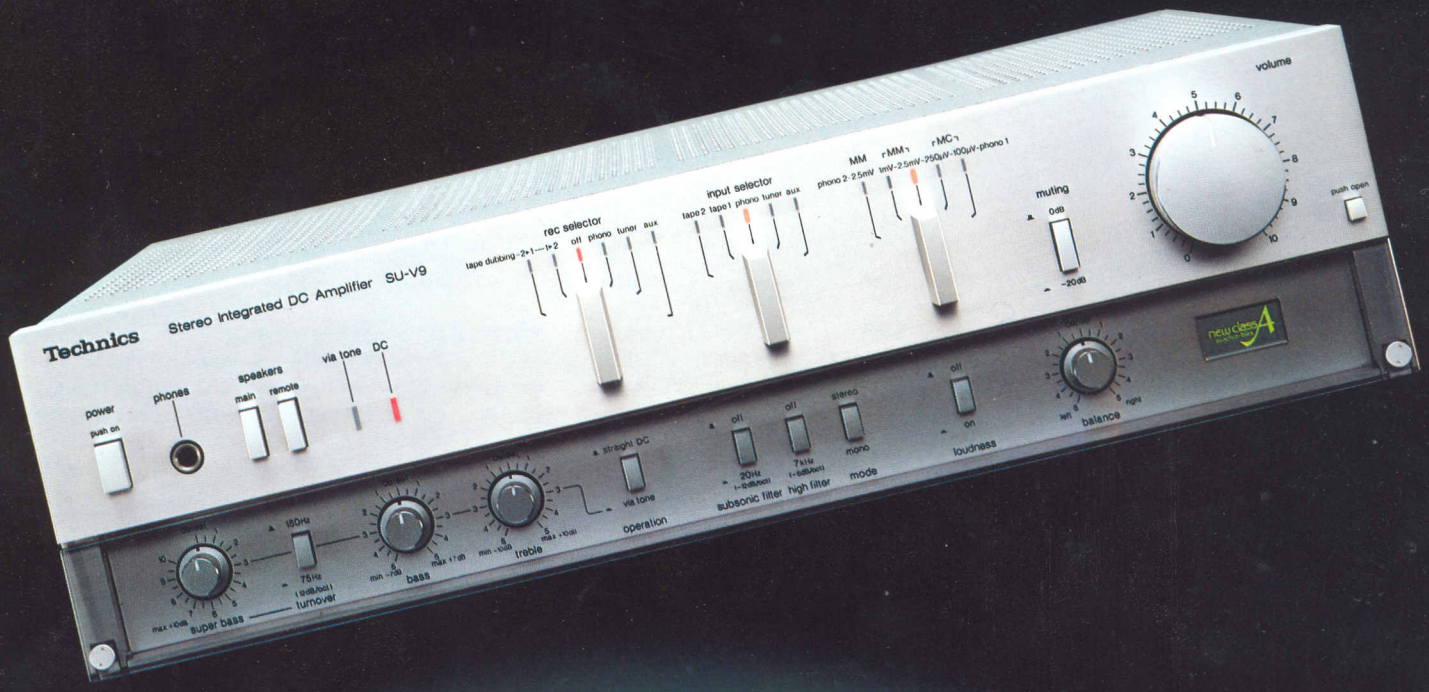
Technics

The science of sound

SU-V9/V7/V5/V3



Stereo Integrated Amplifiers


Technics
Stereo Integrated DC Amplifier SU-V7
power
push on
via tone DC
speakers
speakers off main remote main and remote
rec selector
tape dubbing 2→1 1→2 off phono tuner aux
input selector
tape2 tape1 phono tuner aux
phono selector
MM MC
volume
phones
bass
defeat
min −10dB
max +10dB
treble
defeat
min −10dB
max +10dB
operation
straight DC
via tone
subsonic filter
off
20Hz (−12dB/oct)
high filter
off
7kHz (−6dB/oct)
mode
stereo
mono
loudness
off
on
balance
center
left
right
Technics
Stereo Integrated DC Amplifier SU-V9
power
push on
phones
speakers
main remote
via tone DC
rec selector
tape dubbing→2→1→1→2 off phono tuner aux
input selector
tape2 tape1 phono tuner aux
MM MC
phono 2-2.5mV 1mV-2.5mV-250μV-100μV-phono 1
muting
0dB
−20dB
volume
open
defeat
max +10dB
super bass
150Hz
75Hz (12dB/oct)
turnover
defeat
min −10dB
max +10dB
bass
defeat
min −10dB
max +10dB
treble
straight DC
via tone
operation
off
20Hz (−12dB/oct)
off
7kHz (−6dB/oct)
stereo
mono
subsonic filter
high filter
mode
off
on
loudness
center
left
right
balance


