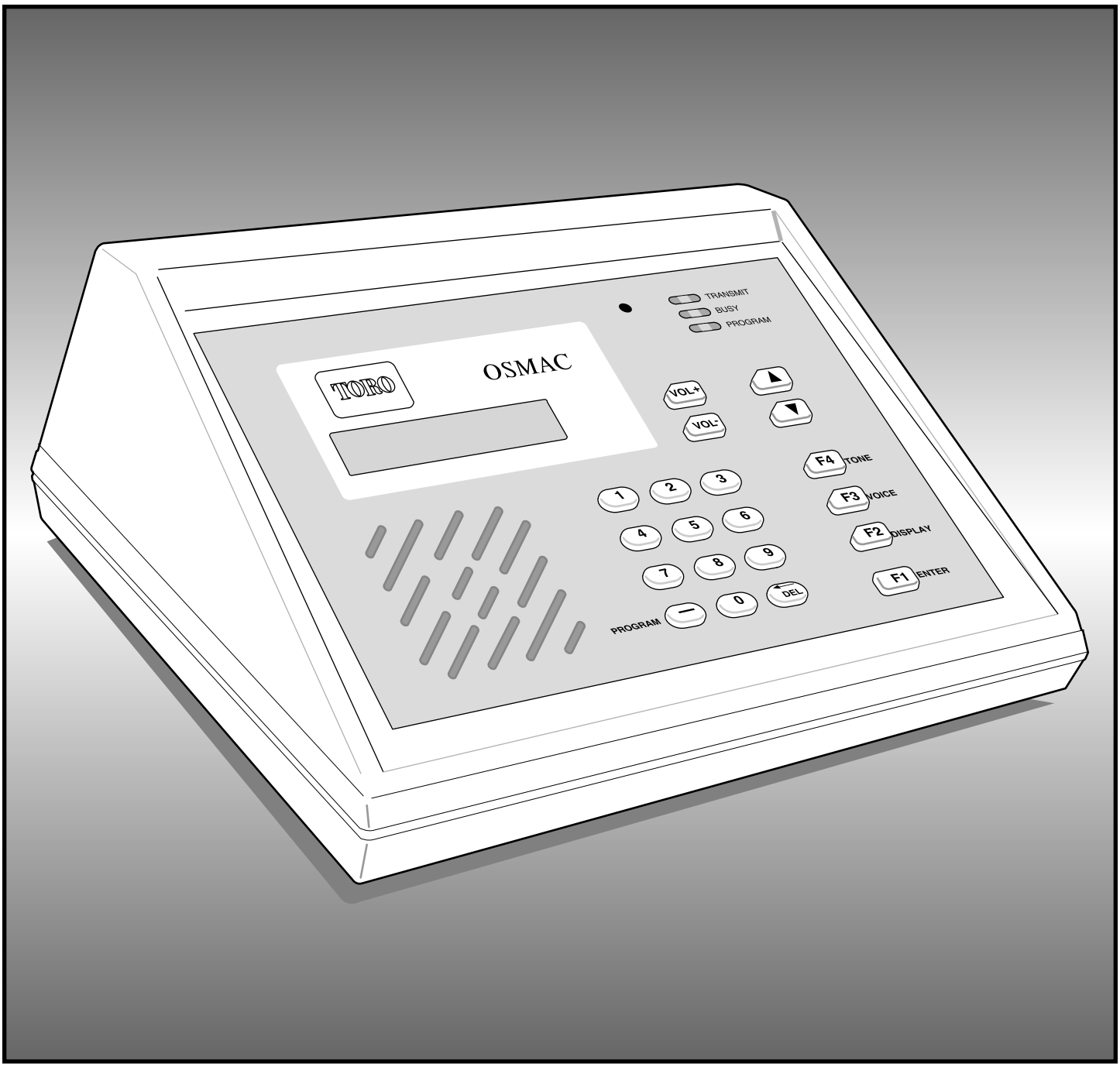
OSMAC® Base Station

Digital Wireless Paging System

Field Service Guide



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System Configuration
(Key **1** held down during power-up)
PASSWORD - **1590**
Note: Factory configuration defaults are indicated in bold type.

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  - **7 DATA BITS**
  - 8 DATA BITS
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  - 2 - 600 BAUD
  - 3 - 1200 BAUD
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- 2 SERIAL PORT RATE
  - 1 - 300 BAUD
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  - 5 - 4800 BAUD
  - **6 - 9600 BAUD**
  - 7 - 19200 BAUD
- 3 SERIAL STOP BITS
  - **1 STOP BIT**
  - 2 STOP BITS
- 4 SERIAL PARITY
  - **EVEN PARITY**
  - ODD PARITY
  - NO PARITY
- 5 FLOW CONTROL
  - **NO FLOW CONTROL**
  - HARDWARE CONTROL
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    - **{464.5 MHZ}**
  - 2 RX SIGNALING
    - **1 (CARRIER ONLY)**
    - 2 CTCSS
  - 3 INVERT CARRIER DETECT
    - YES
    - **NO**
  - 4 INVERT TRANSMIT DATA
    - YES
    - **NO**
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6 DIAGNOSTIC MODE
(See Diagnostic Mode below)

Diagnostic Mode
(Menu item 6 from the Configuration Mode)
Note: Factory configuration defaults are indicated in bold type.

