
CONVEX
Service Plan for
METRUM RSP-2150
Tape Drive



Third Edition
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CONVEX Service Plan for METRUM RSP-2150 Tape Drive

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Service Plan for METRUM RSP-2150 Tape Drive

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Second	081-025030-001	Released May, 1994. Updated MTBF and support personnel.
Third	081-025030-002	Released June, 1994. Updated equipment specifications and preventive maintenance, and corrected FRU part number.

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Service Plan for METRUM RSP-2150 Tape Drive

CONVEX now offers the METRUM RSP-2150 tape drive. The RSP-2150 provides large-scale data archival and backup capability. This document provides the service manager advanced information about the RSP-2150 for planning purposes.

Product information

The METRUM RSP-2150 is a digital magnetic-tape drive capable of storing and retrieving large amounts of data. It can store 14.5 Gbytes on a ST-120 tape cassette which has the same form factor as a standard VHS video cassette. The RSP-2150 provides rapid location of volume and file marks and supports both fixed- and variable-length records. It supports sequential backups and random-access archiving applications. It can be easily integrated into the METRUM RSS-48b and RSS-600b robotic archival systems.

Technical and performance information

The RSP-2150 provides front-panel control as well as control via a SCSI interface which conforms to the ANSI X3.131 specification. The SCSI interface supports both synchronous and asynchronous operation, and can transfer data continuously at 2 MBytes/sec.

The RSP-2150 preserves data integrity by using Reed-Solomon error correction encoding, data interleaving, and a special read-after-write scheme. This scheme immediately reads data after it is written and rewrites it if necessary which ensures that all initial tape defects are overwritten.

Equipment specifications

The equipment specifications are listed in Table 1:

Table 1 METRUM RSP-2150 specifications

Cartridge types	Metrum DCC-258, DDC-343, DDC-367
Tape capacity	14.4 Gbytes
Data interface	SCSI, ANSI X3.131
Data buffer size	8 Mbytes
Data transfer rate	2 Mbytes/sec continuous
Error recovery	Internal auto-retry system
Record length	Fixed or variable
Data error rate	less than 1×10^{-13}
Operating temperature	50°F to 86°F (10°C to 30°C)
Power consumption	87 watts
Weight	40 lb (18.14 kg)
Height	7 in (177 cm)
Width	17 in (432 cm)
Depth	15.5 in (394 cm)

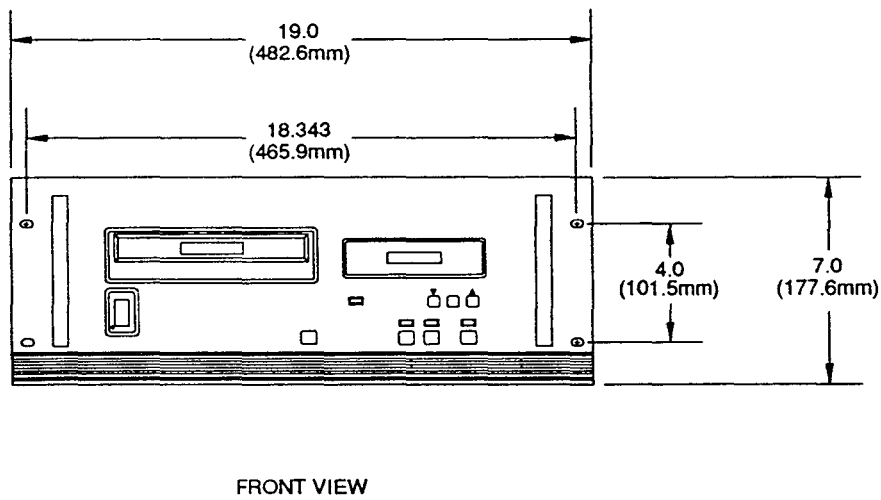
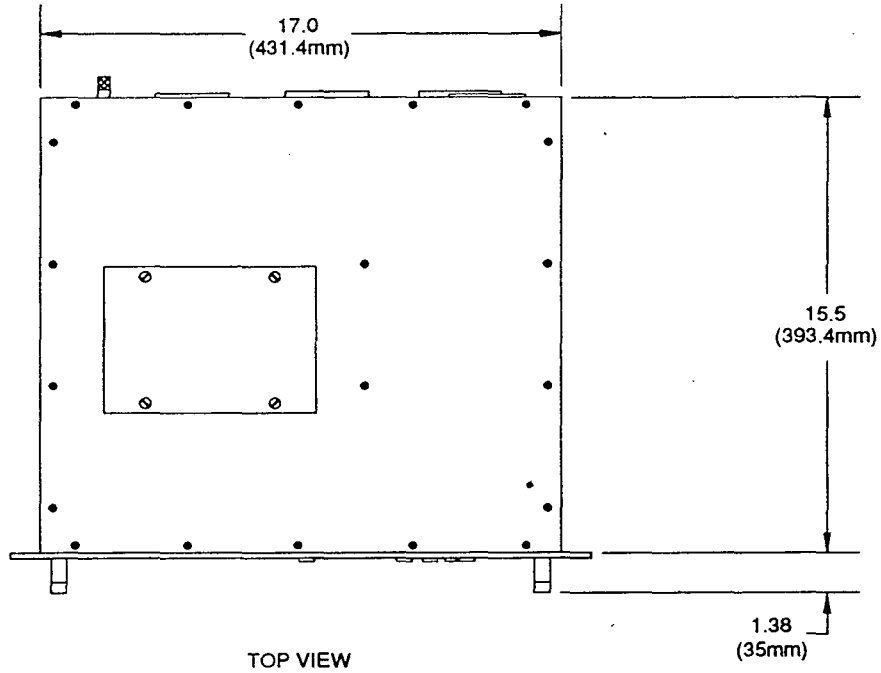
Note