Technics
Stereo Integrated DC Amplifier SU-V3
power
push on
FL peak power meter
speakers
speakers off main remote main and remote
rec selector
tape dubbing 2→1 1→2 off phono tuner aux
input selector
tape2 tape1 phono tuner aux
volume
phones
meter range
×1
×0.01
bass
defeat
min -10dB
max +10dB
treble
defeat
min -10dB
max +10dB
subsonic filter
off
30Hz (-6dB/oct)
high filter
off
7kHz (-6dB/oct)
loudness
off
on
balance
center
left
right
newclass A
Technics
Stereo Integrated DC Amplifier SU-V5
power
push on
FL peak power meter
speakers
speakers off main remote main and remote
rec selector
tape dubbing 2→1 1→2 off phono tuner aux
input selector
tape2 tape1 phono tuner aux
phono selector
MM MC
MM
MC
volume
phones
meter range
×1
×0.01
bass
defeat
min -10dB
max +10dB
treble
defeat
min -10dB
max +10dB
operation
straight DC
via tone
subsonic filter
off
30Hz (-6dB/oct)
high filter
off
7kHz (-6dB/oct)
loudness
off
on
balance
center
left
right
newclass A

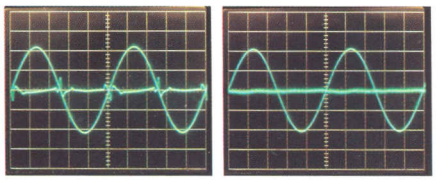
Our Most Advanced Technology . . . Technics Amps

There are a number of good reasons for purchasing an integrated amplifier rather than a receiver. For example, it gives you more flexibility when you select a tuning system. More importantly, integrated amps generally feature the most advanced technology that a manufacturer can offer. This is true of the new line of Technics amplifiers—the SU-V9/7/5/3 include the finest and most extensive technology we have ever offered. If you're in the market for an integrated amp, check out Technics; the V series amps are among the finest products we have made. Exciting new technology. Superior performance. Feature-laden but easy to use, these new amplifiers represent Technics innovation at its best.

New Class A

Class A amplifiers have always enjoyed a superior, almost mythical, reputation among audio purists. Why would anyone pay thousands of dollars for a huge, inefficient, low powered amplifier (these are characteristics of all Class A amps)? The answer is sound. Class A amps handle the full waveform with a single output transistor, so there is no switching distortion and no crossover distortion. Class B amps, which are much more efficient and less expensive, suffer from these types of distortion; they use two types of transistors (one for the upper half of the waveform and one for the lower half) which switch on and off, depending upon the signal requiring amplification. So, until recently, the choice has been simple (though not particularly satisfying)—either pay for a ridiculous dollar-to-watt ratio or live with switching and crossover distortion.

Technics New Class A gives you a third, more attractive (and more logical) alternative. This remarkable circuitry uses two types of transistors, but does not allow either to switch off—instead, a very small bias current is supplied to the idling transistor, so it is always in a ready state. Since this current is so small, a New Class A amp is almost as efficient as a Class B amp, but does not suffer from the distortions inherent in this design. Result? The best of both worlds—plenty of output power, without switching or crossover distortion.



Class B amplifier output waveform and distortion waveform (at 20 kHz)

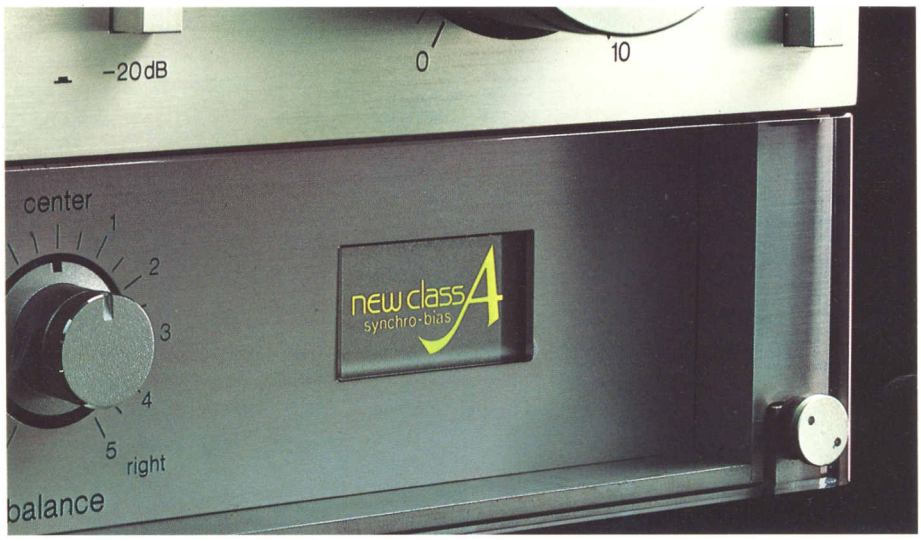
New class A amplifier output waveform and distortion waveform (at 20 kHz)

