



TOUGHSAT XP MOBILE SATELLITE INTERNET



Ground Control's TOUGHSAT XP Series Mobile Satellite Systems are designed for rugged reliability in the most challenging of environments. Quick one-button deployment provides high-speed Internet & phone connectivity in less than 3.5 minutes... Everywhere.

Manufactured by Ground Control

The TOUGHSAT XP is our FLAGSHIP Mobile Satellite System built on our years of mobile satellite engineering for 1000's of clients since 2002.

Mobile Connectivity

Both the 1.2 and .98 Meter TOUGHSAT XPs mount on top of any vehicle, truck or command trailer roof. Connecting is as easy as pressing the "Deploy" button on the ACU (Antenna Control Unit). The dish will automatically deploy, lock on satellite and create a high-speed network for any in range computers, smartphones or other wireless devices.

All Weather - All Conditions

The TOUGHSAT XP is built for extreme environments. Black anodized aluminum, UV resistant plastics, sealed onboard electronics, a no-backlash braking system and dish-arm shock absorbers for operating in high winds. Even strong magnetic distortions have no effect because the on-board acquisition routine does not require a compass reading. The Toughsat XP has superior IP-66 environmental ratings which means it handles extreme rain, snow and wind.

Our Record Speaks For Itself

Ground Control is an industry leader in Mobile Satellite Internet connectivity in all sectors of business including state and local governments, military, emergency services, oil & gas, and mobile retail to list a few. We offer unique add-on services such as VoIP phones and phone service, CIR's, Cellular-Over-Satellite service, Fax-Over-Satellite, VPN, Point-To-Point Networking, Private Networks, and On-Demand Video Streaming. Our team of experts will help you quickly accomplish your communication goals.

Premium Satellite Service - Single Source

Ground Control offers both equipment and premium iDirect satellite communication that delivers high performance, low-latency, commercial grade service. Our iDirect plans also have low contention ratios unlike consumer services that may have a crawling ratio approaching 400:1. Our service global, and always available when and where you need it, so while it may be more expensive, you get what you pay for with us.



Wireless Hot-Spot with Dual Matrix

The Toughsat TS2 ACU (Antenna Control Unit) has an integrated router and wireless access point, so any wireless capable device within 100' from the vehicle may connect. The Dual Matrix service gives you access to a second satellite at the touch of a button. A second satellite means full scale redundancy of communication if one satellite, or teleport has connectivity issues.

Web Accessible Controller

Intuitive screens give full control over the mobile dish or router from any connected browser. System status & overrides, firmware auto-upgrades, and multiple preference settings.

Customer Service and Support

The most important aspect to any service is the level of support offered. Ground Control provides unsurpassed customer service and support 24 hours-a-day, 7 days-a-week.

GENERAL FEATURES

- ▶ Manufactured by Ground Control.
- ▶ One-button operation.
- ▶ Requires little or no training to operate.
- ▶ No certification or licensing to operate.
- ▶ Dish peaking accuracy is within 0.1 degrees with near zero play.
- ▶ Typical seek time to find and lock on satellite is 3.5 minutes.
- ▶ Establishes a self-contained local area network with one button.
- ▶ Establishes a wireless access point and wiring to computers is optional.
- ▶ System is not affected by magnetic distortions to lock on any satellite.
- ▶ Operates globally in both hemispheres.
- ▶ 6 watt transmitter with 8 Watt optional.
- ▶ Can find any liner Ku-Band satellite.
- ▶ Modular design - components easily replaced if problems occur.
- ▶ Operational in high winds.
- ▶ Operational in temperatures of -20° F to 140° F at 100% humidity.
- ▶ No software to install.
- ▶ Computer control is not required.
- ▶ Autostow safety features if rig is moved or dish goes off signal.

Wireless 1RU ACU (Dish Controller)

- ▶ The front of the ACU has buttons for "Deploy, Stow, Stop, Sat 1 and Sat 2".
- ▶ Dual Matrix - Redundant satellite service.
- ▶ Integrated wireless 4 port router.
- ▶ No fan required - Operates silent.
- ▶ Browser accessible interface screen.
- ▶ Intuitive Interface screens controls dish parameters and firmware updates.
- ▶ Manual overrides for dish pointing, GPS, Autostow, router, gateway.
- ▶ Networking Overrides for IP Address, Subnet Gateway address, DNS.

