12-49-0000

PAGING STORE AND FORWARD UNIT

PRODUCT MANUAL

Version 1.00

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Salcom Product Documentation

This document is designed to familiarize you with Salcom products and guide you through the hardware, configuration, installation and overall system management.

Salcom is an environmentally conscious company and in an effort to conserve paper no longer prints manuals with shipped products. All relevant documentation can be downloaded in PDF form from our website www.salcom.com

Warranty and Disclaimer

Salcom products are warranted for a period of 12 months from the date of purchase against faulty materials and workmanship. Should any fault occur the unit should be returned to the vendor, freight pre-paid. Please include a description of the fault to assist with prompt return. Any unauthorized alterations or repairs will invalidate the warranty.

All information provided in this document is carefully prepared and offered in good faith as a guide in the installation, use and servicing of Salcom products. Installers must ensure that the final installation operates satisfactorily within the relevant regulatory requirements. Salcom accept no responsibility for incorrect installation. We reserve the right to change products, specifications and installation data at any time without notice

Product Overview

The Salcom 12-49 Store and Forward Unit is designed to receive and repeat POCSAG paging transmissions to increase the range of a paging network. It may be deployed as a VHF or a UHF unit by selection of the appropriate RF modules.

The 12-49 is a composite system comprising of two, or optionally three separate Salcom products, 12-84 Receiver, 12-62 Transmitter and 11-54 or 11-99 Power amplifier options. Specifications for the individual products apply for the 12-49 specifications.
These are all fitted inside a single standard 19 inch rack mount case, 1 Rack Unit (RU) high.

The default 12-49 is equipped with the standard receiver and 4W transmitter.
For VHF paging band use, the product version is the 12-49-0150, and with the optional 25W power amplifier fitted, the12-49-5150.
For UHF paging band use, the product version is the 12-49-0450, and with the optional 25W power amplifier fitted, the 12-49-5450.

12-84 Receiver
For VHF systems, the receiver used is the Salcom12-84-0150 and for UHF the 12-84-0450. Both of these receivers are identical in function and set-up (using the 12-84 programming software), apart from the frequency band used.

The receiver's function is to intercept paging traffic off air from the host system. Valid paging traffic is compared to a database within the 12-84 and either accepted or ignored, depending upon the receiver settings. For further 12-84 receiver information refer to the 12-84 User Manual or help information in the 12-84 programming application.

Valid paging traffic is passed on to the 12-62 transmitter where it is queued as separate messages for transmission when appropriate.

As shipped, the default setup will accept and repeat all traffic.

12-62 Transmitter
When operated on a single frequency, the 12-49 will only support a single message transmission sequence. That means as soon as the 12-84 receiver outputs a single valid message, the 12-62 transmitter begins transmitting the message.
Any host system messages sent while the 12-49 is transmitting the message will not be received due to the antenna relay being in the transmit mode and the 12-84 being inactive.

To ensure that all valid messages are re-transmitted by the 12-49, it is recommended that the originating transmitter adds a delay between each message. This delay should be at least 1 second longer than the transmission time of the current on-air message.

The 12-49 supports a duplex mode allowing continuous message reception and transmission when receive and transmit frequencies are different and they each operate on separate antennas.

Note: The 12-62 also has 4 user inputs (D15 Socket) for the sending of pre-canned messages programmable from the 12-62 programming software. In VHF systems the 12-62-0150 transmitter

is used and for UHF systems the 12-62-0450 transmitter is used. These units provide up to 4 watts of RF and are functionally identical, apart from the frequency band used. The transmitter converts the POCSAG data into an FM modulated paging transmission.

The transmission frequency is handled by the 12-62 programming software. The RF output is made available to the aerial socket via a coaxial relay, allowing the one connection to be shared with the receiver.

For further information on the 12-62 Transmitter, refer to the User Manual or the 12-62 programming software "Help".
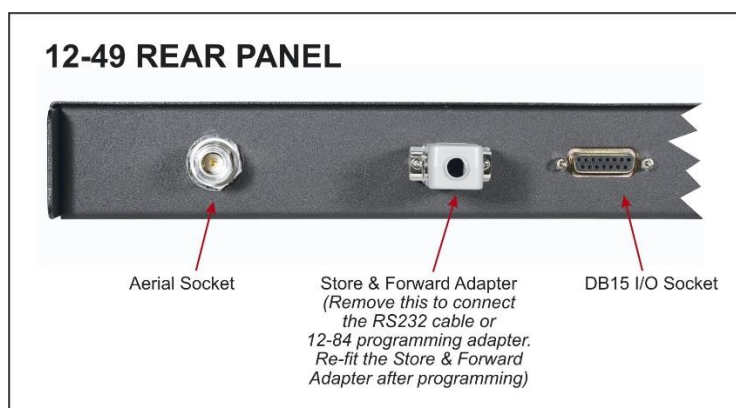
Power Amplifier (Optional)
For systems where a higher power output is required, an 11-54 VHF, or 11-99 UHF amplifier may be fitted. Either of these units will provide up to 25 Watts of RF power.

