

DaySequerra



HD Radio[®]
Tuner

M4 | User Manual

Welcome

Thanks for purchasing a DaySequerra M4 Series HD Radio™ Tuner. We design and build all of our DaySequerra products to be completely reliable and easy to use, so you can concentrate on producing and hearing great sounding broadcasts, instead of struggling with complicated equipment or difficult to use product manuals.

While the M4 has been designed to be straightforward to use, we do suggest that you spend a few minutes familiarizing yourself with the features and operational functions that are contained in this manual.

DaySequerra has been building broadcast quality products since 1989. The technology developed for the M4, and all of our products, has evolved through a process of user feedback, extensive listening, field-testing and careful refinement.

In the event that you encounter any technical or operational difficulties with this or any DaySequerra product, please feel free to contact us at 856-719-9900. Our office hours are from 9 to 5, Monday through Friday, ET. Or you can email your questions to: info@daysequerra.com

Also, please remember to visit our website www.daysequerra.com for warranty registration and the latest DaySequerra product information.

We have worked hard to ensure that your DaySequerra M4 Series tuner will reliably serve as a flawless link between the transmitter and your monitoring facility, or as the primary broadcast reference source in your studio.

We sincerely hope our products help you achieve a new level of excellence in your work, and in your listening pleasure!



David V. Day
and the **DaySequerra Team**

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M4 Firmware v4.0.9 and v4.2.9 - New Features

- Added M4.2R with Performance Loss Monitor (PLM, including 6 dry-contact alarm relay closures), full-time digital audio output, Ethernet remote port and RBDS decoding
- Eliminated “Standby at Turn-on” feature and improved brown-out performance
- Number of AM and FM Presets doubled from 10 to 20 for each band
- Capability to store Multicast stations as FM Presets
- Multicast Set feature to keep tuner continuously monitoring selected HD-2 through HD-8 channel
- iBiquity multicast PSD patch addresses importer cross-porting
- New “Scrolling Data” mode sequentially displays selected HD Radio™ channel PAD fields
- Displays HD-1 for MPS channel modem lock in VFD
- New DATA-DISPLAY menu with firmware version, scrolling data and muting options
- Redesigned user interface for MPS, Multicast and Forced Analog modes
- Support for optional M4.0X Performance Loss Monitor (PLM) with 6 alarms

Important Safety Information

- Indoor use only. Not for use in wet or damp environments.
- Maximum Relative Humidity: <80%
- Class I Equipment (grounded type)
- Electrical rating: 100-120/220-240V~50-60Hz 15W
- Fuse Rating: 2A 250V 20MM
- AC Mains supply voltage fluctuations are not to exceed $\pm 10\%$ of the nominal voltage
- Operations temperature range -40°C to 70°C
- Maximum altitude: 3000m (9843 feet)
- Equipment suitable for continuous operation
- Weight: 2.9kg (6.5lbs) equipment only; 5.4kg (12 lbs.) shipping

Important Note: Please connect your M4 to an on-line, zero-crossing output uninterruptible power supply (UPS) to provide protection against power surges and brownouts.

Service Information

The DaySequerra M4 contains no user serviceable components inside the unit. Please contact DaySequerra for repair and upgrade information. In the event that your unit needs to be returned to the factory, contact us for a return authorization number. **Please visit www.daysequerra.com and register your new M4 so we can keep you informed of the latest hardware and software updates.**

Introduction

The DaySequerra M4 HD Radio™ Tuner is one of the finest broadcast quality tuners available. It was designed to be the industry benchmark in sensitivity (< 5.0dBf in FM) and reliability, and at the same time deliver the highest quality, most accurate monitoring of existing analog and HD Radio™ AM and FM broadcast signals (THD+N <.005% with stereo separation of >90dB for HD Radio™ FM signals).

Just like its larger sibling, the DaySequerra M2, the M4's ultra low noise RF front-end with built-in preselector and double-balanced mixer, low-jitter DAC and Class-A biased audio outputs provide the highest fidelity reception and demodulation of HD Radio™ programs, including display of program applicable data (PAD) for MPS (HD-1) and HD-2 through HD-8 multicast signals.

