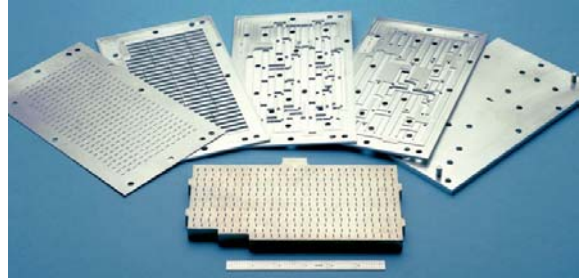


## X-Band Slot Array SatCom Antenna



EMS Technologies' X-Band SatCom Antenna is low-profile, lightweight and can be shaped conformal to an allocated area. This antenna has two interleaved apertures for simultaneous Tx/Rx (full duplex) with opposite circular polarities

### Technical Approach

- Meet Modified ITU Requirements
- Slot-Array Design Conformal to Allocated Area
- Low Profile Antenna
  - 22" W x 10" H
- Interleaved Tx / Rx
  - Orthogonal Slots
  - Good Tx / Rx Isolation
- Electronic Polarization Switching
- Selectable LHCP / RHCP
  - Tx / Rx Polarizations are always opposite

### Measured Performance

- 27dB – 28dB Gain (~ 200 sq. in )
- Same gain as 0.4 m dish
- 12 lbs

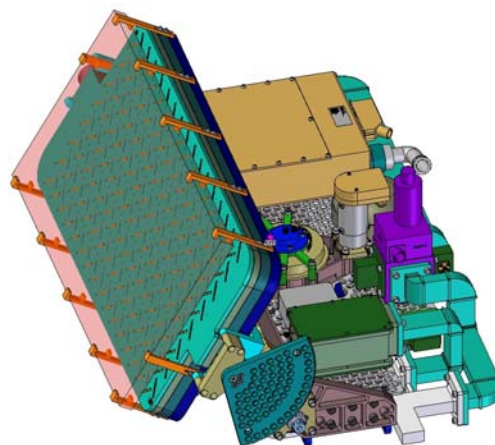
**Always Making Waves**

...and clearing the path to a safer world

## X-Band COTM Terminal Key Performance Specifications

- Tx Frequency: 7.9 to 8.4 GHz
- Rx Frequency: 7.25 to 7.75 GHz
- G/T (at any Az or El angle): 6.3 dB/K
- EIRP (at any Az or El angle): 42.6 dBW
- Tx data rate with XTAR
  - Best Case [1]: 4.1 Mbps
  - Worst Case[2]: 2.7 Mbps
- Rx data rate with XTAR
  - Best Case [3]: 5.0 Mbps
  - Worst Case [4]: 1.5 Mbps
- Effective aperture area: 200 inches<sup>2</sup>
- Azimuth angle: 0 to 360 degrees
- Elevation angle: 0 to 90 degrees
- Height inside radome: 11.875 inches
- Diameter inside radome: 31.6 inches
- Mass (not including SSPA, modem, BUC, radome or adaptor plate: 39.5 lbs

- [1] 150W SSPA @ 2 dB OBO, X-tar spot beam, 45° look angle, 1% unavailability, no rain, 25,000 ft elevation, 50% transponder power, 3 dB impl. loss
- [2] 150W SSPA @ 2 dB OBO, X-tar spot beam, 10° look angle, 1% unavailability, Craine "F" rain region, 0 ft elevation, 20% transponder power, 3 dB impl. loss
- [3] X-tar spot beam, 45° look angle, 1% unavailability, no rain, 25,000 ft elevation, 50% transponder power, 3 dB impl. loss
- [4] X-tar spot beam, 10° look angle, 1% unavailability, Craine "F" rain region, 0 ft elevation, 20% transponder power, 3 dB impl. loss



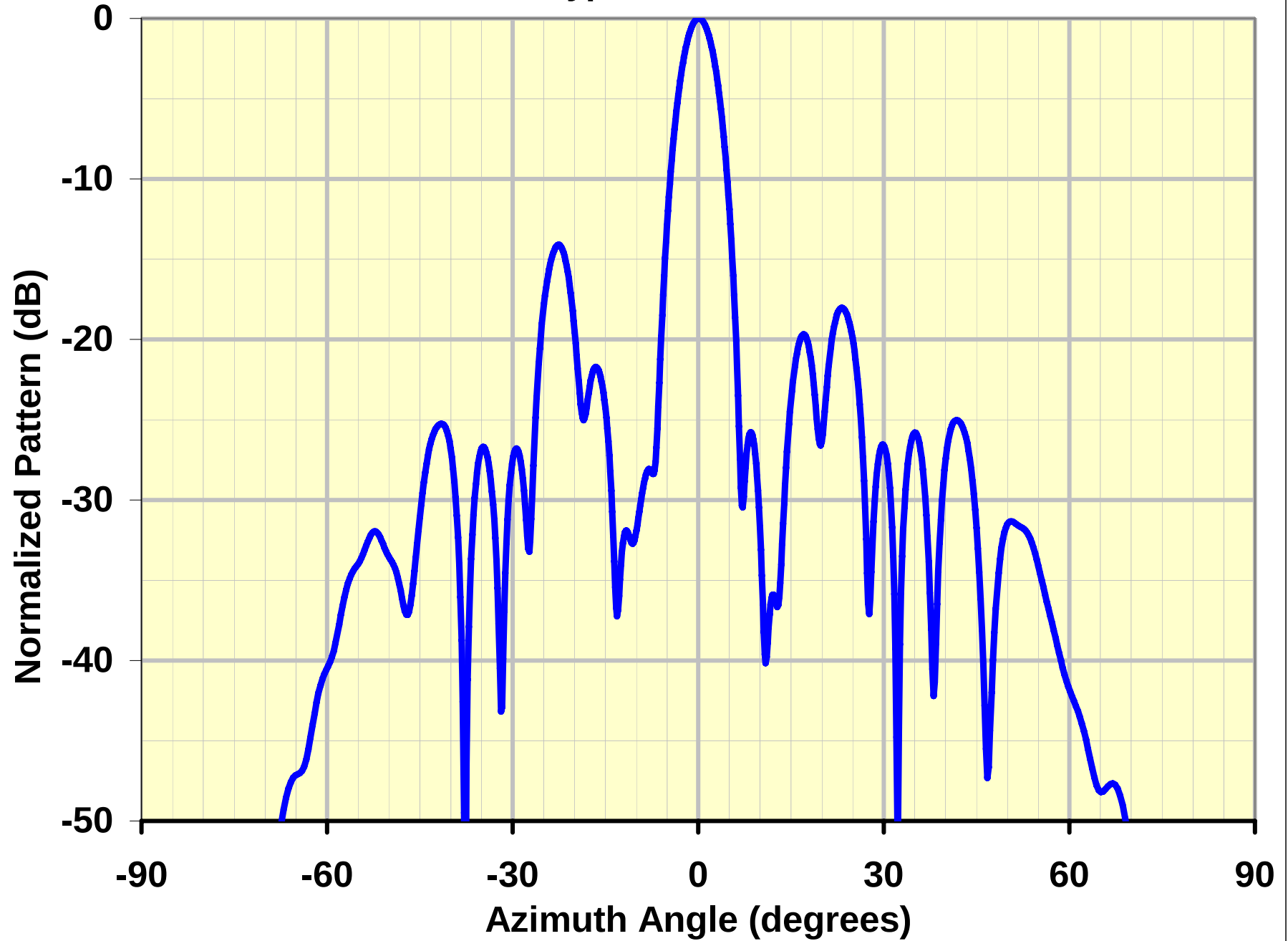
EMS Slot Array Antenna on Mechanical Positioner with integrated RF and control electronics

For more information, contact:

