

9 February, 2009

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



Dear Mr. Robinson:

**Subject:** Type Approval of General Dynamics SATCOM Technologies 3.8M C-Band Series 1385, 1386 and 1387 Circularly Polarized Antennas. This series is manufactured under the Prodelin brand product line. The single-offset, 4-piece reflector Antenna Model is equipped with a 1.09 VAR, 2-port feed and meets standards F1 and G. The GVF/Intelsat Type Approval number is GVF/IA203A00.

**Reference:** General Dynamics SATCOM Technologies (Prodelin) Final Test Data Report and Design Review Report dated 15 January 2009.

We are pleased to inform you that effective 15 January 2009 the General Dynamics SATCOM Technologies (Prodelin Brand) Series 1385, 1386 and 1387 3.8M, 4-piece, C-Band Circularly Polarized Antennas equipped with a 1.09 VAR, 2-port feed is hereby granted approval as an GVF/INTELSAT type approved Antenna Model (GVF/IA203A00) to operate on the Intelsat Satellite System. Our examination of the data submitted confirms compliance with IESS-207 and 601 for standard F1 and G Antenna Models, respectively.

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

- 1.0 Manufacturer: General Dynamics SATCOM Technologies
- 2.0 Antenna Details: Model 1385-XXX Standard Antenna, Model 1386-XXX Dual Axis Tracking Antenna and Model 1387-XXX Quick Deploy Antenna
- 3.0 Approval code: GVF/IA203A00
- 4.0 Approval date: 15 January 2009
- 5.0 Antenna size: Circular 3.8 Meters (C-Band)
- 6.0 Standards: F1 and G
- 7.0 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 components of General Dynamics SATCOM Technologies manufacture:

Reflector Petal part numbers:

- 0178-3801, 0178-3802, 0178-3803 and 0178-3804

2-Port Tx/Rx Feed Assembly part numbers:

- 0183-383 (1.09 VAR, LHCP feed with type N connector)
- 0183-384 (1.09 VAR, RHCP feed with type N connector)
- 0183-385 (1.09 VAR, LHCP feed with WR137 WG interface)
- 0183-386 (1.09 VAR, RHCP feed with WR137 WG interface)

8.0 Performance characteristics from test results:

Transmit Gain (RHCP) (Normalized) Value at 6000 MHz: 46.0 dBi, Efficiency: 69 %  
Transmit Isolation (RHCP), Average: -28.1 dB Minimum: -27.9 dB

Transmit Gain (LHCP) (Normalized) Value at 6000 MHz: 46.0 dBi, Efficiency: 69 %  
Transmit Isolation (LHCP), Average: -27.9 dB, Minimum: -27.7 dB

Receive Gain (RHCP) (Normalized), Value at 4000 MHz: 42.4 dBi, Efficiency: 67 %  
Receive Gain (LHCP) (Normalized), Value at 4000 MHz: 42.4 dBi, Efficiency: 67 %

Receive Noise Temperature (RHCP), Value at 4000 MHz @ 10° elevation: 45K  
Receive Noise Temperature (LHCP), Value at 4000 MHz @ 10° elevation: 45K

Receive G/T (calculated) (RHCP), Value at 4000 MHz @ 10° elevation with 30K LNB:  
23.65 dB/K

Receive G/T (calculated) (LHCP), Value at 4000 MHz @ 10° elevation with 30K LNB:  
23.65 dB/K

Side Lobe Level: 29 - 25 Log Theta dBi

Feed Arm Load Bearing: 30 lbs

Sincerely,

*Calvin C. Harriott*

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