

Technics RS-677US

by Panasonic

Front-Loading, 2-Motor High Fidelity Stereo Cassette Deck with Remote Control

 DOLBY SYSTEM

 HPF Head
10 year limited warranty



- Front-Loading, Front Operation Controls
- HPF™ Head with 10-Year Limited Warranty
- Remote Control Included
- Feather-Touch Pushbutton Controls
- Peak Level Check Meters
- Dolby Noise Reduction System with Dolby FM Calibration
- Automatic CrO₂ Tape Sensing
- 2-Motor Drive for Wow and Flutter of 0.07% (WRMS) or Better
- Memory Play
- Photo-Electronic-Eye Auto-Stop

RS-677US Front-Loading, 2-Motor High Fidelity Stereo Cassette Deck with Remote Control

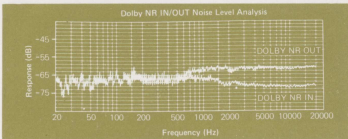
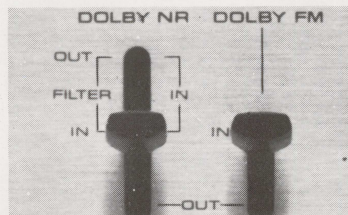
Front-Loading Vertical Style with Front Panel Controls

Every function, including insertion and removal of cassettes, can be controlled at the front panel. There are none of the restrictions associated with the top controls of low-profile horizontal decks, restrictions such as difficult access because of obstruction by a shelf above the deck, or inconvenient visibility of control settings and adjustments. Everything is immediately visible—including check of tape movement from the front: a carefully angled, lamp-illuminated mirror in the cassette compartment presents an eye-level view of the cassette during use. That's just one indication of the careful design and planning by Technics engineers. The physical design of the RS-677US makes it adaptable to any kind of system layout. In fact, it readily lends itself to rack mounting or component stacking.

Dolby® Noise Reduction with FM In/Out Switch

The universally accepted Dolby Noise Reduction System, which provides up to 10 dB improvement in the signal-to-noise ratio, is one of the many advantages of the RS-677US. When it is switched into use, low-level high-frequency sounds—the ones most likely to be obscured by background hiss—are boosted to override the noise level. In playback, they are correspondingly cut to restore them to proper amplitude but, in the meantime, the noise level is pushed down, out of audible range. Prerecorded Dolby tapes are played back properly.

In addition to this normal Dolby NR capability, a special feature takes full advantage of Dolby-encoded FM broadcasts which already exist and are becoming more popular. By selecting the proper Dolby NR mode, it is possible to record



such broadcasts directly in encoded form after which they can be played back with noise-reduced Dolby decoding. However, while Dolby NR record (encode) is off during such recording, the output signal is available from the cassette deck in decoded form, so that proper monitoring is possible. In fact, it is possible to feed the decoded output to one's receiver or

amplifier without recording, for ordinary listening. For owners of conventional FM receiving equipment, it is thus no longer necessary to discard their equipment in favor of a new FM unit with built-in Dolby NR system or to buy a separate add-on Dolby NR unit. The present FM circuit works in conjunction with the cassette deck as a Dolby NR receiver.

MPX Filter Switch for Dolby FM

For conventional stereo broadcasts, the multiplex filtering in the FM receiver is sufficient to prevent undesired interaction between the multiplex pilot signal and the recorder's bias oscillator. (Such interaction produces audible distortion). However, Dolby encoding raises the level of the multiplex carrier, reintroducing the possibility of such distortion. This is counteracted with the built-in filter. At the same time, optimum response to transients and phase linearity are maintained by removing the filter in other recording modes.

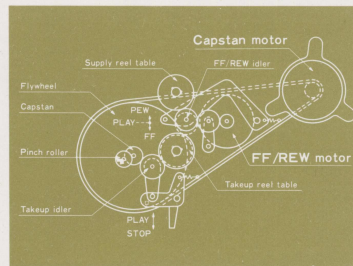
Dolby FM Calibration

The crowning touch to the Dolby FM capability is a built-in calibrator for broadcasts only. An encoded FM signal must be calibrated as to level to insure precise matching to the built-in Dolby decoding. Adjustment is easily accomplished by observing the built-in VU meters. For this, the station transmits a marker signal. Simply turn the Dolby FM calibration volume so that the meter hits the Dolby mark. That's all you need to do to get the full benefit of blissful freedom from noise.

