

2.6 Power Rectifier

The Power Rectifier used in a typical deployment converts 120 Volt AC current to 27 Volt DC current, making it possible for the MCPAs to be powered by an AC power source. The Power Rectifier's ability to hold up to three power modules makes it easy to swap out an existing power module or add a new one as necessary for increased DC power.

The Power Rectifier used in your deployment will have one power module. Each MCPA has two power connections: +27V DC (red) and the Return (black) to the rectifier being used in the system. Each power module in the rectifier requires its own 120 Volt power source.

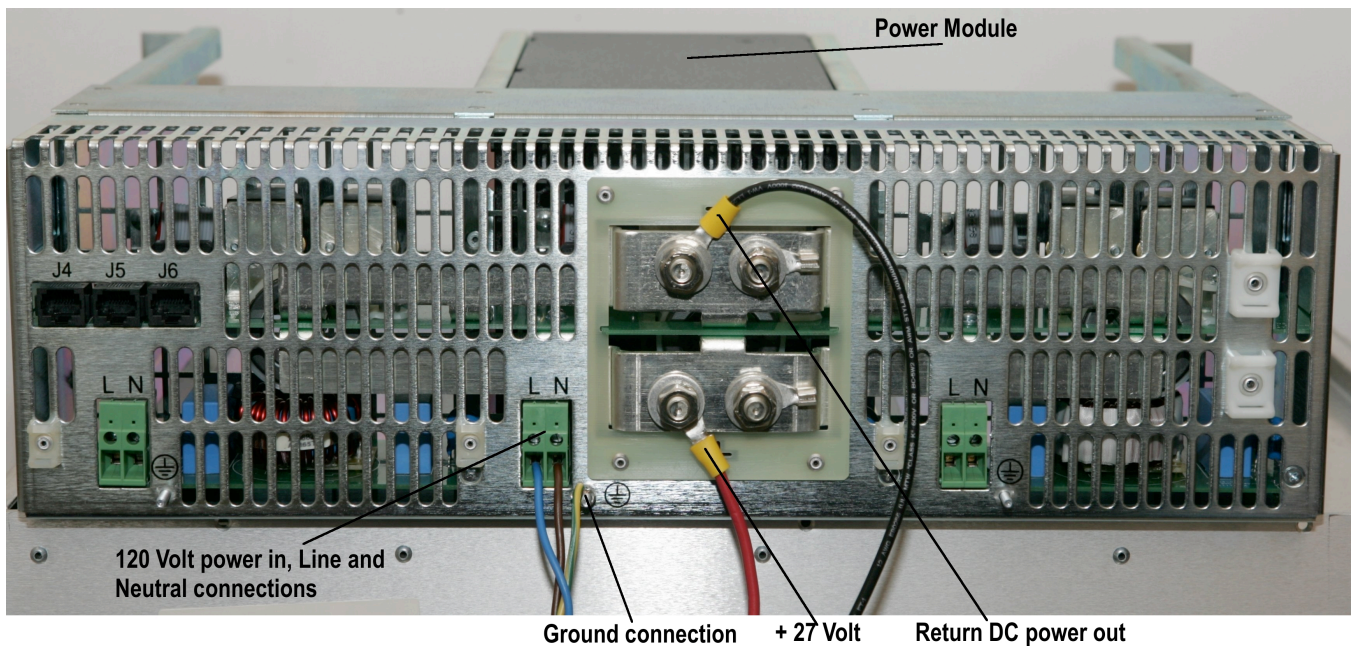


Figure 2.6: Powerwave Power Rectifier

2.7 Terminal Server

The Terminal Server provides serial functionality over the network for both serial consoles and serial data connections. The Terminal Server 16 can provide sixteen independent serial connections from a single IP address to multiple servers, allowing access to network server applications that support TCP/IP. This prevents the need to install serial cards in multiple servers at a location, and enables the use of servers that cannot support a serial card.

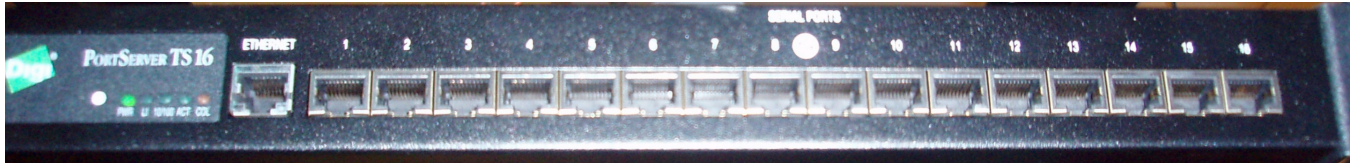


Figure 2.7: Digi Terminal Server TS 16

Chapter 3

System operation

3.1 System startup

After all equipment connections have been correctly made, the system will be ready for operation. To start the system:

