

# EXPLORER 8100

1.0m Stabilized, Auto-Acquire, Drive-Away Antenna System

# COBHAM

April 2019 Product Sheet

## EXPLORER 8100 VSAT

A unique Dynamic Pointing Correction technology and an advanced carbon fiber reflector make the 1 meter EXPLORER 8100 the most advanced Auto-Acquire Drive-Away Land VSAT antenna available.

### Uninterrupted Communication

Traditional vehicle mounted 'Comms-On-The-Pause' VSAT antennas can lose connection to the satellite with even the slightest movement of the vehicle on its suspension caused by high winds or people getting in and out. EXPLORER 8100 isn't a traditional land VSAT antenna.

With EXPLORER 8100 you can enjoy continuous connectivity services even if the vehicle rocks thanks to a new and unique 'Dynamic Pointing Correction' system. Using lessons learned from Cobham SATCOM's maritime stabilized VSAT antennas, EXPLORER 8100 offers the most reliable connectivity available in its class.

### Reliable EXPLORER

EXPLORER 8100 is developed completely in-house by Cobham SATCOM. It features genuine EXPLORER design, which is already established and proven with Cobham SATCOM's highly regarded EXPLORER BGAN and GX terminals for the Inmarsat network.

It is designed to offer unparalleled Comms-On-The-Pause performance, ensuring high-quality connectivity that is available even when other antennas would have lost their connection to the satellite. In the field, this means you can count on EXPLORER 8100 to provide you with vital communications whatever the conditions.

### Industry-Leading

EXPLORER 8100 features industry-leading fast satellite acquisition with pointing achieved typically in less than four minutes, making getting connected to a satellite a quick and easy process.

The system is available in both Ka- and Ku-band configurations and works with all major satellite networks. A swappable feed system allows users to change frequency bands, ensuring full choice of what services to use throughout the lifetime of the antenna.



## SYSTEM FEATURES

- Rugged, Single Piece 1.0m Offset Feed Carbon Fiber Reflector for Multi-Band Ku/Ka Operation
- Built-in Wifi and a Web-based User Interface for Easy PC and Smartphone Configuration
- Precision Polarization Drive in Ku-band Configuration
- Dynamic Pointing Correction and Inclined Orbit Satellite Tracking
- Harmonic Drive Gear Systems
- Advanced Blocking Zone Functionality
- Swappable Feed System Enables Switching between KA-SAT, Ku-band and Inmarsat GX with Optional Conversion Kit

## PRODUCTS

408157A-50211	EXPLORER 8100 Ku (8W BUC / 500W ACU)
408157A-50313	EXPLORER 8100 Ku (20W BUC / 1000W ACU)
408157A-50013	EXPLORER 8100 Ku (No BUC / 1000W ACU)
408157B-50551	EXPLORER 8100 Ka (ViaSat eTRIA)
408157D-50111	EXPLORER 8100 Ka (5W BUC)
408157C-50111	EXPLORER 8100GX