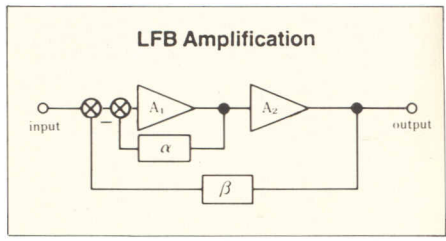
And, unlike other non-switching designs, New Class A with synchro-bias synchronizes the fixed bias current with the *input* signal. This means that the signal paths are completely separate, so the bias signal does not interfere with, or influence, the audio output. Naturally, the best way to demonstrate New Class A's effectiveness is to listen to a Technics amp and a Class A amp side-by-side and compare. After this type of listening test, even the staunchest audio purist will have a difficult time justifying the expense of a Class A amp. New Class A sounds that good.

Linear Feedback

Another Technics innovation is Linear Feedback (LFB). LFB employs multiple feedback loops to achieve theoretical zero distortion (if all other elements were perfect, distortion would be 0.00%!). Even in reality, total harmonic distortion is remarkably low: 0.003% (SU-V9/V7, *minimum continuous RMS, both channels driven into 8 ohms from 20~20,000 Hz).*

LFB has other advantages as well. This innovative circuit also provides theoretical zero output impedance. This results in ideal speaker drive characteristics, because the damping factor is theoretically infinite. And induced intermodulation distortion (caused by the speakers' back electromotive force) is eliminated. With our advanced circuit design, transient intermodulation (TIM) distortion is reduced to a level so low, it cannot be measured with today's most elaborate test instruments.

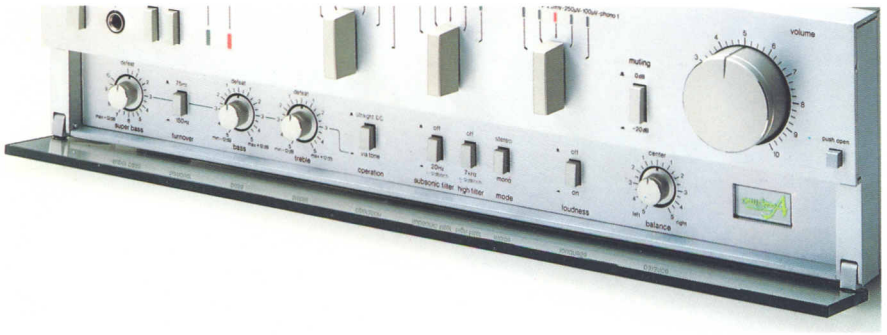




Concentrated Power Block

Anytime a current passes through a wire, a magnetic field is created around the wire. This is basic electronic theory. It can also cause serious problems within an amplifier, because a strong field in power supply can influence weaker upstream signals.

To eliminate this problem, Technics amps use what we call a Concentrated Power Block (CPB). This design (as the name implies) concentrates all the high power handling elements into one block, using the shortest possible connections between them. Since these high power handling devices (with their strong magnetic fields) are isolated physically from those with smaller currents, the interference between the two is eliminated. This is a simple solution, to be sure, but it is completely effective in terms of removing electromagnetically induced distortion.



Servo Power Supply

Another exciting innovation developed by Technics engineers is called a servo power supply. It increases amplifier stability and improves transient response, especially in the extremely important (though often neglected) low frequency range. This remarkable design uses a thyristor servo correction device, which compares the actual voltage with a reference voltage. The result? Our amps sound strong and powerful, particularly in terms of bass response—in fact, in this low frequency range, the amp performs with the same authority as amps with a power supply about ten times the actual size. The advantages of this increased stability and remarkable transient response is especially apparent on direct-to-disc or digital recordings; as these new recording technologies become more and more widespread, the advantages of our servo power supply will become even more obvious, and even more significant.

As a byproduct of this new design, we were able to do without the constant power reserves which some amps require to guard against voltage drop during high power consumption. Consequently, the size of the amp is reduced and less heat is produced by the power transistors. And, since the power supply voltage can easily be varied electronically, a stable performance for 4 ohm loads is assured, yeilding the same rated output as for 8 ohm loads.

