



## DDA266 SITE DIVERSITY CONTROLLER

- \* *Manages main and backup antennae*
- \* *Multi-polarisation support*
- \* *Switching of individual services/transponders*
- \* *Manual and automatic control*
- \* *Manages complex switching sequences – avoids human error*
- \* *WAN-based comms for separated sites*
- \* *Configurable algorithms*
- \* *Browser-based configuration*
- \* *10/100BaseT Network Port*
- \* *TCP/IP sockets interface*
- \* *SNMP support option*
- \* *RS-232/422/485 Serial Interfaces*
- \* *2U case*
- \* *Dual power supplies*

The DDA266 diversity controller manages two physically separate ground station antennae to ensure that the preferred site is transmitting. This is usually to take account of temporary adverse weather conditions at one of the sites; rain in particular. Both transmit and receive paths can be accommodated. The unit bases its decisions on received signal levels at each site, usually derived from the satellite beacon. The switching criteria can be adjusted to optimise actions. As well as a fully automatic mode, the unit can operate in an advisory capacity, and execute the site switchover as an indivisible sequence when commanded.

Switching can also be orientated to handle specific services (typically, each being one HPA supporting one transponder).

Manual switching can be carried out in response to RC&M commands; either to switch site for a single service, or for an entire polarisation. In the event of switching errors, the controller endeavours to restore the previous configuration.

The ability to define switching sequences can be useful simply to avoid human error when carrying out complex routing changes, as well as usually being faster than any human intervention.

The standard unit is packaged in a 2U high 19" rack, with optional front panel mimic displaying current status, and allowing manual control of switching. All units have dual redundant mains power supplies.

All units have one network interface and up to two serial interfaces. One of the serial ports provides RC&M facilities, including configuration of many of the parameters of the unit. The second serial port may be used to communicate with some of the

controlled equipment.

The unit has a 10/100BaseT network port, and supports a standard web browser for basic unit configuration. This covers such items as the unit's network settings, and serial port settings. There is also a simple event log display. The web interface does not include any functionality relating to the switching algorithm.

The unit functions in a similar manner to a redundancy controller, albeit with a more sophisticated algorithm to determine when to switch. It includes automatic and manual modes, and optionally a key-enabled switch to force use of a specific site (intended for use during maintenance).

The unit requires connectivity with all the relevant switching and monitoring elements of the overall system. Typically this is provided over a high-speed WAN, although other transport media are possible. The link requires low latency to achieve the best system performance.

When carrying out a site swap, the overall switching sequence has been designed to ensure that the satellite always receives an uplink signal, and each step of the sequence is confirmed before moving to the next.

The switching sequence is fully configurable through a simple scripting language, and includes options such as waiting for confirmation of physical switching before moving on.

Transmit switching is achieved by commanding the waveguide switching controllers at the two sites; specifically by control of the final 'to air/to load' switch.

Where receive switching is required, it typically is achieved through use of a switch matrix situated at one of the sites, via its network port.

The unit requires a source of signal level from each site; typically from a beacon receiver. The signal level is polled frequently (typically once or twice a second), and then averaged over various sample counts for later use. A long-term average gives a 'clear sky' level, while averages over shorter periods are used within the switching algorithm.

In automatic mode, switching decisions are based on defining 'poor' and 'bad' signal levels, with configurable debounce times. Other algorithms can be supported on request.

The unit supports a number of standard devices, including the DDA267/DDA286 waveguide switch controllers, DDA291 and Novella beacon receivers, Vertex antenna controllers and ETL switches. Other devices can be added on request.

## **Ordering Information**

Please discuss your requirements with the factory, since the overall specification will depend on the details of the system where the DDA266 is being installed.