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ANTENNA CHARACTERISTICS	Ku-band		Ka-band 5W & GX		Ka-band (ViaSat eTRIA)	
	Receive	Transmit	Receive	Transmit	Receive	Transmit
Frequency (GHz)	10.7 - 12.75	13.75 - 14.5	19.2 - 20.2	29 - 30	19.2 - 21.2	29.0 - 30.0
Antenna Gain	39.3 - 40.8	42.0 - 42.2	43.9 - 44.1	48.1 - 48.3	43.9 - 44.5	47.6 - 47.8
Cross Pol Isolation (dB) within 1dB beamwidth	>21.4	>25	>29.2	>24.2	>20.4	>20.5
Cross Pol Isolation (dB) On-Axis	>24.7	>32.2	>30.7	>27.1	-	-
Feed Port Isolation - Tx to Rx (dB)	40	110 w/filter	-	-	-	-
Beamwidth (degrees) at -3dB	1.6° - 1.9°	1.4° - 1.5°	1.0°	0.7°	1.1	0.7
Beamwidth (degrees) at -10dB	2.8° - 3.4°	2.5° - 2.6°	1.8°	1.2°	1.9	1.3
Antenna Noise Temp. (°K) at 30° Elevation	55°		177°	-	107°	-
G/T - Comm (dB/K)	19.4 dB/K @ 30° EL Midband		21.5 dB/K @ 30° EL Midband		22.0 dB/K (eTRIA 1.5 dB Noise Figure)	
Radiation Pattern Compliance	FCC §25.209, ITU-R S.580		FCC/ETSI		ITU-R S.580	
Polarization	Linear Orthogonal Std.		RHCP (Tx) and LHCP (Rx)		RHCP or LHCP (eTRIA auto selectable)	
Standard BUC Options	8 Watt / 20 Watt		5W Ka-band (NJT5830)		3W ViaSat eTRIA	
EIRP	50 dBW (8W) / 54 dBW (20W)		55.3 dBW		54 dBW	

MECHANICAL	
Positioner	Harmonic Drive
Azimuth	± 195°
Elevation	0-100° antenna boresight (mechanical)
Polarization	± 95° (Ku-band)
Satellite Inclination	± 15°
Stowing & Deploying	Up to 9° per second
Acquisition time (typical)	<4 minutes from cold start

ELECTRICAL	
RF	Rx and Tx: Type F (75-ohm) connectors on ACU for modem interface
LNB	Ku : Multi-band for international use included. 10.7 - 12.75 GHz Ka (5W): Ka Band PLL (NJR2825) 19.2 - 20.2
Motors	Low noise, brushless, DC
Antenna Controller (1RU) Power Supply	90 - 264 VAC, 50/60Hz Single Phase 500W or 1000W option available. BUC Voltage Nom. 48VDC
ACU to antenna cable	10m cable harness, incl. Rx, Tx, BUC power and control, antenna power and control
Power Consumption	Motors Active – 290 Watts Motors Idle – 55 Watts

REFLECTOR	
Size	1.0m single piece carbon fiber RTM reflector
Optics	Offset, Prime Focus
Mount Geometry	2-Axis, Elevation over Azimuth
Polarization	Ku-band: Linear with Motorized Rotation Ka-band: RHCP or LHCP

ENVIRONMENTAL	
Wind Speed: Operational (anchored)	112 km/h / 69 mph
Survival, deployed	118 km/h / 73 mph
Survival, stowed	161 km/h / 100 mph
Temperature: Operational	-33° to +55°C / -27° to 131°F
Survival	-40° to +80°C / -40° to 176°F
Rain	<100 mm/hr
Humidity	0 to 100% (condensing)
IP Rating: Antenna	IP-55
Antenna Control Unit	IP-30

WEIGHT & MEASURES	
Weight	63 kg / 139 lbs with 8W BUC / LNB 60 kg / 132.3 lbs (Ka 5W) 56.5 kg / 124.5 lbs with eTRIA
Length	156 cm / 61"
Stowed: Height / Width	35 cm / 14" / 100 cm / 39"
Antenna Control Unit (1RU)	
- Weight (500W / 1000W)	4.5 kg / 9.9 lbs. / 5.3 kg / 11.6 lbs.
- Dimensions	4.4 x 48 x 33 cm / 1.75" x 19" x 13"
iDirect GX Core Module	
- Dimensions (HxWxD)	1 Unit, 19" RU - 1.7" x 19" x 13"
- Weight	- 3.5 kg / 7.7 lbs

ACCESSORIES	
408157A-100	EXPLORER 8100 Ku to KA-SAT Conversion Kit
408157A-300	EXPLORER 8100 Ku to Ka (5W) Conversion Kit
408157D-100	EXPLORER 8100 Ka (5W) to GX Conversion Kit

For further information please contact:

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