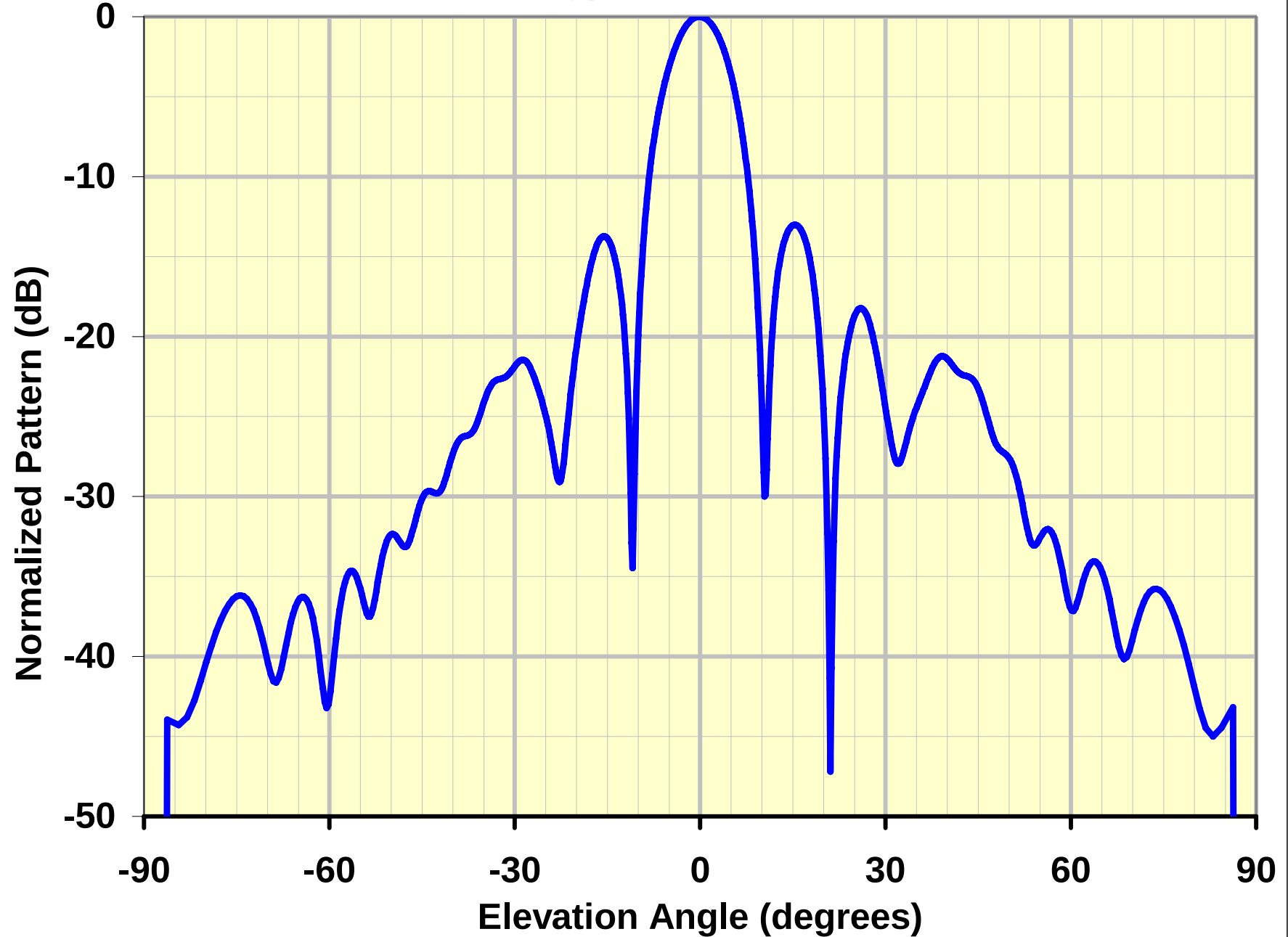
John Volpe  
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DEFENSE & SPACE SYSTEMS  
660 Engineering Drive  
Norcross, GA 30092  
[www.ems-t.com](http://www.ems-t.com)