1. Switch on the Protium RF unit.

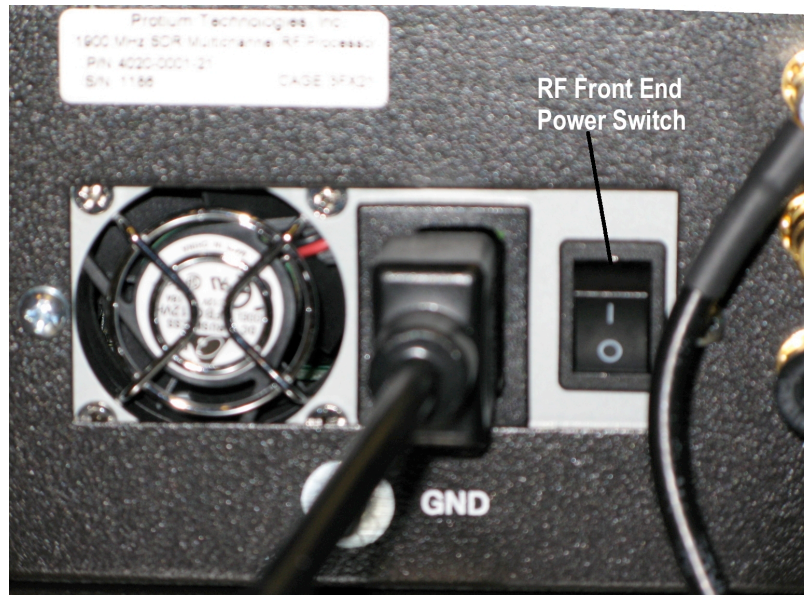


Figure 3.1: RF Front End Power Switch

2. Power on the HP DL380 G5 BSS Server containing the Anywave software.

**BSS Server
Power Button**



Figure 3.2: DL380 G5 Control Panel

3.2 System Usage

Once all the Anywave components are installed, configured, and running, the system should be able to register phones after 60 seconds. The phones being used must be properly configured to function correctly. The necessary configuration parameters include:

- provisioning for use at the MSC
- having a SIM card installed
- ensuring that the phone can be used on the network, i.e. not locked to a competing network
- using the correct frequency band for the BTS

3.3 BTS Software Operations

The BTS software is configured to automatically start approximately five minutes after server boot. If there is an operation failure, the BTS software will automatically restart without user input.

3.4 References

- For further information on system installation and correct system component connections, please see the “Vanu Anywave Installation Guide.”
- For further information on monitoring and management operations, please see the “Vanu Anywave OA & M System User’s Guide” for detailed information on the Vanu, Inc. web-based OA & M system.

Appendix A

Acronym Glossary

Table A.1: Acronym Glossary

ARFCN	Absolute Radio Frequency Control Number
BSC	Base Station Controller
BSS	Base Station Subsystem
BTS	Base Station Transceiver Subsystem
CDMA	Code Division Multiple Access
GSN	Gigabyte System Network
GSM	Global System for Mobile Communications
GPRS	General Packet Radio Service
GPS	Global Positioning System
HLR	Home Location Register
IMEI	International Mobile Equipment Identity
IMSI	International Mobile Subscriber Identity
MCPA	Multi-Carrier Power Amplifier
MSC	Mobile Station Controller
PA	Power Amplifier
PCI	Peripheral Component Interconnect
PCS	Personal Communications Services
PCU	Packet Control Unit
PPS	Port Pulse Per Second port
RF	Radio Frequency
RH	Radio Head
RTP	Realtime Transport Protocol
SDR	Software Defined Radio
SIM	Subscriber Identity Module
SMS	Short Messaging Service
TRAU	Transcoder and Rate Adaptor Unit
VLR	Visitor Location Register
VoIP	Voice over Internet Protocol
VPN	Virtual Private Network
WAP	Wireless Application Protocol
WIC	Wide Area Network Interface Cards

Index

- A interface, 4
 - message, 7
- Abis
 - interface connections, 7
- Abis interface, 4
- AC current, 13
- Air interface, 9
- Analog-to-Digital
 - conversion, 4
 - converters, 9
- Antenna
 - main, 10
- Base station
 - GSM, 4
- BSC
 - definition, 4
- BSS
 - system startup, 15
 - system usage, 17
- BTS, 9, 10
 - definition, 4
 - software, 18
- Bus Bar, 12
- Channel assignment, 7
- Configuration parameters
 - phone, 17
- Data connections, serial, 14
- DC
 - breaker, 12
 - current, 13
- Debian, 7
- Digital filtering, 9
- Digital-to-Analog
 - conversion, 4
 - converters, 9
- duplexer, 9
- Gb interface, 4
- Gbis interface, 4
- GPRS, 4
- GPS Timing Source, 8
- GSM, 4
 - phones, 17
 - configuration, 17
- Handovers, 7
- Hardware
 - overview, 6
- Linux, 4, 7
- MCPA, *see* Power Amplifiers
- Mobile phone, 9
- Network
 - functionality, 4
 - radio access, 4
- PCU, definition, 4
- Phones
 - registration, 17
- Power Amplifier, 11
- Power Chassis, 11
- Power Shelf, power connections, 13
- Power Subrack, status LED, 11
- Power surges, 12
- Protium RF Front End, *see* RF Front End
- Protocol processing, 4
- Radio access, 4
 - Network, 4
- RF Front End, 4, 9, 11
 - Duplexer, 9
 - Up/Down Converter, 9

- up/down converters, 9
- RF subsystem, 9
- Serial
 - cards, 14
 - connectivity to Ethernet, 14
 - console, 14
 - functionality to Ethernet, 14
 - port, 11
- Signal processing, 4
- Subsystems, 4
- System
 - patches, 5
 - updates, 5
- System operation, 15
- System Operator Role, 5
- System usage, 17
- TCP/IP, 14
- Terminal Server
 - description, 14
- Timestamping, injection, 9
- Timestamps, 8
- TRAU
 - definition, 4