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- CONNECTED

F2 TOGGLE RADIO CONNECTION
- **DISCONNECTED**
- RECEIVE MODE
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F3 CONNECT MICROPHONE
- **DISCONNECTED**
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F4 TOGGLE SPEAKER CONNECTION
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6 KEYPAD & KEYBOARD TESTS
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CONFIGURATIONS

System Configuration

The configurations of the OSMAC Base Station can easily be modified to suit the user's requirements. The system configuration mode can be accessed by holding the "**1**" key during power up. It can also be accessed by simultaneously pressing the "**CTRL**" and "**MENU**" key from an external keyboard such as the central computer. The base station will respond with the password prompt. The password for the Configuration Mode is 1590. The system configuration menu is shown on page 4 as a guide to locate the parameters to be configured.

Use the arrow keys to cycle through the configuration menu. To select from the menu, enter the number designated to that option. To change any of the parameters, simply scroll or enter the number designated to the desired option. In the case where numerical value needs to be entered, use the keypad to enter digits. Press "**F1**" to confirm and accept the selection. Press the "**–**" key to exit from the sub-menus and return to the upper level menus. To exit the configuration mode, press the "**–**" key until the "**Pager No=**" prompt is shown. New configuration(s) and/or value(s) are not permanently stored until the Configuration Mode is properly exited using the "**–**" key. If the unit is turned off, or power is lost before the "**–**" key is entered, changes to the configuration will not be saved.

Serial Port Setup

Each of the two serial ports may be configured independently. The serial ports are located at the rear of the unit and are labeled **PORT 1** and **PORT 2**. To access from the main System Configuration menu, enter "**1**" for Port 1 or "**2**" for Port 2. Port settings for SitePro and TouchNet interface:

Serial Data Bits = 7 data bits
Serial Port Rate = 9600 Baud
Serial Stop Bits = 1 stop bit
Serial Parity = Even parity
Flow Control = No flow control
Protocol = TAP
TAP Timeout = 0

Speaker Enable

The speaker is in mute mode, with the exception of Diagnostics Mode, if speaker is disabled. This option can be used when the OSMAC Base Station is located where speaker sounds are not desirable. To access from the main System Configuration menu, enter "**3**" for Mode Selection, then enter "**1**" for the Speaker Enable selection.

Busy Channel Lockout

If this mode is enabled, the OSMAC Base Station will not transmit while the channel is busy. This may be desirable to avoid interfering with other users on the same channel. This mode can be disabled when other activities on the channel prohibits base station transmission in a timely manner. To access from the main System Configuration menu, enter "**3**" for Mode Selection, then enter "**2**" for the Busy Channel Lockout selection.

Remote Paging

If this mode is enabled, remote users can operate the OSMAC Base Station using a telephone. A phone line must be connected to the base station to use this option. To access from the main System Configuration menu, enter "**3**" for Mode Selection, then enter "**3**" for the Remote Paging selection.

Call Forwarding

If this mode is enabled, remote users are able use a two-way-radio make a telephone call from the base station. A phone line must be connected to the base station to use this option. To access from the main System Configuration menu, enter "**3**" for Mode Selection, then enter "**4**" for the Call Forwarding selection.

Autopatch Timer

The autopatch timer establishes the length of time that the OSMAC Base Station awaits before terminating the autopatch session automatically. This is needed in case the two-way-radio user's batteries fails or the user is out of range. To access from the main System Configuration menu, enter "**3**" for Mode Selection, then enter "**5**" for the Auto Timer selection.

Enter the number of minutes that the autopatch may be operated before the disconnect warning tones are sent. Use the "**DEL**" key to correct invalid entries. Press the "**–**" key to exit the menu. Setting the Autopatch Timer to a value of "**0**" will disable the autopatch operation.

Voice Prompts

This mode allows the user to select whether audible tones or voice prompts are used to confirm radio and phone operations with the OSMAC Base Station. To access from the main System Configuration menu, enter "**3**" for mode selection, then enter "**2**" for Busy Channel Lockout. To access from the main System Configuration menu, enter "**3**" for Mode Selection, then enter "**6**" for the Voice Prompt selection.

