

01 January, 2012

Mr. Colin Robinson  
General Dynamics SATCOM Technologies  
1500 Prodelin Drive  
Newton, NC 28658

Dear Mr. Robinson::

Subject: Type Approval of General Dynamics SATCOM Technologies 1.8M C-Band Circularly Polarized Antenna Series 1182. This antenna is manufactured under the Prodelin brand product line. The single-offset, single-piece reflector Antenna Model is equipped with a 2-port feed and meets standards H2 and G. The GVF/Intelsat Type Approval number is GVF/IA206A00.

Reference: General Dynamics SATCOM Technologies (Prodelin) Final Test Data Report and Design Review Report dated 15 December 2011

I am pleased to inform you that effective 01 January 2012 the General Dynamics SATCOM Technologies (Prodelin Brand) 1.8M, single-piece, C-Band Circularly Polarized Antenna Model equipped with a 2-port feed is hereby granted approval as a GVF/INTELSAT type approved Antenna Model (GVF/IA206A00) to operate on the Intelsat Satellite System. Our examination of the data submitted confirms compliance with IESS-207 and 601 for standard H2 and G Antenna Models, respectively.

Antenna Model certified by General Dynamics SATCOM Technologies of the United States:

1. Manufacturer: General Dynamics SATCOM Technologies
2. Model #'s: 1182-990, 1182-991, 1182-994, 1182-995  
1182-996, 1182-997
3. Approval code: GVF/IA206A00
4. Approval date: 01 January 2012
5. Antenna size: Circular 1.8 Meters (C-Band)
6. Standards: H2 and G
7. Restrictions:
  - 7.1 Operation of Antenna Models using this Type Approved Antenna Model within a leased transponder must be in accordance with an approved transmission plan.
  - 7.2. All new individual Antenna Models intended for operation under this Type Approval must be installed according to the manufacturer's specifications.
  - 7.3. All new individual Antenna Models under this Type Approval must be equipped with the following parts:

	<u>Part Description</u>	<u>Manufacturer</u>	<u>Part Number</u>
7.3.1	1.8M Antenna	General Dynamics SATCOM Technologies	1182-990,-991,-994 -995, -996, -997
7.3.2	2 Port Tx/Rx Feed system	General Dynamics SATCOM Technologies	0850-083, -084, -085, -086

. Performance characteristics from test results:

8.1. Transmit Gain (RHCP) (Normalized)

Value at 6000 MHz: 39.8.0 dBi

Efficiency: 70%

8.2. Transmit Isolation (RHCP)

Average: -21.2 dB

Minimum: -20.0 dB

8.3. Transmit Gain (LHCP) (Normalized)

Value at 6000 MHz: 39.7 dBi

Efficiency: 70 %

8.4. Transmit Isolation (LHCP)

Average: -20.7 dB

Minimum: -20.0 dB

8.5. Receive Gain (RHCP) (Normalized)

Value at 4000 MHz: 35.7 dBi

Efficiency: 68 %

8.6. Receive Gain (LHCP) (Normalized)

Value at 4000 MHz: 35.8 dBi

Efficiency: 68 %

8.7. Receive Noise Temperature (RHCP)

Value at 4000 MHz @ 10° elevation:

41K

8.8. Receive Noise Temperature (LHCP)

Value at 4000 MHz @ 10° elevation:

41K

8.9 Receive G/T (calculated) (RHCP)

Value at 4000 MHz @ 10° elevation

with 30K LNB: 17.18 dB/K

8.10 Receive G/T (calculated) (LHCP)

Value at 4000 MHz @ 10° elevation

with 30K LNB: 17.18 dB/K

8.11 Side Lobe Level: 29 - 25 Log Theta dBi

8.12 Feed Arm Load Bearing 25 lbs

Sincerely,

Calvin Harriott  
GVF/Intelsat ATE  
Harriott Communications Consultants LLC  
2043 Woodfield Circle, West Melbourne, FL 32904  
Telephone No.: (321) 768-7728  
Mobile: (703) 798-9183