CONVEX software currently supports only the ST-120 tapes. If it supports the ST-160 and ST-180 tapes in the future, only a single size can be used in the automated tape libraries, the RSS-48b and RSS-600b. Mixing tape sizes is not permitted. If tapes of different length are mixed, a tape will likely be broken.

Clearances

Figure 1 shows dimensions of the RSP-2150.

Figure 1 METRUM RSP-2150 outline dimensions



Note: Dimensions applicable to rack mount model

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Power requirements

The RSP-2150 requires either 117 or 220 vac $\pm 10\%$, single phase, 87 watts, 47 to 440 Hz. The nominal service capacity must be either 1.5 amperes for 117 vac or 1 amperes for 220 vac. Clearly mark the service to prevent electrical hazards.

Environmental requirements

Table 2 shows the environmental requirements of the RSP-2150.

Table 2 METRUM RSP-2150 environmental requirements

Operating temperature	50°F to 86°F (10°C to 30°C)
Non-operational temperature	-4°F to 149°F (-20°C to 65°C)
Operational humidity	5% to 80%, relative, non-condensing
Non-operational humidity	90% maximum, non-condensing
Altitude, operating	15,000 feet (4600 meters) maximum
Altitude, non-operating	50,000 feet (15,200 meters) maximum
Vibration, operating	5 Hz to 25 Hz (0.5 mm p-p)
Vibration, non-operating	25 Hz to 55 Hz (0.25 mm p-p)

Do not install the RSP-2150 next to equipment that radiates excessive radio frequency interference.

The RSP-2150 is cooled by forced air. A minimum of 2 inches of clearance is required for both the air intake and exhaust ports.

MTBF and MTR

The RSP-2150 is field-replaceable. The mean-time-between-failures is greater than 10,000 hours with a 50% duty-cycle, and the mean-time-to-repair is one hour.

System software requirements

The RSP-2150 may be used on CONVEX C-Series and Hewlett-Packard 735/755 systems. The only hardware requirement is that the system have a SCSI port. The software requirement is system dependent. The software listed in Table 3 and Table 4 is required for an entire robotics system, either the RSS-48b or RSS-600b.

C-Series software

To use the METRUM RSP-2150 with either the RSS-48b or RSS-600b on a CONVEX C-series system, the software listed in Table 3 must be installed.

Table 3 Required software for C-Series systems

CONVEX PN	Product	Description
081-006715-xxx	ConvexOS V10.1 or higher	Operating system
750-002715-xxx	Metrum Daemon V1.1 or higher	RS-232C driver (robotics)
750-000115-xxx	Unitree V1.7.x	Data management software ¹
TBD	FileServ V2.1 for METRUM RSS-48b	Data management software ¹
TBD	FileServ V2.1 for METRUM RSS-600b	Data management software ¹

¹ Must use either Unitree or FileServ, but not both.

² Qualification pending

Hewlett-Packard 735/755 software

To use the METRUM RSP-2150 with either the RSS-48b or RSS-600b on the Hewlett-Packard system, the software listed in Table 4 must be installed.

Table 4 Required software for HP 735/755 systems

CONVEX PN	Product	Description
750-002715-xxx	Metrum Daemon V1.1 or higher	RS-232C driver
750-000115-xxx	Unitree V1.7.x	Data management software ¹
TBD	FileServ (future product)	Data management software (future product) ¹

¹ Must use either Unitree or FileServ, but not both.

Service philosophy

CONVEX is the primary service provider for the RSP-2150. This service consists of three levels. The first level is the response to the customer problem call. When the problem call requires corrective (or preventive) maintenance, a system service engineer (SSE) is dispatched to the customer site to troubleshoot the problem. Second-level service is fixing the problem with the appropriate spare parts. If the RSP-2150 has failed, the SSE will replace it rather than attempt to troubleshoot it. Third-level service is technical backup from CONVEX headquarters. Personnel with the appropriate expertise are on standby to resolve problems with either the SSE or the customer in some cases. Service personnel require proper training, tools and preventive maintenance spare parts before down-time can be kept within specification.