Using the Product Programming Software (PSD)

The Salcom 12-49 Store and Forward Unit is usually supplied on the correct frequency and in running order. Some settings however, such as the pager RIC database need to be edited by the user. This and all other settings are easily managed with the Salcom Product Programming Software, commonly called the PSD, which is a historic acronym meaning "Product Software Disk".

The product programming software (one program each for the 12-84 and 12-62) are Microsoft Windows based programs (Windows XP or later) which allow the user to configure the products as required.

The program is started and a serial connection is made to each of the system components in turn, please refer to the documentation for each of these components and the on-line help provided within the programming software.

12-49 REAR PANEL

Aerial Socket   Store & Forward Adapter   DB15 I/O Socket
                             (Remove this to connect
                             the RS232 cable or
                             12-84 programming adapter.
                             Re-fit the Store & Forward
                             Adapter after programming)

Programming Method

12-62 Transmitter
(1)   Remove power from the 12-49.
(2)   Remove the Serial Link Adapter from the D9 port on the rear of the unit.
(3)   For the 12-62 Transmitter, use a standard D9 serial cable and directly connect the computer to the 12-49 D9 socket.
(4)   Re-apply power to the unit.
(5)   Run the 12-62 programming software on a Microsoft Windows XP or later, based computer.
(6)   Read the current settings from the unit.
(7)   Make any desired changes.
(8)   Re-program the unit with the new settings.
(9)   Re-fit the Serial Link Adapter to the D9 port on the rear of the unit.
(10)   Cycle the power on the unit to reload the new settings.

12-84 Receiver
(1)   Remove power from the 12-49.
(2)   Remove the Serial Link Adapter from the D9 port on the rear of the unit.
(3)   For the 12-84 Receiver, fit the programming adapter cable (supplied) between the computer serial cable and the 12-49 D9 socket.
(4)   Re-apply power to the unit.
(5)   Run the 12-84 programming software on a Microsoft Windows XP or later, based computer.
(6)   Read the current settings from the unit.
(7)   Make any desired changes.
(8)   Re-program the unit with the new settings.
(9)   Re-fit the Serial Link Adapter to the D9 port on the rear of the unit.
(10)   Cycle the power on the unit to reload the new settings.

12-62 Programming
Changes to the 12-62 are detailed in the 12-62 User Manual.

Points to note are: The serial protocol in the "General" tab <u>must</u> remain set to "12-84" otherwise the serial data from the 12-84 will not be re-transmitted.

12-84 Programming
Changes to the 12-84 are detailed in the 12-84 User Manual.

Points to note: It is recommended to set the "Decode Any RIC" to NO, and in the "Receive Codes" tab, set a Low RIC and High RIC to avoid any false decodes from the 12-84 receiver.

As a minimum, set the #1 Low RIC to 00000008 and the Hi RIC to 19999999.

Also note the "Type" field controls what type of POCSAG message is decoded for the associated Low to High RIC codes (Numeric or Alpha-Numeric).

