

USER GUIDE

The "ULTIMATE" REMOTE CONTROL AND AUTOMATION INTERFACE MODULE FOR THE SAGE-ENDEC MODEL SE1822 and 3644 Digital E.A.S. ENCODER/DECODER

Software Version 2.0d



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Overview:

The “Ultimate” EAS remote Control and Automation Interface for the Sage-Endec SE1822 and 3644 Digital E.A.S. encoder/decoder has the following features:

- A large backlit LCD scrolling display showing date, time, and alert details, just like the LED sign display, and the unit has a small footprint for crowded studio workspaces.
- An attention getting strobe to catch your eye when an alert is pending, and the color is tailored to the severity of the alert.
- The ability to preview the pending alert audio through an internal speaker or earphones, and an independent rear panel line output is supplied.
- Single push buttons to initiate an RWT, relay a pending alert or RMT, kill a pending alert, preview the pending alert audio, clear the strobe, and reset the LED sign.
- An automation interface that will allow contact closures from your automation or any external contacts or switch to initiate an RWT or relay a pending alert. The interface also includes relay outputs to notify your automation of the presence of a pending alert (momentary or continuous contacts, user selectable) and a momentary closure to notify your automation that the end of message has occurred.
- LED indicator shows “Sending Data” status and “Pending Alert” status

Operation:

The Ultimate EAS Remote Control is a self contained microprocessor based device that interfaces with the Ultimate Interface module via a Category 5e cable of up to 50’ in length. RFI protection is included in the design to assure proper operation in both AM and FM RF environments. The unit “talks” to the Sage-Endec 1822 or Digital 3644 Encoder/Decoder by means of a proprietary code, and connects to the Endec using the Endec COM ports. Please note that it may take 2-5 seconds for the Sage-Endec to decode the various commands and react. A tri-color “Sending Data-Alert Pending” LED indicator is provided to let the operator know if there is an alert pending or that data is being sent to the Endec following a button push.

Power for the Ultimate Remote Control is provided by the supplied power module, and may be left on indefinitely with no adverse reactions. The Interface module derives its power from the Sage-Endec COM ports (pin 9 of the DB9 connector). The supplied contact closures within the Interface Module are rated for 1A at 24VDC and are isolated. Control inputs to Interface Module may be either isolated dry contacts or logic low signals. A pull-up voltage (5VDC, current limited) is internally provided between the control terminals. The Interface module transmits and receives data via the COM ports. Other required connections are the” Decoder Active” or “Dec Rly” and the “Speaker Line Out” connections on the rear of the Sage Endec.

The Ultimate Remote Control:

Front panel

The Ultimate Remote control front panel has 7 operator controlled functions and an earphone jack.

1. RWT: Pressing this button initiates a Required Weekly Test.
2. RLS PEND: Pressing this button will release the alert that is shown active and pending on the LED display. This assumes that the Sage-Endec has not previously automatically relayed the alert.
3. KILL PEND: Pressing this button will deactivate the alert and return the Sage-Endec to its menu mode without relaying the alert. Date and time will again be displayed.
4. CLR SIGN: Pressing this button will return the LED sign to the time and date mode as well as reset the flashing strobe.
5. CLR STROBE: Pressing this button will reset the flashing strobe.
6. PREVIEW AUDIO: Pressing this button will allow the audio portion (monaural) of an alert to be heard either through the internal speaker or stereo earphone jack. When earphones are connected the internal speaker is muted. This function is a timed function, and the audio amplifier is disabled several seconds after the preview audio has played. This prevents unwanted audio from the Sage-Endec from suddenly erupting from the speaker as all audio, tones and digital message signals are provided on the Speaker Line Output terminals of the Sage-Endec. The "Preview Audio" button is disabled for approximately 20 seconds after initially being pushed to avoid inadvertent double pushing of the button causing extraneous commands being sent before the Endec has reset to the main menu.
7. AUDIO GAIN: This control adjusts the audio output level for both the internal speaker and earphones for the Preview Audio function. It is provided with an "off" position to disable the internal audio amplifier if desired.

It is important to note that the RLS PEND, KILL PEND, and REVIEW AUDIO functions are only enabled when there is a pending alert active on the Sage-Endec. This prevents commands being sent in error resulting in a lock-up of the Sage-Endec, and avoids waiting for the automatic time-out cycle on the Endec to take effect. Random button pushing or issuing a command before the unit has completed decoding a previous command will also lock-up the Endec. The red Sending Data led must be out and/or displaying the green "Alert Pending" status before another command may be sent.