Its robust, modular architecture ensures that the M4 will never become obsolete. This design approach along with our Factory Product Upgrade program ensures that your investment in a DaySequerra product will continue to pay off well into the future. **Visit www.daysequerra.com for details including the addition of a PLM option to your M4.0X or upgrading to a fully-featured M4.2R.** DaySequerra M4 Series models include:

- M4.0X** Base Broadcast Unit, rack-mount.
- M4.2R** Enhanced Broadcast Unit, rack-mount, includes RBDS, Signal Strength and Multipath Displays, Ethernet interface with Remote Dashboard™ software, Performance Loss Module with 6 alarm relays, full-time digital output
- M4C** Audiophile table-top version of M4.0X

M4 Series Key Features

- SEPARATE AM AND FM ANTENNA INPUTS** – Industry standard 75-ohm “F” connectors
- STEREO ANALOG OUTPUTS** – Balanced (+4dBm) for 100% analog modulation on XLR connectors
- DIGITAL AUDIO OUTPUT** – 110-ohm transformer isolated XLR for HD Radio™ broadcasts
- IEC320 POWER INLET** – Integrated fuse holder on rear panel
- SYNTHESIZED TUNING** – AM and FM bands including multicast channels each with 20 presets
- VACUUM FLUORESCENT DISPLAY** – Multi-function VFD for tuner and station status
- LEFT AND RIGHT AUDIO LEDES** – Audio signal present indication
- PEAK LEVEL LED** – Flashes red for over +4dBm demodulated audio output (either channel)
- HD LOCKED** – HD Radio™ audio present, indicates digital carrier S/N > 58dB/Hz
- DELAY SET** – Indicates active analog diversity delay for HD Radio™ broadcasts
- HEADPHONE OUTPUT** – Recessed screwdriver gain control on front panel
- A-D SPLIT MODE** – HD Radio™ level, phase and time alignment monitor for analog diversity delay
- RBDS DECODING** – (M4.2R only) Program Service (PS) and Radio Text (RT) fields displayed on VFD
- PROGRAMMABLE STATUS ALARMS** – M4.2R and M4.0X PLM option provides 6 dry-contact relays
- FULL TIME DIGITAL AUDIO OUTPUT** – (M4.2R only) For HD Radio™ and analog broadcasts

M4 Series Technical Specifications

RF TUNING RANGE	AM – 520kHz to 1720kHz in 10kHz increments FM – 87.9MHz to 108.1MHz in 200kHz increments
RF USEABLE SENSITIVITY	AM – 5dBf (0.9µV) 20dB SNR at 30% modulation FM – 5dBf (0.9µV) 30dB SNR at 100% modulation
RF USEABLE INPUT RANGE	15µV to 30KµV – AM or FM
IF REJECTION	AM – greater than 100dB for 20dB SNR FM – greater than 100dB for 30dB SNR
AF BANDWIDTH	AM – ± 1dB 40Hz to 15kHz FM – ± 1dB 20Hz to 20kHz
AF THD+N	< 0.005% (digital audio)
STEREO CHANNEL SEPARATION	> 90dB (digital audio)
HD Radio™ HYBRID ACQUISITION	< 4.5 seconds
HD Radio™ BLEND LEVEL ACCURACY	< 0.5dB
HD Radio™ PAD DATA DISPLAY	HD Radio™ data fields limited to a total of 1018 bytes per message per iBiquity™ specifications.

Unpacking and Installing the M4

Immediately upon receiving your M4, please make a careful inspection for any shipping damage. If damage is found or suspected, please notify the carrier at once and then contact your dealer. The DaySequerra M4 is shipped in one carton, which contains: the M4 unit, an AC power cable and this User Manual.

We strongly encourage you to save the shipping carton and shipping materials supplied with your M4. They are specially designed to properly protect your M4, and in the event that you need to return it for service, only these OEM shipping materials can ensure its safe return to our factory.

We provide a limited 3-year warranty on all of our products, but if you don't register your unit, it's hard for us to contact you when software updates become available. **So please take a few minutes to complete the warranty registration form on our web site, www.daysequerra.com.** Thank you!