e.g.:
Receive Codes tab
#1, Low RIC 0900000, High RIC 0999999, Type N
Means that all RICs between 0900000 and 0999999 will be decoded as Numeric.
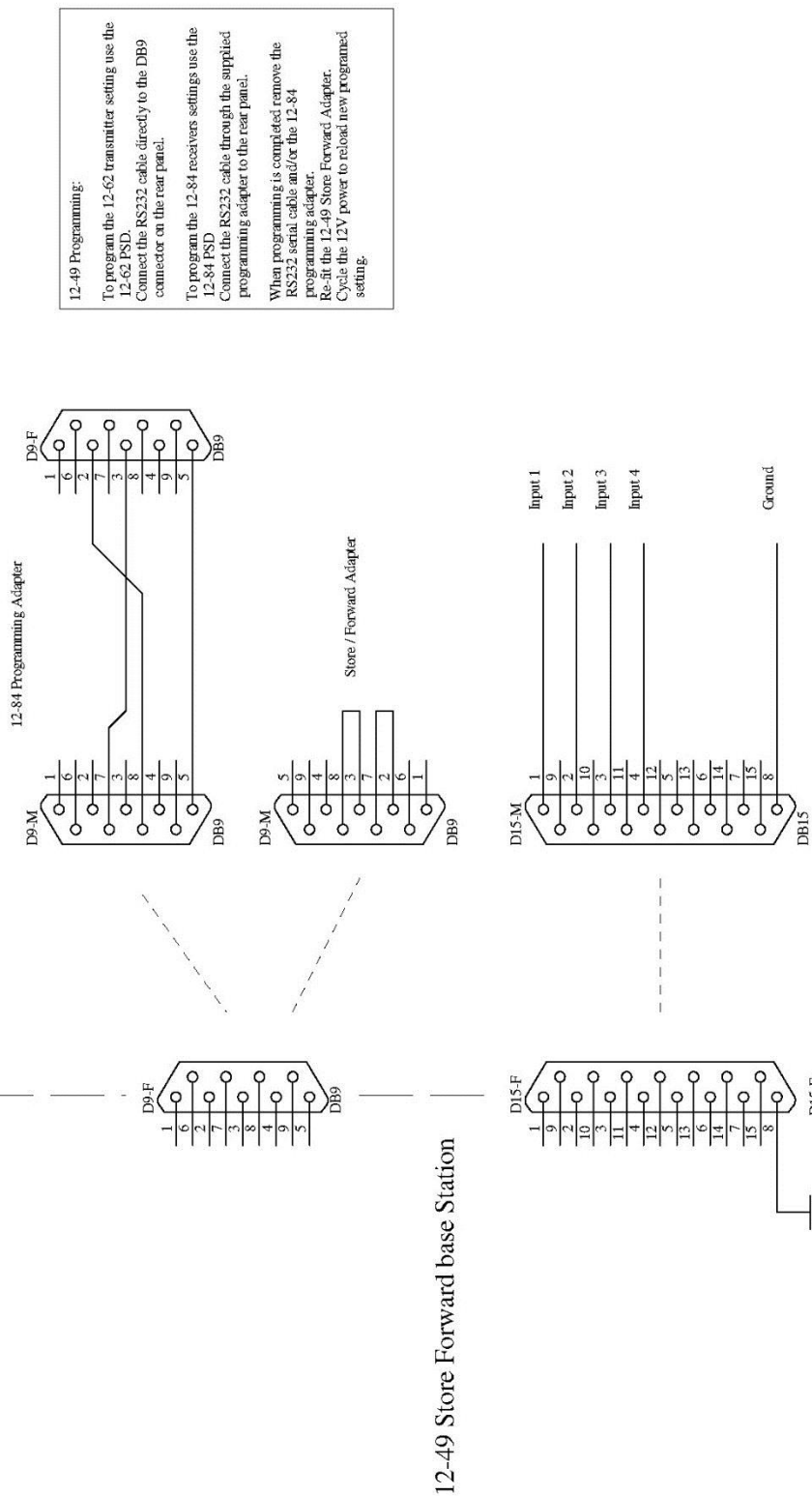
#2, Low RIC 1000000, High RIC 1999999, Type A
Means that all RICs between 1000000 and 1999999 will be decoded as Alpha-Numeric.

Note: In the above example, any RIC codes below 0900000 and above 1999999 will <u>NOT</u> be decoded at all.

12-49 Connections and Cables

12-49-0000 1U Connections and Cables

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12-49 Programming:

To program the 12-62 transmitter setting use the 12-62 PSD.
Connect the RS232 cable directly to the DB9 connector on the rear panel.

To program the 12-84 receivers settings use the 12-84 PSD
Connect the RS232 cable through the supplied programming adapter to the rear panel.

When programming is completed remove the RS232 serial cable and/or the 12-84 programming adapter.
Re-fit the 12-49 Store Forward Adapter.
Cycle the 12V power to reload new programed setting.

12-49 Store Forward base Station

Technical Specification

Description	POCSAG Paging Store and Forward Unit
Power Supply	+12V nominal (Range +10V to 17V) DC power cable included
Fuse	5A
RF Frequency *	VHF: 148-165MHz UHF: 440-480MHz
Frequency selection method	Programmable via Salcom "PSD" Programming Software
Receive Baud Rates	512 or 1200 baud as configured by user
Digital Inputs	D15F Socket: 4 digital inputs
Aerial connection	N-Type Socket
Case Dimensions	140 x 105 x 32mm
Operating Temperature	-10°C to +50°C
Environmental protection	Requires protection from weather

* The frequency of the radio channel is preset at the SALCOM factory.

For additional information please refer to the specifications for the individual products; 12-84, 12-62, 11-54 or 11-99.

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