FM De-Emphasis Selector

This rear panel switch can be set for normal 75µsec FM de-emphasis or for the 25µsec equalization used for Dolby FM transmissions.

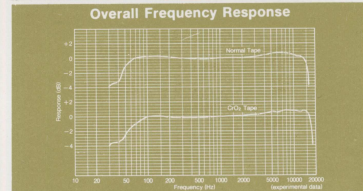
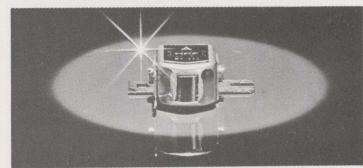
Two-Motor Drive System for Lowest Wow and Flutter: 0.07% (WRMS) or Better



One motor is used exclusively for rotating the spindles that move the tape through the cassette. This frees the electronically regulated DC motor used for capstan drive for optimum performance of its function. This configuration, plus a large flywheel on the capstan-drive motor and a newly designed mechanism for holding the cassette, combine to ensure astonishingly low wow and flutter—equal to many reel-

to-reel systems, and a remarkably low figure in the cassette medium. Metal-case shielding on the reel (spindle) motor keeps electrical noise out of the circuits, magnetic heads or tape. The two-motor transport design also facilitates the use of feather-touch solenoid controls instead of stiff, mechanical controls. The oversize flywheel is 80 mm in diameter. The generous capstan diameter is 3 mm. The wow and flutter figure is no greater than 0.07% (WRMS)—and will generally be lower.

HPF™ Head with 10-Year Limited Warranty†



The HPF recording/playback head, a superb Technics innovation, provides extended high frequency response from its precision finish and also results in reduced noise and distortion because it requires less equalization compensation. Formed under high temperature and pressure to the hardness of tempered glass, it is capable of withstanding intense use that might easily damage conventional heads. This is particularly important when CrO₂ tapes are used; its hardness enables it to retain its original performance characteristics for years instead of gradually deteriorating in performance. Technics has so much faith in this head that it is protected for a full ten years by our limited warranty covering parts and labor.

High-Linearity Low-Noise Preamplifier

High-gain low-noise premium transistors and a stabilizing circuit in the power supply provide an extra 20 dB margin to improve signal-to-noise ratio and expand dynamic range.

Low-Distortion Bias Oscillator

This is achieved with a push-pull circuit and power-supply stabilization. Complete shielding of the oscillator keeps bias signal leakage down more than 40 dB for finest performance.

Selector for Normal/CrO₂ Tape

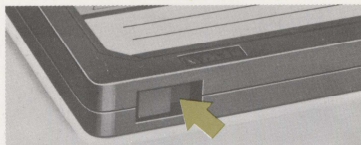
Chromium dioxide cassettes, if used correctly, can add extra sound quality to your recordings in terms of dynamic margin, high-end response and freedom from tape noise.

*Dolby and "Double D" device are the trademarks of the Dolby Laboratories Inc.

† See page 4.

The equalization standard of 70 μ seconds accepted by the world's major manufacturers is achieved by setting the tape selector in the CrO₂ position for both record and playback. For proper playback of earlier chromium dioxide recordings, made with the previous (120 μ sec) standard, the tape selector should be placed in the normal tape position.

Automatic Chrome Tape Sensing



The latest chromium dioxide cassettes have an indentation along the back edge that does not appear on cassettes filled with ferric oxide tape. A sensor in the RS-677US responds to this indent by automatically switching to proper equalization (and bias, in the recording mode) for CrO₂, even though the selector has been left in the NORMAL position.

Peak Level Check Meters



The versatile, dual-indicating VU meters operate normally for problem-free recording inputs, such as recording from broadcast or previously recorded materials. From some sources, particularly live music, there are many high-energy transients, too instantaneous to be sensed by normal meter operation, that may result in distortion due to saturation. Operating the meter mode button will put it in the peak-reading mode, in which the meter circuit quickly responds to these short-term transients. The needle indication falls back slowly so that the peak will not be overlooked, and proper level compensation can be made.

Balance Control

The use of separate recording level controls for each channel makes it possible to compensate any fixed level imbalance between the two channels. It is often inconvenient, however, when short-term level readjustments must be made during recording. For example, when the level must be reduced to accommodate a high-amplitude peak, even when the peak appears in one channel only it is desirable to bring down both channels at once so that balance is maintained. This is difficult to do when two separate adjustments are involved. The RS-677US employs a single

ganged level control plus a balance control—the same system found on better receivers and amplifiers. Once the balance control is used to match the channels to each other properly, they will continue to track together as level readjustments are made with the single master control.