Rack Mount Installation. The M4 chassis has four rack mounting holes in its chassis and has been designed to fit in a 19" standard 1RU space. Plastic 'finishing' washers are recommended to protect the painted finish around the mounting holes. (Rack mounting is not provided for M4C.)

Power Connection. The AC power cable supplied with the M4 must be connected from the M4's IEC320 power entry module to an AC mains outlet with a functional earth ground connection. The M4 has been set at the factory to operate at 120VAC unless otherwise specified on the shipping carton. **Please connect your M4 to an on-line uninterruptible power supply (UPS) to protect against power surges and brownouts.**

Antenna Input Connections. Separate 75ohm F-type connectors are provided on the M4 rear panel for dedicated AM and FM antennas.

Audio Output Connections. Analog audio left and right outputs are on rear-panel XLR connectors with pin 1 GND, pin 2 + and pin 3 -. The digital audio output is transformer-isolated in S/PDIF format on a rear-panel XLR connector with pin 1 GND, pin 2 XFMR and pin 3 XFMR. The M4 digital audio output is 5.1 surround capable.

Front Panel Controls and Indicators

TUNER BAND – Selects manual AM and FM tuning with UP and DN controls. Blue arrow LED illuminates when mode is active.

PRESETS – Tuner has capability to recall 20 preset or stored AM stations and 20 preset or stored FM stations including HD Radio™ FM multicast stations. Blue arrow LED illuminates when tuner is in PRESETS mode. UP and DN controls scroll through stored stations. When in PRESETS mode, second push of PRESETS switch changes tuner band.

UP and DN – For manual AM and FM tuning in TUNER BAND mode and scrolling through PRESETS in PRESETS mode.

SELECT – Multi-function switch for storing PRESETS and controlling other functions, as described below.

MODE - SERVICE – Default is Auto mode. Momentary push activates multicast tuning when a multicast signal is present. Holding switch in for 5 seconds when locked to an HD Radio™ station, forces tuner into Analog mode. Blue LED illuminates only when switch is being pushed, or when multicast tuning or Analog mode is active. In any active mode, second push of MODE – SERVICE returns tuner to Auto mode.

FORCING – Activates A-D SPLIT mode to permit monitoring of HD Radio™ analog-to-digital level and time alignment. Blue LED illuminates when mode is active.

DATA - DISPLAY and DATA - DISPLAY Menu – Selects decoded RBDS from analog broadcast (M4.2R only) and PAD data from an HD Radio™ broadcast for display on the second line of the VFD. Momentary push DATA - DISPLAY switch scrolls display through each RBDS and HD Radio™ PAD data field, as described below. Holding DATA - DISPLAY switch in for 5 seconds activates DATA - DISPLAY menu. The firmware version, e.g., “v4.0.9 A3.2.1” is displayed for 5 seconds before displaying the first menu option. The menu’s first selection enables or disables “Scrolling Data” mode when tuner displays each RBDS and HD Radio™ PAD data field for approximately 5 seconds before scrolling to the next field. UP or DN switches toggle the setting; pressing “SELECT” saves the setting and increments the menu to the next field. The second menu field enables or disables “Audio Muting.” Next press of “SELECT” saves the setting and exits the menu. Blue LED illuminates only when mode is active. Default is AUTO mode with station short name to be displayed in second line of VFD when tuned to an HD Radio™ station.

HD LOCKED – Blue LED illuminates when tuner has acquired OFDM (orthogonal frequency division multiplexing) portion of an HD Radio™ signal and digital carrier S/N > 58dB/Hz, thereby permitting HD Radio™ digital audio to be valid. HD is displayed in upper right hand corner of VFD when tuner has acquired OFDM portion of an HD Radio™ signal.

MULTICAST – Blue LED illuminates when tuner has acquired OFDM of an HD Radio™ signal and there is at least one multicast signal present.

DELAY SET – Blue LED illuminates when tuner has acquired OFDM of an HD Radio™ MPS signal and the analog diversity delay is active. The LED is off when there is no delay bit set; i.e., “ball game mode” meaning that the analog program has not been delayed to be coincident with the HD Radio™ MPS signal.

LEFT AUDIO – Blue LED illuminates when Left program audio is present.

RIGHT AUDIO – Blue LED illuminates when Right program audio is present.

