SALCOM
TECHNOLOGIES

12-85
UHF DESKTOP
POCSAG TRANSMITTER

OPERATOR'S
MANUAL

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12-85 UHF DESKTOP
POCSAG TRANSMITTER

1.0   DESCRIPTION

The 12-85 is a UHF low power POCSAG paging transmitter with an in-built encoder. The keyboard buttons initiate transmissions to provide numeric and pre-canned alpha-numeric POCSAG paging, enabling a user to call a pager (approximately 2,000,000 codes). Serial control is achieved using a serial interface and will respond to Salcom paging protocol, as outlined in the specification. The unit hosts 10 user programmable alpha-numeric messages.

In addition to the keypad, four discrete inputs are supported with unique pre-programmed messages on high and/or low input transition. The inputs can be made to act as four individual transmission trigger inputs. Provision to transmit a message more than once is catered for, as well as a variable time between transmissions.

The 12-85 has a BNC aerial connector allowing direct connection to a helical aerial or to a remotely mounted aerial, -see section 4.0 Installation.

2.0   WARRANTY

Our Products are warranted for a period of 12 months from 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.

3.0   DISCLAIMER

All information provided in this document is carefully prepared and offered in good faith as a guide in the installation, use and servicing of our products. Installers must ensure that the final installation operates satisfactorily within the relevant regulatory requirements. We accept no responsibility for incorrect installation.

We reserve the right to change products, specifications, and installation data at any time, without notice.

Note: The 12-85 should not be used for the control of industrial machinery where a fail-safe mode of operation is necessary for the purposes of safety. Please contact Salcom for advice where this is a requirement.

4.0   INSTALLATION

The unit can be attached to a wall or placed on a desk. Mount the unit away from sources of heat, damp or vibration The power supply can be a 12 volt battery or 12V 150mA minimum regulated plug pack. The supply input is protected against reversed connection damage. Connection is made via the green 2 way plug.
Where FCC Part 90 applies, aerial gain minus coaxial loss must be kept to 0dB to keep the radiated power equal to or less than +20dBm or 100mW EIRP.

5.0   OPERATION

A number of factors can influence the range of the unit. The range can be optimised by applying the following recommendations:

1. Ensure the path between 12-85 and receiver is as clear from obstructions as possible. Use an externally mounted aerial if necessary.
2. Do not fix the unit to metal surfaces so that it screens the radio signals. The aerial must be clear of metal obstruction.
3. Some pager receivers do not respond as well as fixed receivers with external aerials

6.0   OPERATING MODES - there are two modes

Input/Standby mode.   In this state all inputs are monitored. A change on the discrete inputs or a button press will lead the initiator through the transmission sequence with prompts on the display.

Transmit mode. If a transmission has been initiated, the unit will enter this mode to transmit the message(s). The display screen will indicate 'Paging' and the unit will return to standby after the message has been sent.

7.0   TYPES OF PAGING MESSAGE

The 12-85 can transmit two types of POCSAG message, with any one of four function levels:

Alphanumeric transmissions

Messages can contain any alphanumeric character. The 12-85 will accept the standard ASCII 7 bit character set.

Numeric transmissions

Messages can contain numeric characters and some symbols. These can convey a telephone number, or other numerically coded information.

The transmitted message is shorter, and therefore there is a smaller chance of errors received by the pager. The numeric character set is as follows:

0 1 2 3 4 5 6 7 8 9 [ ] - E U <space>
*Note. The E may be displayed as P or * on different pagers*

8.0   INITIATING TRANSMISSIONS

There are four ways of initiating a paging message transmission:

External Discrete Inputs: An action can be initiated from one of the four external inputs with an input transition to LOW (connection to GND) or HIGH (grounded input opening).

RS232 serial port - Using the Serial Commands: Serial commands can be manually issued to a 12-85 using a terminal program connected via a standard serial cable with a D9 plug on the 12-85 end.

Tone only, numeric and alphanumeric pagers can be called using serial commands. These commands will be processed in parallel with other inputs actions for transmission. The SALCOM CA/CN protocols are shown below.

Serially via a SALCOM 11-36:   When used in combination with the 12-85, a 11-36 provides a telephone controlled, voice prompted paging interface.

All paging functions available when using a 12-85 are also available via the office PABX system from any telephone, by using the telephone keypad.

Refer to the 11-36 Telephone Voice Interface manual for operating instructions.