Excellent Overall Performance

Obviously, we have devoted a tremendous amount of attention to the sound of our new amplifiers. And their sound is very impressive indeed. This does not mean, however, that we ignored other elements of the amps' design. For example, there is an elaborate electronic protection circuit, which reduces the likelihood of damage to either the speaker or the amp, which could result from low impedance loads, short circuits, or DC potential at the speaker terminals. Also, we concentrated on the phono equalizer—both MM and MC cartridges may be connected directly, without transformers or pre-preamps. The phono input is capacitorless (ICL), using a low noise FET. Thus, when the amp is used in the straight DC mode (with the tone control circuitry switched out of the signal path) there is only one capacitor (downstream of the equalizer) in the entire signal path, from input to speaker terminals.

Naturally, we've included many features to make these amps a pleasure to operate. Consider:

Other Features

- Separate "rec out" selector switch for tape deck handling flexibility
- NFB-type tone controls for high S/N ratio and low distortion
- Super Bass tone control (SU-V9)
- Remote action switches for rec, input, and phono (SU-V9) selectors
- Huge transformer features vibration-free construction and low magnetic leakage
- Main and/or remote speaker connection and switch
- Highly accurate FL peak power meters (SU-V5/3)
- Straight DC/via tone selector (SU-V9/7/5)
- Audio muting: −20 dB (SU-V9)
- Subsonic and high filters

Features at a Glance

	SU-V9	SU-V7	SU-V5	SU-V3
Output Power	120 W	80 W	60 W	40 W
THD	0.003%	0.003%	0.005%	0.007%
New Class A	∖	∖	∖	∖
LFB Circuitry	∖	∖	∖	∖
Straight DC Amp	∖	∖	∖	—
DC Amp	∖	∖	∖	∖
MM/MC Phono Selector	∖	∖	∖	—
Super Bass	∖	—	—	—
Servo Power Supply	∖	∖	—	—
Heavy Duty Design (4Ω/8Ω)	∖	∖	∖	∖
Electronic Protection Circuit	∖	∖	∖	∖
Tape Mon./Dub.	1⇄2	1⇄2	1⇄2	1⇄2
FL Peak Power Meter	—	—	∖	∖
Audio Muting	∖	—	—	—
Subsonic and High Filter	∖	∖	∖	∖
2 Speaker Selector	∖	∖	∖	∖

Technical Specifications (IHF '78)