Maintenance

Currently, CONVEX pays a monthly premium for a 7-day repair turnaround. Failed units are returned to CONVEX headquarters where all appropriate arrangements are made with METRUM. The service manager should not call METRUM directly.

One year after receipt of each RSP-2150, CONVEX will contract with METRUM to retain the 7-day turnaround. A fee of \$90 per month per unit will be charged by CONVEX headquarters to the regional service organization for this expedited shipping and repair service agreement.

Note

CONVEX will continue to evaluate this charge-back policy. All world-wide service organizations will be notified of any changes in policy.

Preventive maintenance.

The recommended head-cleaning interval for the RSP-2150 is once every 50 hours of head-to-tape contact time using the METRUM head cleaning kit (CONVEX part number 902-002150-001). The head may require more frequent cleaning (depending on the operating environment, tape quality, and so on), but should not be cleaned more frequently than every 16 hours. The entire head-cleaning procedure requires less than five minutes.

The RSP-2150 transport requires cleaning and lubrication every 1,000 hours of head-to-tape contact time or once per year, whichever occurs more frequently. Only an SSE trained on the RSP-2150 should perform the lubrication and cleaning procedure which is detailed in the METRUM Preventive

Maintenance Supplement (CONVEX part number 081-026530-000). Cleaning the transport requires the METRUM cleaning kit (CONVEX part number 900-000778-001) and takes approximately four hours.

Note

Do not remove the small panel above the recorder heads. When performing the lubrication and cleaning procedure, remove the entire top panel which attaches to the outside edge of the recorder chassis.

Preventive maintenance kits

The following table shows the RSP-2150 PM kits and schedule.

Table 5 RSP-2150 PM kits

CONVEX P/N	Description	Frequency of use
902-002150-001	Head-cleaning kit	Approximately every 50 hours of head-to-tape contact (not to exceed every 16 hours)
900-000778-001	Lubrication and cleaning kit	Approximately every 1,000 hours of head-to-tape contact or once per year.
081-026530-000	PM supplement for lubricating and cleaning process	

Sparing

The RSP-2150 is considered a field-replaceable unit, and CONVEX field personnel will not troubleshoot it. A spare RSP-2150 should be kept at the depot. The RSP-2150 is available with either a single-ended and differential data interface. Be sure to order the correct replacement/spare unit.

Single-ended RSP-2150 part number: 207-000023-201

Differential RSP-2150 part number: 207-000025-201

The RSP-2150 is available in the following four configurations:

- unit mounted in an equipment rack
- unit mounted in the METRUM RSS-48b Automated Tape Library
- unit mounted in the METRUM RSS-600b Automated Tape Library
- unit used as a stand-alone desk-top peripheral

Each configuration requires a different plenum. When replacing an RSP-2150, the SSE must make sure the new unit has the correct plenum. If the replacement (or spare) unit does not have the same plenum as the unit to be replaced (the failed unit), the SSE must remove the plenum from the unit to be replaced and mount it on the replacement unit. Then the SSE must mount the loose plenum on the replaced (or failed) unit before returning the replaced unit to the depot.

Installation

CONVEX field engineering organization is responsible for installing the RSP-2150. It is also responsible for installing any additional units. These activities should be accurately recorded by field service personnel in the appropriate reporting system.

Support

CONVEX is the primary service provider for the RSP-2150. In the US, the CONVEX Technical Assistance Center (TAC) is the front line of support for SSEs and customers. In other CONVEX regions around the world, the SSE and customer should contact their local CONVEX support office. A second line of support is provided by expert personnel. These secondary points-of-contact for the METRUM RSP-2150 are:

Point-of-contact	E-mail login	Phone number
Kelvyn Gipp	kgipp	(214) 497-4601

Obtaining spare drives

Spare drives are obtained through normal logistic channels. Questions concerning the logistics, pricing, and ordering of spare parts and tools should be directed to:

	Primary contact	Region	E-mail login	Phone number
Headquarters Spares Depot	Barbara Lester	US, S. America, Asia, and Pacific	lester	(214) 497-4216
European Distribution Center	Jorge Torres	Europe	torres	31-20-6540251 (Holland)

Firmware upgrades

Firmware upgrades are periodically required to improve or maximize performance. When firmware upgrades are released, they will be distributed in kit form from CONVEX headquarters. Included in the kit will be detailed instructions which will allow the SSE to perform the installation in a timely manner. Upgrades will be distributed to field offices at no charge for those units covered under the expedited service agreement mentioned in the "Maintenance" section on page 6.

Training

While the SSE does not maintain the RSP-2150, to have a better understanding of the unit as a part of the automated tape library systems, the SSE requires two training courses. One course provides training on the RSP-2150, and the other on the RSS-48b and RSS-600b library units.

The table below shows when these classes will be offered in June 1994.

Class	Estimated cost (1994)	Date
RSP-2150	\$750	June 6 - 8
RSS-48/600	\$500	June 9 - 10

To obtain latest prices or register for these courses, contact:

Point-of-contact	E-mail login	Phone number
Debbie Ericksen	ericksen	(214) 497-4239