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Warmup Signal

If this mode is enabled, a special “warmup” signal is transmitted for a brief period of time at the beginning of each transmission. This may improve reception by satellites in some circumstances. To access from the main System Configuration menu, enter “**3**” for Mode Selection, then enter “**7**” for Busy Channel Lockout.

Transceiver Setup

The OSMAC Base Station is equipped with a transceiver that enable the base station to communicate with a two-way radio. The base station can also interface with an external transceiver. In either case, it has been programmed with the correct transmitter type, carrier detect inversion, transmit data inversion and TX bandwidth modes. The user should not change these settings or improper operation will result. To access from the main System Configuration menu, enter “**4**” for the Transceiver Setup.

Transmit and Receive Frequencies

Enter the desired transmit or receive operating frequency using the number keys. The decimal point is automatically entered. Use the “**DEL**” key to delete any incorrect entries. Valid frequencies range from 403.005 Mhz to 512.995 Mhz and the last digit must be a five or a zero to be a valid entry. Press “**F1**” or “**–**” key to accept the new frequency. To access Transmit Frequency from the Transceiver Setup menu, enter “**1**” for Transmit Setup, then enter “**1**” for Transmit Frequency. To access Receive Frequency from the Transceiver Setup menu, enter “**2**” for Receive Setup, then enter “**1**” for Receive Frequency.

Transmit and Receive Signaling

By enabling Carrier Squelch mode, the base station will allow the two-way-radio user to hear the command signals being transmitted. Carrier Squelch mode may be desirable if no other users or interference are on the channel. To enable this mode, press “**1**” to select CARRIER ONLY. Press the “**F1**” key to save configuration and “**–**” to exit the menu. To access Transmit Signaling from the Transceiver Setup menu, enter “**1**” for Transmit Setup, then enter “**2**” for Transmit Signaling. To access Receive Signaling from the Transceiver Setup menu, enter “**2**” for Receive Setup, then enter “**2**” for Receive Signaling.

CTCSS operation should be used when other users are sharing the channel, or there are excessive interference in the channel, and or two-way-radio users do not want to hear the transmission signals. In this mode, a low frequency tone is transmitted along with the desired audio. The receiver is enabled only when this tone is present, thus eliminating unwanted signals. To enable this mode, press “**2**” to select CTCSS from the Receive Signaling menu. Use the arrow keys to select the desired tone frequency. Press the “**F1**” key to accept and save the frequency.

CW Identification Call Sign

In many cases, the rules and regulations under which the OSMAC Base Station is licensed requires the station's Call Sign to be transmitted at regular intervals using Morse Code for identification purposes. The Base Station sends the Call Sign (with CTCSS turned off) every 10 minutes if the Call Sign has been programmed. This feature is set disabled from the factory.

To enable this feature, press “**5**” from the main System Configuration menu. At the prompt, enter your station's Call Sign identification number from your license as follows:

- Enter the numbers directly from the keypad.
- Letters and other special symbols are entered by pressing the arrow keys.
- Press the “**F2**” key to accept the displayed letter or to enter a “**space**” character which is displayed as a “_” and results in a pause in the Morse Code.
- Press the “**DEL**” key to correct errors or clear the display completely to disable CW Identification.
- Press the “**F1**” or “**–**” key to accept the Call Sign settings and exit the menu.

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DIAGNOSTICS

Built-in Diagnostics

If the user selects DIAGNOSTICS MODE from the Configuration Menu, the OSMAC Base Station goes into a diagnostics mode. This mode allows the operator to exercise many of the Base Station's hardware functions and help troubleshoot any problems with connections to the unit. Connections to the phone line, radio, speaker and microphone may be independently toggled for testing.

The Functions that are available are:

F1 - Toggle the connection of the phone line between On and Off
F2 - Toggle the Base Station radio connection between Off, Receive and Transmit modes
F3 - Toggle the unit microphone connection between On and Off
F4 - Toggle the unit speaker between On and Off

1 – Satellite Bit Test (sends alternating 1010 pattern at a specific baud rate)
- 1 – 512 baud
- 2 – 1200 baud
- 3 – 2400 baud

2 – Sound Tests
- – Press any of the number keys to play one of the first 10 sounds
- – Press the up arrow key to select additional sounds

3 – DTMF tests
- – Press one of the 16 lower buttons to generate DTMF tones in "encode" modes
- – Press the down arrow key to exit the DTMF test mode
- – Press the up arrow key to toggle between the following test modes:
  - Encode DTMF continuously
  - Decode DTMF from the radio or phone line, depending on which was enabled last
  - Encode DTMF in 50 mS beeps
  - Encode only the low tone continuously
  - Encode only the high tone continuously

4 – DAC ramp test (exercises the sound DAC)
- – Press the number keys to change the ramp frequency

5 – LCD display tests
- – Press the "**–**" key to sequence between the tests

6 – Keypad and keyboard test
- – Keypad codes and external keyboard scan codes are displayed when keys are pressed
- – Press the "**–**" key on the keypad twice to exit this test mode

7 – Alarm inputs (displays the status of the alarm inputs)

Remote Diagnostics

Test functions may also be initiated remotely via a two-way radio which is equipped with a 16 tone DTMF keyboard.

