A2)

A1-1 or A1-2

Frequency (GHz) (± 0.1)	Beam Position 1		Beam Position 15		Beam Position 30	
	Cross Track (Deg)	Down Track (Deg)	Cross Track (Deg)	Down Track (Deg)	Cross Track (Deg)	Down Track (Deg)
50.3 (Ch 3)						
52.8 (Ch 4)	Not Required for A1 Testing					
89.0 (Ch 15)						
Computed Mean*						
Required Mean	N/A	0.0° ± 0.2°	N/A	0.0° ± 0.2°	N/A	0.0° ± 0.2°
Pass/Fail	N/A		N/A		N/A	

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A2

Frequency (GHz) (± 0.1)	Beam Position 1		Beam Position 15		Beam Position 30	
	Cross Track (Deg)	Down Track (Deg)	Cross Track (Deg)	Down Track (Deg)	Cross Track (Deg)	Down Track (Deg)
23.8 (Ch 1)	48.40	+.14	1.71	+.19	-48.29	+.11
31.4 (Ch 2)	48.41	+.12	1.69	+.09	-48.33	+.03
Computed Mean*	48.41	+.13	1.70	+.14	-48.31	+.07
Required Mean	N/A	0.0° ± 0.2°	N/A	0.0° ± 0.2°	N/A	0.0° ± 0.2°
Pass/Fail	N/A	P	N/A	P	N/A	P

* Mean is defined as:

$$\text{Mean} = \frac{\text{Max Angle} - \text{Min Angle}}{2} + \text{Min Angle}$$

These test partially satisfy the requirements of S-480-80 paragraphs 3.7.1 and 3.7.3.4.

Check procedure paragraph that applies: 3.4.1.3, 3.4.2.3, 3.4.3.3 (X) RF
3.4.4.3, 3.4.5.3, 3.4.6.3 ( ) IF

Assembly No. 1331210-3

Serial No. F03

Customer R. Brown 6/2/98

Engineer Louis C. Lund

Quality Assurance M Chavez 5/30/98

Date 5/29/98

TEST DATA SHEET 16
Dynamic Range/Amplitude Accuracy Test (A2)

Laser Alignment System Verification

	Required	Measured	Pass/Fail
Crosstrack Mean	≤ 0.02	0.02	P
Downtrack Mean	≤ 0.02	0.02	P

Frequency GHz (± 0.1)	Dynamic Range (dB)		Amplitude Accuracy (dB)		
	Required	Measured	Required	Measured	Pass/Fail
31.40	≤ 50		≤ 66		

Required for Engineering Model Only
Denis G. Card
5/29/98
236
QC 236
5-30-98

These tests satisfy the requirements of S-480-80 paragraph 6.2.6.2.

Check procedure paragraph that applies: 3.4.3.2 (X) RF
3.4.6.2 ( ) IF

Assembly No. 1331210-3
Serial No. F03
Customer R. Brown 6/2/98

Engineer Denis G. Card
Quality Assurance [signature] 5/30/98
Date 5/29/98

TEST DATA SHEET 17
Beamwidth Test (A2)

Frequency GHz (± 0.1)	Beam Position	Nominal Beamwidth (degrees)					
		Tolerance		Measured			
		Minimum	Maximum	Downtrack	Crosstrack	Average	Pass/Fail
23.80	1 15 30	2.97	3.63	3.53 3.50 3.49	3.52 3.49 3.55	3.53 3.50 3.52	P P P
31.40	1 15 30	2.97	3.63	3.39 3.47 3.39	3.39 3.21 3.30	3.39 3.34 3.35	P P P

Channel-to-Channel Variance		
Parameter	Measured (degrees)	Pass/Fail
Maximum Ave BW	3.53	N/A
Minimum Ave BW	3.34	N/A
Max-Min	0.19	P
Tolerance	≤ 0.33°	N/A

Pass = P
Fail = F

These tests partially satisfy the requirements of S-480-80 paragraph 3.7.1 and 3.7.3.4.

Check procedure paragraph that applies: 3.4.3.3 (X) RF
3.4.6.3 ( ) IF

Assembly No. 1331210-3

Serial No. F03

Customer [signature] 6/2/98

Engineer [signature]

Quality Assurance [signature] 5/30/98

Date 5/29/98

TEST DATA SHEET 18
Crosstrack Alignment Test (A2)

Frequency GHz (± 0.1)	Beam Position	Tolerance (degrees)			Measured (degrees)	Pass/Fail
		Nominal	Low Limit*	Up Limit*		
23.80	1	48.33	48.21	48.61	48.40	P
	15	1.66	1.50	1.90	1.71	P
	30	–48.33	-48.51	-48.11	-48.29	P
31.40	1	48.33	48.21	48.61	48.41	P
	15	1.66	1.50	1.90	1.69	P
	30	–48.33	-48.51	-48.11	-48.33	P

* The tolerance limits are defined as:
Upper limit = Window channel mean + 0.2°
Lower limit = Window channel mean – 0.2°
Where window channel mean is derived from TDS 5.

These tests partially satisfy the requirements of S-480-80 paragraphs 3.7.1 and 3.7.3.4.

Check procedure paragraph that applies: 3.4.3.3 (X) RF
3.4.6.3 ( ) IF

Assembly No. 1331210-3
Serial No. F03
Customer R. Brown 6/2/98

Engineer [signature]
Quality Assurance [signature] 5/30/98
Date 5/29/98

TEST DATA SHEET 19
Downtrack Alignment Test (A2)

Frequency (GHz) (± 0.1)	Beam Position	Tolerance (degrees)			Measured (degrees)	Pass/Fail
		Nominal	Low Limit*	Up Limit*		
23.80	1	0.0	-.07	+.33	+.14	P
	15	0.0	-.06	+.34	+.19	P
	30	0.0	-.13	+.27	+.11	P
31.40	1	0.0	-.07	+.33	+.12	P
	15	0.0	-.06	+.34	+.09	P
	30	0.0	-.13	+.27	+.03	P

* The tolerance limits are defined as:
Upper limit = Window channel mean + 0.2°
Lower limit = Window channel mean − 0.2°
Where window channel mean is derived from TDS 5.

These tests partially satisfy the requirements of S-480-80 paragraphs 3.7.1 and 3.7.3.4.

Check procedure paragraph that applies: 3.4.3.3 (X) RF
3.4.6.3 ( ) IF

Assembly No. 133121 0-3
Serial No. F03
Customer R. Brown 6/2/98

Engineer [signature]
Quality Assurance [signature] 5/30/98
Date 5/29/98

29 May 1998 16:23:45

31.4 GHz
D.T.

DATAFILE: AH264

ANGULAR POSITION: .12 DEGREES BP1
HALF-POWER BEAMWIDTH: 3.39 DEGREES

DATAFILE: AH266

ANGULAR POSITION: .09 DEGREES BP15
HALF-POWER BEAMWIDTH: 3.47 DEGREES

DATAFILE: AH268

ANGULAR POSITION: .03 DEGREES BP30
HALF-POWER BEAMWIDTH: 3.39 DEGREES

PN: 1331210-3

SO: 335305

SN: F03

OP: 0078

T.E.: [signature]

QA: [signature] 5/30/98

DCMC: R. Burns 6/2/98

DATE: 5/29/98

29 May 1998 16:22:23

31.4 GHz
C.T.

DATAFILE: AH263

ANGULAR POSITION: 48.41 DEGREES BP1
HALF-POWER BEAMWIDTH: 3.39 DEGREES

DATAFILE: AH265

ANGULAR POSITION: 1.69 DEGREES BP15
HALF-POWER BEAMWIDTH: 3.21 DEGREES

DATAFILE: AH267

ANGULAR POSITION: -48.33 DEGREES BP30
HALF-POWER BEAMWIDTH: 3.3 DEGREES

PN: 1331210-3

SO: 335305

SN: F03

OP: 0078

TE: [signature]

QA: [signature] 5/28/98

DCMC: R. [signature] 5/28/98

DATE: 5/29/98

29 May 1998 16:24:42

23.8 GHz
C.T.

DATAFILE: AH273

ANGULAR POSITION: 48.4 DEGREES BP1
HALF-POWER BEAMWIDTH: 3.52 DEGREES

DATAFILE: AH271

ANGULAR POSITION: 1.71 DEGREES BP15
HALF-POWER BEAMWIDTH: 3.49 DEGREES

DATAFILE: AH269

ANGULAR POSITION: -48.29 DEGREES BP30
HALF-POWER BEAMWIDTH: 3.55 DEGREES

PN: 1331210-3

SO: 335305

SN: F03

OP: 0078

TE: [signature]

QA: [signature] 5/30/98

DCMC: [signature] 5/29/98

DATE: 5/29/98

TEST DATA SHEET 20
Beam Efficiency Test (A2)

Frequency (GHz) (±0.1)	Beam Position	DATA FILES								Required Beam Efficiency (%)	Measured Beam Efficiency (%)	Pass/ Fail
		0 Degree Plane		45 Degree Plane		90 Degree Plane		135 Degree Plane				
		Co-Pol	X-Pol	Co-Pol	X-Pol	Co-Pol	X-Pol	Co-Pol	X-Pol			
23.8	1	AH275	AH276	AH277	AH278	AH279	AH280	AH281	AH282	≥ 95%	96%	PASS
	15	AH283	AH284	AH285	AH286	AH287	AH288	AH289	AH290	≥ 95%	96%	PASS
	30	AH291	AH292	AH293	AH294	AH295	AH296	AH297	AH298	≥ 95%	96%	PASS
	COLD CAL	AH323	AH324			AH325	AH326			N/A	N/A	N/A
31.40	1	AH315	AH316	AH317	AH318	AH319	AH320	AH321	AH322	≥ 95%	97%	PASS
	15	AH307	AH308	AH309	AH310	AH311	AH312	AH313	AH314	≥ 95%	97%	PASS
	30	AH299	AH300	AH301	AH302	AH303	AH304	AH305	AH306	≥ 95%	97%	PASS

These tests partially satisfy the requirements of S-480-80 paragraphs 3.7.2, 3.7.4, and 6.2.6.

