## Two new components at Munich exhibition

Two completely new components – a Joystick Controller and a High Power X-band Junction Circulator – were unveiled by the Specialized Components Division at the Electronica '76 exhibition in Munich.

The Joystick Controller (Type F3049) has been developed by Marconi in two versions – the 01 and 02 – to provide an extremely reliable and sensitive mechanical control for operating many types of electronic equipment. Both versions are ideal for use as man-machine interfaces in the operation of radar and graphical displays and industrial machines etc.

A unique feature of the Joystick Controller is that it is completely solid-state with no potentiometers, gears or sliding contacts, thus ensuring high reliability and virtually eliminating the need for maintenance.

The 02 version of the equipment also has a momentary action, push button switch located within the handle, which allows the user to operate external functions at will.

The Circulator (Type F1158-02) is ideal for use in many types of radar applications, at both high peak and mean power levels, without the need for water cooling. It can also be operated as an isolator by the addition of a suitable load on one port, the power rating being dependent on the expected reflected power.

It is a compact high-power aircooled junction circulator in R100 waveguide, operating over the frequency band 8.5 to 9.6GHz at a normal working power rating of 60kW peak, 500W mean. Isolation is 20dB minimum and isolation loss 0.3dB maximum over the temperature range 0°C to +85°C. The circulator also gives performance over the extended frequency range 8.0 to 10.3GHz and ambient temperature range -40°C to +85°C.



H.R.H. Duke of Kent talking to D. Gill, Manager, Specialized Components Division, at Electronica '76