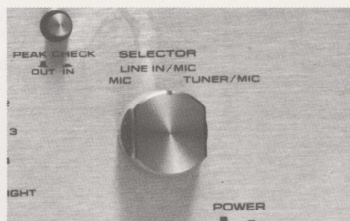
Feather-Touch Controls

Optimum control convenience is obtained with quick-acting, solenoid pushbuttons of the type used in professional equipment. Solid-state switching techniques instead of mechanical operation prevent noise and eliminate wear problems. Illuminated pushbuttons clearly indicate the operating mode at all times, even in the dark.

Muting Circuitry

Whenever a button is pressed, the micro-switch activates one or more solenoids, which can cause internal switching noise. To ensure noise-free recording and listening, a muting switch interrupts the signal path until all parts have reached stable operating condition.

Versatile Source Selector



The three positions of the input selector switch are marked TUNER/MIC, LINE IN/MIC and MIC. For straight live recording, of course, the MIC input is chosen. With TUNER or LINE inputs, live signals may be blended with other sources.

MIC/Headphone Inputs, with MIC Mixing

Phone-type microphone input jacks are conveniently mounted on the front panel, as well as a standard 3-contact jack for stereo headphones for monitoring. A separate microphone amplifier with front-panel level adjustments provides optimum convenience and precision in mixing live signals with those from other sources, and matching levels as desired. The microphone input circuitry is designed to handle a wide range of microphone types, both low-and high-impedance designs, as well as low-and high-output types. The 8-ohm stereo headphone output is suitable for monitoring or private listening.

Memory Play

Even more useful and more automatic than memory rewind, this feature assures rapid fuss-free return to the beginning of a selection just played, an earlier selection, or any earlier point on the tape. A great convenience for replaying of favorite selections. It is also very useful in recording, when one wishes to review the

selection or portion just recorded before recording additional material. To activate this function, simply put the memory play switch on at the beginning of the selection to be recorded and then set the tape counter to 000. Later on, to review this portion, simply depress the rewind button. The tape will rewind to 999 on the counter and immediately begin to replay the desired portion automatically.

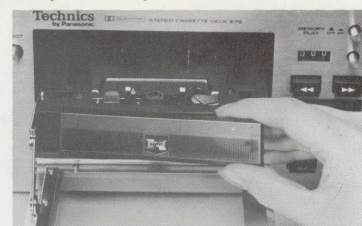
Photo-Electronic-Eye Safety Auto-Stop

At the end of the tape, the transport system is stopped and mechanically disengaged positively and quickly, in any transport mode—play, record, fast forward or rewind. To protect drive components, full disengagement occurs even when AC power goes off.

Lockable Pause Control

This illuminated feather-touch button makes it possible to stop and restart tape motion instantly while retaining the operating mode of the transport. It thus enables stopping and restarting while remaining in the recording mode, a particularly useful feature when one wishes to edit out unwanted material while recording. When activated, this button moves only the pinch roller, not the head assembly, avoiding noise and undesired tape movement.

Foolproof Safety Features



Even if you forget, the RS-677US remembers. The automatic selection of tape equalization has already been mentioned, as well as the automatic stop and disengagement in all transport modes. In addition, the Eject button will not operate unless the transport is at a standstill, thus preventing accidental damage to cassettes or the mechanism. A lock system prevents any operation unless a cassette has been inserted properly and is correctly positioned. An improved holding system secures the cassette near the head section, preventing tilt and wobbling. This not only prevents mechanical problems but also minimizes the possibility of poor high-frequency response and other distortion due to improper tape alignment. A removable cover and illuminated mirror in the cassette compartment simplify the usually inconvenient task of head cleaning.



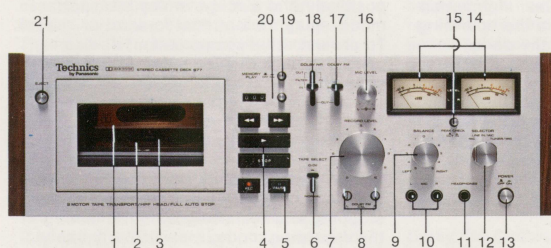
Remote Control RP-9677 Included

Technics takes another large step forward in listening convenience. This compact remote control unit eliminates the bother of getting up just to operate the tape transport modes. Stay where you are in your favorite listening chair, and simply touch the feather-light pushbutton controls of this handy little unit. It contains all transport modes including lockable pause control, so sit back and record your FM programs etc. without any more fuss or bother. The 11 feet cord is more than ample.