Check procedure paragraph that applies: 3.4.3.5 (X) RF
3.4.6.5 ( ) IF

Assembly No. 1331210-3

Serial No. F03

Customer R. Bruno 6/6/98

Engineer

Quality Assurance

Date 6/2/98

23.8 GHz
BP1

1 Jun 1998 08:32:36
PHI=0 IS THE SYMMETRICAL PLANE
DATA IS INTEGRATED ACROSS THE MAINBEAM

	DATAFILE		INTEGRATION LIMITS		
PHI ANGLE	PRIN POL	CROSS POL	LOWER	UPPER	PEAK
0	AH275	AH276	-4.40	+4.40	+0.00
45	AH277	AH278	-4.40	+4.40	-.13
90	AH279	AH280	-4.40	+4.20	-.12
135	AH281	AH282	-4.20	+4.40	+.04

TOTAL POWER:
SUM PRIN FOR 1 IS .07477
SUM PRIN FOR 2 IS .07538
SUM PRIN FOR 3 IS .07482
SUM PRIN FOR 4 IS .07294
SUM PRINCIPAL TOTAL POWER IS: .29791

SUM CROSS FOR 1 IS .00385
SUM CROSS FOR 2 IS .00219
SUM CROSS FOR 3 IS .00052
SUM CROSS FOR 4 IS .00176
SUM CROSS TOTAL POWER IS: .00833

SUM TOTAL POWER IS: .30624

BEAM POWER:

SUM PRIN FOR 1 IS	.07320	3.52	8.80
SUM PRIN FOR 2 IS	.07343	3.48	8.70
SUM PRIN FOR 3 IS	.07193	3.47	8.68
SUM PRIN FOR 4 IS	.07083	3.41	8.53

BEAM PRIN POWER IS: .28939

SUM CROSS FOR 1 IS .00255
SUM CROSS FOR 2 IS .00107
SUM CROSS FOR 3 IS .00001
SUM CROSS FOR 4 IS .00105
SUM CROSS TOTAL POWER IS: .00468

SUM BEAM POWER IS: .29407

BEAM EFFICIENCY IS: 96.00 %

PN: 1331210-3

SN: F03

SO: 335305

OP: 0078

TE: [signature]

QA: [signature]

DCMC: [signature] 6/2/98

DATE: 6/2/98

23.8 GHz
BP15

1 Jun 1998 08:34:37
PHI=0 IS THE SYMMETRICAL PLANE
DATA IS INTEGRATED ACROSS THE MAINBEAM

	DATAFILE		INTEGRATION LIMITS		
PHI ANGLE	PRIN POL	CROSS POL	LOWER	UPPER	PEAK
0	AH283	AH284	-4.40	+4.40	+.11
45	AH285	AH286	-4.40	+4.40	-.12
90	AH287	AH288	-4.20	+4.40	+.17
135	AH289	AH290	-4.40	+4.20	-.09

TOTAL POWER:
SUM PRIN FOR 1 IS .07581
SUM PRIN FOR 2 IS .07398
SUM PRIN FOR 3 IS .07592
SUM PRIN FOR 4 IS .07277
SUM PRINCIPAL TOTAL POWER IS: .29848

SUM CROSS FOR 1 IS .00327
SUM CROSS FOR 2 IS .00163
SUM CROSS FOR 3 IS .00033
SUM CROSS FOR 4 IS .00258
SUM CROSS TOTAL POWER IS: .00780

SUM TOTAL POWER IS: .30627

BEAM POWER:

SUM PRIN FOR 1 IS	.07428	3.55	8.88
SUM PRIN FOR 2 IS	.07240	3.50	8.75
SUM PRIN FOR 3 IS	.07219	3.44	8.60
SUM PRIN FOR 4 IS	.07077	3.43	8.58

BEAM PRIN POWER IS: .28963

SUM CROSS FOR 1 IS .00233
SUM CROSS FOR 2 IS .00109
SUM CROSS FOR 3 IS .00001
SUM CROSS FOR 4 IS .00135
SUM CROSS TOTAL POWER IS: .00477

SUM BEAM POWER IS: .29440

BEAM EFFICIENCY IS: 96.00 %

PN: 1331210-3
SN: F03
SO: 335305
OP: 0078

TE:
QA:
DCMC: 6/2/98
DATE: 6/2/98

23.8 GHz
BP30

1 Jun 1998 11:47:54
PHI=0 IS THE SYMMETRICAL PLANE
DATA IS INTEGRATED ACROSS THE MAINBEAM

	DATAFILE		INTEGRATION LIMITS		
PHI ANGLE	PRIN POL	CROSS POL	LOWER	UPPER	PEAK
0	AH291	AH292	-4.40	+4.00	-.19
45	AH293	AH294	-4.20	+4.40	+.06
90	AH295	AH296	-4.20	+4.40	+.02
135	AH297	AH298	-4.40	+4.20	+.02

TOTAL POWER:
SUM PRIN FOR 1 IS .07309
SUM PRIN FOR 2 IS .07431
SUM PRIN FOR 3 IS .07398
SUM PRIN FOR 4 IS .07442
SUM PRINCIPAL TOTAL POWER IS: .29579

SUM CROSS FOR 1 IS .00296
SUM CROSS FOR 2 IS .00170
SUM CROSS FOR 3 IS .00047
SUM CROSS FOR 4 IS .00200
SUM CROSS TOTAL POWER IS: .00712

SUM TOTAL POWER IS: .30292

BEAM POWER:

SUM PRIN FOR 1 IS	.07139	3.39	8.48
SUM PRIN FOR 2 IS	.07233	3.46	8.65
SUM PRIN FOR 3 IS	.07126	3.41	8.53
SUM PRIN FOR 4 IS	.07196	3.46	8.65

BEAM PRIN POWER IS: .28693

SUM CROSS FOR 1 IS .00196
SUM CROSS FOR 2 IS .00111
SUM CROSS FOR 3 IS .00003
SUM CROSS FOR 4 IS .00122
SUM CROSS TOTAL POWER IS: .00431

SUM BEAM POWER IS: .29125

BEAM EFFICIENCY IS: 96.00 %

PN: 1331210-3
SN: F03
SO: 335305
OP: 0078

TE: [signature]
QA: [signature]
DCMC: [signature] 6/2/98
DATE: 6/2/98

31.4 GHz
BP 1

2 Jun 1998 12:20:56
PHI=0 IS THE SYMMETRICAL PLANE
DATA IS INTEGRATED ACROSS THE MAINBEAM

	DATAFILE		INTEGRATION LIMITS		
PHI ANGLE	PRIN POL	CROSS POL	LOWER	UPPER	PEAK
0	AH315	AH316	-4.40	+4.60	+0.00
45	AH317	AH318	-4.40	+4.60	+.08
90	AH319	AH320	-4.40	+4.60	+.06
135	AH321	AH322	-4.60	+4.60	-.07

TOTAL POWER:
SUM PRIN FOR 1 IS .07651
SUM PRIN FOR 2 IS .07780
SUM PRIN FOR 3 IS .07922
SUM PRIN FOR 4 IS .07954
SUM PRINCIPAL TOTAL POWER IS: .31308

SUM CROSS FOR 1 IS .00296
SUM CROSS FOR 2 IS .00203
SUM CROSS FOR 3 IS .00080
SUM CROSS FOR 4 IS .00129
SUM CROSS TOTAL POWER IS: .00708

SUM TOTAL POWER IS: .32016

BEAM POWER:

SUM PRIN FOR 1 IS	.07580	3.58	8.95
SUM PRIN FOR 2 IS	.07625	3.56	8.90
SUM PRIN FOR 3 IS	.07713	3.60	9.00
SUM PRIN FOR 4 IS	.07794	3.65	9.13

BEAM PRIN POWER IS: .30712

SUM CROSS FOR 1 IS .00227
SUM CROSS FOR 2 IS .00121
SUM CROSS FOR 3 IS .00037
SUM CROSS FOR 4 IS .00090
SUM CROSS TOTAL POWER IS: .00475

SUM BEAM POWER IS: .31187

BEAM EFFICIENCY IS: 97.00 %

PN: 1331210-3
SN: F03
SO: 335305
OP: 0078

TE: [signature]
QA: [signature]
DCMC: [signature]
DATE: 6/2/98

31.4 GHz
BP15

1 Jun 1998 17:01:08
PHI=0 IS THE SYMMETRICAL PLANE
DATA IS INTEGRATED ACROSS THE MAINBEAM

	DATAFILE		INTEGRATION LIMITS		
PHI ANGLE	PRIN POL	CROSS POL	LOWER	UPPER	PEAK
0	AH307	AH308	-4.40	+4.20	-.14
45	AH309	AH310	-4.40	+4.40	-.10
90	AH311	AH312	-4.60	+4.60	+0.00
135	AH313	AH314	-4.60	+4.40	-.06

TOTAL POWER:
SUM PRIN FOR 1 IS .07529
SUM PRIN FOR 2 IS .07601
SUM PRIN FOR 3 IS .08153
SUM PRIN FOR 4 IS .07755
SUM PRINCIPAL TOTAL POWER IS: .31038

SUM CROSS FOR 1 IS .00228
SUM CROSS FOR 2 IS .00198
SUM CROSS FOR 3 IS .00022
SUM CROSS FOR 4 IS .00241
SUM CROSS TOTAL POWER IS: .00689

SUM TOTAL POWER IS: .31727

BEAM POWER:

SUM PRIN FOR 1 IS	.07340	3.42	8.55
SUM PRIN FOR 2 IS	.07473	3.51	8.78
SUM PRIN FOR 3 IS	.07914	3.67	9.18
SUM PRIN FOR 4 IS	.07601	3.57	8.93

BEAM PRIN POWER IS: .30328

SUM CROSS FOR 1 IS .00168
SUM CROSS FOR 2 IS .00149
SUM CROSS FOR 3 IS .00001
SUM CROSS FOR 4 IS .00163
SUM CROSS TOTAL POWER IS: .00481