Key Sequence	Function
* A	Send an "A" DTMF tone to the radio and the phone line continuously for a period of time.
* B	Send all 16 DTMF tones plus all 8 single tones to the radio and the phone line.
* D	Transmit the CW Identification Call Sign in Morse Code. CTCSS is turned on.

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SERIAL PORT PROTOCOL

The OSMAC Base Station transmitter supports three different serial port communication protocols.
The three protocols supported are:

TAP (also called IXO)	The Telocator Access Protocol is the protocol for communications between central computer devices and the base station. This is the protocol used by SitePro and TouchNet.
COMP1	This protocol is a simple way to send commands to one specific satellite. This protocol allows the user to use a computer terminal to type the commands into the OSMAC Base Station. The Base Station must be pre-configured with the satellite ID of the field satellite being controlled. All data that is sent into the serial port of the Base Station will be transmitted to that one satellite.
COMP2	COMP2 is similar to COMP1 with the exception that each transmitted commands requires two lines of text to be entered. The first line is the satellite address number being transmitted, and the second line is the alpha or numeric command to send to that satellite.

TAP
The Telocator Alphanumeric Protocol, or TAP protocol as it is called, is used to send numeric command information to the transmitter. It is the order and sequence of characters sent over the serial interface to the transmitter. The transmitter must parse the commands and take the appropriate actions.

The following sections describe how the TAP protocol works. It assumes that the device communicating with the OSMAC Base Station is directly connected via a serial cable. If other means are used (i.e. modem), then the modem connection must first be established. For the purposes of this manual, the Base Station is assumed to be the transmitter, and the device connected to its serial port is the “Entry Device”. Typical entry devices are computers, paging terminals, and alarm monitors. Characters listed in brackets <**XX**> are ASCII codes and the values for them are listed in the ASCII Control Character Table.

After initiating a command and receiving the “ID=” prompt, the Entry Device can respond in one of two different ways. One way places the Base Station into an Automatic Mode, and the other places the base station into a Manual Mode.

Initiating a Command

Entry Device	OSMAC Base Station Action	Comment
<CR>		The entry device should send a <CR> at two second intervals until the OSMAC Base Station responds with the characters ID =. The <CR> is an ASCII code 13h.
	ID = <CR> <LF>	The Base Station will respond within one second of the <CR>, and it does not end the ID = prompt with a <CR> or a <LF>.

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Automatic Entry of a Command

Entry Device	OSMAC Base Station Action	Comment
<ESC> PG1 <CR>		The entry device tells the base station transmitter that it wants to automatically send a POCSAG command by ending this sequence.
	<CR> <ACK> <CR> or **<CR> <NAK> <CR>** or **<ESC> <EOT> <CR>**	The Osmac Base Station will respond within one second of the ACK sequence signifying that the entry device has successfully logged on to the base station. If command entries cannot be accepted, it will respond with the NAK sequence or the ETX sequence, which should force the entry device to disconnect.
	<ESC> [p <CR>	This “go ahead” sequence tells the entry device that it is OK to go ahead and send over the information for the first command(s). The “**p**” is always the lower case p.
<STX> Satellite ID <CR> **Command <CR>** **<ETX>** **Checksum <CR>**		This Satellite/Command Sequence Block tells the base station the ID (the satellite ID Code in the satellite database) of the satellite the command is to be sent to. The checksum is computed as shown in this document. The total number of characters sent from the entry device per sequence should not exceed 255.
Repeat the above Satellite/Command Sequence Block as many times as required, if more commands are to be sent.		
<EOT> <CR>		When the entry device does not want to send any more commands, it sends this EOT sequence to tell the base station that it is finished with this automatic session.
	Pages Accepted <CR> **or** **Invalid Page Entered <CR>** **or** **<Message> <CR>**	One of these status messages will be returned at the end of the session. They are for information purposes only.
	<CR> <RS> <CR>	This is only sent if there was an error in this session, probably due to an invalid satellite ID or a message type mismatch.
	PAGING EXCHANGE DISCONNECT <CR> **<ESC> <EOT>**	The end of transaction message sent from the Base Station to the entry device telling it to disconnect.

