

Non-Compressed, 10-bit, 4:2:2 Quality and Next-Generation Capabilities

Panasonic's non-compressed, 10-bit, D-5 format VTR is designed to meet the postproduction needs of high-end users who emphasize computer graphics and digital effects.

As seen in the AJ-D580E/B, the D-5 VTR also smoothly adapts to the coming broadcasting environment with next-generation technologies such as digital component and digital composite signals and the wide-screen aspect ratios of HDTV and other broadcast systems.

The D-5 format is the first to achieve non-compressed, 10-bit, 4:2:2 signals with current television systems. It offers pure, true-to-the-original image data in 1,024-step gradation.

The D-5 VTRs also provide an 8-bit, 18-MHz sampling mode for editing a wide 16:9 aspect ratio image without horizontal resolution degradation. Use of the optional AJ-PB35HE circuit board allows the AJ-D580E/B to play back D-3 composite digital recordings, enabling full-bit digital signal management with D-3 and D-5 VTRs from field recording to transmission. Optional analogue video/audio interfaces can also be added.

Both the D-5 format and the AJ-D580E/B VTR mechanism are based on field-proven D-3 technology — your assurance of reliability. D-5 VTR also offers the same space-saving, easy handling convenience of 1/2" cassette tapes.



Digital (AES/EBU)/Analogue Audio Input/Output

The AJ-D580E/B provides separate digital audio input and output for each of four channels, allowing standard interface with a range of digital audio equipment.

The optional AJ-MK30E/AJ-MK30EG can be added to input and output 4-channel analogue audio signals.

9-pin (RS-422A)/RS-232C Remote Terminals

The AJ-D580E/B is equipped with remote terminals for the standard 9-pin serial (RS-422A), RS-232C, 50-pin parallel, and V/A control connections.

Variety of Editing Features

High-Speed Search

Shuttle search at up to 50x normal speed in forward and reverse takes you to the next or previous 30-second tape spot within 5 seconds. The D-5 format also permits viewing of colour images while searching with minimal degradation, due to data compression not being used in D-5.

Complete Editing Functions

The AJ-D580E/B provides assemble, insert, and audio split editing functions, as well as spot erase. With RS-422A control, 1-event editing is possible using two AJ-D580E/Bs, or with one in combination with other types of VTRs.

Digital Jog/VAR Sound

The AJ-D580E/B plays back all four channels of digital audio in either Jog or Variable mode. This allows quick, extremely accurate setting of edit points.

Auto Tracking with Piezo Element

The AJ-D580E/B's advanced auto tracking function uses a piezo element to achieve noiseless Still and Slow mode playback from -1x to 2x normal speed.

Pre-read Editing (Read-before-Write)

This function enables playback and output of the signal before it is recorded on the tape. You can use it for single-unit (read-before-write) editing, for example, adding an external effect to the playback signal of the AJ-D580E/B, then sending the signal back to the AJ-D580E/B for editing.

Programme Play

The AJ-D580E/B's playback speed can be adjusted to $\pm 15\%$ of normal speed in 0.1% steps. This allows time compression or expansion for on-air broadcasting or production of commercials and programs.

Confidence Playback

The AJ-D580E/B's full confidence playback allows real-time monitoring of pictures and sound while recording. The confidence playback function can also be used to check the recording signal automatically.

Digital Audio Crossfade

During audio insert editing, the AJ-D580E/B can mix the recorded signal with the input audio signal and record on the same track. This allows audio crossfade editing for a smooth audio transition at edit points.

Easy, Enhanced Operation

Direct-Access Control Panel

The AJ-D580E/B uses a multifunction menu display and a user-friendly control panel that allows direct operation of frequently used controls, such as level adjustment, WFM monitor signal selector, and L/R audio monitor switch.

Channel Condition Monitor and Logging

The AJ-D580E/B continuously monitors itself for errors. When the error rate while operating exceeds the preset reference value, a lamp on the front panel alerts the operator. This can help extend tape life and prevent head clogging. It is also possible to record error-generating conditions on an IC card.

IC Card-Compatible User Files

The AJ-D580E/B lets you store up to 10 sets of operating parameters in memory, then use a simple key operation to switch instantly among them. Using IC cards, you can externally store an unlimited number of user files.

Auto Equalizing

Auto Equalizing automatically corrects the RF parameters during playback and ensures optimum conditions for the digital data of the playback signal to maintain uniform picture and sound quality.

Auto Edit Tracking

By optimizing head tracking during the pre-roll operation, this function ensures top editing results while eliminating the need for tracking adjustment.

Built-in Test Signal Generator

The built-in generator provides test signals for both video and audio such as colour bar and multiburst patterns for use in maintenance, connection checking and adjustment.

Multi-Cue

Cues can be inserted at 100 locations for use in search and pre-roll operations.