PEAK LEVEL – Red LED illuminates when Left or Right program audio exceeds +4dBm (100% modulation).

M4 Series Operating Description

Power-up and Standby. The Power switch is located on the rear panel of the M4; when switched on the tuner displays the hardware and software version for your M4 to be displayed for 3 seconds on the M4’s VFD.

In any mode, if the SELECT and DN switches are depressed simultaneously for 5 seconds, tuner goes into Standby mode with all front panel controls and indicators inoperative except for SELECT and UP switches; the M4's VFD then indicates the "DaySequerra Standby" message. Holding SELECT together with UP switch in for 5 seconds when in standby mode re-activates all front panel controls and indicators and returns tuner to normal operation.

Front Panel Locked. In any mode, if SELECT and MODE – SERVICE switches are depressed simultaneously for 5 seconds, tuner goes into Front Panel Locked mode; i.e., all front panel controls are inhibited except for UP and SELECT switches; analog and digital audio outputs continue. VFD alternates between displaying FRONT PANEL LOCKED and normal display for tuned station. Momentary simultaneous push of SELECT and UP switches in Front Panel Locked mode restores all front panel controls and indicators, and returns tuner to normal operation. VFD displays "Exiting Front Panel Locked Mode" message during tuner state transition.

Audio Muting. The M4's audio output can be set to automatically mute for received signals with signal strength less than 45dBf. The audio muting can be enabled using the DATA - DISPLAY menu described previously.

Tuner Band Control. TUNER BAND control toggles between manual AM and FM tuning. TUNER BAND arrow LED illuminates only when mode is active. Audio muting is active while tuning.

Presets Control. In PRESETS tuning mode tuner has ability to store 20 AM stations and 20 FM stations including FM-HD multicast signals.

Preset stations are stored for recall in positions A1 through A20 and F1 through F20 respectively for AM and FM bands. PRESETS Arrow LED illuminates when tuner is in PRESETS tuning mode. UP and DN scroll through the preset stations stored for the band selected. Audio MUTING is active while scrolling through preset stations. Second momentary push of PRESETS switch changes tuner band.

When tuner has acquired any station and SELECT switch is held for three seconds, tuner enters PRESETS store mode and PRESETS arrow LED flashes. UP and DN controls then allow user to scroll through A1 through A20 and F1 through F20 dependant on band. When the desired preset location is indicated on VFD, next momentary push of SELECT switch stores selected station in that PRESETS position.

Mode - Service Control. MODE - SERVICE control selects AUTO or ANALOG mode, and activates multicast tuning when an HD Radio™ multicast signal is present. In the AUTO mode, the tuner will receive an HD Radio™ digital broadcast if one is being transmitted; if not, the tuner will receive the analog broadcast. The MODE - SERVICE LED illuminates when only the mode is active or when the switch is being pushed. Default mode is AUTO.

When tuned to an HD Radio™ broadcast and at least one multicast signal is present, momentarily depressing the MODE – SERVICE switch selects the multicast tuning mode; the M4 is automatically tuned to the first multicast broadcast, probably HD-2. The UP and DN controls can then be used to tune to the other multicast stations; i.e., HD-3 through HD-8, available on that RF frequency.

When tuned to an HD Radio™ broadcast and the MODE - SERVICE switch is depressed for 5 seconds, the tuner is forced into ANALOG-only mode; the M4 is then locked only to the analog broadcast signal and the audio outputs provide only the analog portion of the HD Radio™ broadcast.

Forcing Control. The FORCING control is used to select A-D SPLIT mode, functional with AM or FM HD Radio™ signals. When locked to an HD Radio™ signal, momentary push of FORCING switch puts tuner in A-D SPLIT mode. In A-D SPLIT mode, the analog audio outputs and headphone jack provide left analog program audio in the M4 left channel and the left HD Radio™ audio program in the M4 right channel. This mode provides for audio phase matching as well as audio level and time-alignment of the HD Radio™ broadcast for the correct analog diversity delay. FORCING arrow LED illuminates when tuner is in FORCING mode. Subsequent momentary push of FORCING switch turns FORCING mode and FORCING LED off. Default mode is off.

