

750 MHz Model 6920 Optoelectronic Receiver Station



**Scientific
Atlanta**



22386

DESCRIPTION

The Model 6920 Optoelectronic Receiver Station, with an integral System Amplifier II, is the ideal platform for delivering video (digital and analog), telephony and data services over advanced hybrid fiber/coax (HFC) networks. It fits especially well in Scientific-Atlanta's Fiber-to-the-Serving-Area (FSA™) MiniStar architecture. The Ministar architecture provides a clear migration path for evolution of the fiber serving areas (nodes) of 2,000 or 500 home pockets down to passive cable networks of fewer than 100 homes.

With its modular design of fiber receiver, reverse fiber transmitter and RF amplifier electronics, the Model 6920 station can provide the full complement of functions required by advanced networks. The unit can be equipped with a variety of reverse transmitters to provide full two-way

communication, and a second receiver with an RF switch to accommodate total optical redundancy or band splitting (550/570) options for worldwide applications.

Additionally, the Model 6920 station can be equipped with a status monitoring transponder for use with Scientific-Atlanta's Status Monitoring and Control (SMC) Element Manager

or other support systems. On-board temperature, RF levels, RF bypass switch position and power supply condition can be monitored.

Installation of the Model 6920 is quick and easy. The fiber receiver is delivered with pre-connectorized SC terminations. Optional preconnectorized cable stubs are the ideal method for connecting the Model 6920 Stations to the fiber network (see Cable Stubs data sheet, publication number 88D050Z). External termination connectors are also available for central strength member and LXE style fiber optic cables. The Model 6920 includes a 12 fiber handling tray for these cables. Other industry standard fiber service cables may be used as well.

FEATURES

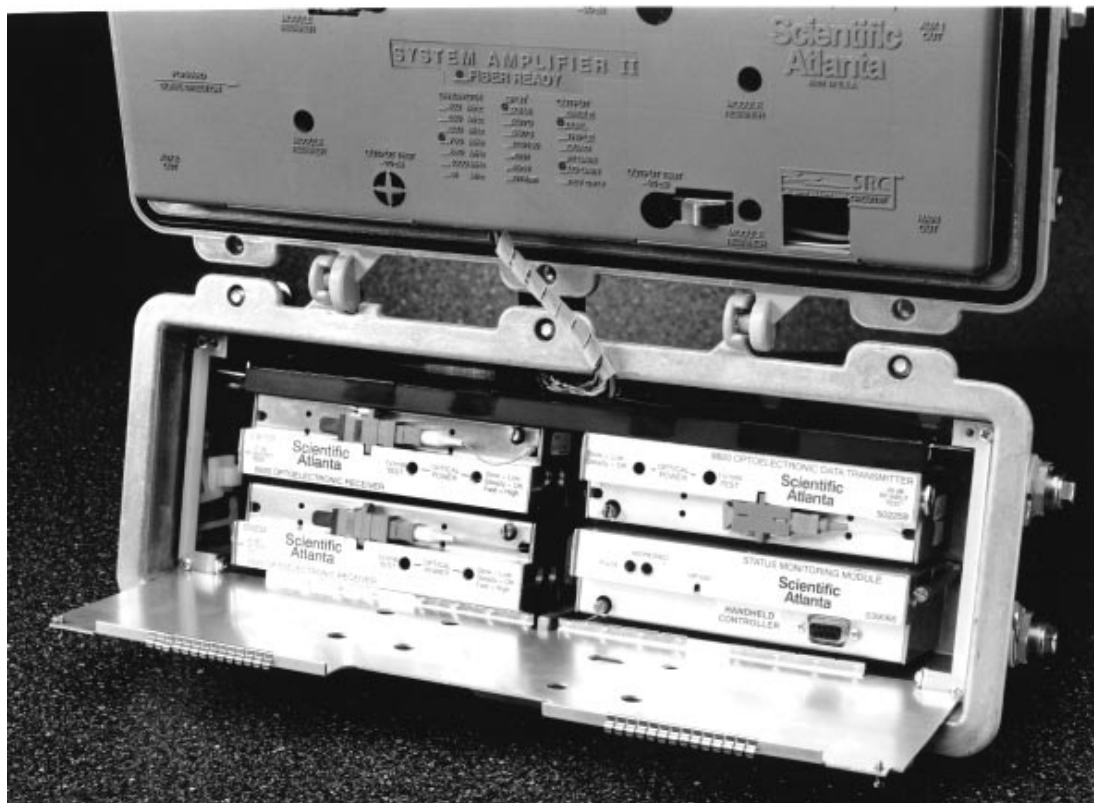
- 60 and 90 V AC powering capability
- Fiber Lid containing all optical components for simplified installation and maintenance
- Optional Status Monitoring and Control system interface and local LED indicators provide important monitoring and troubleshooting capability
- Preconnectorized cable stub options are available for ease of installation
- 1 GHz bandwidth platform enables future upgrades of modular receiver and amplifier components.
- A variety of optional reverse transmitter modules provide capability of advanced data, telephony and video services
- High Efficiency power supply lowers system operating costs



