Sherpa™ is a modular, GNSS-guided parachute delivery system that supplies airborne cargo from high altitudes and substantial lateral distances to a small drop zone, including hard-to-reach areas. It operates autonomously, is easy to use and is rugged, having benefited from over two decades of development and testing.

Designed for Multiple Canopies

Four canopies are sufficient to meet a payload range of 100 to 7500 lb. Each parachute supports a broad weight range and overlaps adjacent ranges, which allows customers to choose the minimum number of canopies to suit their operational needs using a single guidance unit. Each main parachute is paired with a drogue parachute that facilitates HALO/HAHO deployment. Desired opening altitudes are achieved with the use of user-programable release mechanisms that trigger on time, pressure or altitude.

Airborne Guidance Unit (AGU)

The AGU is the main component of the Sherpa system, which is available in two versions: Ranger and Provider. The Ranger AGU has a maximum payload capacity of 1200 lb (544 kg). The Provider AGU includes an additional battery and larger servo motors making it capable of carrying a payload ranging from 100 lb (45 kg) to 7500 lb (3400 kg). Both AGUs can use a selection of parachutes suitable for the supported payloads and have a radial landing accuracy of 100 m (50% CEP).

Sherpa™ can be easily integrated with different types of cargo payloads, including standardized Container Delivery Systems (CDS) designed for aerial delivery on military aircraft. Sherpa has been successfully deployed with various platforms such as 463L, Type-V, Enhanced Container Delivery Systems (ECDS), Low Cost Containers (LCC) and custom payloads, including Special Operations Combat Expendable Payloads (SOCEP).

Sherpa™ is operationally supported by a family of MMIST products: LaunchPADS for mission planning, SkyLink for accompanying personnel and Drop Sonde for up-to-date wind estimation and planning.

System Configurations and Key Vitals

	700 Sherpa System	1200 Sherpa System	2200 Sherpa System	7500 Sherpa System
System P/N	062446 Ranger 075638 Provider	075639 Ranger 062448 Provider	- 062443 Provider	- 062450 Provider
Parachute Size	400 sq-ft [37.1 m^2]	900 sq-ft [83.4 m^2]	1200 sq-ft [111.4 m^2]	3000 sq-ft [278.7 m^2]
Suspended Payload – Min Suspended Payload – Max	100 lb [45 kg] 700 lb [317 kg]	400 lb [181 kg] 1200 lb [544 kg]	700 lb [318 kg] 2200 lb [988 kg]	5000 lb [2267 kg] 7500 lb [3400 kg]
Deployment Altitude – Max Deployment Altitude – Min Expected Glide Ratio → High Glide Option	29000 ft MSL 3500 ft AGL 3:1 5:1	29000 f MSL 4500 f AGL 3:1 -	20000 ft MSL 4500 ft AGL 3:1 -	18000 ft MSL 5000 ft AGL 3:1 -
Parachute system weight [mass] (textiles, bars and side plates; excludes AGU)	55 lb [25 kg]	90 lb [41 kg]	110 lb [50 kg]	395 lb [179 kg]

Ranger

P/N 068787
100 – 1200 lb payload
24 kg mass (51 lb)
34 cm x 21 cm x 44 cm
1 Li-ion BB-2590/U battery
Multiple radio configurations

Provider

P/N 063860
100 – 7500 lb payload
29 kg mass (62 lb)
41 cm x 21 cm x 44 cm
2 Li-ion BB-2590/U batteries
Multiple radio configurations

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Operational Performance and Limits

Operational Aspect	Performance or Limit
Landing Accuracy	100 m radius at 50% CEP
Maximum Deployment Altitude	29,000 ft MSL [8 840 m MSL]
Minimum Deployment Altitude	3,500 ft AGL [1 066 m MSL] – limit is parachute-dependent
Parachute Opening Modes	HALO and HAHO Capable (programmable drogue delay based on GNSS altitude, pressure altitude or time)
Landing Modes	Into-wind or user-selectable approach heading or manual (remote control)
Thermal Operating Range	-60 °C to +60 °C (when operated in accordance with the Sherpa Operator Manual)

Interfaces

Interface	Description
GNSS	Multi-constellation support
Mission Planning	Wired (USB) and wireless (802.11 b/g/n)
Radio (Data)	Modular radio card configuration for supported bands: L-UHF, U-UHF
Remote Control	Monitor and re-task via the MMIST Rugged Tablet (MRT)

Qualifications

Qualification Aspect	Standard
ESD	IEC 61000-4.2, Level 4; AECTP-500, NCS12 (Cat. 501)
Pressure	MIL-STD-810 500.6, Procedure III; AECTP-300/312, Procedure III
Radiated Emissions	MIL-STD-461, RE102; AECTP-500, NRE02
Sand and Dust Ingress	MIL-STD-810 510.5, Procedures I & II; AECTP-300 313, Procedures I & II
Shock	MIL-STD-810 516.5, Procedure I (20 g)
Water Ingress	IEC 60529, IPx7; MIL-STD-810 512.5, Procedure I (Immersion 1 m, 30 min)

Optional Features and Key Ancillaries

Option	Description
Beacon Lights P/N 063947	Operation in low-light or at night is aided by adding navigation lights to the Sherpa's AGU and/or payload. Beacons support both IR and red/green.
GPS Redistributor P/N 063156	Using a roll on/off kit, the redistributor converts aircraft-external GNSS signals to wi-fi for safe dissemination in a cargo bay to hot start the Sherpa AGU with live data prior to release, saving valuable time otherwise spent locking during free-fall.
Water Landing P/N 065149, 067004	For maritime operations, adding a floatation kit triggers buoyancy devices to inflate on contact with water. This option pairs with a requisite battery-sealing kit.
Remote Control P/N 073300	MMIST's MRT allows an operator to track Sherpa's flight progress, re-task to an alternate landing point and, if needed, direct manual steering (ground based). See MMIST's SkyLink product information for details.

Safely and accurately delivering cargo to a point of need.

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