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Manual Entry of a Command

Entry Device	OSMAC Base Station Action	Comment
M <CR>		The entry device tells the OSMAC base station that it wants to manually send a POCSAG command by ending the **M**.
	ENTER PAGER NUMBER:	The Osmac Base Station will respond within one second of the **M** sequence signifying that the entry device has successfully logged on to the base station, and it is ready to receive command information. The base station begins by responding with this prompt.
Satellite ID <CR>		The user responds with the satellite number he/she wishes to transmit commands to.
	Enter Alpha Message: **or** **Enter Numeric Message:**	The base station responds with one of the following messages, depending upon the type of satellite controller that the satellite number is assigned to.
Command <CR>		The user enters the command to send to the satellite.
	Sending Message... <CR>	The base station displays this command as it sends the it to the satellite.
	Message Sent <CR> **or** **Can't Deliver to XXXXXXX <CR>** **or** **Too Slow, Goodbye. <CR>** **or** **Too many errors, Goodbye. <CR>**	One of these messages will then be sent from the base station depending upon the current situation of the command that was entered. The serial port has a 45 second activity time, and it will force and end the manual session if the user does not complete the command in that time frame.

TAP Protocol Timing Issues

The OSMAC Base Station will only wait for 15 seconds for a response to return from the entry device. If a response is not received within the time-out period, the base station will cancel the current transaction. It will send the <ESC> <EOT> <CR> sequence.

TAP Protocol Line Feed Issues

The OSMAC Base Station will ignore all <LF> characters it receives. The entry device may send a <LF> with any <CR>.

XOFF

In the very unlikely event that the user enters more commands than the OSMAC Base Station can queue up, the base station will send the <XOFF> character before sending a carriage return. The base station will send the <XON> character when buffer space is available for more commands. If the base station does not receive any data within 10 seconds after sending an <XON>, it will send another <XON>.

EOT

Whenever the OSMAC Base Station terminates a session by sending the <EOT><CR> sequence, it will drop the DTR signal on the RS-232 signal for 250mS. This will normally cause any linked modem to disconnect.

Sending Multiple-Line Commands

Users cannot send the <CR> return character into the serial port. Instead of a <CR>, use the TAB character if you wish the command to continue on another line of a multi-line satellite. The OSMAC Base Station will translate the TAB character to a <CR> when it transmits the command to the satellite.

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Computing the Checksum

The checksum is a simple arithmetic sum of the 7-bit values of all characters preceding it. The checksum reported is the least significant 12 bits of this summation, converted to BCD ASCII.

Checksum Example:

STX	000	0010
1	011	0001
2	011	0010
3	011	0011
<OCR>	000	1101
A	100	0001
B	100	0010
C	100	0011
<CR>	000	1101
ETX	000	0011
TOTAL	10111	1011
Convert to BCD	1 0111	1011
Answer in BCD ASCII	1 7	;

COMP1

COMP1 enables the OSMAC Base Station to interface with any device that can output RS-232 data . All data entering the serial port is sent to a pre-set satellite. The reception of a <CR> will initiate transmission of the command.

Manual Entry of a Command

Entry Device	OSMAC Base Station Action	Comment
<Command> <CR>		The user types in the command to send to a pre-set satellite from the entry device.
	Characters are echoed back.	

COMP2

COMP2 enables the OSMAC Base Station to interface with any device that can output RS-232 data. It has the added capability of selecting specific satellite or satellite groups to transmit the command.

All data entering the serial port is sent to a pre-set satellite. The reception of a <CR> will initiate transmission of the command. If the last <CR> is not sent within 15 seconds, the OSMAC Base Station will abort this transaction, and begin waiting for a new <Satellite #> entry.

Manual Entry of a Command

Entry Device	OSMAC Base Station Action	Comment
<Satellite#> <CR> <Command> <CR>		The user types in the command to send to the pre-set satellite from the entry device.
	Characters are echoed back.	

ASCII control characters

For your reference, here is a table of the commonly used ASCII control characters.

Decimal	Hex	Code	Decimal	Hex	Code
00	00	<NUL>	16	10	<DLE>
01	01	<SOH>	17	11	<XON>
02	02	<STX>	18	12	<DC2>
03	03	<ETX>	19	13	<XOFF
04	04	<EOT>	20	14	<DC4>
05	05	<ENQ>	21	15	<NAK>
06	06	<ACK>	22	16	<SYN>
07	07	<BEL>	23	17	<ETB>
08	08	<BS>	24	18	<CAN>
09	09	<TAB>	25	19	<EM>
10	0A	<LF>	26	1A	<SUB>
11	0B	<VT>	27	1B	<ESC>
12	0C	<FF>	28	1C	<FS>
13	0D	<CR>	29	1D	<GS>
14	0E	<SO>	30	1E	<RS>
15	0F	<SI>	31	1F	<US>

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DATABASE TRANSFER

The OSMAC Base Station database can be uploaded and downloaded. This feature is very useful in managing databases containing large number of satellites. This function is also helpful in storing data for data backup purposes as well as to facilitate databases cloning from one unit to another. The uploading and downloading of data can be achieved by a host computer that is connected to the serial port which is configured for TAP protocol.