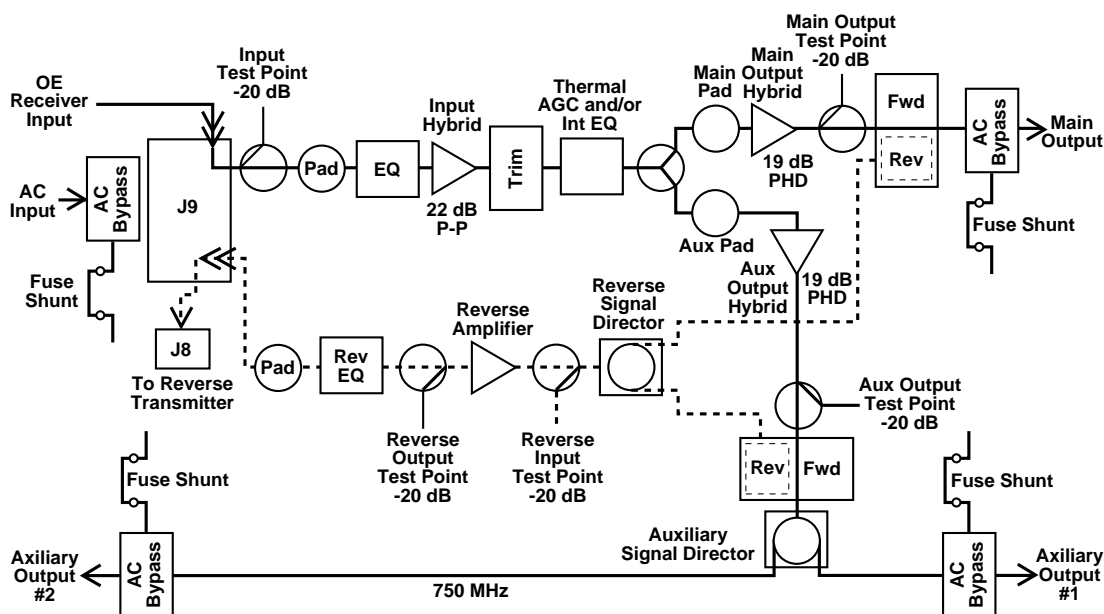
System reliability and upgrade flexibility are integral to the construction of the Model 6920. Key standard features include a coated housing to withstand severe operating environments, local status monitoring of each module, and a 1 GHz housing for future higher bandwidth applications. High and low gain output optical receiver types are available to address a variety of system architectural requirements.

The Model 6920 station is designed to accommodate the use of emerging technologies. For example, multiple fiber optic wavelengths are supported by the receiver design, permitting the use of wave division multiplexing technology.

The System Amplifier II module utilizes the latest 750 MHz PHD technology. This industry leading platform is available in a variety of bandwidth splits and output configurations to match evolving system needs.



