

Zin! Furbished, Archive-Ready

Sony AV-8650 1/2" EIAJ Color Deck

Now Available:
Serial 12168

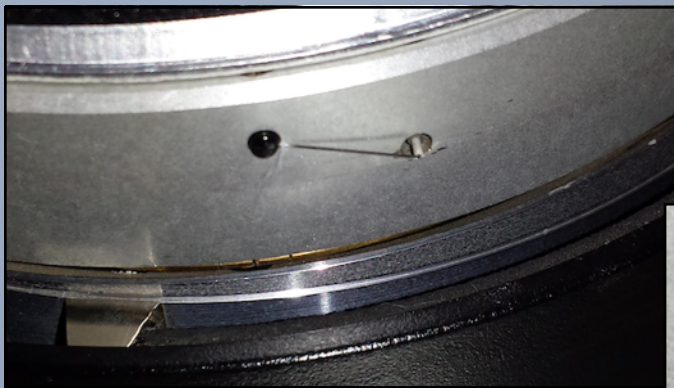
This is a cream puff Cadillac
of an EIAJ Color deck.

ZinFurbisher Ken Zin says in his experience, you'd be "unlikely to find another deck like this at this point in time."

It covers all EIAJ variations: Monochrome and Color, Standard and High Density Tapes.

The deck has been completely gone through, and has a number of ZinMods to improve connectivity, productivity and life! It's an archive-quality machine.

The Transport is in *excellent* condition and ready to transfer many tapes!



These grooves gradually wear down from use.

This unit has little or no wear visible.

The video scanner is a "like a new scanner" as seen by the factory-created grooves in these photos.



During ZinFurbishing:

Video modulator and demodulator, servo, color, audio and power supply boards were thoroughly inspected and cleaned. This removes dirt and accumulated material that can cause circuit values to change, creating problems.

Power supplies were checked for proper voltages, stability and freedom from AC ripple in the DC circuits. Any issues were worked on, fixed, tested. The deck Passed!

All capacitors were replaced with new electrolytic capacitors or upgraded to tantalum capacitors.

Tantalum capacitors provide better signal to noise ratios, providing better picture, better sound and more reliable servo system performance over time.



Performance was checked using a now unavailable Sony Factory-Made test and alignment tape.

The playback meets Sony specifications as seen via test and measurement equipment, including eyes:



RF Envelope coming off the tape is flat at top and bottom, showing that the tape path mechanical alignment meets "interchange" standards for deck-to-deck tape play and record.

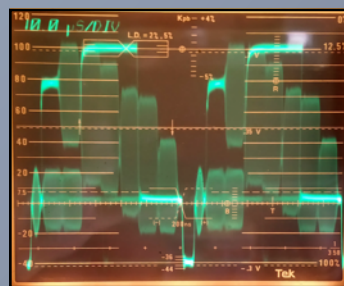
ZinFurbished Sony AV-8650 Serial # 12168



Picture monitor displaying split-field color bars from the Sony EIAJ Color AV Series Alignment Tape as played from this just-ZinFurbished Sony AV-8650.

This rather rare videotape "measuring device" allows Zin! VTR Works to accurately evaluate and adjust EIAJ decks.

V3



Waveform monitor verifies that the playback of the Sony alignment tape meets specifications for luminance, color, sync and chroma burst levels and timing.

With a waveform monitor and vectorscope, this AV-8650 can be used to evaluate tape quality

4/6/15



Vectorscope display of the Sony alignment tape playback verifies that the chroma levels and hues from this AV-8650 meet standards: Red is red, Magenta is magenta, Blue is blue, Cyan is cyan, Green is green and Yellow is yellow, and that other chroma-related settings are correct.

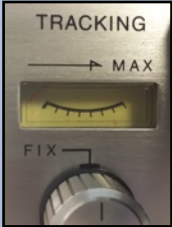
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These modifications to the stock AV-8650 improve productivity, reliability or performance.

ZinTrack Video Level Meter Modification:

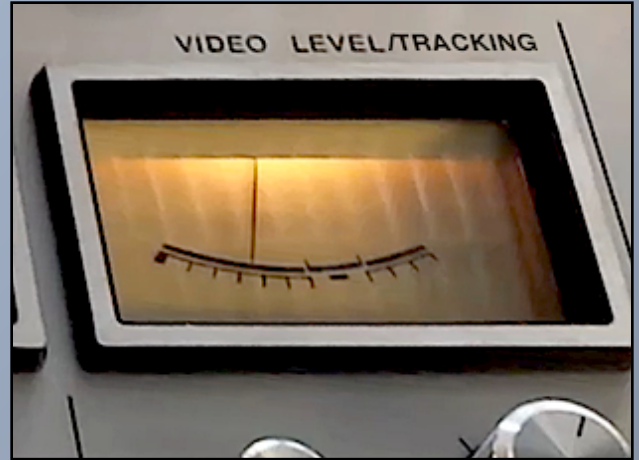
Uses Video Input Meter to monitor Playback Tracking, as found on most professional/broadcast VTRs.