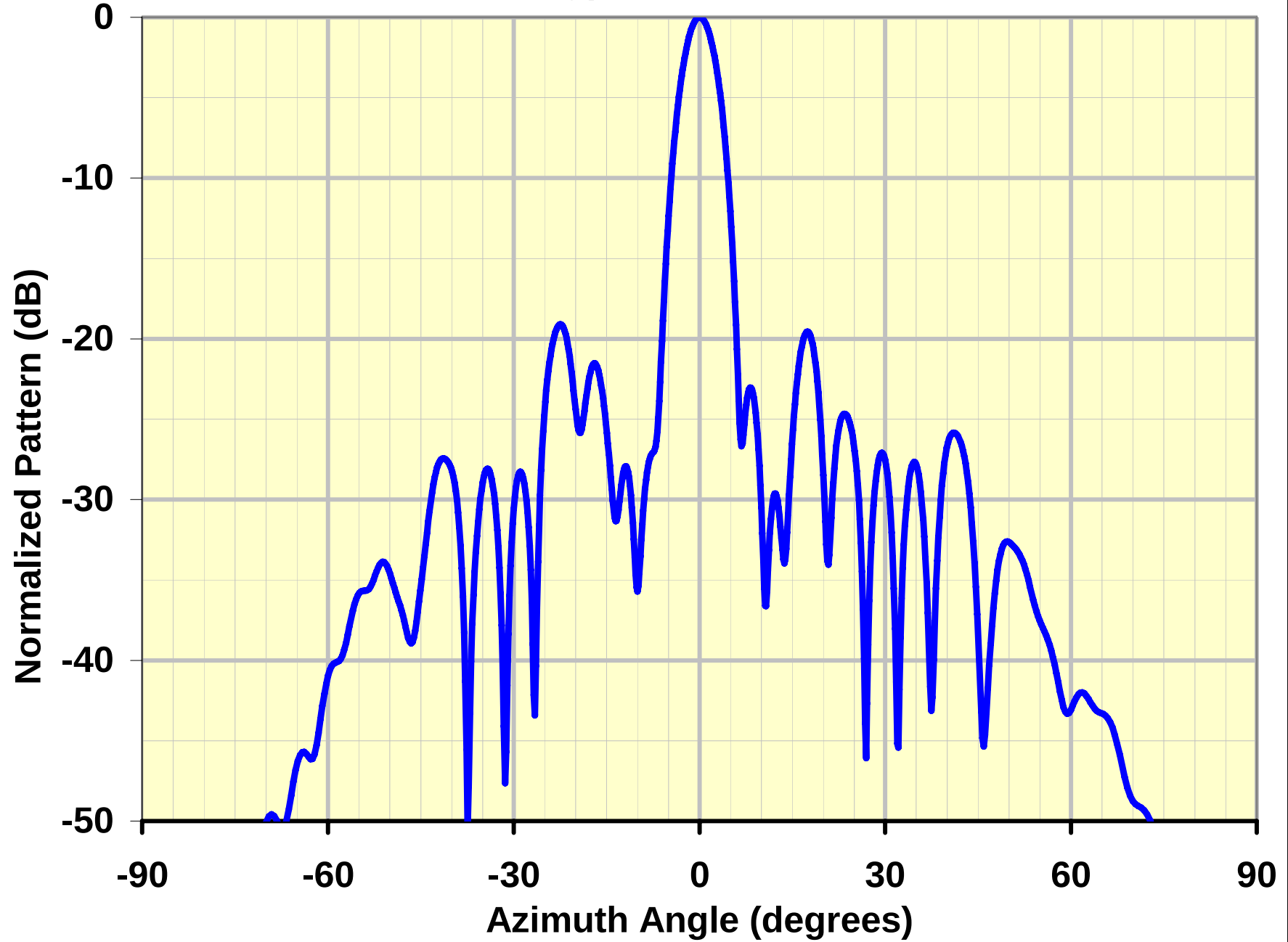
XTAR Prototype 1, Port 2, 7.2 GHz



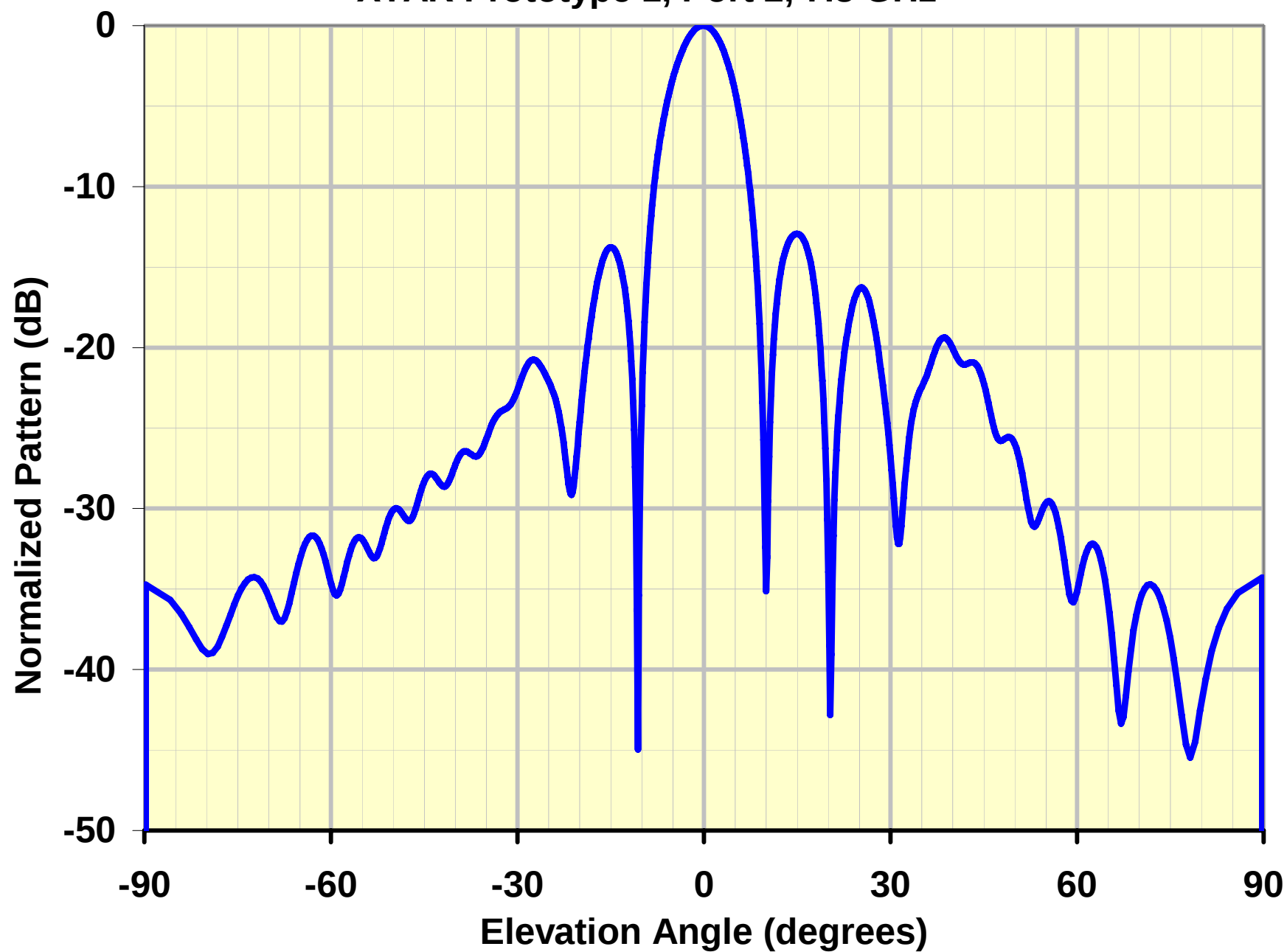
XTAR Prototype 1, Port 2, 7.2 GHz



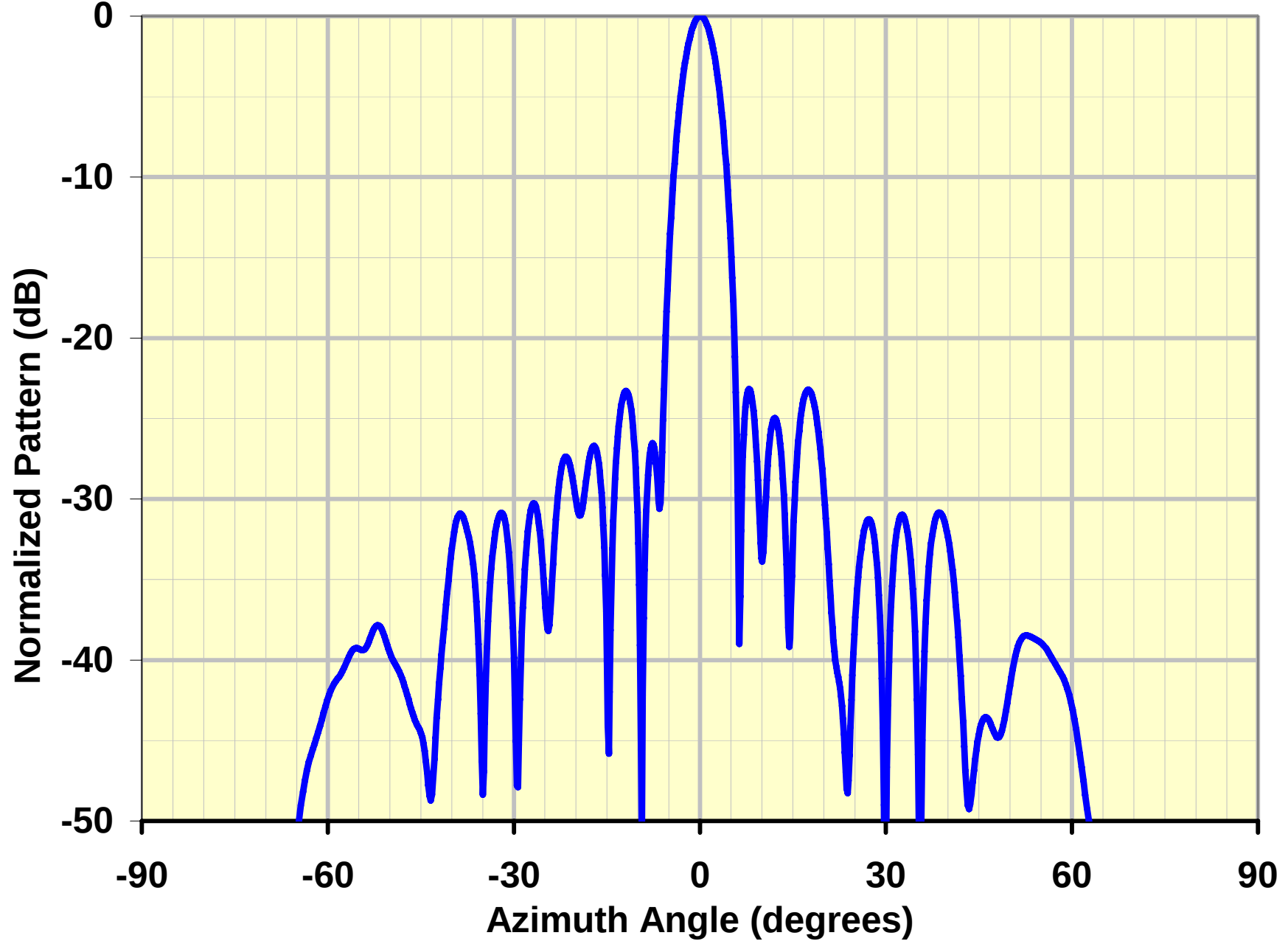