When tuned to an HD Radio™ broadcast and the FORCING switch is depressed for 5 seconds, the tuner is forced into HD-1 DIGITAL-only mode; the M4 is then locked only to the HD-1 broadcast. There is no DIGITAL-only mode for multicast broadcasts.

Data – Display. The DATA - DISPLAY control provides display of RBDS PS and RT fields (M4.2R only) as well as PAD data for HD Radio™ signals. DATA - DISPLAY arrow LED illuminates when mode is active. DATA - DISPLAY switch selects RBDS from the current analog broadcast or PAD data from the current HD Radio™ MPS (HD-1) or HD-2 through HD-8 multicast signal to be displayed on tuner's VFD. Momentary push scrolls through each PAD field in the following sequence:

- Station long name
- Station program type
- Song title
- Artist
- Album
- Genre
- Comment

Subsequent momentary push of DATA - DISPLAY switch turns DATA - DISPLAY mode and DATA - DISPLAY LED off. The second line of VFD display scrolls if the message is longer than 16 characters. If there is no data for the selected field, VFD displays “NO” plus the data category; e.g., “NO ALBUM DATA.”

In the M4.2R, RBDS PS and RT fields are displayed per RBDS specifications. Station long name, station short name and program type are processed as an ID3 tag. In all M4 models, HD Radio™ PAD data; i.e., song title, artist, album, genre and comment fields are limited to 127 bytes each for a total of 1018 bytes per message per iBiquity™ specifications. For more information on ID3 tags and PAD data, please visit www.ibiquity.com and www.id3.org.

UP. Momentary push of UP control tunes frequency up one increment in TUNER BAND mode, when held for three seconds tunes faster. UP selects next stored preset station in PRESETS mode (no faster mode, one push per preset). Selects next item in other menus and is used for other functions as described herein.

DN. Momentary push of DN control tunes frequency down one increment in TUNER BAND mode, when held for three seconds tunes faster. DN selects next stored preset in PRESETS mode (no faster mode, one push per preset). Selects next item in other menus and is used for other functions as described herein.

Select Control. When tuner has acquired any station and SELECT switch is held for three seconds, tuner goes into PRESETS store mode; PRESETS arrow LED flashes. UP and DN controls then allow user to scroll through A1 through A20 or F1 through F20, dependant on band.

HD Radio™ FM multicast stations can be stored as FM Presets. Once the desired PRESETS position has been selected, next momentary push of SELECT switch stores selected station in that PRESETS position.

Multicast Tuning. When tuned to an HD Radio™ broadcast with at least one FM multicast signal present, momentarily depressing the MODE – SERVICE switch puts tuner into MULTICAST TUNING mode. Use the UP and DN controls to scroll through each of the multicast stations available. Depress the DATA - DISPLAY switch to display PAD data from the tuned multicast broadcast on tuner’s VFD.

Headphones. Recessed screwdriver control adjusts headphone output level on recessed ¼” TRS jack. Default set at the factory is +4dBm.

Sample VFD Displays

HD Radio™ FM - Multicast HD-2 channel selected

F	M			1	0	8	.	3			H	D	-	2	
S	P	O	R	T	S										

HD Radio™ AM - WATT-AM tuned to preset position A9 in A-D Split Mode

A	9				5	3	0				H	D	-	I	
	A	-	D		S	P	L	I	T		M	O	D	E	

Performance Loss Monitor

Performance Loss Monitor (PLM) Connections – The PLM (standard on the M4.2R, optional on the M4.0X) provides six dry, floating relays with outputs on a rear panel mounted DB15 connector to report selected alarm conditions, including loss of RF carrier, program audio, OFDM lock and PAD data. The following lists the DB15 pin-outs. Relay contacts are rated at 1A @ 24VDC.

Note – RBDS Loss alarm available on M4.2R model only.