Diagnostic & Updating

- ▶ Lifetime free firmware upgrading with easy one-button updates with active Ground Control account.
- ▶ System provides accurate technical diagnostics without dispatching a technician to rig site.
- ▶ Remote access into system from Ground Control for performance tuning and troubleshooting.
- ▶ System provides historical log of events for accurate diagnostics and quick correction.



Toughsat XP with Fly-And-Drive Option

TOUGHSAT XP

MOBILE SATELLITE SYSTEM

Simple - Rugged - Reliable - Quick Operation



TOUGHSAT XPs are completely self-contained when power is supplied. There is no external equipment needed for it to deploy, lock on satellite, and create a local area network for high-speed Internet access to multiple computers, smartphones or other devices. Each Toughsat system includes a Mobile Satellite Dish, the XP Wireless ACU (Antenna Control Unit), and the iDirect Satellite Gateway for Ground Control's Premium grade satellite service.

Little or no training is necessary to operate the system. Once the power is on, simply press the "Deploy" button and the dish will deploy automatically, lock on the satellite and create a high-speed network in about 3.5 minutes.

Optional Items

Case Based - The Flyaway Case places a Toughsat mobile system in a reinforced lightweight shippable case. It is designed to be handled and setup by one person.

Fly-And-Drive - At no additional cost, the flyaway ground mounting brackets will double as a fly-and-drive solution. Ship the Flyaway case anywhere, and then mount it on any vehicle roof rack.

VoIP Phones & Phone Service - Standard phone connectivity. \$49.95 a month for 1000 minutes over our iDirect satellite network.



TOUGHSAT XP 1.2 & .98 Meter Specifications

NETWORK (iDirect Services)

DHCP.....	Yes. Wireless and 4 port Ethernet
Wireless Security.....	WPA (TKIP) WPA2 (AES) + WEP 64 and 128bit
NAT.....	Supported by XP Controller integrated router
Firewall.....	Supported by XP Controller integrated router
Port Mapping & Port Triggers.....	Supported by XP Controller integrated router
QoS, ToS, MAC Address Clone, RIP v1 RIP v2.....	Supported by XP Controller integrated router
Networkable client machines.....	Unlimited
Wi-Fi.....	Cisco Linksys 802.11 "G" wireless router
Download Speed.....	Depends on iDirect Service Purchased
Upload Speed.....	Depends on iDirect Service Purchased
Public IP Address.....	Can be included with service

SATELLITE DISH

Reflector Type	1.2 or 0.98 square meter effective area
Mount Geometry.....	3 Axis motor drive (elevation, azimuth & skew)
Deployment Sensors.....	GPS & Tilt Sensor +/- 0.1°

MAXIMUM MOUNT ROTATION

Azimuth	410°
Elevation	165°
Polarization	+95°

RF INTERFACE

Transmit Power	6 watts BUC Transmitter (8 watt optional)
Frequency (Ku-Band).....	10.95-12.75 GHz Receive / 13.75-14.50 GHz Send

DIMENSIONS OF DISH

Stowed Dish Dimensions 1.2 meter	67.5" L x 48.3" W x 12" H (172 x 123 x 30.5 cm)
Stowed Dish Dimensions .98 meter	59" L x 39" W x 12" H (150 x 74 x 30.5 cm)
Mounting Plate...(Both 1.2 and .98 meter)	22" x 57" (56 x 145 cm)
Base Plate (attached to mounting plate).....	14" x 16" (35.6 x 40.7 cm)
Deployed Max Height	1.2m - 68" height / .98m- 52" height (132 cm)
Weight.	1.2m - 133 lbs (60.4 kg) / .98m - 125 lbs (56.7 kg)
Boom Radius Sweep. 1.2 meter / .98 meter.....	61" / 53" from center with 5" min. ground clearance

ENVIRONMENT

Wind Deployed	1.2m - 50mph (80 kph) / .98m - 75 mph (120 kph)
Wind Stowed	140 mph (225 kph)
Max Operational Temperature (at 100% humidity)	Operational -20° F to 140° F (-28° C to 60° C)
Max Survival Temperature (at 100% humidity)	-60° F to 160° F (-51° C to 71° C)
Ingress (Environmental Protection).....	IP66 (can withstand powerful water jets)

POWER DRAW REQUIREMENTS

Dish Controller & Dish Motors (Via 120 VAC).....	15 watts @ 120V (Max 144 Watt power-on surge)
iDirect Modem (via AC120V to DC 24V @ 5 Amp).....	75 watts @ 120V (Max 240 Watt power-on surge)