

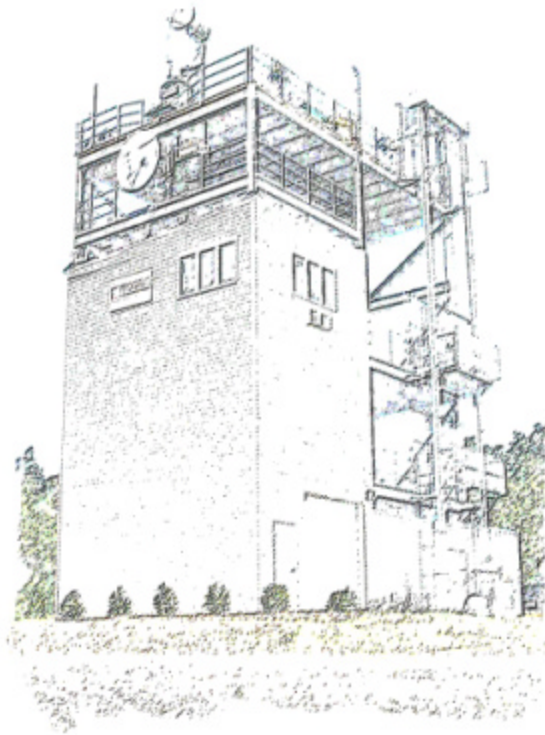
GENERAL DYNAMICS

SATCOM Technologies

Antenna Test Report

Test No. 1769

Project: 3.8M Series 1385 F1 C-Band CP Rx/Tx System.



General Dynamics SATCOM Technologies

East Maiden Antenna Test Facility
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Maiden, North Carolina 28650
828-428-1485 / 828-428-1488 fax

Test report prepared by Keny Poovey

General Dynamics SATCOM Technologies

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1.0 Product Details



TRANSMIT / RECEIVE ~ NEW SERIES 1385 ~ 3.8m VSAT ANTENNA



Key Features

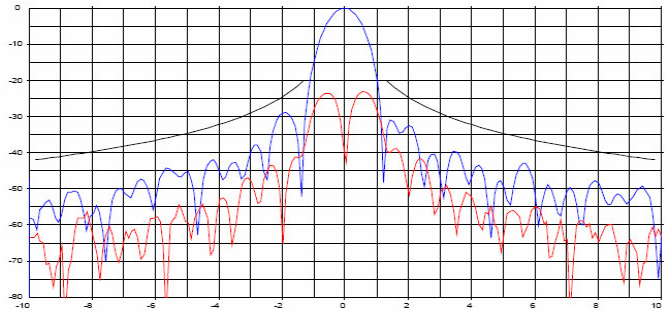
- **UPGRADED INTEGRAL RIB DESIGN FOR HIGHER FREQUENCY OPERATION.**
- **INCREASED STRENGTH FOR HEAVIER RADIO AND ODU EQUIPMENT LOADS.**
- **HIGHER PRECISION ASSEMBLY AND ALIGNMENT FROM AUTOMATED MANUFACTURING PROCESSES.**
- **FIELD FRIENDLY INSTALLATION WITHOUT REQUIREMENT FOR SPECIALIZED TOOLS.**
- **ANTI-ICE CAPABILITY FOR USE IN COLD CLIMATE AND ARCTIC ENVIRONMENTAL CONDITIONS.**
- **OPTIMIZED, 4-PIECE REFLECTOR DESIGN FOR MAXIMUM SHIPPING EFFICIENCIES.**
- **UPGRADABLE FOR HIGH XPD PERFORMANCE.**

Description

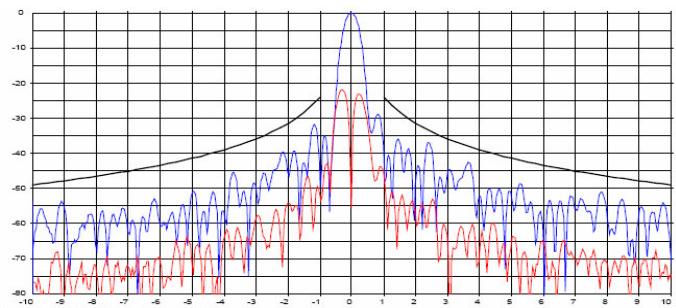
The General Dynamics new series 1385 ~ 3.8m antenna has been designed to provide a reliable, long-life and trouble free antenna solution for demanding applications in the primary VSAT communications bands. Enhancements to this antenna design have improved the structural stability and surface tolerances of the reflector, offering growth potential for reliable communications up to Ka-band.

The antenna has been designed to meet the performance requirements of the major satellite service providers and regulatory agencies.

The mechanical design has been optimized for high efficiency packaging to reduce shipping costs. Material selections for the reflector significantly reduce the risk for shipping damage when compared to metal reflector solutions. Factory pre-assembly of critical components eliminates the requirement for complex assembly procedures in the field.



C-band Azimuth, +/- 10 deg, Coverage (Tx) Band



Ku-band Azimuth, +/- 10 deg, Coverage (Tx) Band

GENERAL DYNAMICS
SATCOM Technologies



Series 1385 Transmit / Receive Multi-band 3.8m VSAT Antenna

PARAMETER	C-Band Linear	C-Band Circular	Ku-Band Linear
ELECTRICAL PERFORMANCE			
Antenna Size	3.8M	3.8M	3.8M
Operating Frequency	Rx 3625 - 4200 MHz Tx 5845 - 6425 MHz	3625 - 4200 MHz 5845 - 6425 MHz	10.95-12.75 GHz 13.75-14.50 GHz
Midband Gain (+/-0.2 dB)	Rx 41.8 dB Tx 46.2 dB	42.1 dB 46.0 dB	51.7 dB 53.2 dB
HPBW Nominal mid-band to -3 dB points (degrees)	Rx 1.4 deg Tx 0.9 deg	1.4 deg 0.9 deg	0.5 deg 0.4 deg
Antenna Noise Temperature (at feed flange)			
10°	31K	28K	29K
20°	25K	22K	21K
30°	23K	20K	20K
40°	22K	19K	19K
Sidelobe Envelope Co-pol (Azimuth) (Gain - dBi)			
1° <= θ <= 20°	29 - 25 LOG(θ) (Note)	29 - 25 LOG(θ) (Note)	29 - 25 LOG(θ)
20° < θ <= 26.3°	-3.5 dBi	-3.5 dBi	-3.5 dBi
26.3° < θ <= 48°	32-25 Log (θ)	32-25 Log (θ)	32-25 Log (θ)
48° < θ < 180	<= - 10 dBi averaged	<= - 10 dBi averaged	<= - 10 dBi averaged
Note: In receive portion of C-band only, sidelobe envelope specified from 100λ/D rather than 1°			
Polarization	Linear	Circular	Linear
Feed Interface	Rx CPR 229 Tx CPR 137 or Type N	CPR 229 CPR 137 or Type N	WR 75 or direct radio Connect
Cross Pol Isolation	>30 dB on axis	>17.69 dB on axis	>30 dB on axis
Note: Standard C-band Circular polarization in Tx-band provides an axial ratio of 1.3 (XPD equivalence of 17.69 dB). Optional F-1 station feed available with axial ratio of 1.09 (XPD equivalence >27.2 dB) in Tx band. Call factory when specifying this option.			
VSWR	Tx 1.3:1 Max. (Γ<-17.7dB) Rx 1.5:1 Max. (Γ<-14.0dB)	1.3:1 Max. (Γ<-17.7dB) 1.5:1 Max. (Γ<-14.0dB)	1.3:1 Max. (Γ<-17.7dB) 1.5:1 Max. (Γ<-14.0dB)
MECHANICAL PERFORMANCE			
Reflector Material	Glass Fiber Reinforced SMC. Highly resistant to corrosion, fungus and UV radiation.		
Antenna Optics	Easy-to-assemble, 4-Piece, Offset Fed Prime Focus Design with 0.6 F/D optics.		
Mast Pipe Size	10" SHC 40 Pipe (10.75" OD) 27.3 cm.		
Elevation Adjustment Range	12° to 90° or 0° to 15° for polar latitudes		
Azimuth Adjustment Range	360° Continuous with +/- 35° Fine Adjustment		
Maximum Radio weights	20 lbs on feedboom (unsupported). Call factory for feed stabilizer option when using heavier radios.		
Shipping Specifications	Weight (nominal) 1882 lbs, (855 Kg)		
ENVIRONMENTAL PERFORMANCE			
Wind Loading	Operational Survival	50 mph (80 km/h) 125 mph (201 km/h)	
Temperature	Operational Survival	-40° to 140 °F (-40° to 60°C) -50° to 160° F (-46° to 71° C)	
Atmospheric Conditions	Salt, Pollutants and Contaminants as Encountered in Coastal and Industrial Areas		
Solar Radiation	360 BTU/h/ft ²		

GENERAL DYNAMICS

SATCOM Technologies

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2.0 Test Results

2.1 Gain and Efficiency

Freq. (GHz)	LHCP	RHCP	Average Gain (dB)	Efficiency (%)
3.625	41.9	41.8	41.8	73%
3.825	42.2	42.1	42.1	70%
4.025	42.4	42.4	42.4	67%
4.200	42.8	42.7	42.7	67%
5.845	45.8	45.8	45.8	70%
6.045	46.0	46.0	46.0	69%
6.245	46.3	46.3	46.3	69%
6.425	46.6	46.7	46.7	71%

* 46.00dB Gain used for 29-25 Log theta Specification Line On TX Patterns

* 42.10dB Gain used for 29-25 Log theta Specification Line On RX Patterns

2.2 BeamWidth Analysis

3-dB						
Freq. (GHz)	Azimuth LHCP (Deg)	Elevation LHCP (Deg)	Azimuth RHCP (Deg)	Elevation RHCP (Deg)	Average (Deg)	Maximum (Deg)
5.845	0.93	0.98	0.92	0.97	0.95	0.98
6.045	0.90	0.94	0.90	0.94	0.92	0.94
6.245	0.87	0.91	0.87	0.91	0.89	0.91
6.425	0.84	0.89	0.85	0.88	0.87	0.89

10-dB						
Freq. (GHz)	Azimuth LHCP (Deg)	Elevation LHCP (Deg)	Azimuth RHCP (Deg)	Elevation RHCP (Deg)	Average (Deg)	Maximum (Deg)
5.845	1.64	1.72	1.63	1.70	1.67	1.72
6.045	1.59	1.67	1.59	1.65	1.63	1.67
6.245	1.53	1.62	1.53	1.61	1.57	1.62
6.425	1.48	1.59	1.48	1.55	1.53	1.59

15-dB						
Freq. (GHz)	Azimuth LHCP (Deg)	Elevation LHCP (Deg)	Azimuth RHCP (Deg)	Elevation RHCP (Deg)	Average (Deg)	Maximum (Deg)
5.845	1.94	2.06	1.92	2.04	1.99	2.06
6.045	1.88	2.00	1.87	1.98	1.93	2.00
6.245	1.81	1.94	1.80	1.93	1.87	1.94
6.425	1.76	1.89	1.75	1.87	1.82	1.89

2.3 1st Sidelobe Level

Counter Clockwise from Main Beam										
Freq. (GHz)	Azimuth RHCP		Elevation RHCP		Azimuth LHCP		Elevation LHCP		Amplitude Average (dB)	Amplitude Maximum (dB)
	Angle	Amplitude	Angle	Amplitude	Angle	Amplitude	Angle	Amplitude		
5.845	1.50	29.45	1.50	33.05	1.50	30.19	1.60	31.78	31.12	33.05
6.045	1.45	30.02	1.48	32.93	1.45	30.43	1.58	31.67	31.26	32.93
6.245	1.42	28.91	1.44	32.73	1.42	29.23	1.54	31.51	30.60	32.73
6.425	1.39	29.12	1.40	36.55	1.39	34.56	1.50	31.92	33.04	36.55

Clockwise from Main Beam										
Freq. (GHz)	Azimuth RHCP		Elevation RHCP		Azimuth LHCP		Elevation LHCP		Amplitude Average (dB)	Amplitude Maximum (dB)
	Angle	Amplitude	Angle	Amplitude	Angle	Amplitude	Angle	Amplitude		
5.845	1.48	34.86	1.50	31.14	1.48	35.94	1.79	30.50	33.11	35.94
6.045	1.45	29.80	1.47	30.97	1.45	33.04	1.75	29.89	30.93	33.04
6.245	1.40	30.06	1.46	30.35	1.40	29.80	1.73	29.36	29.89	30.35
6.425	1.40	29.44	1.42	31.58	1.40	32.39	1.70	30.59	31.00	32.39

2.4 Cross Pol Isolation On Axis

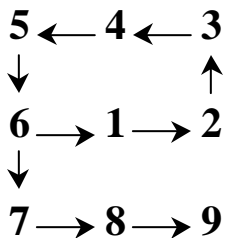
On axis referenced to mainbeam peak						
Freq. (GHz)	Azimuth LHCP (dB)	Elevation LHCP (dB)	Azimuth RHCP (dB)	Elevation RHCP (dB)	Average (dB)	Minimum (dB)
3.625	-19.0	-22.2	-21.3	-19.8	-20.6	-19.0
3.825	-31.4	-17.3	-27.1	-19.5	-23.8	-17.3
4.025	-20.5	-18.2	-18.5	-18.0	-18.8	-18.0
4.200	-17.2	-21.9	-20.6	-18.6	-19.6	-17.2
5.845	-29.8	-28.9	-30.5	-29.6	-29.7	-28.9
6.045	-31.4	-31.4	-34.2	-28.8	-31.5	-28.8
6.245	-35.6	-37.0	-39.6	-31.6	-35.9	-31.6
6.425	-34.7	-29.4	-36.8	-31.8	-33.2	-29.4

* Levels Indicate X-POL level on axis down from main beam peak.

9-Point Swept X-Pol Worst Case Level										
//////	Pos #1	Pos #2	Pos#3	Pos #4	Pos #5	Pos #6	Pos #7	Pos #8	Pos #9	Avg
LHCP	28.0	27.5	27.5	27.5	27.6	29.0	28.6	27.5	27.5	27.9
RHCP	30.0	29.0	27.5	27.4	27.5	27.4	27.4	28.9	27.6	28.1

2.5 9-Point Swept Frequency Transmit Isolation

9 Points as illustrated:



- No.1 - defined as AUT and source antenna aligned for maximum peak.
- No. 2 - AUT azimuth pointed right facing source antenna by 0.18 degrees and elevation at zero degrees.
- No. 3 - AUT azimuth pointed right facing source antenna by 0.18 degrees and AUT elevation pointed up by 0.18 degrees.
- No. 4 - AUT elevation pointed up by 0.18 degrees AUT azimuth at zero degrees.
- No. 5 - AUT azimuth pointed left facing source antenna by 0.18 degrees and AUT antenna elevation pointed up by 0.18 degrees.
- No. 6 - AUT azimuth pointed left facing source antenna by 0.18 degrees AUT elevation at zero degrees.
- No. 7 - AUT azimuth pointed left facing source antenna by 0.18 degrees and AUT elevation pointed down by 0.18 degrees.
- No. 8 - AUT elevation pointed down by 0.18 degrees AUT azimuth at zero degrees.
- No. 9 - AUT azimuth pointed right facing source antenna by 0.18 degrees and AUT elevation pointed down by 0.18 degrees.

Step size calculated as: $\frac{4.286}{f \times d}$

Where f = Frequency in GHz and d = Diameter of antenna (meters).

Position # 1

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Operator: Dwight B. Lutz

Ser. no.:

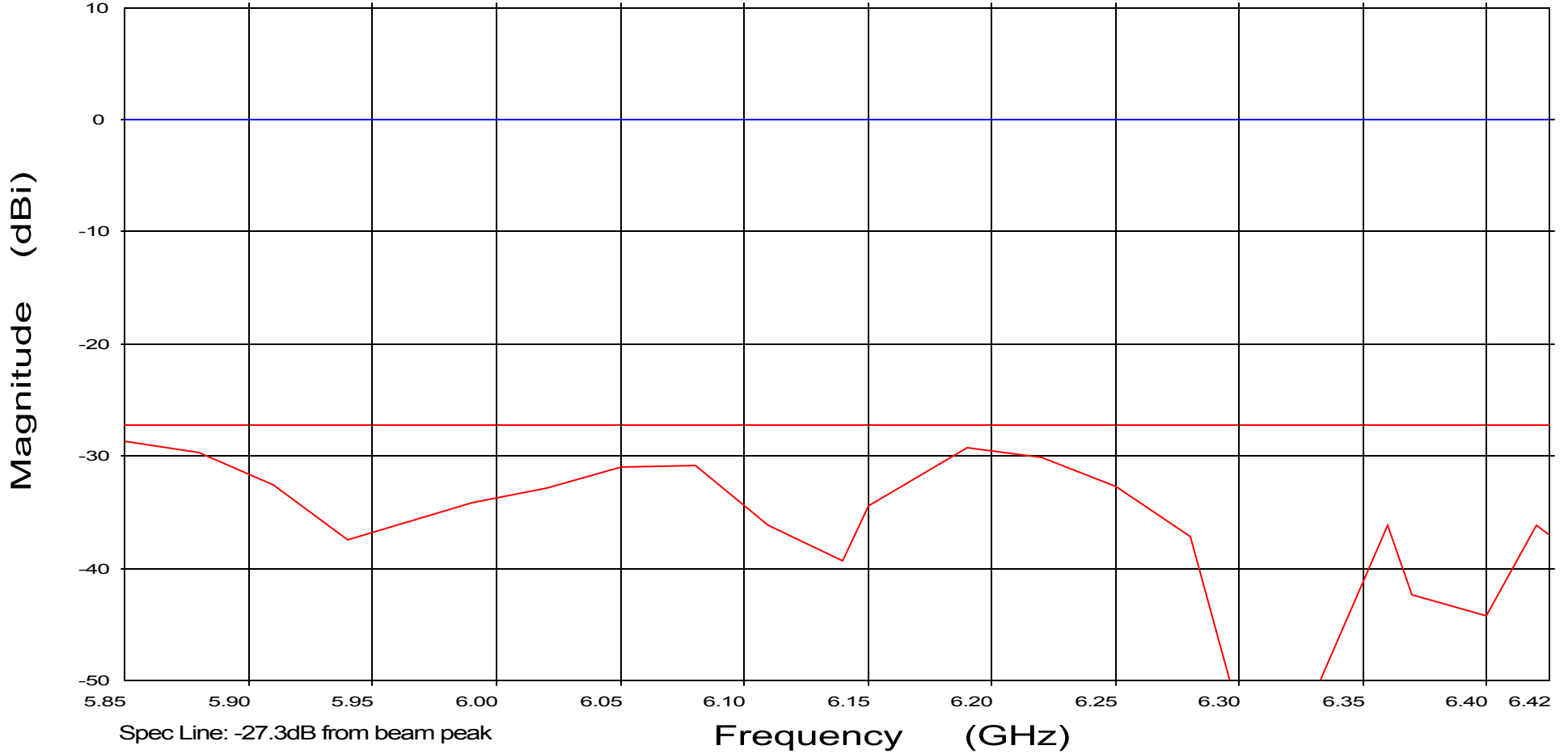
Channel: ch1

Tx pol: LHCP

Rx pol: LHCP

Azimuth : 0.00 Deg

Elevation : 0.00 Deg



Overlays
1769 87.dat-ant_under_test
1769 88.dat-ant_under_test

Cal. file
1769 87.dat
1769 88.dat

table
SGA-70
SGA-70

channel
ch1
ch1

units
dBi
dBi

Position # 2

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Operator: Dwight B. Lutz

Azimuth : -0.18 Deg

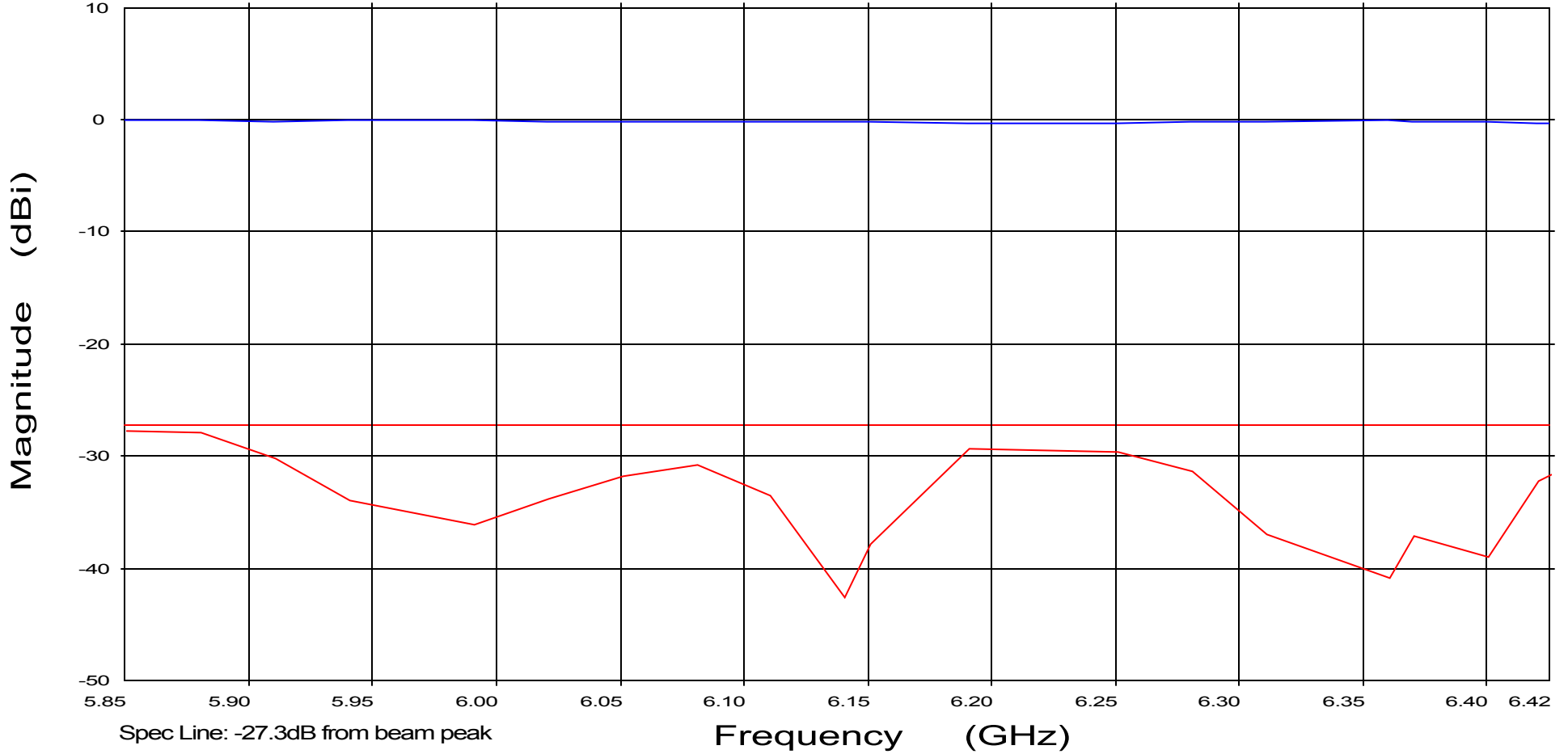
Ser. no.:

Elevation : 0.00 Deg

Channel: ch1

Tx pol: LHCP

Rx pol: LHCP



Overlays
1769 87.dat-ant_under_test
1769 88.dat-ant_under_test

Cal. file
1769 87.dat
1769 88.dat

table
SGA-70
SGA-70

channel
ch1
ch1

units
dBi
dBi

Position # 3

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Operator: Dwight B. Lutz

Azimuth : 0.18 Deg

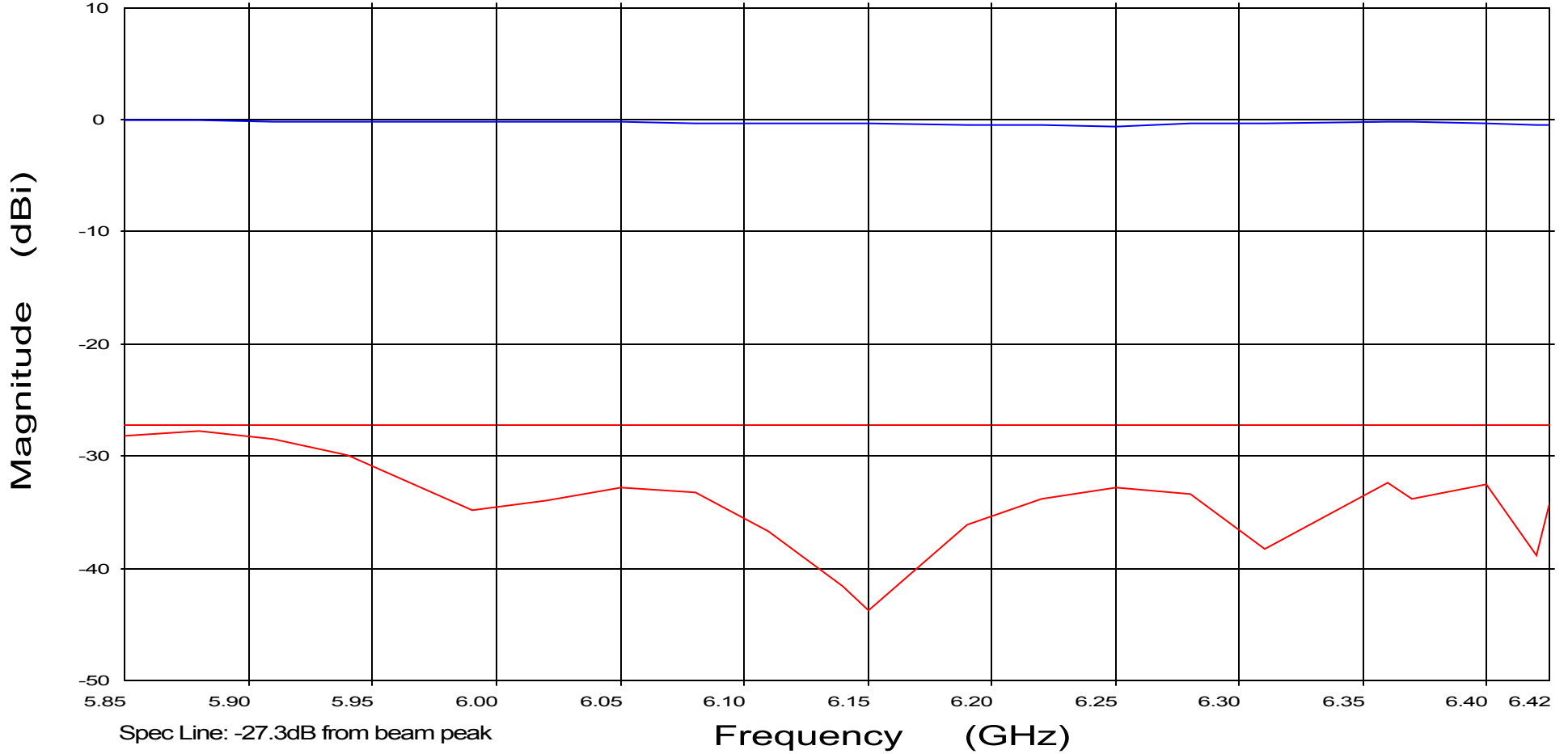
Ser. no.:

Elevation : 0.18 Deg

Channel: ch1

Tx pol: LHCP

Rx pol: LHCP



Overlays

1769 87.dat-ant_under_test — blue line
1769 89.dat-ant_under_test — red line

Cal. file

1769 87.dat
1769 89.dat

table

SGA-70
SGA-70

channel

ch1
ch1

units

dBi
dBi

Position # 4

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Operator: Dwight B. Lutz

Ser. no.:

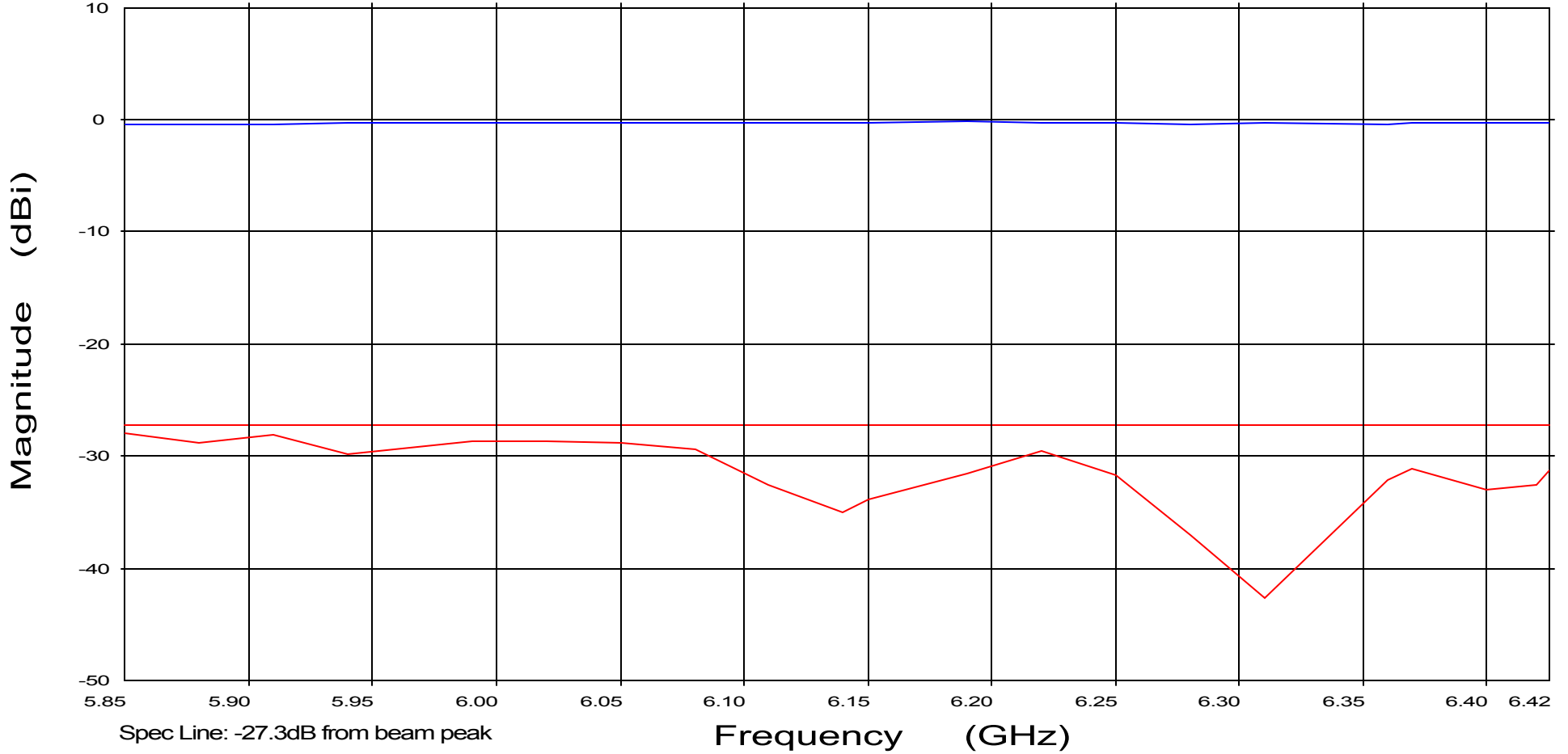
Channel: ch1

Tx pol: LHCP

Rx pol: LHCP

Azimuth : 0.00 Deg

Elevation : 0.18 Deg



Overlays
 1769 87.dat-ant_under_test
 1769 89.dat-ant_under_test

Cal. file
 1769 87.dat
 1769 89.dat

table
 SGA-70
 SGA-70

channel
 ch1
 ch1

units
 dBi
 dBi

Position # 5

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Operator: Dwight B. Lutz

Azimuth : -0.18 Deg

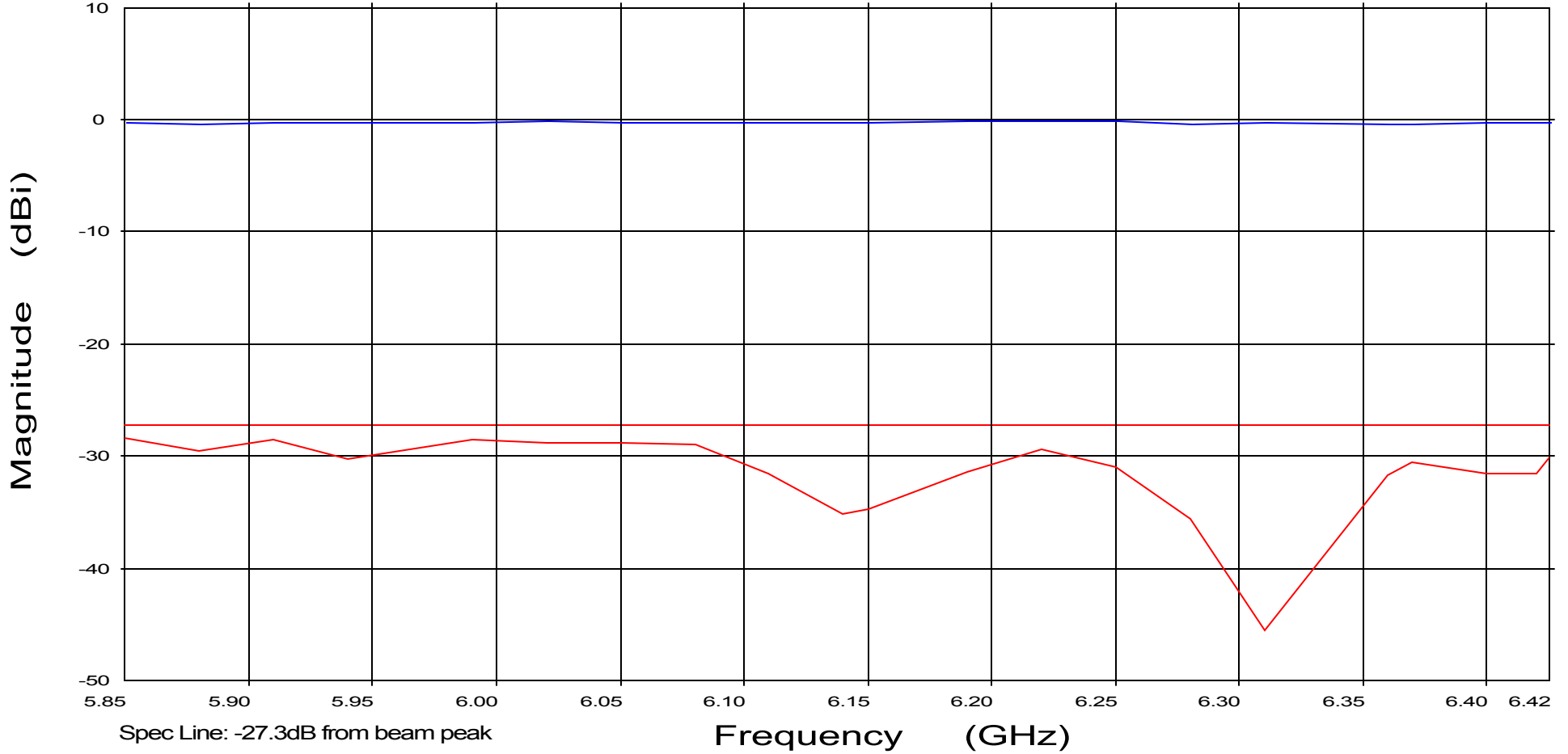
Ser. no.:

Elevation : 0.18 Deg

Channel: ch1

Tx pol: LHCP

Rx pol: LHCP



Overlays
 1769 87.dat-ant_under_test
 1769 89.dat-ant_under_test

Cal. file
 1769 87.dat
 1769 89.dat

table
 SGA-70
 SGA-70

channel
 ch1
 ch1

units
 dBi
 dBi

Position # 6

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Operator: Dwight B. Lutz

Ser. no.:

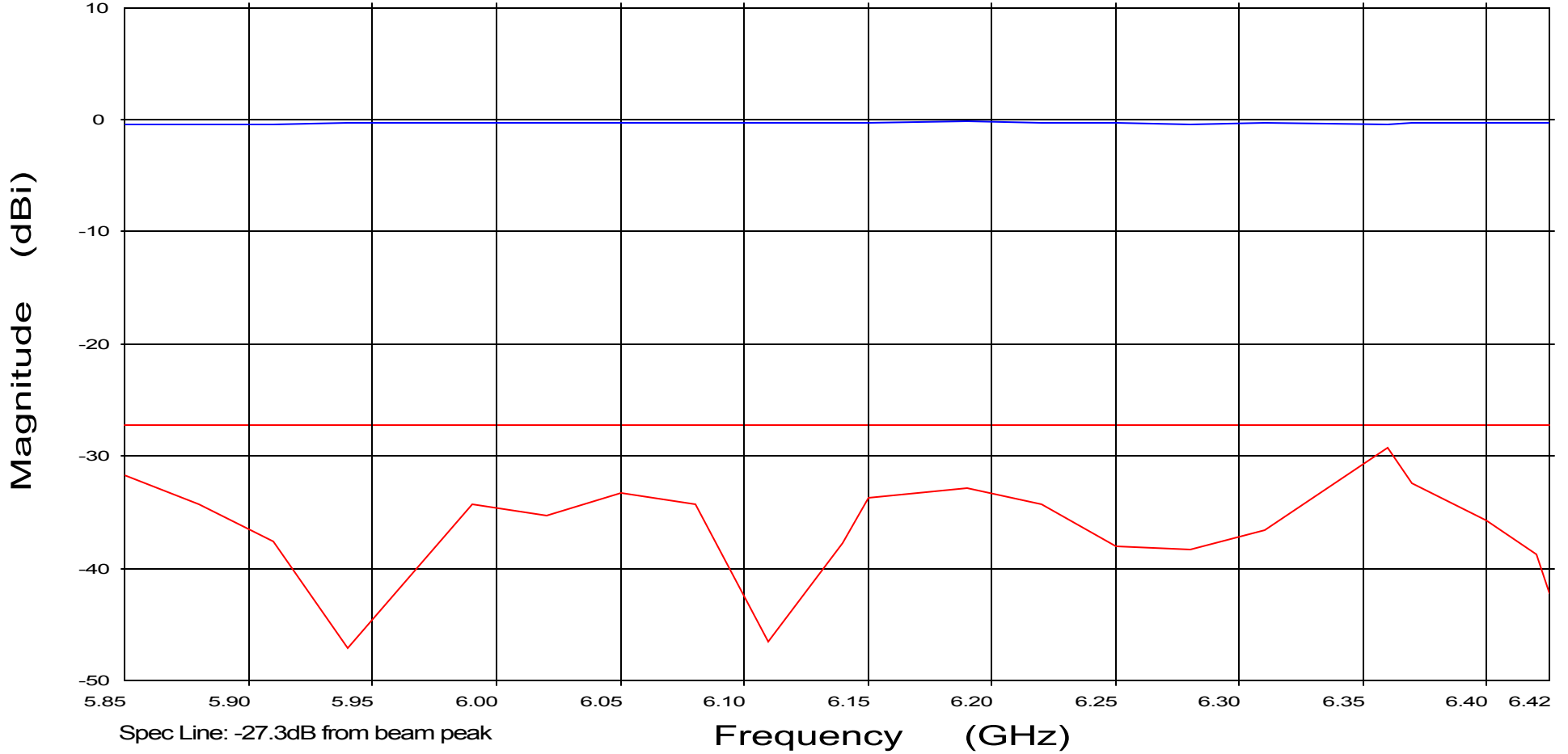
Channel: ch1

Tx pol: LHCP

Rx pol: LHCP

Azimuth : -0.18 Deg

Elevation : 0.00 Deg



Overlays
1769 87.dat-ant_under_test
1769 88.dat-ant_under_test

Cal. file
1769 87.dat
1769 88.dat

table
SGA-70
SGA-70

channel
ch1
ch1

units
dBi
dBi

Position # 7

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Operator: Dwight B. Lutz

Ser. no.:

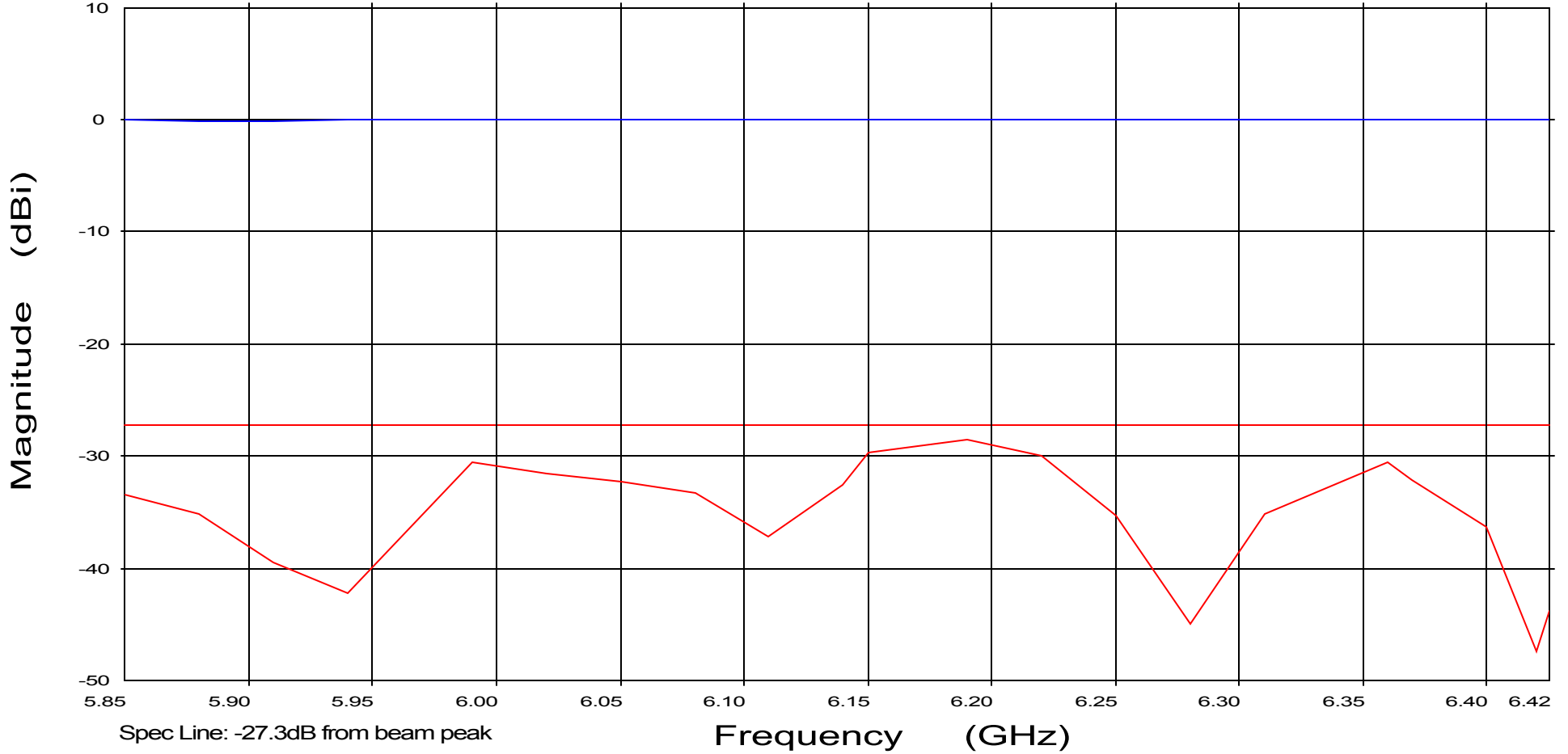
Channel: ch1

Tx pol: LHCP

Rx pol: LHCP

Azimuth : -0.18Deg

Elevation : -0.18 Deg



Overlays

1769 87.dat-ant_under_test — (blue line)
 1769 90.dat-ant_under_test — (red line)

Cal. file

1769 87.dat
 1769 90.dat

table

SGA-70
 SGA-70

channel

ch1
 ch1

units

dBi
 dBi

Position # 8

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Operator: Dwight B. Lutz

Azimuth : 0.00 Deg

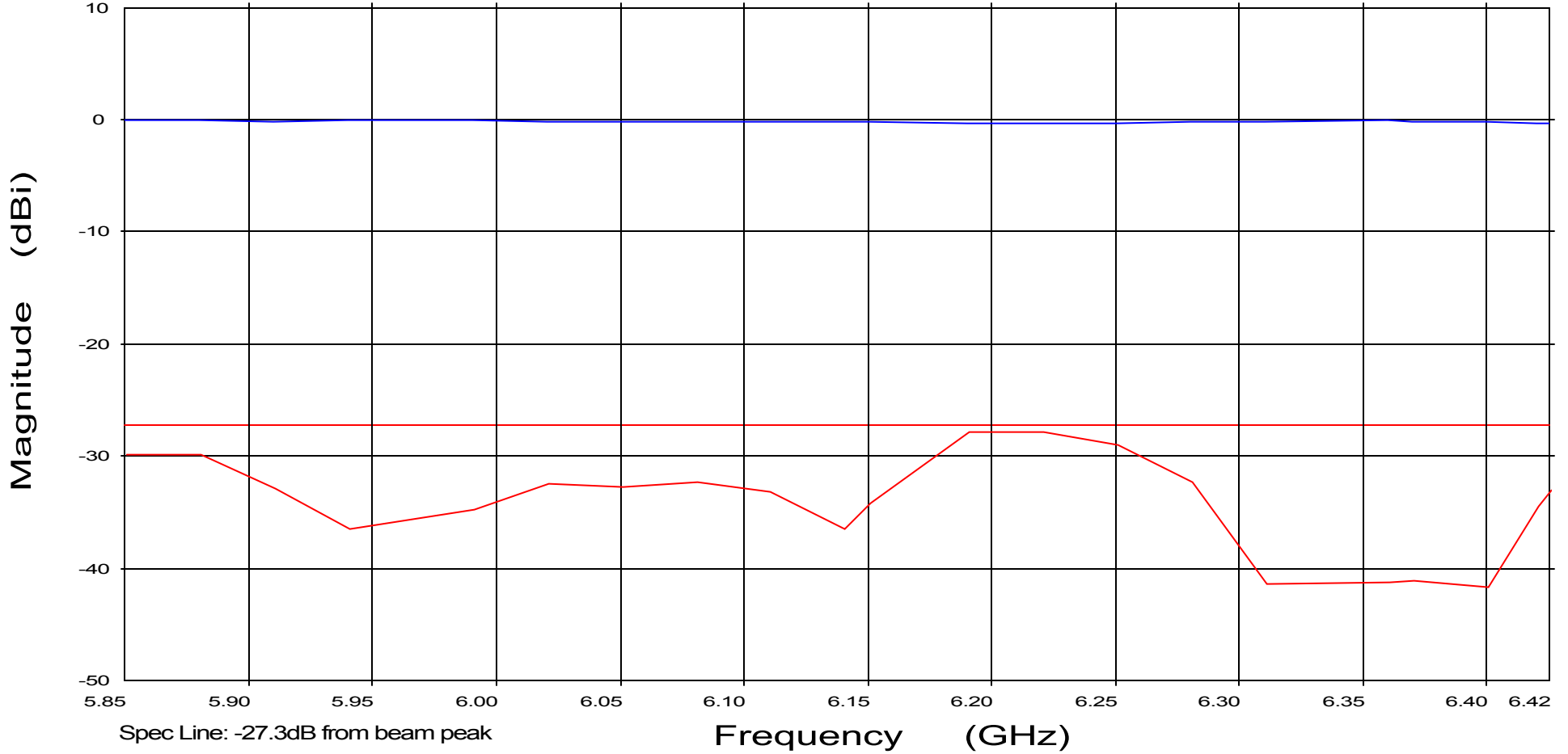
Ser. no.:

Elevation : -0.18 Deg

Channel: ch1

Tx pol: LHCP

Rx pol: LHCP



Overlays

1769 87.dat-ant_under_test — blue line
1769 90.dat-ant_under_test — red line

Cal. file

1769 87.dat
1769 90.dat

table

SGA-70
SGA-70

channel

ch1
ch1

units

dBi
dBi

Position # 9

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Operator: Dwight B. Lutz

Ser. no.:

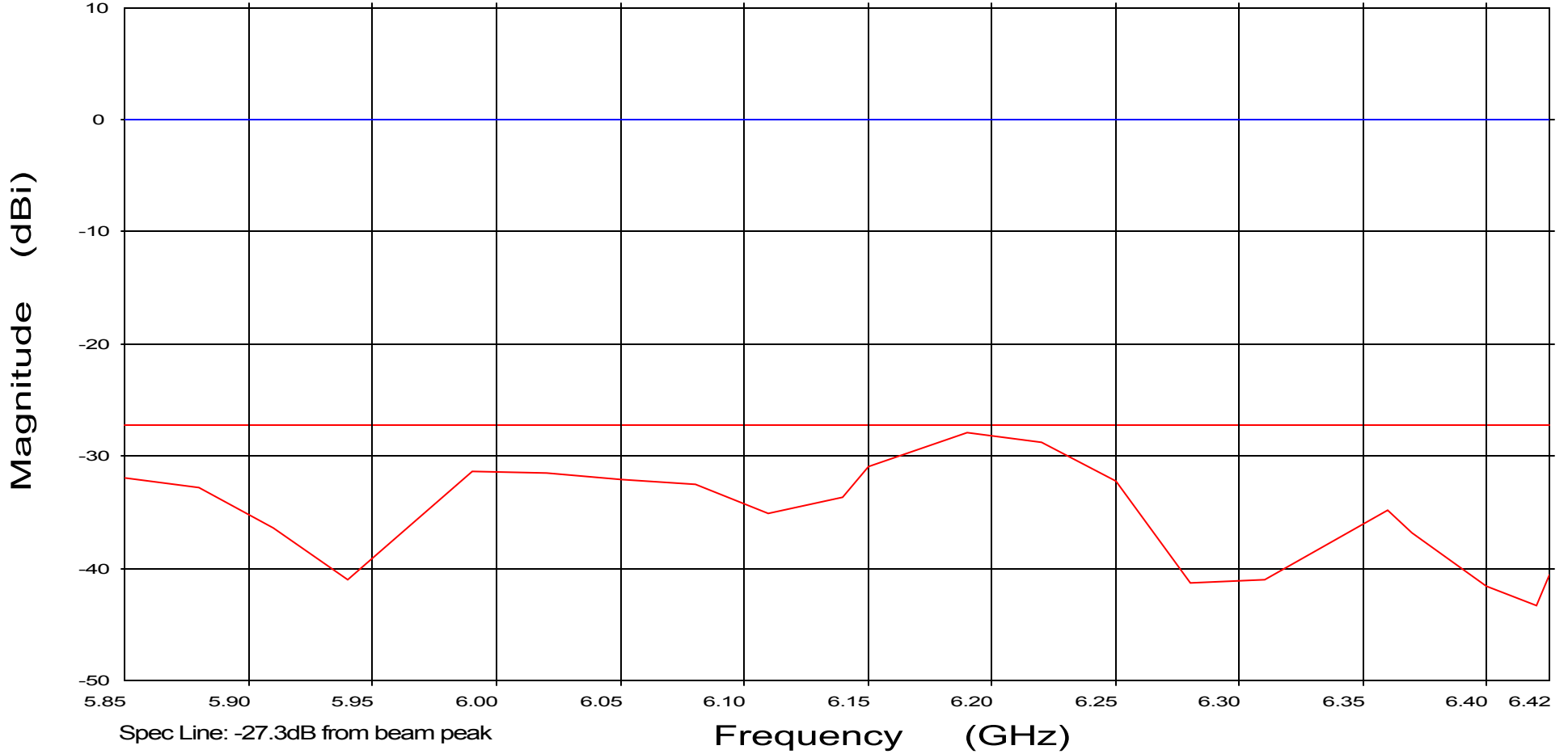
Channel: ch1

Tx pol: LHCP

Rx pol: LHCP

Azimuth : 0.18 Deg

Elevation : -0.18 Deg



Overlays
 1769 87.dat-ant_under_test
 1769 90.dat-ant_under_test

Cal. file
 1769 87.dat
 1769 90.dat

table
 SGA-70
 SGA-70

channel
 ch1
 ch1

units
 dBi
 dBi

Position # 1

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Operator: Dwight B. Lutz

Ser. no.:

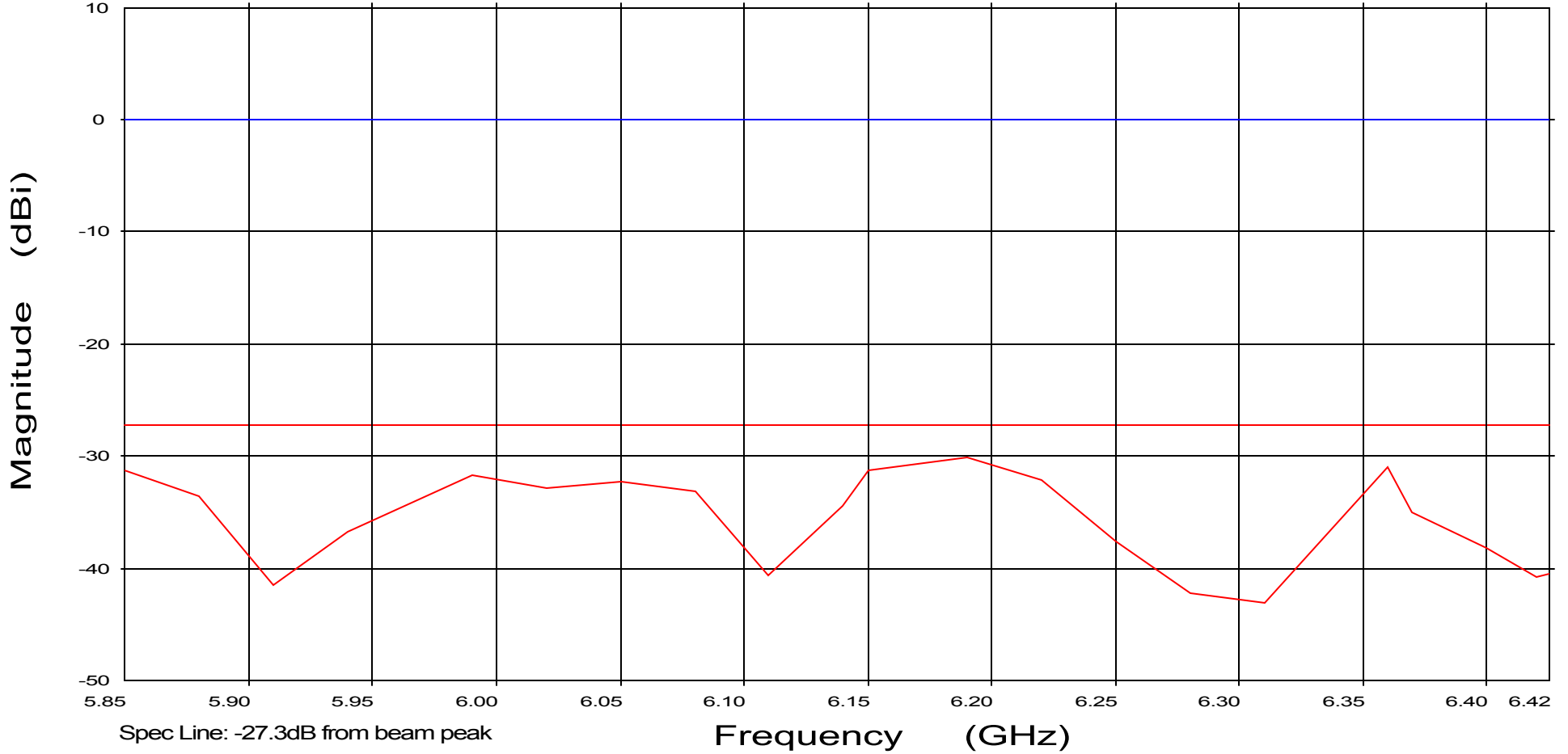
Channel: ch1

Tx pol: RHCP

Rx pol: RHCP

Azimuth : 0.00 Deg

Elevation : 0.00 Deg



Overlays
 1769 78.dat-ant_under_test
 1769 79.dat-ant_under_test

Cal. file
 1769 78.dat
 1769 79.dat

table
 SGA-70
 SGA-70

channel
 ch1
 ch1

units
 dBi
 dBi

Position # 2

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Operator: Dwight B. Lutz

Ser. no.:

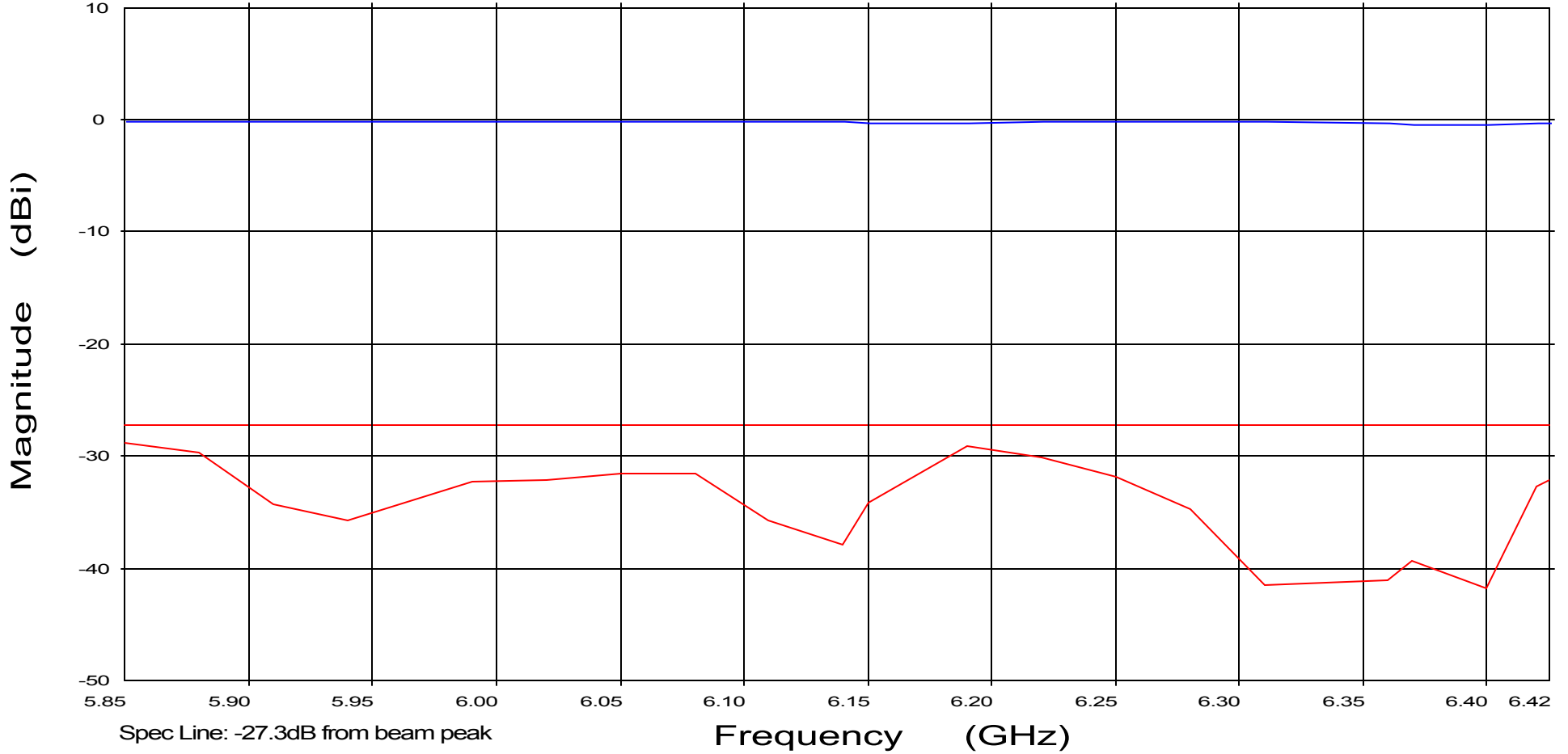
Channel: ch1

Tx pol: RHCP

Rx pol: RHCP

Azimuth : 0.18 Deg

Elevation : 0.00 Deg



Overlays

1769 78.dat-ant_under_test — (blue line)
 1769 79.dat-ant_under_test — (red line)

Cal. file

1769 78.dat
 1769 79.dat

table

SGA-70
 SGA-70

channel

ch1
 ch1

units

dBi
 dBi

Position # 3

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Operator: Dwight B. Lutz

Ser. no.:

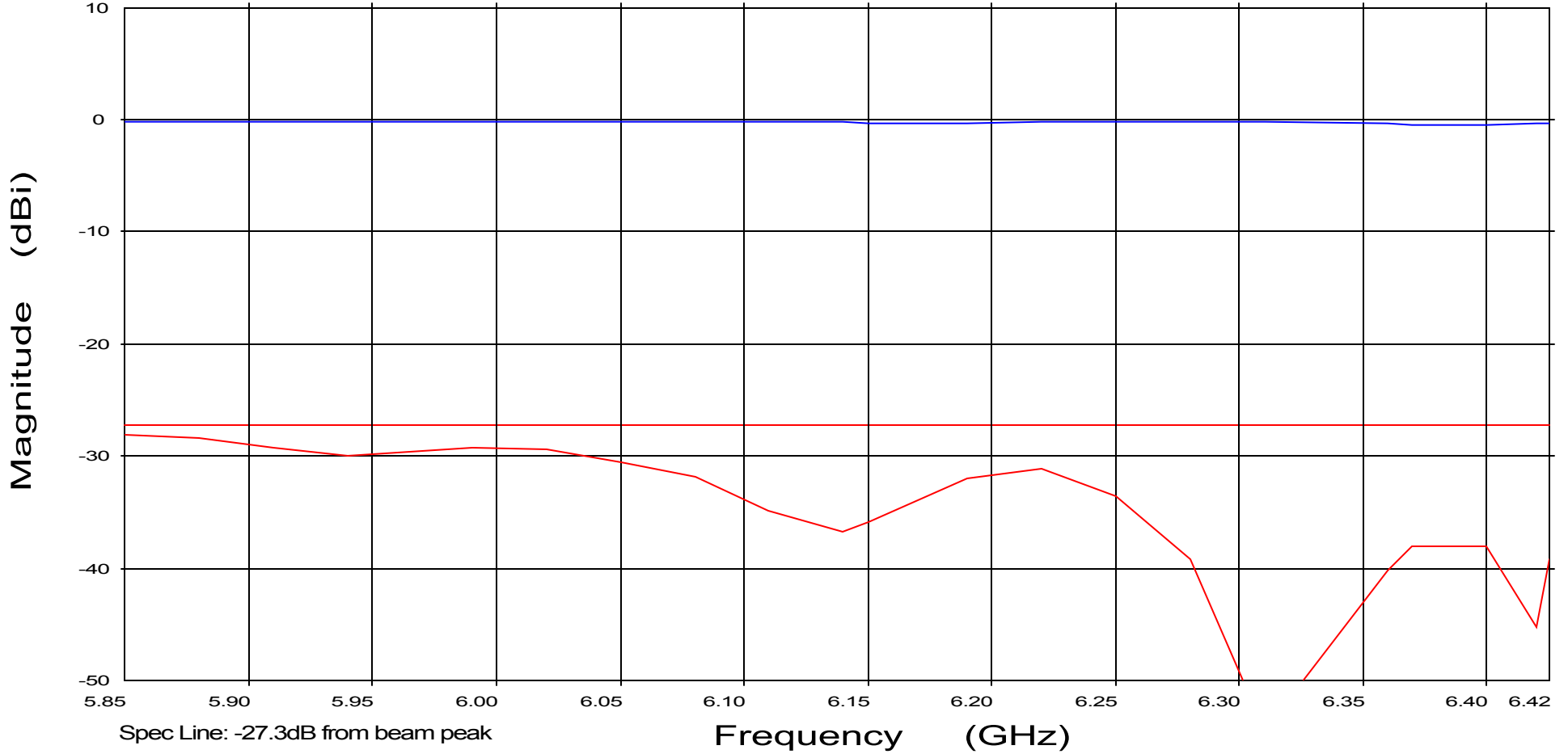
Channel: ch1

Tx pol: RHCP

Rx pol: RHCP

Azimuth : 0.18 Deg

Elevation : 0.18 Deg



Overlays

1769 78.dat-ant_under_test — (blue line)
 1769 80.dat-ant_under_test — (red line)

Cal. file

1769 78.dat
 1769 80.dat

table

SGA-70
 SGA-70

channel

ch1
 ch1

units

dBi
 dBi

Position # 4

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Operator: Dwight B. Lutz

Ser. no.:

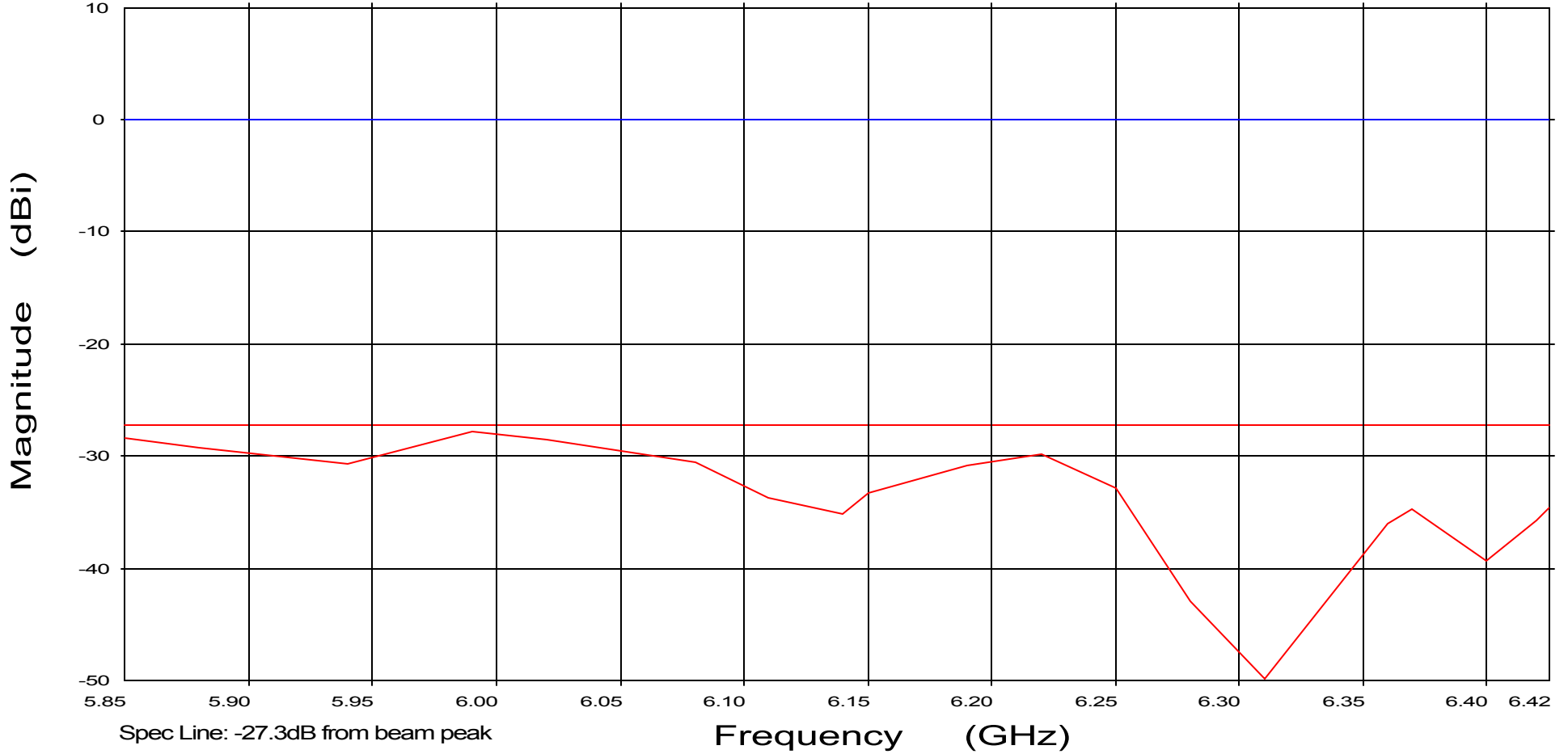
Channel: ch1

Tx pol: RHCP

Rx pol: RHCP

Azimuth : 0.00 Deg

Elevation : 0.18 Deg



Overlays
1769 78.dat-ant_under_test
1769 80.dat-ant_under_test

Cal. file
1769 78.dat
1769 80.dat

table
SGA-70
SGA-70

channel
ch1
ch1

units
dBi
dBi

Position # 5

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Operator: Dwight B. Lutz

Ser. no.:

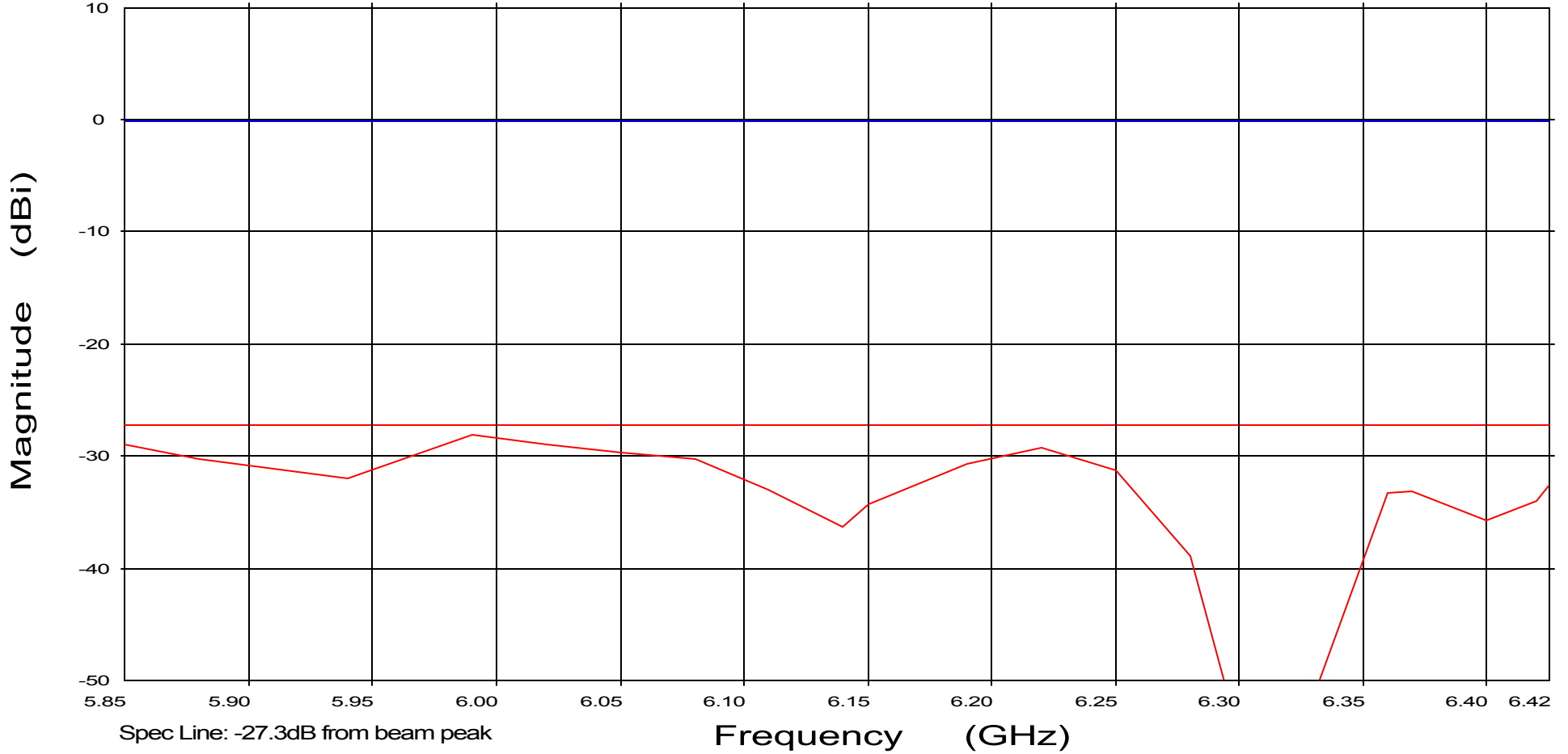
Channel: ch1

Tx pol: RHCP

Rx pol: RHCP

Azimuth : -0.18 Deg

Elevation : 0.18 Deg



Overlays
1769 78.dat-ant_under_test
1769 80.dat-ant_under_test

Cal. file
1769 78.dat
1769 80.dat

table
SGA-70
SGA-70

channel
ch1
ch1

units
dBi
dBi

Position # 6

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Operator: Dwight B. Lutz

Azimuth : 0.18 Deg

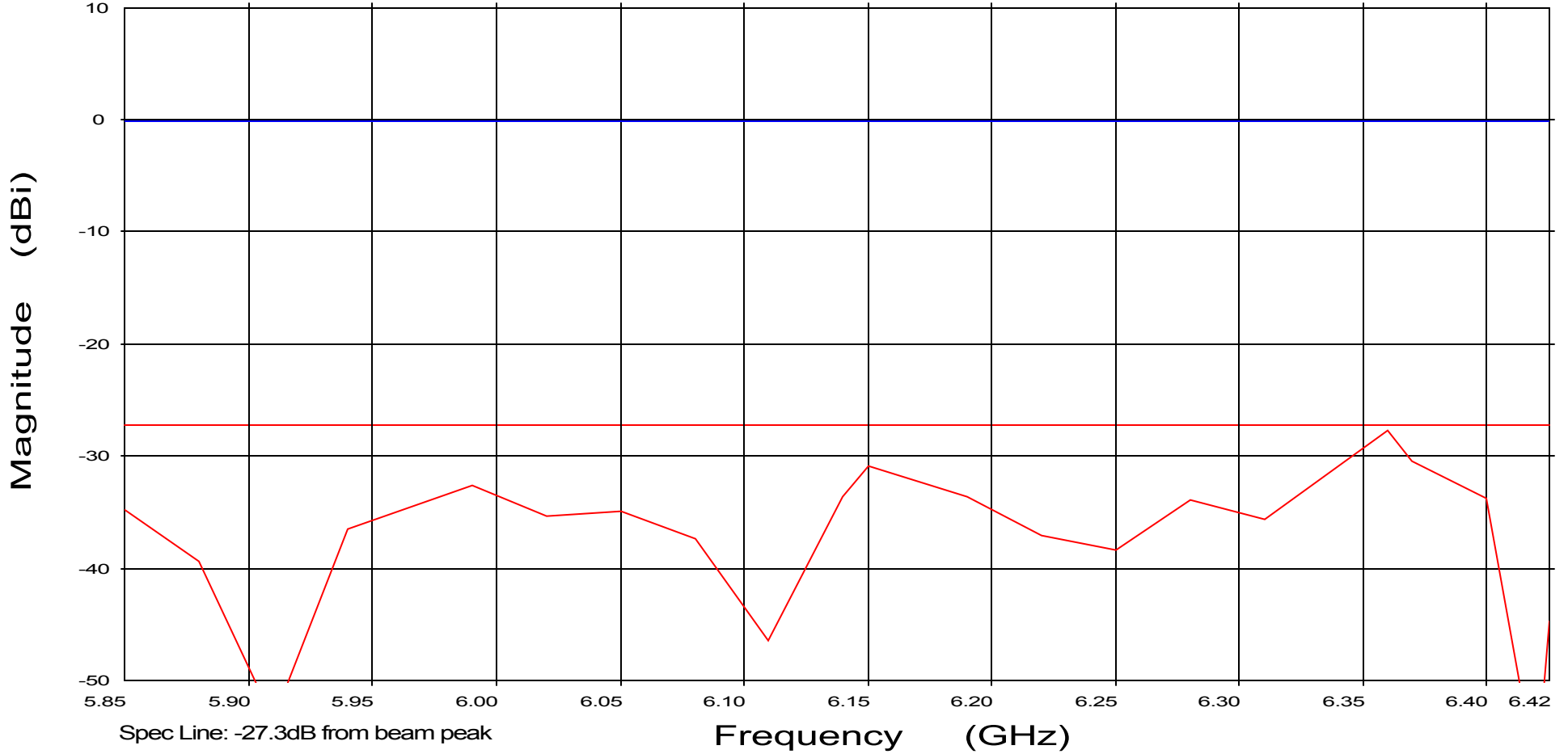
Ser. no.:

Elevation : 0.00 Deg

Channel: ch1

Tx pol: RHCP

Rx pol: RHCP



Overlays

1769 78.dat-ant_under_test — blue line
1769 79.dat-ant_under_test — red line

Cal. file

1769 78.dat
1769 79.dat

table

SGA-70
SGA-70

channel

ch1
ch1

units

dBi
dBi

Position # 7

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Operator: Dwight B. Lutz

Ser. no.:

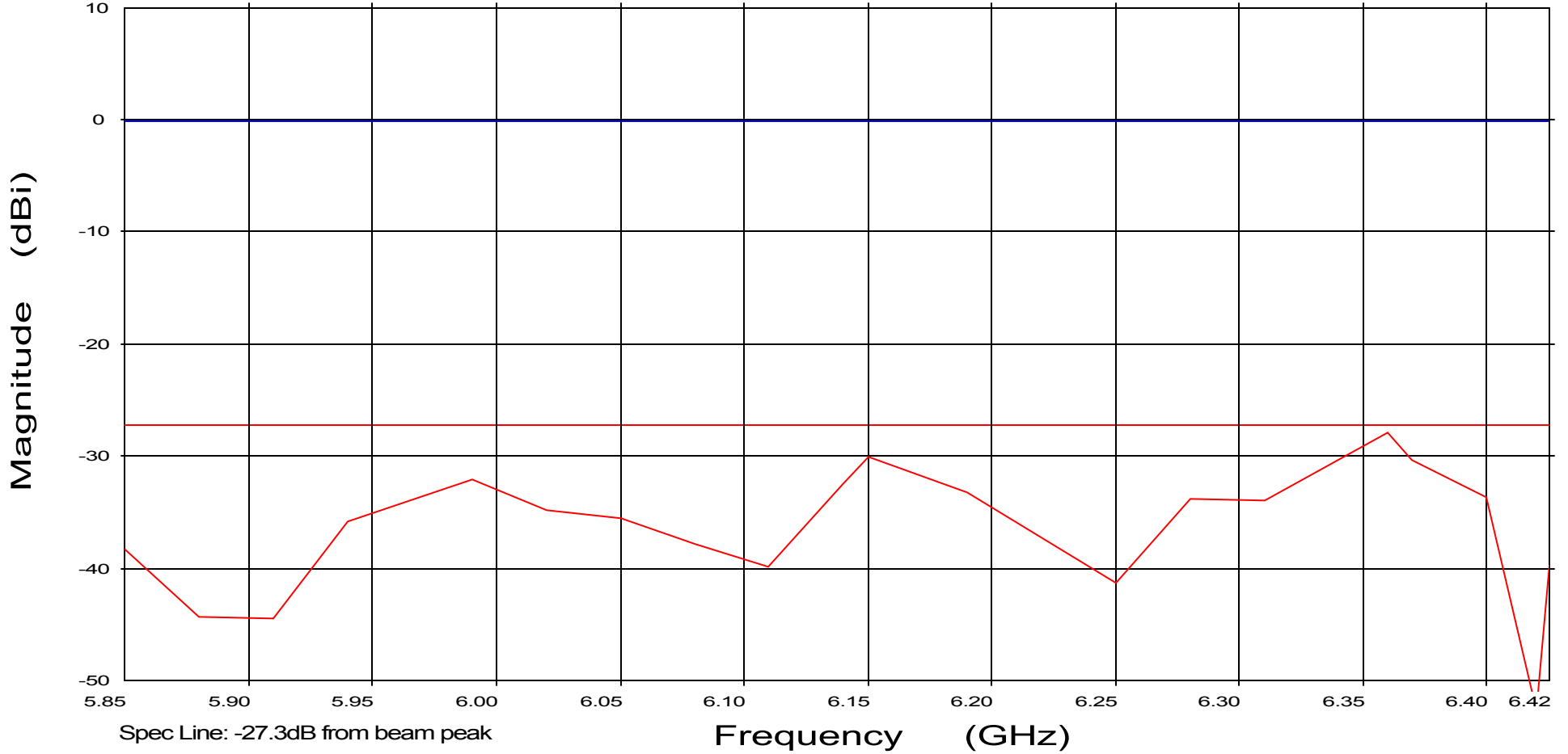
Channel: ch1

Tx pol: RHCP

Rx pol: RHCP

Azimuth : -0.18 Deg

Elevation : -0.18 Deg



Overlays

1769 78.dat-ant_under_test
1769 81.dat-ant_under_test

Cal. file

1769 78.dat
1769 81.dat

table

SGA-70
SGA-70

channel

ch1
ch1

units

dBi
dBi

Position # 8

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Operator: Dwight B. Lutz

Ser. no.:

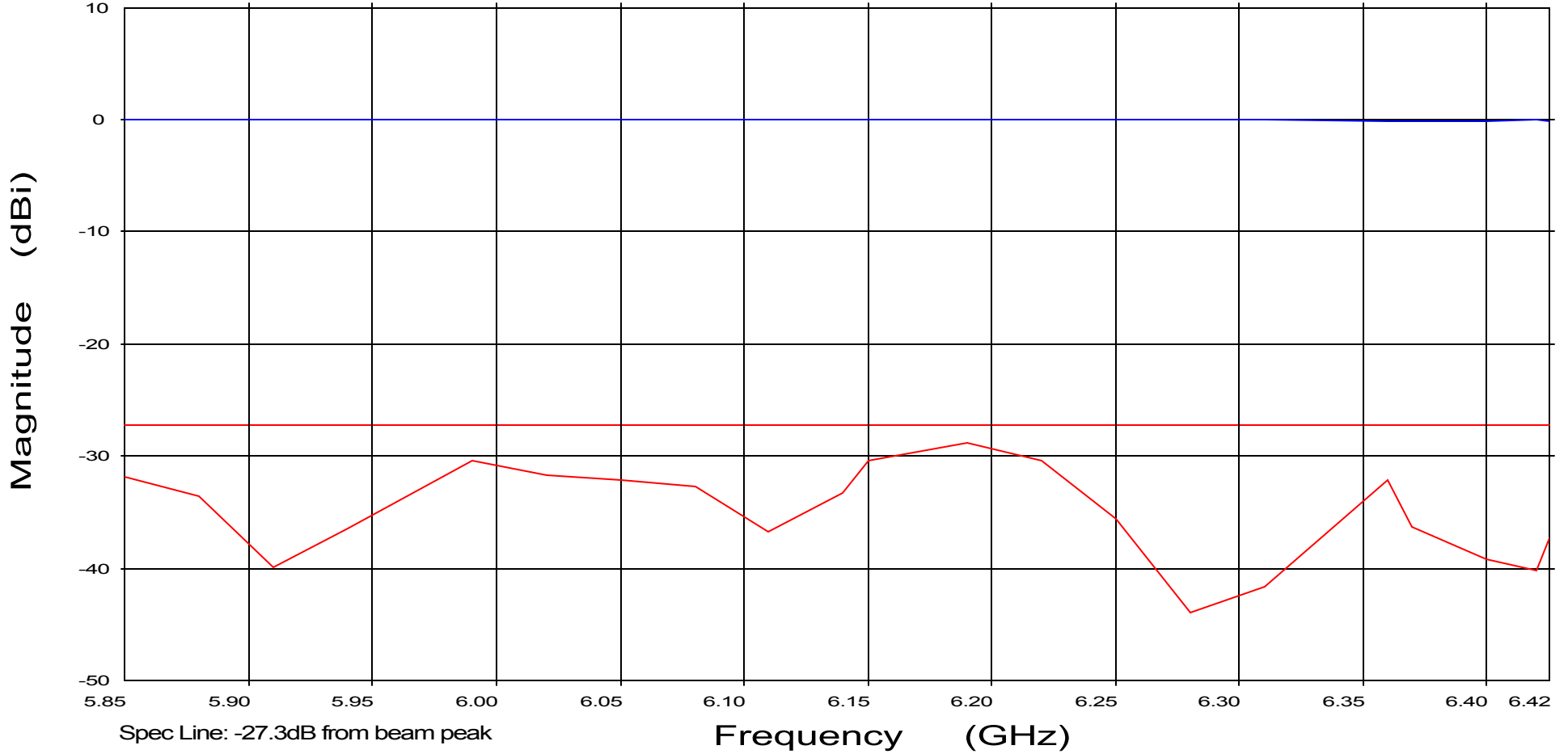
Channel: ch1

Tx pol: RHCP

Rx pol: RHCP

Azimuth : 0.00 Deg

Elevation : -0.18 Deg



Overlays

1769 78.dat-ant_under_test — blue line
 1769 81.dat-ant_under_test — red line

Cal. file

1769 78.dat
 1769 81.dat

table

SGA-70
 SGA-70

channel

ch1
 ch1

units

dBi
 dBi

Position # 9

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Operator: Dwight B. Lutz

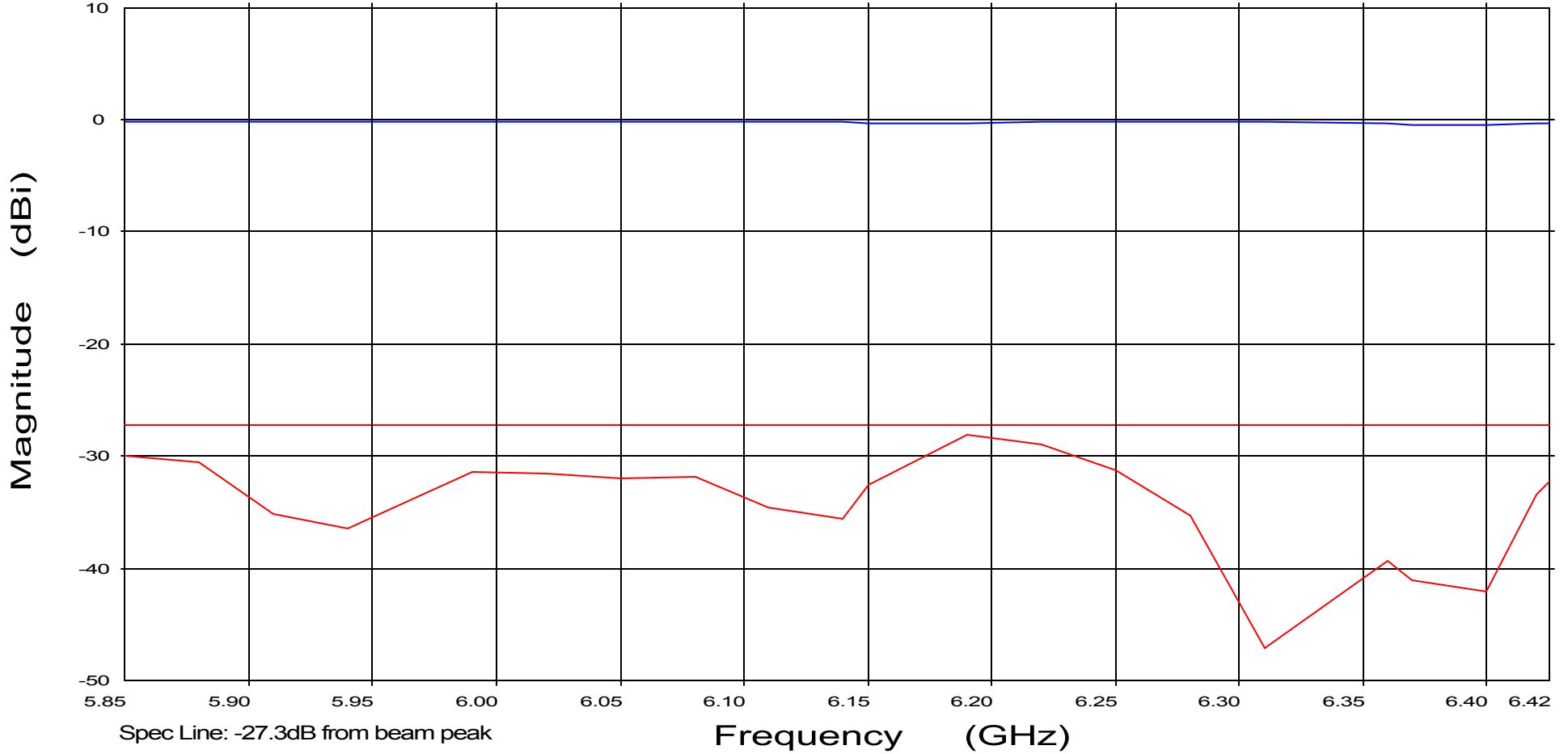
Azimuth : 0.18 Deg
Elevation : -0.18 Deg

Ser. no.:

Channel: ch1

Tx pol: RHCP

Rx pol: RHCP



Overlays
 1769 78.dat-ant_under_test
 1769 81.dat-ant_under_test

Cal. file
 1769 78.dat
 1769 81.dat

table
 SGA-70
 SGA-70

channel
 ch1
 ch1

units
 dBi
 dBi

3.0 Antenna Pattern Measurements

3.1 LHCP Transmit Close-in Patterns

File: 1769 15.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 15.dat
Chan.: ch1
Table: SGA-70
Units: dBi

Frequency : See Legend

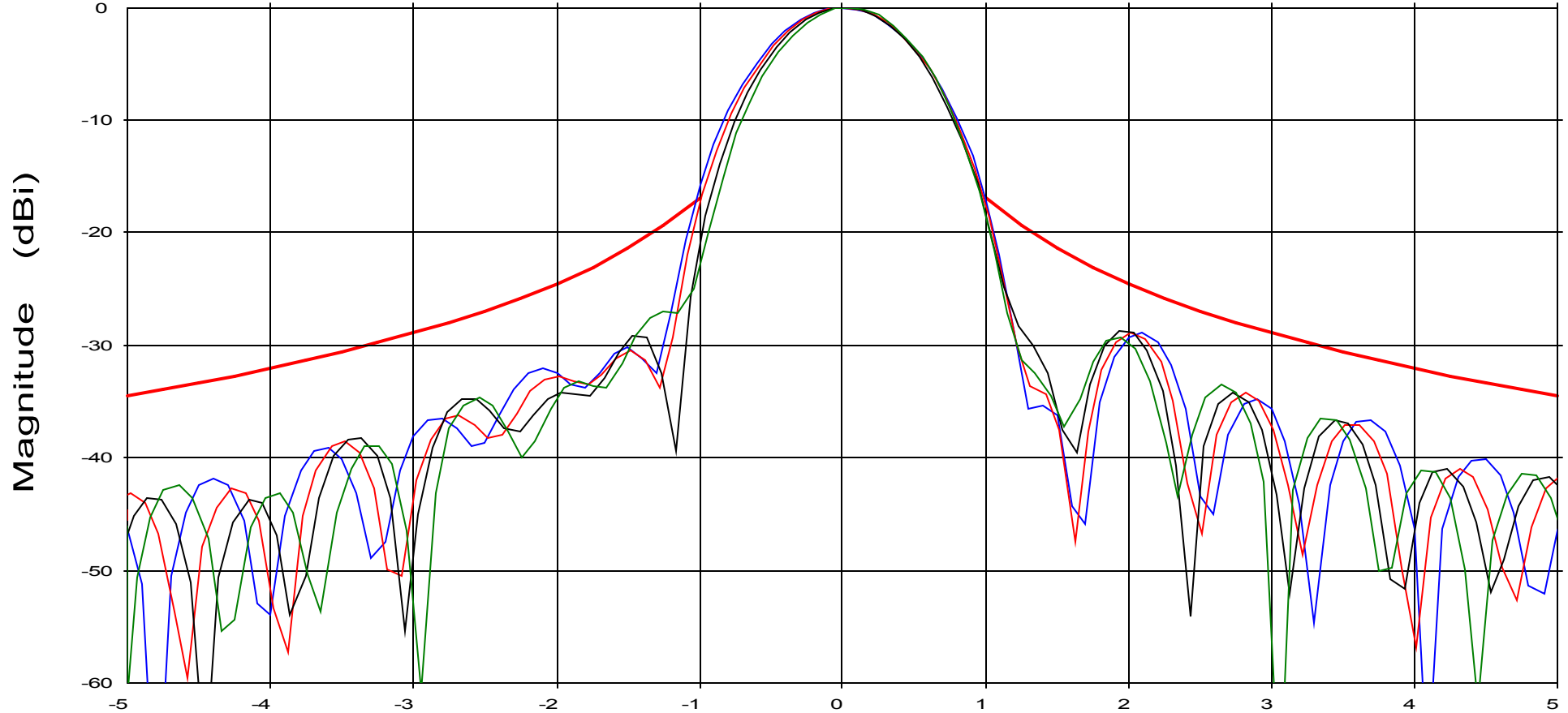
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: LHCP

Rx pol: LHCP



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

Overlays

Frequency : 5.845 GHz — Blue
 Frequency : 6.045 GHz — Red
 Frequency : 6.245 GHz — Black
 Frequency : 6.425 GHz — Green

Azimuth (Deg)

Beam Width @ 3 dB

(Deg)
 0.93
 0.90
 0.87
 0.84

Beam Width @ 10 dB

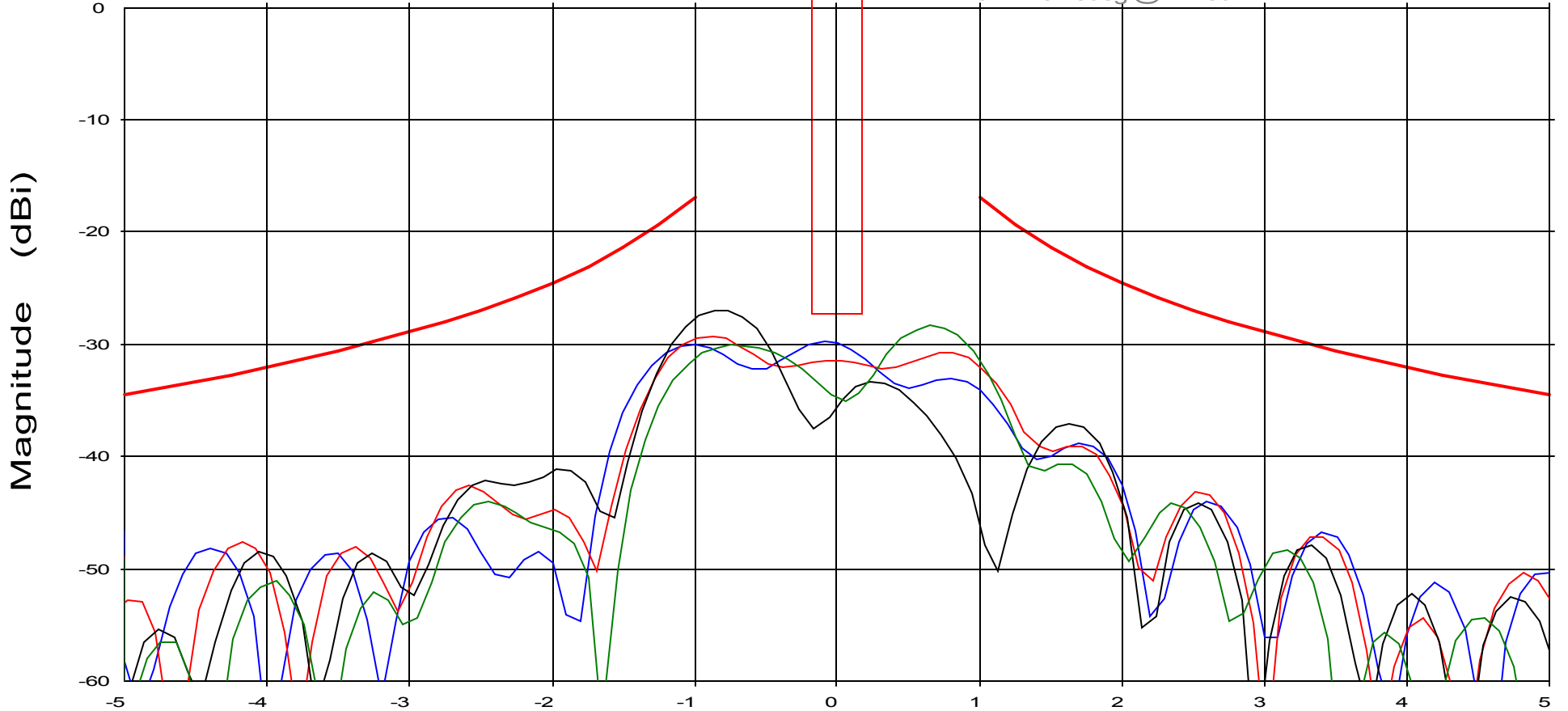
(Deg)
 1.64
 1.59
 1.53
 1.48

Operator: Dwight B. Lutz
Ser. no.:
Channel: ch1

Tx pol: LHCP

Rx pol: LHCP

XPD Box +/- 0.18deg @ -27.3dB



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

- Overlays
- Frequency : 5.845 GHz — blue
 - Frequency : 6.045 GHz — red
 - Frequency : 6.245 GHz — black
 - Frequency : 6.425 GHz — green

Beam Width (Deg)
 1.66
 2.26

Supp Beam Width @ 10 dB (Deg)
 2.95
 2.92
 1.20
 2.60

File: 1769 13.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

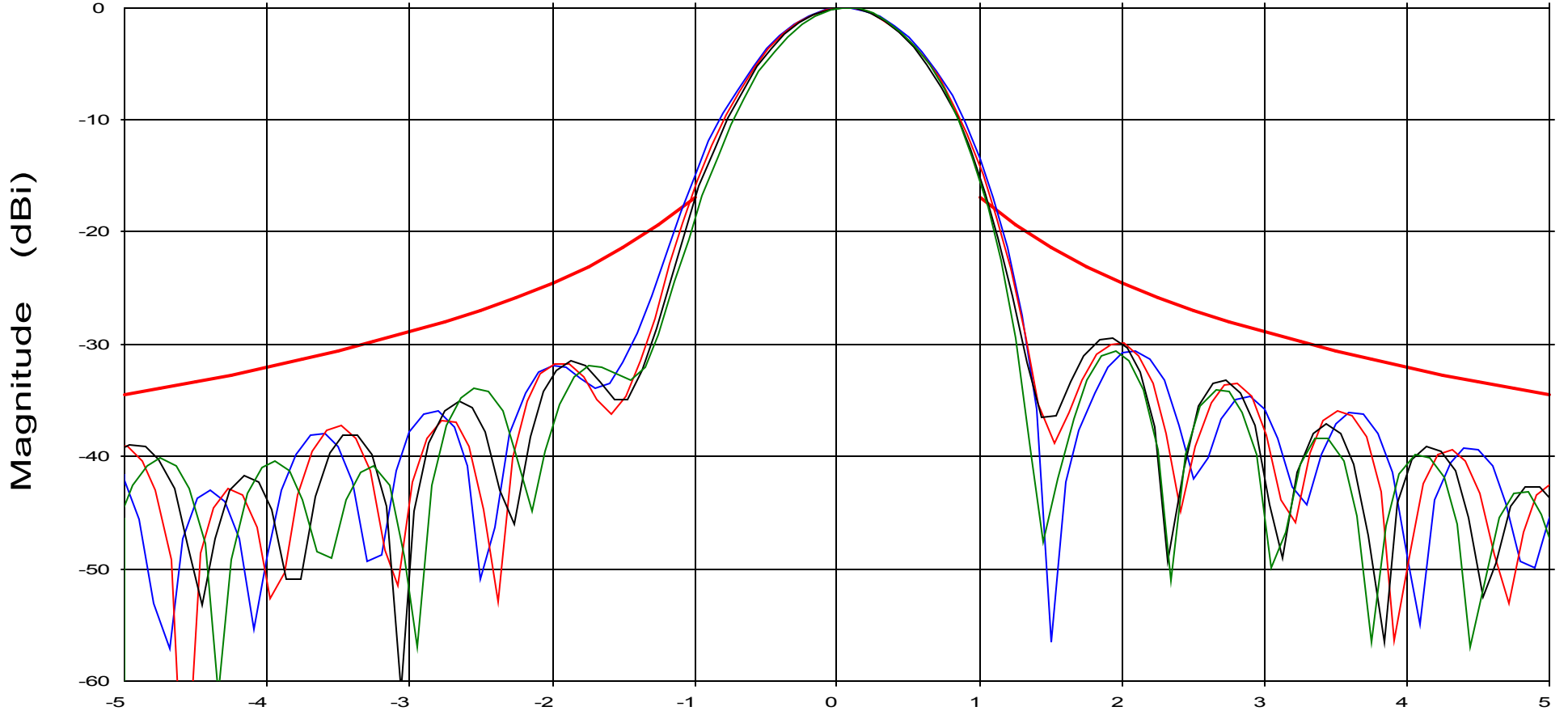
Calibration status:
File: 1769 13.dat
Chan.: ch1
Table: SGA-70
Units: dBi

Frequency : See Legend

Operator: Dwight B. Lutz
Ser. no.:
Channel: ch1

Tx pol: LHCP

Rx pol: LHCP



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

Overlays
 Frequency : 5.845 GHz — blue
 Frequency : 6.045 GHz — red
 Frequency : 6.245 GHz — black
 Frequency : 6.425 GHz — green

Elevation (Deg)

Beam Width @ 3 dB

(Deg)
 0.98
 0.94
 0.91
 0.89

Beam Width @ 10 dB

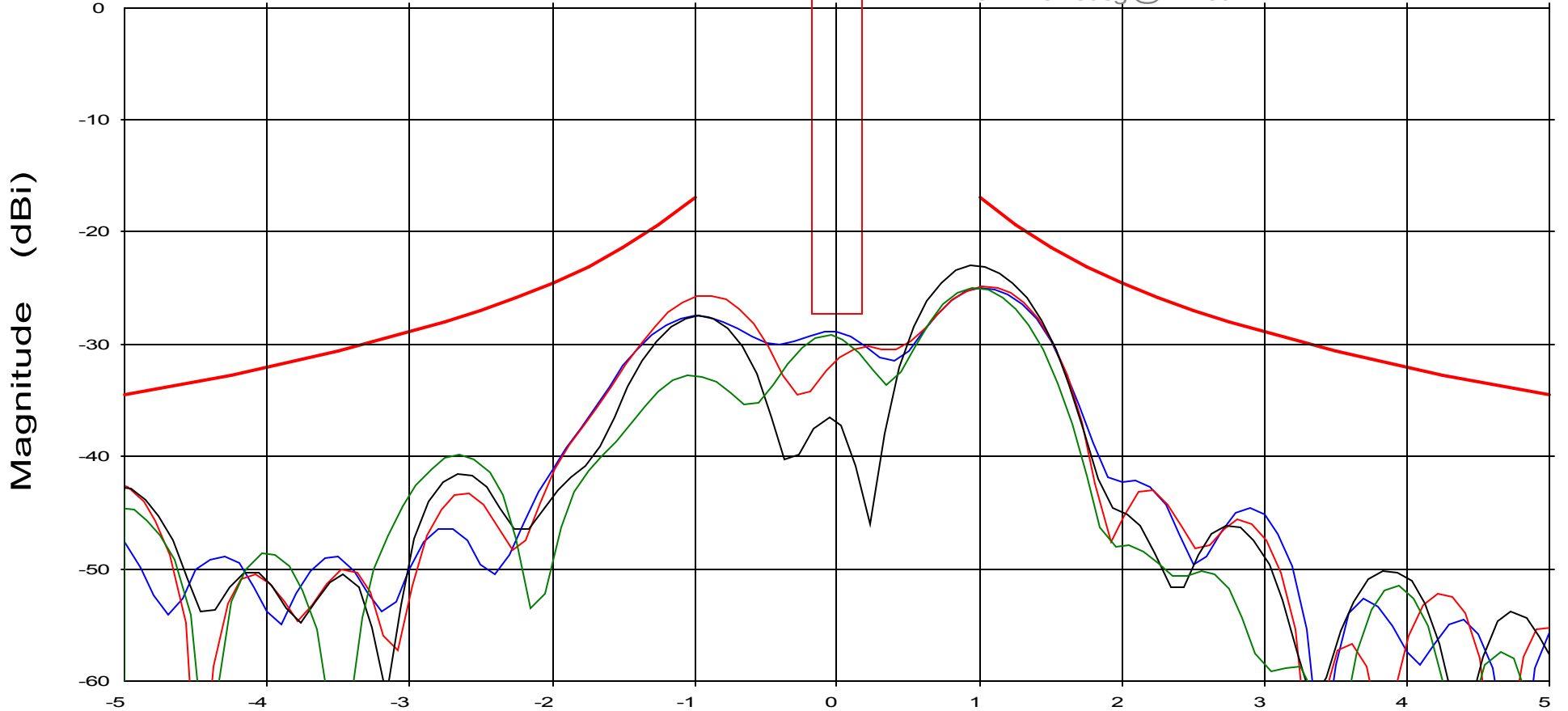
(Deg)
 1.72
 1.67
 1.62
 1.59

Operator: Dwight B. Lutz
Ser. no.:
Channel: ch1

Tx pol: LHCP

Rx pol: LHCP

XPD Box +/- 0.18deg @ -27.3dB



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

Overlays
 Frequency : 5.845 GHz — blue
 Frequency : 6.045 GHz — red
 Frequency : 6.245 GHz — black
 Frequency : 6.425 GHz — green