SUM BEAM POWER IS: .30809

BEAM EFFICIENCY IS: 97.00 %

PN: 1331210-3
SN: F03
SO: 335305
OP: 0078

TE: [signature]
QA: [signature]
DCMC: [signature] 6/16/98
DATE: 6/2/98

31.4 GHz
BP30

1 Jun 1998 14:35:20
PHI=0 IS THE SYMMETRICAL PLANE
DATA IS INTEGRATED ACROSS THE MAINBEAM

	DATAFILE		INTEGRATION LIMITS		
PHI ANGLE	PRIN POL	CROSS POL	LOWER	UPPER	PEAK
0	AH299	AH300	-4.40	+4.40	-.05
45	AH301	AH302	-4.40	+4.80	+.12
90	AH303	AH304	-4.60	+4.40	-.02
135	AH305	AH306	-4.20	+4.40	+.12

TOTAL POWER:
SUM PRIN FOR 1 IS .07573
SUM PRIN FOR 2 IS .08030
SUM PRIN FOR 3 IS .07951
SUM PRIN FOR 4 IS .07662
SUM PRINCIPAL TOTAL POWER IS: .31217

SUM CROSS FOR 1 IS .00319
SUM CROSS FOR 2 IS .00129
SUM CROSS FOR 3 IS .00080
SUM CROSS FOR 4 IS .00195
SUM CROSS TOTAL POWER IS: .00722

SUM TOTAL POWER IS: .31939

BEAM POWER:

SUM PRIN FOR 1 IS	.07492	3.54	8.85
SUM PRIN FOR 2 IS	.07887	3.68	9.20
SUM PRIN FOR 3 IS	.07741	3.59	8.98
SUM PRIN FOR 4 IS	.07414	3.44	8.60

BEAM PRIN POWER IS: .30534

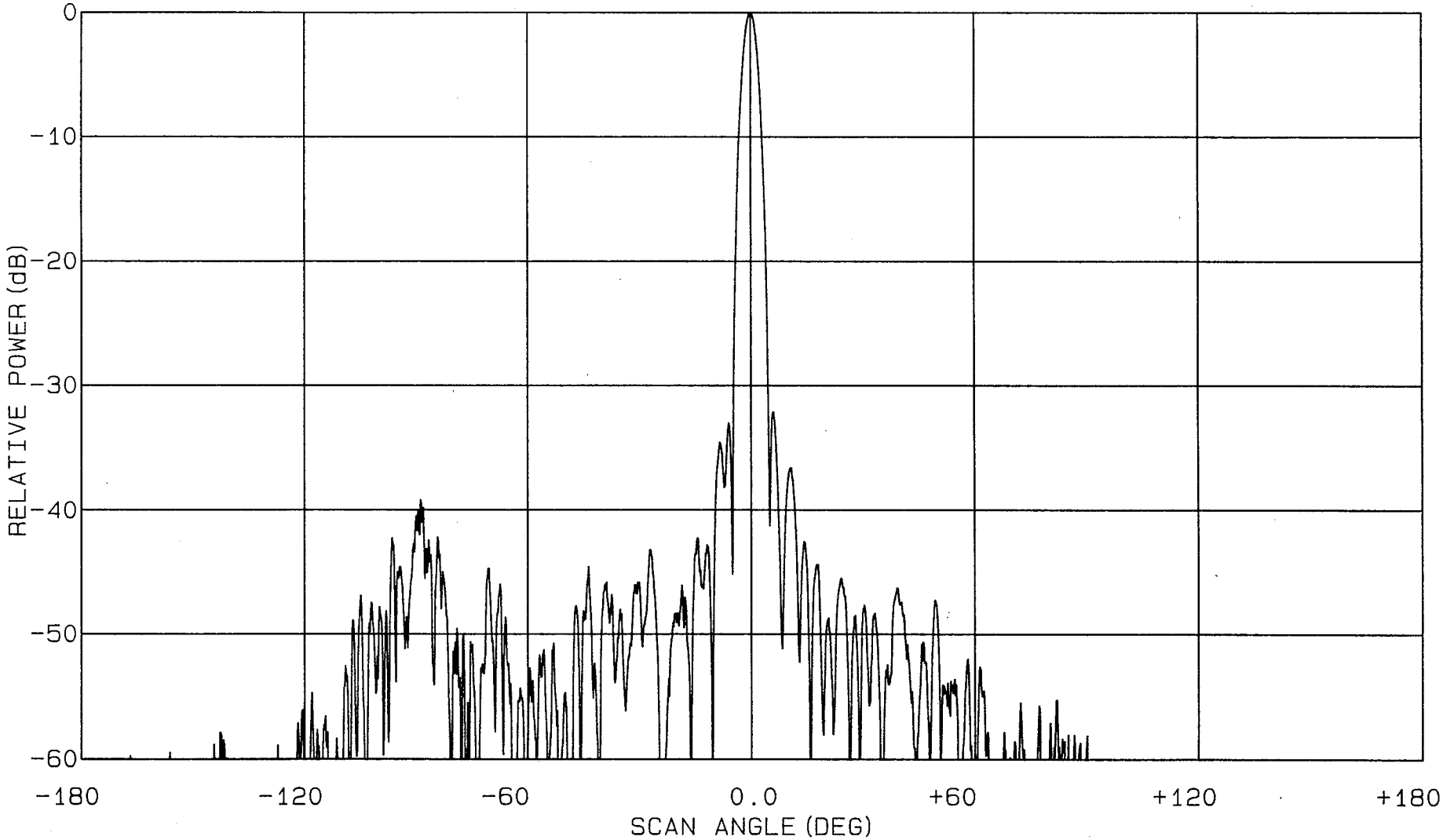
SUM CROSS FOR 1 IS .00231
SUM CROSS FOR 2 IS .00100
SUM CROSS FOR 3 IS .00028
SUM CROSS FOR 4 IS .00129
SUM CROSS TOTAL POWER IS: .00488

SUM BEAM POWER IS: .31022

BEAM EFFICIENCY IS: 97.00 %

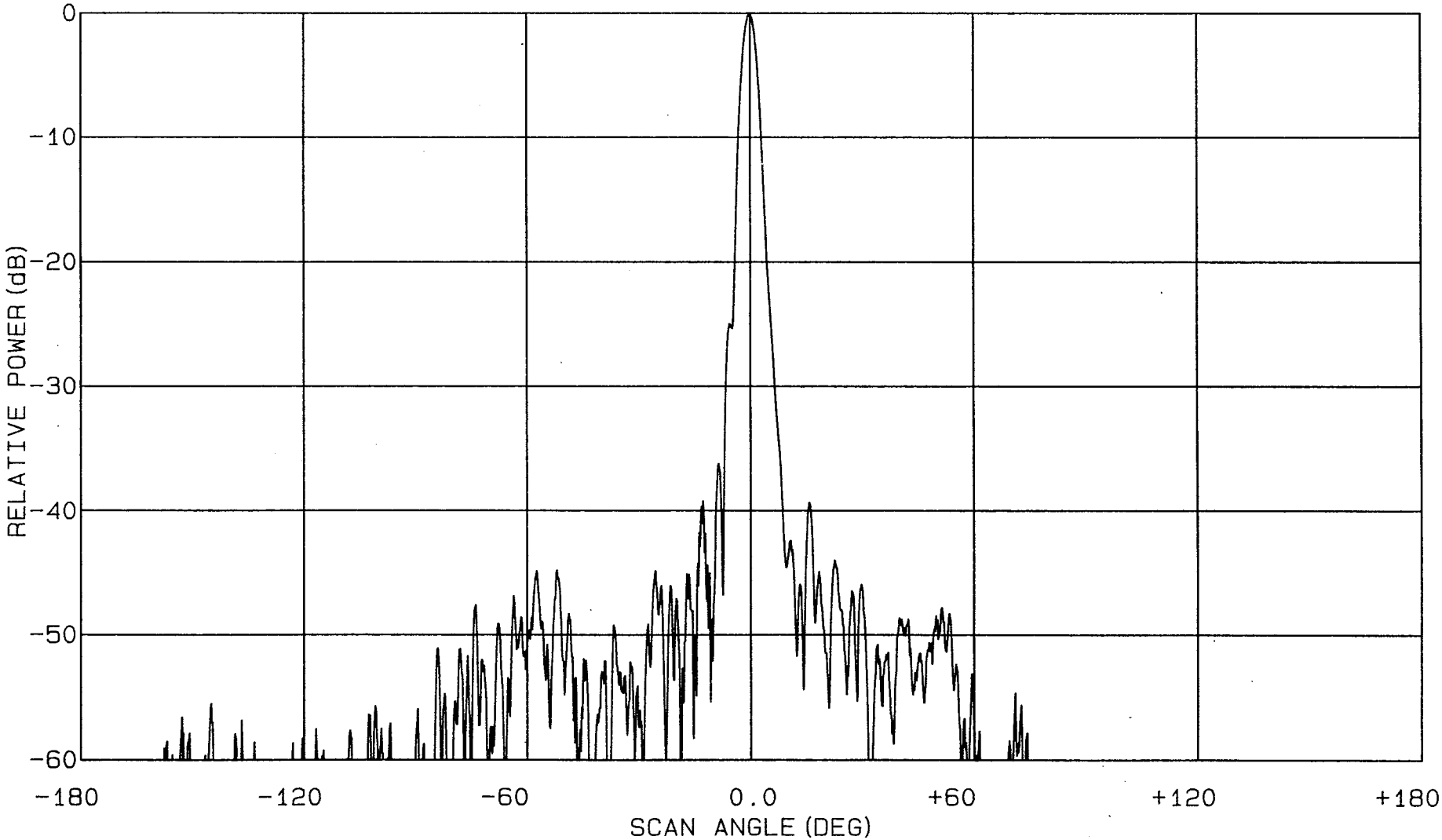
PN: 1331210-3
SN: F03
SO: 335305
OP: 0078