It is recommended that the automatic reset time of the Sage-Endec be set to a low number, like 10-15 seconds or less to avoid long waits if errors are made. This is done by entering *menu.config.menu timeout*, and use the more or less keys to adjust the number of seconds. The default is 30 seconds.

Please note that the command language is similar to pushing the front panel buttons on the Sage-Endec and takes approximately the same time as pressing the

sequence manually. (Of course, we go as fast as the Sage-Endec will allow but it has data speed restrictions.) The reaction time of the Endec is slow and several seconds may elapse between the Remote Control button push and the decoding and actual operation of the Endec. A red "Sending Data" LED is provided as feedback to the operator that his command is being sent.

Simultaneous pressing of the remote pushbuttons and the Sage-Endec front panel controls are disallowed. Once commands are issued either by the Remote Control or the front panel of the Endec, the other is locked out for the duration of that command set. The CLR STROBE is an internal function of the Remote Control, and may be pushed at any time desired, while the CLR SIGN button may not be pushed until the red "Sending Data" LED has gone out.

Note that if an alert is pending, the "Alert Pending" LED will be green to signify that there is a pending event. If you issue a command from the Remote Control, the "Alert Pending/Sending Data" LED will turn amber instead of red to signify that data is being sent to the Endec.

Rear panel

The Ultimate Remote Control has the following rear panel connections and control:

1. Data I/O: an RJ45: 8 station modular connector.
2. Power in: A 5/2.5 mm coaxial jack with the center pin positive. The input voltage used is 9VDC at 500ma.
3. Line Audio Out: A mono 3.5mm connector that is transformer coupled (600 ohm) to the Speaker Line Output of the Sage-Endec. Please note that all audio, alert tones, digital signals and alert audio are present at this jack. It may be used for a line input to a studio control board for alert playback using either the RLS PEND (for the entire alert) or the PREVIEW AUDIO (audio portion only).
4. LCD Contrast Control: User screwdriver adjustable LCD contrast control. This may be adjusted to accommodate the user viewing angle if required.

The Ultimate Interface Module:

The interface module has the following interface connections:

1. DB9 on the Interface Module: This DB9 connector connects to an available COM port on the Sage-Endec. The selected COM port must be set up for Hand Held Remote Operation and the baud rate must be set to 9600 on the selected port. (See installation section)
2. Auxiliary DB9 pig-tail: This DB9 connector connects to an available COM port on the Sage-Endec. The selected port must be set up for LED sign operation and the baud rate must be set to 9600 on the selected port. (See installation section)
3. DEC ACT INPUT: This pair of inputs must connect to the "Decoder Active" or "Dec Rly" terminals of the Sage-Endec using the supplied twisted pair of wires. Polarity is not important.

4. RWT: This is a user input pair that will initiate a Required Weekly Test from any normally open contact pair, be it an isolated automation system relay, logic low signal, switch or pushbutton.
5. RLS PEND: This is a user input pair that will release a Pending Alert from any normally open contacts, be it an isolated automation system relay, logic low signal, switch or pushbutton.
6. DEC ACT OUTPUT: This user output is a normally open contact pair that is closed momentarily or continuously whenever the Sage-Endec decoder is active. This will be activated for any incoming alert or pending alert until released in the continuous mode, or for a 1 second pulse in the momentary mode. Momentary or continuous control of this contact closure is determined by the jumper at the right end of the PCB.
7. EOM: This user output is a normally open contact pair that is closed momentarily whenever the Sage-Endec decoder has completed being active, that is, at the end of an alert, test, or released pending alert.
8. AUDIO/COMMON-GND: This is the audio input to the Ultimate Remote Control and must be connected to the Sage-Endec "Speaker Line Outputs" and "Audio Common" or "Gnd" terminals using the supplied shielded cable.
9. RJ45 Data I/O: This 8 station modular connector interfaces with the Category 5 cable to the Ultimate Remote Control. The Ferrite RFI suppressor should be on the Interface Module end.
10. CONT-MOM JUMPER: This jumper determines momentary or continuous closure of the DEC ACT OUTPUT relay function.

Installation:

The following menu items and jumper connections must be set on the Sage-Endec prior to connection of the Ultimate system. It is advisable to remove power from the Endec prior to this installation to avoid accidental shorting within the Endec or initiation of a test. Prevent damage to the Ultimate system by avoiding ground loops between the Ultimate interface module inputs and the station equipment by using only isolated relays, solid state relays, isolated logic low circuits or pushbuttons for control devices.