Since this deck's tracking meter does not work and no replacement is available, this ZinMod provides relay switching for the Video Meter function.

When in the E-E mode, the Video Level meter displays incoming video input signal level.

When in Playback mode, the Video Level meter displays tracking, so the tracking knob adjustment can be set for maximum.

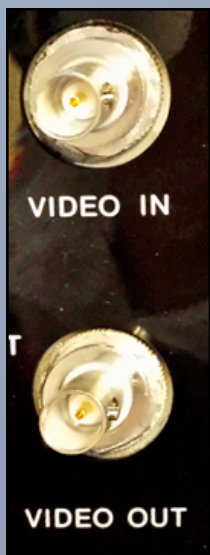


On the Back Panel:

Before:



After:



ZIN-AV8600 BNC UPGRADE Modification

Replaces the old UHF type video input and output connectors !

No more UHF to BNC adaptors that can get lost.

BNC chassis mount connectors are installed and tested, improving connection reliability and making this machine easily connectible with common BNC to BNC cables.



ZIN-AV8600 RCA UPGRADE Modification

Changes the 1/8" mini-jack audio input and output connections to more common and sturdy RCA female jacks.

This make it easier to connect the deck with more common, more reliable cables.

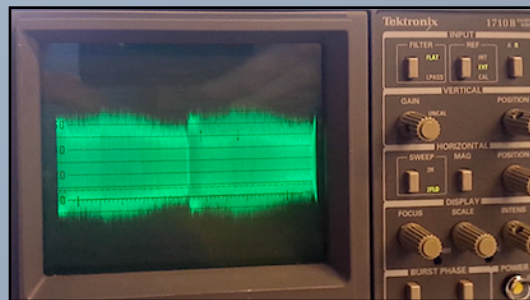
The mini-jack for microphone use is retained in case someone needs to record from a microphone.

ZIN-SONY-AV EIAJ-TBC- RF-OUT Modification



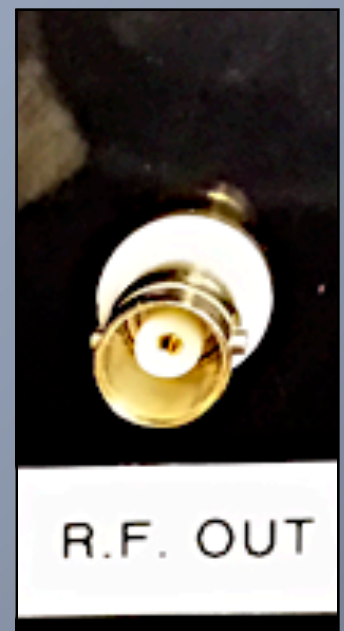
Provides a separate, labelled BNC connector on the back panel supplying Buffered Off-Tape RF.

The BNC and custom, Zin! RF-Buffer circuit board replace the TV Ch. 3/4 modulator housed in a compartment next to the connector panel.



The Off-Tape RF can be used for inspecting playback using a waveform monitor as an RF display for tape interchange, quality evaluation,

quality assurance and troubleshooting before and during digitization, such as this client's tape that has some issues.



The RF signal can be looped through the waveform monitor and sent to the Off-Tape RF input of a Timebase Corrector for additional dropout compensation (DOC) and timebase correction.

While the AV-8650 has a one-line dropout compensator built-in, the advantage of using a TBC dropout compensator is evident when a tape has multiple dropouts on adjacent lines.



Use of a Timebase Corrector stabilizes the picture, and also allows adjustment of video levels, black (aka setup/pedestal) chroma (color) levels and hue to improve picture quality.



Pre-TBC Signals

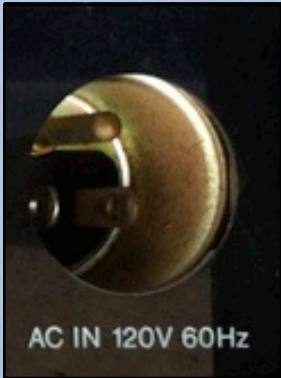
The TBC's Advanced Sync output is fed to the video input of the AV-8650 to "steer" the video picture into the TBC's correction window.