TE: [signature]
QA: [signature]
DCMC: 6/2/98
DATE: 6/2/98



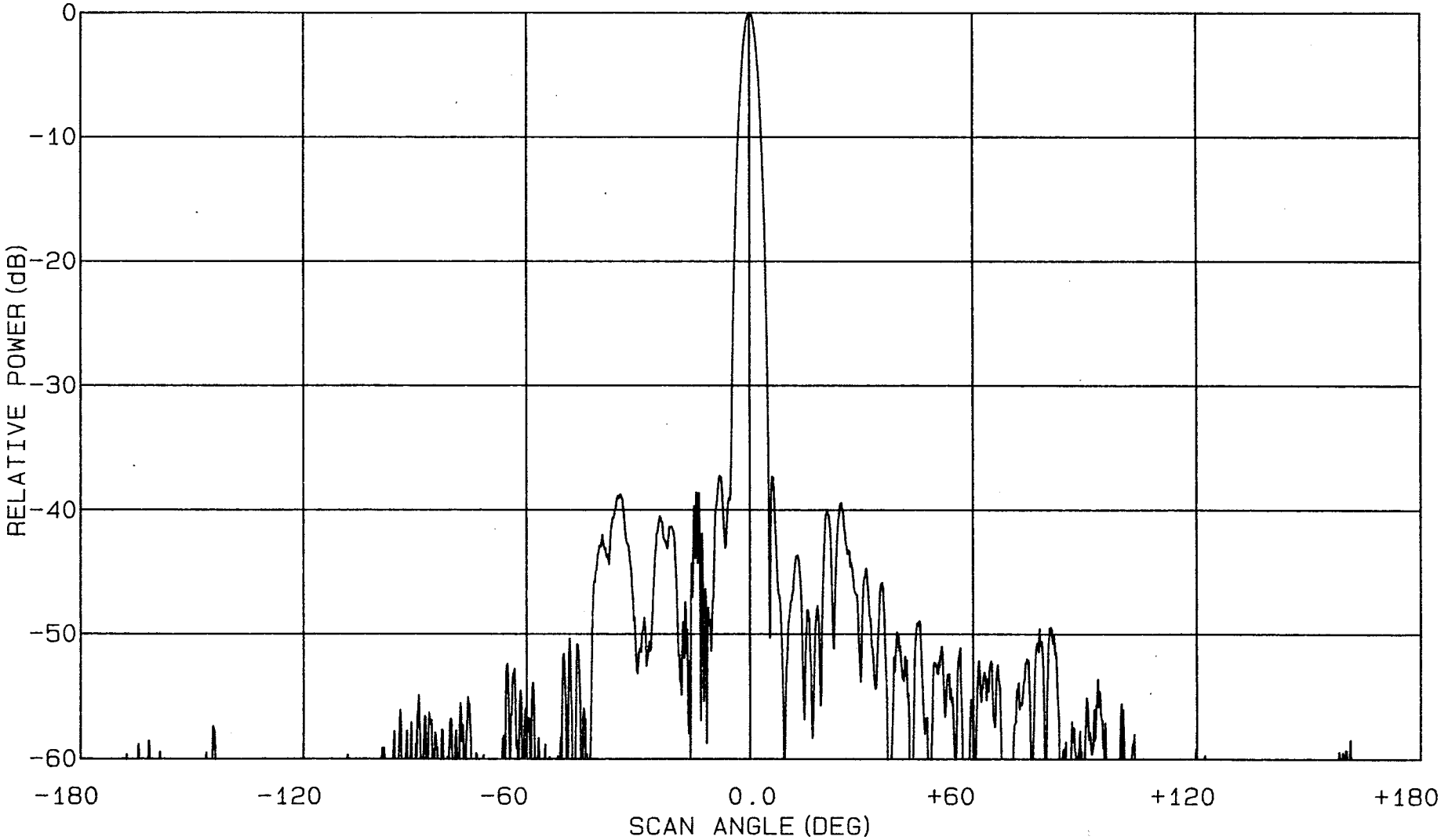
METSAT 2 A2, 23.8 GHZ
BEAM POS. 1, CROSSTRACK PLANE
DATAFILE(S): AH275

DATE: 30 May 1998



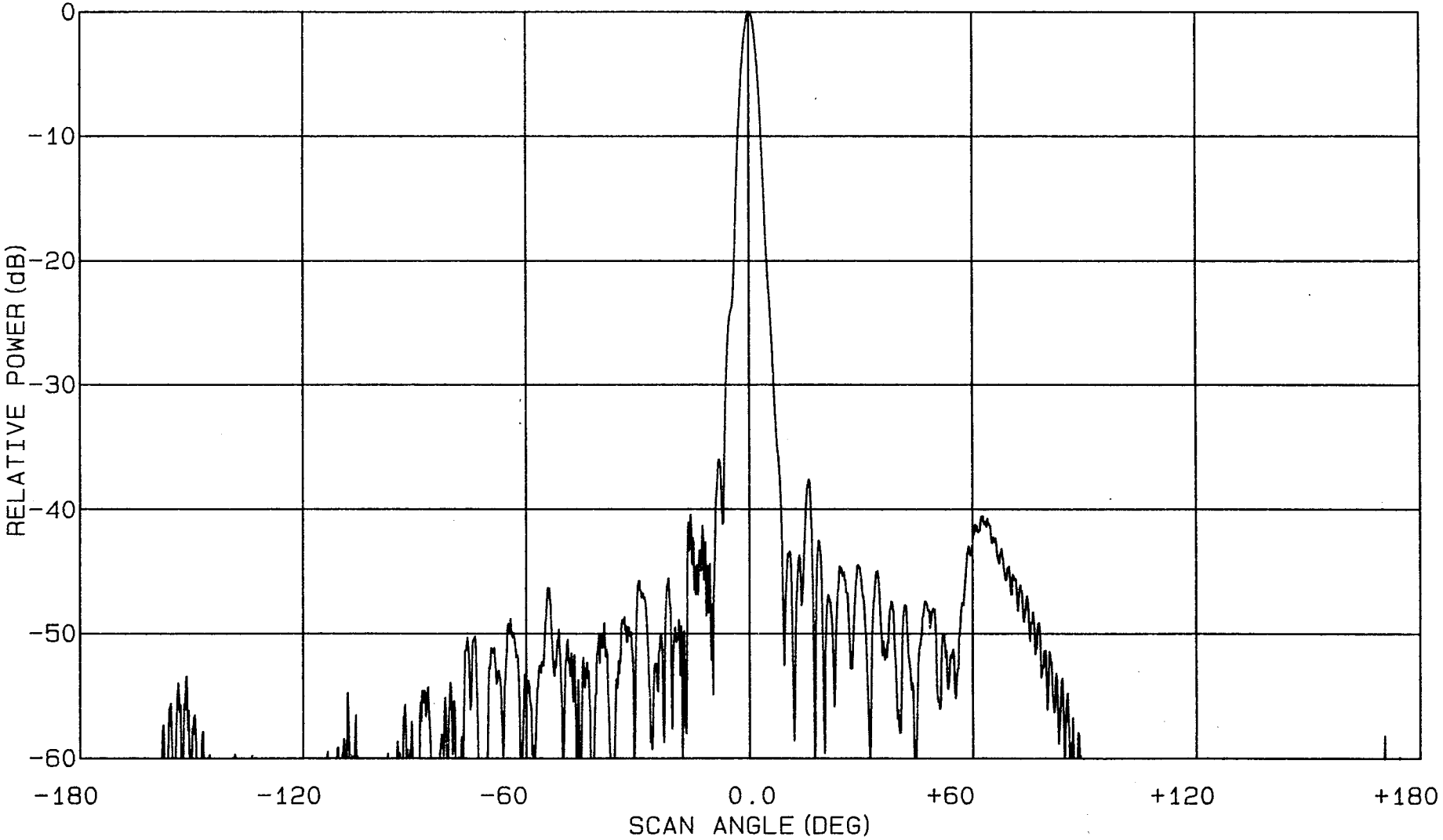
METSAT 2 A2, 23.8 GHZ
BEAM POS. 1, DOWNTRACK PLANE
DATAFILE(S): AH279

DATE: 30 May 1998



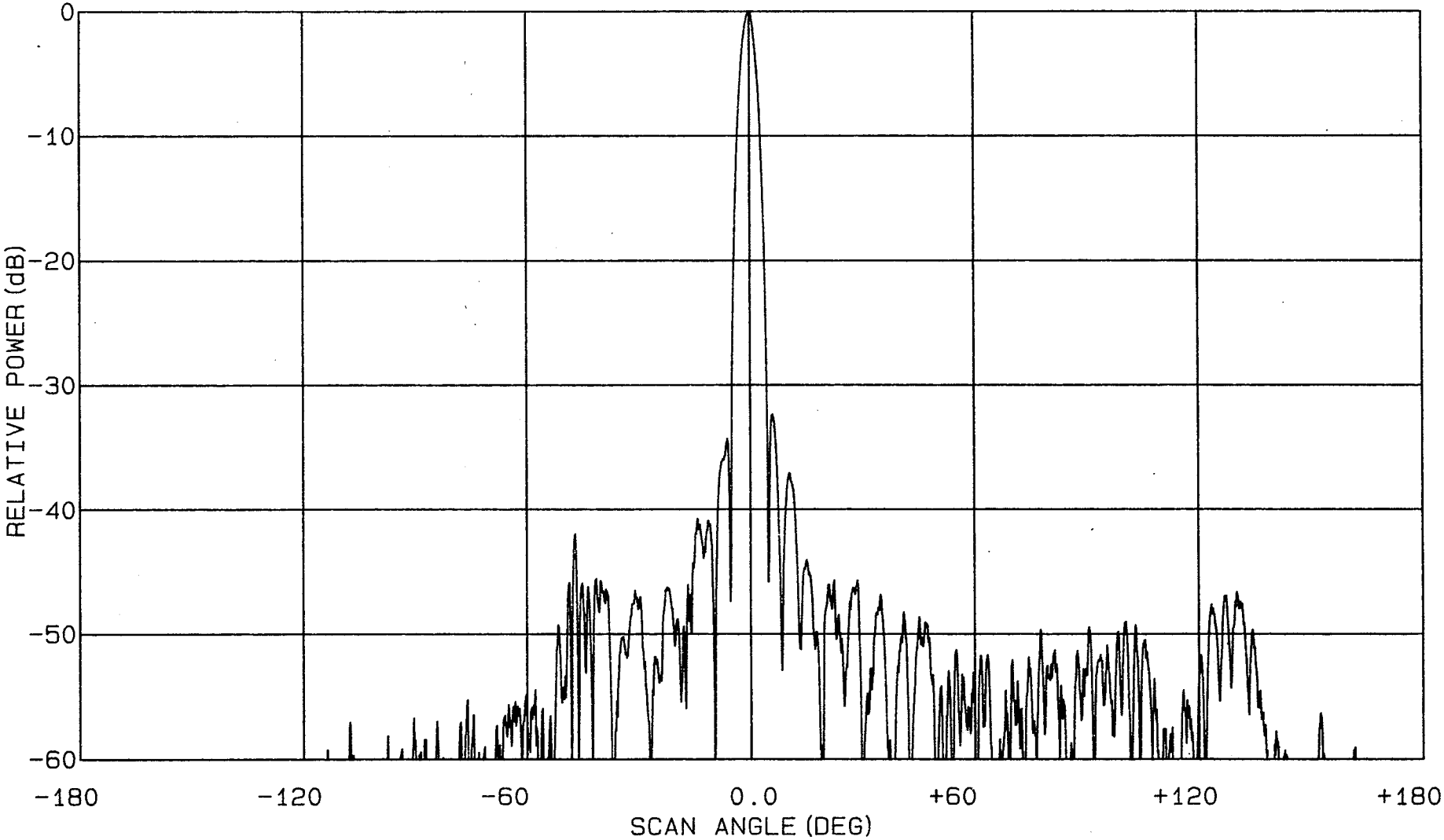
METSAT 2 A2, 23.8 GHZ
BEAM POS. 15, CROSSTRACK PLANE
DATAFILE(S): AH283

DATE: 30 May 1998



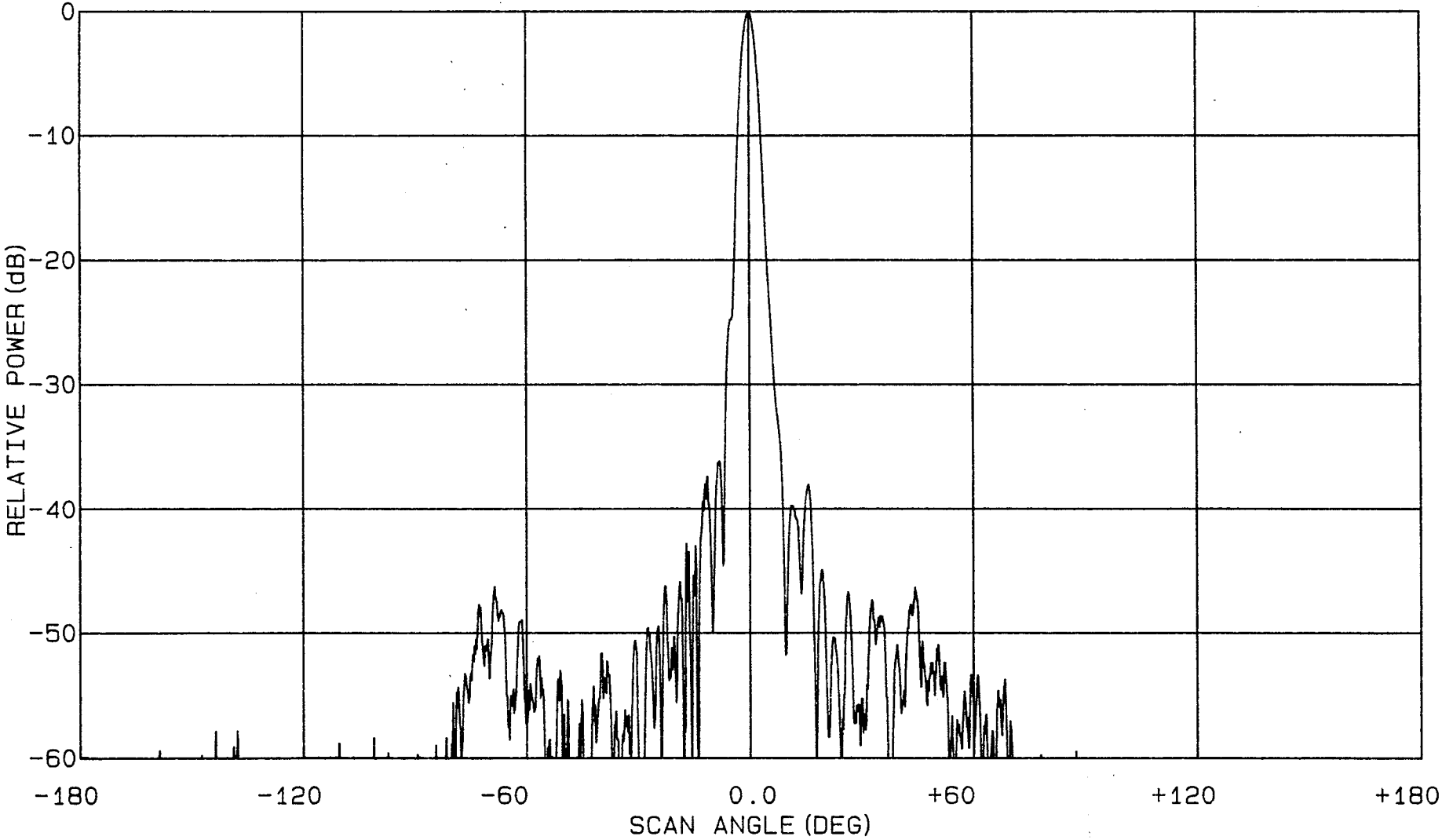
METSAT 2 A2, 23.8 GHZ
BEAM POS. 15, DOWNTRACK PLANE
DATAFILE(S): AH287

DATE: 1 Jun 1998



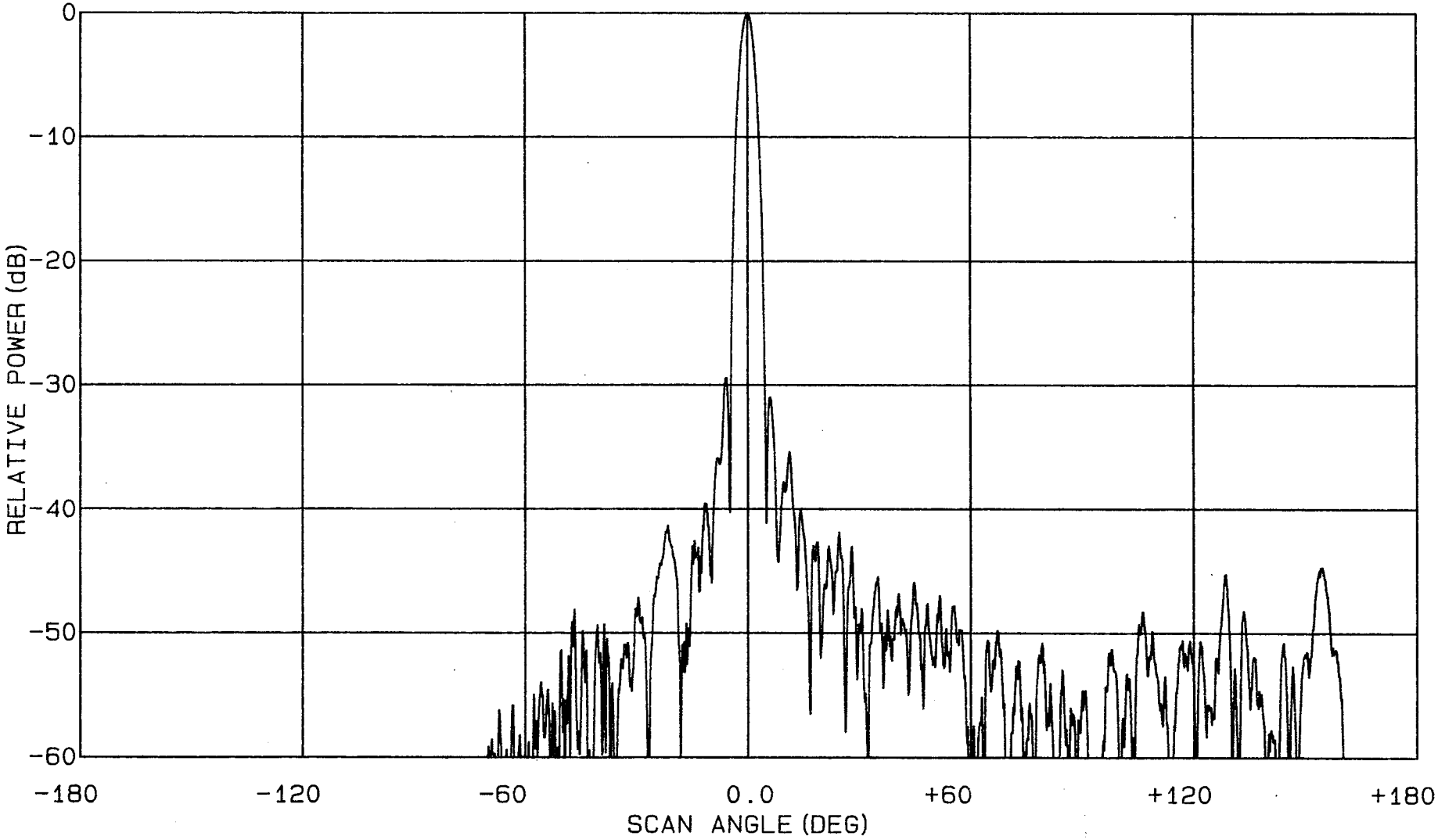
METSAT 2 A2, 23.8 GHZ
BEAM POS. 30, CROSSTRACK PLANE
DATAFILE(S): AH291

DATE: 1 Jun 1998

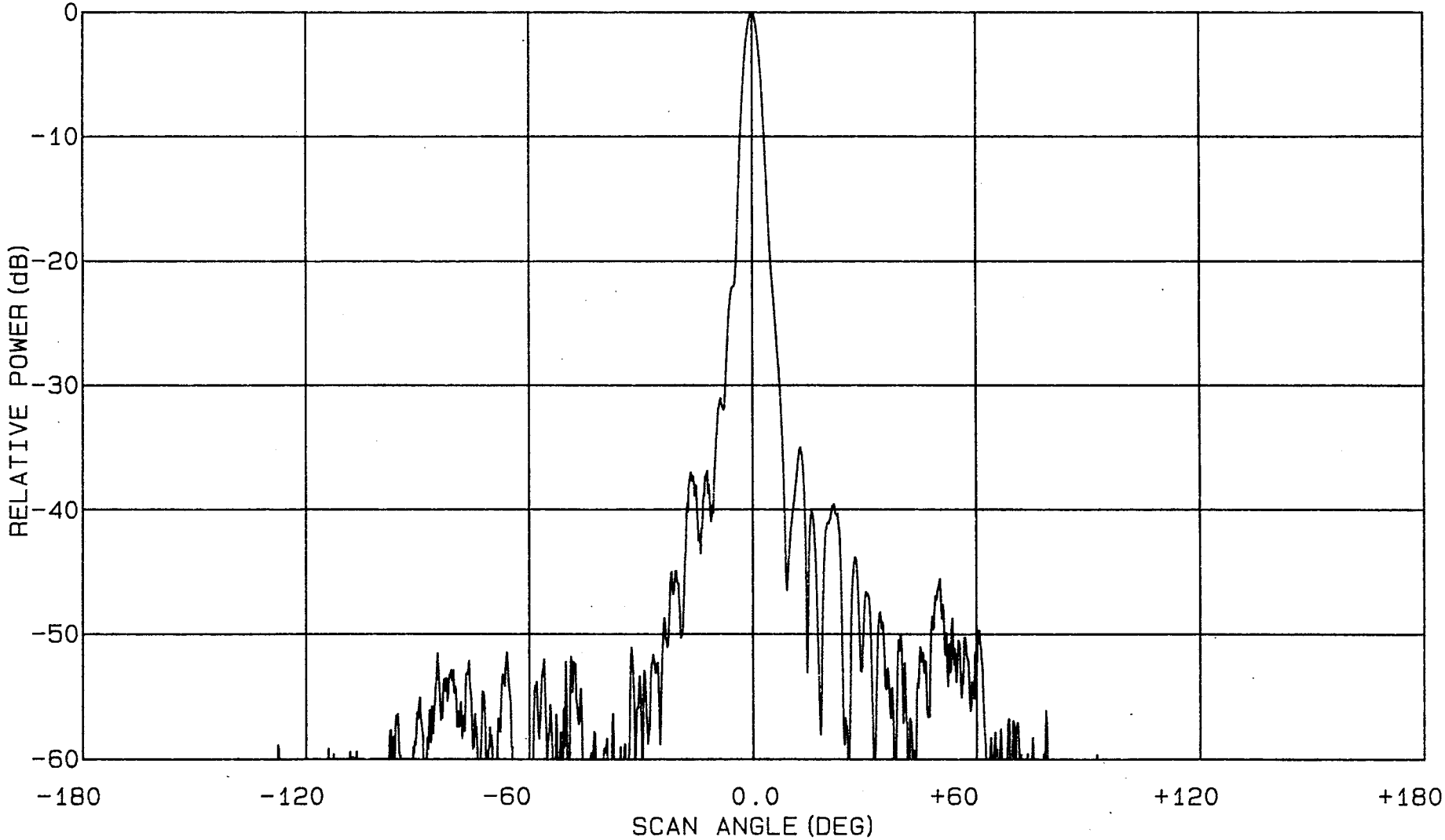