Elevation (Deg)

Beam Width (Deg)

0.75
 0.75
 0.70
 0.68

Supp Beam Width @ 10 dB (Deg)

3.35
 3.31
 1.20
 2.13

File: 1769 15.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 15.dat
Chan.: ch1
Table: SGA-70
Units: dBi

Frequency : See Legend

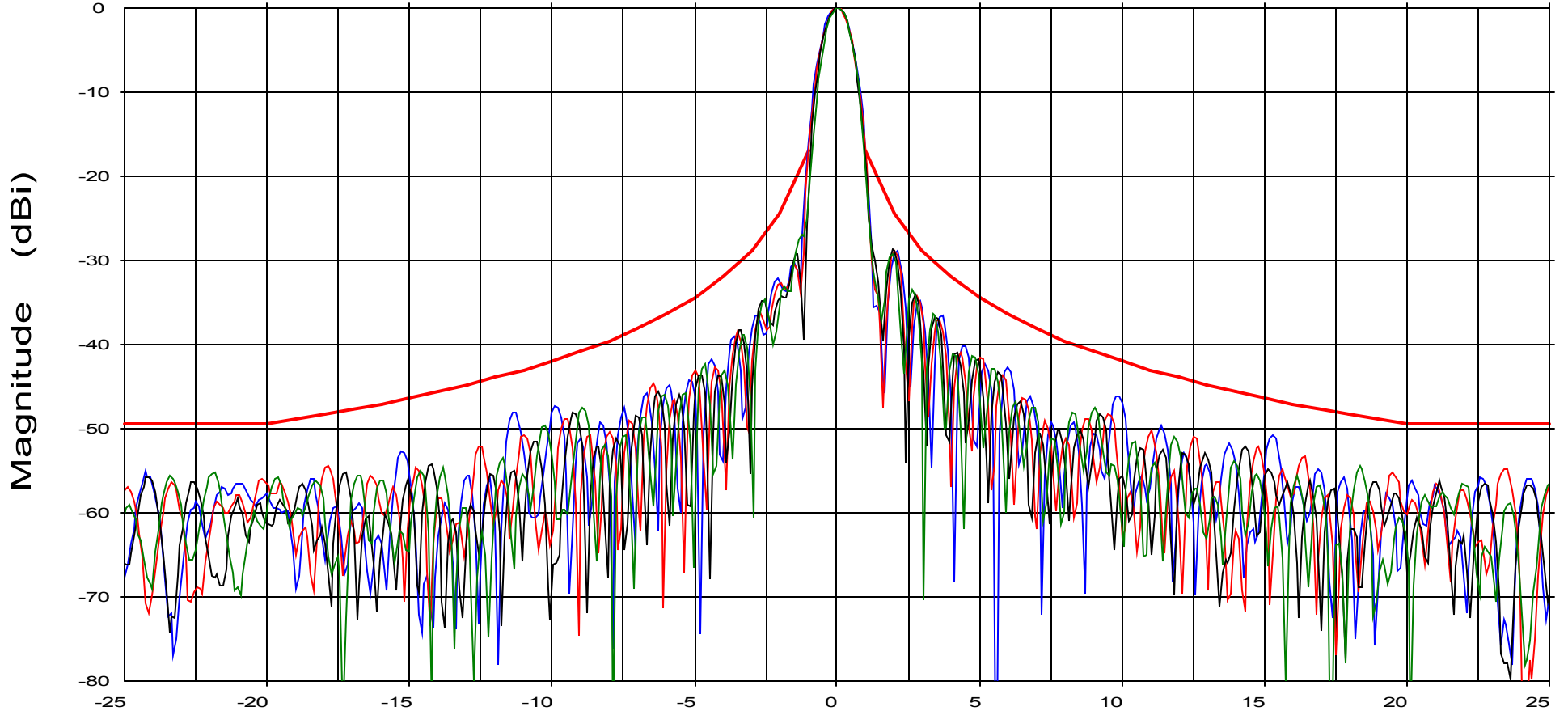
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: LHCP

Rx pol: LHCP



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

Overlays

- Frequency : 5.845 GHz — blue
- Frequency : 6.045 GHz — red
- Frequency : 6.245 GHz — black
- Frequency : 6.425 GHz — green

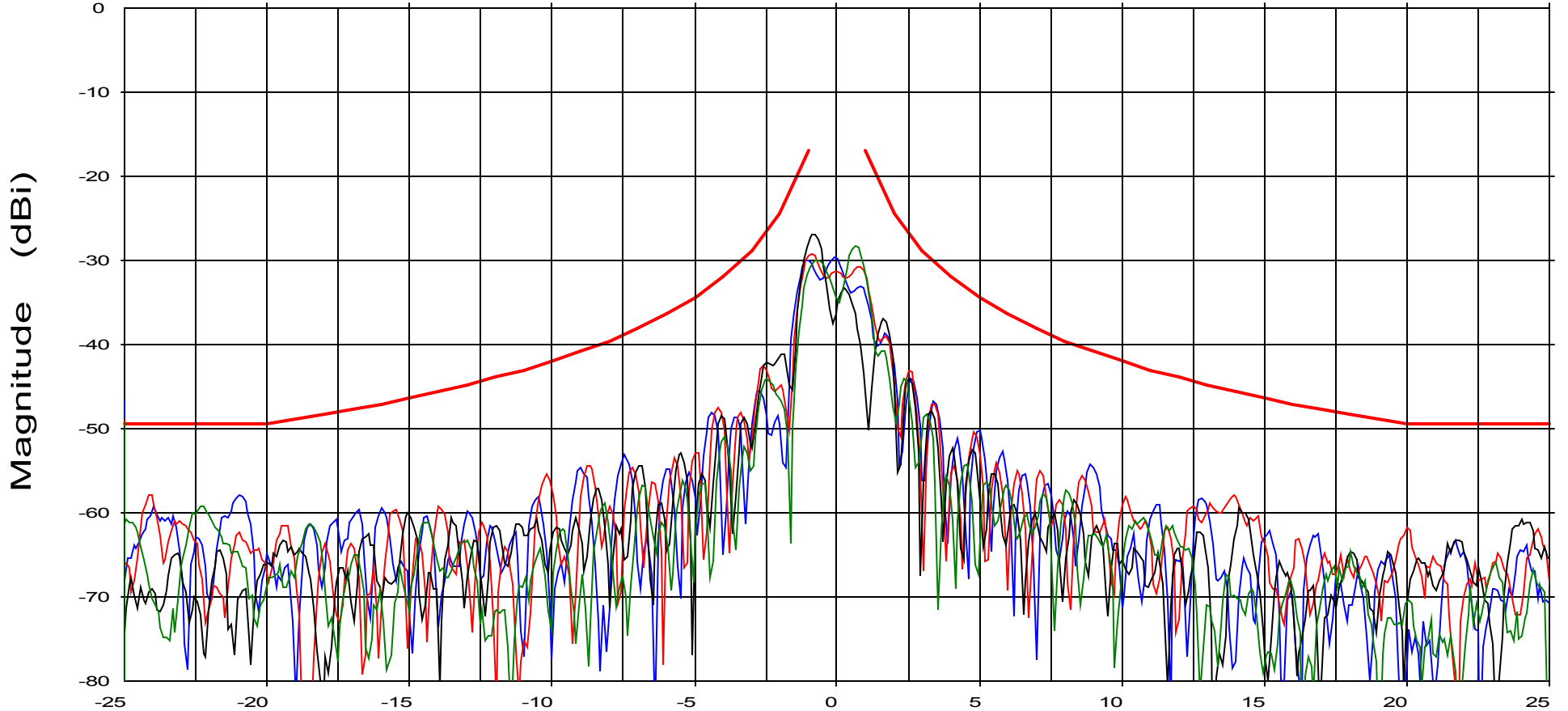
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: LHCP

Rx pol: LHCP



Sidelobe Envelope: $29-25\text{Log}(\text{Theta}) \sim 100\text{Lambda}/D$ to 20 Deg
 -3.5dBi 20.0 to 26.5 Deg | $32-25\text{Log}(\text{Theta}) \sim 26.5$ to 48 Deg
 $-10.0\text{dBi} \sim 48$ to 180 Deg

Overlays

- Frequency : 5.845 GHz — blue
- Frequency : 6.045 GHz — red
- Frequency : 6.245 GHz — black
- Frequency : 6.425 GHz — green

File: 1769 13.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 13.dat
Chan.: ch1
Table: SGA-70
Units: dBi

Frequency : See Legend

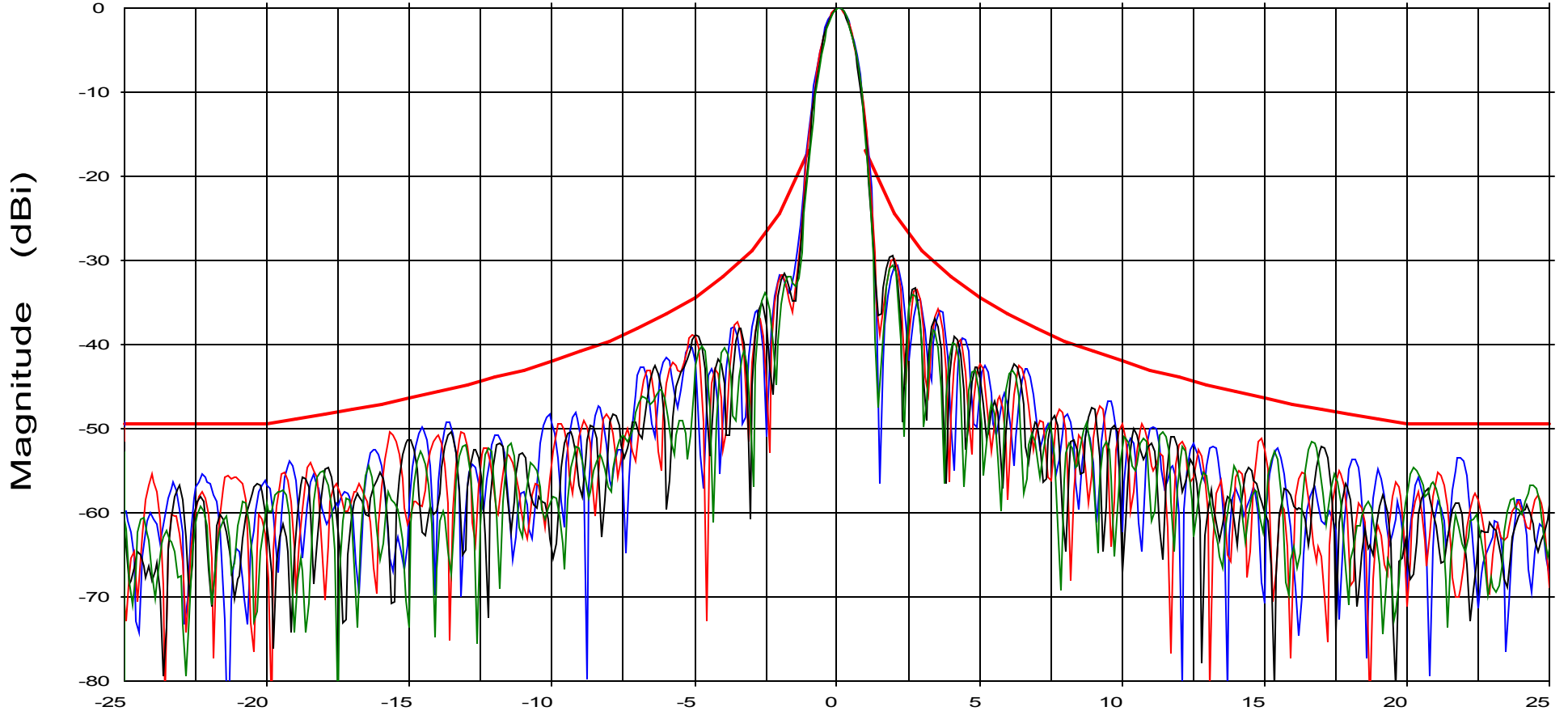
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: LHCP

Rx pol: LHCP



Sidelobe Envelope: $29-25\text{Log}(\text{Theta}) \sim 100\text{Lambda}/D$ to 20 Deg
 -3.5dBi 20.0 to 26.5 Deg | $32-25\text{Log}(\text{Theta}) \sim 26.5$ to 48 Deg
 $-10.0\text{dBi} \sim 48$ to 180 Deg

Overlays

- Frequency : 5.845 GHz — blue
- Frequency : 6.045 GHz — red
- Frequency : 6.245 GHz — black
- Frequency : 6.425 GHz — green

File: 1769 14.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 14.dat
Chan.: ch1
Table: SGA-70
Units: dBi

Frequency : See Legend

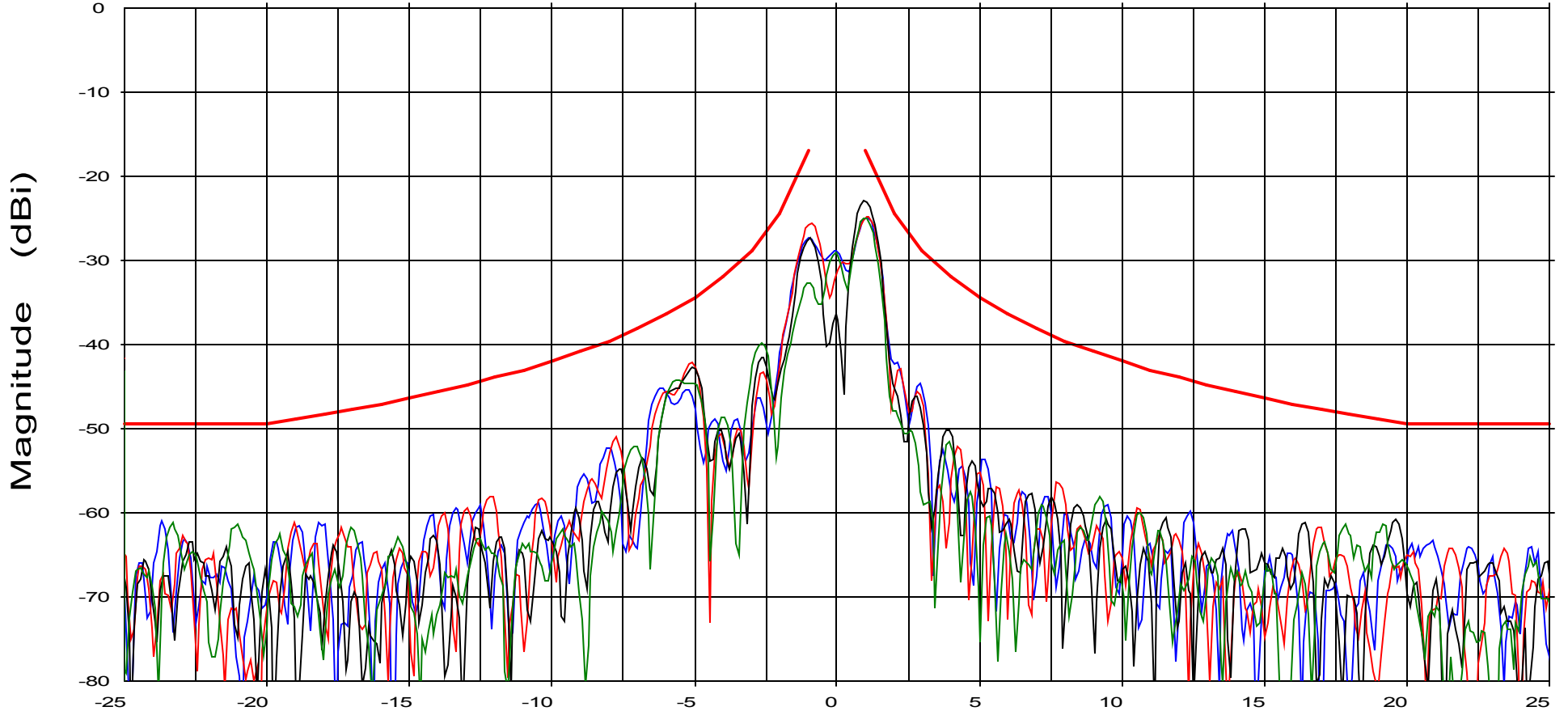
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: LHCP

Rx pol: LHCP



Sidelobe Envelope: $29-25\text{Log}(\text{Theta}) \sim 100\text{Lambda}/D$ to 20 Deg
 -3.5dBi 20.0 to 26.5 Deg | $32-25\text{Log}(\text{Theta}) \sim 26.5$ to 48 Deg
 $-10.0\text{dBi} \sim 48$ to 180 Deg

Overlays

- Frequency : 5.845 GHz — blue
- Frequency : 6.045 GHz — red
- Frequency : 6.245 GHz — black
- Frequency : 6.425 GHz — green

3.2 LHCP Transmit Wide Angle Patterns

File: 1769 15.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 15.dat
Chan.: ch1
Table: SGA-70
Units: dBi

Frequency : See Legend

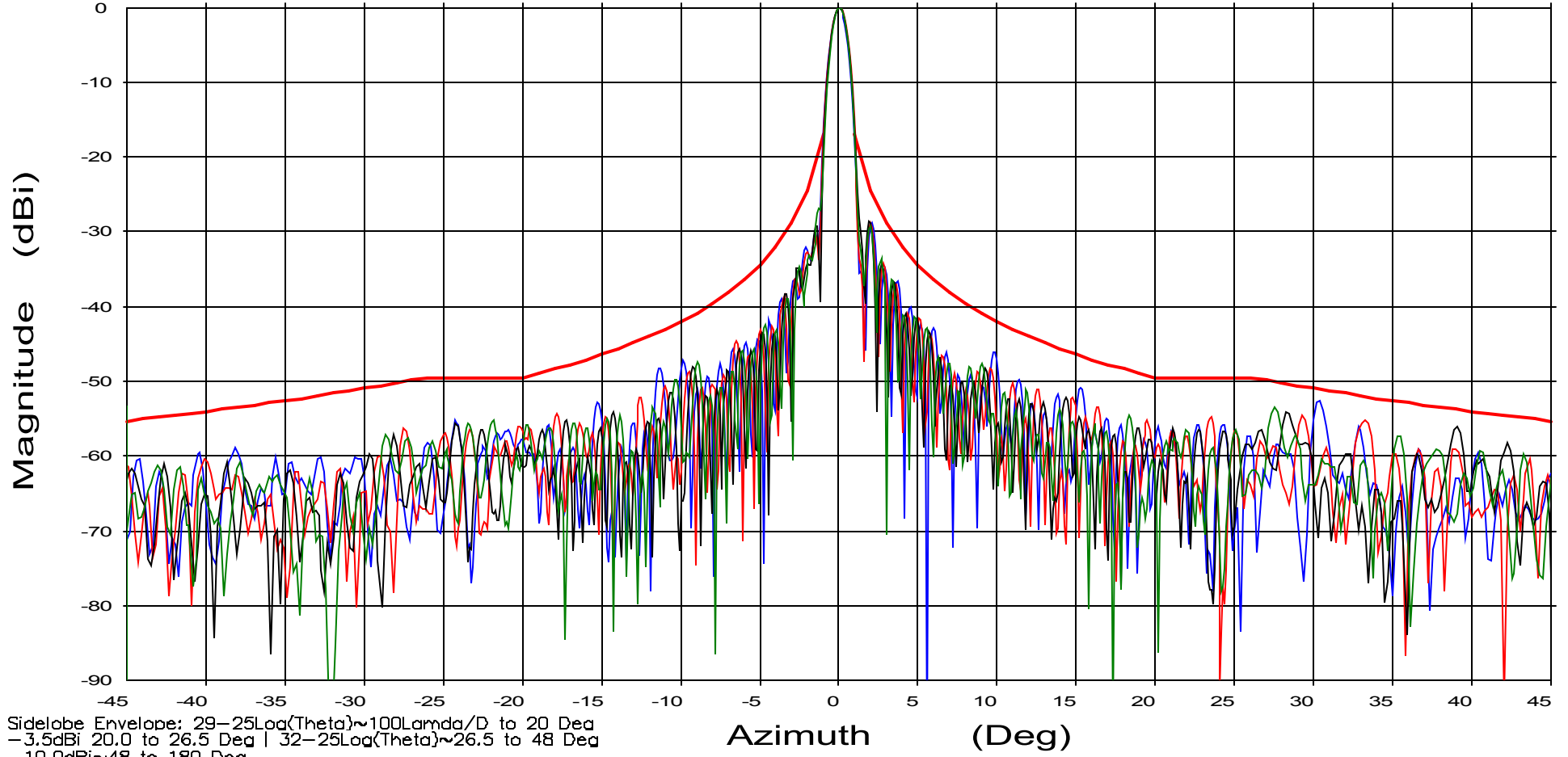
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: LHCP

Rx pol: LHCP



Overlays

Frequency : 5.845 GHz — blue
Frequency : 6.045 GHz — red
Frequency : 6.245 GHz — black
Frequency : 6.425 GHz — green

File: 1769 16.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 16.dat
Chan.: ch1
Table: SGA-70
Units: dBi

Frequency : See Legend

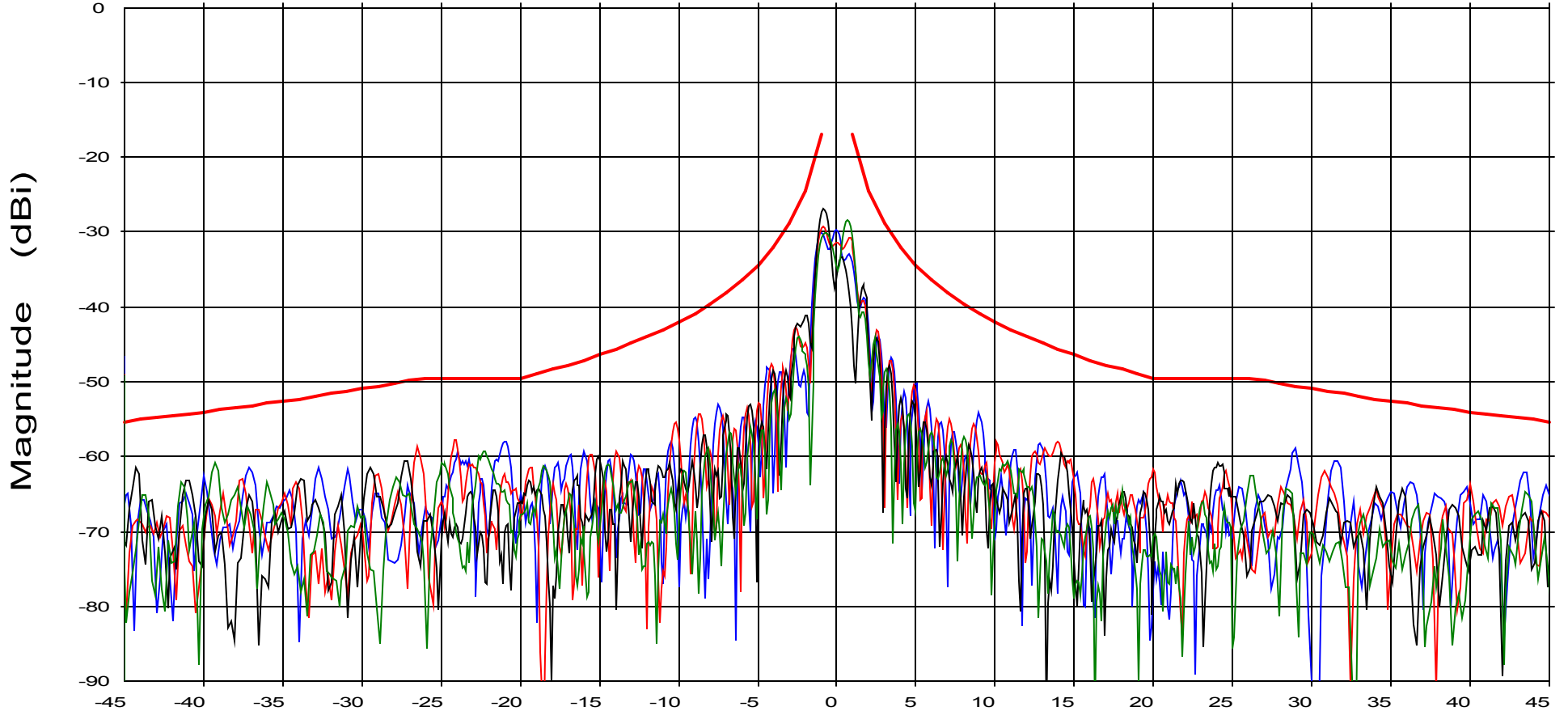
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: LHCP

Rx pol: LHCP



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

Overlays

- Frequency : 5.845 GHz — blue
- Frequency : 6.045 GHz — red
- Frequency : 6.245 GHz — black
- Frequency : 6.425 GHz — green

File: 1769 13.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 13.dat
Chan.: ch1
Table: SGA-70
Units: dBi

Frequency : See Legend

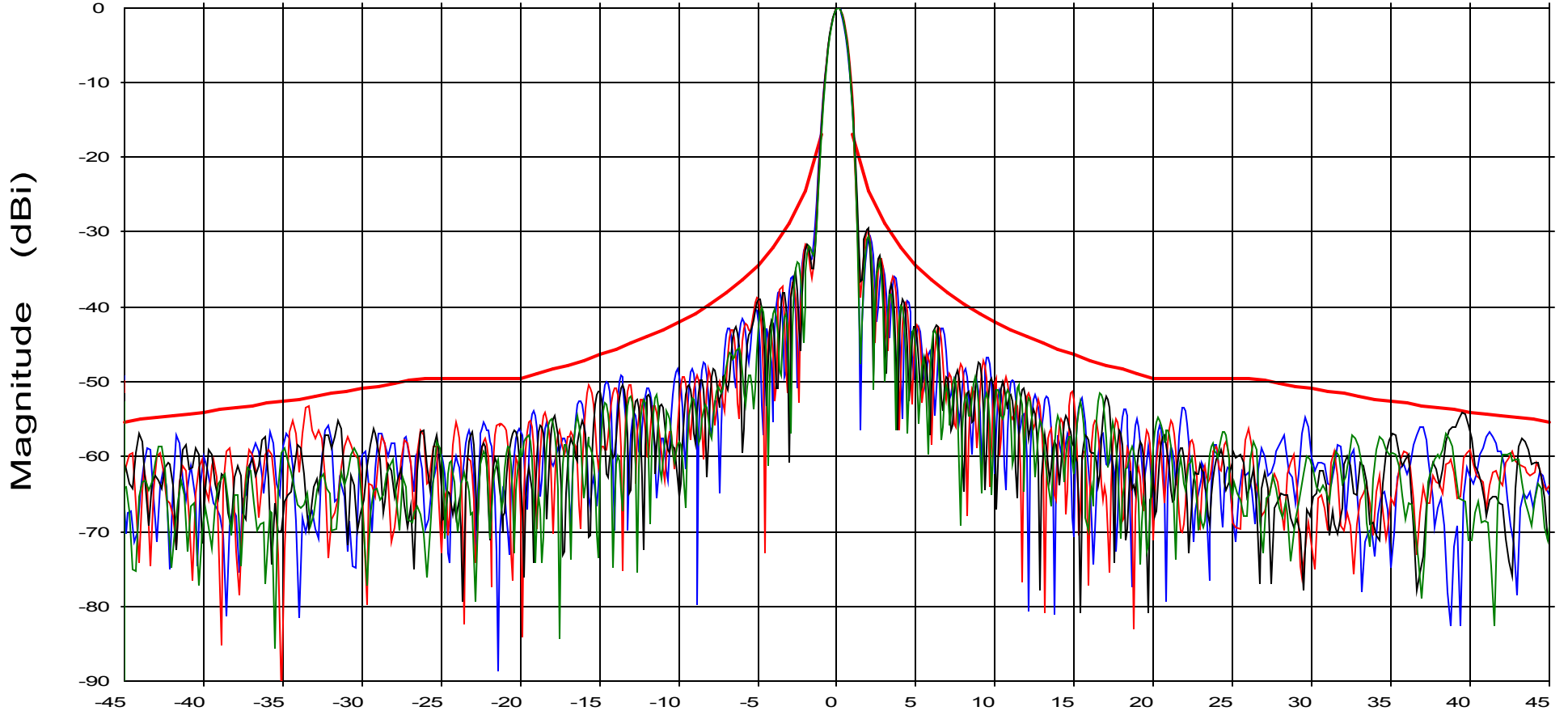
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: LHCP

Rx pol: LHCP



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

Overlays

- Frequency : 5.845 GHz — blue
- Frequency : 6.045 GHz — red
- Frequency : 6.245 GHz — black
- Frequency : 6.425 GHz — green

File: 1769 14.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 14.dat
Chan.: ch1
Table: SGA-70
Units: dBi

Frequency : See Legend

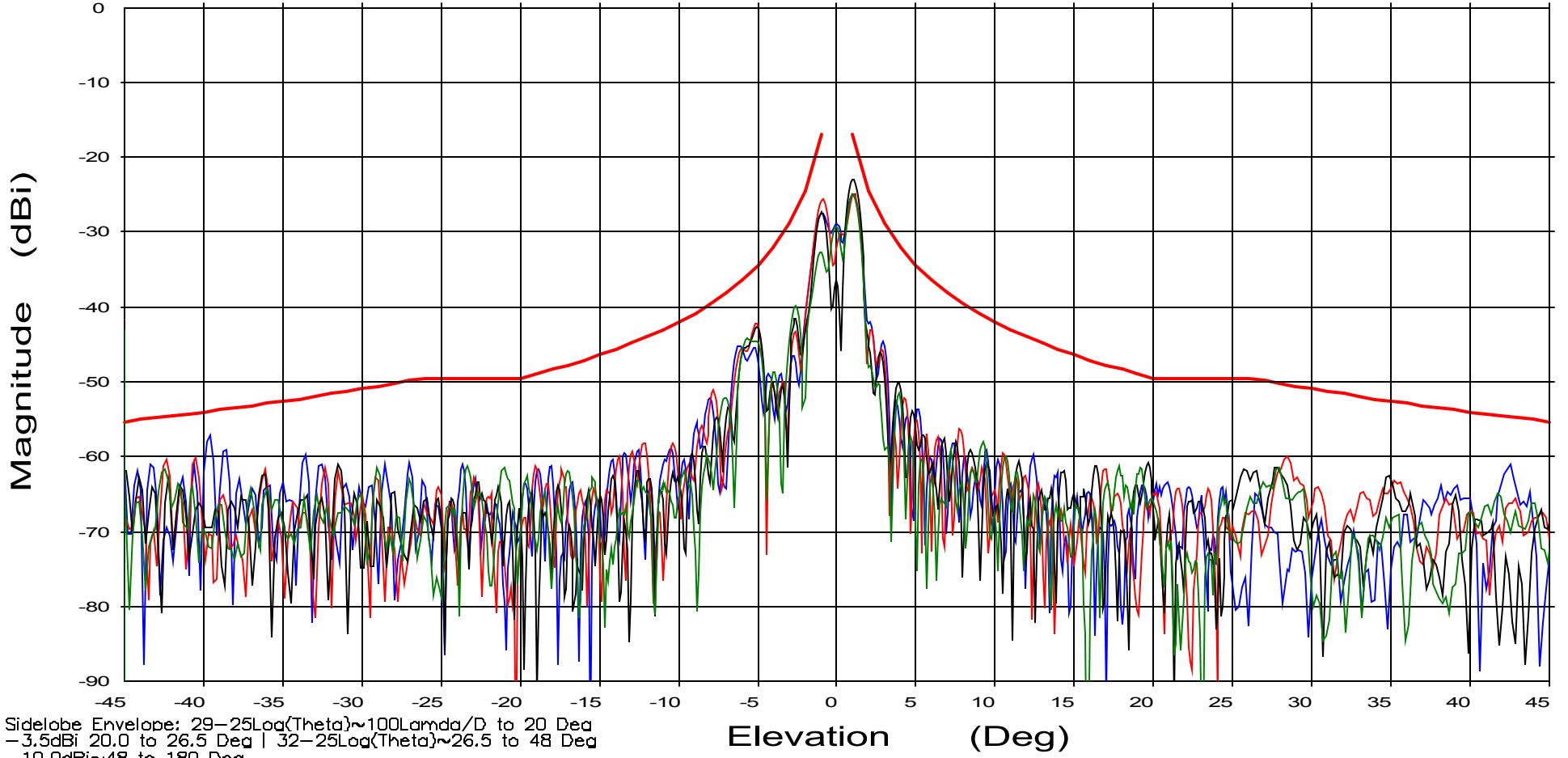
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: LHCP

Rx pol: LHCP



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

Overlays

- Frequency : 5.845 GHz — blue
- Frequency : 6.045 GHz — red
- Frequency : 6.245 GHz — black
- Frequency : 6.425 GHz — green

File: 1769 15.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 15.dat
Chan.: ch1
Table: SGA-70
Units: dBi

Frequency : See Legend

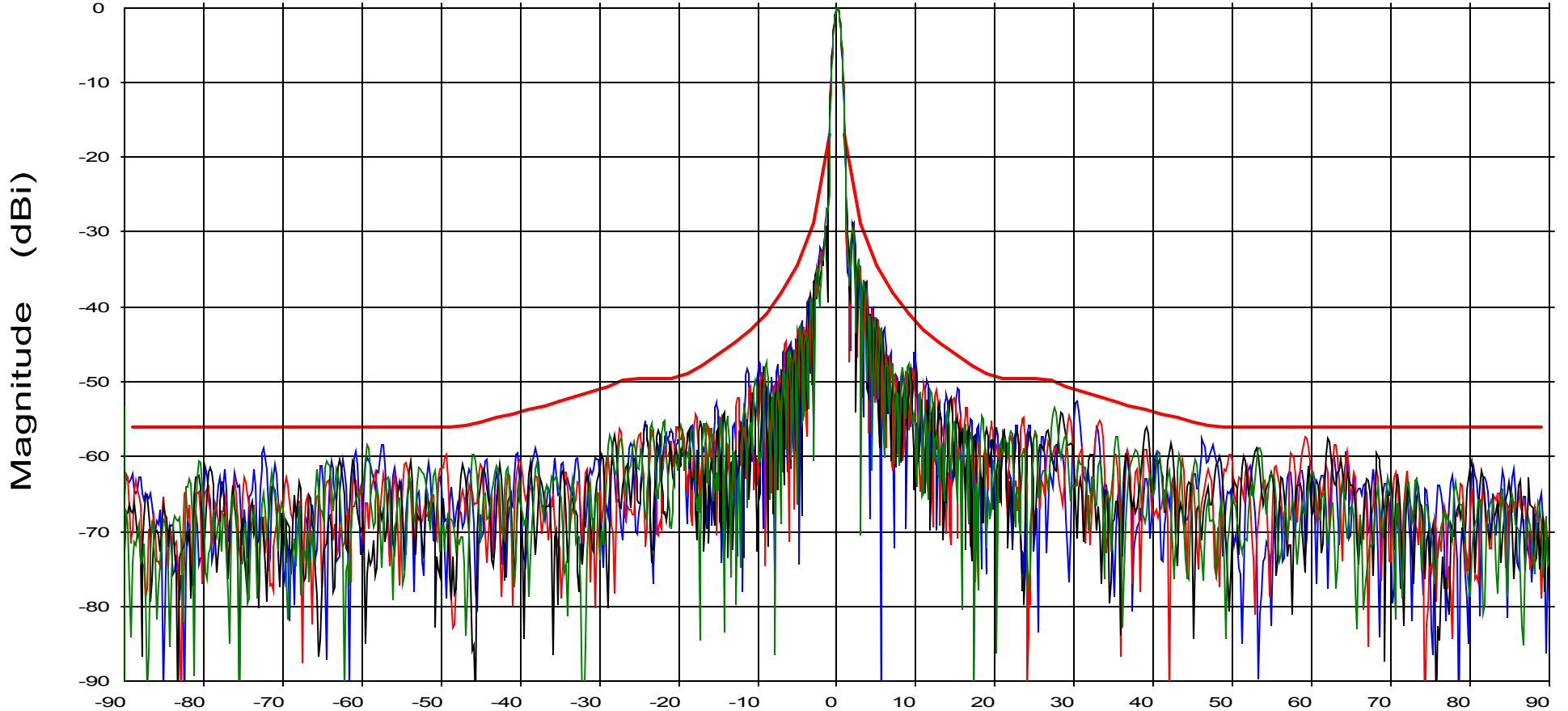
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: LHCP

Rx pol: LHCP



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

Overlays

- Frequency : 5.845 GHz — blue line
- Frequency : 6.045 GHz — red line
- Frequency : 6.245 GHz — black line
- Frequency : 6.425 GHz — green line

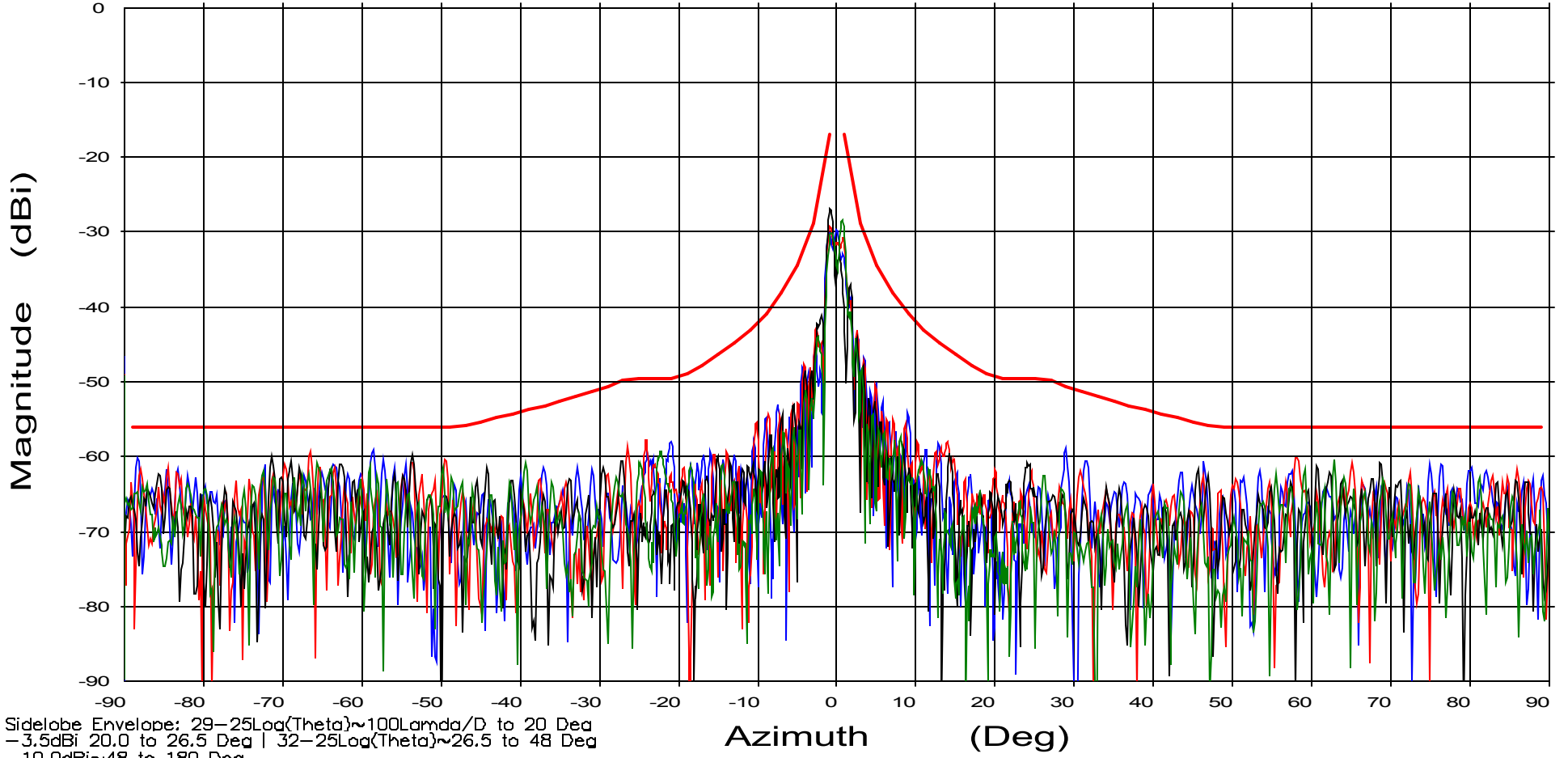
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: LHCP

Rx pol: LHCP



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

Overlays

- Frequency : 5.845 GHz — (Blue line)
- Frequency : 6.045 GHz — (Red line)
- Frequency : 6.245 GHz — (Black line)
- Frequency : 6.425 GHz — (Green line)

File: 1769 13.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 13.dat
Chan.: ch1
Table: SGA-70
Units: dBi

Frequency : See Legend

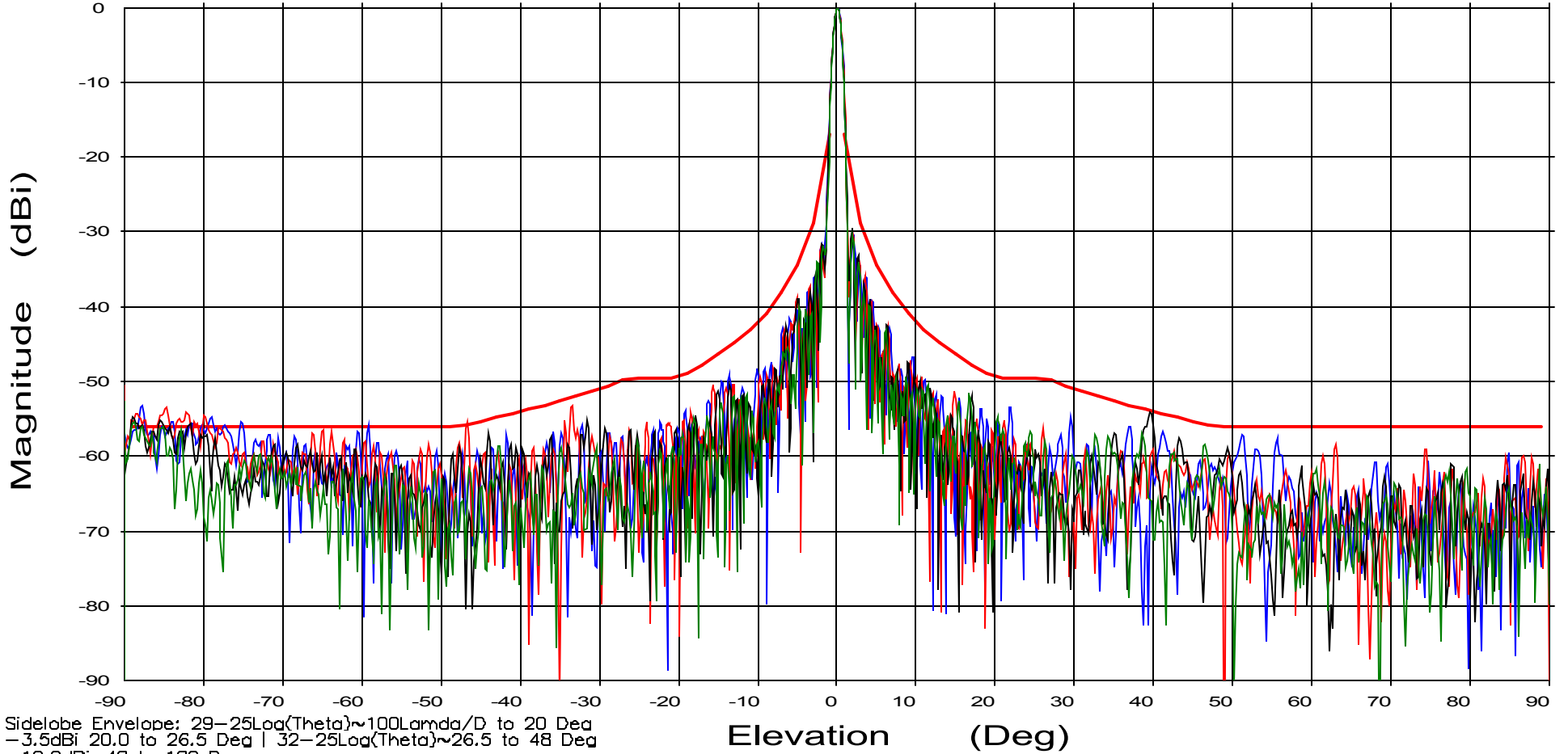
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: LHCP

Rx pol: LHCP



Overlays

- Frequency : 5.845 GHz — blue line
- Frequency : 6.045 GHz — red line
- Frequency : 6.245 GHz — black line
- Frequency : 6.425 GHz — green line

File: 1769 14.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 14.dat
Chan.: ch1
Table: SGA-70
Units: dBi

Frequency : See Legend

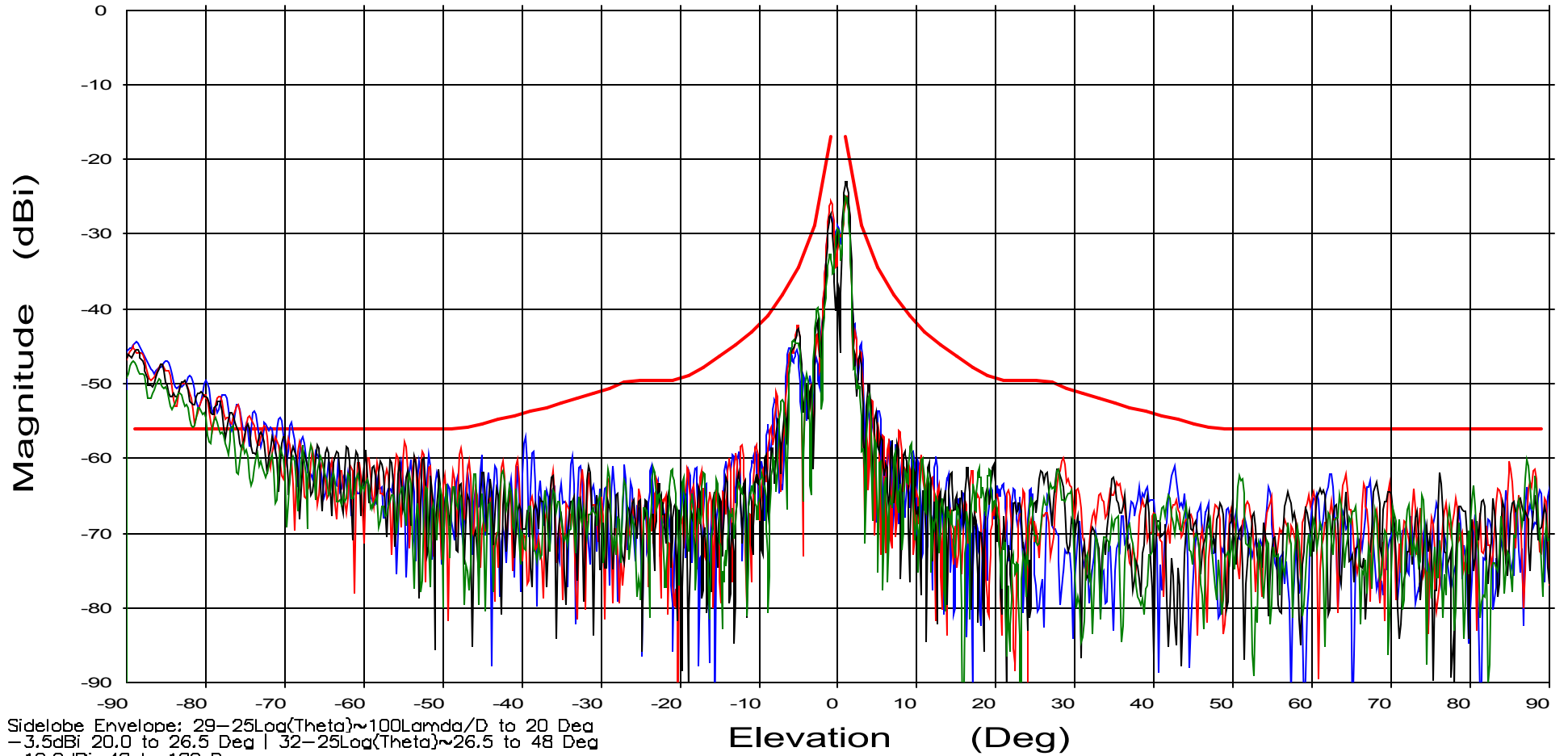
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: LHCP

Rx pol: LHCP



Overlays

- Frequency : 5.845 GHz — blue
- Frequency : 6.045 GHz — red
- Frequency : 6.245 GHz — black
- Frequency : 6.425 GHz — green

File: 1769 15.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

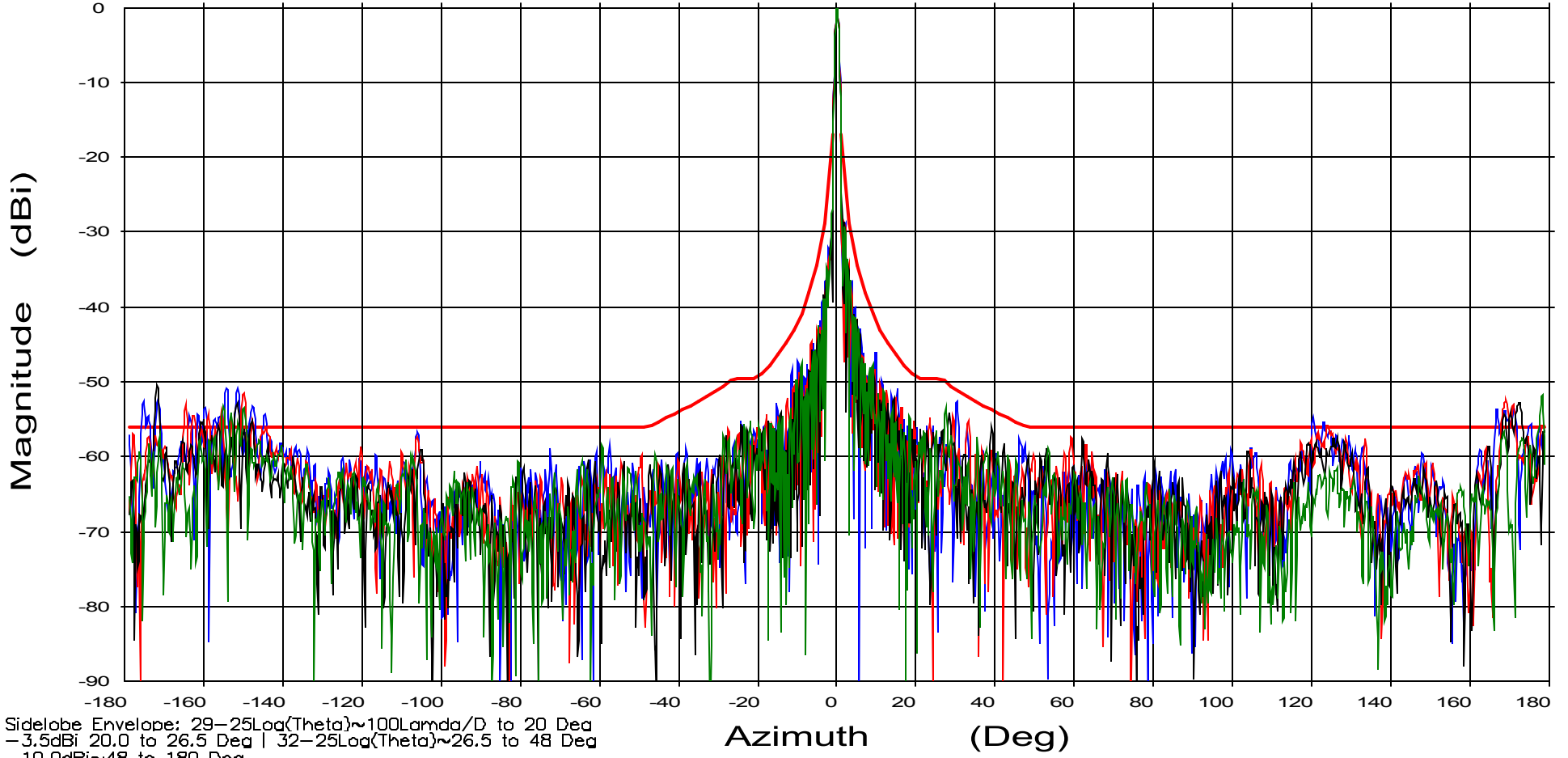
Calibration status:
File: 1769 15.dat
Chan.: ch1
Table: SGA-70
Units: dBi