The capstan servo system monitors and controls the tape speed, assuring precise editing and a stable picture with minimum jitter. This capstan servo is an advantage many other EIAJ decks do not have.

Coupled with the Zin! RF Out, the AV-8650 and a good, well-tuned TBC enables better archiving of sometimes difficult-to-transfer EIAJ monochrome and color tapes.

ZIN-EIAJ- POWERCHANGE Modification

Before



After



This power socket replacement provides multiple benefits: It enables a common IEC power cord to be used.



The socket incorporates a power-line filter not present on the stock AV-series decks. The power line filter can help where the AC power is noisy or otherwise not clean.

Benefits of *this* Sony AV-8650 Archive Quality EIAJ Deck:

This specific machine offers VERY low mileage, a freshly ZinFurbished transport and electronics, and benefits that help operators and archive projects maintain productivity AND quality at the same time Less fuss. More fun.

Details about the Sony AV-8650 from the Operation Manual (included):

- Tapes are fully interchangeable so that a tape recorded on any Sony AV-Series Videocorder can be played back on the AV-8650. However high density tapes recorded on the AV-8650 are only interchangeable on other high density tape machines such as other AV-8650 Videocorders.
- Both regular tape and high density tape can be used. When using high density tape, particularly in editing, the high quality picture can be obtained. The TAPE SELECT switch adapts the Videocorder to the type of tape.
- Video and audio signals can be inserted into or assembled onto a prerecorded tape. The rotary erase head and vertical interval switcher assures smooth insertion and assembly.
- A converted sub-carrier direct recording system and dropout compensator are employed.
- External sync may be checked during playback without disconnecting the signal source.
- The capstan servo system monitors and controls the tape speed, assuring precise editing and a stable picture with minimum jitter.
- Video recording level can be controlled automatically or manually by the setting of the VIDEO AUTO/ MANUAL button. Audio LIMITER for recording is selected with the AUDIO LIMITER ON/ OFF button.
- A still playback picture can be obtained by setting the Function selector to PAUSE/STILL. Slow motion tape speed is adjustable by means of the SLOW SPEED control.
- Tracking and skew conditions are manually controlled in the playback mode. A level meter indicates tracking condition.

SONY AV-8650 Specifications:

General

Power requirement	AC 120V \pm 10%, 60 Hz \pm 0.5%
Power consumption	95W
Ambient temperature	32°F-104°F
Video recording standards	Monochrome, EIA standard Color, NTSC standard
Video recording system	Rotary 2-head helical-scan system, FM recording
Tape pattern	EIA Japan type-1
Tape speed	7.5 Inches per Second Capstan Servo locks to incoming video for editing and use with TBC.
Recording time	More than 60 min. with Sony V-32 (regular) or V-72 (high density)
Rewind and fast forward time	Within 6 min. with Sony V-32 or V-72
Dimensions	17.5" W x 10.75" H 18.4" D
Weight	55 Pounds

Available for Immediate Sale

Video signal

Input	Composite, sync negative, 0.5-2.0 Vp-p, 75 Ohms, unbalanced
Output	Composite, sync negative, 1.0 Vp-p, 75 Ohms, unbalanced
Resolution	Monochrome: regular tape, more than 300 lines, High density tape, more than 350 lines Color: Regular tape, more than 240 lines, High density tape, more than 250 lines
Signal-to-noise ratio	Regular tape, better than 40 dB, High density tape, better than 43 dB

Audio signal

Input:	MIC : - 60 dB, LOW impedance, unbalanced AUX: 0 dB, HIGH impedance, unbalanced TV: - 20 dB, HIGH impedance, unbalanced
Output	LINE : 0 dB, less than 2 k Ohms, unbalanced TV: 0 dB, less than 2 k Ohms, unbalanced Headphone : 8 Ohms

Frequency response	Regular tape, 80- 10,000 Hz, High density tape, 80- 12,000 Hz
Signal-to-noise ratio	Better than 40dB

Special functions

Slow	Playback speed is continuously variable from 1/16 to 1/5 of normal speed
Tracking	Adjustable
Skew	Adjustable

This Sony AV-8650 is a fine example of the depth of skill and knowledge behind each ZinFurbished VTR. We support a wide range of VTRs including 2" Quad and Helical scan open reel and cassette formats.



Contact Ted Langdell for details, to purchase or to rent
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ted@ZinVTRWorks.com

Putting the Zing! back into VTRs since the 1920s.

Ken Zin, Principal Engineer