METSAT 2 A2, 23.8 GHZ
BEAM POS. 30, DOWNTRACK PLANE
DATAFILE(S): AH295

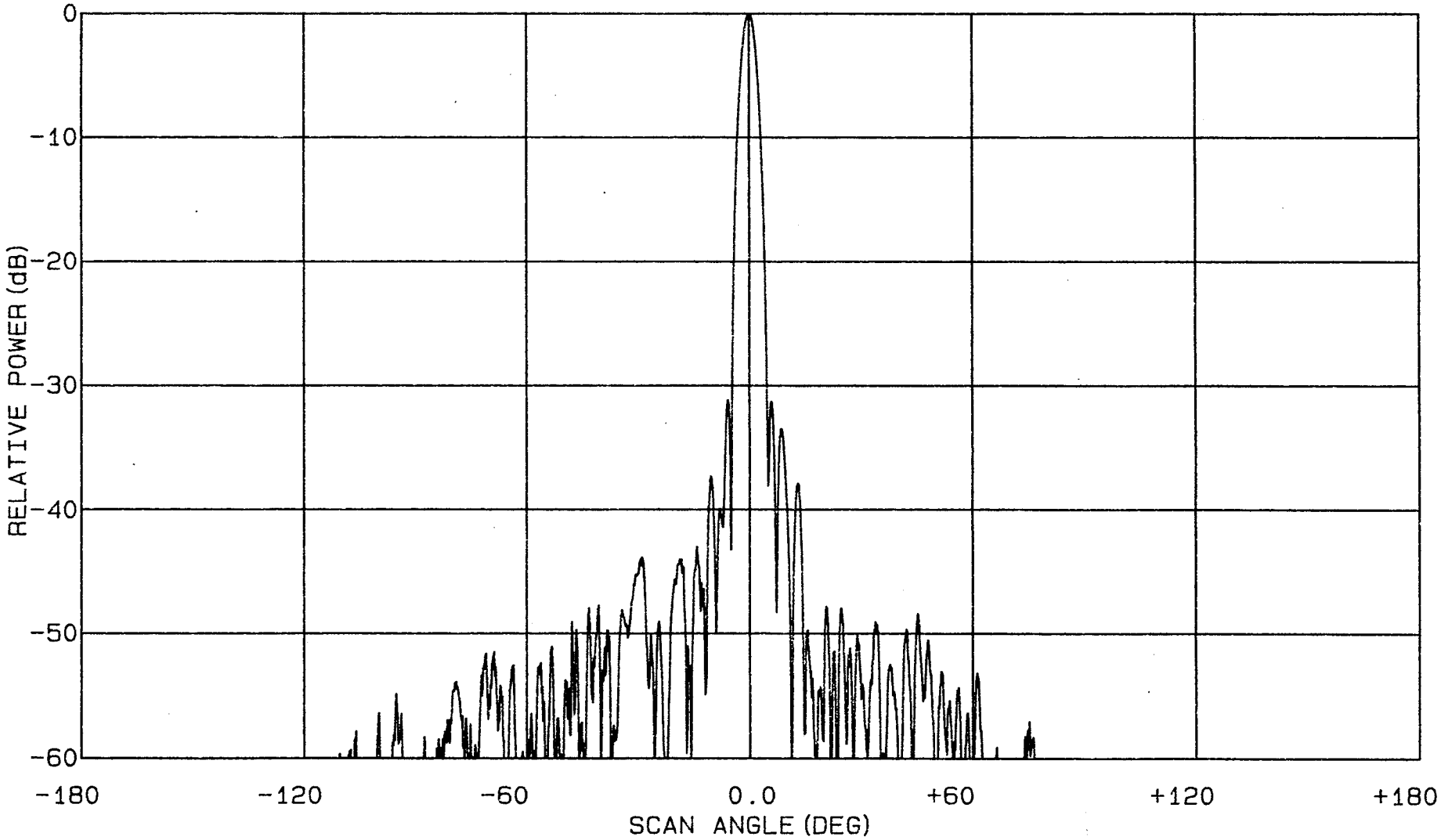
DATE: 1 Jun 1998



METSAT 2 A2, 23.8 GHZ
COLD CAL. POS., CROSSTRACK PLANE
DATAFILE(S): AH323 DATE: 2 Jun 1998

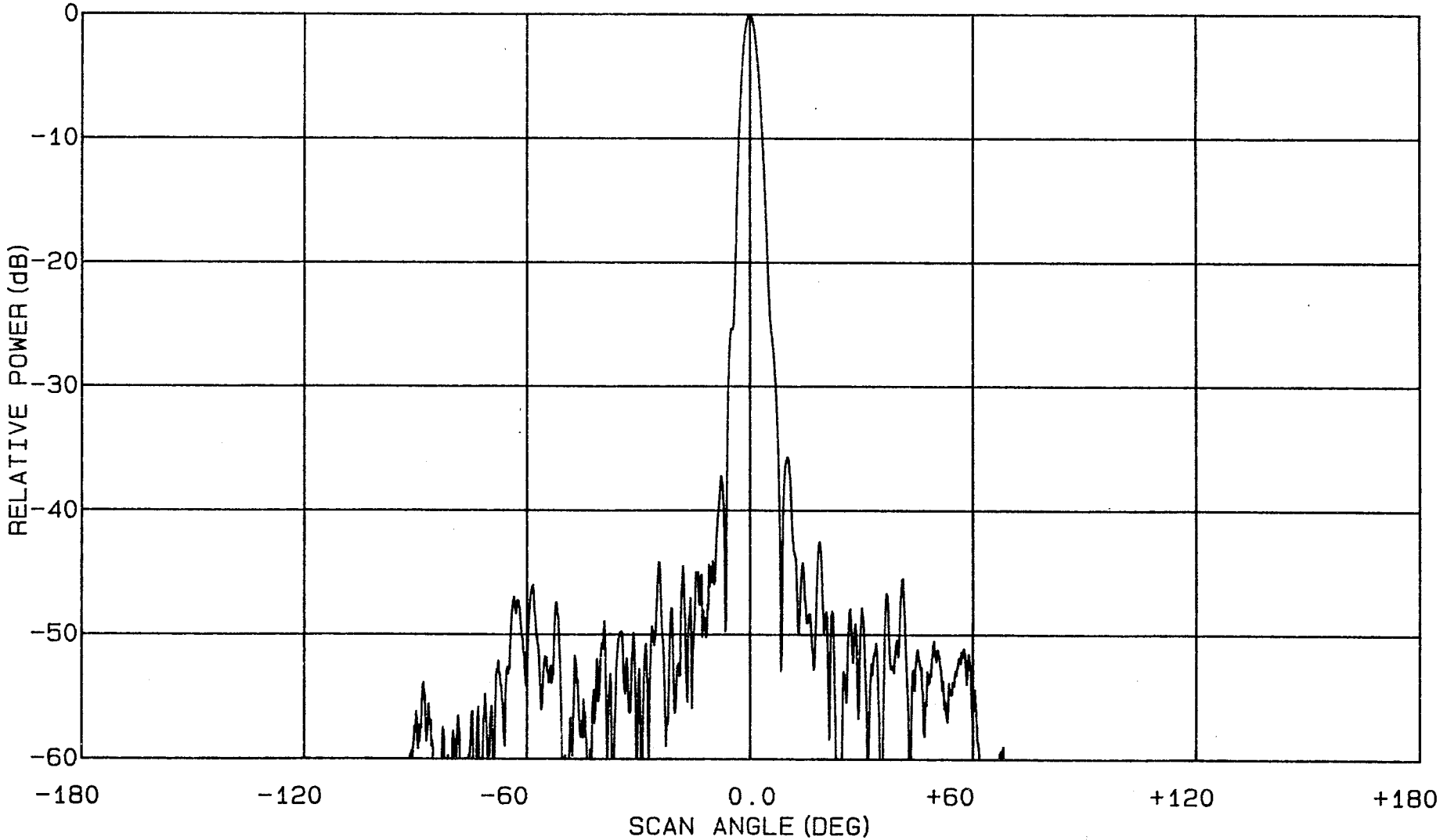


METSAT 2 A2, 23.8 GHZ
COLD CAL. POS., DOWNTRACK PLANE
DATAFILE(S): AH325 DATE: 2 Jun 1998



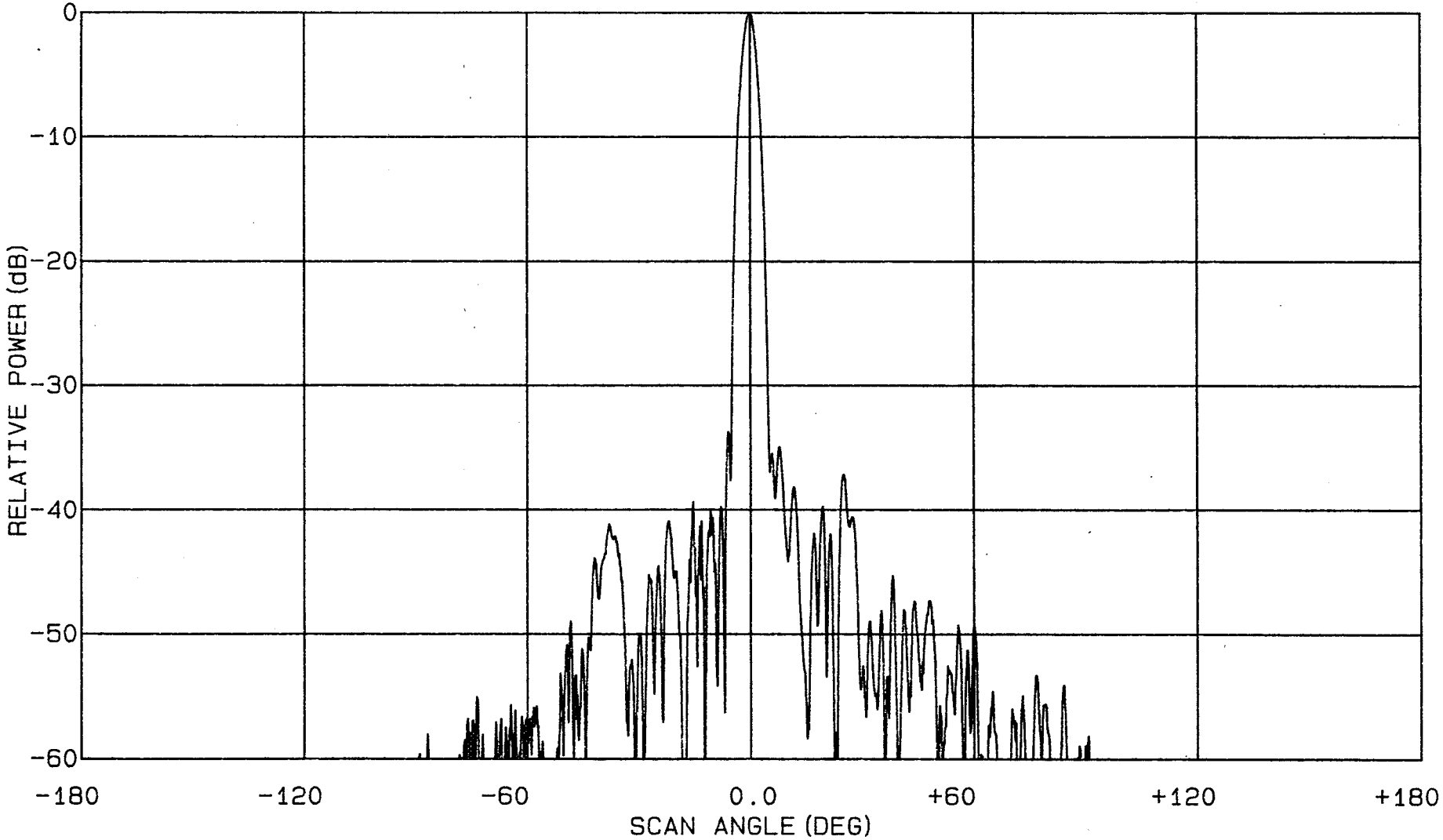
METSAT 2 A2, 31.4 GHZ
BEAM POS. 1, CROSSTRACK PLANE
DATAFILE(S): AH315

DATE: 2 Jun 1998



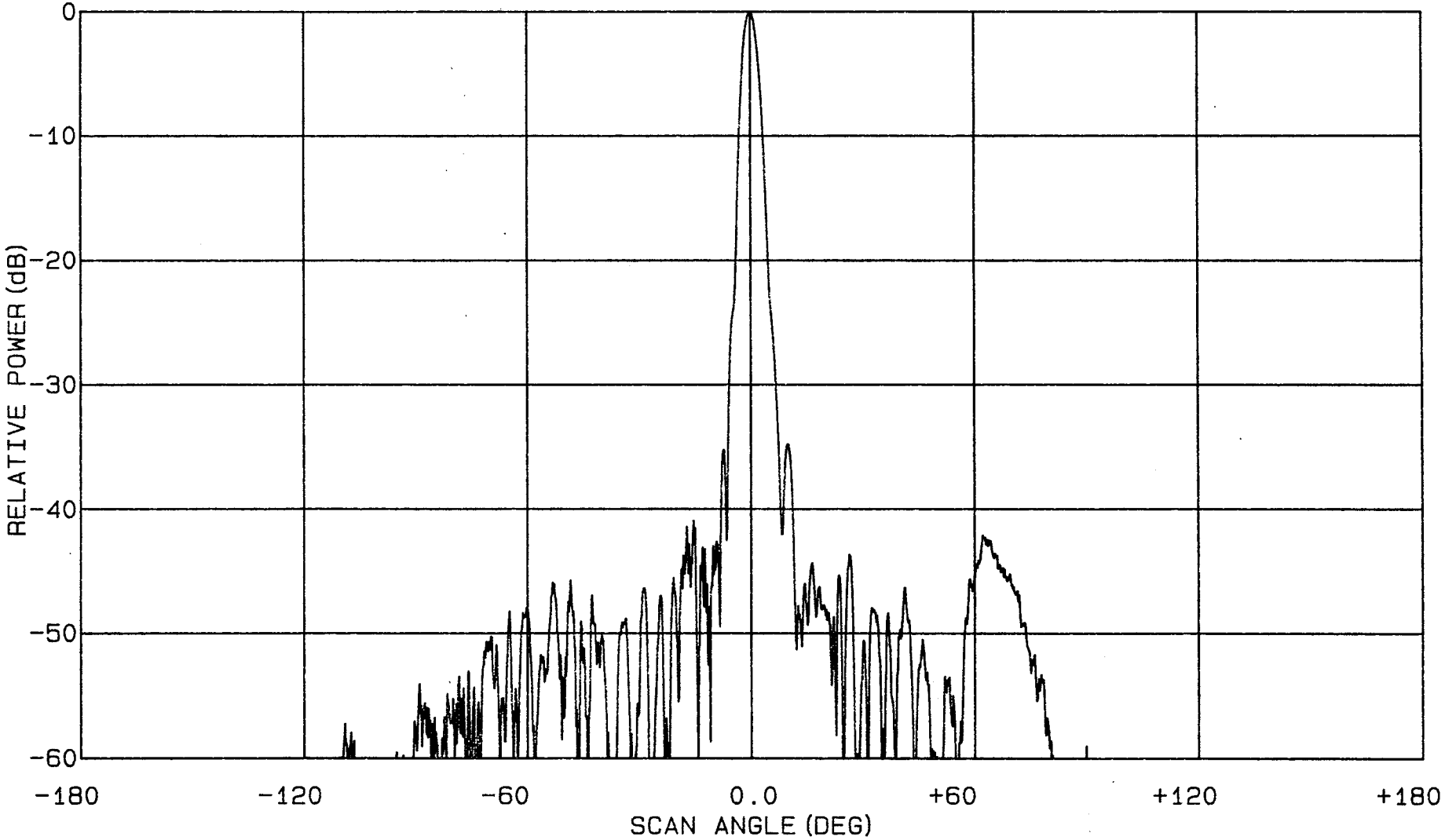
METSAT 2 A2, 31.4 GHZ
BEAM POS. 1, DOWNTRACK PLANE
DATAFILE(S): AH319

DATE: 2 Jun 1998



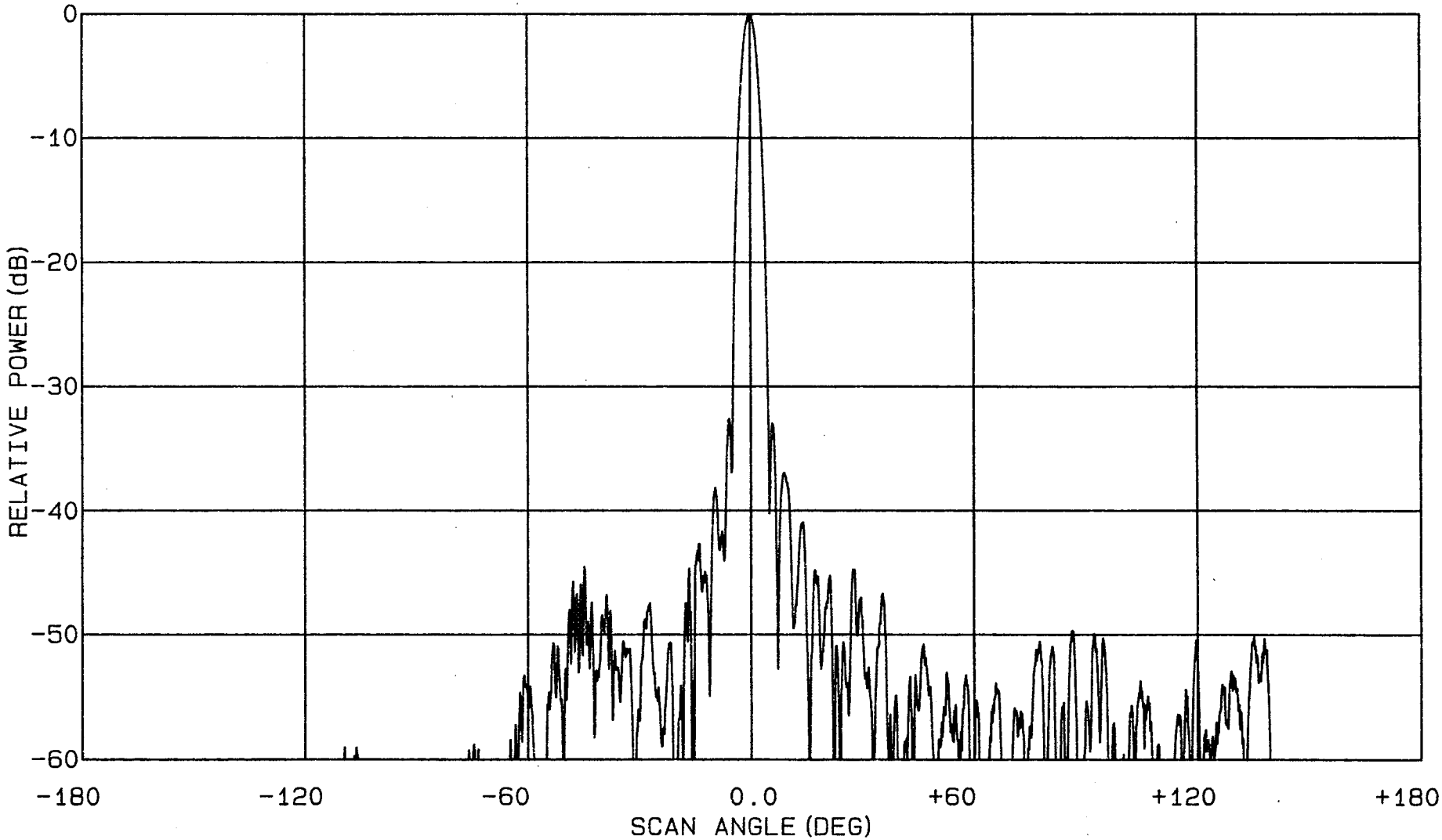
METSAT 2 A2, 31.4 GHZ
BEAM POS. 15, CROSSTRACK PLANE
DATAFILE(S): AH307