Database Format

The OSMAC Base Station database are uploaded or downloaded in ASCII form. The data can be readily transferred, stored and/or edited as desired. The format of the database output is as follows:

DB1[0D]
VERSION,{VERSION},{OPTIONS},[0D]
SERIAL,{PORT},{BITS},{STOP},{PARITY},{FLOW},{BAUD},{TAP-TO},{COMP-TO},{MAN-TO},{PROTO},[0D]
MODE,{SPKR},{BUSY},{REMOTE},{CALL},{AP-TIMER},{VOICE},{WARMUP},[0D]
RADIO,{T-REF},{T-FREQ},{T-CTCSS},{BW},{R-REF},{R-FREQ},{R-CTCSS},{CD},{DATA},{TYPE},[0D]
AUTODIAL,{MEMORY NUM},{PHONE NUM},[0D]
PAGER,{0-999},{TYPE},{CAPCODE},{FORMAT},{GROUP},{ACTIVE},{DUR-A},{DUR-B},[0D]
GROUP,{NUMBER},{SATELLITE NUM},{MEMBERS},{SPARE},{MEMBER 1},…{MEMBER N}[0D]
DONE[0D]

Where:

DB1	Signifies that the database download follows
[0D]	Is an ASCII carriage return
VERSION	Signifies that the version string follows
{VERSION}	Firmware version string
{OPTIONS}	Firmware options
SERIAL	Signifies that this line is data for a serial port
{PORT}	Port number for this line's data
{BITS}	Number of data bits (0= 7 bits, 1= 8 bits)
{STOP}	Number of stop bits (0= 1 bit, 1= 2 bits)
{PARITY}	Parity (0= No Parity, 1= Odd, 2= Even
{FLOW}	Flow control (0= None, 1= Xon/Xoff, 2= RTS/CTS)
{BAUD}	Baud rate (0= 300, 1= 600, 2= 1200, 3= 2400, 4= 4800, 5= 9600, 6= 19200)
{TAP-TO}	Timeout for TAP protocol in seconds
{COMP-TO}	Timeout for COMP protocol in seconds
{MAN-TO}	Timeout for manual entry mode in seconds
{PROTO}	Port protocol (0 = TAP, 1 = COMP1, 2 = COMP2)
MODE	Signifies that this line is data for mode settings
{SPKR}	Speaker enable mode on/off
{BUSY}	Busy channel lockout on/off
{REMOTE}	Remote enable on/off
{CALL}	Call forwarding on/off
{AP-TIMER}	Autopatch timer in second
{VOICE}	Voice Prompts on/off
{WARMUP}	Warmup signal on/off
RADIO	Signifies that this line is data for the radio transceiver
{T-REF}	Transmit reference frequency in Hz
{T-FREQ}	Transmit frequency in Hz
{T-CTCSS}	Transmit CTCSS code (-1 = CTCSS off)
{BW}	Transmit Bandwidth (0= wide, 1= narrow)
{R-REF}	Receive reference frequency in Hz
{R-FREQ}	Receive frequency in Hz
{R-CTCSS}	Receive CTCSS code (-1 = CTCSS off)
{CD}	Carrier detect inversion on/off
{DATA}	Transmit data inversion on/off
{TYPE}	Transceiver type code
AUTODIAL	Signifies that this line is data for an autodial memory
{MEMORY NUM}	Memory number
{PHONE NUM}	Phone number

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PAGER	Signifies that this line is a data for a satellite
{0-999}	Satellite number for the data on this line
{TYPE}	Satellite type: ALPHA, NUMERIC, TONE, ALERT or VOICE
{CAPCODE}	Satellite CAPCODE. If the satellite number refers to a group of satellites, then the capcode number will be the group number minus 1. DUR-A is not zero, CAPCODE contains frequencies of the two tones with the first tone frequency in units of 1/10 Hz in bits 0 to 15 and the second tone frequency in units of 1/10 Hz in bits 16 to 31.
{FORMAT}	Paging format: POC512, POC1200, POC2400, TWO-TONE or GROUP-TONE
{GROUP}	This field is either Y if it is a satellite group, or N if it is not a satellite group
{ACTIVE}	This field is either Y if the satellite is enabled, or N if it is de-activated
{DU-A}	Duration of first tone in units of 50 mS for two-tone satellites with random frequencies. Otherwise, the frequency is 0.
{DUR-B}	Duration of second tone in units of 50 mS for two-tone satellites with random frequencies. Otherwise, the frequency is 0.
GROUP	Signifies that this line is the data for a satellite group
{NUMBER}	Satellite group number (1-16)
{SAT NUM}	Satellite number that references this group
{MEMBERS}	Number of satellites assigned to this group
{SPARE}	A blank entry for future use
{MEMBER 1}	The satellite number for the first member. All other members follow this one and are separated by commas.
{MEMBER N}	This is the satellite number for the final member of the satellite group
DONE	This entry signifies the end of the database.