<u>Alarm on Loss of</u>	<u>NC Contact</u>	<u>NO Contact</u>	<u>Common</u>
RF Carrier	3	2	1
Audio	5	4	1
OFDM Lock	8	7	6
RBDS – M2.2R and M4.2R only	10	9	6
PAD Data	13	12	11
MC-Avail or Delay	15	14	11

Alarm Configuration Menu – Pressing the SELECT and PRESETS switches for 5 seconds activates the Alarm Configuration Menu. VFD displays ALARM CONFIG with “ENABLE” and “SETUP” options. Select desired option using UP and DN switches to toggle the setting. Select “ENABLE” to arm all alarms as previously configured and exit Alarm Configuration Menu; select “SETUP” to continue with alarm configuration menu. Press “SELECT” to increment the menu to the next alarm function. Exit the Alarm Configuration Menu at any time by pressing PRESETS switch.

		A	L	A	R	M		C	O	N	F	I	G		
	E	N	A	B	L	E			>	S	E	T	U	P	<

All Alarms

- Select “ON” to activate all alarms at the minimum threshold with the minimum alarm delay. Select “OFF” to set all alarms to off; select “SETUP” option to continue with alarm configuration menu. Use UP and DN switches to toggle the setting. Push “SELECT” switch to increment the menu to the next alarm function.

	A	L	L						A	L	A	R	M	S	
	O	N			O	F	F		>	S	E	T	U	P	<

Alarm Output 1 – RF Carrier Loss (alarm based on analog RF signal strength)

- Highlight desired “SET” or “OFF” option using UP and DN switches to toggle the setting. Select “SET” to set this tuner alarm and continue with alarm configuration menu; select “OFF” to set this tuner alarm function to off. Push “SELECT” to continue.

R	F		C	A	R	R	I	E	R		L	O	S	S	
	>	S	E	T	<						O	F	F		

- If “SET” is selected, submenu for “Level” threshold with “LOW”, “MED” and “HIGH” options is displayed next. “LOW” option sets RF carrier loss threshold for approximately 10µV (25dBf); “MED” option sets RF carrier loss threshold for approximately 100µV (45dBf); and “HIGH” option sets RF carrier loss threshold for approximately 3KµV (75dBf). Use UP and DN switches to toggle the setting and highlight the desired option.

R	F		C	A	R	R	I	E	R		L	E	V	E	L
	L	O	W		>	M	E	D	<		H	I	G	H	

Push “SELECT” switch to increment the menu to the next alarm function.

- Submenu for “Alarm Delay” with “30”, “60”, “120” and “240” second options is displayed next. Use UP and DN switches to toggle the setting and highlight the desired option.

		A	L	A	R	M			D	E	L	A	Y		
	3	0	>	6	0	<	1	2	0		2	4	0		S

Push “SELECT” switch to increment the menu to the next alarm function.

Alarm Output 2 – Audio Loss (Silence Detect)

- Highlight desired “SET” or “OFF” option using UP and DN switches to toggle the setting. Select “SET” to set this tuner alarm and continue with alarm configuration menu; select “OFF” to set this tuner alarm function to off. Push “SELECT” to continue.

		A	U	D	I	O			L	O	S	S			
	>	S	E	T	<						O	F	F		

- If “SET” is selected, submenu for “Level” threshold with “LOW”, “MED” and “HIGH” options is displayed next. “LOW” option sets audio loss threshold for approximately -60dB; “MED” option sets audio loss threshold for approximately -40dB; and “HIGH” option sets audio loss threshold for approximately -20dB. Use UP and DN switches to toggle the setting and highlight the desired option. Push “SELECT” switch to continue.

		A	U	D	I	O			L	E	V	E	L		
	L	O	W		>	M	E	D	<		H	I	G	H	

- Submenu for “Alarm Delay” with “30”, “60”, “120” and “240” second options is displayed next. Use UP and DN switches to toggle the setting and highlight the desired option.

		A	L	A	R	M			D	E	L	A	Y		
	3	0	>	6	0	<	1	2	0		2	4	0		S

Push “SELECT” switch to save and increment the menu to the next alarm function.

Alarm Output 3 – OFDM Lock Loss (HD Radio™ modem lock)

- Highlight desired “SET” or “OFF” option using UP and DN switches to toggle the setting. Select “SET” to set this tuner alarm and continue with alarm configuration menu; select “OFF” to set this tuner alarm function to off. Push “SELECT” to continue.

	O	F	D	M		L	O	C	K		L	O	S	S	
	>	S	E	T	<						O	F	F		

- If “SET” is selected, submenu for “Alarm Delay” with “30”, “60”, “120” and “240” second options is displayed next. Use UP and DN switches to toggle the setting and highlight the desired option.