Frequency : See Legend

Operator: Dwight B. Lutz
Ser. no.:
Channel: ch1

Tx pol: LHCP

Rx pol: LHCP



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

Overlays
 Frequency : 5.845 GHz — blue —
 Frequency : 6.045 GHz — red —
 Frequency : 6.245 GHz — black —
 Frequency : 6.425 GHz — green —

File: 1769 16.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 16.dat
Chan.: ch1
Table: SGA-70
Units: dBi

Frequency : See Legend

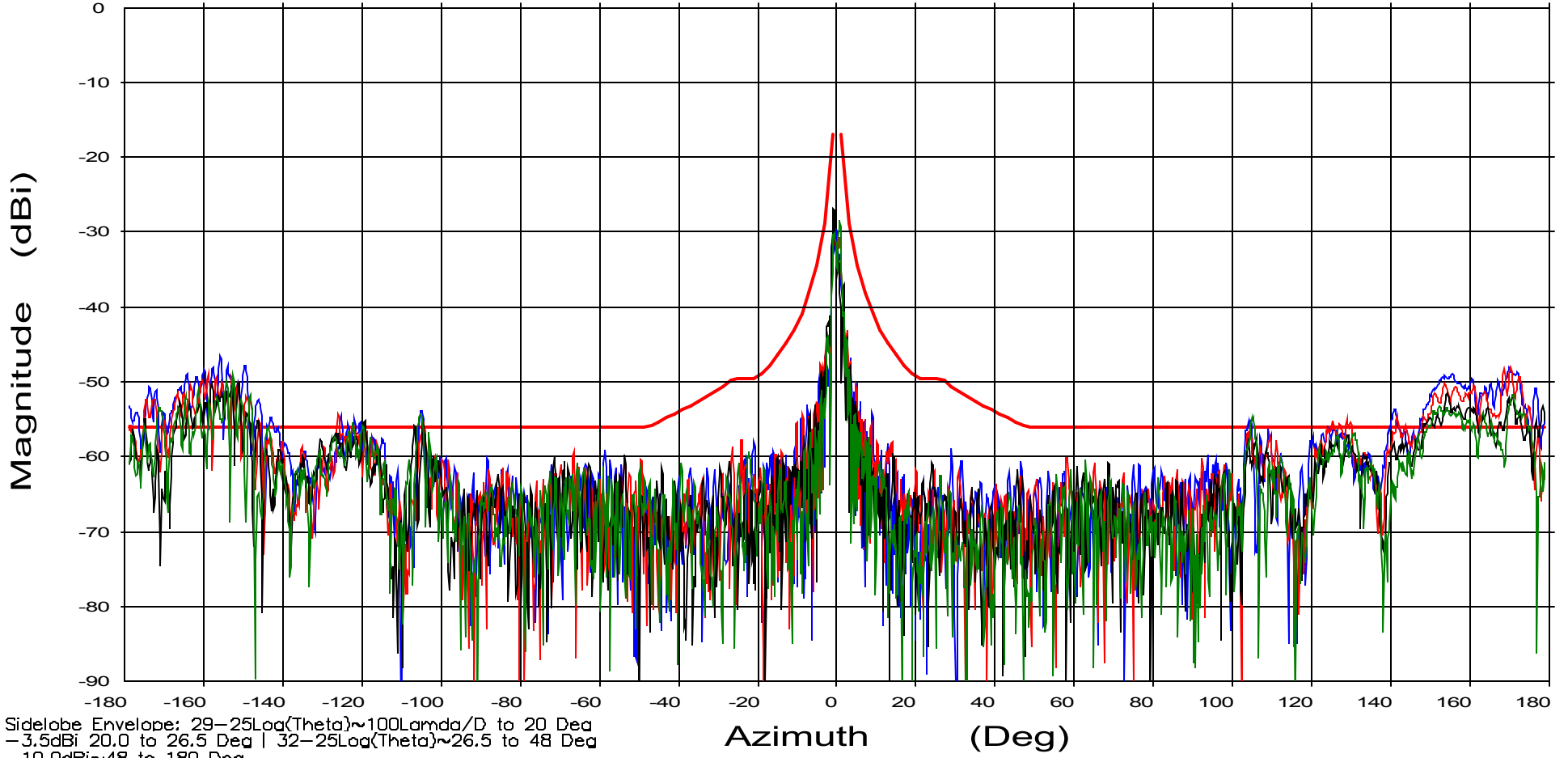
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: LHCP

Rx pol: LHCP



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

Overlays

- Frequency : 5.845 GHz — blue line
- Frequency : 6.045 GHz — red line
- Frequency : 6.245 GHz — black line
- Frequency : 6.425 GHz — green line

File: 1769 13.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 13.dat
Chan.: ch1
Table: SGA-70
Units: dBi

Frequency : See Legend

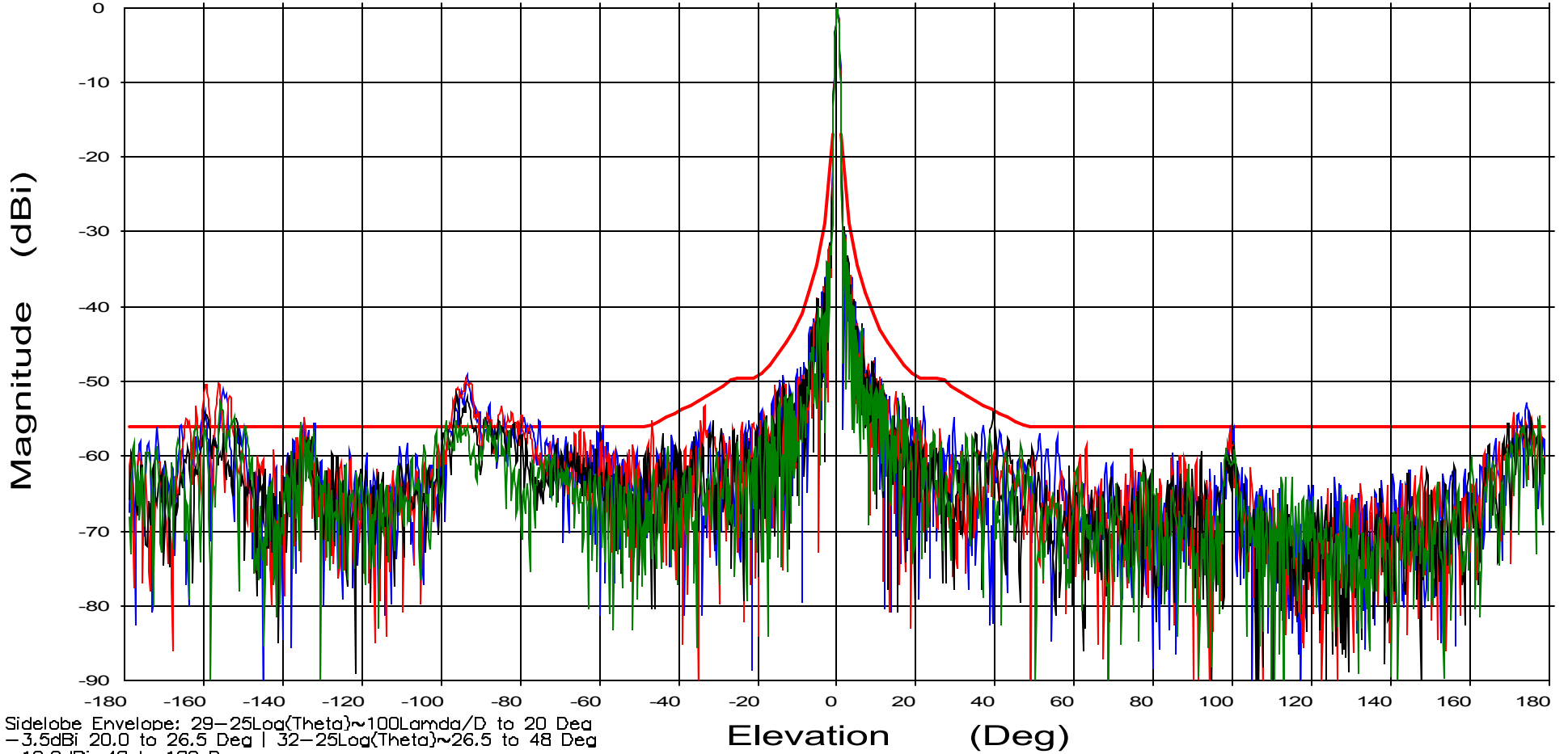
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: LHCP

Rx pol: LHCP



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

Overlays

- Frequency : 5.845 GHz — blue
- Frequency : 6.045 GHz — red
- Frequency : 6.245 GHz — black
- Frequency : 6.425 GHz — green

File: 1769 14.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 14.dat
Chan.: ch1
Table: SGA-70
Units: dBi

Frequency : See Legend

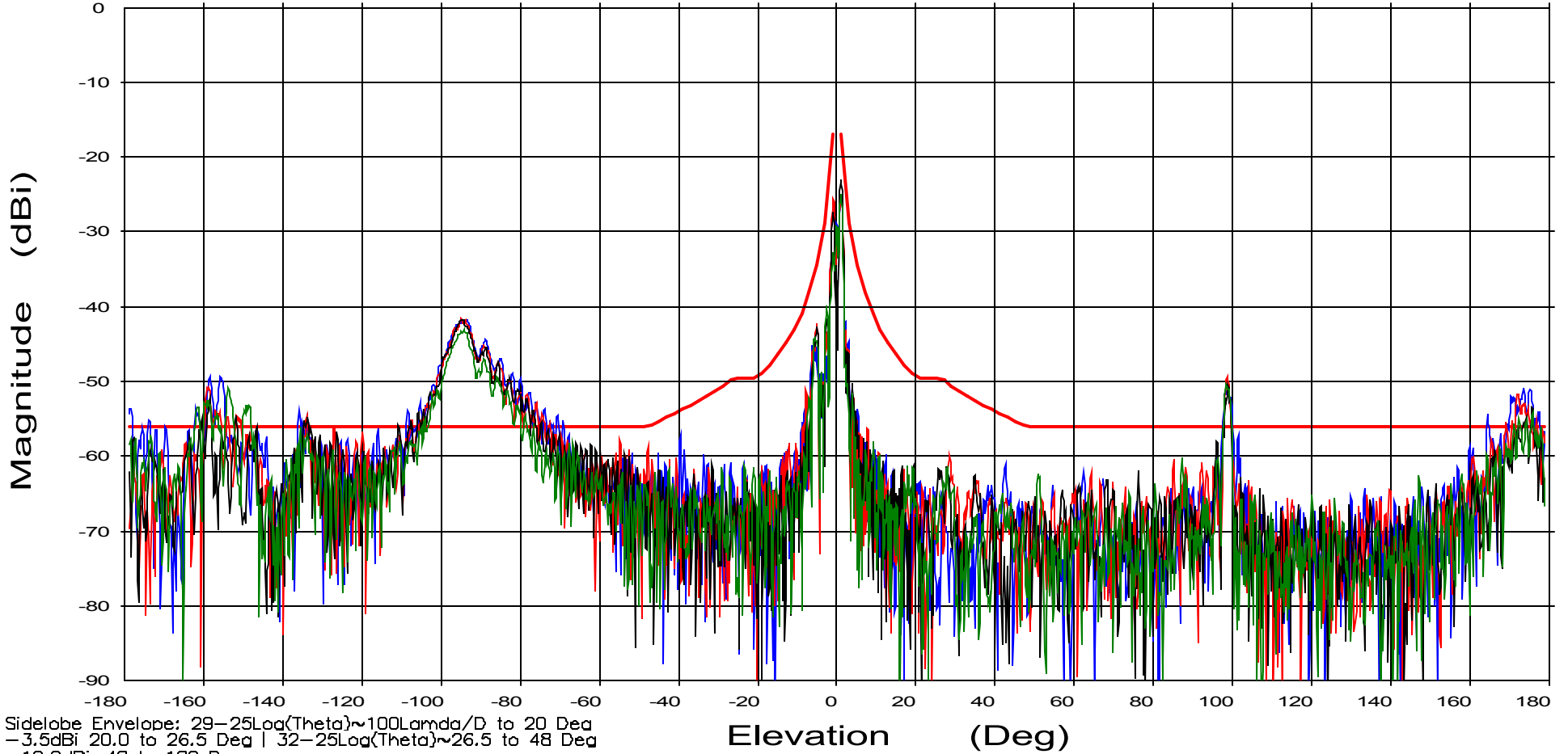
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: LHCP

Rx pol: LHCP



- Overlays
- Frequency : 5.845 GHz — blue line
 - Frequency : 6.045 GHz — red line
 - Frequency : 6.245 GHz — black line
 - Frequency : 6.425 GHz — green line

3.3 RHCP Transmit Close-in Patterns

File: 1769 00.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 00.dat
Chan.: ch1
Table: SGA-70
Units: dBi

Frequency : See Legend

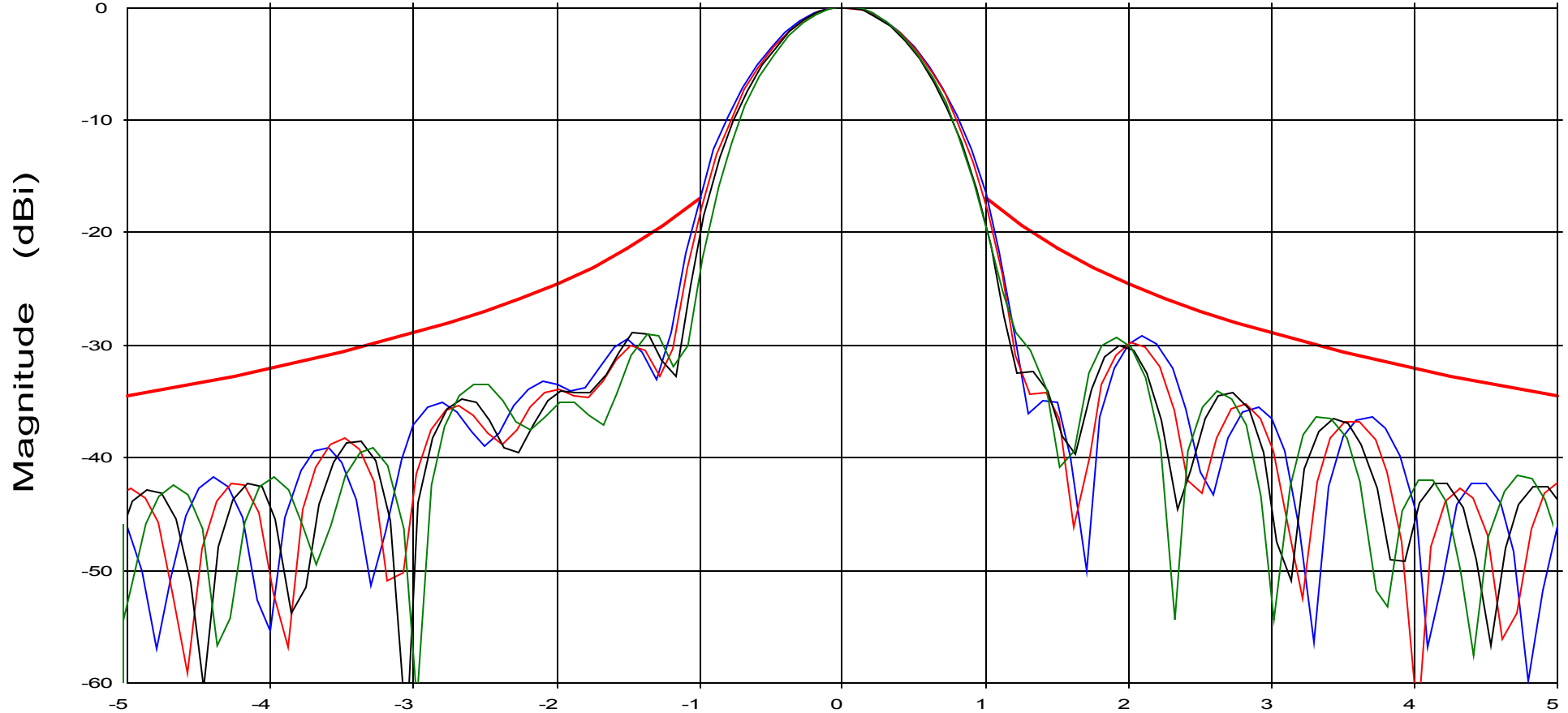
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: RHCP

Rx pol: RHCP



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

Overlays

- Frequency : 5.845 GHz — blue
- Frequency : 6.045 GHz — red
- Frequency : 6.245 GHz — black
- Frequency : 6.425 GHz — green

Beam Width @ 3 dB

(Deg)

- 0.92
- 0.90
- 0.87
- 0.85

Beam Width @ 10 dB

(Deg)

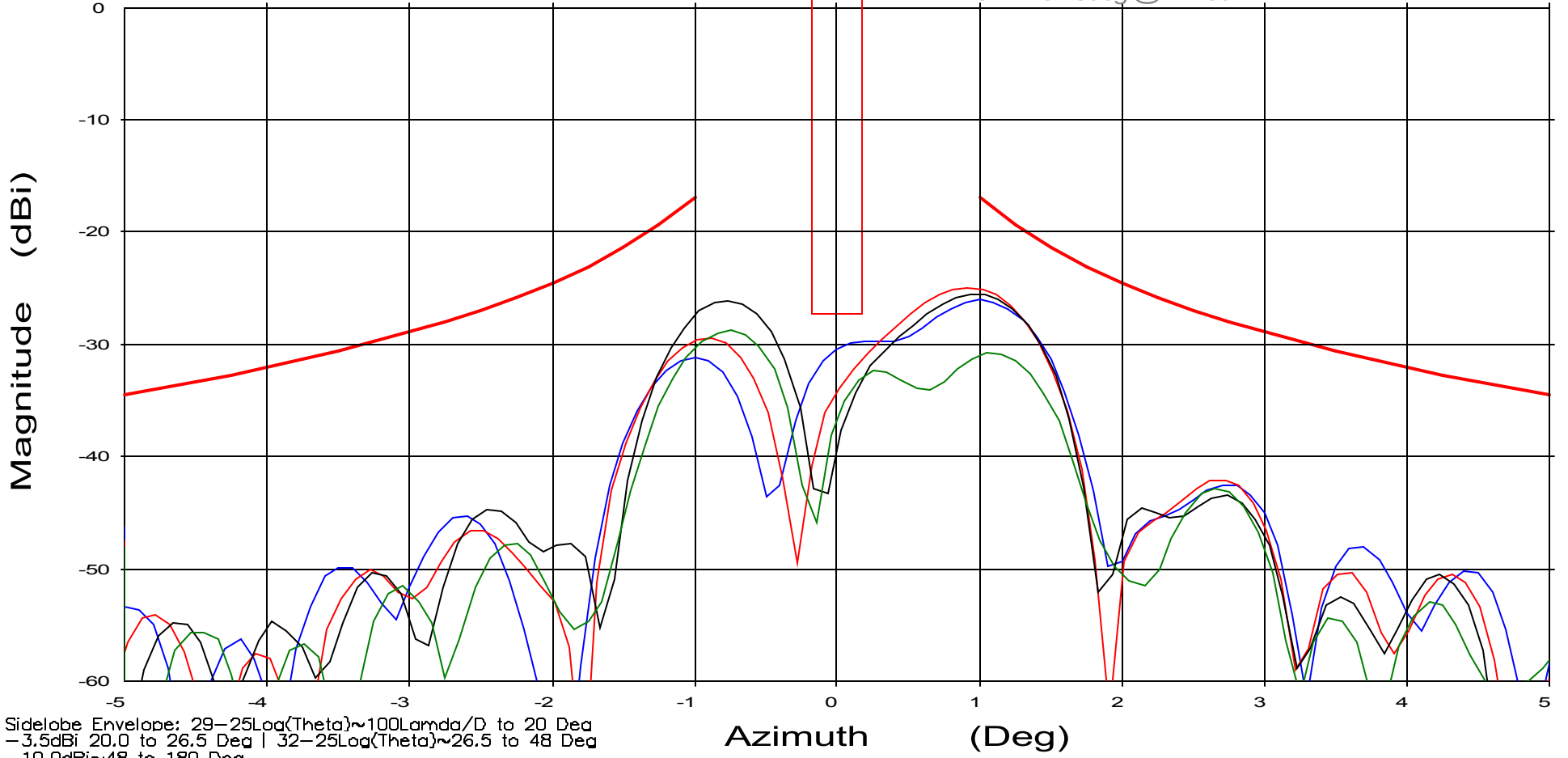
- 1.63
- 1.59
- 1.53
- 1.48

Operator: Dwight B. Lutz
Ser. no.:
Channel: ch1

Tx pol: RHCP

Rx pol: RHCP

XPD Box +/- 0.18deg @ -27.3dB



- Overlays
- Frequency : 5.845 GHz — blue line
 - Frequency : 6.045 GHz — red line
 - Frequency : 6.245 GHz — black line
 - Frequency : 6.425 GHz — green line

File: 1769 09.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

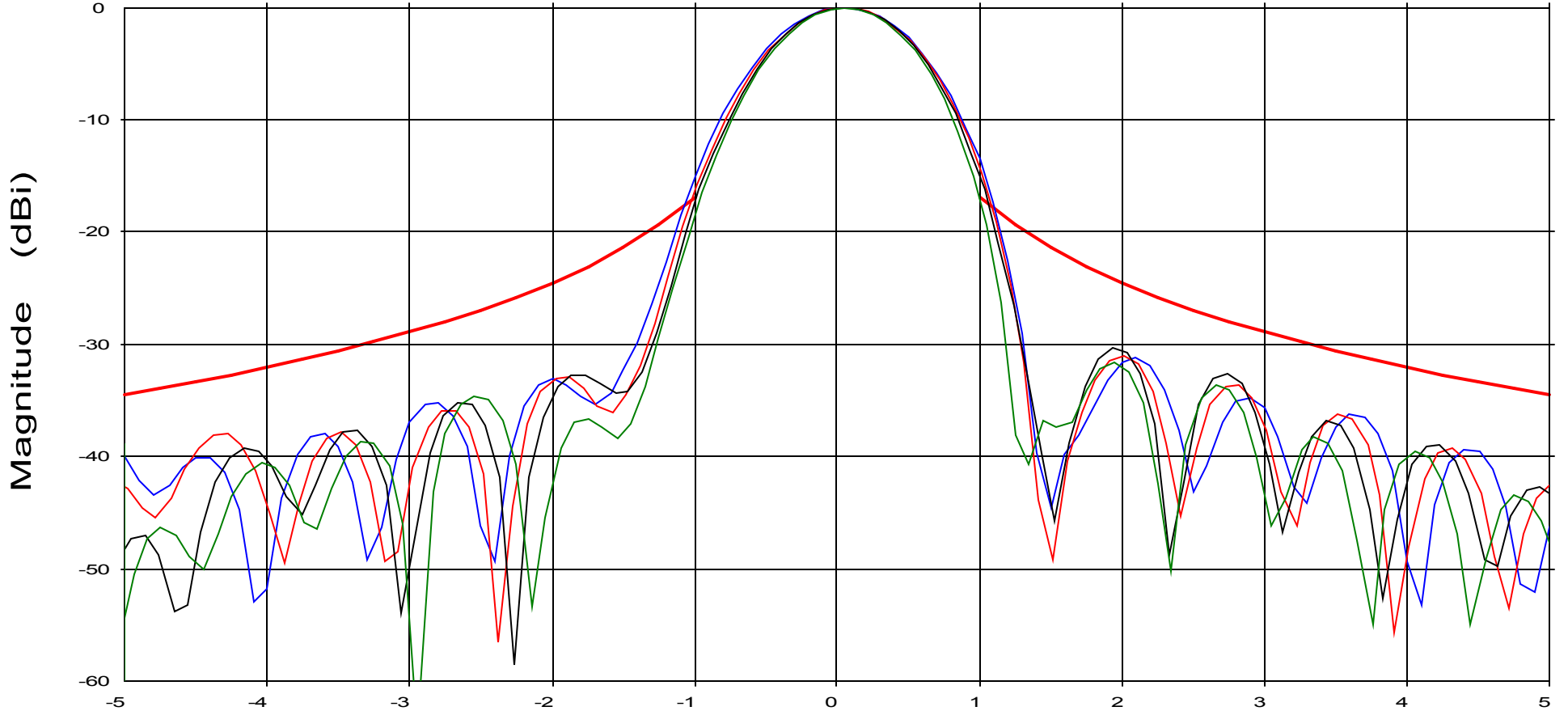
Calibration status:
File: 1769 09.dat
Chan.: ch1
Table: SGA-70
Units: dBi

Frequency : See Legend

Operator: Dwight B. Lutz
Ser. no.:
Channel: ch1

Tx pol: RHCP

Rx pol: RHCP



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

Overlays
 Frequency : 5.845 GHz — blue
 Frequency : 6.045 GHz — red
 Frequency : 6.245 GHz — black
 Frequency : 6.425 GHz — green

Elevation (Deg)

Beam Width @ 3 dB

(Deg)
 0.97
 0.94
 0.91
 0.88

Beam Width @ 10 dB

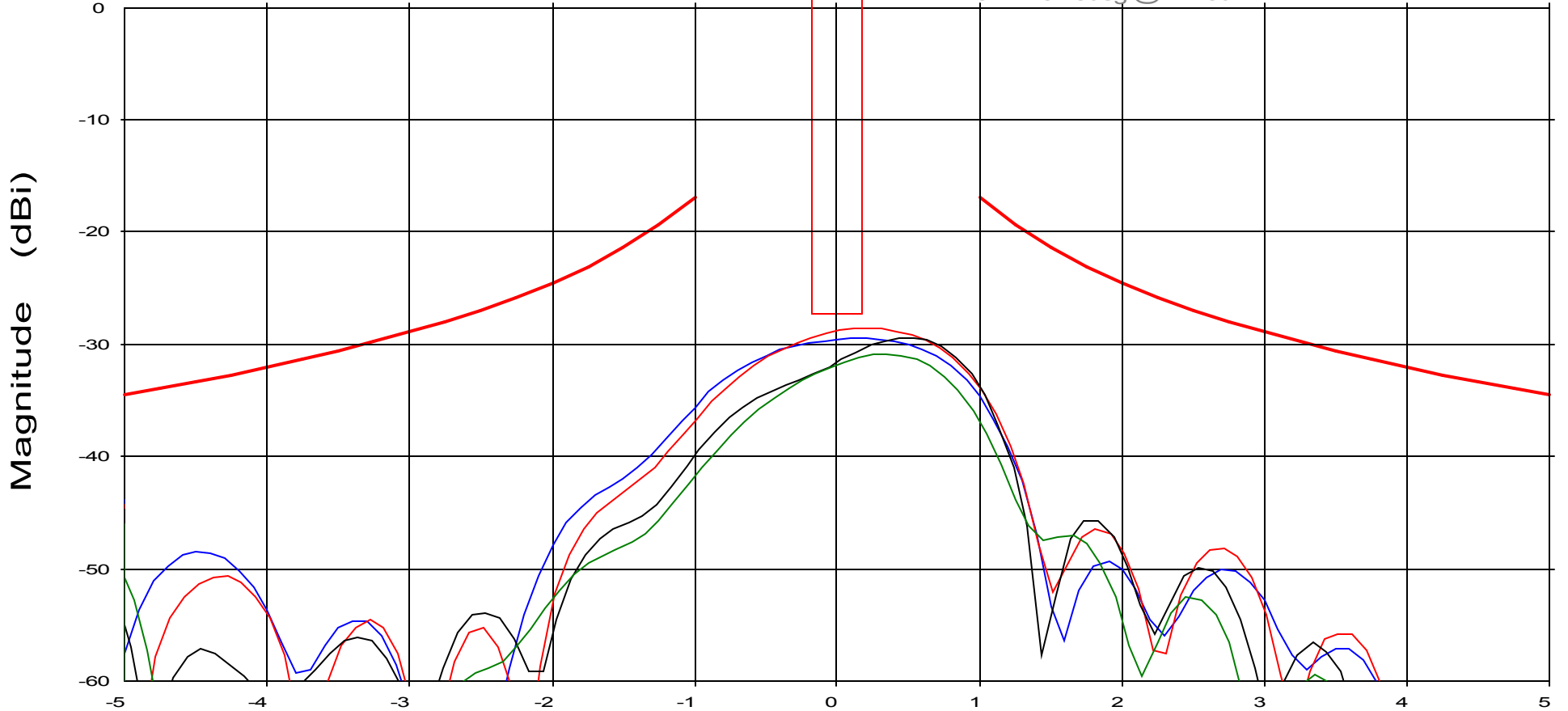
(Deg)
 1.70
 1.65
 1.61
 1.55

Operator: Dwight B. Lutz
Ser. no.:
Channel: ch1

Tx pol: RHCP

Rx pol: RHCP

XPD Box +/- 0.18deg @ -27.3dB



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

Overlays
 Frequency : 5.845 GHz — blue
 Frequency : 6.045 GHz — red
 Frequency : 6.245 GHz — black
 Frequency : 6.425 GHz — green

Elevation (Deg)

Beam Width (Deg)

1.56
 1.38
 1.06
 1.17

Supp Beam Width @ 10 dB (Deg)

2.49
 2.32
 2.17
 2.10

File: 1769 00.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 00.dat
Chan.: ch1
Table: SGA-70
Units: dBi

Frequency : See Legend

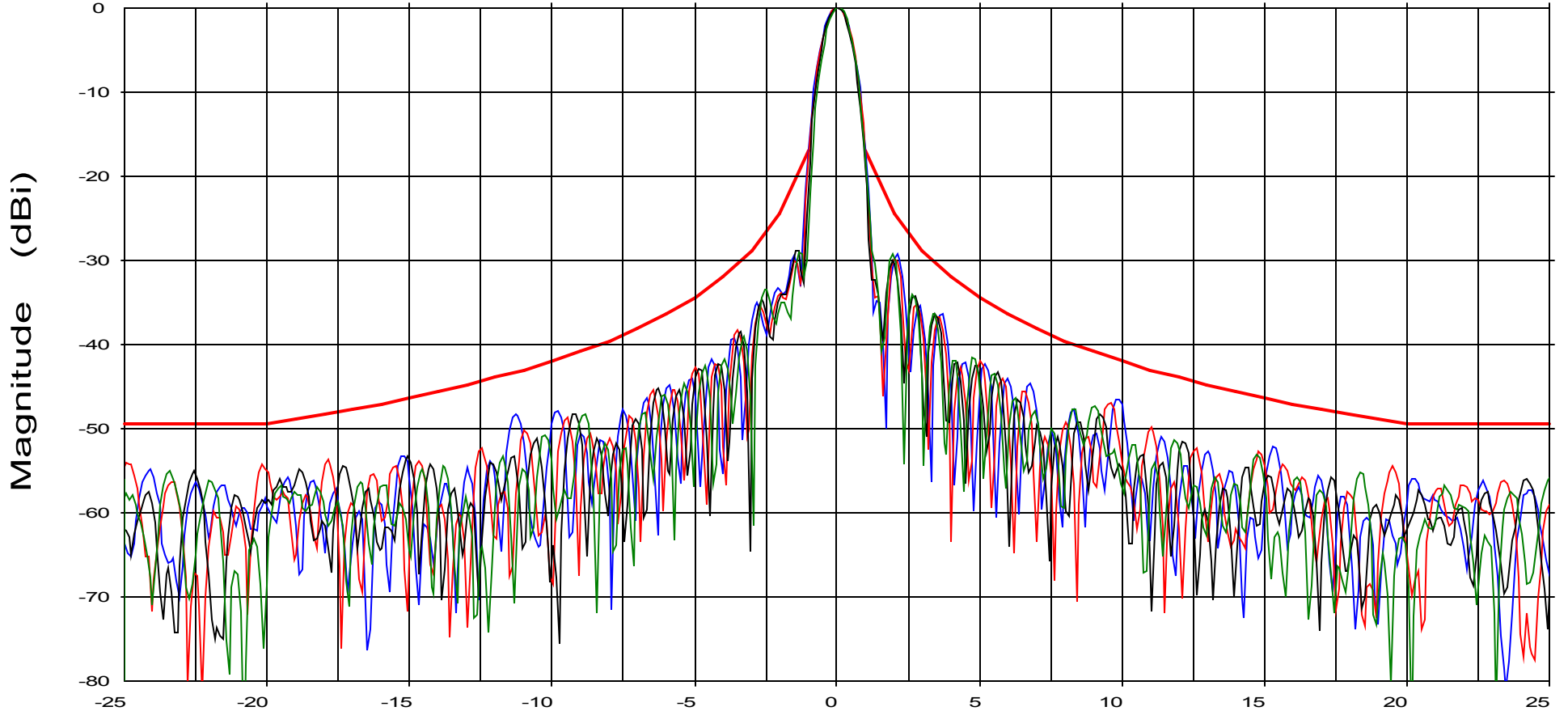
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: RHCP

Rx pol: RHCP



Sidelobe Envelope: $29-25\text{Log}(\text{Theta}) \sim 100\text{Lambda}/D$ to 20 Deg
 -3.5dBi 20.0 to 26.5 Deg | $32-25\text{Log}(\text{Theta}) \sim 26.5$ to 48 Deg
 $-10.0\text{dBi} \sim 48$ to 180 Deg

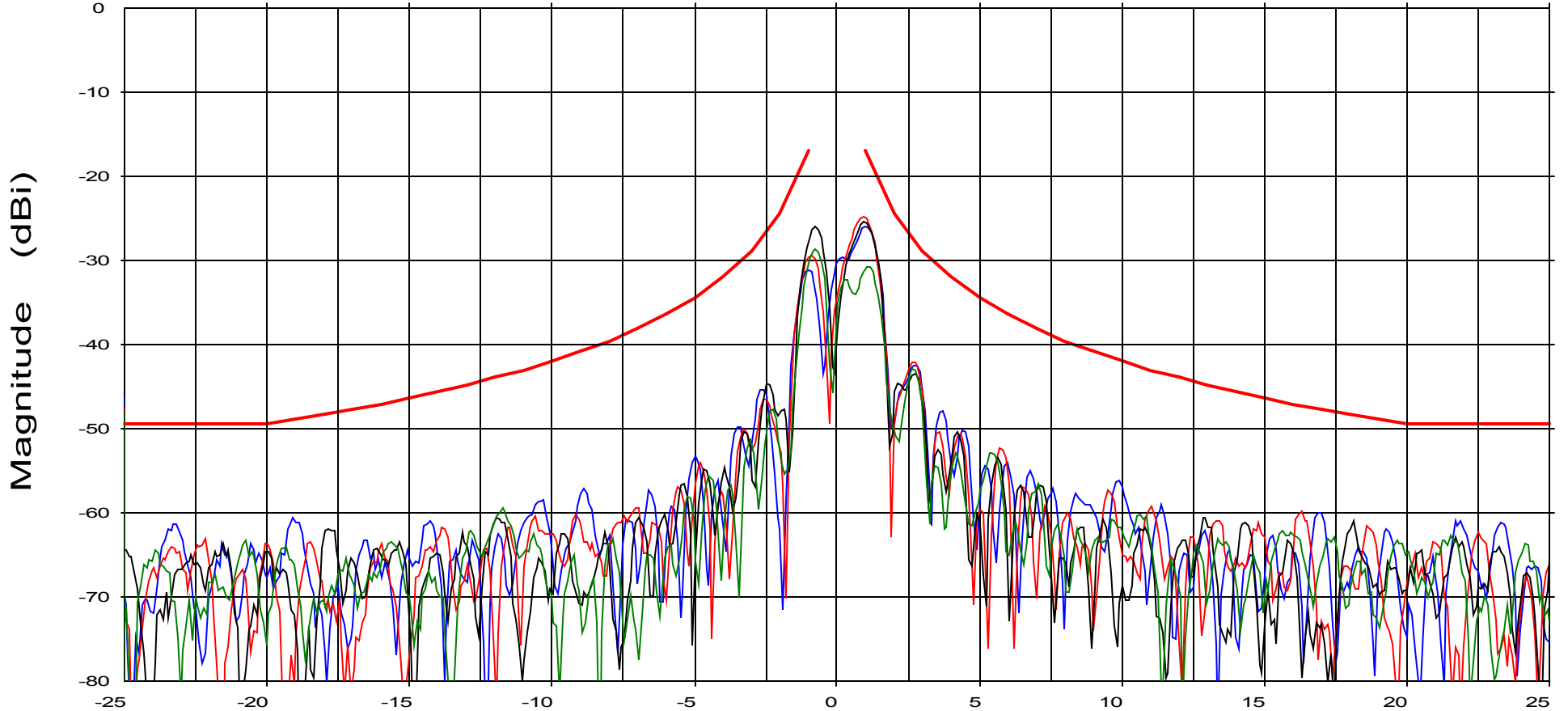
Overlays

- Frequency : 5.845 GHz — blue
- Frequency : 6.045 GHz — red
- Frequency : 6.245 GHz — black
- Frequency : 6.425 GHz — green

Operator: Dwight B. Lutz
Ser. no.:
Channel: ch1

Tx pol: RHCP

Rx pol: RHCP



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

Overlays
 Frequency : 5.845 GHz — blue —
 Frequency : 6.045 GHz — red —
 Frequency : 6.245 GHz — black —
 Frequency : 6.425 GHz — green —

File: 1769 09.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 09.dat
Chan.: ch1
Table: SGA-70
Units: dBi

Frequency : See Legend

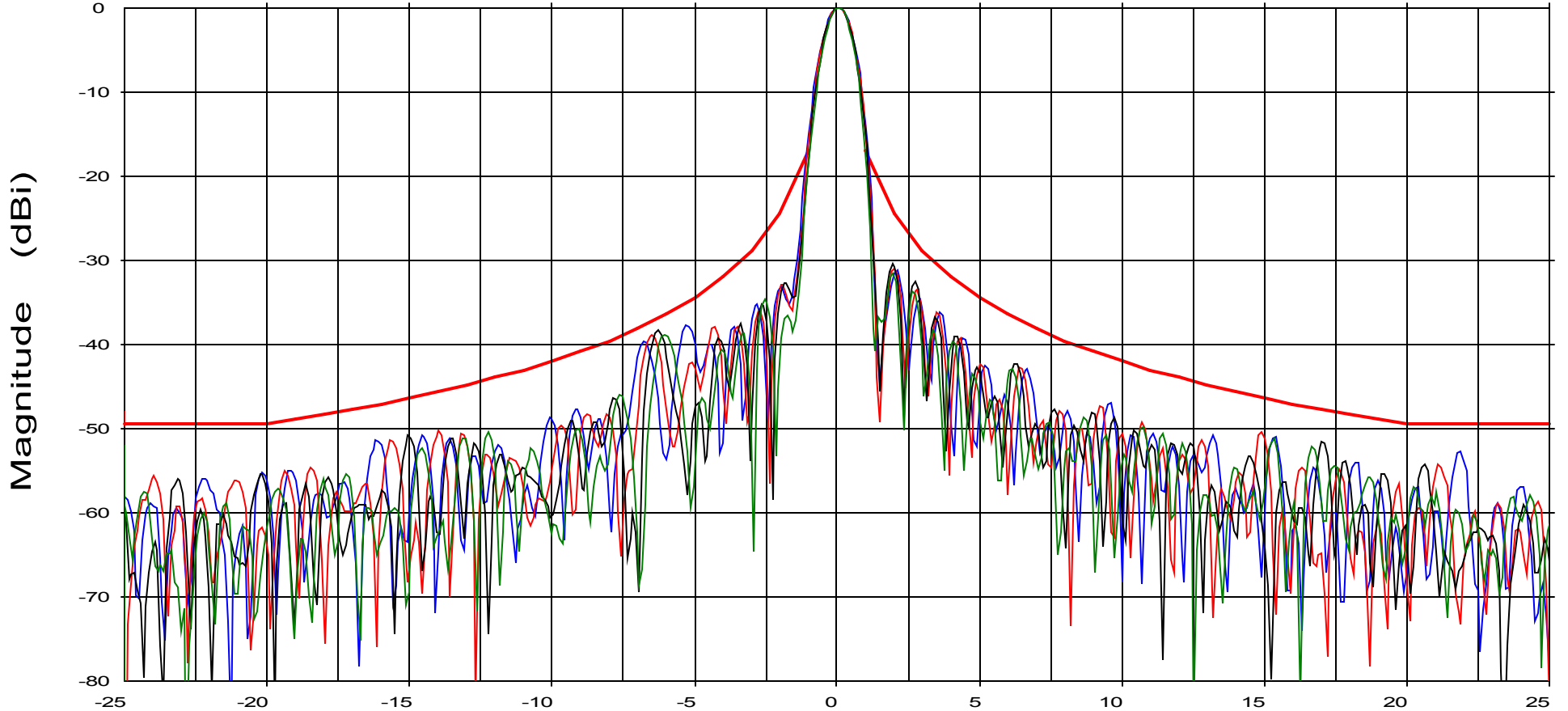
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: RHCP

Rx pol: RHCP



Sidelobe Envelope: $29-25\text{Log}(\text{Theta}) \sim 100\text{Lambda}/D$ to 20 Deg
 -3.5dBi 20.0 to 26.5 Deg | $32-25\text{Log}(\text{Theta}) \sim 26.5$ to 48 Deg
 $-10.0\text{dBi} \sim 48$ to 180 Deg

Overlays

- Frequency : 5.845 GHz — blue
- Frequency : 6.045 GHz — red
- Frequency : 6.245 GHz — black
- Frequency : 6.425 GHz — green

File: 1769 11.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 11.dat
Chan.: ch1
Table: SGA-70
Units: dBi

Frequency : See Legend

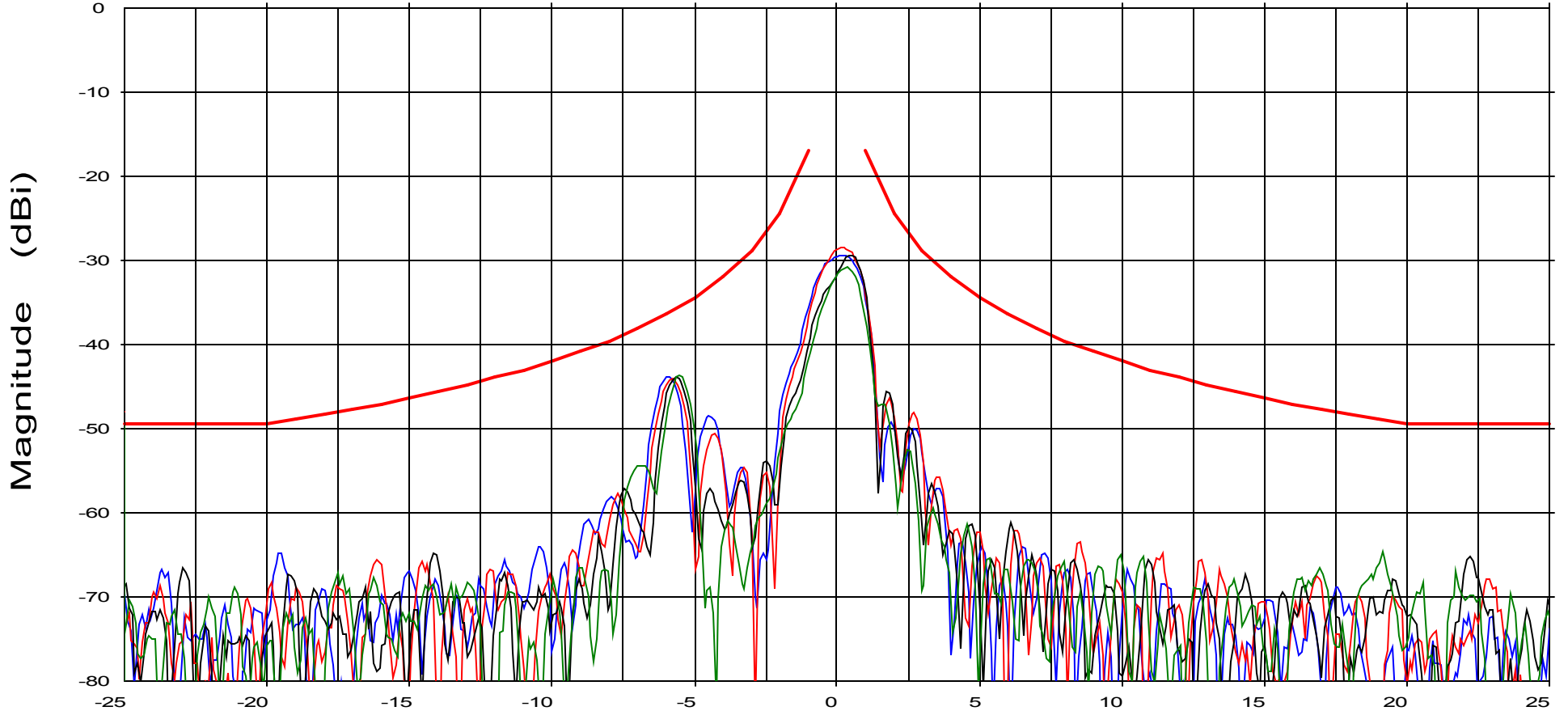
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: RHCP

Rx pol: RHCP



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

Overlays

- Frequency : 5.845 GHz — blue
- Frequency : 6.045 GHz — red
- Frequency : 6.245 GHz — black
- Frequency : 6.425 GHz — green

3.4 RHCP Transmit Wide Angle Patterns

File: 1769 00.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 00.dat
Chan.: ch1
Table: SGA-70
Units: dBi

Frequency : See Legend

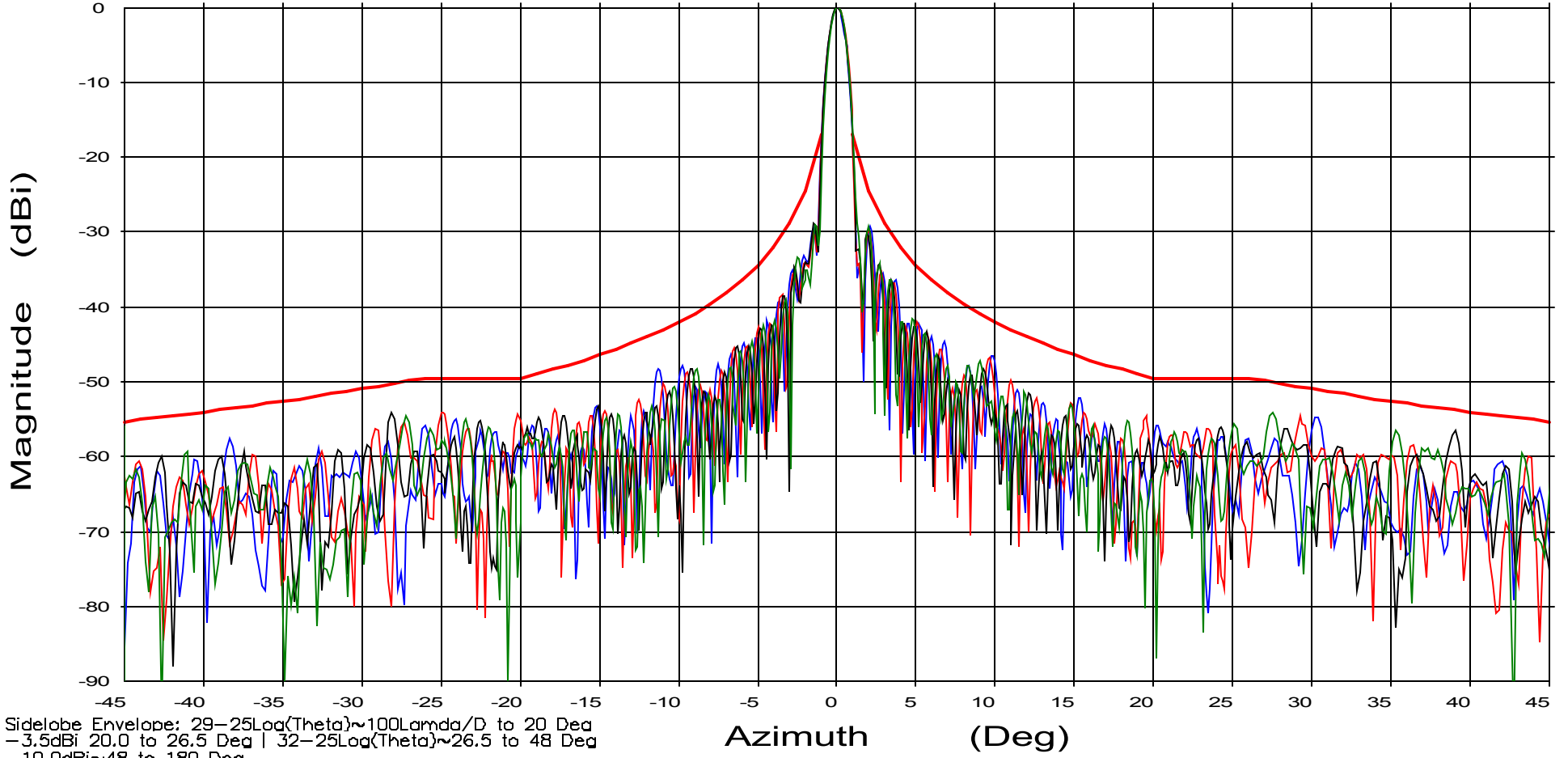
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: RHCP

Rx pol: RHCP



Sidelobe Envelope: $29-25\log(\theta) \sim 100\lambda/D$ to 20 Deg
 -3.5dBi 20.0 to 26.5 Deg | $32-25\log(\theta) \sim 26.5$ to 48 Deg
 $-10.0\text{dBi} \sim 48$ to 180 Deg

- Overlays
- Frequency : 5.845 GHz — blue
 - Frequency : 6.045 GHz — red
 - Frequency : 6.245 GHz — black
 - Frequency : 6.425 GHz — green

File: 1769 03.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 03.dat
Chan.: ch1
Table: SGA-70
Units: dBi

Frequency : See Legend

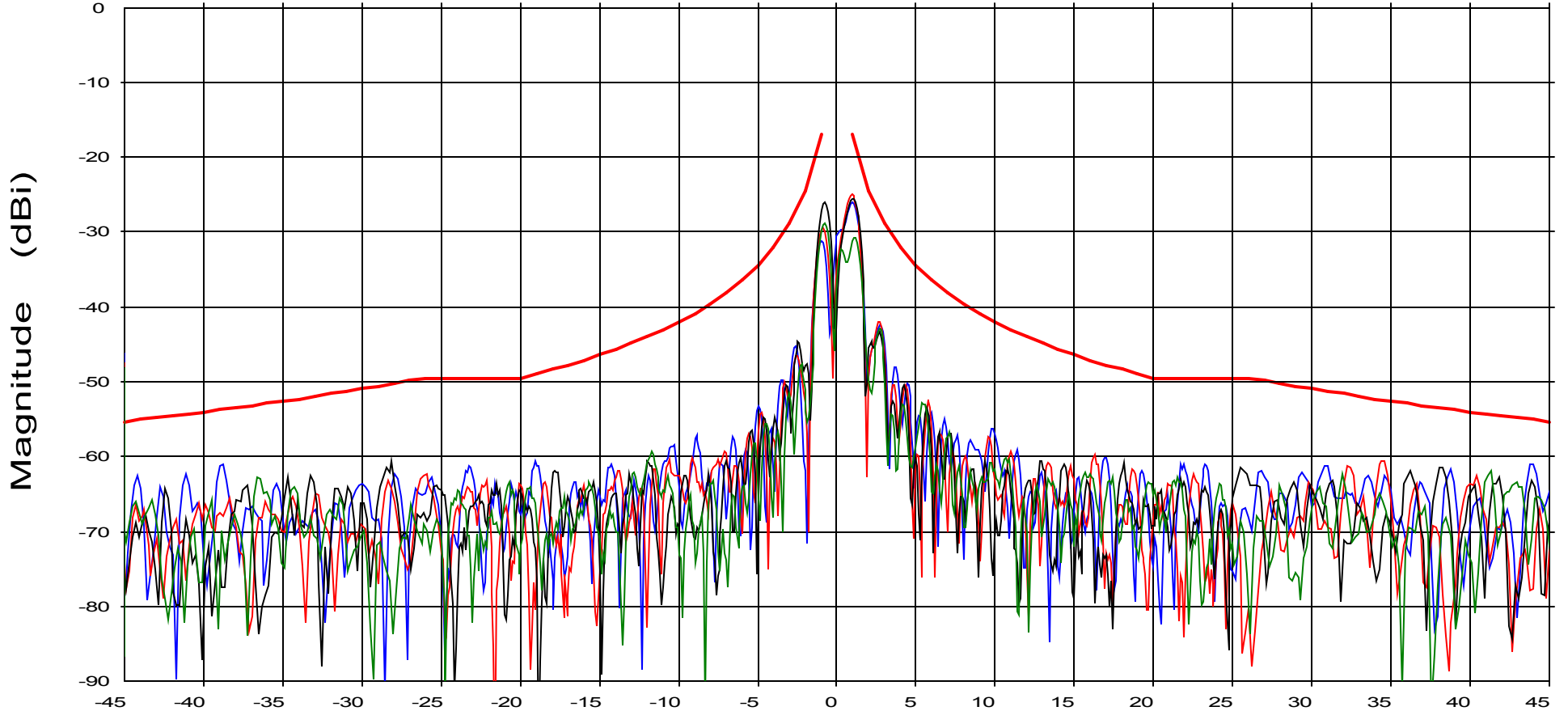
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: RHCP