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MODEL 6920 OPTOELECTRONIC RECEIVER SPECIFICATIONS (OPTICAL RECEIVER ONLY⁴)

	Units	6920 Low Gain	6920 High Gain
Bandwidth	MHz	46-750	46-750
Frequency Response (peak to peak)	dB	±0.6 dB maximum	±0.75 dB maximum
Input Level (typical)	mW	0.5 to 2.0	0.25 to 1.0
	dBm	-3.0 to 3.0	-6.0 to 3.0
Output Level (typical) ¹ @ 0 dBm input ²	dBmV	15.5	33.5
Tilt (typical)	dB	-0.5	-0.5
Output Test Point	dB	-20 ± 1.0	-20 ± 1.0
Output Return Loss (75 Ohm)			
46 to 550 MHz	dB	-16 minimum	-16 minimum
550 to 750 MHz	dB	-12 minimum	-12 minimum
Power Dissipation ³	Amperes	0.13 @ 24 V DC	0.37 @ 24 V DC
Output Impedance	Ohms	75	75

NOTES:

- (1) Per channel at 3.8% Modulation Index per channel
- (2) Assume a 2:1 RF output to Optic input ratio
- (3) Without External Relay Option
- (4) Station performance can be determined by adding optics performance and integrated RF amplifier performance (see data sheet for specific amplifier type for performance specifications).

SPECIFICATIONS

Electrical

Power Requirements

60 V AC, 60 Hz

90 V AC, 60 Hz

Power Consumption (typical @ 24 V DC)

Component	I DC (mA)
Low Gain Dual System Amplifier II	1.05
Reverse Amplifier (RF)	0.10
AGC	0.09
Backup Switch (Rx or Tx)	0.09
Status Monitoring	0.10
Low Gain Receiver	0.09
High Gain Receiver	0.22
Reverse Data Transmitter	0.06
Reverse Video Transmitter	0.17

Power Supply Rating

2.6 Amperes @ 24 V DC

Wavelength

1310 or 1550 nm

Environmental

Operating Temperature (Ambient)

32°F to 120°F (0°C to 50°C)

Relative Humidity

5% to 95%

Mechanical

Dimensions

8.75 in. H x 18.5 in. W x 7.0 in. D

(22.2 cm H x 47.0 cm W x 17.8 cm D)

Weight (station)

20 lbs (9.1 Kg)

Station Powering Data

Model 6920 Optoelectronic Receiver Station	I DC (Amps)	AC Voltage											
		90	85	80	75	70	65	60	55	50	45	40	
AC Current (A)	2.60	0.93	0.98	1.02	1.07	1.12	1.18	1.25	1.35	1.48	1.65	0.0	
Power (W)		70.80	70.70	70.40	70.20	70.00	69.80	69.70	69.70	69.60	69.80	0.0	

This table assumes a fully-loaded station (i.e., primary and redundant high gain receiver, Status Monitoring module, reverse transmitter and a Low Gain Dual System Amplifier II).

STATION BANDWIDTH / CONFIGURATION OPTIONS*

	Bandwidth Splits (MHz)				
	30-46	40-51	50-70	55-70	65-88
6920 Low Gain – Part Number	506070	537918	537022	N/A	537915
6920 High Gain – Part Number	506072	537919	537021	548522	537916

* Part numbers shown include a low gain dual fiber-ready System Amplifier II. Station with integrated unbalanced triple output System Amplifier II is also under development.

** High Gain receiver suggested for most applications

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Additional Model 6920 Optoelectronic Receivers including the following are available in specific bandwidth splits:

Bandwidth Split (MHz)	Description	Part Number
30/46	Low-Low Gain Station with fiber ready single stage dual System Amp II	537004
40/51	Low-Low Gain Station with fiber ready single stage dual System Amp II	543094
65/88	Low Gain Receiver with fiber ready balanced triple System Amp II	541716
65/88	High Gain Receiver with fiber ready balanced triple System Amp II	541715