DATE: 1 Jun 1998



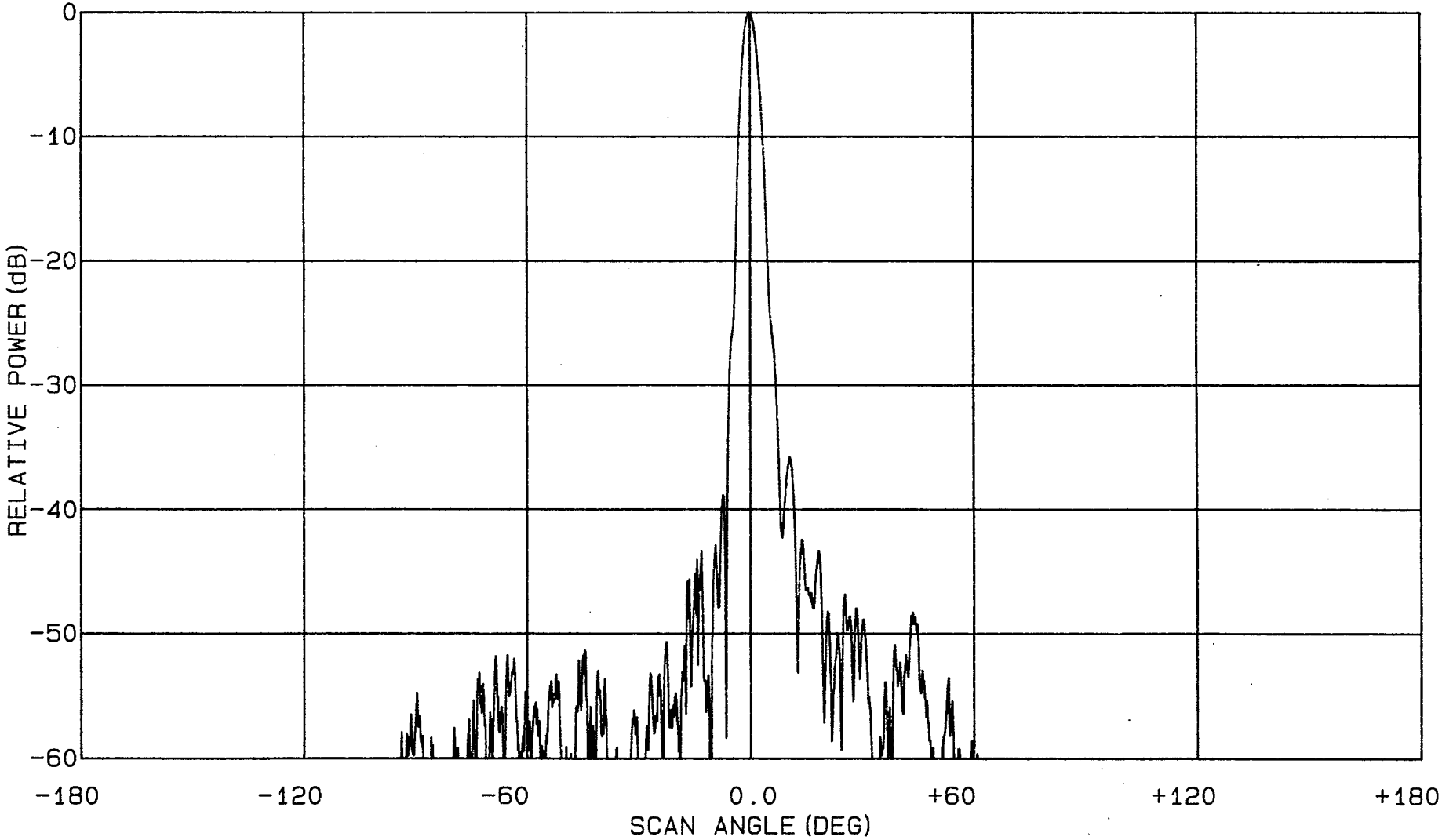
METSAT 2 A2, 31.4 GHZ
BEAM POS. 15, DOWNTRACK PLANE
DATAFILE(S): AH311

DATE: 1 Jun 1998



METSAT 2 A2, 31.4 GHZ
BEAM POS. 30, CROSSTRACK PLANE
DATAFILE(S): AH299

DATE: 1 Jun 1998



METSAT 2 A2, 31.4 GHZ
BEAM POS. 30, DOWNTRACK PLANE
DATAFILE(S): AH303

DATE: 1 Jun 1998

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Report Documentation Page

1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.
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4. Title and Subtitle	5. Report Date
Integrated Advanced Microwave Sounding Unit-A (AMSU-A), Performance Verification Report	June 1998
	6. Performing Organization Code: ---
7. Author(s): B. Brest	8. Performing Organization Report No.: 11157