Rx pol: RHCP



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

Overlays

- Frequency : 5.845 GHz — blue
- Frequency : 6.045 GHz — red
- Frequency : 6.245 GHz — black
- Frequency : 6.425 GHz — green

File: 1769 09.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 09.dat
Chan.: ch1
Table: SGA-70
Units: dBi

Frequency : See Legend

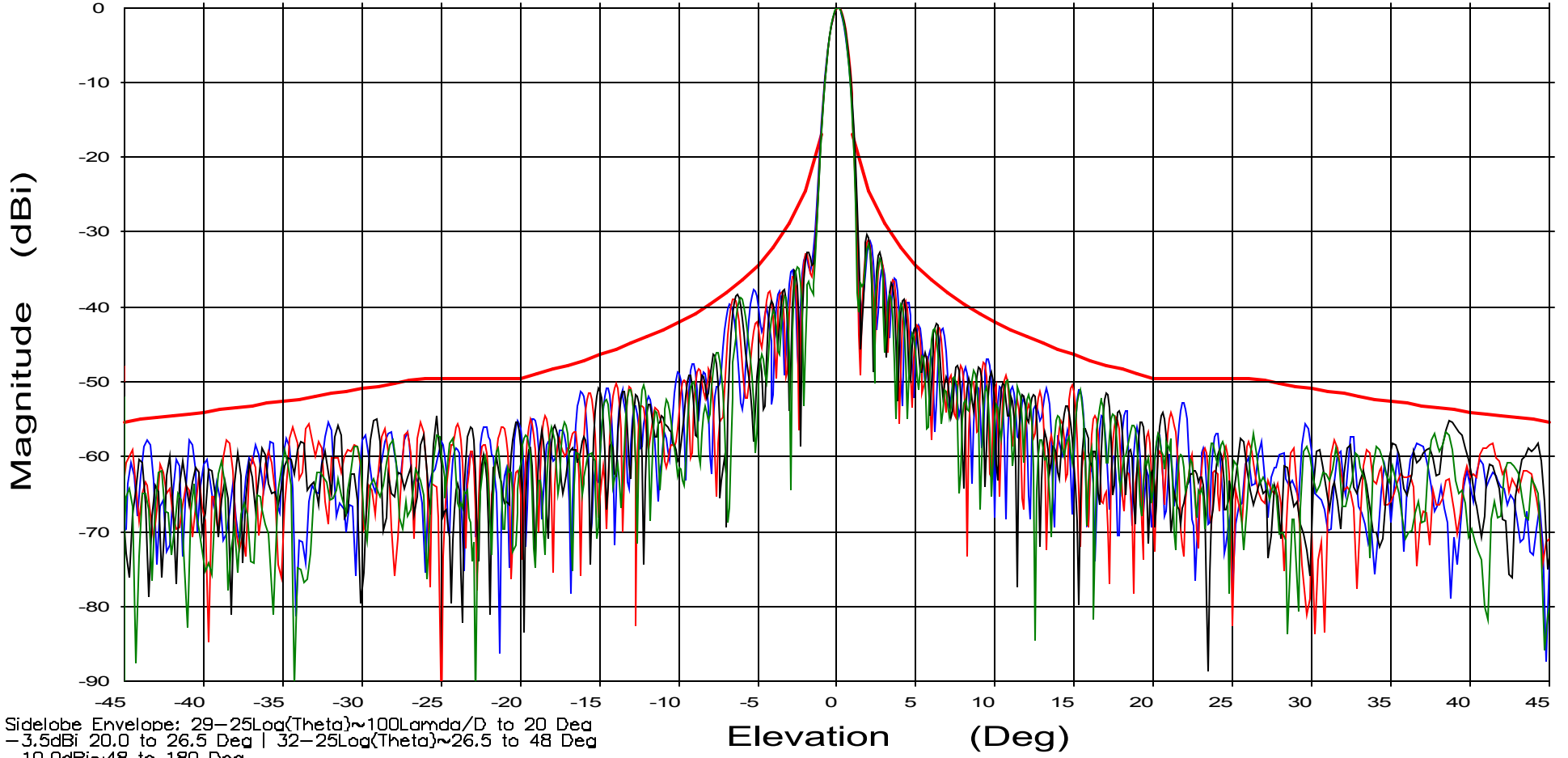
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: RHCP

Rx pol: RHCP



Overlays

- Frequency : 5.845 GHz — blue
- Frequency : 6.045 GHz — red
- Frequency : 6.245 GHz — black
- Frequency : 6.425 GHz — green

File: 1769 11.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 11.dat
Chan.: ch1
Table: SGA-70
Units: dBi

Frequency : See Legend

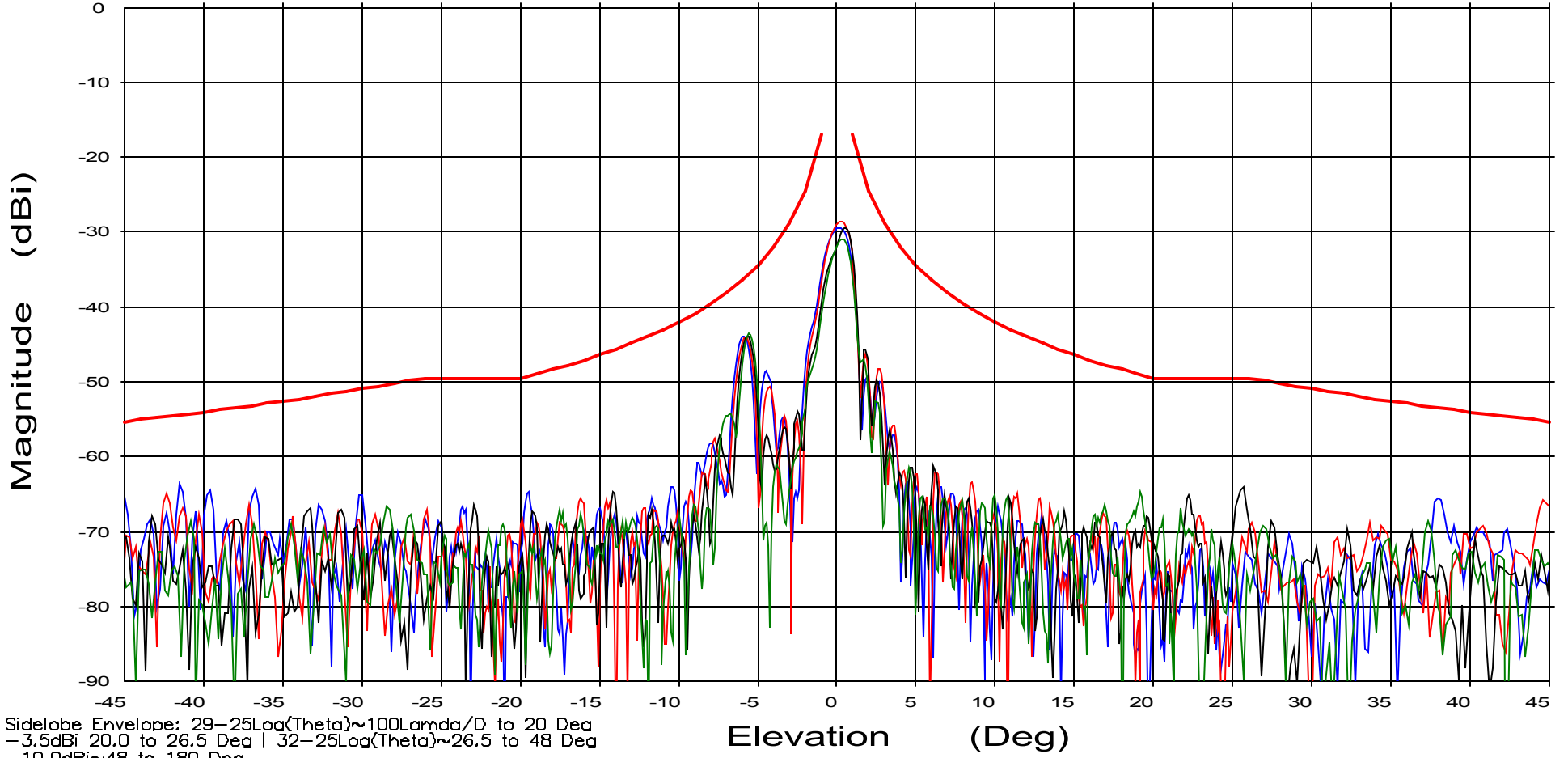
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: RHCP

Rx pol: RHCP



Overlays

- Frequency : 5.845 GHz — blue
- Frequency : 6.045 GHz — red
- Frequency : 6.245 GHz — black
- Frequency : 6.425 GHz — green

File: 1769 00.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 00.dat
Chan.: ch1
Table: SGA-70
Units: dBi

Frequency : See Legend

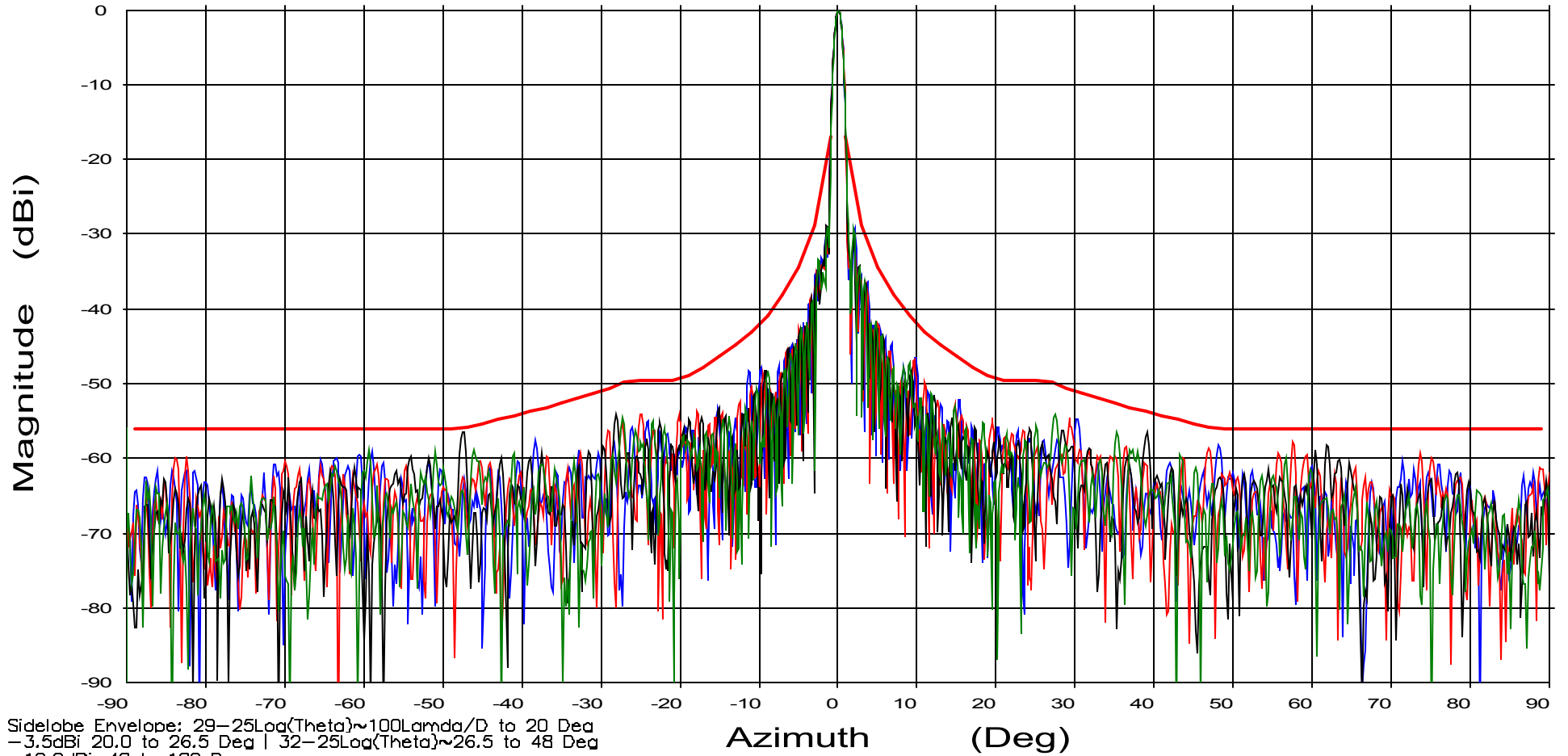
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: RHCP

Rx pol: RHCP



Overlays

- Frequency : 5.845 GHz — Blue
- Frequency : 6.045 GHz — Red
- Frequency : 6.245 GHz — Black
- Frequency : 6.425 GHz — Green

File: 1769 03.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 03.dat
Chan.: ch1
Table: SGA-70
Units: dBi

Frequency : See Legend

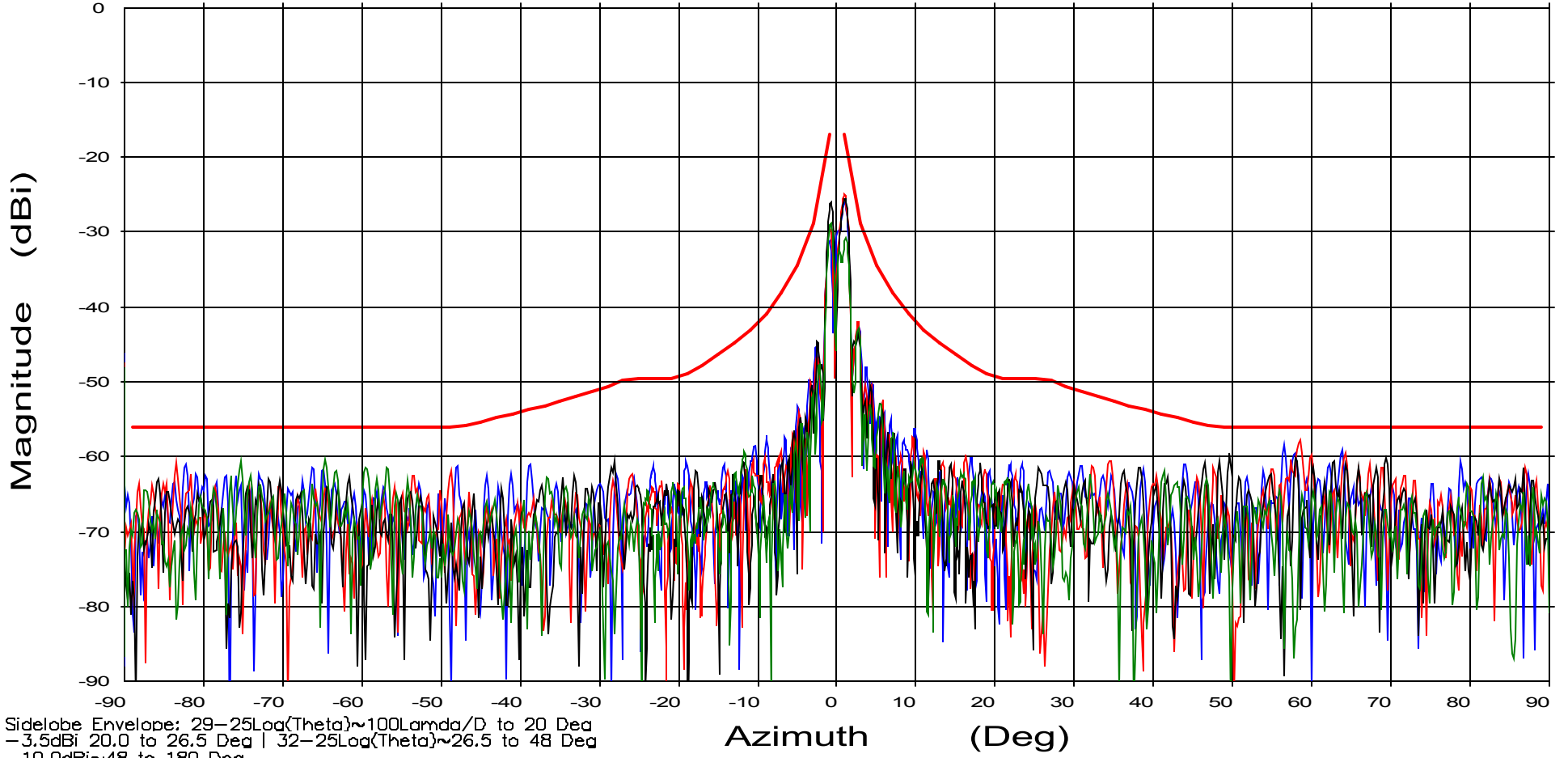
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: RHCP

Rx pol: RHCP



Overlays

- Frequency : 5.845 GHz — blue line
- Frequency : 6.045 GHz — red line
- Frequency : 6.245 GHz — black line
- Frequency : 6.425 GHz — green line

File: 1769 09.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 09.dat
Chan.: ch1
Table: SGA-70
Units: dBi

Frequency : See Legend

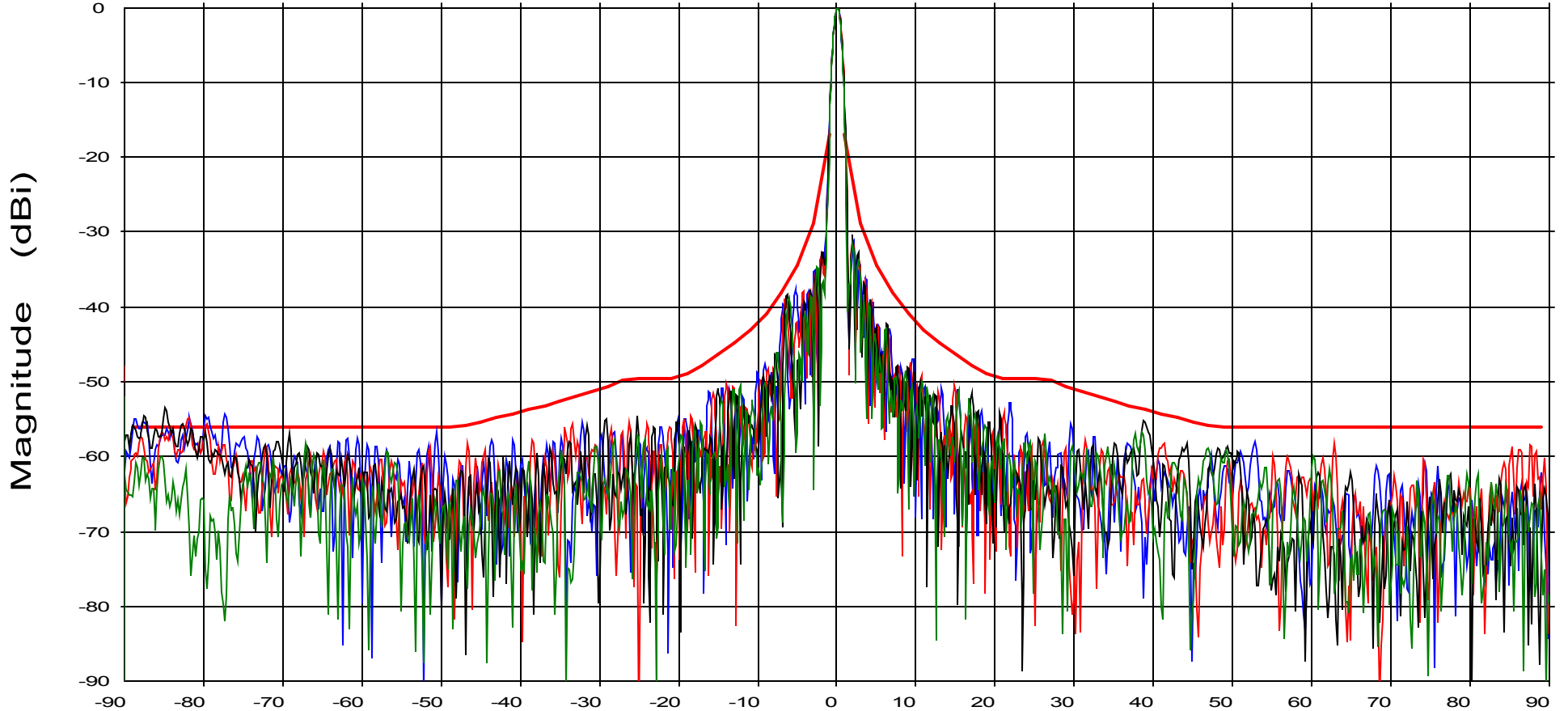
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: RHCP

Rx pol: RHCP



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

Overlays

- Frequency : 5.845 GHz — blue
- Frequency : 6.045 GHz — red
- Frequency : 6.245 GHz — black
- Frequency : 6.425 GHz — green

File: 1769 11.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 11.dat
Chan.: ch1
Table: SGA-70
Units: dBi

Frequency : See Legend

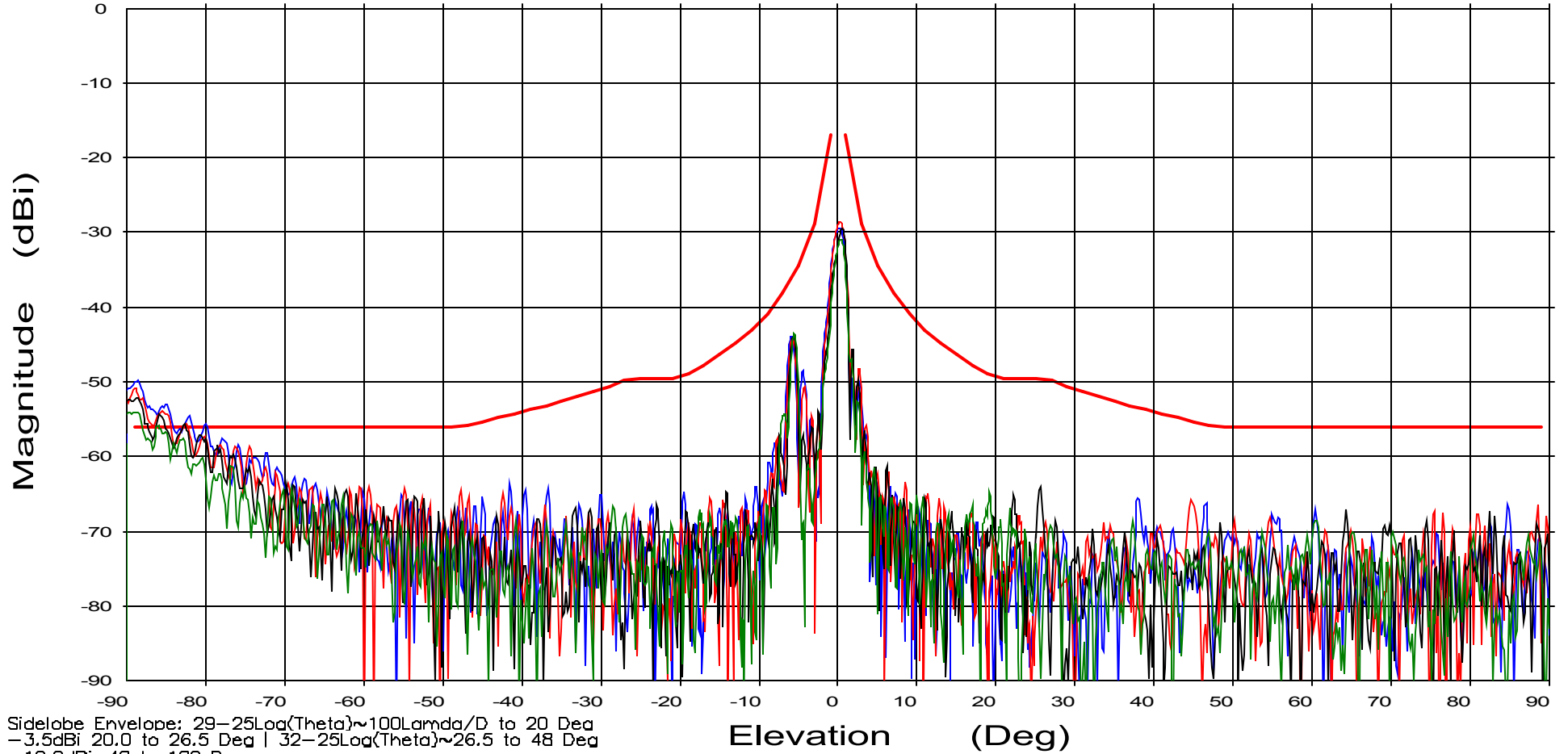
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: RHCP

Rx pol: RHCP



Sidelobe Envelope: 29-25Log(Theta)~100Lamda/D to 20 Deg
-3.5dBi 20.0 to 26.5 Deg | 32-25Log(Theta)~26.5 to 48 Deg
-10.0dBi~48 to 180 Deg

Overlays

- Frequency : 5.845 GHz — blue
- Frequency : 6.045 GHz — red
- Frequency : 6.245 GHz — black
- Frequency : 6.425 GHz — green

File: 1769 00.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 00.dat
Chan.: ch1
Table: SGA-70
Units: dBi

Frequency : See Legend

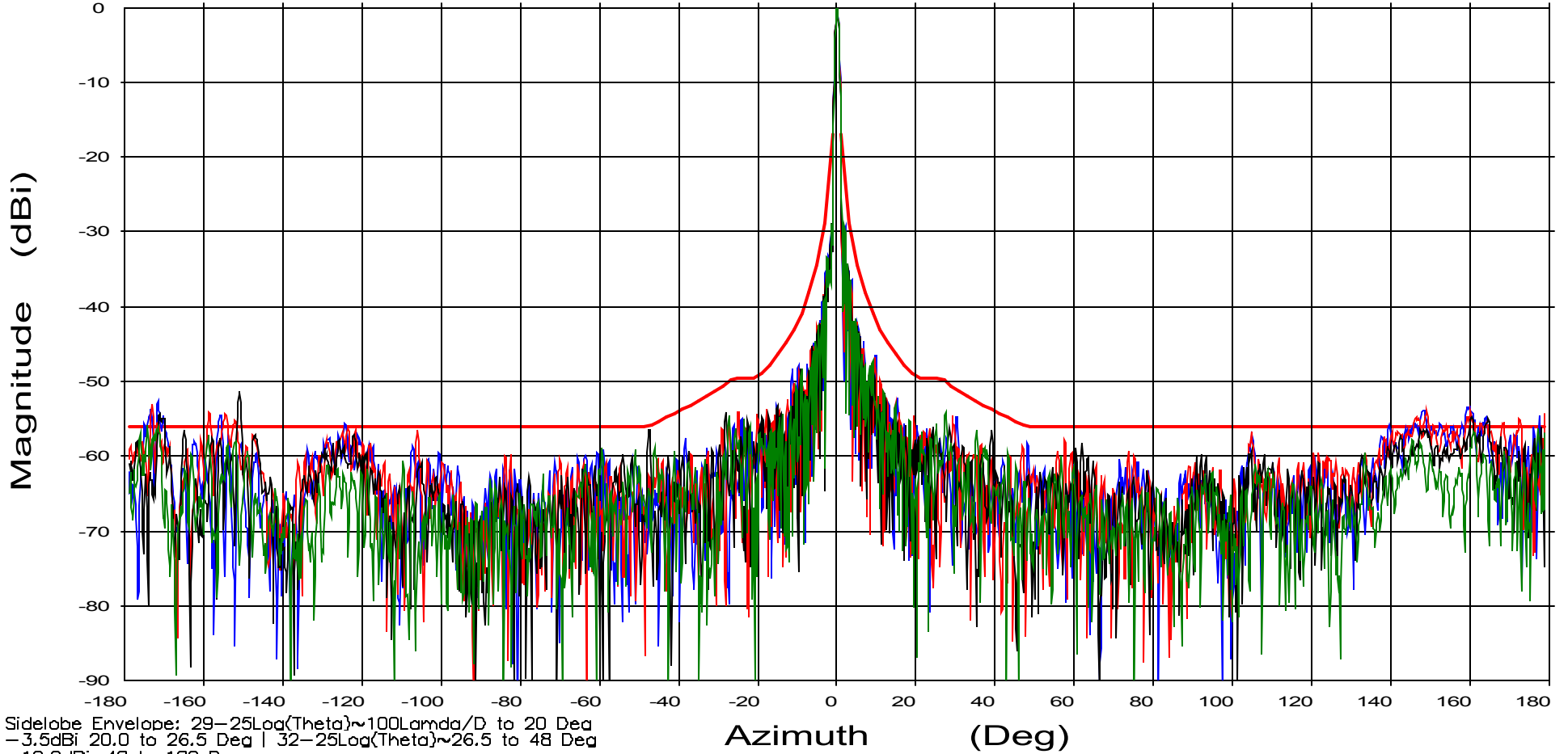
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: RHCP

Rx pol: RHCP



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

Overlays

- Frequency : 5.845 GHz — blue line
- Frequency : 6.045 GHz — red line
- Frequency : 6.245 GHz — black line
- Frequency : 6.425 GHz — green line

File: 1769 03.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 03.dat
Chan.: ch1
Table: SGA-70
Units: dBi

Frequency : See Legend

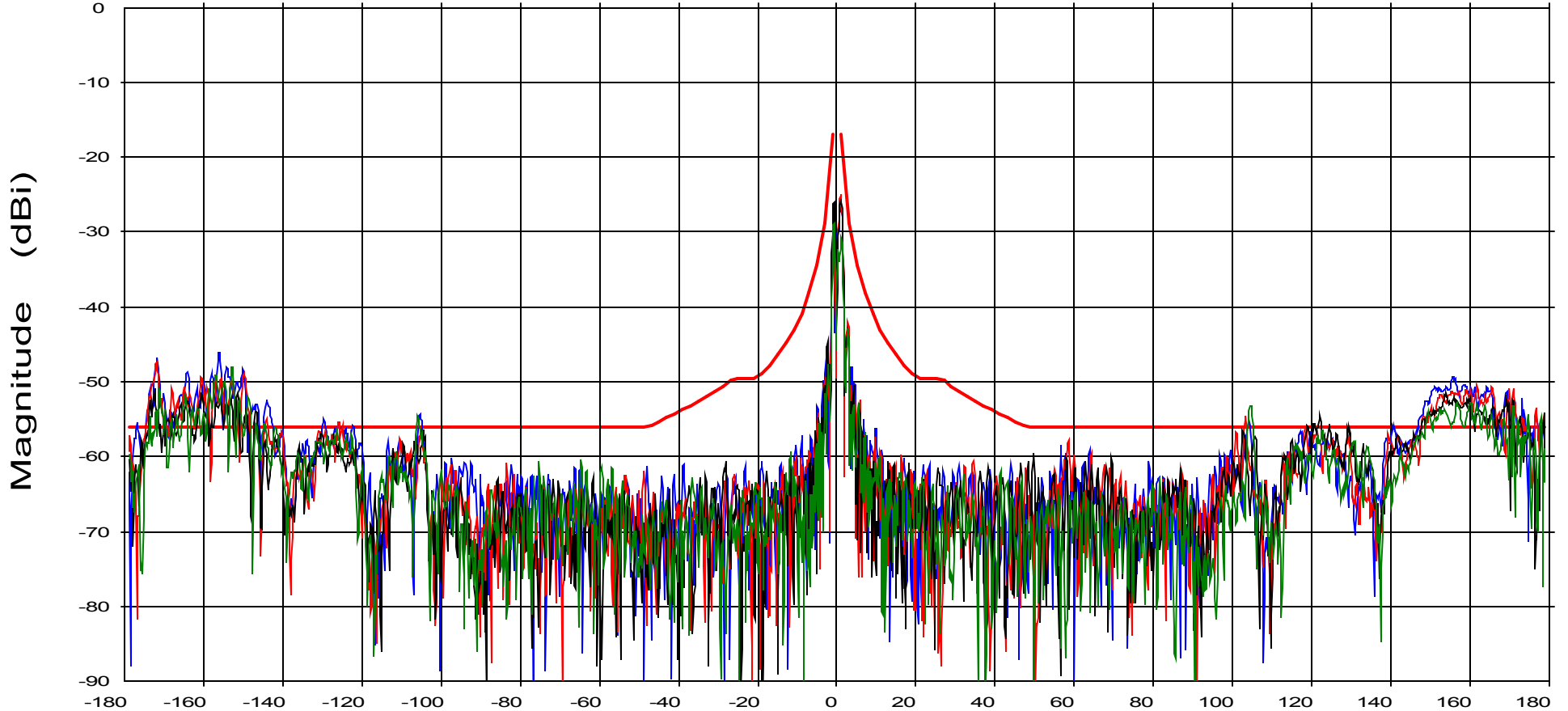
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: RHCP

Rx pol: RHCP



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

Overlays

- Frequency : 5.845 GHz — blue
- Frequency : 6.045 GHz — red
- Frequency : 6.245 GHz — black
- Frequency : 6.425 GHz — green

File: 1769 09.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 09.dat
Chan.: ch1
Table: SGA-70
Units: dBi

Frequency : See Legend

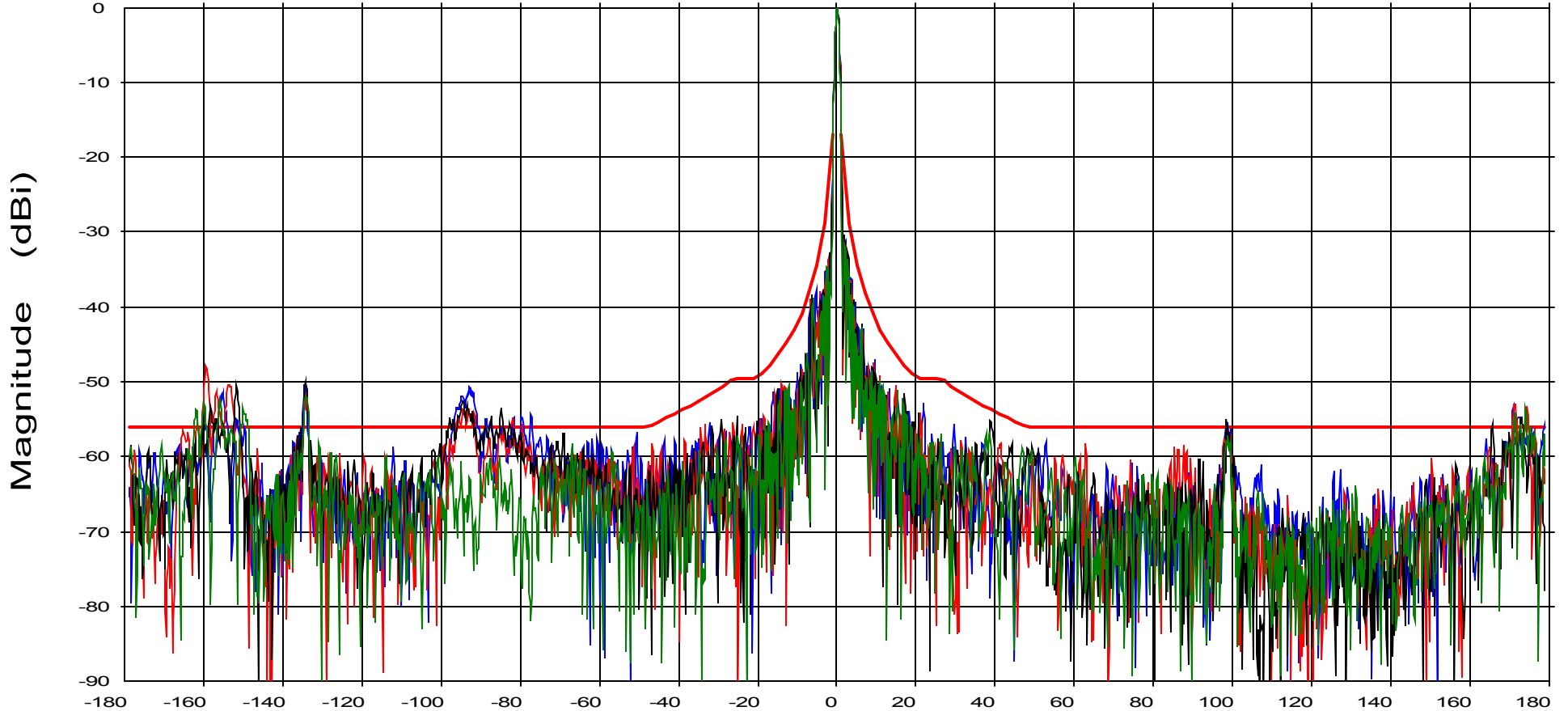
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: RHCP

Rx pol: RHCP



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

Overlays

- Frequency : 5.845 GHz — blue
- Frequency : 6.045 GHz — red
- Frequency : 6.245 GHz — black
- Frequency : 6.425 GHz — green

File: 1769 11.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 11.dat
Chan.: ch1
Table: SGA-70
Units: dBi

Frequency : See Legend

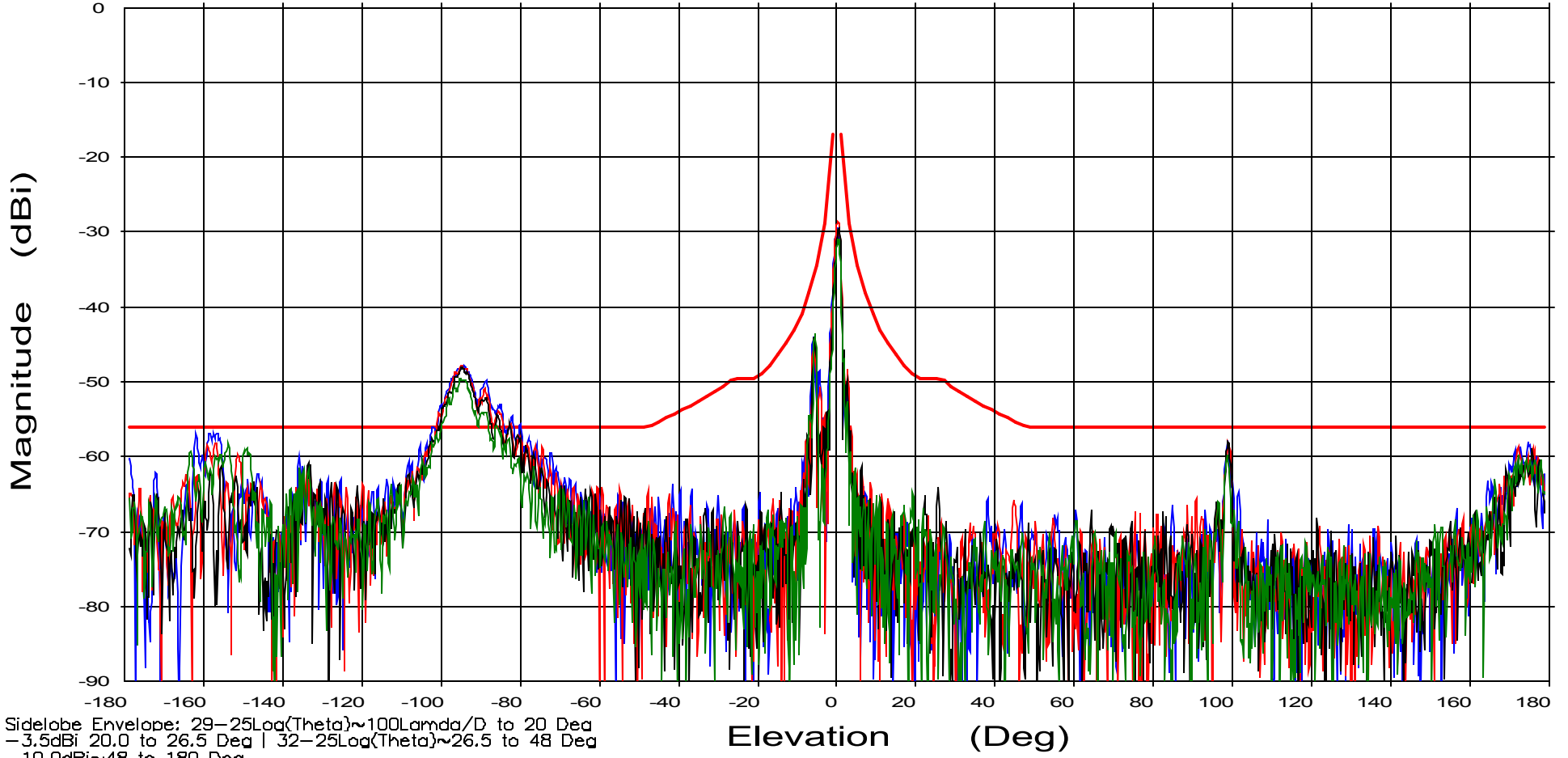
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: RHCP

Rx pol: RHCP



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

Overlays

- Frequency : 5.845 GHz — blue
- Frequency : 6.045 GHz — red
- Frequency : 6.245 GHz — black
- Frequency : 6.425 GHz — green

3.5 LHCP Receive Close-in Patterns

File: 1769 92.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 92.dat
Chan.: ch1
Table: SGA-40
Units: dBi

Frequency : See Legend

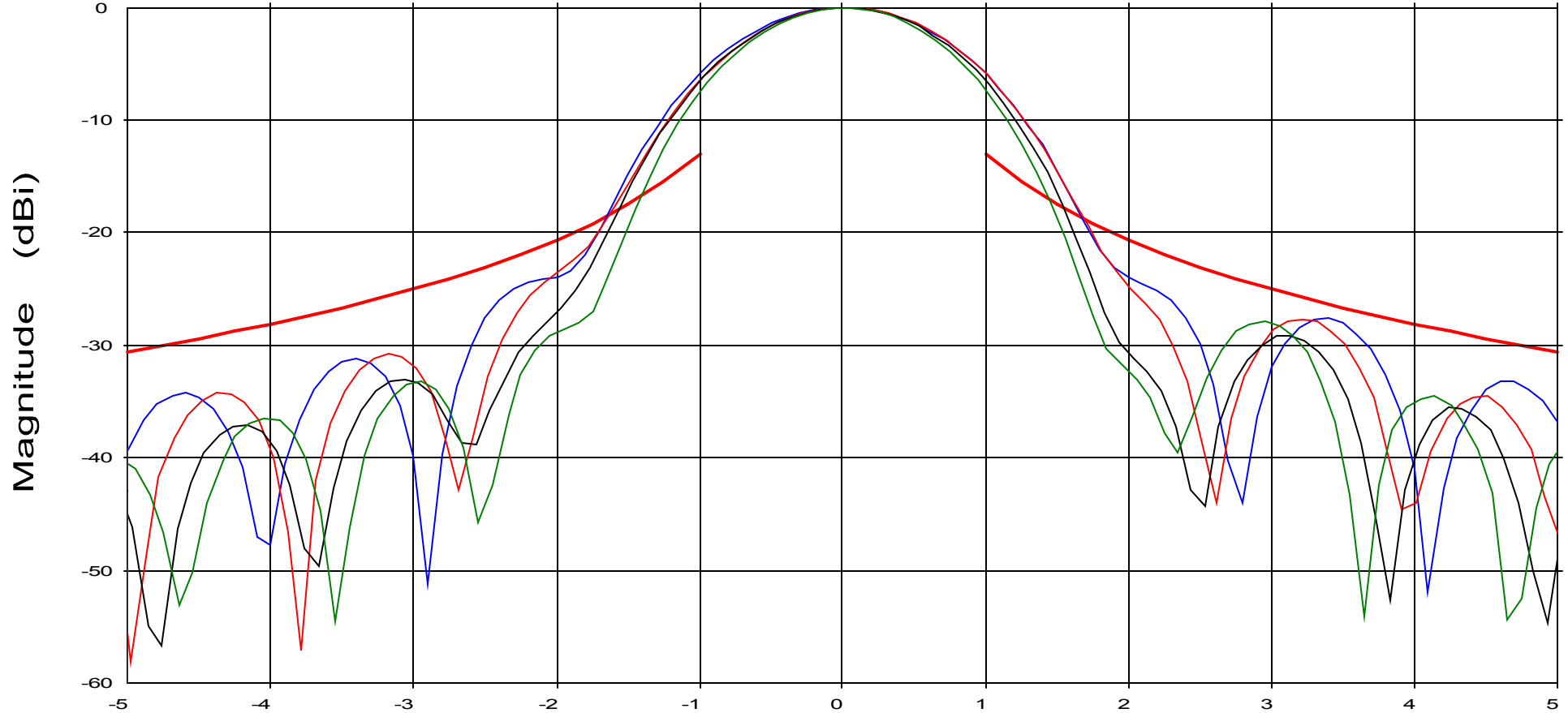
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: LHCP

Rx pol: LHCP



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

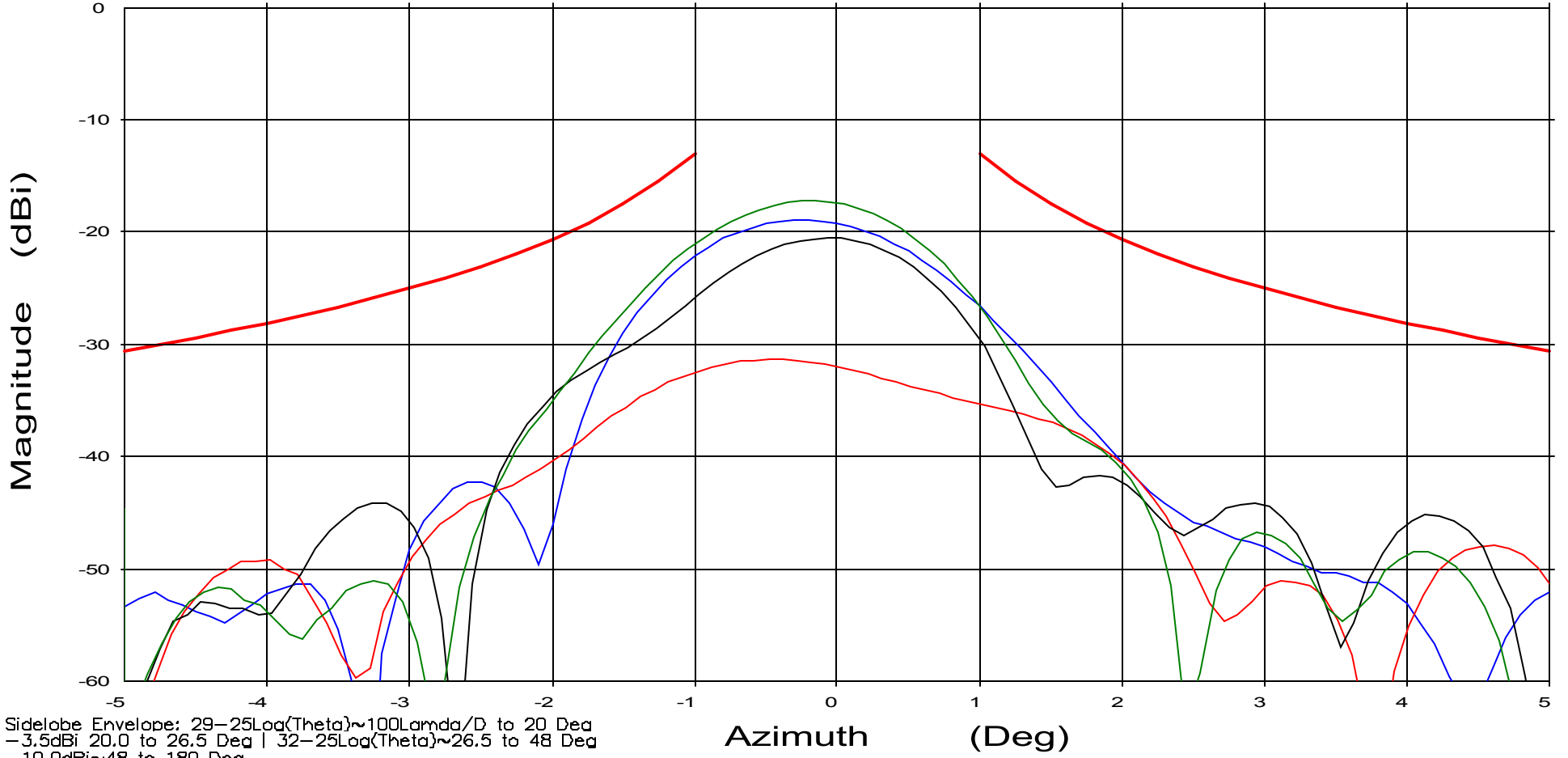
Overlays

- Frequency : 3.625 GHz — blue
- Frequency : 3.825 GHz — red
- Frequency : 4.025 GHz — black
- Frequency : 4.200 GHz — green

Operator: Dwight B. Lutz
Ser. no.:
Channel: ch1

Tx pol: LHCP

Rx pol: LHCP



- Overlays
- Frequency : 3.625 GHz — blue
 - Frequency : 3.825 GHz — red
 - Frequency : 4.025 GHz — black
 - Frequency : 4.200 GHz — green

File: 1769 95.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

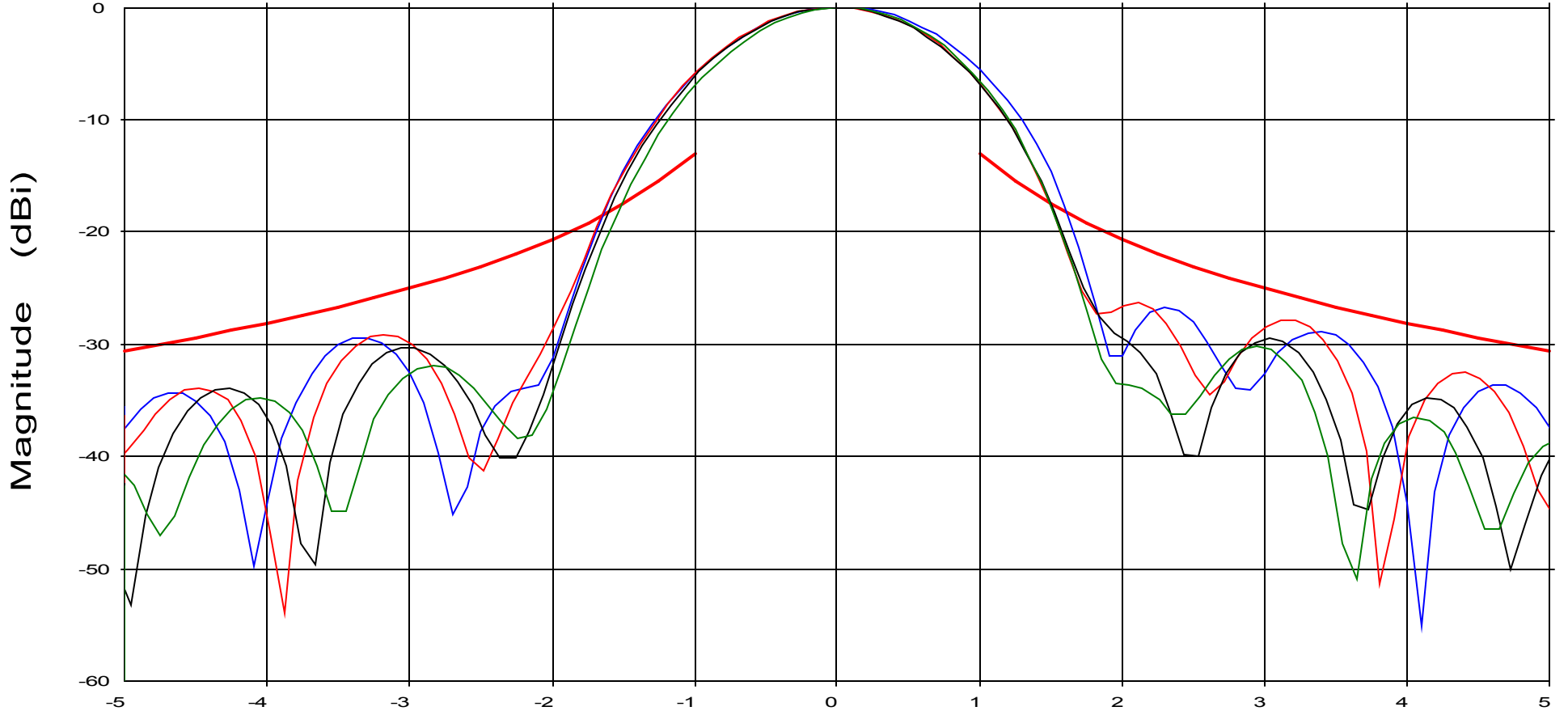
Calibration status:
File: 1769 95.dat
Chan.: ch1
Table: SGA-40
Units: dBi