Note: If an RC1 hand held remote has been or is connected to the Endec and was or is operational, the jumper in the following step 1 for each model has already been enabled and step 1 may be ignored.

SE1822:

1. Assure that JP16 is enabled. This places accessory power on pin 9 of the Endec COM connectors. To verify this, remove the printer cover plate and lift the printer slider plate up towards the top of the Endec. JP16 is located underneath the metal cup that holds the printer paper, near the right edge. If there is no jumper present you must install one across the 2 pins.
2. The Interface Module may be attached to the COM 2, 3 or 6 DB9 connectors on the rear of the SE1822 Endec. Secure the Module to the

Endec using the captive screws provided as a part of the Module. The Ultimate operates at 9600 baud, and COM 2 and 6 are set to 9600 baud by default and cannot be changed. If the COM 3 port is used, you may have to configure the port to 9600 baud as the default setting is 1200 baud. Configure the ports using *menu.devices.port.baud*. Select another available COM port for LED sign operation by selecting; *menu.devices.port.device.type.LED sign* and connect the DB9 pigtail to this port. If the COM 3 port is selected, you may have to configure the port to 9600 baud as the default setting is 1200 baud. Configure the ports using *menu.devices.port.baud*.

3644 Digital:

1. To enable the required DC voltage to pin 9 of the COM ports, remove the top cover of the Endec by removing the six retaining screws and slide the cover plate toward the rear of the Endec. Locate “JP1” on the main green PCB covering the bottom of the case. “JP1” is located towards the rear left corner of the PCB. Do not confuse this “JP1” with the JP1 on the red daughter card. You will find that the jumper is placed on only one of the pins by factory default. Remove the jumper and place it on both pins of “JP1” and replace the cover. Refer to section 13.2 of your Endec 3644 Digital User Guide and Reference Manual.
2. The Interface Module may be connected to COM 3, 4, 5, or 6 on the rear of the Endec. Secure the Module to the Endec using the captive screws provided as a part of the Module. You may have to configure the selected port to 9600 baud as the default settings for all ports is 1200 baud. Configure the selected port using *menu.devices.port.baud*.
3. The DB9 pigtail may be connected to any remaining available port other than COM 3. You may have to configure the selected port to 9600 baud as the default settings for all ports is 1200 baud. Configure the selected port using *menu.devices.port.baud*.

General:

1. Attach the supplied twisted wire pair to the “Decoder Active” or “Dec Rly” terminals on the rear of the Sage-Endec. Polarity is not important.
2. Attach the shielded wire to the “Speaker Line Out” and the closest “Audio Common” or “GND” terminals. The shield goes to the “Audio Common” or “GND” terminal.
3. Connect the twisted pair of wires from the Endec “Decoder Active” or “Dec Rly” terminals to the DEC ACT INPUT on the Interface Module. Polarity does not matter.
4. Connect the shielded conductor from the Endec “Speaker Line Out” and “Audio Common” or “GND” terminals to the AUDIO and COMMON connectors on the Interface Module. Shield goes to COMMON.

5. Connect any auxiliary control wiring you desire to the RWT, RLS PEND inputs, Decoder Active Output and EOM output terminals. The RWT and RLS PEND inputs should interface with isolated contacts or logic circuits to avoid ground loops between equipment.
6. Run the CAT5e data cable to the desired locations with the ferrite RF suppressor at the Interface Module end. Connect the RJ45 modular connectors to the Interface Module.
7. Install the Ultimate Remote Control at its desired location, connect the line out connection (if desired) and connect the power supply. The backlight will come on, the strobe will light for several seconds and “DM Engineering v2.0” will be displayed until the next minute update is received from the Endec after the next step.
8. Re-apply power to the Sage-Endec and wait for the self diagnostics and start-up function to complete. The LCD sign on the Ultimate will wait until the next minute advance of the Sage-Endec clock and then will display the date and time.
9. **The User password must be 1111**, the factory default password. There can be no exceptions without custom programming of the Ultimate microprocessor. Custom programming is available at an additional charge. Please contact DME if custom programming is desired.
10. To change the User password to 1111, use the *menu.change password* command on the Endec. You will need the administrator’s password to do this change, and if it is not available consult section 14.3 of the SE1822 Endec User Guide or section 12.11 in the 3644 Digital Endec User Guide.
11. Assure that the “Decoder Active” or “Dec Rly” relay is set to either the default “Pending” or to the “Pending Done” (preferred) relay program. Go to *menu.relay*, and scroll to the “Decoder Active” relay, and press *pick*. Then scroll to the “Pending Done” or “Pending” choice and select it. See table 5-7 and section 5.7.2 of the SE1822 Sage-Endec User Guide or Table 3-2 and sections 4.7 and 5.7 or the Digital 3644 User Guide for assistance.