**XTAR Prototype 1, Port 2, 7.3 GHz**



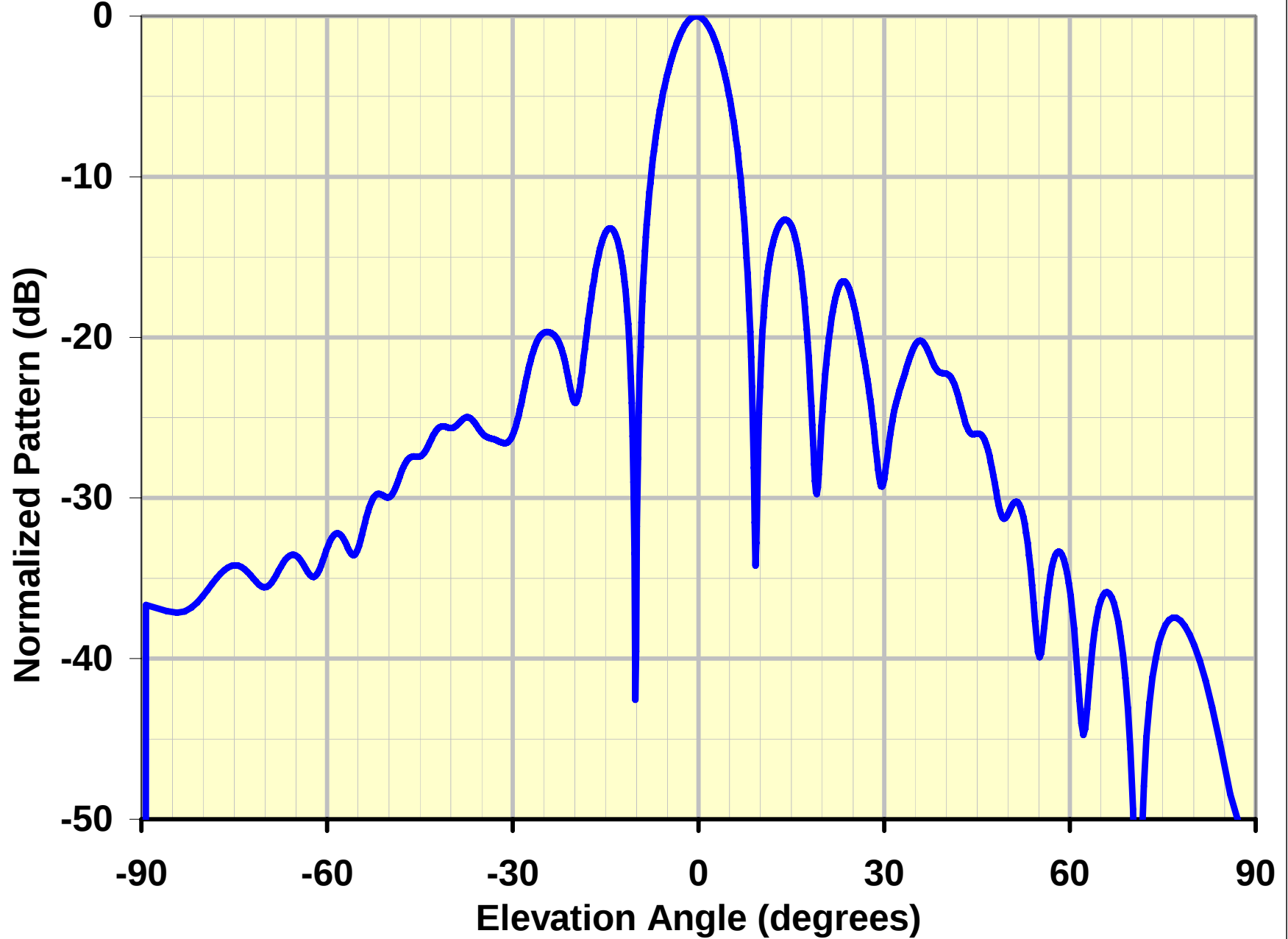
**XTAR Prototype 1, Port 2, 7.3 GHz**



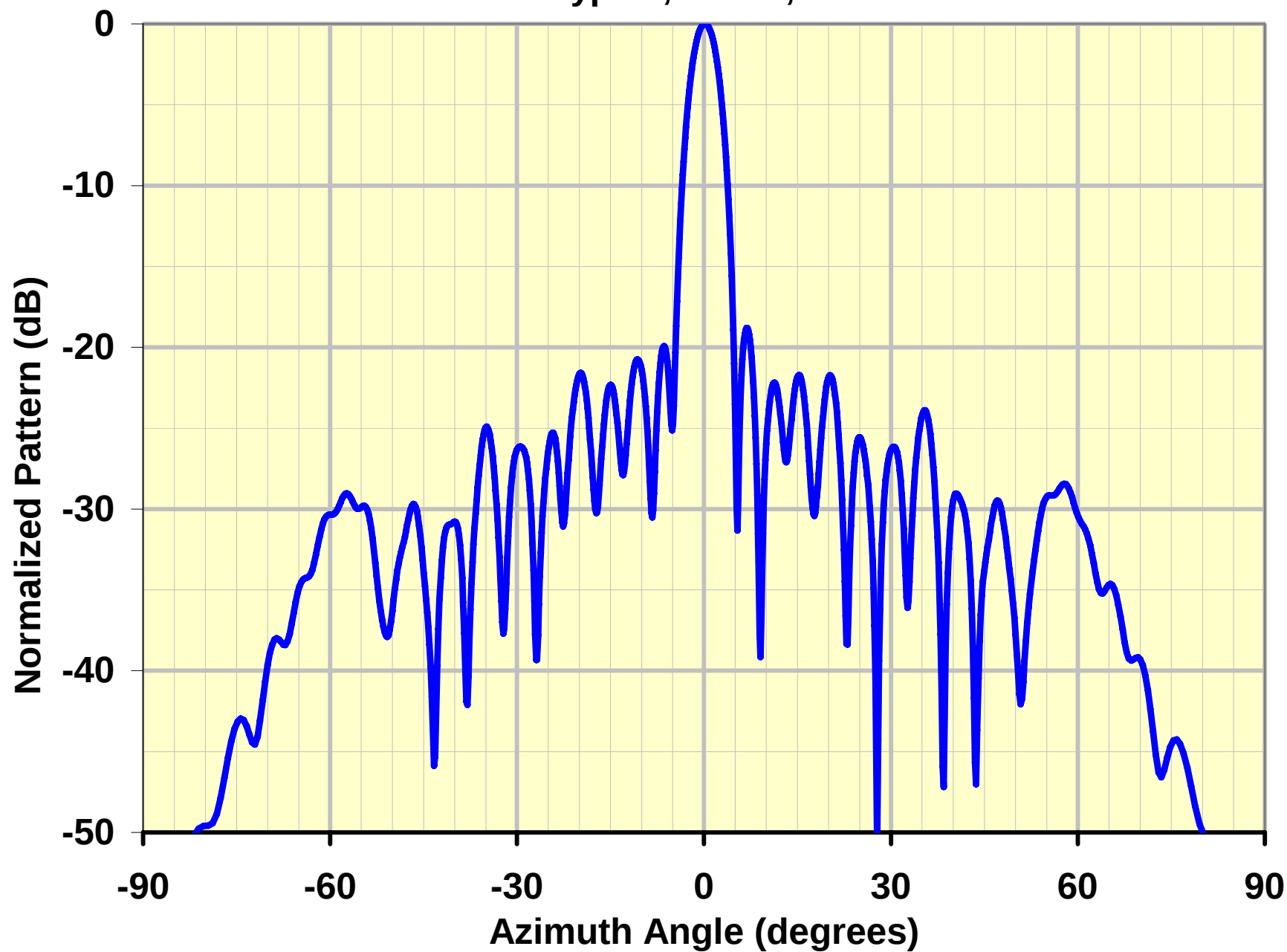