Frequency : See Legend

Operator: Dwight B. Lutz
Ser. no.:
Channel: ch1

Tx pol: LHCP

Rx pol: LHCP



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

- Overlays
- Frequency : 3.625 GHz — blue line
 - Frequency : 3.825 GHz — red line
 - Frequency : 4.025 GHz — black line
 - Frequency : 4.200 GHz — green line

File: 1769 97.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 97.dat
Chan.: ch1
Table: SGA-40
Units: dBi

Frequency : See Legend

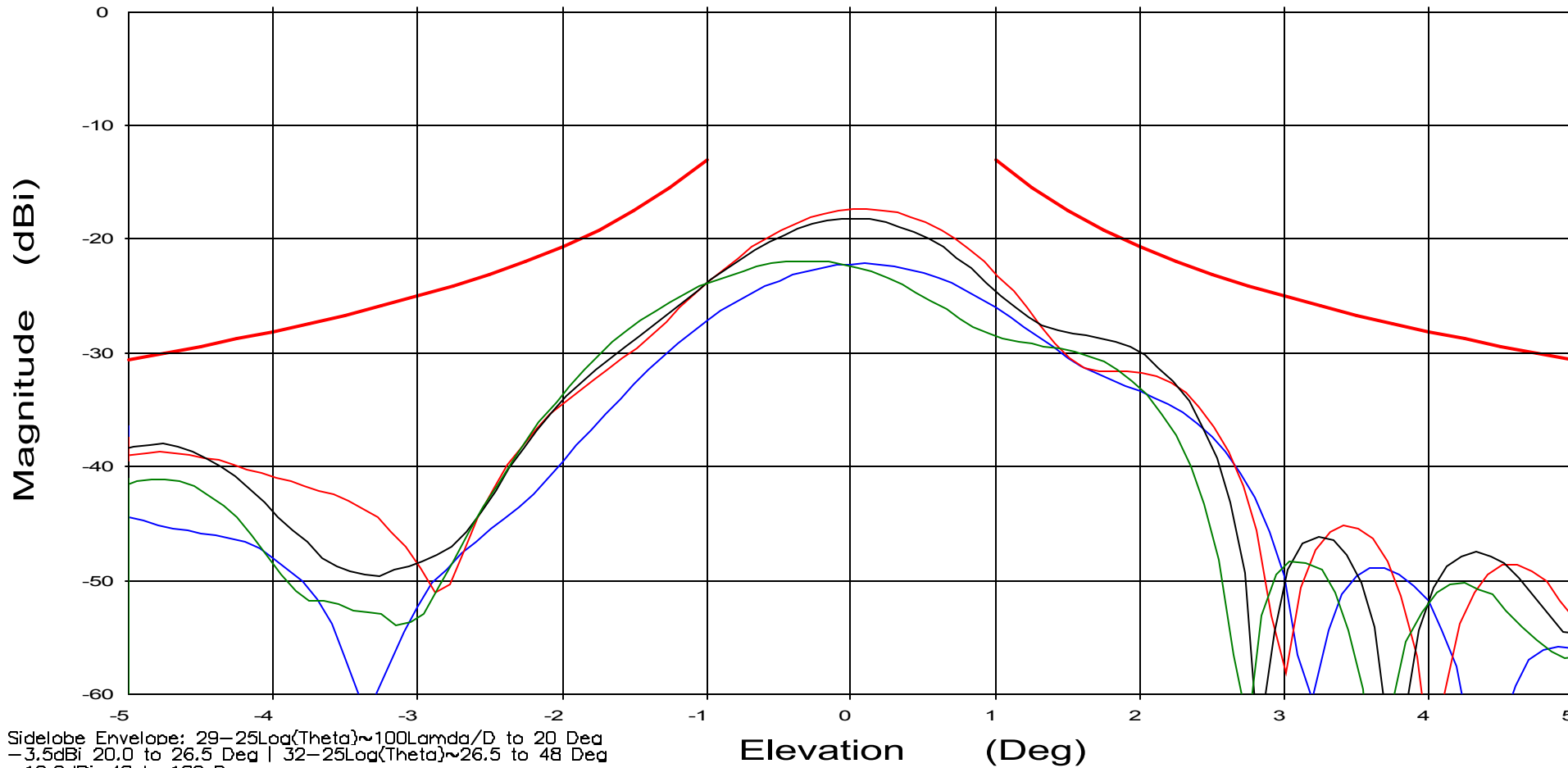
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: LHCP

Rx pol: LHCP



Overlays

- Frequency : 3.625 GHz — blue line
- Frequency : 3.825 GHz — red line
- Frequency : 4.025 GHz — black line
- Frequency : 4.200 GHz — green line

File: 1769 92.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 92.dat
Chan.: ch1
Table: SGA-40
Units: dBi

Frequency : See Legend

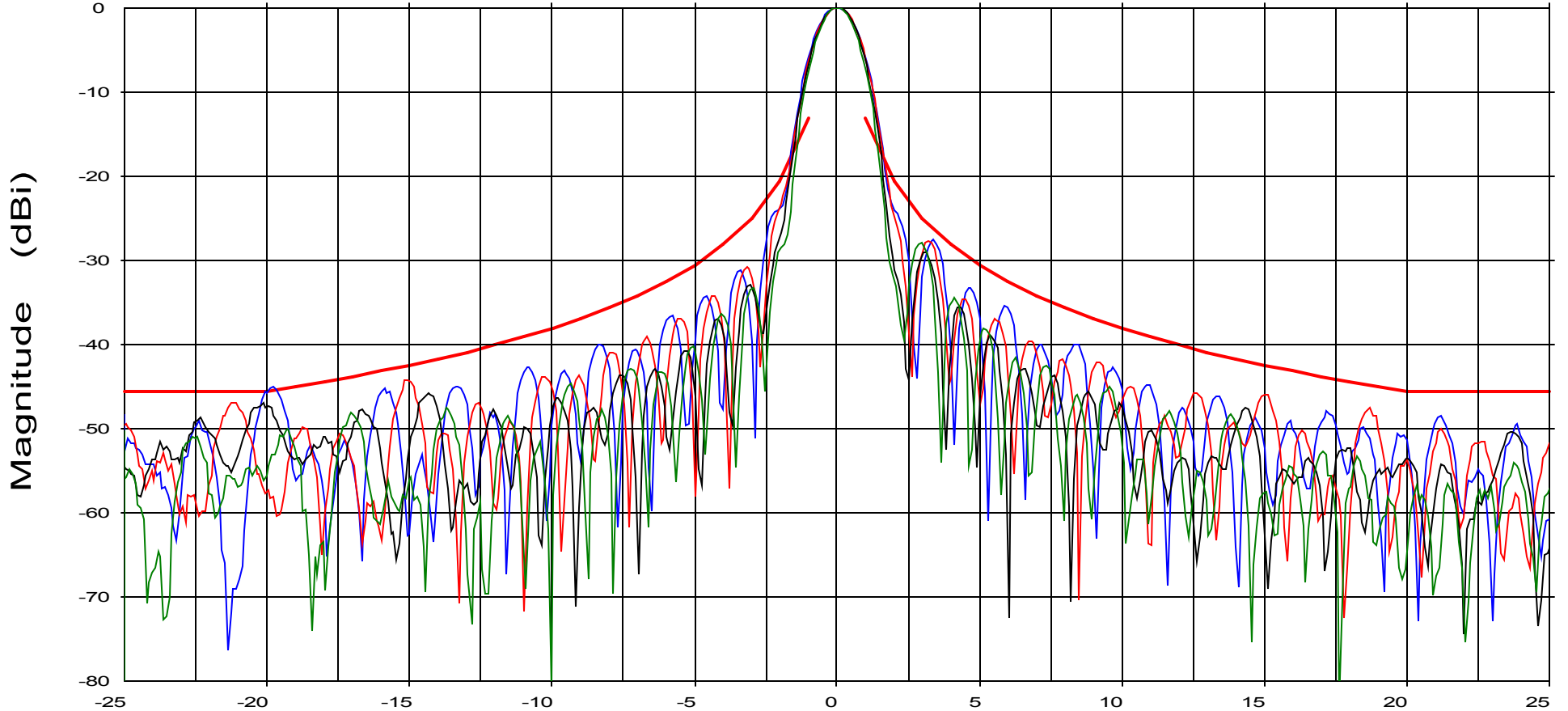
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: LHCP

Rx pol: LHCP



Sidelobe Envelope: $29-25\text{Log}(\text{Theta}) \sim 100\text{Lambda}/D$ to 20 Deg
 -3.5dBi 20.0 to 26.5 Deg | $32-25\text{Log}(\text{Theta}) \sim 26.5$ to 48 Deg
 $-10.0\text{dBi} \sim 48$ to 180 Deg

Overlays

- Frequency : 3.625 GHz — blue
- Frequency : 3.825 GHz — red
- Frequency : 4.025 GHz — black
- Frequency : 4.200 GHz — green

File: 1769 94.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 94.dat
Chan.: ch1
Table: SGA-40
Units: dBi

Frequency : See Legend

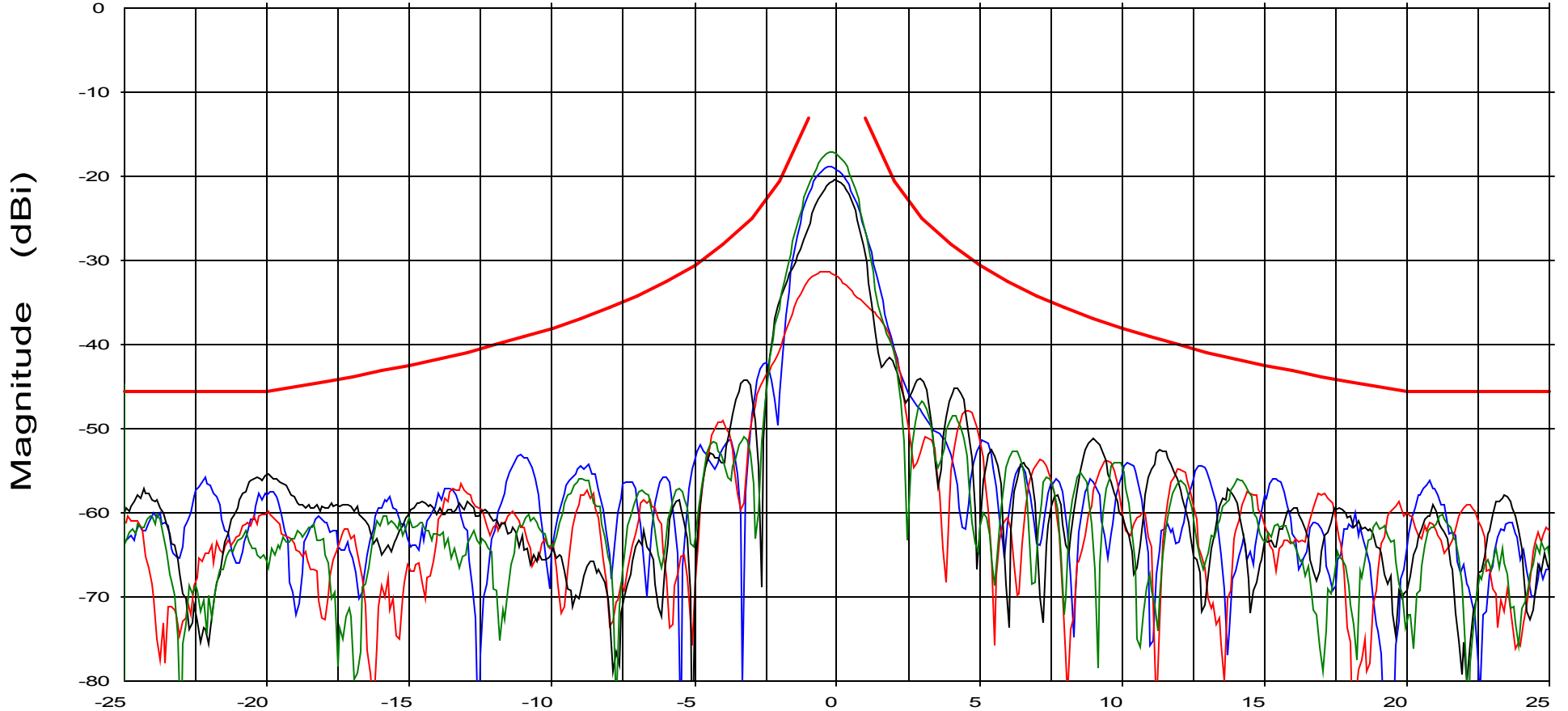
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: LHCP

Rx pol: LHCP



Sidelobe Envelope: $29-25\text{Log}(\text{Theta}) \sim 100\text{Lambda}/D$ to 20 Deg
 -3.5dBi 20.0 to 26.5 Deg | $32-25\text{Log}(\text{Theta}) \sim 26.5$ to 48 Deg
 $-10.0\text{dBi} \sim 48$ to 180 Deg

Overlays

- Frequency : 3.625 GHz — blue
- Frequency : 3.825 GHz — red
- Frequency : 4.025 GHz — black
- Frequency : 4.200 GHz — green

File: 1769 95.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 95.dat
Chan.: ch1
Table: SGA-40
Units: dBi

Frequency : See Legend

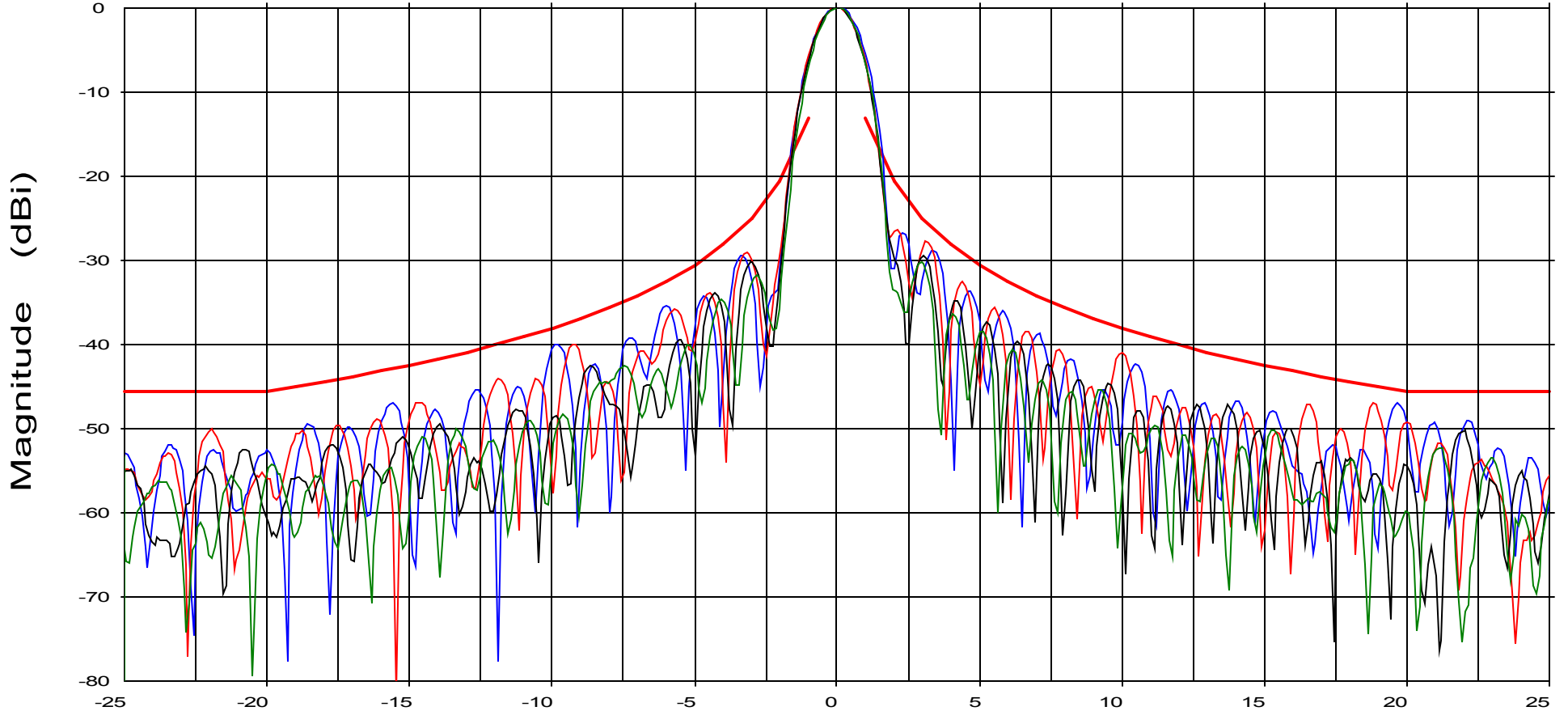
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: LHCP

Rx pol: LHCP



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

Overlays

- Frequency : 3.625 GHz — blue
- Frequency : 3.825 GHz — red
- Frequency : 4.025 GHz — black
- Frequency : 4.200 GHz — green

File: 1769 97.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 97.dat
Chan.: ch1
Table: SGA-40
Units: dBi

Frequency : See Legend

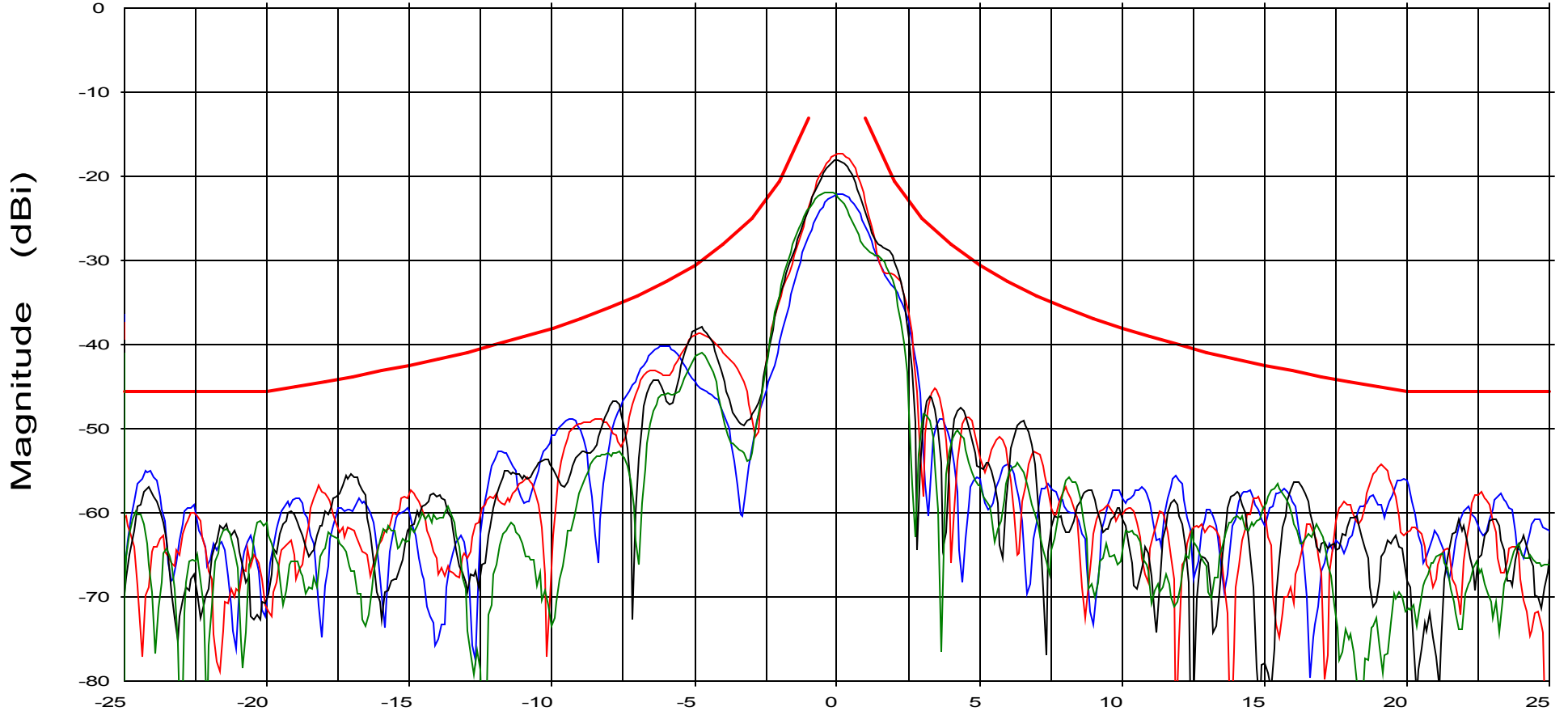
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: LHCP

Rx pol: LHCP



Sidelobe Envelope: $29-25\text{Log}(\text{Theta}) \sim 100\text{Lambda}/D$ to 20 Deg
 -3.5dBi 20.0 to 26.5 Deg | $32-25\text{Log}(\text{Theta}) \sim 26.5$ to 48 Deg
 $-10.0\text{dBi} \sim 48$ to 180 Deg

Overlays

- Frequency : 3.625 GHz — blue
- Frequency : 3.825 GHz — red
- Frequency : 4.025 GHz — black
- Frequency : 4.200 GHz — green

3.6 LHCP Receive Wide Angle Patterns

File: 1769 92.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 92.dat
Chan.: ch1
Table: SGA-40
Units: dBi

Frequency : See Legend

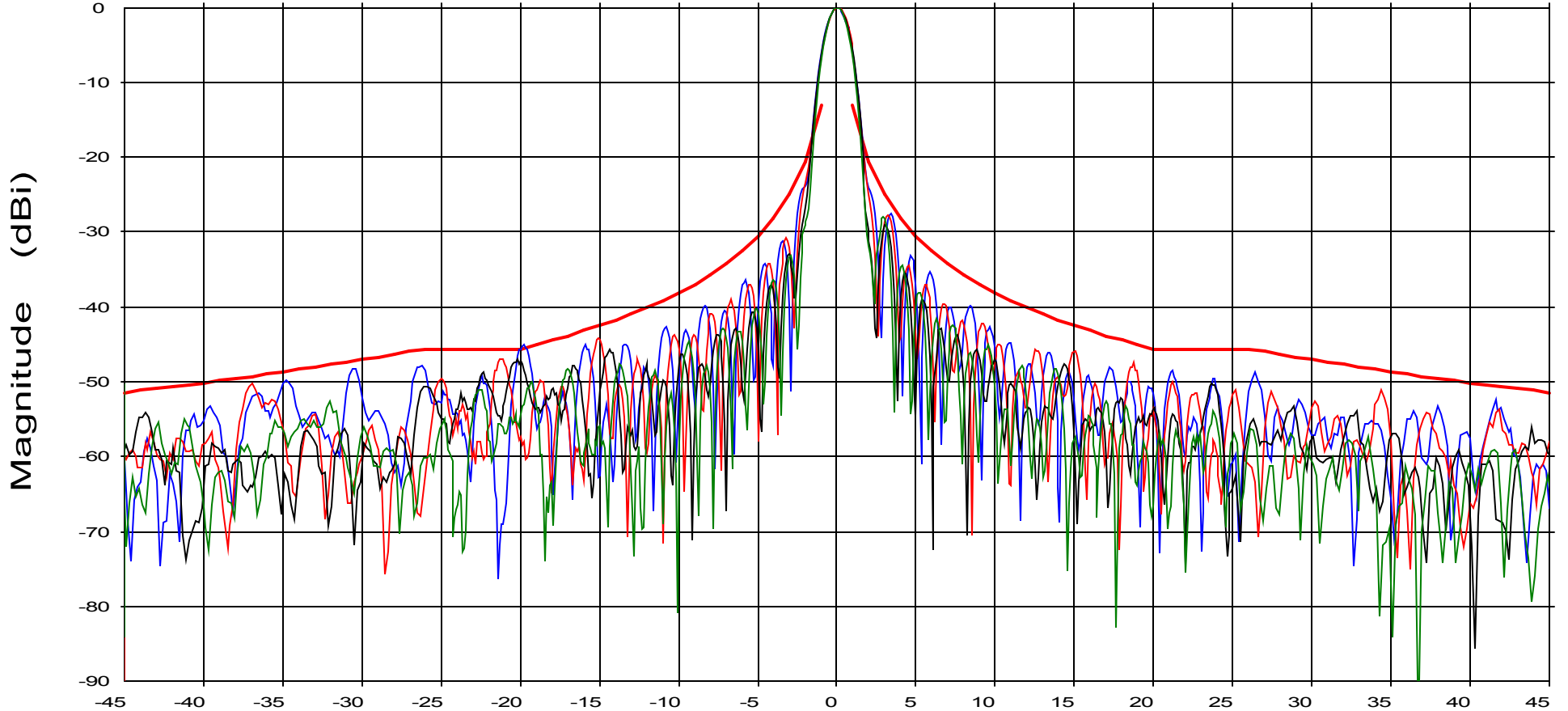
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: LHCP

Rx pol: LHCP



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

Overlays

- Frequency : 3.625 GHz — blue
- Frequency : 3.825 GHz — red
- Frequency : 4.025 GHz — black
- Frequency : 4.200 GHz — green

File: 1769 94.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 94.dat
Chan.: ch1
Table: SGA-40
Units: dBi

Frequency : See Legend

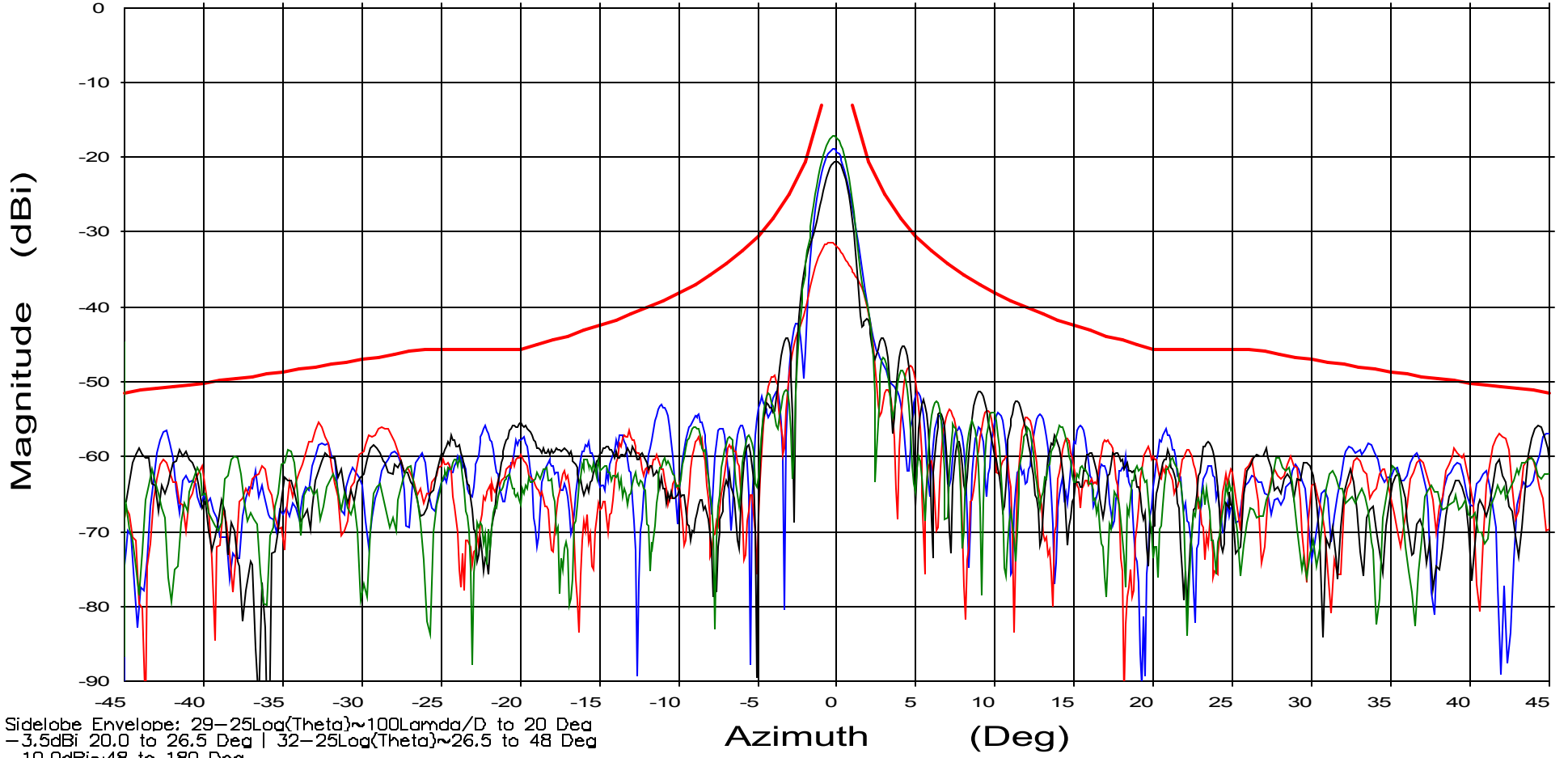
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: LHCP

Rx pol: LHCP



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

Overlays

- Frequency : 3.625 GHz — blue
- Frequency : 3.825 GHz — red
- Frequency : 4.025 GHz — black
- Frequency : 4.200 GHz — green

File: 1769 95.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 95.dat
Chan.: ch1
Table: SGA-40
Units: dBi

Frequency : See Legend

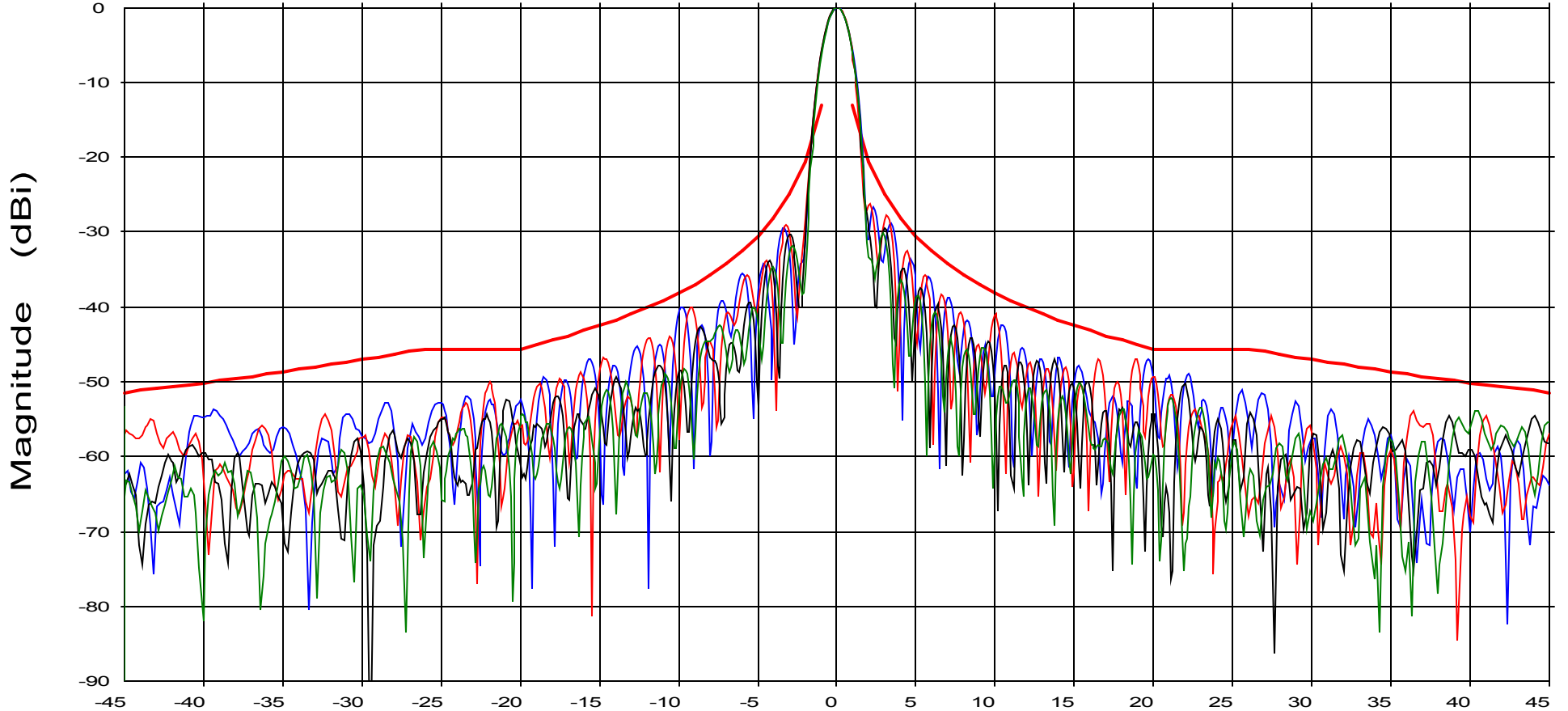
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: LHCP

Rx pol: LHCP



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

Overlays

- Frequency : 3.625 GHz — blue
- Frequency : 3.825 GHz — red
- Frequency : 4.025 GHz — black
- Frequency : 4.200 GHz — green

File: 1769 97.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 97.dat
Chan.: ch1
Table: SGA-40
Units: dBi

Frequency : See Legend

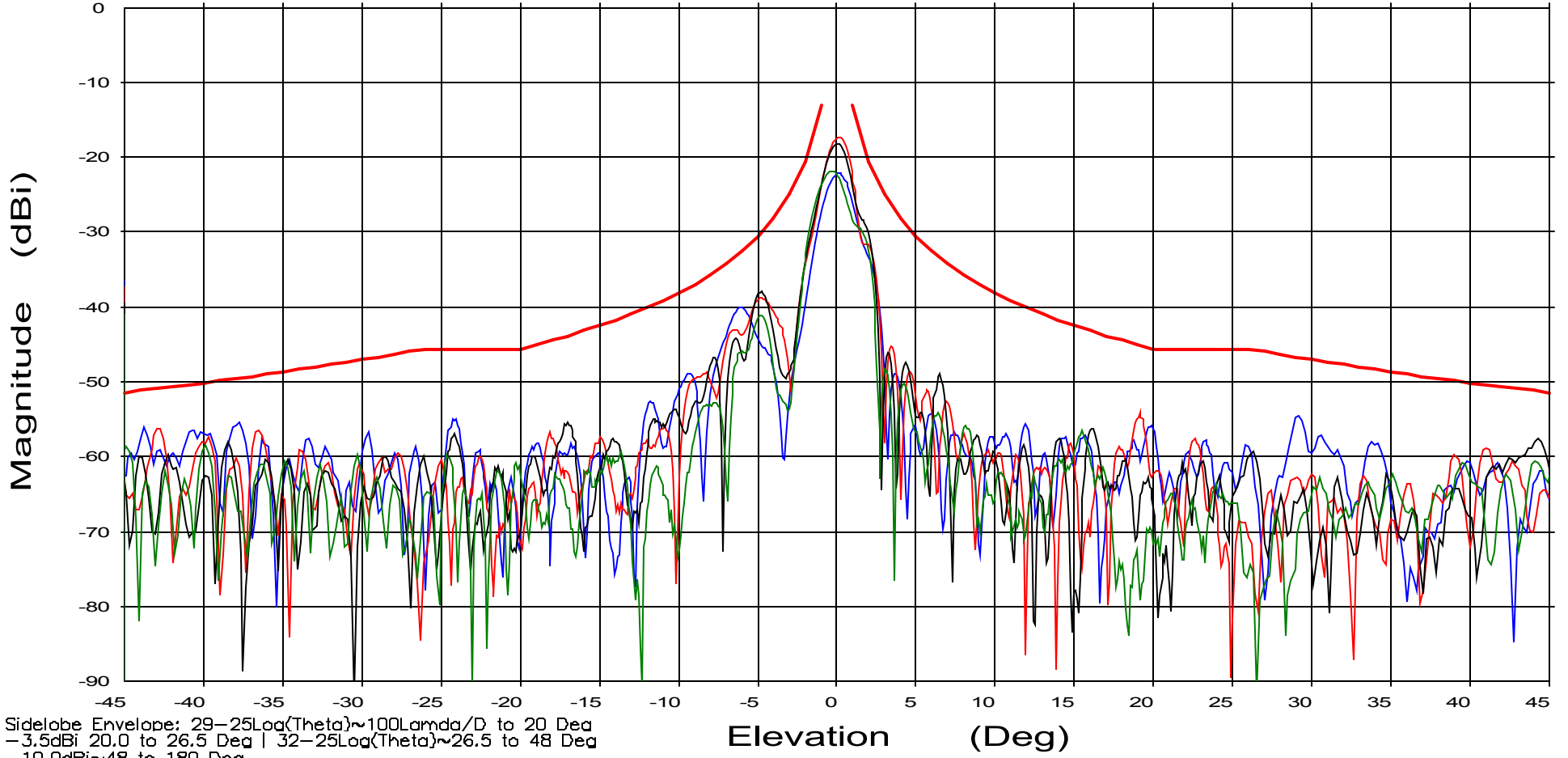
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: LHCP

Rx pol: LHCP



- Overlays
- Frequency : 3.625 GHz — blue line
 - Frequency : 3.825 GHz — red line
 - Frequency : 4.025 GHz — black line
 - Frequency : 4.200 GHz — green line

File: 1769 92.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 92.dat
Chan.: ch1
Table: SGA-40
Units: dBi

Frequency : See Legend

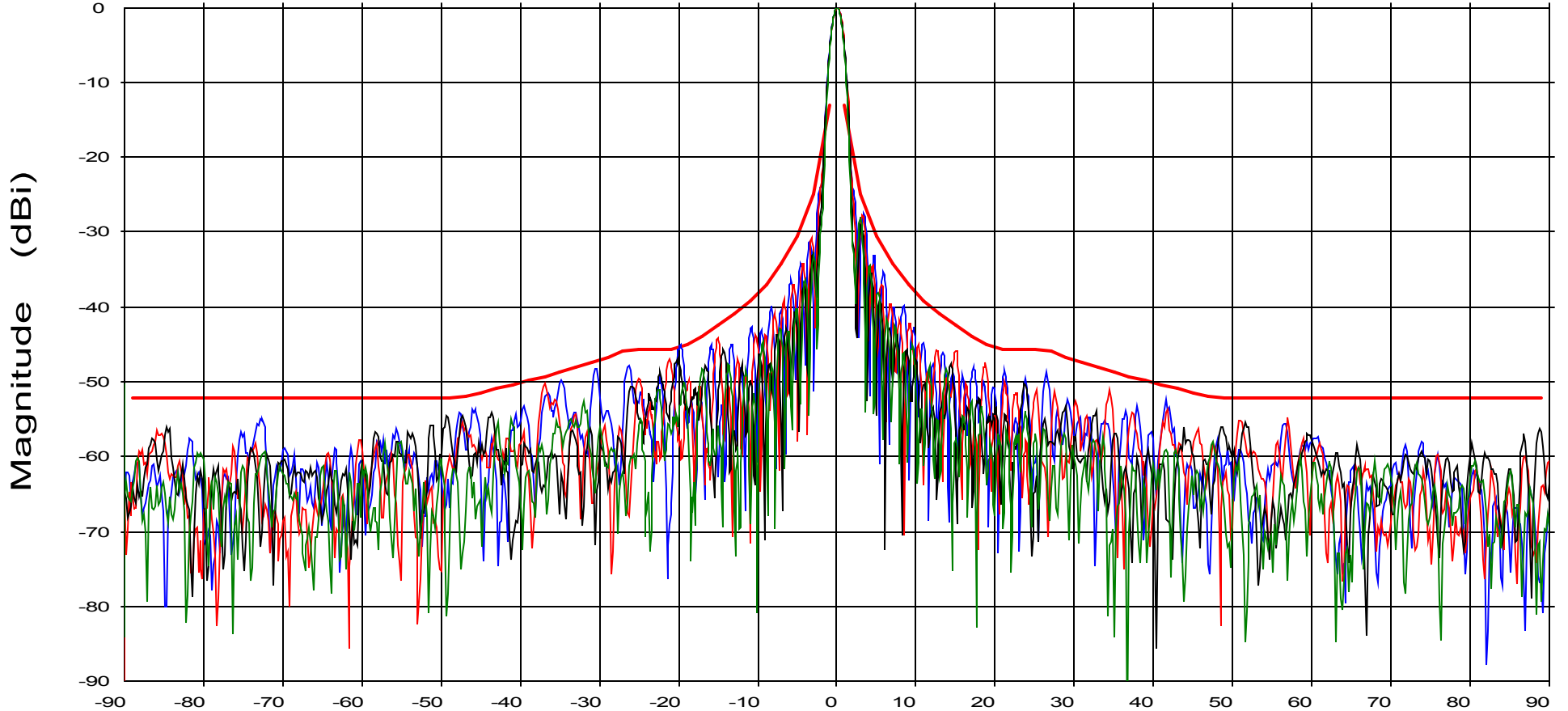
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: LHCP

Rx pol: LHCP



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

Overlays

- Frequency : 3.625 GHz — blue
- Frequency : 3.825 GHz — red
- Frequency : 4.025 GHz — black
- Frequency : 4.200 GHz — green

File: 1769 94.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 94.dat
Chan.: ch1
Table: SGA-40
Units: dBi

Frequency : See Legend

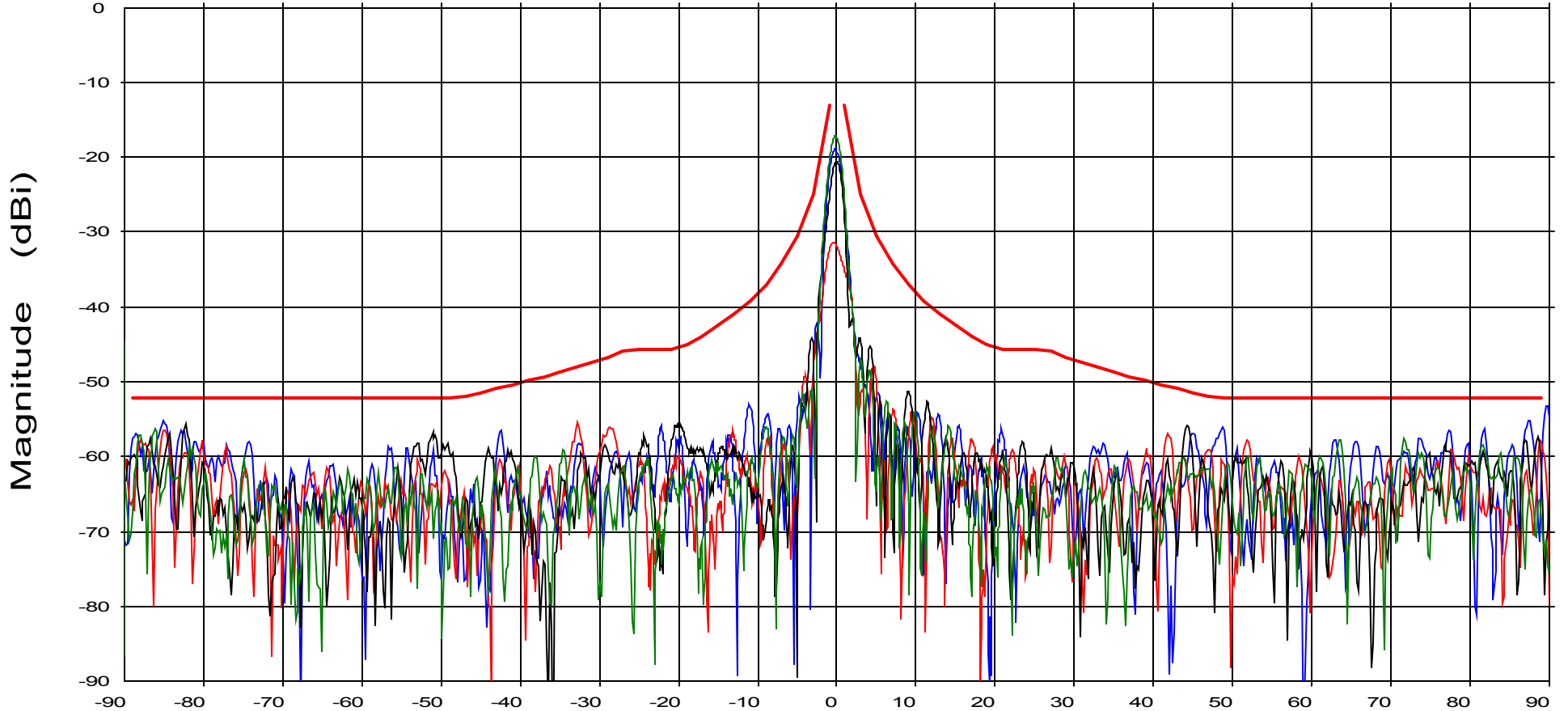
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: LHCP

Rx pol: LHCP



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

Overlays

- Frequency : 3.625 GHz — blue
- Frequency : 3.825 GHz — red
- Frequency : 4.025 GHz — black
- Frequency : 4.200 GHz — green

File: 1769 95.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 95.dat
Chan.: ch1
Table: SGA-40
Units: dBi

Frequency : See Legend

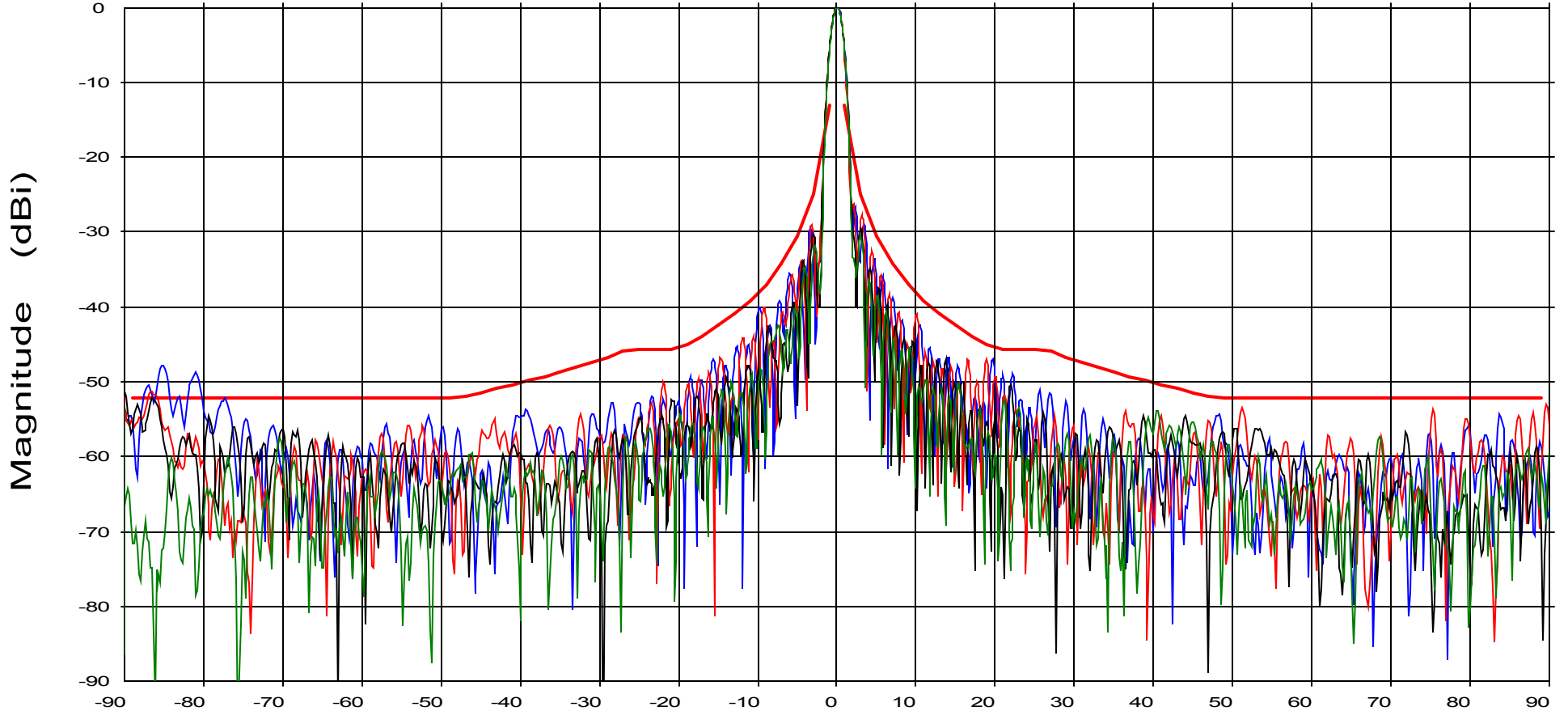
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: LHCP

Rx pol: LHCP



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

Overlays

- Frequency : 3.625 GHz — blue
- Frequency : 3.825 GHz — red
- Frequency : 4.025 GHz — black
- Frequency : 4.200 GHz — green

File: 1769 97.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 97.dat
Chan.: ch1
Table: SGA-40
Units: dBi

Frequency : See Legend

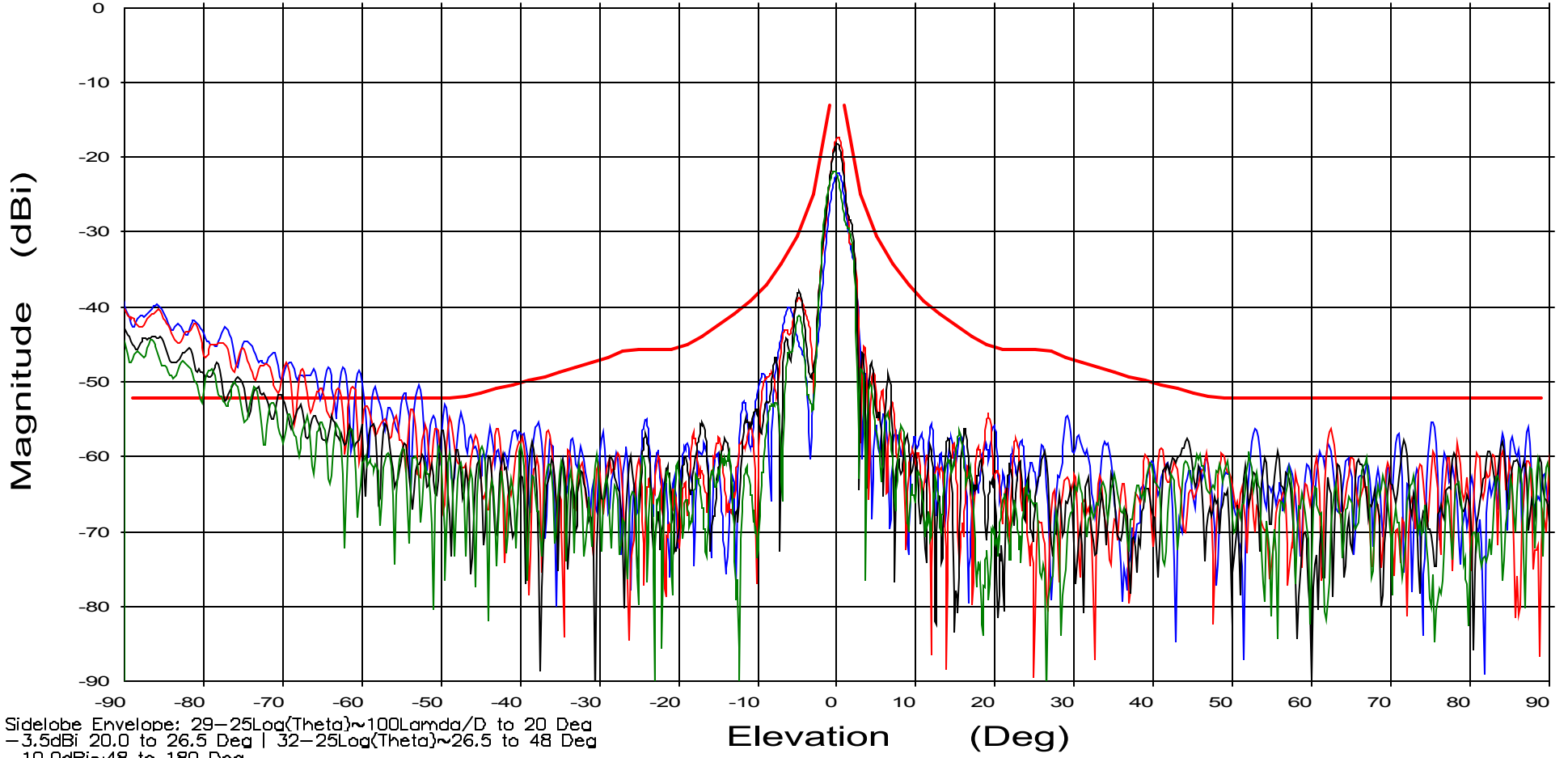
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: LHCP