HPF Tape Recorder Heads 10-Year Limited Warranty

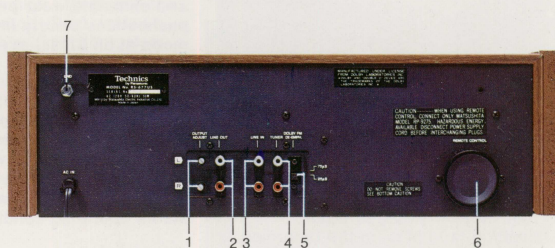
Panasonic Company, Division of Matsushita Electric Corp. of America and Matsushita Electric of Hawaii guarantee the HPF tape head incorporated in the RS-677 US, in home use, to be free from defective material and workmanship, and agree to replace any defective HPF tape head with a new one provided the tape recorder is purchased and retained within the U.S.A.
This warranty covers 10 years labor and parts, from date of original purchase if the tape recorder is delivered prepaid to an authorized service agency. Bill of sale or other proof of date of purchase must be presented to receive in-warranty service.
This warranty does not apply if the tape head or the tape recorder incorporating same has been subjected to damage in transit, accident, misuse or abuse following sale.

Front Panel Facilities



- | | |
|---|----------------------------------|
| 1. CrO ₂ Tape Automatic Sensor | 8. Dolby FM Calibration Controls |
| 2. HPF Head | 9. Recording Balance Control |
| 3. Photo-Electronic-Eye Auto-Stop | 10. Microphone Inputs |
| 4. Feather-Touch Pushbutton Controls | 11. Headphone Jack |
| 5. Lockable Pause Control | 12. Input Source Selector |
| 6. CrO ₂ /Normal Tape Selector | 13. Power Switch |
| 7. Recording Level Control | 14. Level/Peak Check Meters |

Rear Panel Facilities



- | | |
|------------------------------------|----------------------------------|
| 15. Peak Level Check Button | 1. Output Level Controls |
| 16. Microphone Level Control (L/R) | 2. Line Output Jacks |
| 17. Dolby FM Switch | 3. Line Input Jacks |
| 18. Dolby NR/MPX Filter Switch | 4. Tuner Input Jacks |
| 19. Memory Play Switch | 5. Dolby FM De-Emphasis Selector |
| 20. Tape Counter | 6. Remote Control Jack |
| 21. Eject Button | 7. Ground Terminal |

Technical Specifications

Track System: 4-track 2-channel stereo recording and playback

Recording System: AC bias (90 kHz), AC erasure

Tape Speed: 1 $\frac{7}{8}$ ips

Wow and Flutter: 0.07% (WRMS)

Frequency Response: CrO₂ tape; 30-17,000 Hz
Normal tape; 30-15,000 Hz

Signal-to-Noise Ratio:
(signal level = 250nWb/m) Dolby NR out; 52 dB (Normal tape)
Dolby NR in; 65 dB (CrO₂ tape, above 5 kHz)

Fast Forward and Rewind Time: Approx. 80 seconds with C-60 cassette tape

Inputs: MIC; sensitivity 0.3 mV/applicable microphone impedance 600 Ω -20 k Ω
LINE; sensitivity 60 mV/impedance 70 k Ω
TUNER; sensitivity 100 mV/impedance 90 k Ω

Outputs: LINE; output level 0.42 V (at OVU)/load impedance 50 k Ω over
HEADPHONE; output level 45 mV/8 Ω

Motors: 2-Motor system
1-Electronic speed control motor for capstan drive
1-DC motor for reel table drive

Heads: 2-Head system
1-HPF head for record/playback
1-Ferrite head for erasure

Power Requirement: AC; 120V, 50/60 Hz (not necessary for conversion)

Power Consumption: 50 W

Dimensions: 5 $\frac{3}{8}$ "(H) \times 17 $\frac{1}{4}$ "(W) \times 13 $\frac{1}{4}$ "(D)

Weight: 26 $\frac{3}{8}$ lbs.

Accessories: Remote control unit (RP-9677)
2-Connection cord G

Optional Accessories: Electret condenser microphones
RP-3850E/RP-3830E/RP-3550E

The cabinetry features real wood sides with an overlay of printed vinyl and a simulated wood top panel.

Technics
by Panasonic

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