**XTAR Prototype 1, Port 2, 7.8 GHz**



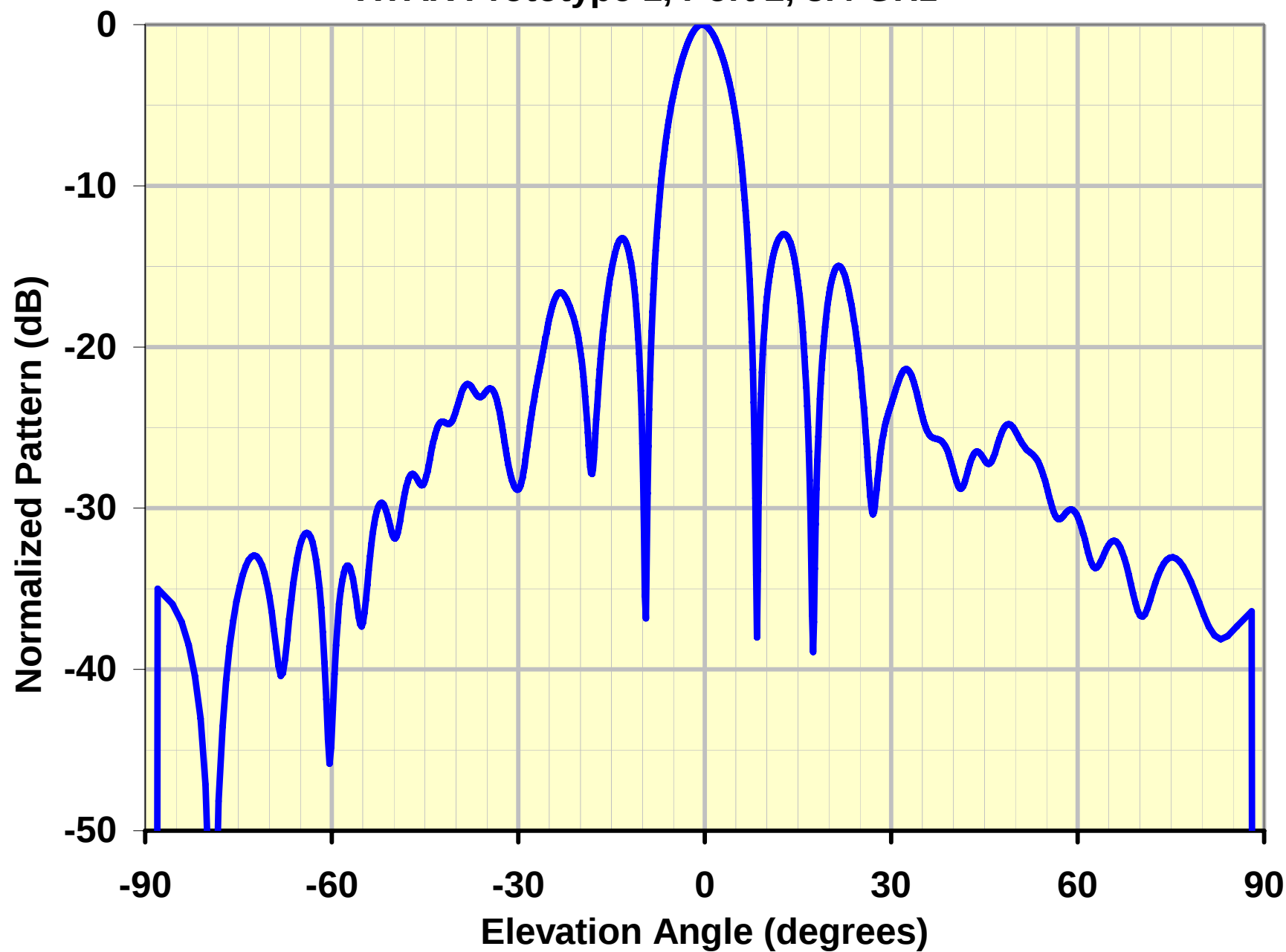
XTAR Prototype 1, Port 2, 7.8 GHz



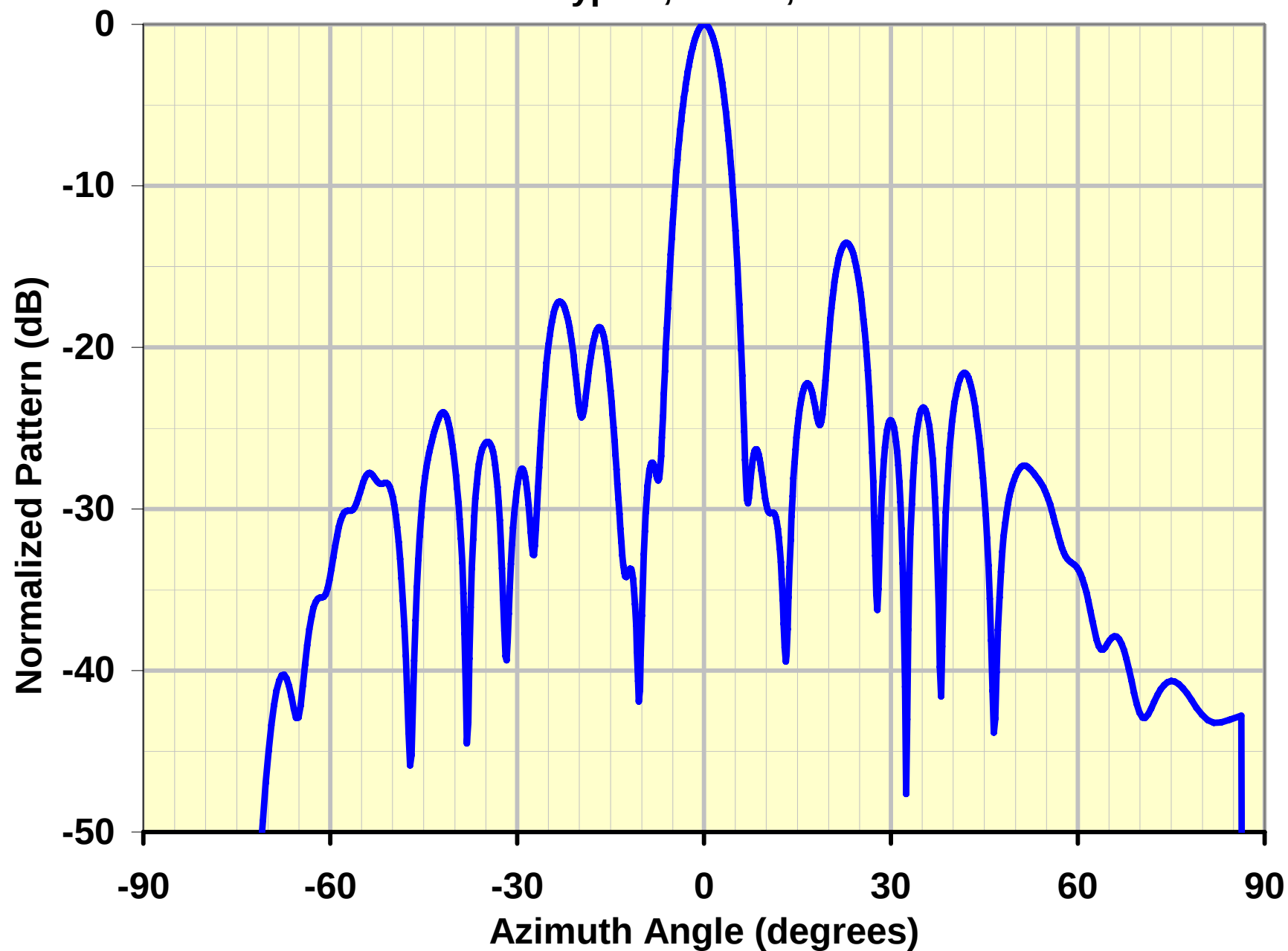
**XTAR Prototype 1, Port 2, 8.4 GHz**



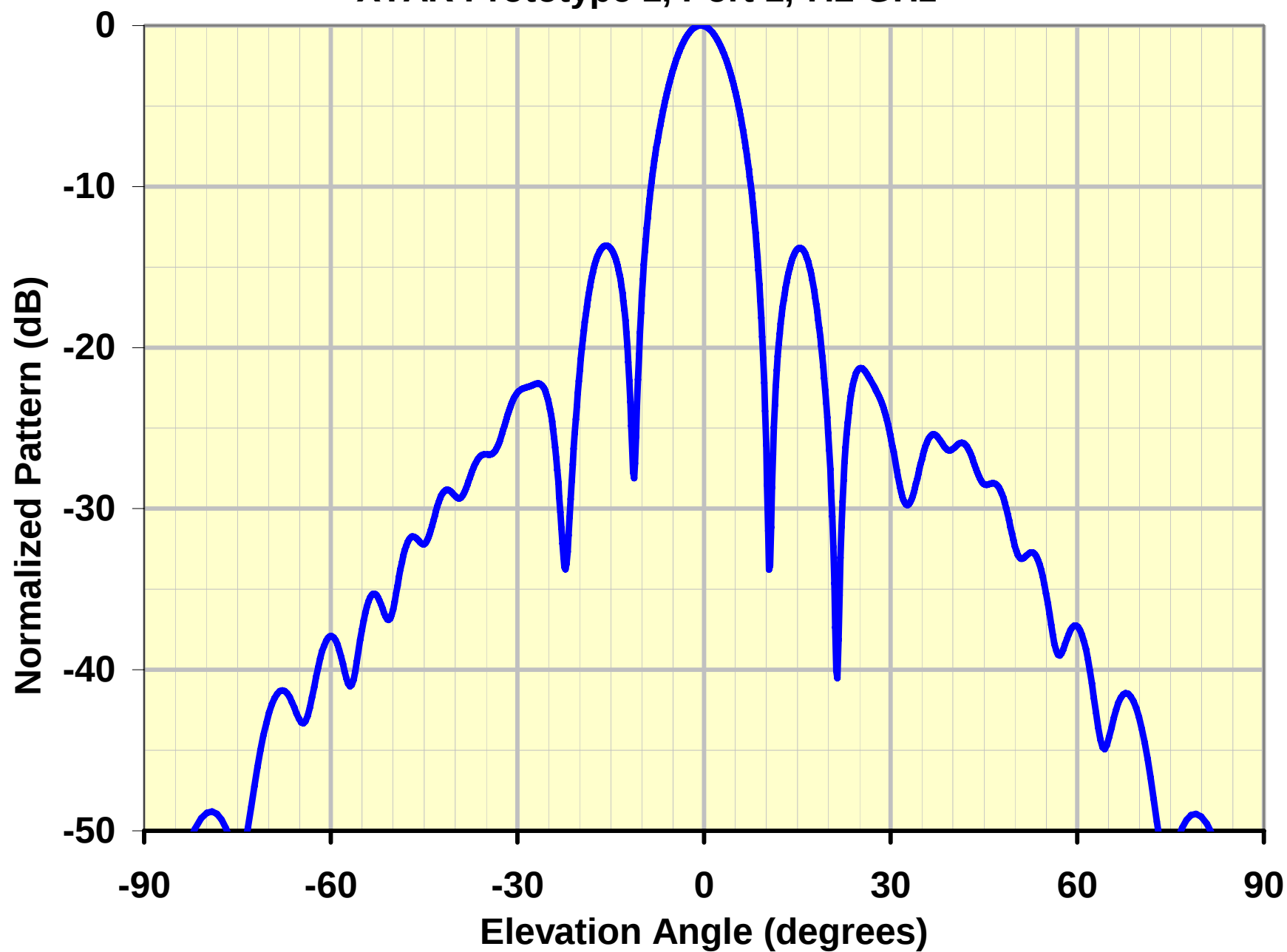
