



Merlin

Command and Control

The QinetiQ Target Systems' Merlin ground control station is a smaller version of the successful "Wizard" ground station, which has been in operation around the world for almost 20 years.



The Merlin has been developed using the same architecture and systems, such as the Wizard ground station that has been successfully operating the entire range of QinetiQ unmanned vehicle systems on land, in the air and on the sea.

The Merlin ground station may be configured to control up to two Banshee, Snipe or Sprite targets simultaneously. It is packed in a rugged, moulded, military specification, 19" rack container to provide a truly mobile unit. Within the unit are mounted 20 Watt command link transmitters and telemetry link receivers (one or two off, depending on the number of targets being operated). The unit is fitted with the necessary decoders and encoders to allow it to transfer information and data to the computer unit, connectors for supplementary manual input controllers, and connectors for RF antennae.

The Merlin can be supplied with an uninterruptable power supply (UPS) and will operate on 110 or 220 volt mains supply.

The 20 Watt transmitters allow operation of aerial targets to a range of 100km using directional antennae. Use of Omni-directional antennae allows operation to 70km (RF line of sight must be maintained).

Key Features

Simultaneous operation of multiple targets

Automatic station keeping

Autonomous way point navigation

Real time telemetry/status display

Map and/or imagery display

Embedded trainer

Merlin configuration

Computer processor unit

This is a ruggedised specification laptop, running a Windows operating system. Each computer can simultaneously display target telemetry data for one or two targets and can record all ground station, command and target telemetry data for both targets on the built-in hard disk drive.

The target telemetry displays can include the following data for each target:

Height, track, engine RPM, latitude, longitude, battery voltage, airspeed, ground speed, autopilot status, GPS status

Computer unit typical specification

Central processor unit	Core 2 duo P8400 2.26 GHz or greater 2GB DDR3 13333 MHz
RAM	320GB SATA
Hard disk drive	DVD-RW
Optical drive operating system	Windows
Display	17.1" WXGA (1440 x 900) CCFL backlight, daylight readable 87-keyboard, standard keypad, PS/2 compatible touchpad (works with water spray and gloves); mouse supplied

The principal characteristics of the fitted transmitters are:

Command transmitter unit

Transmitter type	FM data transmission
Tuning range	300 MHz to 470 MHz, specified at the time of ordering, to suit target command frequency. Other frequencies available on request
Method of tuning	Synthesised
TF channel capability	Single channel
Output power (mean)	20 Watts

Telemetry receiver module

Receiver type	Dual conversion, superheterodyne
Tuning range	300 MHz to 470 MHz, specified at the time of ordering, to suit target telemetry frequency. Other frequencies available on request.
Method of tuning	Synthesised
Maximum bit rate	2400/9600 bps
Sensitivity	<-110dBm for mean 10% valid data output

Note: Due to continuous process improvements, specifications are subject to change without notice.

Collaborating with QinetiQ

At QinetiQ we bring organisations and people together to provide innovative solutions to real world problems, creating customer advantage.

Working with our partners and customers, we collaborate widely, working in partnership, listening hard and thinking through what customers need. Building trusted partnerships, we are helping customers anticipate and shape future requirements, adding value and future advantage.

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