DOUBLE D ELECTRONICS LTD

DDA78-41/43 VRPC Controller

* Supports Apollo VRPC
* Ku-Band and X-Band options
* Supports phase combined and single HPA operation
* OLED meter for power indication
* Muting control when used with HPAs
* Single or dual mains supplies
* 10/100 BaseT network port for configuration, RC&M
* RS-422/485 serial port for RC&M
* 2U 19" rack mount with integral RF
* Summary alarm output
* Other variants possible

The DDA78-41/43 family manages the phase combining of a pair of HPAs using a VRPC (Variable Ratio Power Combiner) from Apollo. It manages the various RF switching options. The package includes the phase adjuster and RF splitter.

The primary configuration is a 2U high rack mount unit incorporating all RF components.

Other configurations are possible, including a 1U rack mount unit with RF components mounted externally.

The unit will operate with a pair of HPAs from virtually any manufacturer - the main interface requirements are a suitable alarm output from the HPA, and a mute (RF Inhibit) input.

In automatic mode, a failed HPA is switched out, and the remaining operational HPA used.

A manually operated phase adjuster, together with a display of forward and reverse power at the VRPC, allow the output power to be maximised at a given frequency.

RC&M features include both 10/100baseT and serial ports, through which unit status is available and switching can be controlled.

The unit is generally functionally equivalent or superior to to other 2U DDA78 controllers supporting the Apollo VRPC, but physical features such as size, front and rear panel layouts, connector types and pinouts may vary.

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SPECIFICATION

Physical:	Controller - 19" rack, 2U high, 460mm deep (excluding connectors).
Power:	DDA78-41 – single mains supply DDA78-43 - Dual mains supplies 90-254V a.c., 48-62Hz, 150VA max. via IEC mains inlet
Switching:	9-D socket and 15-D socket for CRCA interface. Optional interface for antenna/load waveguide switch
HPA Interface:	9-pin D-socket per HPA - alarm input accepts volt-free contact or NPN open collector. Volt-free changeover contact for muting.
VRPC Interface	15-pin D-socket with controls and tellbacks to manage VRPC position. +5V 0.1A power output for position tellbacks +24V 0.5A supply intended for fan power +24V 1.6A supply available for VRPC drive
Network Port	10/100BaseT RJ-45 Configuration of some features via web browser RC&M via TCP/IP using same format as serial messages
Host Serial:	9-pin D-socket; RS-422/RS-485, fixed 9600,7,e,1. Supports "Printable ASCII" and "STX/ETX" protocols. (Note that the phase adjuster and RF levels are not accessible via this port).
Summary Alarm	9-pin D-plug; volt-free relay contact signals alarm on any detected fault
RF level	Two BNC connector to accept output of diode detector as indication of antenna and load power levels
RF frequency	DDA78-41/Ku – Ku Band 13.75-14.5GHz DDA78-41/X – X-Band 7.9 – 8.4 GHz
RF Connections	SMA
Meter	OLED display showing indicative forward and reverse power from VRPC based on diode detector inputs. Can be adjusted to suit system.
Accessories	One or two diode detectors (and associated couplers) are required to measure the output power into the antenna and/or the load - to be procured separately.

Ordering Information

Part number	Outline description
DDA78-4x/Ku	2U high controller with integral manual phase adjuster, splitter and isolators for Apollo VRPC operating at Ku Band 13.75-14.5GHz
DDA78-4x/X	2U high controller with integral manual phase adjuster, splitter and isolators for Apollo VRPC operating at X-Band 7.9 – 8.4 GHz

Many other combinations are possible (including application specific units); please contact the factory to discuss your requirements.

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