Rx pol: LHCP



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

Overlays

- Frequency : 3.625 GHz — blue
- Frequency : 3.825 GHz — red
- Frequency : 4.025 GHz — black
- Frequency : 4.200 GHz — green

File: 1769 92.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 92.dat
Chan.: ch1
Table: SGA-40
Units: dBi

Frequency : See Legend

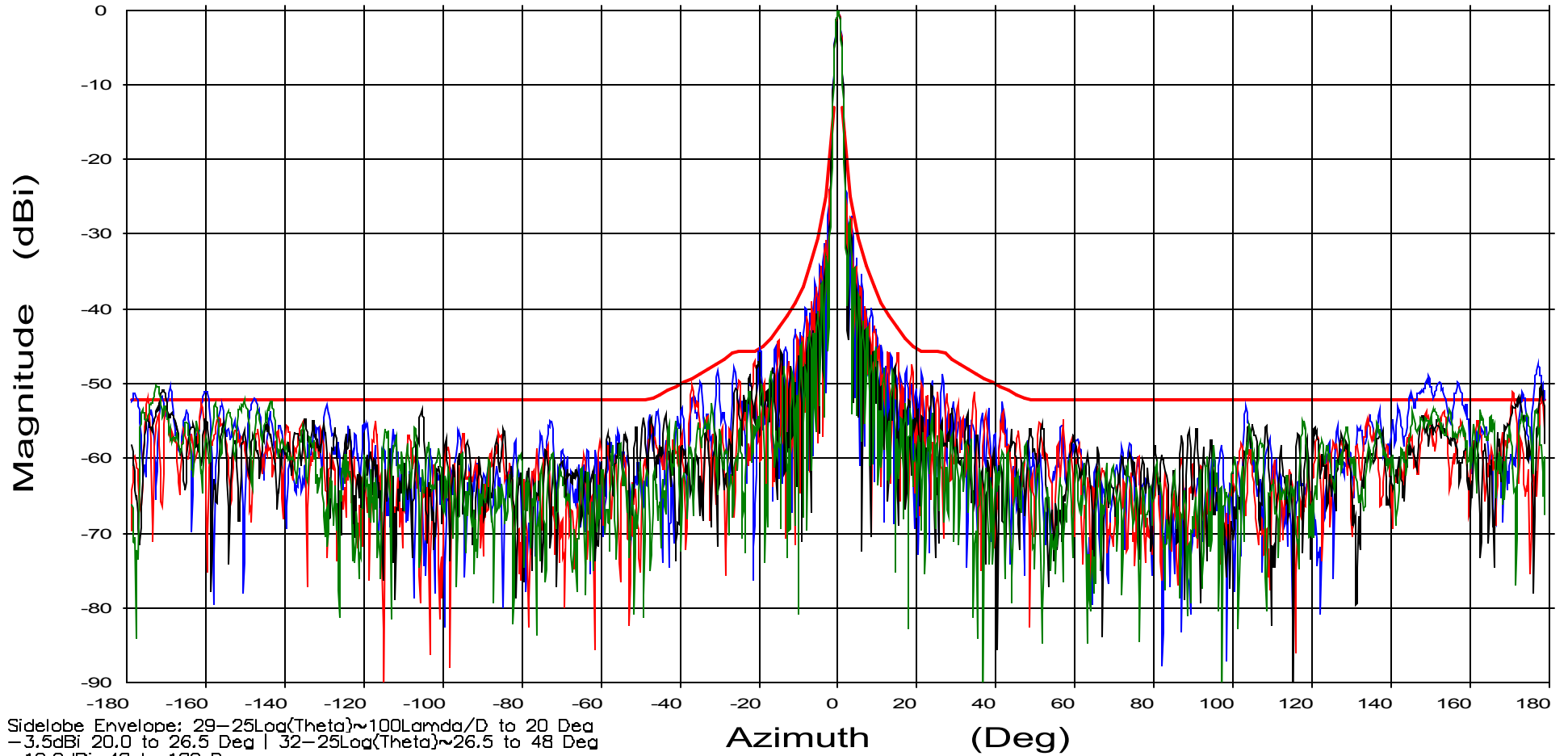
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: LHCP

Rx pol: LHCP



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
-3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
-10.0 dBi ~ 48 to 180 Deg

Overlays

- Frequency : 3.625 GHz — blue
- Frequency : 3.825 GHz — red
- Frequency : 4.025 GHz — black
- Frequency : 4.200 GHz — green

File: 1769 94.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

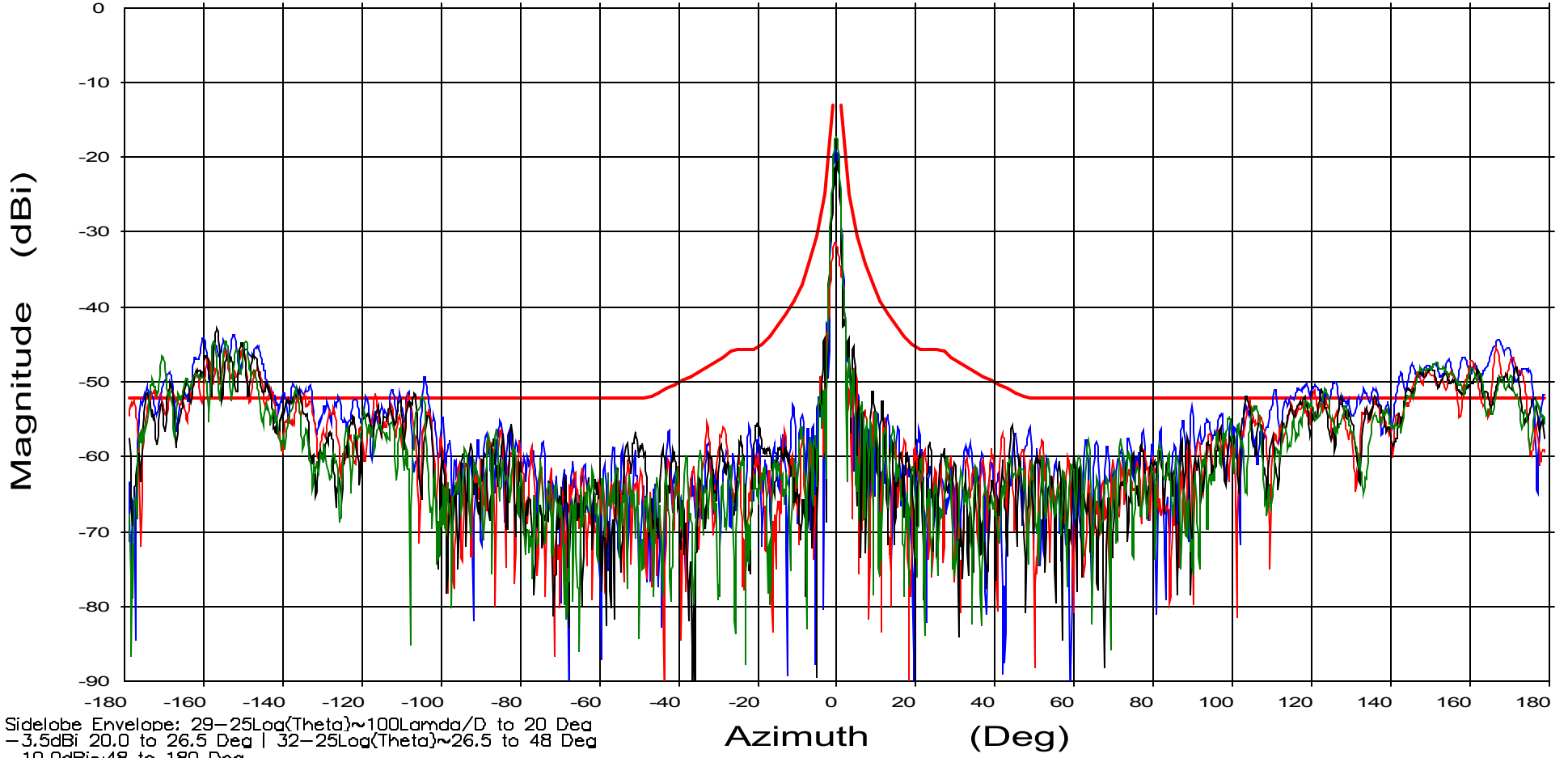
Calibration status:
File: 1769 94.dat
Chan.: ch1
Table: SGA-40
Units: dBi

Frequency : See Legend

Operator: Dwight B. Lutz
Ser. no.:
Channel: ch1

Tx pol: LHCP

Rx pol: LHCP



Overlays

- Frequency : 3.625 GHz — blue
- Frequency : 3.825 GHz — red
- Frequency : 4.025 GHz — black
- Frequency : 4.200 GHz — green

File: 1769 95.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 95.dat
Chan.: ch1
Table: SGA-40
Units: dBi

Frequency : See Legend

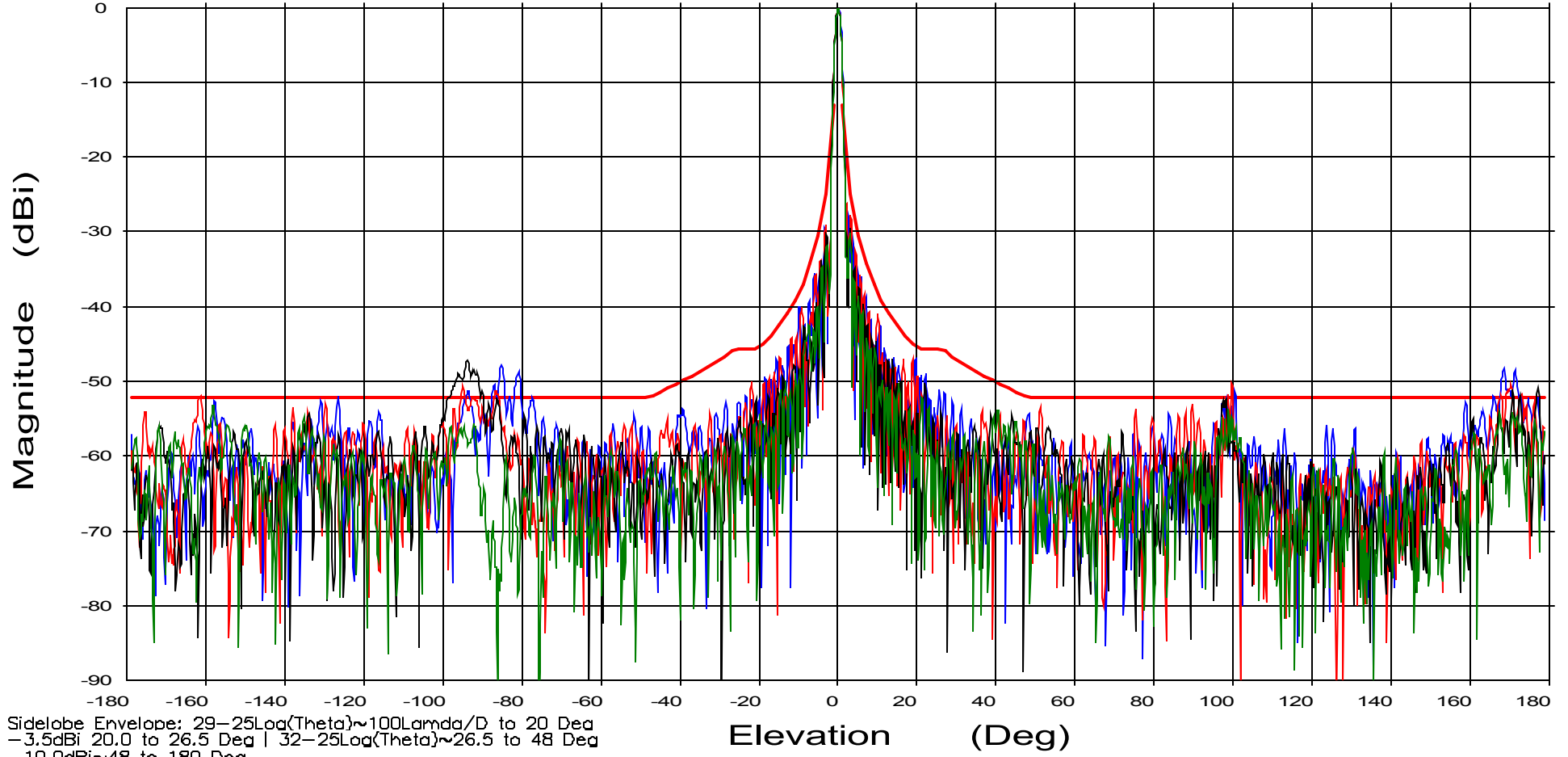
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: LHCP

Rx pol: LHCP



Overlays

- Frequency : 3.625 GHz — blue
- Frequency : 3.825 GHz — red
- Frequency : 4.025 GHz — black
- Frequency : 4.200 GHz — green

File: 1769 97.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

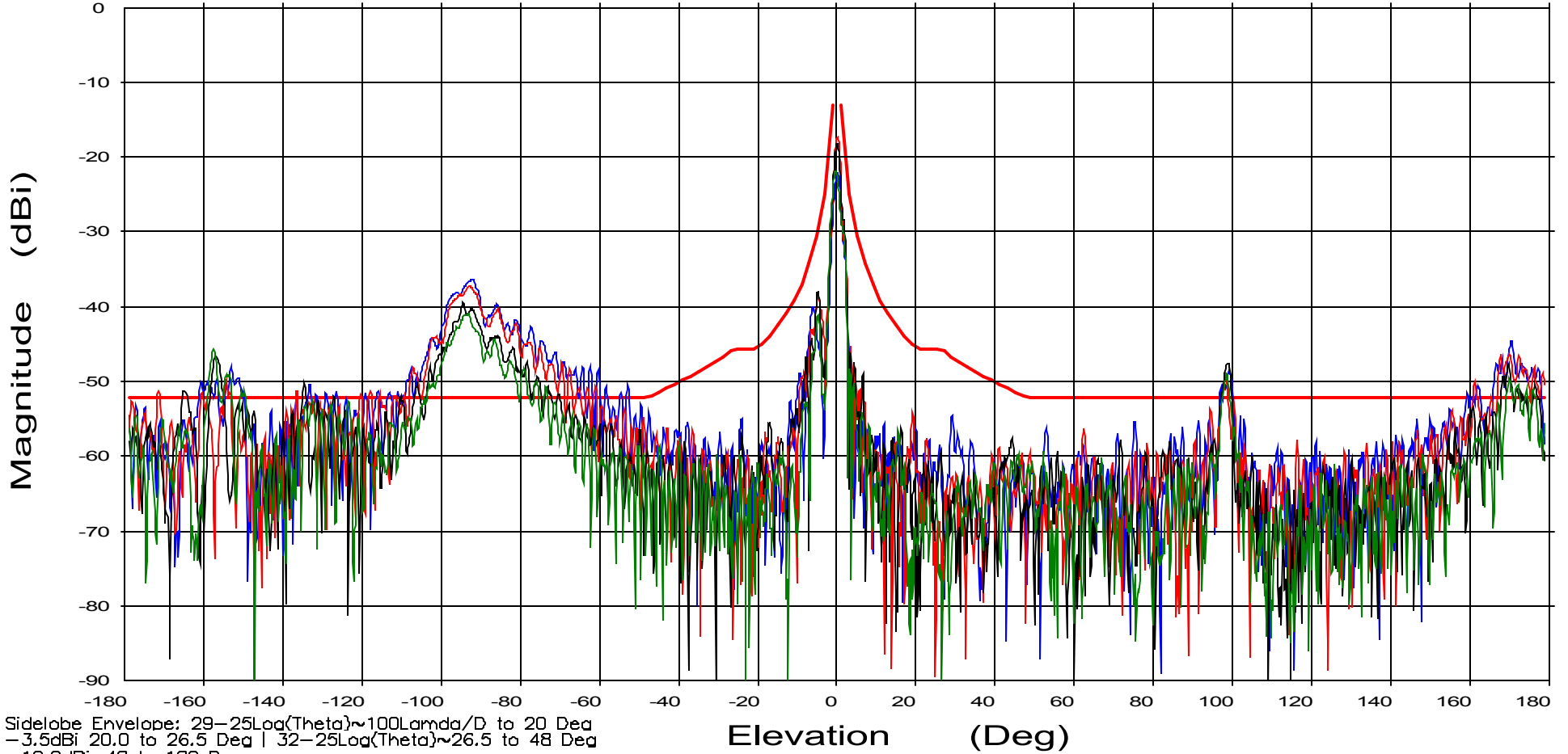
Calibration status:
File: 1769 97.dat
Chan.: ch1
Table: SGA-40
Units: dBi

Frequency : See Legend

Operator: Dwight B. Lutz
Ser. no.:
Channel: ch1

Tx pol: LHCP

Rx pol: LHCP



Overlays
 Frequency : 3.625 GHz — blue
 Frequency : 3.825 GHz — red
 Frequency : 4.025 GHz — black
 Frequency : 4.200 GHz — green

3.7 RHCP Receive Close-in Patterns

File: 1769 A02.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 A02.dat
Chan.: ch1
Table: SGA-40
Units: dBi

Frequency : See Legend

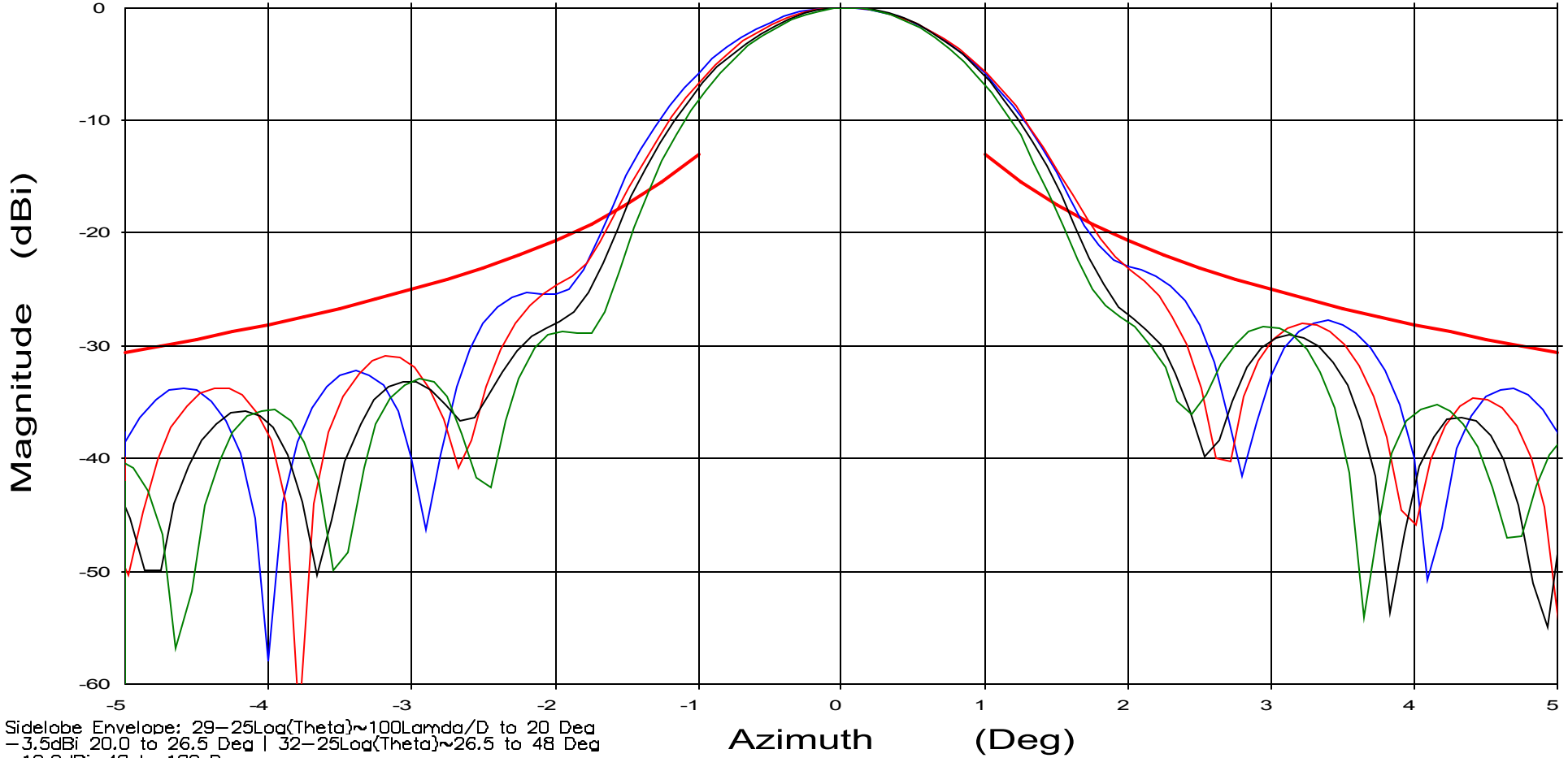
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: RHCP

Rx pol: RHCP



Overlays

- Frequency : 3.625 GHz — blue line
- Frequency : 3.825 GHz — red line
- Frequency : 4.025 GHz — black line
- Frequency : 4.200 GHz — green line

File: 1769 A03.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 A03.dat
Chan.: ch1
Table: SGA-40
Units: dBi

Frequency : See Legend

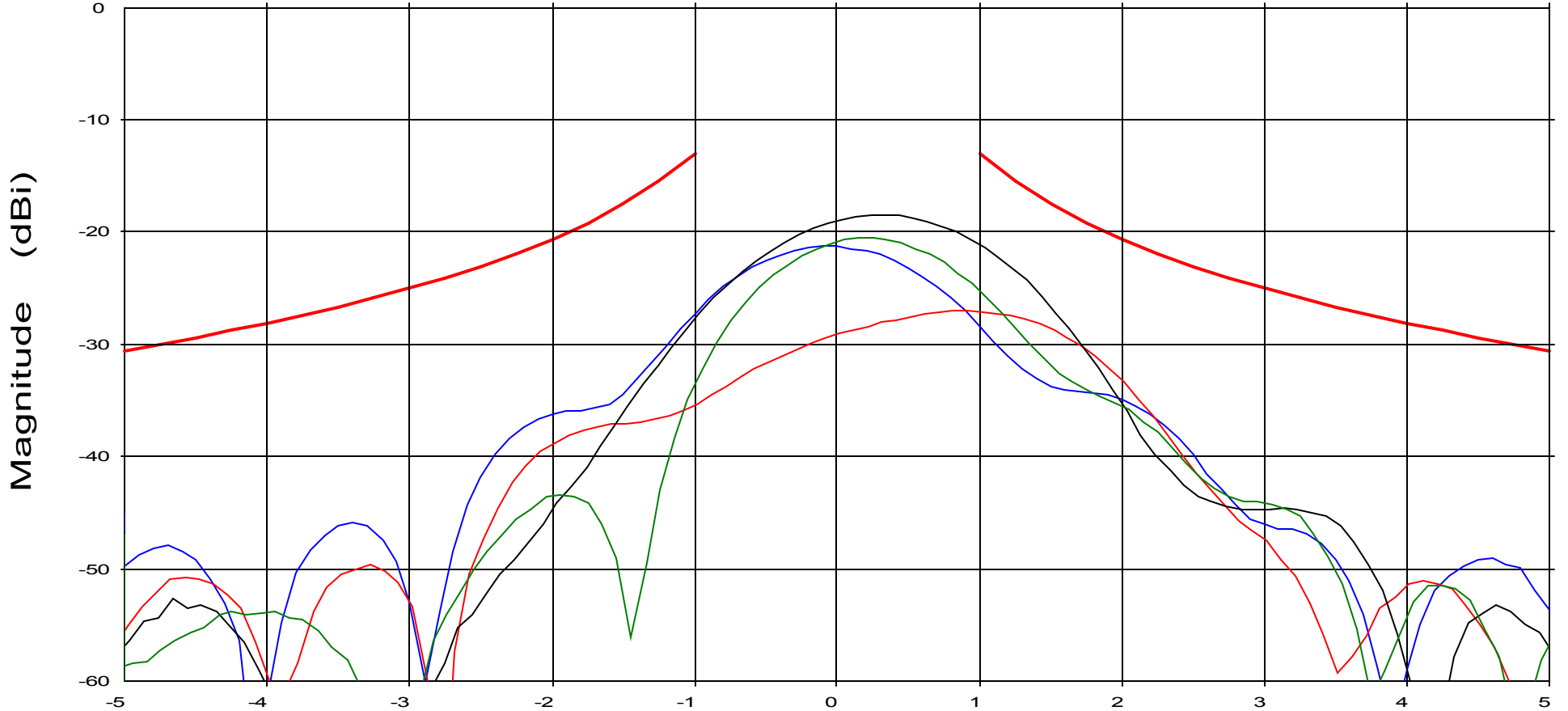
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: RHCP

Rx pol: RHCP



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

Overlays

- Frequency : 3.625 GHz — blue
- Frequency : 3.825 GHz — red
- Frequency : 4.025 GHz — black
- Frequency : 4.200 GHz — green

File: 1769 99.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

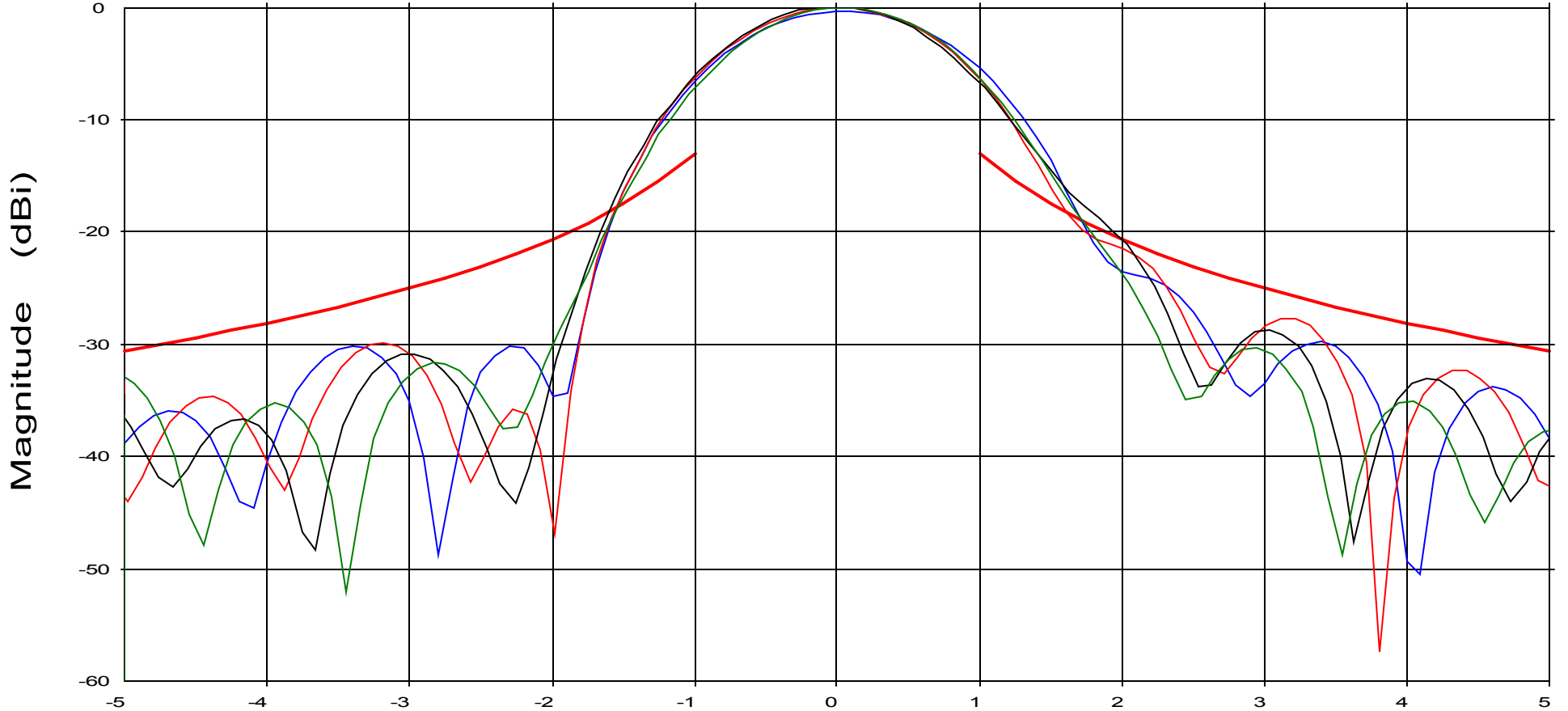
Calibration status:
File: 1769 99.dat
Chan.: ch1
Table: SGA-40
Units: dBi

Frequency : See Legend

Operator: Dwight B. Lutz
Ser. no.:
Channel: ch1

Tx pol: RHCP

Rx pol: RHCP



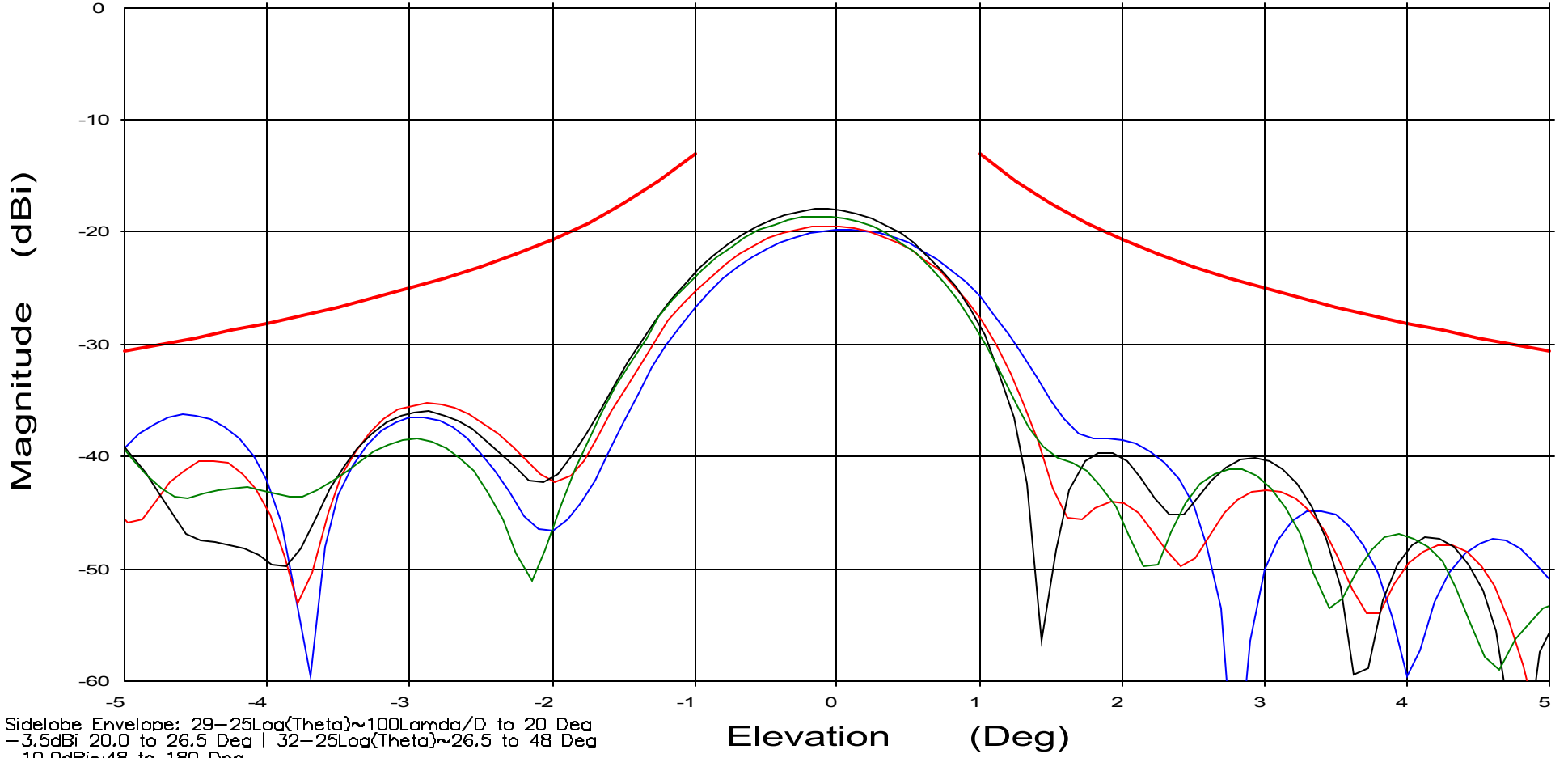
Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

- Overlays
- Frequency : 3.625 GHz — blue
 - Frequency : 3.825 GHz — red
 - Frequency : 4.025 GHz — black
 - Frequency : 4.200 GHz — green

Operator: Dwight B. Lutz
Ser. no.:
Channel: ch1

Tx pol: RHCP

Rx pol: RHCP



- Overlays
- Frequency : 3.625 GHz — blue line
 - Frequency : 3.825 GHz — red line
 - Frequency : 4.025 GHz — black line
 - Frequency : 4.200 GHz — green line

File: 1769 A02.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 A02.dat
Chan.: ch1
Table: SGA-40
Units: dBi

Frequency : See Legend

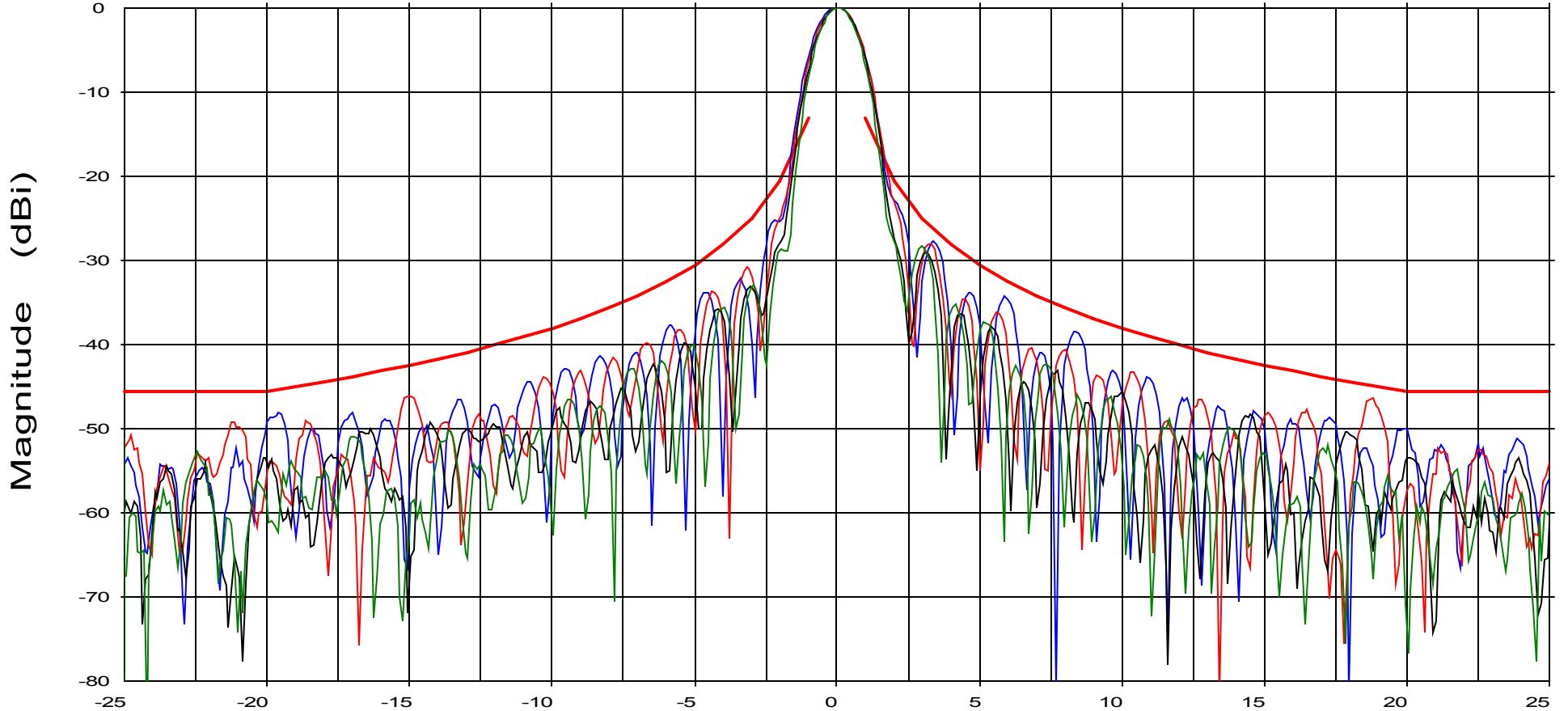
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: RHCP

Rx pol: RHCP



Sidelobe Envelope: $29-25\text{Log}(\text{Theta}) \sim 100\text{Lambda}/D$ to 20 Deg
 -3.5dBi 20.0 to 26.5 Deg | $32-25\text{Log}(\text{Theta}) \sim 26.5$ to 48 Deg
 $-10.0\text{dBi} \sim 48$ to 180 Deg

Overlays

- Frequency : 3.625 GHz — blue
- Frequency : 3.825 GHz — red
- Frequency : 4.025 GHz — black
- Frequency : 4.200 GHz — green

File: 1769 A03.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 A03.dat
Chan.: ch1
Table: SGA-40
Units: dBi

Frequency : See Legend

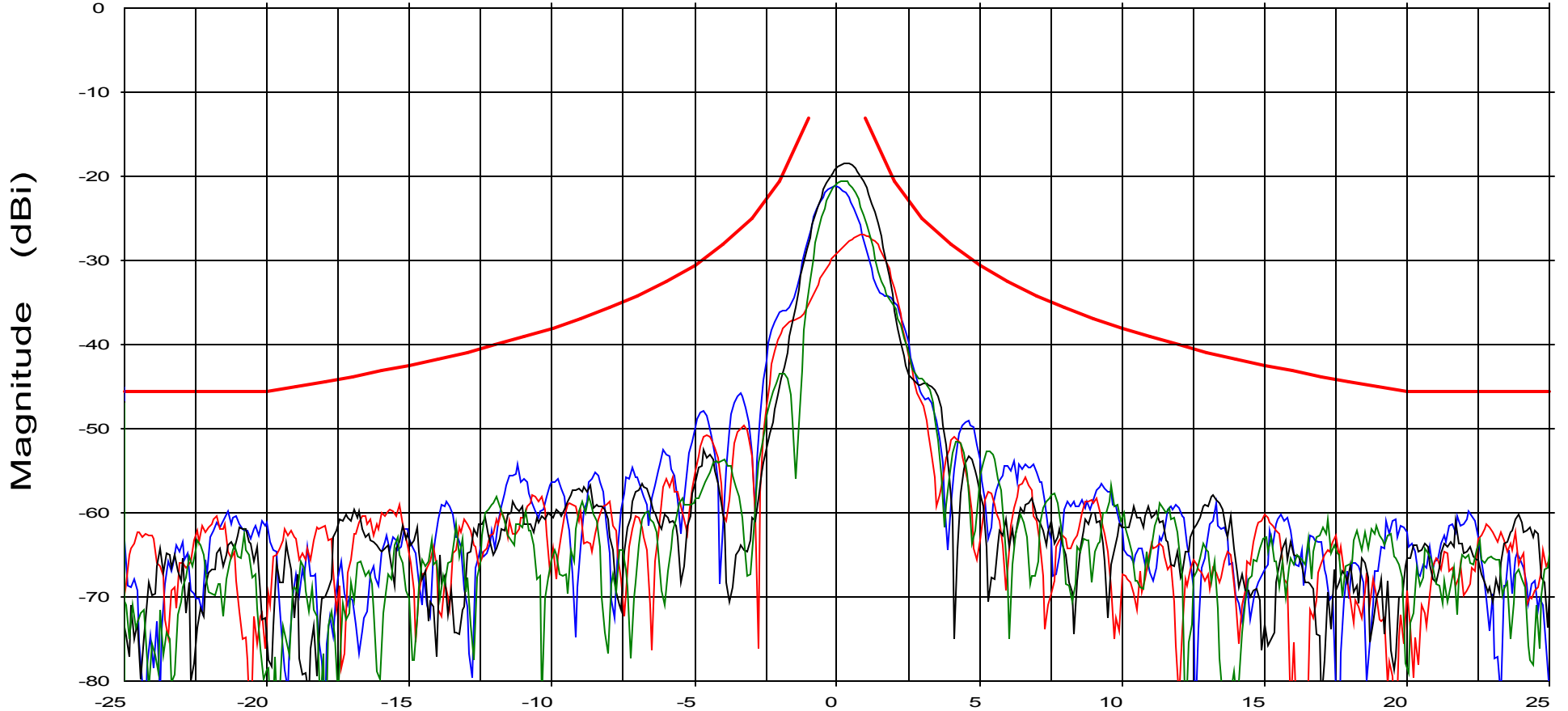
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: RHCP

Rx pol: RHCP



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

Overlays

- Frequency : 3.625 GHz — blue
- Frequency : 3.825 GHz — red
- Frequency : 4.025 GHz — black
- Frequency : 4.200 GHz — green

File: 1769 99.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 99.dat
Chan.: ch1
Table: SGA-40
Units: dBi

Frequency : See Legend

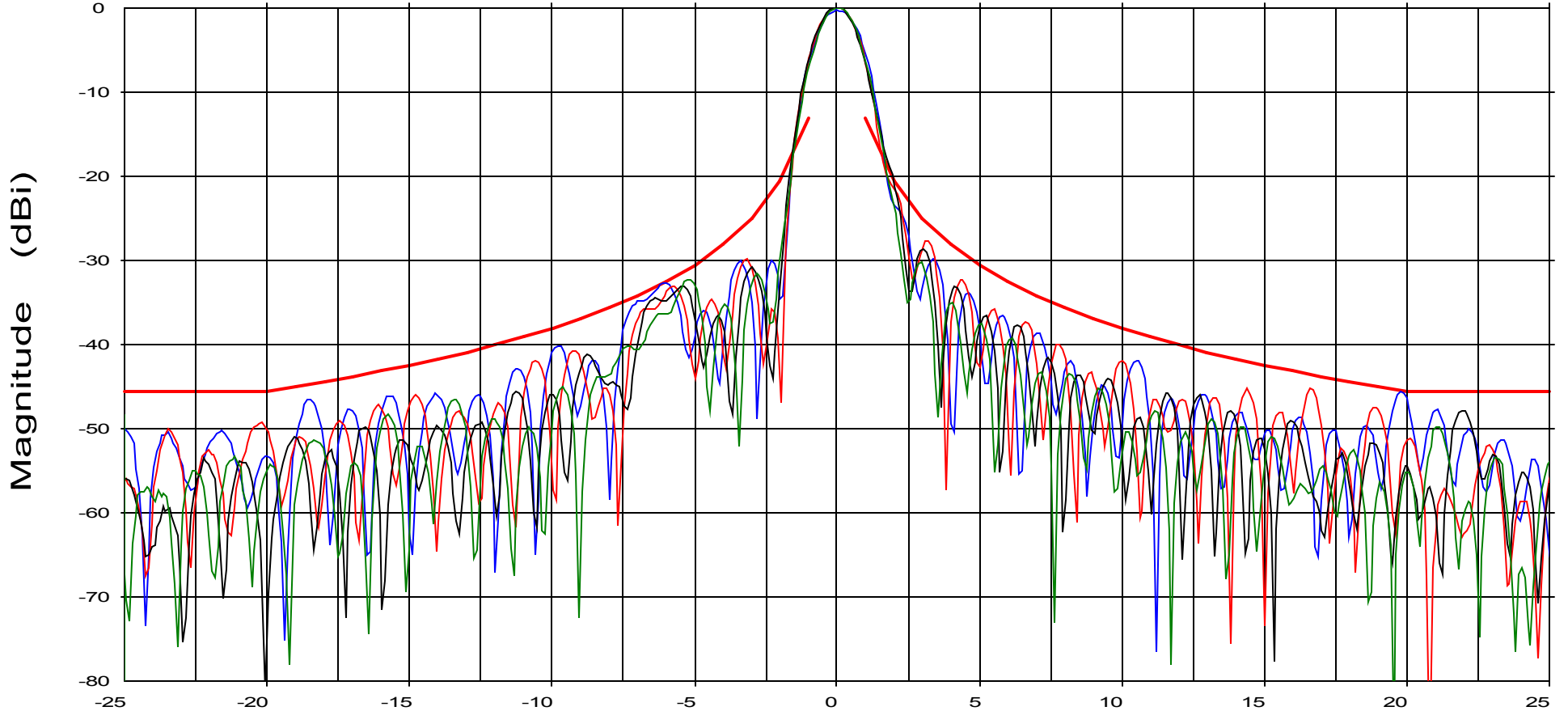
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: RHCP

Rx pol: RHCP



Sidelobe Envelope: $29-25\text{Log}(\text{Theta}) \sim 100\text{Lambda}/D$ to 20 Deg
 -3.5dBi 20.0 to 26.5 Deg | $32-25\text{Log}(\text{Theta}) \sim 26.5$ to 48 Deg
 $-10.0\text{dBi} \sim 48$ to 180 Deg

Overlays

- Frequency : 3.625 GHz — blue
- Frequency : 3.825 GHz — red
- Frequency : 4.025 GHz — black
- Frequency : 4.200 GHz — green

File: 1769 A01.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 A01.dat
Chan.: ch1
Table: SGA-40
Units: dBi

Frequency : See Legend

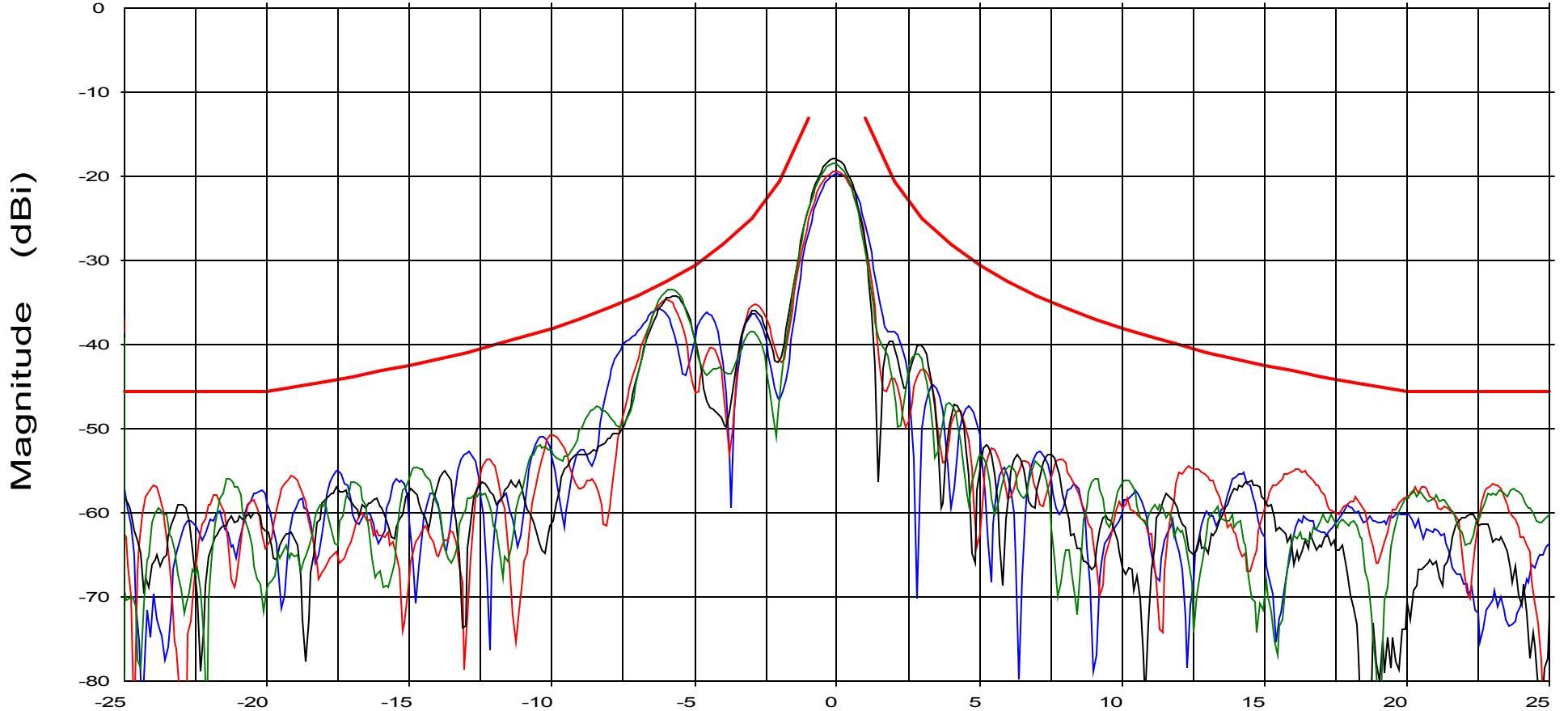
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: RHCP

Rx pol: RHCP



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

Overlays

- Frequency : 3.625 GHz — blue
- Frequency : 3.825 GHz — red
- Frequency : 4.025 GHz — black
- Frequency : 4.200 GHz — green

3.8 RHCP Receive Wide Angle Patterns

File: 1769 A02.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 A02.dat
Chan.: ch1
Table: SGA-40
Units: dBi

Frequency : See Legend

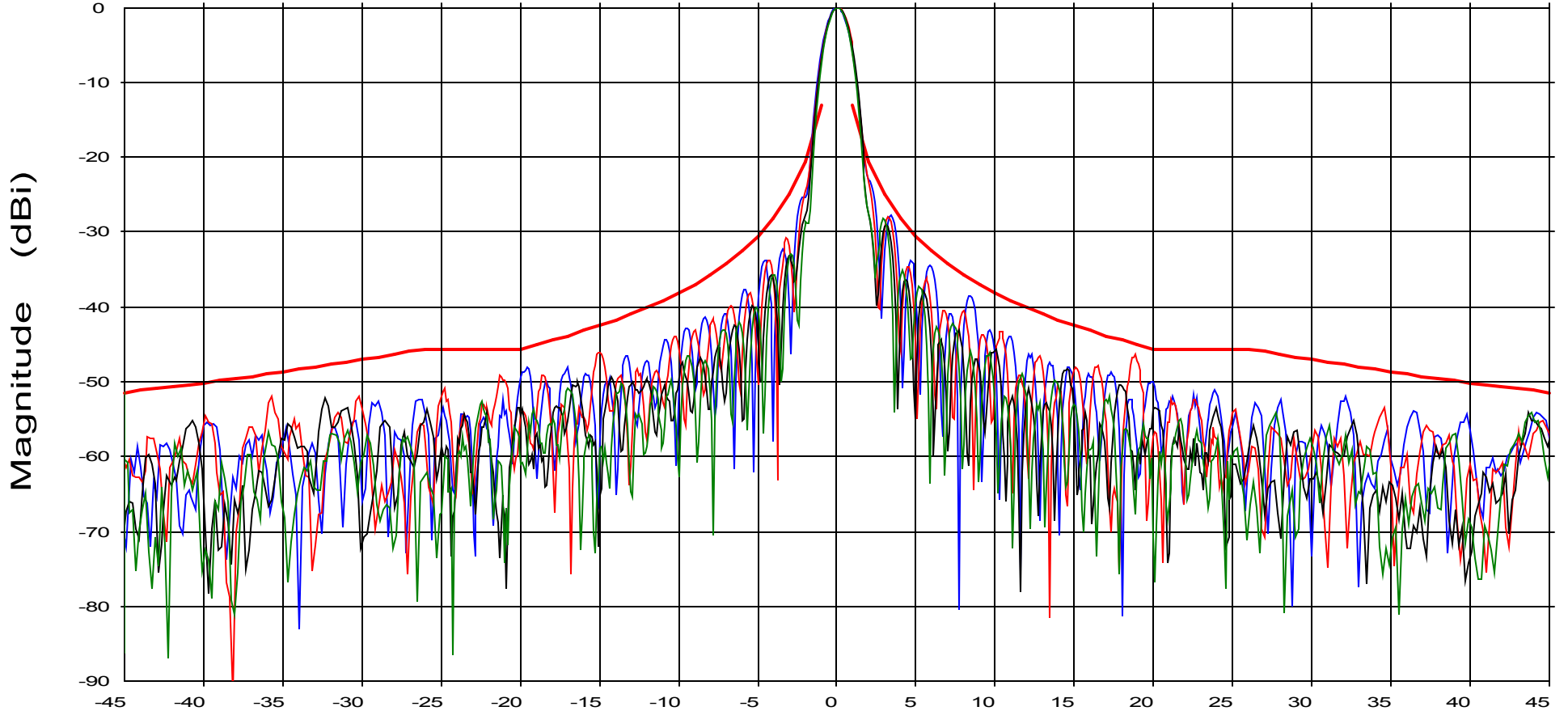
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: RHCP

