

Checkfire

Advanced GPS Based Field Artillery Safety System for Independent Verification of Gun Azimuth and Elevation



Main Advantages & Features

- A modular artillery safety system ideal for OEM or retrofit applications
- Gun orientation data transmission via convenient radio link
- Designed for ease of installation
- Designed to operate from locally derived vehicle power
- Instro's intuitive field artillery safety officer application software
- Minimal training requirement both for the user and the maintainer
- Versatile- A single safety officer can monitor a battery of up to eight guns

Application

- Field artillery training exercise safety

Checkfire is a self-contained GPS based field artillery safety system designed for use during field artillery training exercises to provide the safety officer in charge with a remotely operated, independent and reliable means of verifying gun azimuth and elevation.

The system is based around a high performance GPS orientation and attitude module used in conjunction with Instro's field artillery safety officer application software.

The versatile Checkfire system is supplied as individual sets of cased equipment containing items relating to either safety officer or gun crew.

Safety officer equipment consists of a rugged laptop with embedded field artillery safety system software, associated power supplies, cables and radio modem.

Gun crew equipment consists of the GPS orientation and attitude module along with all of the required cables, mounting brackets, fixings and tools to enable the gun crew to easily deploy and install the equipment on their gun.

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Outline Specification

Gun Crew Equipment:

GPS Orientation and Attitude Module:

Azimuth accuracy	20 Mils 2σ
Roll and Pitch accuracy	9 Mils 1σ
GPS position accuracy	5m CEP
GPS TTFF (Warm start)	<150 sec
Orientation Backup	3 axis Inertial Measurement Unit
Power Supply	18 to 32Vdc
Operating temperature	-35°C to +55°C

Radio Modem:

A common component other than antenna used by both gun crew and safety officer

Controls	Rugged and secure on/off switch and LED status/ power indicator
Power Supply power (or alternate	18 to 32Vdc vehicle +5VDC USB)
Radio frequencies	2 user selectable 869.45MHz or 869.525MHz to European EN-300-220 standards to allow license free operation in Europe.
Transmission Power	500mW
Antenna type	Flexible rubber coated $\frac{1}{2} \lambda$ Dipole whip antenna with FME CO-AX connector

Cabling:

Data / Power cable, GNAV IMU to Radio Modem

Vehicle power cable

Mechanical Interfacing:

GPS module and Modem mounting brackets bespoke to the vehicle

Safety Officer Equipment:

Rugged Laptop:

Laptop type	GETAC V100
Pre installed software	Field Artillery Safety Officer application software Laptop lock down security application software
Password Access	Yes - 1 admin, 9 user and 9 maintainer passwords
Data Logging	Yes - Files can be transferred via USB for post mission analysis

Radio Modem:

A common component other than antenna used by both gun crew and safety officer.

Controls	Rugged and secure on/off switch and LED status/ power indicator
Power Supply	Powered directly from Laptop 5Vdc USB
Radio frequencies	2 user selectable 869.45MHz or 869.525MHz to European EN-300-220 standards to allow license free operation in Europe
Transmission Power	500mW
Antenna type	Vertical collinear 900Mhz mobile mag mount whip antenna with 2 meters CO-AX cable and FME connector

Cabling:

Interconnecting power and USB cables

5 meter USB diagnostic cable used for system calibration and maintenance procedures

Vehicle Power Supply:

12 to 32Vdc rugged MIL SPEC power supply unit to provide power and battery charging to the laptop

Vehicle input connector options such as cigar adapter, ring terminals, Gabriel



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