12-85 numeric keypad: Use the 12-85 top panel keypad to enter the pager code, select the message and initiate a transmission, -see Keypad Instructions below.

9.0   KEYPAD INSTRUCTIONS:

Note: During entering of instructions via the keypad the unit may be called on by another input to send a page. In this case the screen will display 'PAGING' and the user must wait for the screen to return to where they were before entering any more button pushes. Buttons pressed while a page is being sent are ignored by the unit.

Initial State:
The screen displays the prompt 'Enter pager number'

Entering the pager number:
C The user can press the number keys to enter the pager identification. Numbers under 1000 (0 - 999) are related to entries in the pager database. The name of the user(s) allocated to a particular entry is displayed as the number is entered

C Pressing the Up arrow will enter the previous messages list. These can then be scrolled through using the Up and Down arrows, a previous message can be re-sent by pressing the Enter or # key.

C The Down arrow can be used to enter the user database which can then be scrolled through using the up and down arrows.

C A number greater than 999 will allocate the page to the pager that is coded with that particular RIC (Receiver Identification Code).

C Pressing cancel at any time will clear the entered numbers and return to the initial state.

C Once the desired recipient is displayed then the user can press the Enter or * key to proceed to the next stage.

C The screen will now display the 'Enter Message' prompt.

Entering the Message:
C Pressing cancel at this time will return the user to the 'Enter pager number' prompt.

C The user can press the number keys to create a numeric message to send to the target pager, alternatively if the Up or Down arrow key is pressed then the unit will scroll through the Canned messages available.

C These are pre-defined messages that are stored inside the unit. Once a canned message is displayed then the number keys can be pressed to switch between the 10 messages available, alternately the messages can be scrolled through with the arrow keys.

C Pressing Cancel will return to the 'Enter Message' prompt.

Initiating a Page:
Once the desired message is displayed then the Enter or # key can be pressed to send the message. The unit will respond with two short beeps and the screen will display 'PAGING'. Once the message is sent then the unit will return to the 'Enter pager number' prompt.

10.0 SERIAL PROTOCOL INFORMATION

The serial communication port has DCE (data communication equipment) connections to allow an 'all connections straight through' cable from a standard D9 'RS232' port on an IBM PC compatible.

The Salcom paging protocol consists of readable ASCII commands, is 9600 baud, uses no parity, eight data bits and one stop bit (9600 N 8 1)

Protocol Command Set

CA	SALCOM
Usage:	CA<pager#>[<space>]<level>[<space>/<cr>]<message><CR>
Description:	Call alphanumeric pager
Example:	CA119358 1 Please return to reception<CR>
Response:	CA01193581<CR> <SPACE>Page Sent<CR>
Example 2:	CA119358 1<CR> Please return to reception<CR>
Response 2:	CA01193581<CR> MSG?<echos each character of message><CR> <SPACE>Page Sent<CR>

CN	SALCOM
Usage:	CN<pager#>[<space>]<level>[<space>/<cr>]<message><CR>
Description:	Call numeric pager
Example:	CN119358 1 777<CR>
Response:	CN01193581<CR> <SPACE>Page Sent<CR>
Example 2:	CN119358 1<CR> 777<CR>
Response 2:	CN01193581<CR> MSG?<echos each character of message><CR> <SPACE>Page Sent<CR>

11.0 SPECIFICATIONS

Parameter	Specified value
Power Supply	+12V nominal, (11.5V - 14V)
RF Frequency	450 - 470 MHz Synthesized frequency control
Channel Spacing	12.5 KHz or 25 KHz
Output Power	100mW, (+20dBm)
Modulation	Carrier FSK with NRZ data
Deviation	+/-2.25kHz or +/-4.5kHz
Transmit duty cycle	Up to 100%
Baud rate	512 Baud (1200 Baud to order)
Message format	POCSAG
Message length	200 characters total.
Spurious Outputs	-36dBm or less
Serial input/output	RS-232 (DCE), 9600 baud no parity,8 data bits, 1 stop bit
Serial paging protocols	SALCOM proprietary CN and CA protocols
Power Consumption	Standby 60mA. Transmit: 120mA approx
Discrete inputs	Ground to initiate transmission
Type Approvals	
Case Dimensions	120 x 160 x 65mm
Weight	330grms
Temperature	-30 to +60 deg C

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