Rx pol: RHCP



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
-3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
-10.0 dBi ~ 48 to 180 Deg

Overlays

- Frequency : 3.625 GHz — blue
- Frequency : 3.825 GHz — red
- Frequency : 4.025 GHz — black
- Frequency : 4.200 GHz — green

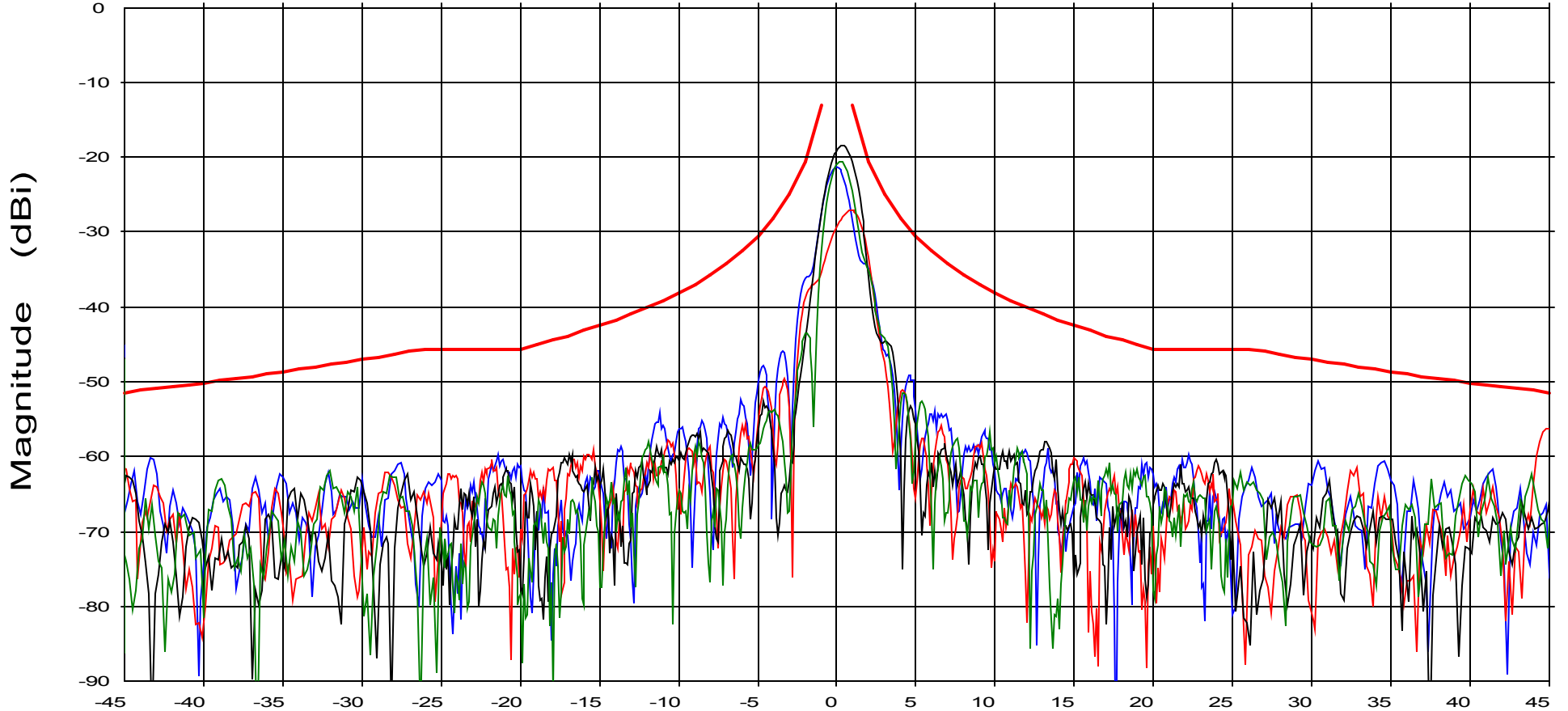
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: RHCP

Rx pol: RHCP



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

Overlays

- Frequency : 3.625 GHz — blue
- Frequency : 3.825 GHz — red
- Frequency : 4.025 GHz — black
- Frequency : 4.200 GHz — green

File: 1769 99.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 99.dat
Chan.: ch1
Table: SGA-40
Units: dBi

Frequency : See Legend

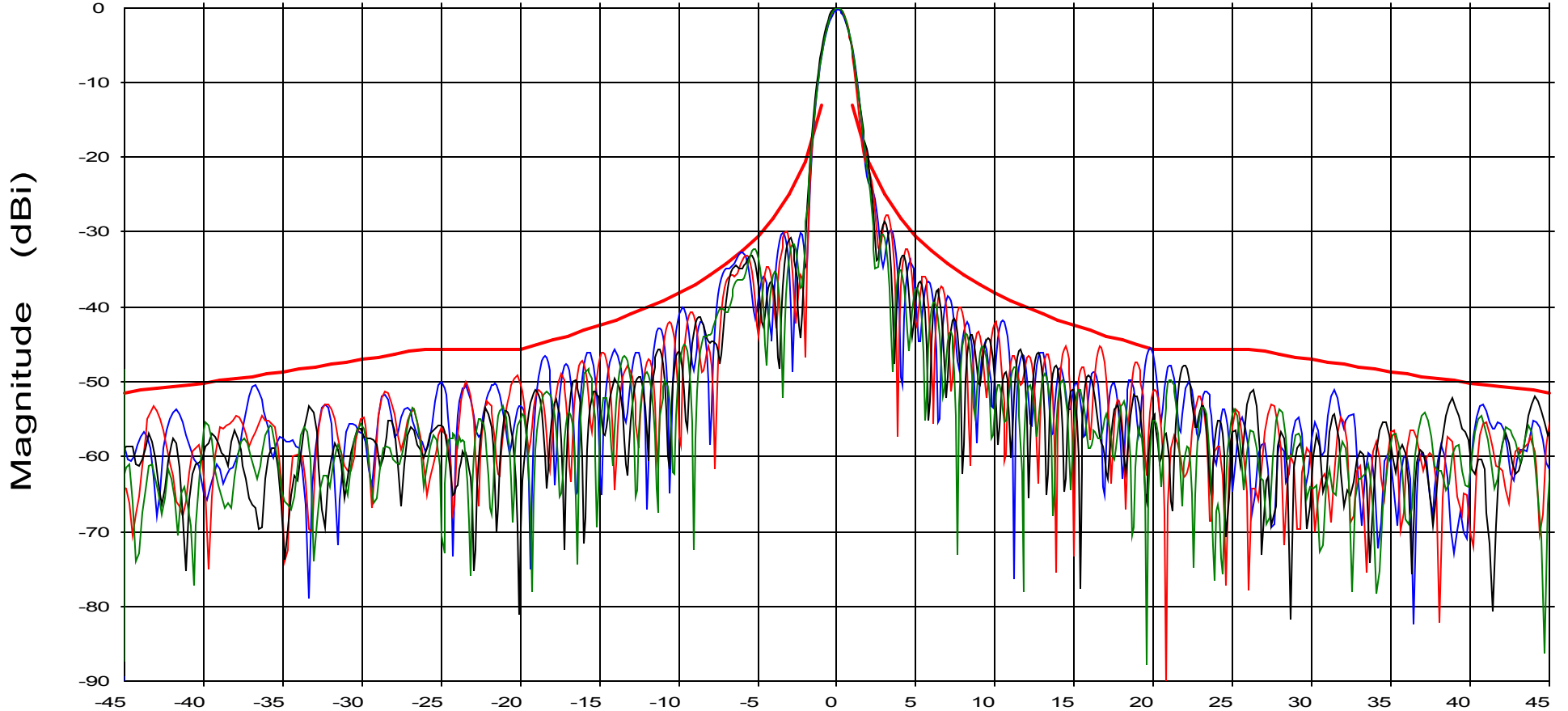
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: RHCP

Rx pol: RHCP



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

Overlays

- Frequency : 3.625 GHz — blue
- Frequency : 3.825 GHz — red
- Frequency : 4.025 GHz — black
- Frequency : 4.200 GHz — green

File: 1769 A01.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 A01.dat
Chan.: ch1
Table: SGA-40
Units: dBi

Frequency : See Legend

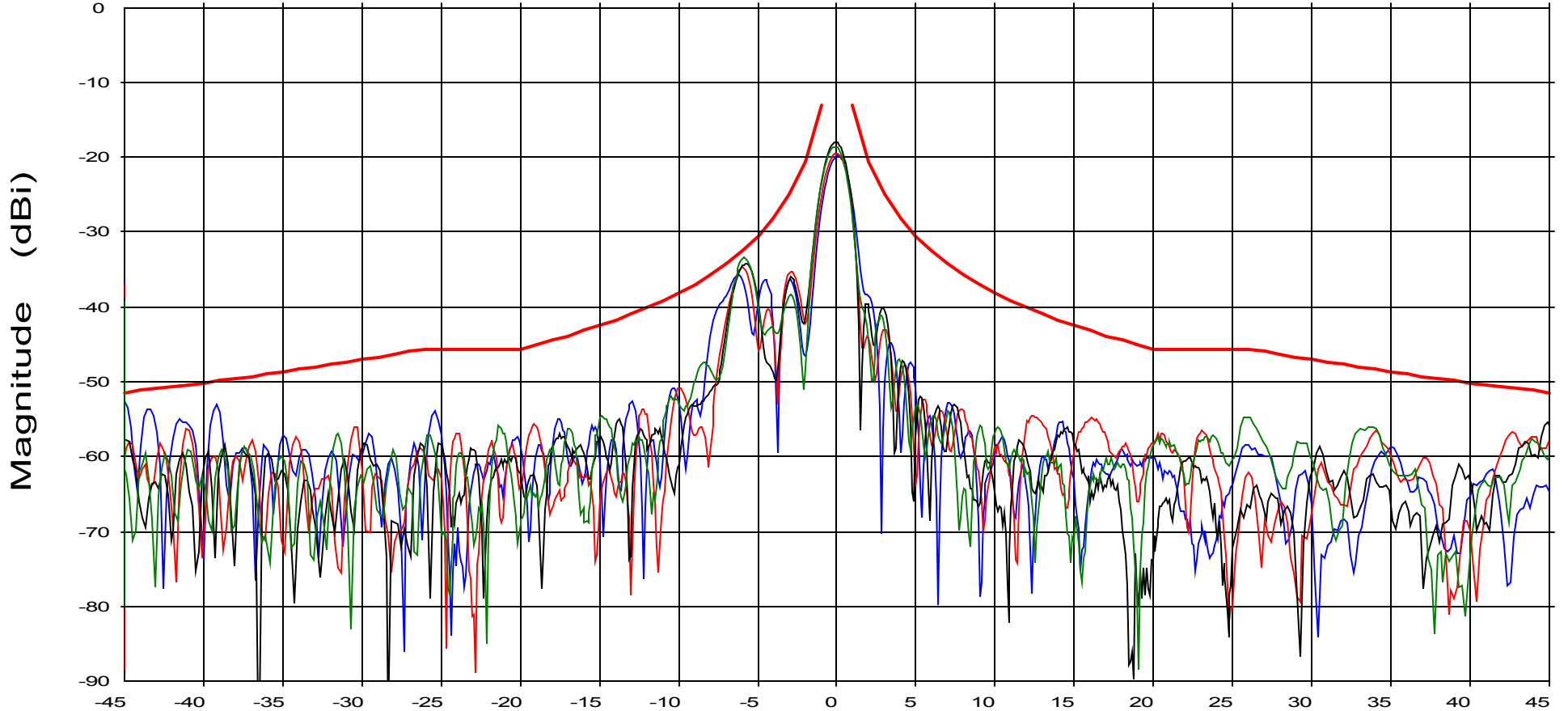
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: RHCP

Rx pol: RHCP



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

Overlays

- Frequency : 3.625 GHz — blue
- Frequency : 3.825 GHz — red
- Frequency : 4.025 GHz — black
- Frequency : 4.200 GHz — green

File: 1769 A02.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 A02.dat
Chan.: ch1
Table: SGA-40
Units: dBi

Frequency : See Legend

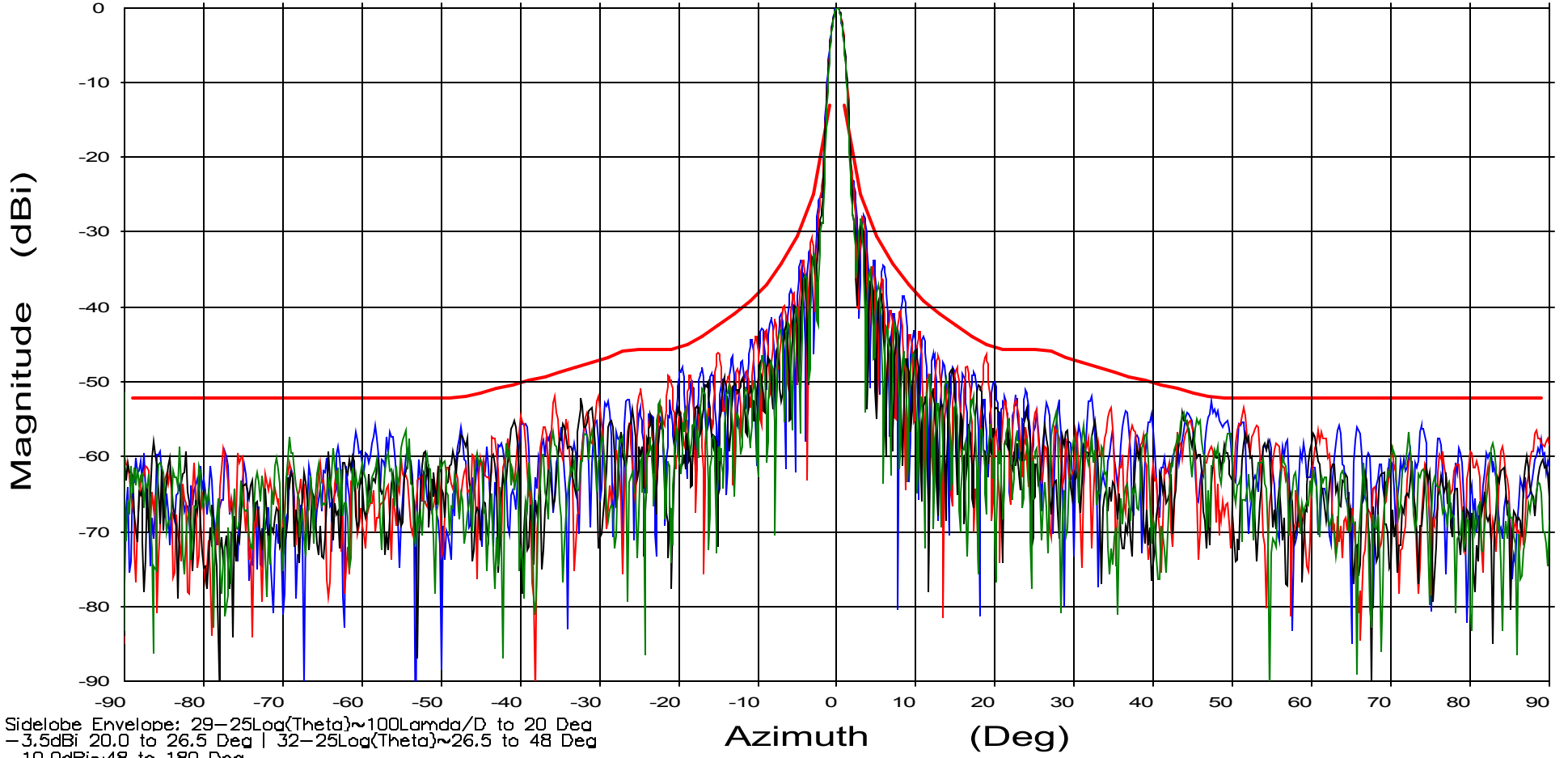
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: RHCP

Rx pol: RHCP



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

Overlays

- Frequency : 3.625 GHz — blue
- Frequency : 3.825 GHz — red
- Frequency : 4.025 GHz — black
- Frequency : 4.200 GHz — green

File: 1769 A03.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 A03.dat
Chan.: ch1
Table: SGA-40
Units: dBi

Frequency : See Legend

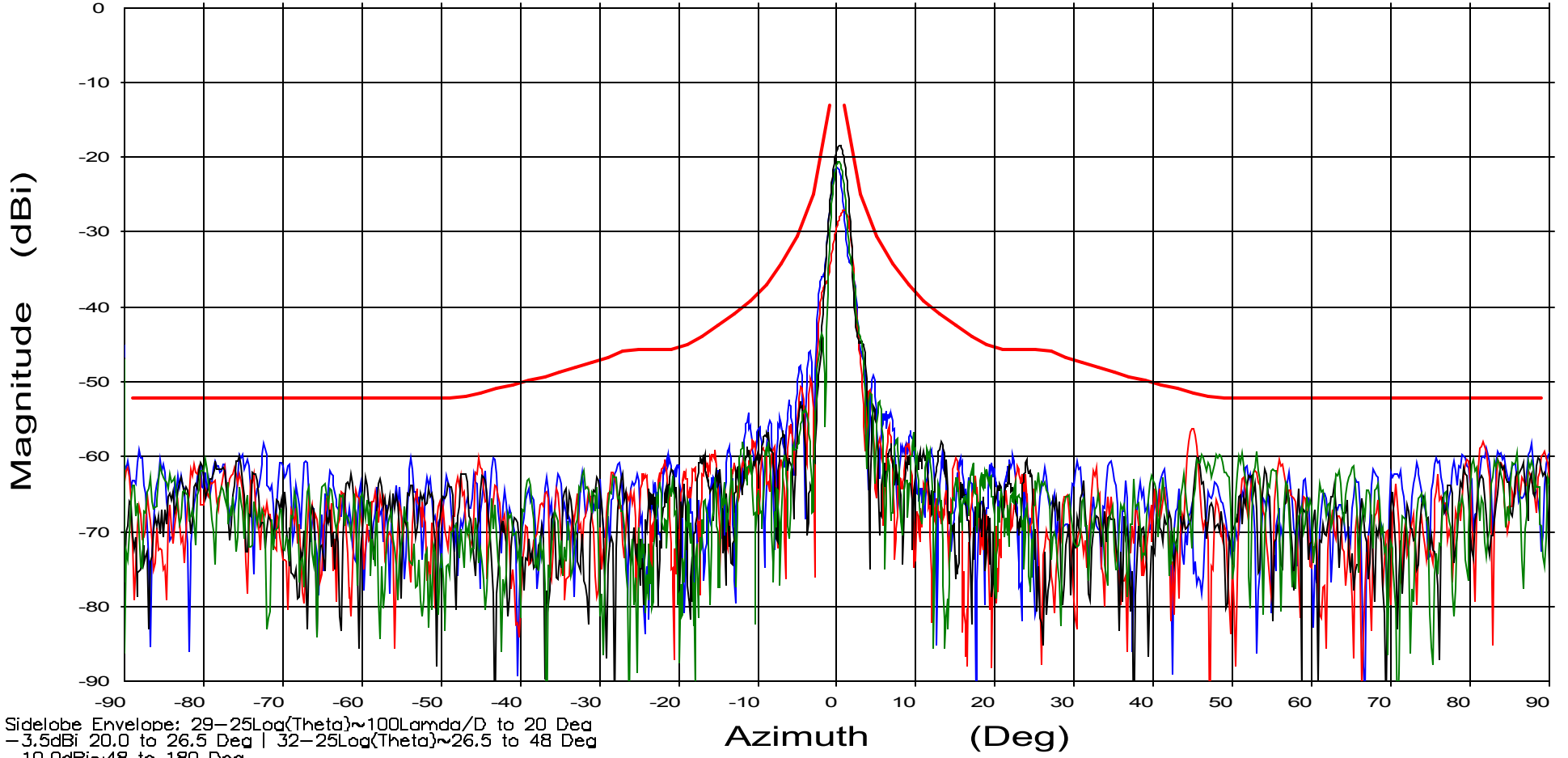
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: RHCP

Rx pol: RHCP



Overlays

- Frequency : 3.625 GHz — blue
- Frequency : 3.825 GHz — red
- Frequency : 4.025 GHz — black
- Frequency : 4.200 GHz — green

File: 1769 99.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 99.dat
Chan.: ch1
Table: SGA-40
Units: dBi

Frequency : See Legend

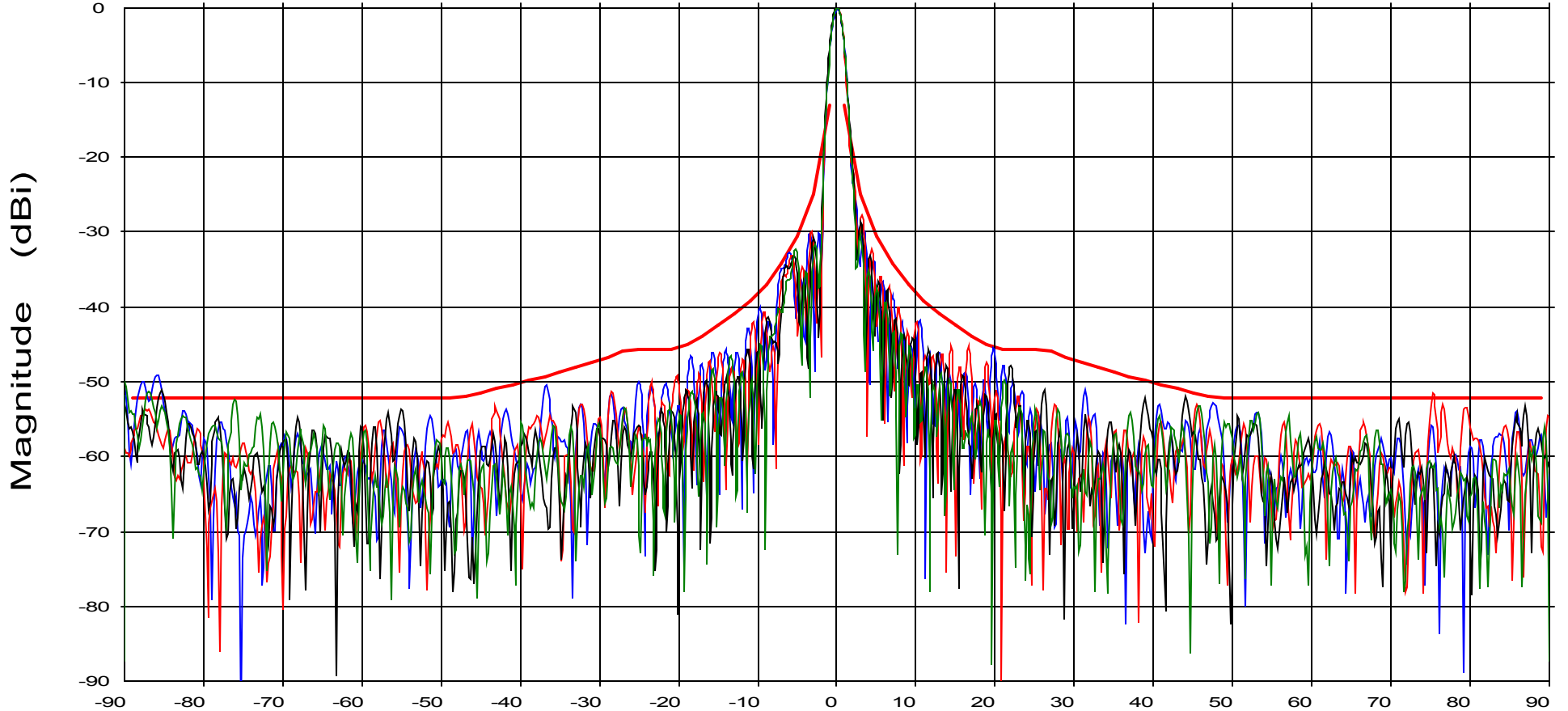
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: RHCP

Rx pol: RHCP



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

Overlays

- Frequency : 3.625 GHz — blue
- Frequency : 3.825 GHz — red
- Frequency : 4.025 GHz — black
- Frequency : 4.200 GHz — green

File: 1769 A01.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 A01.dat
Chan.: ch1
Table: SGA-40
Units: dBi

Frequency : See Legend

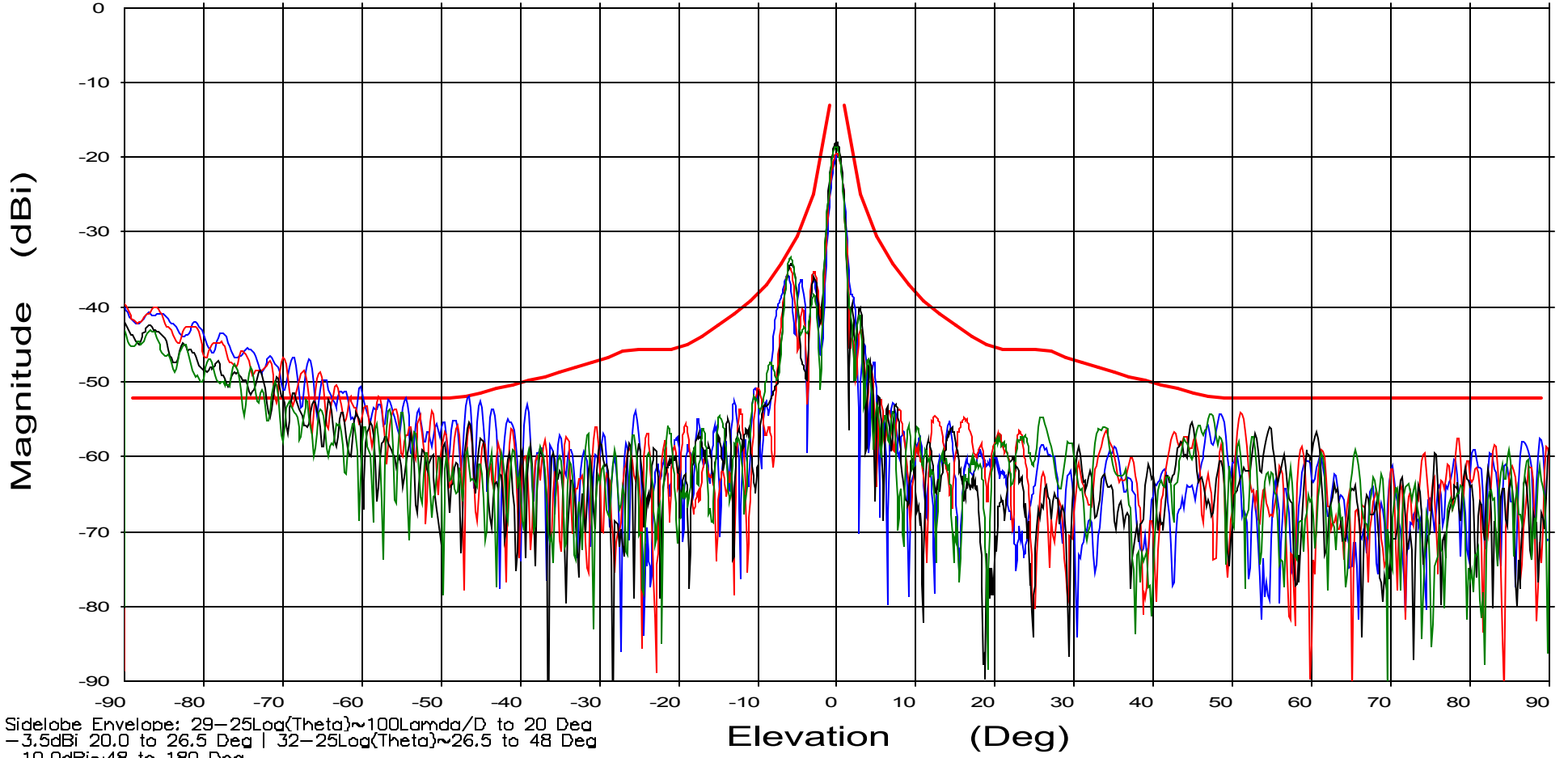
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: RHCP

Rx pol: RHCP



Overlays

- Frequency : 3.625 GHz — blue
- Frequency : 3.825 GHz — red
- Frequency : 4.025 GHz — black
- Frequency : 4.200 GHz — green

File: 1769 A02.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 A02.dat
Chan.: ch1
Table: SGA-40
Units: dBi

Frequency : See Legend

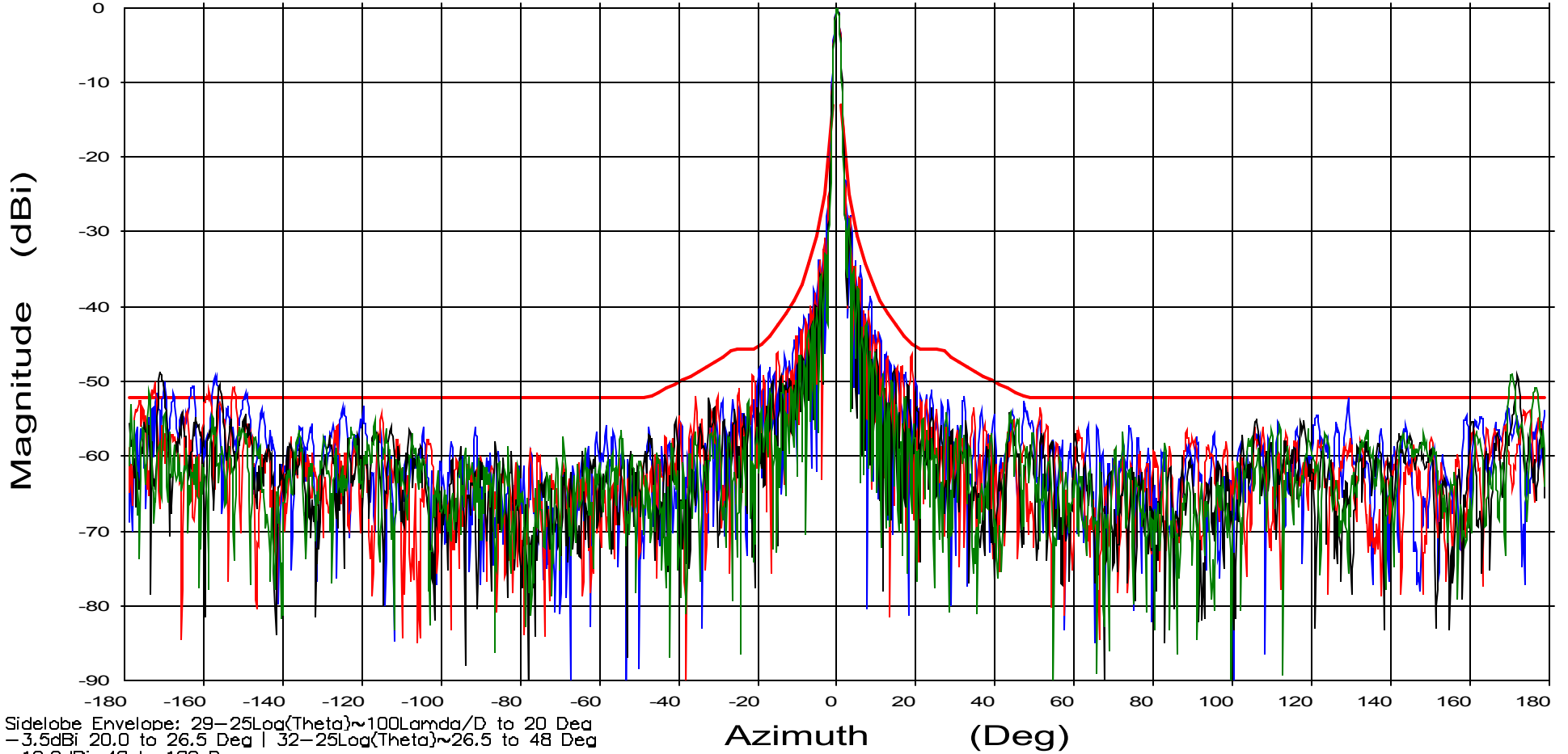
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: RHCP

Rx pol: RHCP



- Overlays
- Frequency : 3.625 GHz — blue
 - Frequency : 3.825 GHz — red
 - Frequency : 4.025 GHz — black
 - Frequency : 4.200 GHz — green

File: 1769 A03.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 A03.dat
Chan.: ch1
Table: SGA-40
Units: dBi

Frequency : See Legend

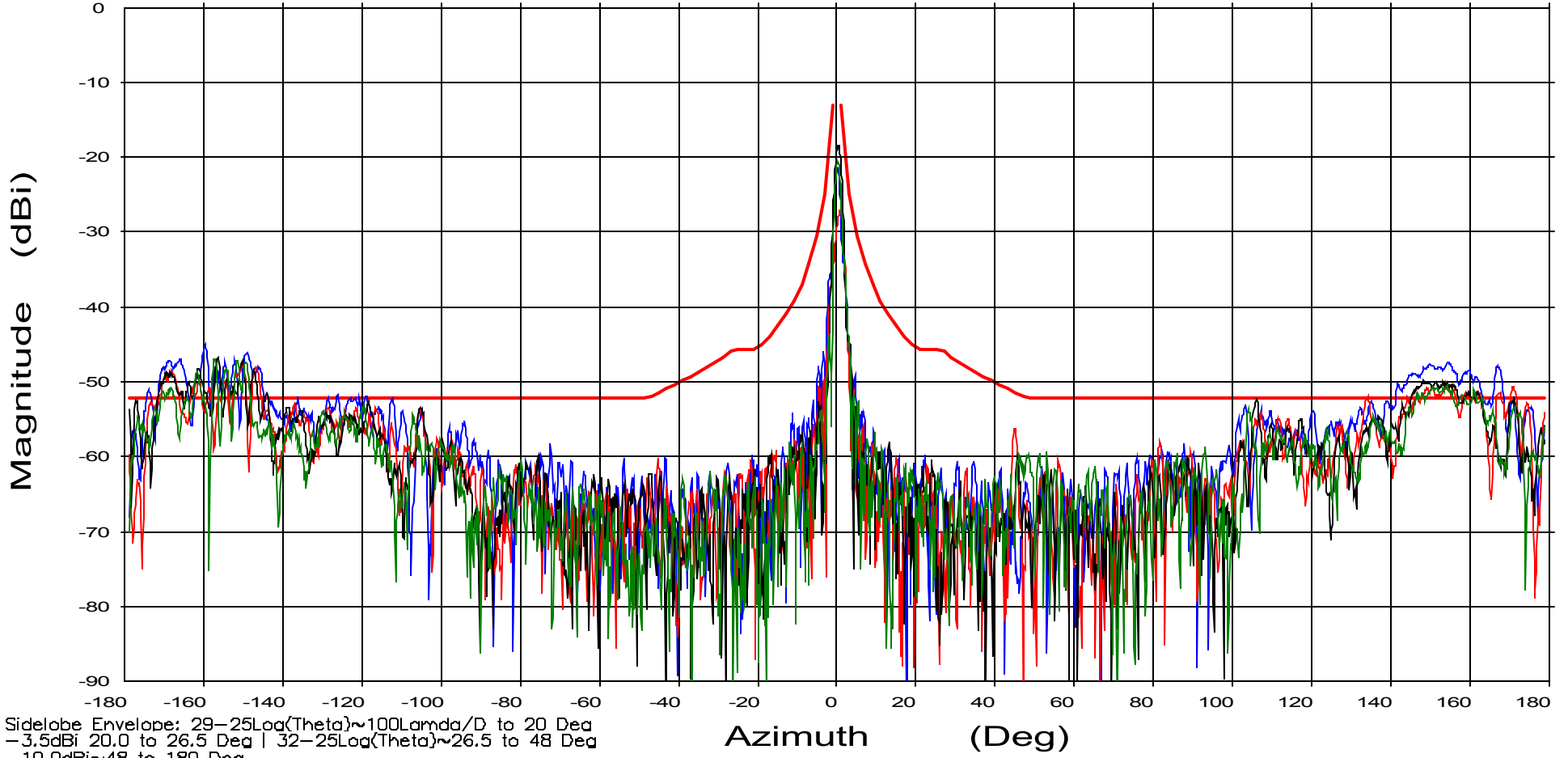
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: RHCP

Rx pol: RHCP



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

Overlays

- Frequency : 3.625 GHz — blue
- Frequency : 3.825 GHz — red
- Frequency : 4.025 GHz — black
- Frequency : 4.200 GHz — green

File: 1769 99.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 99.dat
Chan.: ch1
Table: SGA-40
Units: dBi

Frequency : See Legend

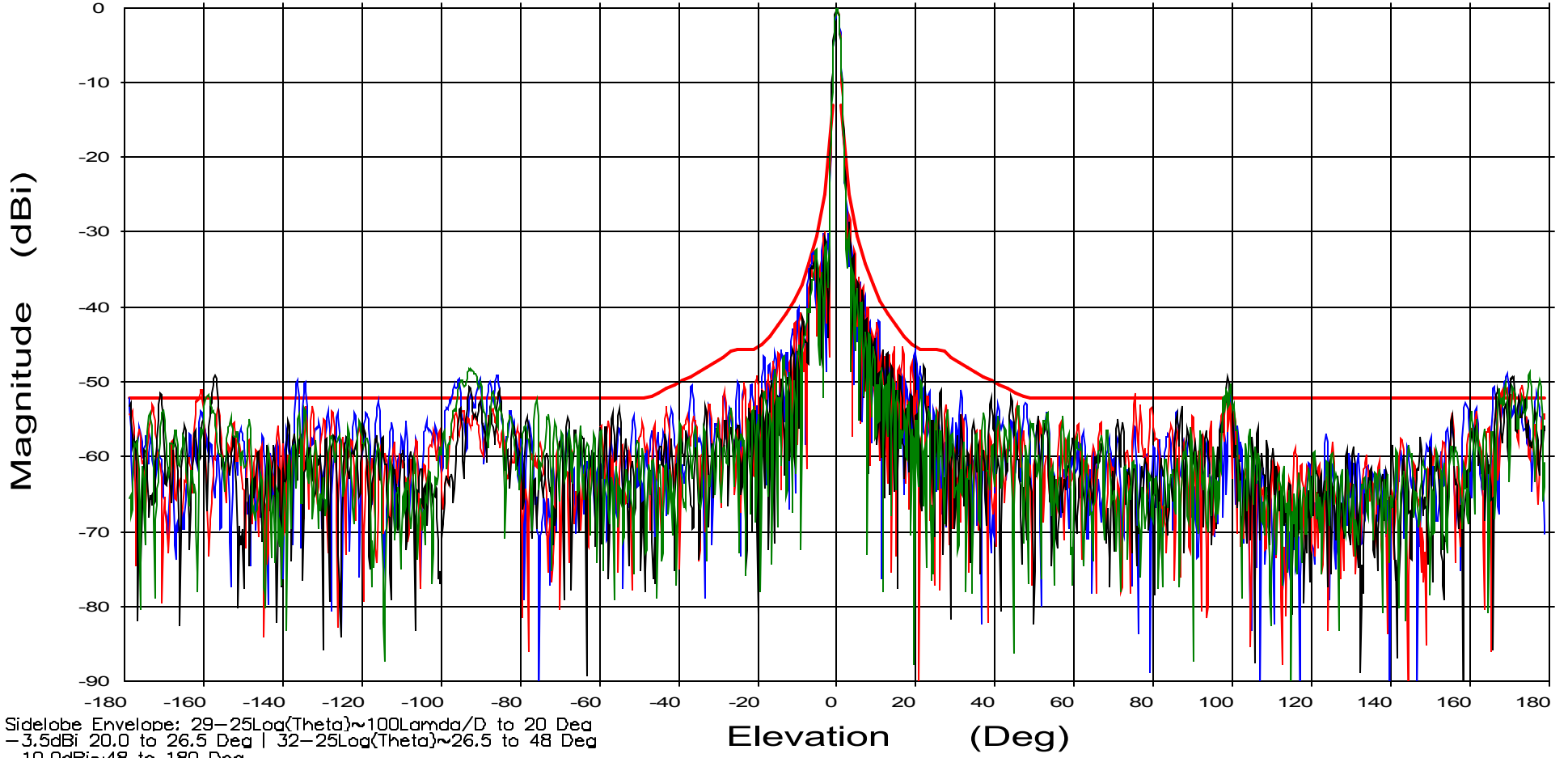
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: RHCP

Rx pol: RHCP



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda/D$ to 20 Deg
 -3.5 dBi 20.0 to 26.5 Deg | $32 - 25 \log(\theta) \sim 26.5$ to 48 Deg
 $-10.0 \text{ dBi} \sim 48$ to 180 Deg

Overlays

- Frequency : 3.625 GHz — blue
- Frequency : 3.825 GHz — red
- Frequency : 4.025 GHz — black
- Frequency : 4.200 GHz — green

File: 1769 A01.dat

General Dynamics
3.8 Meter Series 1385 Antenna System
C-Band Circular F1 Feed

Calibration status:
File: 1769 A01.dat
Chan.: ch1
Table: SGA-40
Units: dBi

Frequency : See Legend

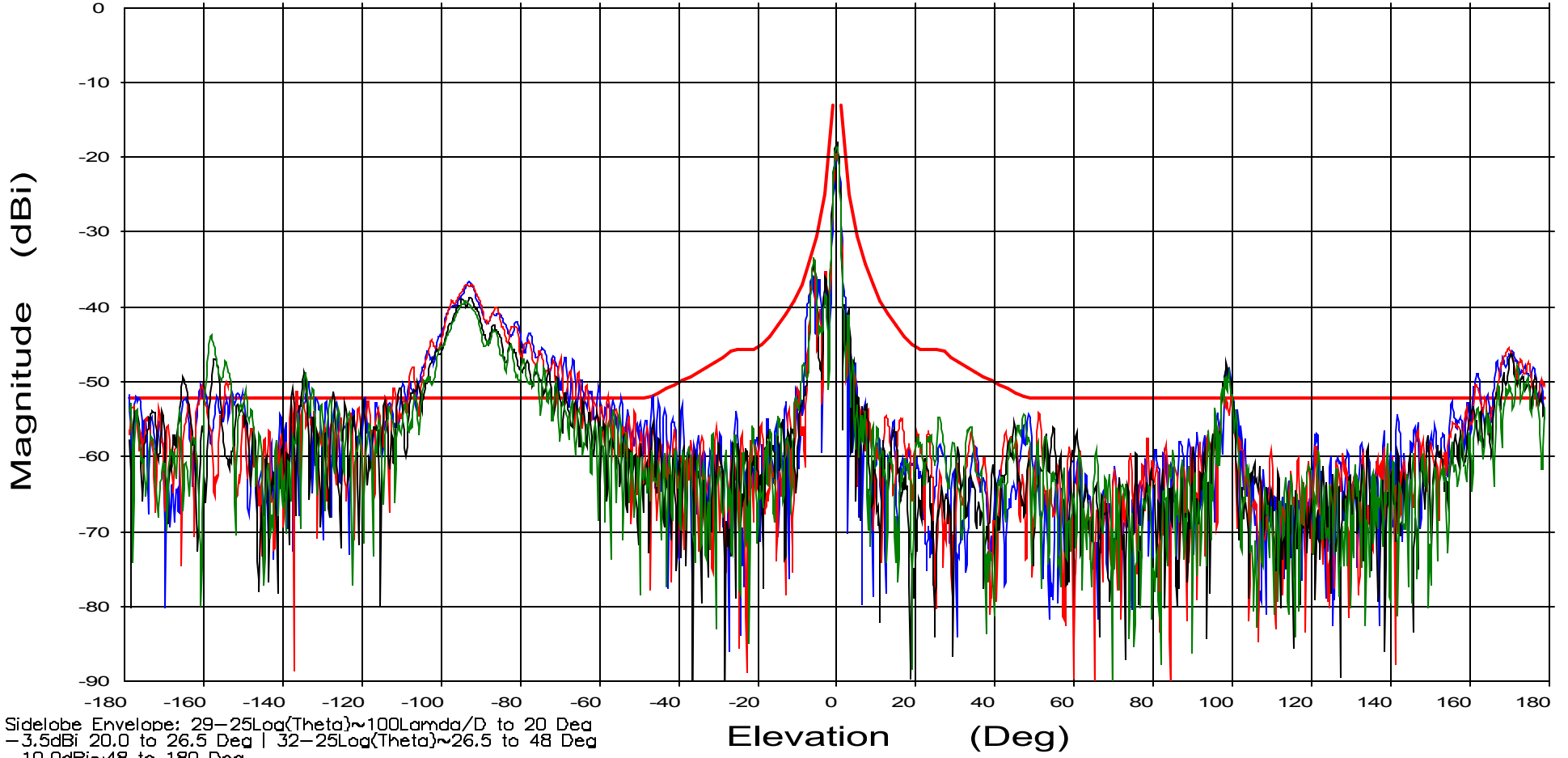
Operator: Dwight B. Lutz

Ser. no.:

Channel: ch1

Tx pol: RHCP

Rx pol: RHCP



Overlays

- Frequency : 3.625 GHz — blue
- Frequency : 3.825 GHz — red
- Frequency : 4.025 GHz — black
- Frequency : 4.200 GHz — green

4.0 Test Photographs



5.0 Test Equipment Details

5.1 General Information

General Dynamics SATCOM Technologies / Prodelin Antenna Test Facility is located 5km (3 miles) East of Maiden, NC and approximately 16km (10 Miles) South-southeast of Prodelin main office in Newton, NC. We are located 61km (38 Miles) from Charlotte International Airport and 149km (90 miles) from Piedmont Triad International Airport in Greensboro, NC.

The antenna range can test a multitude of frequencies between 800 MHz and 30.00GHz, and antennas up to 4.5 meters in diameter.

Testing is accomplished over a test path between a fixed transmit tower location and a fixed receive tower location, separated by a distance of 1193.06 Meters (3914.44 feet). Transmit and receive tower heights are 17.41 meters (57.11 feet) above ground level. Using directional antennas, an unmodulated carrier wave (CW) test signal(s) are transmitted from the source tower location toward the receive tower location.

The signal is then received and interpreted by the sophisticated Orbit F/R959 Antenna Measurement System. Data is digitally recorded and many options of data analysis and presentation are possible using the Orbit F/R DataPro and GD specific software.

5.2 Test range specifics:

Range Length	1193.06 Meters (3914.44 Feet)
C/L Tx Source Antenna AGL	17.41 Meters (57.11 Feet)
C/L AUT Mounting Positioner AGL	17.49 Meters (57.88 Feet)

Test zone:

Frequency range	0.8 - 30.00 GHz
Dynamic range	80 dB (in most frequency bands)
Gain	+/- 0.5 dB*
Amplitude ripple	< +/- 0.3 dB* @ +/-20°-boresight
Amplitude ripple	< +/-0.5 dB* @ greater than 20° boresight
Phase ripple	< +/-5°*
Cross-polar purity:	-40 dB*

* For the majority of practical applications.

Positioner:

Axis 1 Azimuth	
Accuracy	< 0.12°
Axis 2 Elevation	
Accuracy	< 0.1°
Max load:	800 Lbs.

5.3 Test Equipment:

Manufacturer:	Model	Options	S/N
HP Microwave Receiver (Top Section)	8530A	010-011-8Ze	3031A08077
HP Microwave Receiver (Btm Section)	8530A	011-8ZE	3409A00301
HP Synthesized Sweeper Source #1 (Tx Source) 10Mhz – 50GHz	83651B		3844A00444
HP Amplifier 2-50GHz	83050A	8ZE	3331A00520
HP Power Supply (For 83050A Amplifier)	87421A		3611A00932
HP Synthesized Sweeper Source #2 (Reference Source) 10Mhz – 20GHz	83621B		3614A00156
HP LO/IF Distribution Unit	85309A		3224A00188
HP Extender (Up-Range)	37204A	03	3212U24550
HP Extender (Down-Range)	37204A	03	3212U23735
HP Mixer Module (Reference) 2 - 26.5GHz -71Mv	85320B		860A00143
HP Mixer Module (Test) 2 - 26.5GHz	85320A		3031A08077
HP Spectrum Analyzer 9kHz - 40 GHz	8564E		3745A01006

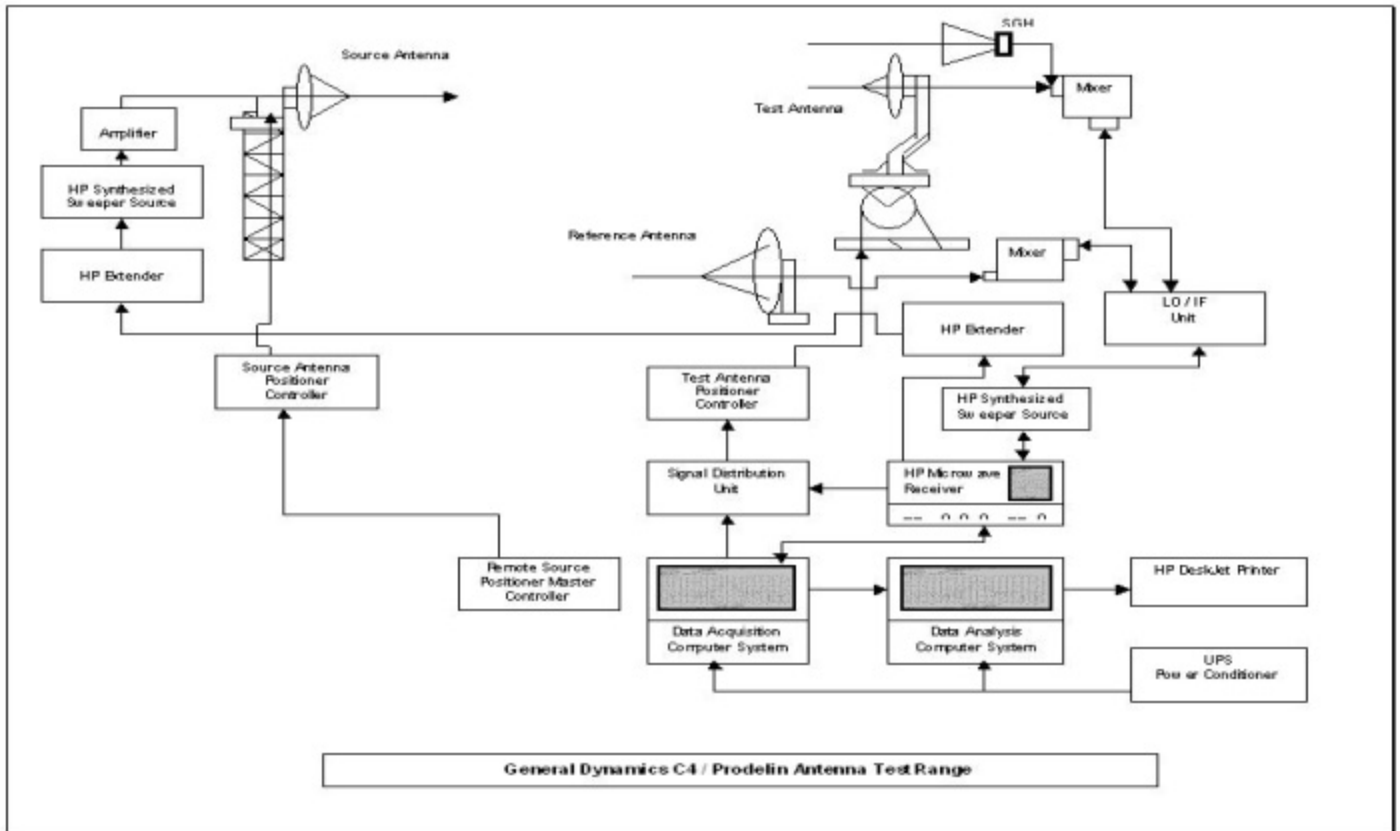
5.4 Positioner Equipment:

Orbit Positioner Programmer (To control Tx positioner)	AL-4706-3B		208
Orbit Positioner Controller & PCU (Up Range – Power Control Unit)	AL-4806-3A		182
Orbit Positioner Controller & PCU (Down Range – Power Control Unit)	AL-4806-3A	1 & 5	266

5.5 Software

F/R Signal Distribution Unit	959		K1036
Orbit F/R 959 Data Acquisition Software	Spectrum Version 2.6.1	Rev-A	
Automated Antenna Measurement Workstation			
Orbit F/R DataPro Plus Software Antenna Data Presentation and Analysis	Spectrum Version 2.6.1	Rev-A	

5.6 Block Diagram



5.7 Staff / Contact Information:

Two full time operators with a combined total of 35+ Years experience in antenna testing.

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 Email: kenneth.poovey@gdsatcom.com

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 Internet: <http://www.gdsatcom.com>