XTAR Prototype 1, Port 2, 8.4 GHz



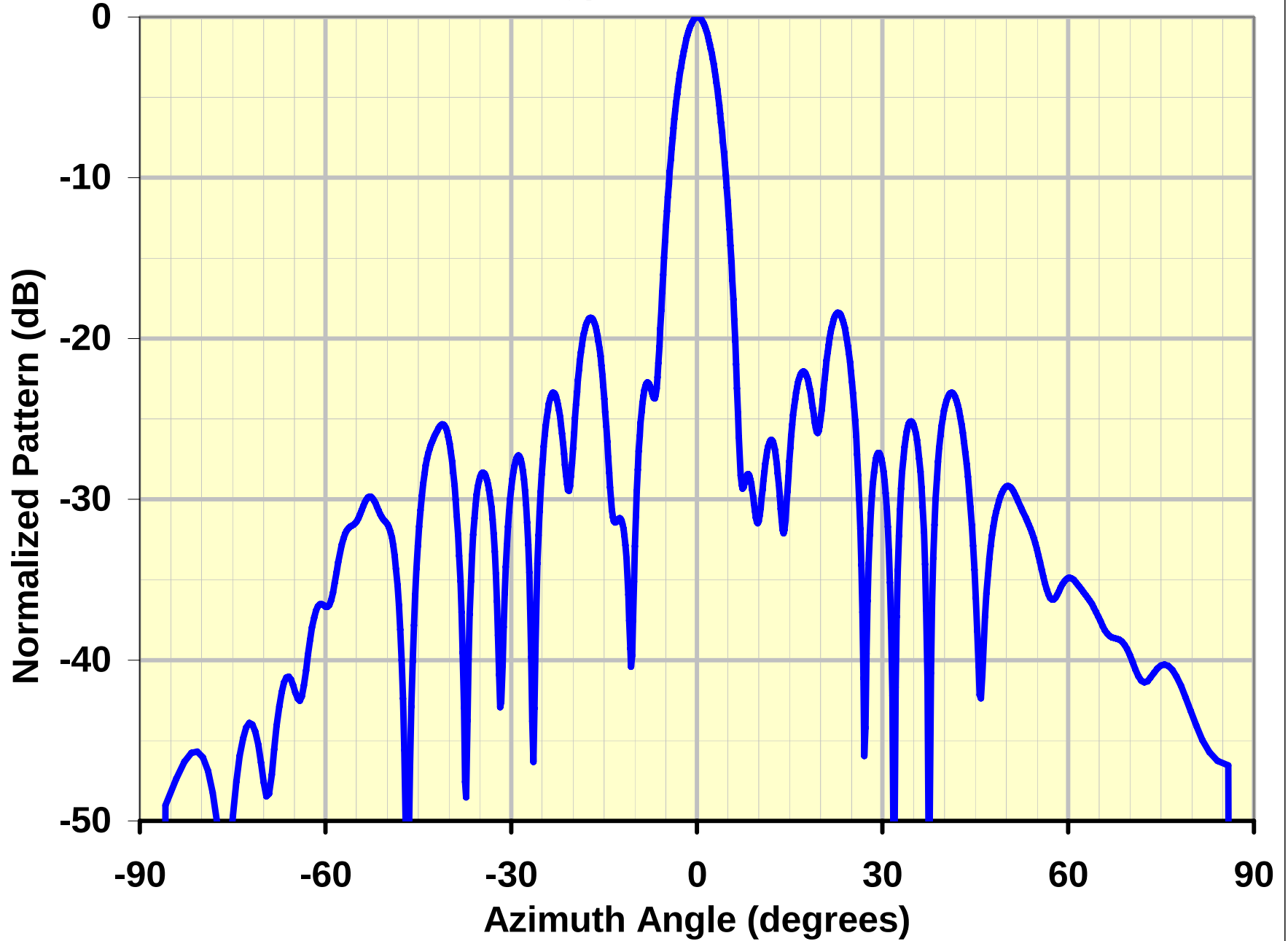
XTAR Prototype 1, Port 1, 7.2 GHz



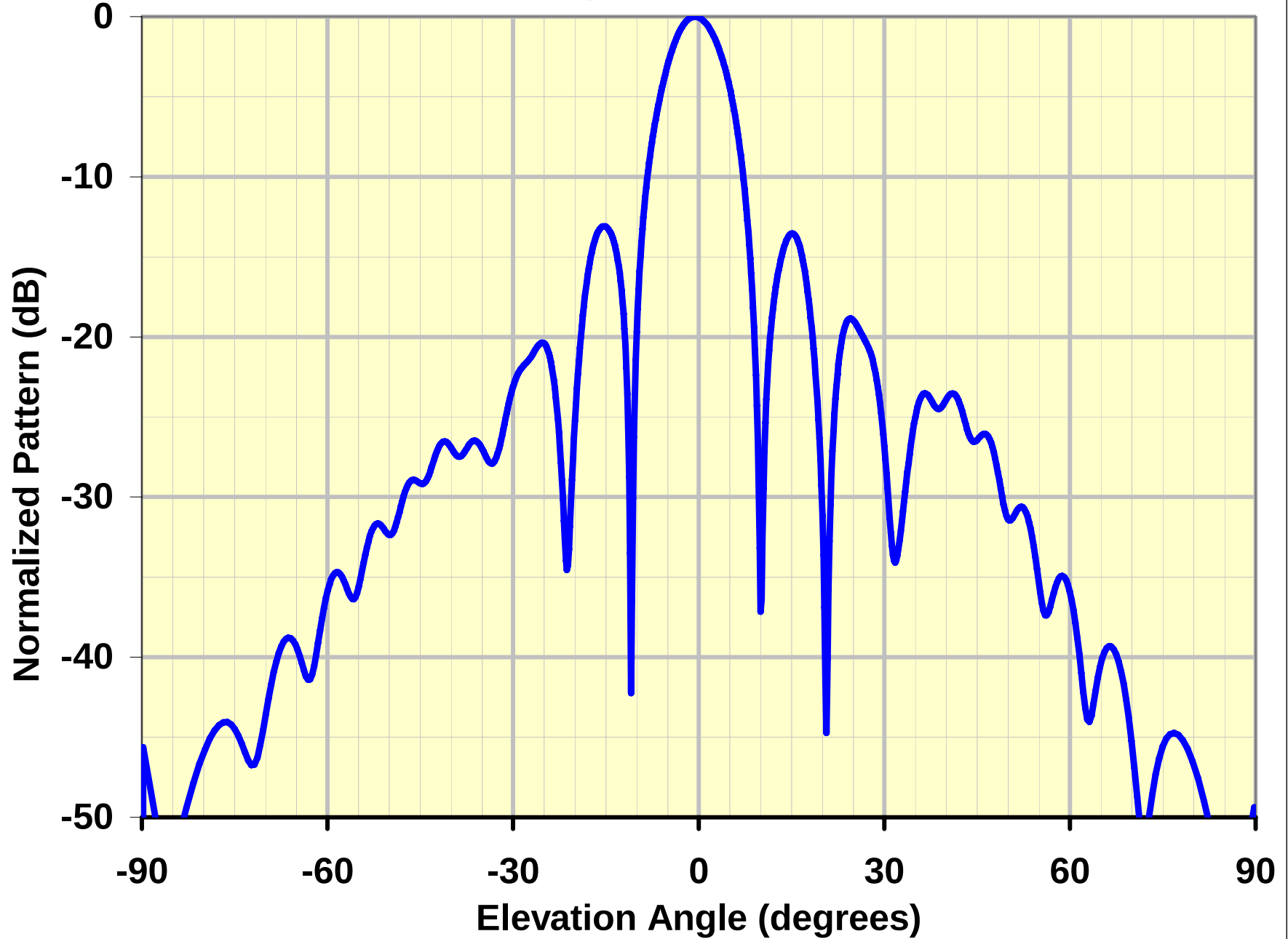