		A	L	A	R	M			D	E	L	A	Y		
	3	0	>	6	0	<	1	2	0		2	4	0		S

Push “SELECT” switch to save and increment the menu to the next alarm function.

Alarm Output 4 – RBDS Data Loss (alarm based on data appearing in Radio Text field; available in M4.2R model only)

Alarm Output 5 – HD Radio™ PAD Loss (alarm based on data appearing song title field only, does not mean data is valid)

- Highlight desired “SET” or “OFF” option using UP and DN switches to toggle the setting. Select “SET” to set this tuner alarm and continue with alarm configuration menu; select “OFF” to set this tuner alarm function to off. Push “SELECT” to continue.

		P	A	D		D	A	T	A		L	O	S	S	
	>	S	E	T	<						O	F	F		

- If “SET” is selected, submenu for “Alarm Delay” with “30”, “60”, “120” and “240” second options is displayed next. Use UP and DN switches to toggle the setting and highlight the desired option.

		A	L	A	R	M			D	E	L	A	Y		
	3	0	>	6	0	<	1	2	0		2	4	0		S

Push “SELECT” switch to save and increment the menu to the next alarm function.

Alarm Output 6 – User Assignable

Note – Alarm Output 6 can be configured for one of two HD Radio™ parameters, **MC Available Loss** or **Delay Bit Loss**. MC Available Loss triggers whenever the multicast available bit is no longer active, meaning that there was at least one multicast program being broadcast. If two multicast programs are being broadcast and one is interrupted, the MC Available Loss alarm will not activate because of the remaining multicast program. MC Available Loss is an option only in FM.

- Highlight desired **MC Available** - “MC-AV”, **Delay Bit** – “DLAY” or “OFF” option using UP and DN switches to toggle the setting. Select desired function to be alarmed and continue with alarm configuration menu; select “OFF” to set this tuner alarm function to off. Push “SELECT” to continue.

	A	L	A	R	M		O	U	T	P	U	T		6	
>	M	C	-	A	V	<	D	L	A	Y		O	F	F	

- If “MC-AV” or “DLAY” is selected, submenu for “Alarm Delay” with “30”, “60”, “120” and “240” second options is displayed next. Use UP and DN switches to toggle the setting and highlight the desired option.

		A	L	A	R	M			D	E	L	A	Y		
	3	0	>	6	0	<	1	2	0		2	4	0		S

Push “SELECT” switch to save and increment the menu to the next alarm function.

Audible Alarm Buzzer

- Highlight desired “ON” or “OFF” option using UP and DN switches to toggle the setting. Select “ON” for audible alarm to beep during any active alarm condition and continue with alarm configuration menu; select “OFF” for audible alarm to be silent during any active alarm condition.

		A	L	A	R	M		B	U	Z	Z	E	R		
		>	O	N	<					O	F	F			

Push “SELECT” to continue.

Alarm Configuration Enable or Save

- Highlight desired “ENABLE” option to arm selected alarms and save alarm configuration or “SAVE” option to save alarm configuration without arming alarms. Use UP and DN switches to toggle the setting.

		A	L	A	R	M		C	O	N	F	I	G		
	E	N	A	B	L	E		>	S	A	V	E	<		

Push “SELECT” to continue. The alarm configuration settings are saved in non-volatile memory.

Activate Alarm - Activate tuner alarm conditions saved in configuration by holding SELECT and PRESETS buttons both in for 5 seconds to enter ALARM CONFIG menu and selecting “ENABLE” using UP and DN switches to toggle the setting. Pushing “SELECT” arms the alarms; tuner VFD alternates between “ALARM SET” message and normal VFD display for the station. **Front panel of the tuner is locked whenever alarm is armed to prevent false alarm conditions.**

De-activate Alarm - To de-activate the configured alarm functions, hold SELECT and PRESET buttons both in for 5 seconds. Tuner VFD display returns to normal operation and front panel of the tuner is unlocked.

