

## High Performance DC Helmet Tracking System

The GEC-Marconi Avionics second generation Helmet Tracking System (HTS) is currently in use by a number of fast jet and helicopter programmes. This flight proven fixed and rotary wing system has clearly demonstrated the advantages of the direct current (DC) electromagnetic system over conventional helmet tracking systems.

GEC-Marconi Avionics is further developing the DC Electromagnetic HTS to provide :-

- Significantly enhanced performance.
- Miniaturised HTS electronics.
- Full module interchangeability.

The HTS employs a unique pulsed direct current technique which has the advantage of being much less susceptible to cockpit metal than equivalent AC electromagnetic systems. Cockpit mapping, once conducted for any aircraft or cockpit type, is valid for the whole fleet. Mapping only once is a significant cost saving.

GEC-Marconi Avionics has developed advanced techniques for correction of the metallic induced effects of both helmet and cockpit, resulting in a system which has very high installed accuracy.

The DC Helmet Tracking System is suitable for any application where accurate head orientation and position are required. It is normally used with a Helmet Mounted Display (such as the GEC-Marconi Avionics Viper, Knighthelm or Crusader HMD) to enable space stabilised symbology to be displayed, slave sensors to the user's line of sight and for weapon aiming.



# The Helmet Tracking System for all Fixed and Rotary Wing Applications



Component parts of the Helmet Tracking System

## Key features of the High Performance DC Helmet Tracking System are :-

- **Simple Installation**
  - Miniature Lightweight, Rugged, Helmet Mounted Sensor
  - Single, Small, Cockpit Mounted Transmitter Assembly
  - Pilot Control Unit incorporating a small interface electronics module
  - Single HTS Electronics Module normally remotely located in Avionics Bay, within the Helmet Mounted Display Electronics Unit.
- **Suitable for a Wide Range of Applications**
  - Fixed Wing
  - Helicopters
  - Simulators
  - Ground Vehicles
- **Single or Two Seat Operation**
- **High Angular Accuracy**
  - Less than 0.2 degrees Line of Sight (installed)
- **Full Angular Coverage**
  - Azimuth  $\pm 180$  degrees
  - Elevation  $\pm 90$  degrees
  - Roll  $\pm 180$  degrees
- **Low Angular Noise**
  - Less than 0.05 degree
- **Large Motion Box**
- **High Update Rate**
  - Up to 200Hz (single seat), 100Hz (dual seat)
- **Low Latency**
  - Less than 15 milliseconds
- **Outputs available in any format**
  - Angles
  - Direction Cosines
  - Position

*Selected for the German Tiger Helicopter development programme*

## GEC-Marconi Avionics Limited Displays Division

Airport Works, Rochester, Kent, ME12XX. England      1 South Gyle Crescent, Edinburgh, EH12 9HQ. Scotland

**GEC-Marconi**  
AVIONICS

Telephone John White on (01634) 816890 Facsimile (01634) 816748

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