

## 3.7-Meter C-Band Earth Station Antenna F-1 INTELSAT Type Approved General Description and Specifications

### Features

- Fully Type Approved for F-1, D-1, G, and Z INTELSAT operating standards
- Eliminates costly field testing of transmit patterns and G/T measurements
- Gregorian optics for high gain and pattern control
- Motorizable mount allows upgrade to motorization
- Optional steptrack controls
- Large enclosure with security doors
- Wide-band two-port feed system 3.625-4.2 GHz Rx and 5.850-6.425 GHz Tx
- 125 mph survival in any position of operation
- Polarization Field Switchable Circular/Linear
- Circular Polarization Field Switchable RHCP to LHCP

### Introduction

Andrew Corporation announces final INTELSAT F-1 Type Approval of its 3.7-meter C-band earth station products. This first ever F-1 Type Approval, for this size antenna, by INTELSAT followed extensive factory testing witnessed by COMSAT, INTELSAT's U.S. Signatory.

By specifying an Andrew INTELSAT Type Approved F-1 3.7-meter product, savings as high as \$10,000 per antenna in field testing are realized and the system turn-on is expedited without the need of on-site engineers to conduct testing. This may require coordination with each of the INTELSAT signatories depending on the region.

Andrew also offers a complete line of C-band - B, F-1, F-2, F-3; Ku-band - E-2, E-3; and C-/Ku-band - G and Z standard INTELSAT antennas and can provide on-site or in-factory testing of these products whether they be fixed or transportable.

Contact your Andrew sales representative for further details on how to implement these new F-1 Type Approved antennas into your next project.

Attached are typical patterns measured during the witnessing of the Type Approval Phase II Testing.

The entire test report is filed with either INTELSAT, COMSAT, EUTELSAT or ASIASAT. Other signatories can request copies thru ESA Product Line.

### Description

Eight different 3.7-meter split and solid reflector antenna models are available. The Type ES37MPJK Series antennas have a motorizable mount with machine jack-screws, the Type ES37MPK Series antennas have a motorizable mount with pipe struts, the Type ES37K Series antennas have a manual pedestal mount and the Type ES37 Series antennas are mountable to a 6 inch nominal customer-supplied pipe.

**Type ES37K-CCP2** includes a large hub enclosure (24" deep), manual pedestal mount, azimuth and elevation strut kit, subreflector subassembly, subreflector strut kit, azimuth and elevation hand crank kit, 2-port combiner network, wide-band feed horn assembly, circular waveguide assembly, 3.7-meter two-piece reflector assembly and various hardware kits for assembly. This antenna model can be deployed in the field with minimal testing of G/T as a fully-certified INTELSAT Standard F-1 under INTELSAT registration number **IA014A00**.

**Type ES37K-CCP2-24** includes all of the above mentioned components and an LNA kit that is guaranteed to meet the minimum F-1 standard requirement G/T of 22.7 dB/K at 4.0 GHz and at a 10 elevation. This antenna system can be deployed in the field as a fully-certified INTELSAT Standard F-1 under INTELSAT registration number **IA014AA0**.

**Type ES37MPJK-CCP2** is the same as Type ES37K-CCP2 but is mounted on a motorizable mount. The INTELSAT registration number is **IA014A00**.

**Type ES37MPJK-CCP2-24** is the same as Type ES37K-CCP2-24 but is mounted on a motorizable mount. The INTELSAT registration number is **IA014AA0**.

**Type ES37-CCP2S** includes a subreflector subassembly, subreflector strut kit, 2-port combiner network, wide-band feed horn assembly, circular waveguide assembly, 3.7-meter split reflector assembly and various hardware kits for assembly. This antenna can be deployed in the field with minimal testing of G/T as a fully certified under INTELSAT Standard F-1 under INTELSAT registration number **IA014A00**.

**Type ES37-CCP2S-24** includes all of the above mentioned components of ES37-CCP2 plus an LNA Kit that is guaranteed to meet the minimum F-1 standard requirement G/T of 22.7db/K at 4.0 GHz at a 10 degree elevation. This antenna can be deployed in the field as a fully certified INTELSAT Standard F-1 under INTELSAT registration number **IA014AA0**.

**Note:** All applicable Type Approval Certificates are available thru the Andrew Fax-On-Demand System.  
1-800-861-1700 (North America)  
1-708-873-3614 (All Other Regions)

## Electrical Specifications

Antenna Type	ES37-CCP2S ES37-CCP2S-24	ES37K-CCP2 ES37K-CCP2-24	ES37MPK-CCP2 ES37MPK-CCP2-24	ES37MPJK-CCP2 ES37MPJK-CCP2-24
INTELSAT Registration Number	IA014A00	IA014A00	IA014A00	IA014AA0
Receive Frequency, GHz	3.625-4.2	3.625-4.2	3.625-4.2	3.625-4.2
Transmit Frequency, GHz	5.850-6.425	5.850-6.425	5.850-6.425	5.850-6.425
Gain in dB				
@ 3.625 GHz	40.9	40.9	40.9	40.9
@ 4.000 GHz	42.4	42.4	42.4	42.4
@ 4.200 GHz	42.9	42.9	42.9	42.9
@ 5.850 GHz	45.7	45.7	45.7	45.7
@ 6.175 GHz	46.2	46.2	46.2	46.2
@ 6.425 GHz	46.4	46.4	46.4	46.4
Polarization	Circular, Switchable to Linear in the Field			
Polarization Discrimination, Voltage Axial Ratio Rx 1.20; Tx 1.09				
Receive 3 dB Beamwidth	1.20°	1.20°	1.20°	1.20°
Transmit 3 dB Beamwidth	.80°	.80°	.80°	.80°
Antenna Noise Temperature				
Elevation	<u>Kelvin</u>	<u>Kelvin</u>	<u>Kelvin</u>	<u>Kelvin</u>
10°	42	42	42	42
20°	37	37	37	37
30°	35	35	35	35
G/T with 38K LNA @ 10° EI Angle @ 4.0 GHz	23.3 dB/K	23.3 dB/K	23.3 dB/K	23.3 dB/K

Types **ES37K-CCP2-24**, **ES37MPJK-CCP2-24** and **ES37-CCP2S-24** include an INTELSAT approved LNA kit.

If preferred, however, this LNA can be separately purchased directly from the following Andrew specified vendor for use with other Andrew Type Approved earth station antennas such as 3.7m antenna Types **ES37K-CCP2** and **ES37MPJK-CCP2**.

Below is a listing of the Type Approved LNA and respective vendor.

For Use With Antenna Type	Andrew LNA Kit P/N	Andrew LNA P/N	Kelvin	Vendor	Vendor LNA P/N
ES37K-CCP2 ES37-CCP2S ES37DK-CCP2 ES37MPJK-CCP2	AE01K-D0402-003	ELNAC-16039	38K	Locus, Inc. P.O. Box 740 State College, PA	RF3000-39-60B3

Other LNA's, that meet or exceed the Type Approved noise temperature specifications, may be utilized, but will require full specification submittal to COMSAT for evaluation and final approval.