Operational Testing note: It is advised that you remove the Sage-Endec from the audio chain before proceeding to avoid on air transmissions from the unit. Just connect the XLR audio inputs to the XLR outputs temporarily.

Note that after a short period of time after power up of the Ultimate, the strobe will light for several seconds and the LCD display will show “DM Engineering V2.0 until the next Endec minute update, then the LCD sign will display the date and time.

You are now ready to test the equipment. Remember...if you have the Sage-Endec in the audio chain it will broadcast alerts!

Try an RWT from the Ultimate Remote Control. The red "Sending Data" LED will light and then the LCD sign will display that the station has sent an RWT and the strobe will flash green. The Sage-Endec will output an RWT. Clear the sign on the Ultimate Remote Control only after the red "Sending Data" LED goes out. Initiate a warning of some type (Tornado, Earthquake, Etc.) from the Sage-Endec front panel. (This cannot be done from the Ultimate Remote Control). Again the LCD sign will display the warning message and the strobe will flash orange. Clear the sign on the Ultimate Remote Control.

Initiate an Alert (CAE, etc.) from the Sage-Endec front panel. (This cannot be done from the Ultimate Remote Control). Again the LCD sign will display the warning message and the strobe will flash red. Clear the sign on the Ultimate Remote Control.

In order to test the Pending Alert functions it will take receipt of an actual alert and the inputting of alert audio from another EAS encoder. This is done by connecting the MAIN/ALERT XLR output from another unit to either the "Monitor 1" or "Monitor 2" input and the audio common terminals of the Sage-Endec under test and initiating an alert from the other unit. You will then be able to release the pending, kill the pending and preview the audio functions. The audio functions can be tested either using the speaker or earphones. Just turn on the audio by rotating the gain control clockwise to a comfortable level. Note that the audio is enabled only when the Preview Audio button is pressed. This is a timed and self muting function, and turns off 5 seconds after the audio has ended.

Warranty Information:

The Ultimate Remote Control and Automation Interface Module are warranted for a period of one year from the date of purchase. This warranty covers materials and workmanship only. Any misapplication, physical or electrical damage from outside sources or by the customer is not covered. The customer must pay shipping costs to the factory, and DME will pay shipping costs to return the warranted equipment to the customer. Any priority shipping costs are to be the responsibility of the customer as ground service is standard. Please contact the factory for an RMA number prior to any returns. Items returned without an RMA may be sent back to the customer unopened.

Technical Support :

If you have questions, experience difficulties with the product or require further information please contact DME at: 805-987-7881 or 800-249-0487, Contact technical support at: support@dmengineering.com or visit www.DMEngineering.com for the latest User Guide.

Specifications:

Case Dimensions (Remote Control): 8.4" wide X 4.3" deep X 1.2" high Case

Dimensions (Interface Module): 3.5' wide X 3" deep X 1" high Remote Control

Case Material and Color: styrene plastic, light grey

LCD Display Dimensions: 6 1/16 X 5/8

Character Size: .453 X .265

LCD Display: Yellow Backlight

Preview Audio Internal Speaker: 1 1/8"

Earphone output: .2 W, variable gain with off switch

Earphone Jack: 1/4" Stereo (wired for mono), disconnects internal speaker when used

Line Output: Balanced 600 ohms, 3.5mm mono rear panel jack

Connection Method: 50' Category 5e cable with RJ45 connectors, supplied DB9 interface module with DB9 pigtail and Endec/Automation control interface screw terminal connections

Sage-Endec Interface: Serial RS 232, 2 Endec ports required

Power: External power supply (supplied), Input: 120VAC 50-60Hz, Output: 9VDC @ >350ma

Power Cord Length: approx. 6 ft. total

Mounting: Desktop

Operating temperature: 32 to 120F Humidity: 0 to 95% non-condensing

Shipping Weight: 4 lbs. (approximate)

Trademark Information:

"Endec" is a trademark of Sage Alerting Systems, Inc.