

The Orion5r is a rugged, modular automation platform designed for harsh utility substation and process plant environments. With the appropriate software and hardware modules, the Orion5r can perform the following functions:

- **Substation Smart RTU**
- **Protective Relay Integration**
- **Alarm Annunciation**
- **Sequence of Events (SOE) Recording**
- **Distribution Automation**

The 2U 19-inch chassis supports up to seventeen user serial ports, 2 Ethernet TCP/IP ports, internal dial-up modem, IRIG-B, and discrete inputs and outputs. Sixteen of the user ports can be ordered with RS-232, RS-422/485 or fiber optic connectors. Most importantly, the Orion5r contains no fans, no hard drives, and no moving parts.

Port and protocol configuration is completely flexible. The Orion5r is capable of using a different protocol for each port with any combination of master and slave protocols. Multi-dropped devices are supported when protocols and communication media allow. Each port uses hardware buffers for independent high-speed data serial communications.

Configuration is facilitated by the simple drag-and-drop interface of the NovaTech Communications Director (NCD). NCD pre-packages IED protocol information, allowing the user to focus on the project rather than protocols and IEDs. Users can configure the system without connecting to the IEDs, enabling configuration both offline and outside of the substation.

Separate polling groups can be configured to adjust update times on a per point basis. Unsolicited responses from IEDs are also accepted.

Over 50 math and text manipulation functions can be applied to any data point, and user logic simulation software provides offline troubleshooting.

State of the art onboard diagnostics allow the user to view port communications, data values, and communication statistics. These tools provide a clear definition of device and point status.

Orion5r Automation Platform



Orion5r Front and Rear View

Expansion Cards

Serial

- A:** RS-232 Standard
- B:** RS-422/485
- C:** ST-Fiber Optic
- D:** Bit Card (Bit-to-byte conversion)
- E:** RS-232 Isolated
- G:** RS-485 w/IRIG-B
- H:** V-Pin Fiber Optic w/IRIG-B

Specialty:

- IB:** IRIG-B

Communication:

- ENET:** Ethernet 10/100 BaseT
- MDM:** Internal dial-up modem
- 2ENET:** Dual Ethernet 10/100BaseT

IED Protocols

- ABB DPU
- Allen Bradley DF1
- Areva KITZ
- Areva Optimho
- Basler DFPR
- DNP3 Serial and IP
- GE DLP
- GE Moisture Meter
- GridSense PAC
- IEC 870-5-103
- Keithley Meter
- Modbus Serial and TCP
- PG&E 2179
- RFL
- SEL® ASCII
- SEL® Fast Meter
- SEL® Fast Operate
- SEL® Fast SER
- SPA Bus
- TransData DTO

SCADA Protocols

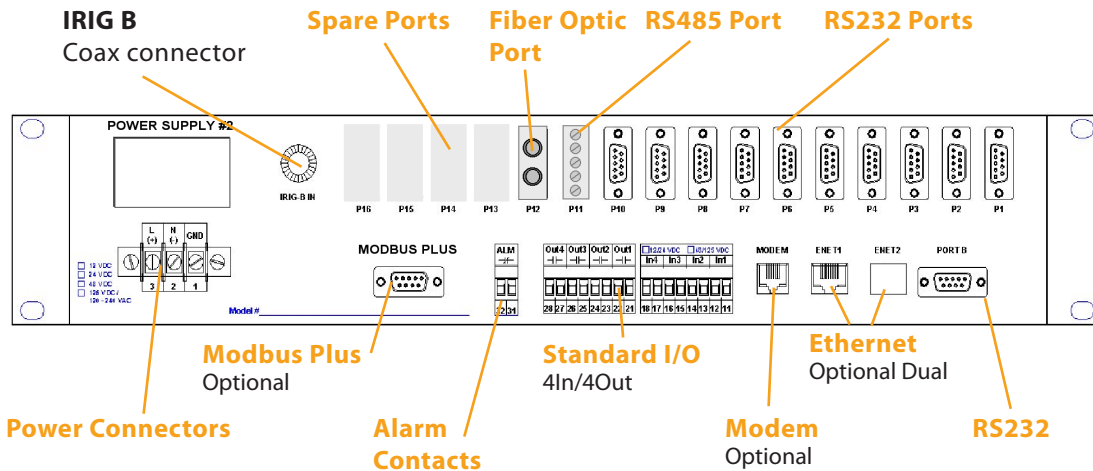
- Betac/Getac
- Conitel - 300/20x0
- CDC-1
- DNP3.0 – Serial and IP
- Harris 5000
- L&G 8979
- Modbus – Serial and TCP
- REDAC 70H
- TejasV

Other Protocols

- FTP
- HTTP
- PPP
- SNMP
- SNTP
- telnet
- XML



Orion5r Automation Platform



Specifications

Surge Withstand

Tested to	ANSI C37.90.1 Fast Transient (2002) and C37.90.2 RFI (1995)
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Environmental

Temperature, operating	-40° C to +70° C
Humidity, operating	5 to 95% non-condensing

Indication LEDs

Power	LED
Alarm	LED
TX / RX	LED

Physical

Standard case (2U)	19W x 3.5H x 13D (in)
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Weight

9.5 lbs

Connections

RS-232 w/IRIG-B	DB9 (Female)
RS-422/485	Screw Terminal
RS-485 w/IRIG-B	Screw Terminal
Fiber Optic	ST Multimode
Fiber Optic w/IRIG-B	V-Pin Multimode
Bit Card	RJ11 (Female)
Ethernet	RJ45 (Female)
Modem	RJ11 (Female)
I/O Terminals	Phoenix type, #12-24AWG
Power Terminal	3-position barrier strip, #10 stud

IRIG-B

Input	Modulated or Unmodulated
Output (on serial ports)	Unmodulated

Processor

CPU	586 class
Speed	100MHz
DRAM	32MB
Flash	32MB

Performance/Capabilities

IED/SCADA points	5,000; typical
Refresh Rate	< 2 sec; typical

Communications

Serial	1200bps - 115kbps
Ethernet	
Single	10BaseT
Dual	100BaseT
Protocols	Bit or byte
Upgrades	Via file transfer

Data Archiving & Storage

Standard Memory	24MB
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Internal Modem

Type	Dial-up; v.34
Speed	33.6kbps

Digital Inputs

Quantity	4 Std (Expandable)
Input Range	12-150V dc Optically Isolated

Digital Outputs

Quantity	4 Std (Expandable)
Contact Ratings	10A MOV Protected

Alarm Output

Type	Form A (default)
Contact Ratings	10A MOV Protected

Power Supplies

Input Voltage	12V dc (+/- 20%) 24V dc (+/- 20%) 48V dc (+/- 20%) 125V dc -120V ac (+/- 20%)
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Rating

7 Watts

Warranty

5 Year Limited

Contact:

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