Alarm Notification and Reset - When any alarm is active, audible alarm will sound (modulated beeping, if Alarm Buzzer has been set to “ON”) and second line of VFD will scroll an alarm message indicating “ALARM” and the specific alarm that is active, for example “ALARM – RF CARRIER LOSS, PRESS SELECT TO CLEAR”. Pressing SELECT and PRESETS buttons will clear all alarms.

If during an alarm active condition the alarm condition is corrected, the tuner will reset to its state before the alarm occurred and the audible alarm will cease. The tuner alarms as configured will remain active until de-activated by the user, as described above.

M4.2R Ethernet Port Set-up

The M4.2R adds includes DaySequerra’s *Remote Dashboard*™ software, a proprietary PC-based application, and an Ethernet interface to provide remote control monitoring for both AM and FM HD Radio™ broadcasts as well as a robust alarm panel for HD Radio™ signal and data attributes.

Please email your M4.2R serial number and contact information to support@daysequerra.com or register your unit on our website www.daysequerra.com to obtain the password for CD-ROM containing the *Remote Dashboard*™ software application, supporting firmware and User Guide that came with your M4.2R. Follow the instructions in the *Remote Dashboard*™ User Guide to change your M4.2R’s IP address and complete the software installation before connecting the PC and using your M4.2R for the first time.

In the event that you encounter any difficulties with your DaySequerra *Remote Dashboard*™, please feel free to contact us at 856-719-9900. Our office hours are from 9 to 5 ET, Monday through Friday. Or you can email your questions to: support@daysequerra.com.

DaySequerra – Three Year Limited Warranty

DaySequerra warrants this product to be free from defects in materials and workmanship to its original owner for three (3) years from the date of purchase. DaySequerra will repair or replace such product or part thereof that upon inspection by DaySequerra, is found to be defective in materials or workmanship subject to conditions contained herein.

DaySequerra products are sold worldwide, through a network of authorized DaySequerra dealers and distributors. This Warranty is for the sole benefit of the original purchaser of a DaySequerra product, purchased directly from an authorized DaySequerra dealer or distributor, is restricted to such original purchaser, and shall not be transferred to a subsequent purchaser of the product. Proof of purchase in the form of a bill of sale or receipted invoice substantiating that the product was purchased directly from an authorized DaySequerra dealer or distributor and is within the warranty period must be presented to obtain warranty service. Removal or alteration of the original DaySequerra serial number from a product automatically renders that product warranty null and void.

A Return Authorization Number must be obtained from DaySequerra in advance of return. Parts or product for which replacement is made shall become the property of DaySequerra. The customer shall be responsible for all costs of transportation and insurance to and from the DaySequerra factory, and all such costs will be prepaid.

DaySequerra shall use reasonable efforts to repair or replace any product covered by this limited warranty within thirty days of receipt. In the event repair or replacement shall require more than thirty days, DaySequerra shall notify the customer accordingly. DaySequerra reserves the right to replace any product that has been discontinued from its product line with a new product of comparable value and function.

This warranty shall be void in the event a covered product has been damaged, or failure is caused by or attributable to acts of God, abuse, accident, misuse, improper or abnormal usage, failure to follow instructions, improper installation or maintenance, alteration, or lightning, power fluctuations and other incidental or environmental conditions. Further, product malfunction or deterioration due to normal wear is not covered by this warranty.

DAY SEQUERRA DISCLAIMS ANY WARRANTIES, EXPRESSED OR IMPLIED, WHETHER OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE, EXCEPT AS EXPRESSLY SET FORTH HEREIN. THE SOLE OBLIGATION OF DAY SEQUERRA UNDER THIS LIMITED WARRANTY SHALL BE TO REPAIR OR REPLACE THE COVERED PRODUCT, IN ACCORDANCE WITH THE TERMS SET FORTH HEREIN. DAY SEQUERRA EXPRESSLY DISCLAIMS ANY LOST PROFITS, GENERAL, SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES WHICH MAY RESULT FROM BREACH OF ANY WARRANTY, OR ARISING OUT OF THE USE OR INABILITY TO USE ANY DAY SEQUERRA PRODUCT.

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DaySequerra
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West Berlin, NJ 08091

For more information, please call 856-719-9900, visit www.daysequerra.com or email us at support@daysequerra.com.