REQUIRED ACCESSORIES

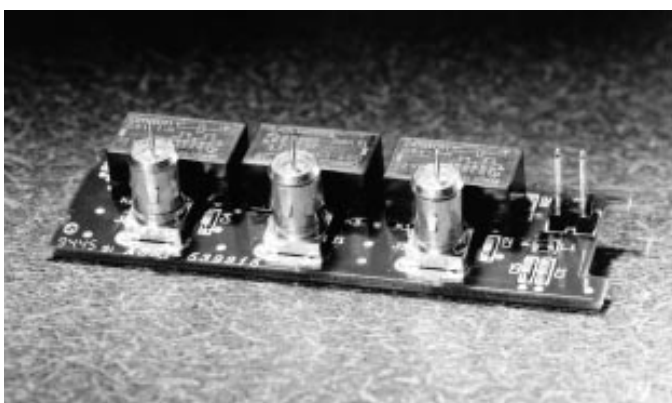
(Applies to stations equipped with Low Gain Dual SAIL)

- Plug-in pads, 3 required (1 input, 2 output), 1 additional pad required for reverse, and 1 additional pad required for AGC if applicable. Available in 0.5 dB steps from 0 to 20.5 dB. Model PP-* (* denotes pad value), specify value.
- Plug-in Forward Equalizer, 1 required. Available in 1.5 dB steps from 0 to 27 dB at 750 MHz. Model EQ750-* (* denotes equalizer value), specify value.
- Plug-in Passive for Auxiliary Output, select one:
 - #467778 - Jumper
 - #502110 - 2-way splitter
 - #502115 - DC-8
 - #502120 - DC-12
- Interstage equalizers (one required)
 - 3-9 dB variable interstage equalizer - #511380
 - 3-9 dB variable interstage equalizer with AGC - #539578

OPTIONAL/ANCILLARY EQUIPMENT

- Cable Stubs and connectors (see Cable Stubs data sheet for complete listing)
 - #542396 Mini-LXE 0.35 OD, depressed clad fiber with 2 SC pre-connectorized fiber terminations (60 ft.)
 - #542397 Mini-LXE 0.35 OD, depressed clad fiber with 4 SC pre-connectorized fiber terminations (60 ft.)
 - #506583 Mini-LXE 0.35 OD External Cable Connector

RF Switch Kit



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- Reverse Transmitters
 - 6920 RT-1; # 502259 (short links – data only)
 - 6920 RT-2; # 564133 (long links – data only)
 - 6920 RT-3; # 539542 (1 video channel + data)
 (See reverse transmitter data sheet for specifications on these products)
- Variable Reverse Equalizer, select one:
 - #511075 1.5 to 4.5 dB
 - #511295 4.5 to 7.5 dB
 - #511298 7.5 to 12.0 dB
- Reverse Combiner, 1 required for 2-way operation, order Plug-in Passive #502110
- Status Monitoring Transponders for Model 6920 (see Model 6920 Status Monitoring Transponder data sheet)
- Reverse Amplifiers, 1 required
 - #463310 – 5 - 30 MHz Reverse Amplifier for SA II – 19 dB gain
 - #544171 – 5 - 40 MHz Reverse Amplifier for SA II – 23 dB gain
 - #539900 – 5 - 40 MHz Reverse Amplifier for SA II – 27 dB gain
 - #463718 – 5 - 50 MHz Reverse Amplifier for SA II – 19 dB gain
 - #548620 – 5 - 55 MHz Reverse Amplifier for SA II – 23 dB gain
 - #544173 – 5 - 65 MHz Reverse Amplifier for SA II – 23 dB gain
 - #539901 – 5 - 65 MHz Reverse Amplifier for SA II – 27 dB gain
- Model 6920 RF Switch Kit (for upgrade to redundant configuration – order switch and one optical receiver module)
 - #542016 - RF Switch
 - #541647 - Low Gain Optical Receiver Module
 - #541649 - High Gain Optical Receiver Module

Specifications and product availability are subject to change without notice.

Specifications shown reflect typical equipment performance at stated reference levels in the recommended operating configuration. Specifications are based on measurements made in accordance with NCTA Practices for Measurements on Cable Television Systems using standard frequency assignments and are referenced to 68°F (20°C).



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