Highly Reliable Mechanism Based on D-3 VTRs

Exceptional Durability

The D-5 VTR boasts the same highly acclaimed and field-proven mechanism as D-3 VTRs. The VTR's tape transport mechanism maintains a low tape tension, and its single fixed post helps minimize tape bending. Subloading during standby also prevents tape contact with the head drum. Together, these features reduce tape wear, extend head life, and minimize dropout and head clogging.

Easy Maintenance

Circuit boards are designed for easy access during routine maintenance or repair. Plug-in circuit boards pull out for testing with an extension board, or for replacement. Because all circuitry is isolated from the tape transport section, maintenance can be done without opening the tape transport area.

Compact Size, Light Weight

Built around the same chassis as D-3 VTRs, the non-compressed, 10-bit, D-5 VTRs boast a compact, lightweight body with a 6U height and a weight of approximately 50 kg.

Self-Diagnostic System

A built-in self-diagnostic system automatically checks the unit when the power is switched on, and during operation, and shows any irregularity on the front-panel display. Warnings can also be relayed to an external unit via RS-232C, RS-422A or through the parallel port. This lets the operator monitor VTR condition during remote operation via a communication line.

Detachable Control Panel

The optional AJ-MA30 blank panel allows the front panel of the AJ-D580E/B to be removed for remote applications.

Excellent Picture and Sound Quality

Non-Compressed 10-Bit Component

The D-5 format records a non-compressed 10-bit, 4:2:2 component signal, the highest specifications obtainable today, for maximum picture quality. The superb colour reproduction with smooth 1,024-step gradation and a S/N ratio of 60 dB accommodate even sophisticated graphic needs. And the high, 13.5 MHz sampling frequency fully meets the ITU-R Recommendation 601 standard, giving outstanding resolution with sharp detail.

4-Channel PCM Audio

The D-5 VTR is equipped with 4 PCM audio channels. Sound quality is excellent, boasting a frequency response from 20 Hz to 20 kHz (+0.5/-0.5dB) and wide dynamic range of 100 dB (20 bits). A single longitudinal audio channel (audio cue track) is also provided.

Multigeneration Recording

The digital component recording and powerful error correction/concealment functions ensure virtually no degradation in picture quality even after 20 or more dubbing generations in the digital domain (In/Out: EBU Tech.3267-E). This assures high-quality results in advanced image creations that use a variety of digital effects and computer graphics.

Compact 1/2-inch Cassette Tape

The AJ-D580E/B accepts all three cassette sizes (L, M and S) without an adaptor and offers a maximum 124 minutes of continuous recording and playback. Compact 1/2-inch tape saves space in the studio, field and library.

Compatible with the Next-Generation Digital Broadcasting Environment

D-3 Playback (with optional AJ-PB35HE)

D-5 VTR are ready to adapt to the fast-advancing broadcasting environment where both composite digital and component digital are used. Installing the optional AJ-PB35HE allows the AJ-D580E/B to play back D-3 format (1/2" composite digital) tapes. Video output can be switched between component and composite regardless of the tape type. High-quality, full-bit digital sources recorded with such D-3 equipment as the

AJ-D310 camera/recorder and AJ-D320 portable recorder can be used in component digital editing. Since the D-3 format is suitable for tape archiving, use of D-3 tapes as a secondary medium adds convenience.

M.A.R.C. Digital Operation

The AJ-D580E/B is identical in size to the AJ-D350 D-3 VTR and can mount in the M.A.R.C. automatic broadcasting system. By adding the D-3 playback function, the D-5 VTR can play back both D-5 and D-3 tape sources.

Compatibility with Next-Generation TV

The potential of a recording medium depends on its absolute data recording capacity. Non-compressed 10-bit processing brings the D-5 VTR to the 300-Mbps class, ensuring superb performance both in today's broadcasting and in next-generation systems. The 18-MHz sampling, 8-bit mode allows production of wide-screen 16:9 programming with superb picture quality. And since the D-5 VTR uses non-compressed signals, the future use of compression technology will dramatically boost the D-5's data recording capacity. The D-5 VTR is expected to support recording and playback of next-generation HDTV.

Digital/Analogue Interface

Digital Composite/Component Output Capability

While playing back a D-3 format tape using the optional AJ-PB35HE, the D-5 VTR can convert and output a digital component signal. When equipped with the optional AJ-MK20E, it can also convert a digital component playback signal into a digital composite signal for output.

Serial/Parallel Digital Input/Output

The AJ-D580E/B is equipped with both serial digital (EBU Tech.3267-E) and parallel digital (EBU Tech.3246-E) component interfaces (switchable to digital composite output with the optional AJ-MK20E). Serial digital signals can be carried via a single BNC cable (including support Embedded Audio and EDH), allowing simple connection with 4-channel audio and time-code (D-VITC) devices.

Analogue Component/Composite Input/Output

The 10-bit A/D, D/A converter of the optional AJ-MK11E enables the input and output of analogue component (Y/PB/PR) and RGB video signals. For analogue composite video signals, the optional AJ-MK40E allows input and the optional AJ-MK20E allows output.