Retrieving the Database

The OSMAC Base Station will send the contents of its database out the serial port when it is given the command <ESC>SDB<CR>. The database is transmitted out at the currently configured baud rate in an ASCII format, with commas between the parameters and a <CR> at the end of each line.

Example Output of the database:

```
DB1[0D]
VERSION,307D31,1,
SERIAL,0,0,0,2,0,5,30,60,90,0,
SERIAL,1,0,0,2,0,5,30,60,90,0,
MODE,1,0,1,1,10,1,1,
RADIO,6250,462925000,-1,0,6250,462925000,-1,0,0,2,[0D]
AUTODIAL,0,8531212,[0D]
AUTODIAL,1,18005551212,[0D]
AUTODIAL,2,,[0D]
AUTODIAL,3,,[0D]
AUTODIAL,4,,[0D]
AUTODIAL,5,,[0D]
AUTODIAL,6,,[0D]
AUTODIAL,7,,[0D]
AUTODIAL,8,,[0D]
AUTODIAL,9,,[0D]
PAGER,0,ALPHA,9,POC1200,N,Y,0,0,[0D]
PAGER,1,NUMERIC,0,POC2400,Y,Y,0,0,[0D]
PAGER,2,NUMERIC,2,POC1200,N,Y,0,0,[0D]
PAGER,3,NUMERIC,100303,POC1200,N,Y,0,0,[0D]
PAGER,4,NUMERIC,4,POC1200,N,Y,0,0,[0D]
PAGER,5,NUMERIC,5,POC1200,N,Y,0,0,[0D]
PAGER,10,NUMERIC,10,POC2400,N,Y,0,0,[0D]
PAGER,11,NUMERIC,11,POC1200,N,Y,0,0,[0D]
PAGER,12,NUMERIC,12,POC512,N,Y,0,0,[0D]
PAGER,13,ALPHA,13,POC512,N,Y,0,0,[0D]
PAGER,14,ALPHA,14,POC1200,N,Y,0,0,[0D]
PAGER,17,NUMERIC,0,0,0,Y,Y,0,0,[0D]
PAGER,20,ALPHA,20100,POC512,N,Y,0,0,[0D]
PAGER,21,NUMERIC,21,POC1200,N,Y,0,0,[0D]
PAGER,22,NUMERIC,2200,POC1200,N,Y,0,0,[0D]
PAGER,100,TONE,99,POC1200,N,Y,0,0,[0D]
PAGER,101,NUMERIC,1010,POC512,N,Y,0,0,[0D]
```


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PAGER,102,ALPHA,1020,POC512,N,Y,0,0,[0D]
PAGER,103,TONE,1030,POC1200,N,Y,0,0,[0D]
PAGER,104,NUMERIC,1040,POC1200,N,Y,0,0,[0D]
PAGER,105,ALPHA,1050,POC1200,N,Y,0,0,[0D]
PAGER,105,ALPHA,1050,POC1200,N,Y,0,0,[0D]
PAGER,106,TONE,1060,POC2400,N,Y,0,0,[0D]
PAGER,107,NUMERIC,1070,POC2400,N,Y,0,0,[0D]
PAGER,108,ALPHA,9,POC1200,N,Y,0,0,[0D]
PAGER,109,ALPHA,9,POC1200,N,Y,0,0,[0D]
PAGER,110,ALPHA,10,POC1200,N,Y,0,0,[0D]
PAGER,115,NUMERIC,0,,Y,Y,0,0,[0D]
PAGER,123,ALPHA,123,POC512,N,Y,0,0,[0D]
PAGER,125,ALERT,131195,TWO-TONE,N,Y,0,0,[0D]
PAGER,300,TONE,3000,GROUP-TONE,N,Y,0,0,[0D]
PAGER,301,TONE,30000,GROUP-TONE,N,Y,0,0,[0D]
PAGER,400,TONE,4000,GROUP-TONE,N,Y,0,0,[0D]
PAGER,500,TONE,5000,GROUP-TONE,N,Y,0,0,[0D]
PAGER,510,TONE,655380000,TWO-TONE,N,Y,20,20,[0D]
PAGER,556,ALPHA,0,,Y,Y,0,0,[0D]
PAGER,599,NUMERIC,599,POC1200,N,Y,0,0,[0D]
PAGER,998,NUMERIC,997,POC1200,N,Y,0,0,[0D]
PAGER,999,TONE,12345,POC2400,N,Y,0,0,[0D]
GROUP,1,1,23,,100,101,102,103,104,105,106,107,108,109,110,999,104,104,105,105,105,104,106,107,108,106,109[0D]
GROUP,5,556,3,,123,122,121[0D]
GROUP,15,115,5,,123,10,1,23,20[0D]
GROUP,16,17,3,,100,103,106[0D]
DONE[0D]

