



## SA electronics companies profile: EDH

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**An innovative electronics company that has not received the attention it deserves is *EDH*, which is located in the Stellenbosch Technopark. The company was founded in 1989 by electronic engineer Henri Johnson who remains a driving force behind the company's innovations.**

Its initial focus was on the military market with its core expertise being the design and development of 3D tracking radar systems.

A major success was the launch in 1992 of a purpose-built Ballistic Measurement

Radar based on phased array technology, that measured projectiles in flight up to ranges of 25 km. Ballistic characteristics measured included the velocity, spin rate and the x-y-z position in space. The velocities were measured with an accuracy of 0,01% and angles within 0,05°. Both the needs of test ranges (to measure the trajectory or part of it) and tactical requirements were addressed. The latter saw compact systems developed that could be permanently mounted on naval and artillery weapons to measure the initial velocity of every round fired. The tactical system is designed for the high rates of fire associated with these weapons.

The latest EDH military systems are even more sophisticated and can measure a projectile (such as the rounds fired by the G5 and G6 howitzers) over distances in excess of 50 km and at speeds of up to 3000 m/s. EDH developed the muzzle velocity (MV) radar, the processors, software and auxiliary systems such as the gun brackets and flash detector. Full training is provided for users enabling them to install, operate and maintain the equipment. EDH also offers a velocity simulator that can be used for functional checks of the MV system. The tactical systems offered can be fitted to new weapons or incorporated into new systems with equal ease. All types of projectile from 4,5 mm calibre or greater can be measured with EDH systems. The company's market for its military products is not only South Africa and it has representatives located in Europe, Australia, the Far East and the UK.

Although having a strong market in the military area, EDH looked at other commercial areas where its technology could be utilised to advantage and initially, it focused on the sports market. One of the contentious areas in sport involved cricket and the use of the third umpire to rule on controversial issues such as LBW. In 1996, EDH released its first sport innovation for cricket, called EDH SpeedBall, which using Doppler radar techniques, has the power to interrogate the flight of the ball in three dimensions. The radar technology is able to track the ball from when it

leaves the bowler's hand (providing ball speed of course) until it hits the bat, pad or goes through to the wicket keeper. Even the rotation of the seam can be tracked, impossible with more expensive camera-based systems. Current users of the EDH Speedster system include all major TV and media operations.

The SpeedBall was followed up in 2001 with the EDH tennis serve system launched under the name EDH RacquetRadar. Since 2002, the tennis system has been supplied to the Wimbledon Championships and has been supplying scoring, serve speed and serve direction for a host of events including the Davis Cup and Fed Cup events. Besides this application the EDH RacquetRadar system can also determine the speed of the racquet and by looking at the difference between ball and racquet speed can provide a very accurate comparison between the performances of various racquets.

EDH followed up its tennis system in 2003 with what could become its most successful sports product, namely the FlightScope golf system. FlightScope is a portable unit that uses the same phased-array tracking radar and can accurately record a host of parameters such as club head speed, ball speed, carry distance, launch angle and other critical factors that could enhance an individual's game. The ability of golfers and instructors to view the ball trajectory at various angles allows them to make the necessary adjustments for enhanced performance. As with tennis racquets, the system can also be used to measure the consistency of clubs and provides a scientific method of selecting the best club to fit an individual player. FlightScope has received rave reviews from professionals and golf magazines in the UK, USA and South Africa and according to reports, it is the official system used by the USGA, the R&A and major coaches in the USA.

The EDH Tennis Simulator based on 3D RacquetRadar allows tennis players to practice their serve, while another recent innovation is the company's GoalTrack

Soccer Simulator where a soccer ball is kicked from a position in front of a projected video screen. This system allows players to practice penalty shots, reaction times and moving target shots. Still to come is the company's new product that will address baseball.

Not satisfied with his innovations in the sports arena, Henri Johnson has taken EDH into the industrial market using funding where possible from the SPII. One such venture (listed as a success story by the SPII) was the development of the WizCam, a high speed optical comparison and recognition system that has many applications in quality and process control. The system comprises a digital camera linked to a powerful multiprocessor that can accurately compare products to a required specification. Current applications include inspection of blow-moulded bottles, canning and product filling lines. A range of WizCam products allows inspection rates from 1500 to 3000 parts per minute.

Following on the WizCam came the ArmCam, developed in collaboration with UCT, which is a closure liner inspection system. In particular, the system can be used to inspect the liner area of plastic screw-on caps for PET bottles and a recent installation was carried out at the major supplier of plastic closures for Coca Cola in South Africa. In addition to this range of products EDH offers the WeldMonitor used to monitor weld seam integrity and has undertaken custom solutions against specific customer requirements using their camera systems and other sensors.

EDH must be praised for its continuous innovation and the development of new markets very different from its once sole military focus.