XTAR Prototype 1, Port 1, 7.2 GHz



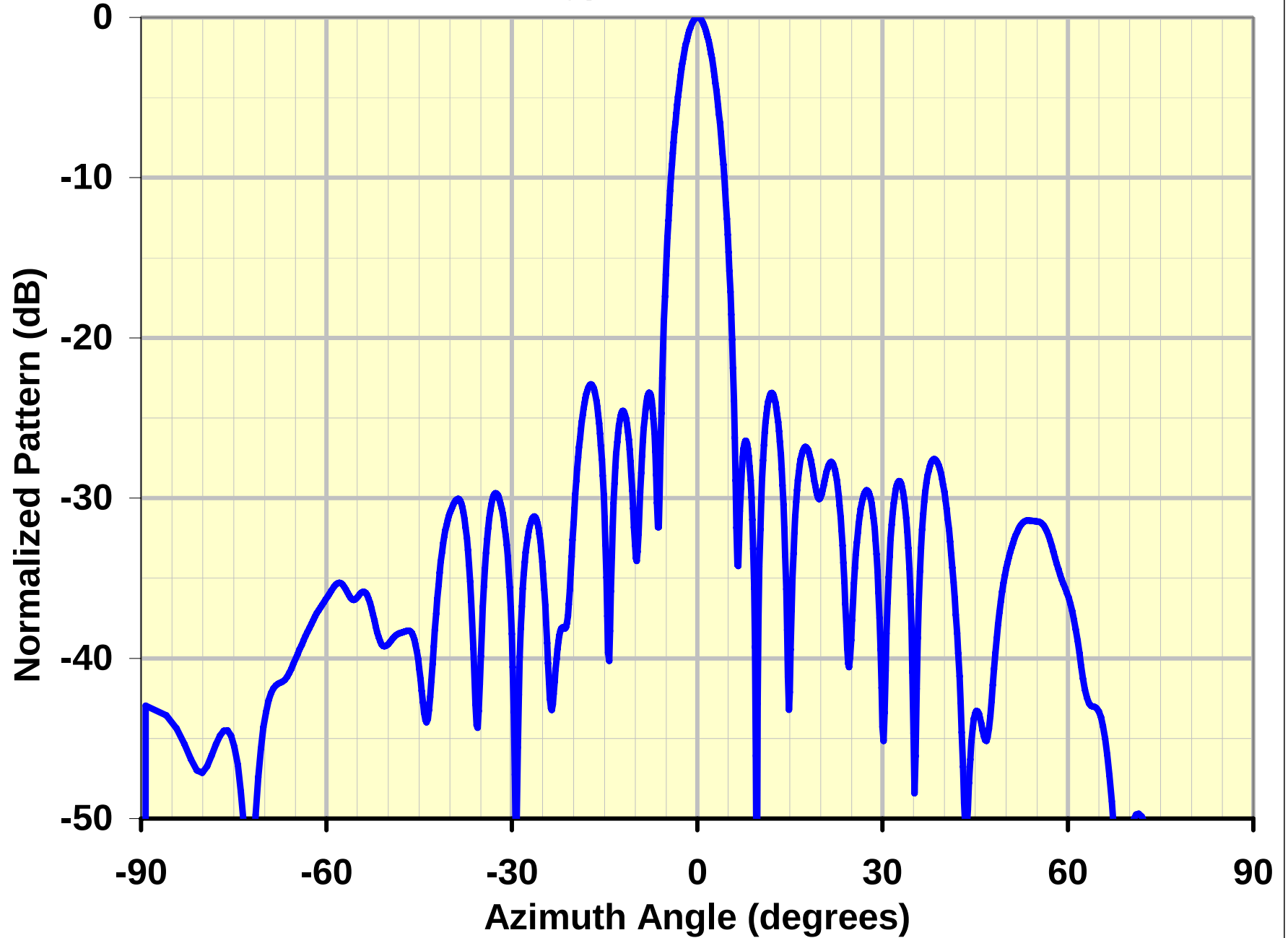
**XTAR Prototype 1, Port 1, 7.3 GHz**



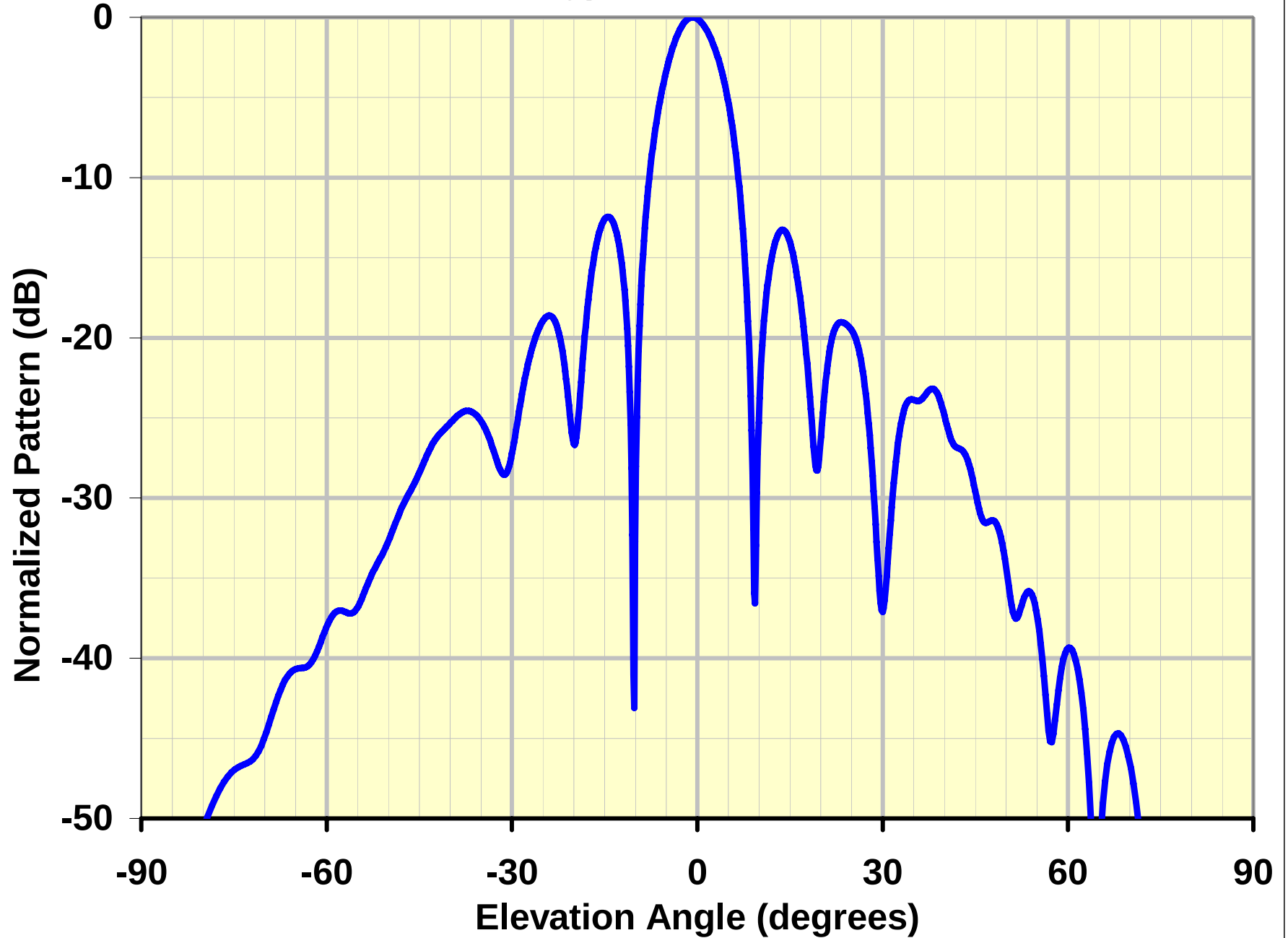
**XTAR Prototype 1, Port 1, 7.3 GHz**