	SU-V9	SU-V7	SU-V5	SU-V3
Rated minimum sine wave RMS power output				
20Hz~20kHz both channels driven	0.003% THD 120W per channel (8 ohms)	0.003% THD 80 W per channel (8 ohms)	0.005% THD 60 W per channel (8 ohms)	0.007% THD 40 W per channel (8 ohms)
20Hz~20kHz both channels driven	0.007% THD 120W per channel (4 ohms)	0.007% THD 80W per channel (4 ohms)	0.02% THD 60W per channel (4 ohms)	0.02% THD 45W per channel (4 ohms)
1kHz continuous power output both channels driven	0.003% THD 120W per channel (8 ohms) 0.003% THD 120W per channel (4 ohms)	0.003% THD 80W per channel (8 ohms) 0.007% THD 80W per channel (4 ohms)	0.003% THD 65W per channel (8 ohms) 0.007% THD 65W per channel (4 ohms)	0.003% THD 45W per channel (8 ohms) 0.007% THD 50W per channel (4 ohms)
Dynamic headroom	0dB (8 ohms), 0dB (4 ohms)	0dB (8 ohms), 0dB (4 ohms)	1.5dB (8 ohms), 2.5 dB (4 ohms)	1.5dB (8 ohms), 2.5 dB (4 ohms)
Total harmonic distortion				
rated power	0.003% (20Hz~20kHz, 8 ohms)	0.003% (20Hz~20kHz, 8 ohms)	0.005% (20Hz~20kHz, 8 ohms)	0.007% (20Hz~20kHz, 8 ohms)
half power	0.003% (20Hz~20kHz, 8 ohms) 0.0007% (1kHz, 8 ohms)	0.003% (20Hz~20kHz, 8 ohms) 0.003% (1kHz, 8 ohms)	0.005% (20Hz~20kHz, 8 ohms) 0.003% (1kHz, 8 ohms)	0.007% (20Hz~20kHz, 8 ohms) 0.003% (1kHz, 8 ohms)
SMPTE intermodulation distortion	0.003%	0.007%	0.005%	0.007%
Low frequency damping factor	80 (8 ohms), 40 (4 ohms)	40 (8 ohms), 20 (4 ohms)	40 (8 ohms), 20 (4 ohms)	40 (8 ohms), 20 (4 ohms)
Load impedance				
MAIN or REMOTE	4~16 ohms	4~16 ohms	4~16 ohms	4~16 ohms
MAIN and REMOTE	8~16 ohms	8~16 ohms	8~16 ohms	8~16 ohms
Frequency response				
PHONO	RIAA standard curve ±0.2dB	RIAA standard curve ±0.5dB	RIAA standard curve ±0.5dB	RIAA standard curve ±0.8dB
AUX, TUNER	20Hz~20kHz, +0, −0.2dB (straight DC)	20Hz~20kHz, +0, −0.2dB (straight DC)	20Hz~20kHz, +0, −0.2 dB (straight DC)	20Hz~20kHz, +0, −0.2 dB
Input sensitivity				
PHONO (PHONO 1) MM	0.25mV (2.5mV IHF '66) 0.1mV (1mV IHF '66)	0.25mV (2.5mV IHF '66)	0.32mV (2.5mV IHF '66)	0.4mV (2.5mV IHF '66)
MC	25μV (250μV IHF '66) 10μV (100μV IHF '66)	17.0μV (170μV IHF '66)	22μV (170μV IHF '66)	
PHONO 2 MM	0.25mV (2.5mV IHF '66)			
AUX, TUNER, TAPE	15mV (150mV IHF '66)	15mV (150mV IHF '66)	19mV (150mV IHF '66)	24mV (150mV IHF '66)
Signal-to-noise ratio				
PHONO MM	75dB (88dB, IHF '66)	77dB (86dB, IHF '66)	76dB (86dB, IHF '66)	75dB (82dB, IHF '66)
MC	74dB (71dB, IHF '66, 250μV input)	74dB (68dB, IHF '66, 250μV input)	74dB (68dB, IHF '66, 250μV input)	
AUX, TUNER	79dB (103dB, IHF '66) (straight DC)	80dB (100dB, IHF '66) (straight DC)	82dB (100dB, IHF '66) (straight DC)	82dB (100dB, IHF '66)
Maximum input voltage				
PHONO MM	150mV (170mV, 1kHz)	150mV (150mV, 1kHz)	150mV (150mV, 1kHz)	150mV (150mV, 1kHz)
MC	15mV (17mV, 1kHz)	10mV (10mV, 1kHz)	10mV (10mV, 1kHz)	
Input impedance				
PHONO MM	47 kilohms	47 kilohms	47 kilohms	47 kilohms
MC	100/220 ohms	220 ohms	220 ohms	
AUX, TUNER, TAPE	33 kilohms	27 kilohms	22 kilohms	22 kilohms
Tone controls				
SUPER BASS	20Hz,+10dB~0dB(12dB/oct) (turn over 75Hz, 150Hz)			
BASS	50Hz, +7dB~−7dB	50Hz, +10dB~−10dB	50Hz, +10dB~−10dB	50Hz, +10dB~−10dB
TREBLE	20kHz, +10dB~−10dB	20kHz, +10dB~−10dB	20kHz, +10dB~−10dB	20kHz, +10dB~−10dB
Subsonic filter	20Hz, −12dB/oct	20Hz, −12dB/oct	30Hz, −6dB/oct	30Hz, −6dB/oct
High filter	7kHz, −6dB/oct	7kHz, −6dB/oct	7kHz, −6dB/oct	7kHz, −6dB/oct
Loudness control (volume at −30dB)	50Hz, +7dB	50Hz, +9dB	50Hz, +9dB	50Hz, +9dB
Muting	−20dB			
Output voltage				
TAPE 1, 2 REC OUT	150mV	150mV	150mV	150mV
GENERAL				
Power consumption	740VA, 520W	515VA, 295W	400VA, 330W	345VA, 280W
Power supply	AC 120V, 60Hz	AC 120V, 60Hz	AC 120V, 60Hz	AC 120V, 60Hz
Dimensions (W×H×D)	430×120×350 mm (16-15/16"×4-23/32"×13-25/32")	430×120×330 mm (16-15/16"×4-23/32"×13")	430×97×310 mm (16-15/16"×3-13/16"×12-7/32")	430×97×310 mm (16-15/16"×3-13/16"×12-7/32")
Weight:	14.7 kg (32.4 lb)	10.5 kg (23.2 lb)	7.8kg (17.2lb)	7.2kg (15.9lb)

Note: Total harmonic distortion is measured by the digital spectrum analyzer (HP 3045 system).

Technics

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