	10. Work Unit No.: ---
9. Performing Organization Name and Address: Aerojet, 1100 W. Hollyvale, Azusa, CA 91702	11. Contract or Grant No.: NAS 5-32314
12. Sponsoring Agency Name and Address: NASA, Goddard Space Flight Center, Greenbelt, Maryland 20771	13. Type of Report and Period Covered: Final
	14. Sponsoring Agency Code: ---

15. Supplementary Notes: ---

16. ABSTRACT (*Maximum 200 words*)

This is the Performance Verification Report, METSAT 3 A2 Assy, S/N 107, AMSU-A2 Antenna Assy, P/N 1331210-3-SPN, S/N 03 for the Integrated Advanced Microwave Sounding Unit-A (AMSU-A).

17. Key Words (Suggested by Author(s))	18. Distribution Statement
EOS Microwave System	Unclassified --- Unlimited

19. Security Classif. (of this report)	20. Security Classif. (of this page)	21. No. of pages	22. Price
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4. TITLE AND SUBTITLE

Integrated Advanced Microwave Sounding Unit-A (AMSU-A), Performance Verification Report

5. FUNDING NUMBERS

NAS 5-32314

6. AUTHOR(S)

D. Brest

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)

Aerojet
1100 W. Hollyvale
Azusa, CA 91702

8. PERFORMING ORGANIZATION REPORT NUMBER

11157
June 1998

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)

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12a. DISTRIBUTION/AVAILABILITY STATEMENT

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17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
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