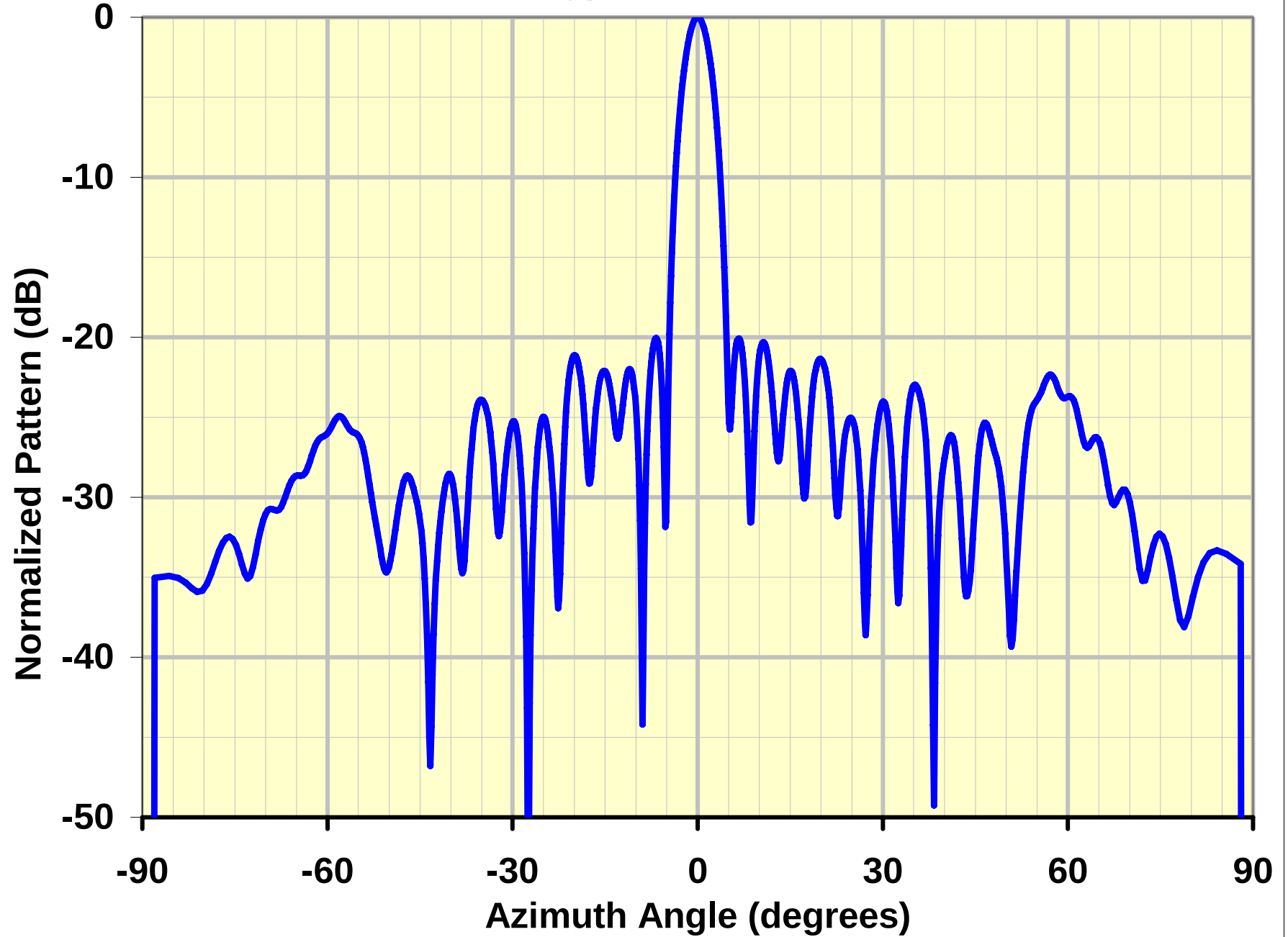
XTAR Prototype 1, Port 1, 7.8 GHz



**XTAR Prototype 1, Port 1, 7.8 GHz**



XTAR Prototype 1, Port 1, 8.4 GHz



XTAR Prototype 1, Port 1, 8.4 GHz