Restoring/Uploading the Database

If the database is stored on a disk in the format shown above, it may be re-loaded into the OSMAC Base Station. Use a terminal emulation program to send the ASCII file into either serial port in a plain-text format. The serial port must be configured for TAP protocol.

The Base Station will answer every line that is sent with an OK> if the line is acceptable, or ER> if there is an error. If any error(s) occur during uploading, a message will be displayed at the end of the upload sequence and the information received will not be saved. If this occurs, reduce the data rate transfer of the communication port in use or enable the hardware flow control, then retry the upload operation.

Note: The “DB1[0D]” sequence in the first line notifies the base station that a database file will be sent. The word “DONE” at the end of the file informs the base station that the database file transmission has ended. Once the word “DONE” is received by the base station and no error is detected, it will immediately save the database into its FLASH memory.

Erasing Satellites or Groups from the Database

Uploading the database file into the OSMAC Base Station can only add and re-program the satellite(s) and satellite group(s) specified. The process does not erase other satellites with entries already stored in the unit memory.

If the user wants to erase the satellite database, use a text editor to add a line before the first “PAGER” entry in the database. The only characters on the line should be:

ERASEDATABASE[0D]

This line will tell the OSMAC Base Station to clear the database before it adds the new satellites and groups from the ASCII file. If you only wish to erase the group information, and not the individual satellites, put a line in the file that reads:

ERASEGROUPS[0D]

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Programming Two-Tone Satellites with Non-Standard Frequencies

Two-tone or group-tone satellite using non-standard frequencies and durations may be programmed via the database upload command. Use a text editor to create an entry in the database file for the satellite as follows before uploading the file to the unit:

PAGER,{0-999},{TYPE},{CAPCODE},{FORMAT},N,{ACTIVE},{DUR-A},{DUR-B},

Where:

PAGER	Signifies that this line is the data for the satellite
{0-999}	Satellite number for the field satellite
{TYPE}	Satellite type: TONE, ALERT or VOICE
{CAPCODE}	Bits 0 to 15 = First tone frequency in units of 1/10 Hz Bits 16 to 31 = Second tone frequency in units of 1/10 Hz
{FORMAT}	Transmission format: TWO-TONE or GROUP-TONE
{ACTIVE}	Is either Y if the satellite is enabled, or N if it is de-activated
{DUR-A}	Duration of the first tone in units of 50 mS
{DUR-B}	Duration of the second tone in units of 50 mS. Set to 0 for group-tone satellite.

Programming the Unit Configuration

The unit's configuration data stored in the SERIAL, MODE, RADIO and AUTODIAL entries are normally ignored when the database file is uploaded to the OSMAC Base Station. This is a security feature in order to prevent unauthorized users from changing the unit configuration.

If the user desires to change the base station's configuration through data download, use a text editor to add the following line to the database file immediately after the "DB1" entry:

PASSWORD,xxxxxx,[0D]

Where xxxxxx is the same password required to access the Configuration Mode from the OSMAC Base Station's front panel.

FIRMWARE UPDATE

The OSMAC Base Station firmware can be loaded with firmware updates via the serial port number 1.

Note: The user might need to reset the Flash memory and reload the database of satellites after you load the new firmware into the unit. Before updating the firmware, it is recommended for the user to download and save the satellite database as described in the "Retrieving the Database" section of this manual.

Start the update by connecting a computer terminal to the serial port of the OSMAC Base Station. On the computer, run a terminal emulation program such as Hyperterminal or ProComm. Set the baud rate to 38.4kbps, 8 data bits, 1 stop bit and no parity. Power up the Base Station and hold the "**–**" button down. You should see a sign-on message from the Base Station that looks like the following:

PageCenter software installation utility
Copyright (c) 1999, Sonik Technologies Corp.
San Marcos, CA
Version: 306D1

Erase current software and begin download?

The computer will prompt the user for confirmation to load the new firmware update, press **Y** for yes. The file name for the OSMAC Base Station firmware is 307XXXBIN, where XXX is the revision code. Begin the file transfer of the new firmware from the computer by using either YMODEM or XMODEM. If one protocol fails to work, try the other. When the update is complete, the unit will reset and start operation.

Check to see whether the satellite's database has been reset by the new firmware version. If the database has been reset, upload the satellite database previously saved.

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