

CONCEPT

The Ultimate in
Sound Reproduction



Includes Newest Models

The Design

CONCEPT — the result of a concerted effort to design a line of stereo receivers without compromise in any area. Every detail, from the action of the controls to the surface area of the internal heat sinks, has been carefully thought out and crafted by a distinguished, specialized international team of designers and production engineers. A laboratory standard of performance is complemented by bold visual definition. The final product is an instrument that will satisfy the most discerning audiophile.

There are five **CONCEPT** receivers, expressions of the same design philosophy. The more expensive **CONCEPT** models are designed for those who need more power or greater control flexibility; yet the five **CONCEPT**s are far more alike than different. The sound is the same.

Experience the calm authority of **CONCEPT** now. Look at it, operate it, and most of all, listen to it. You'll find the least expensive **CONCEPT** will prove more exciting than the best competing model. **CONCEPT** — the ultimate synthesis of the technical, the visual and the tactile. There may be attempts to copy it, but **CONCEPT** is the original.

The Controls

The **CONCEPT** receiver's controls and control layout provide you with full access to the sonic excellence of the circuitry, and the **CONCEPT**'s versatility will enhance the performance of the rest of any system.

All of **CONCEPT**'s binary (on-off) functions are controlled by newly-developed push switches. Light-emitting diodes (LED's) are built into the switches to provide positive visual indication. These indicators, which won't burn out, glow red on the tape monitor switches and green on all others. The tape monitor function has been carefully thought out for the most logical operation. It facilitates the use of two tape machines in conjunction with the **CONCEPT**; you can monitor either deck and dub from one to the other.

CONCEPT's tuning assembly is yet another manifestation of the total design philosophy. A generous machined tuning knob, attached to a heavy flywheel, rotates smoothly with a light touch for ease in station changing and very precise tuning adjustments. A slide-rule dial pointer shows exactly the station selected, even from across the room.

The Detail

The front panel is a heavy aluminum extrusion with a rich brushed finish. All markings are actual calibrations, distinct and easily read. The dial lighting has been carefully coordinated for maximum visibility without glare.

The rear panel too is the result of user-oriented study. All speaker and antenna connections are made at color-coded push terminals that provide safe, positive contact. AC convenience outlets are provided as well, to facilitate hook-up of other components.

CONCEPT — a receiver design clearly thought out, and perfectly executed. You can hear the result.

Concept 16.5

The magnificent **CONCEPT 16.5** is the ultimate expression of the **CONCEPT** design philosophy. Engineered to exceed the performance of expensive component separates, the **CONCEPT 16.5** is without peer as a receiver. The 16.5 is the only high-powered receiver with *fully* independent dual power supplies; two oversized power transformers and four 10,000 μ F electrolytic capacitors help provide the 16.5 with an awesome power output. And because neither channel ever interferes with the other, the sound of the 16.5 is uniquely unstrained.

All of the outstanding features standard on the **CONCEPT** line are incorporated in the 16.5, plus some others that are unique. The 16.5 uses a precision *5-gang* tuning assembly; and there are two phono inputs with a convenient switch that permits you to A-B phono cartridges. Individual industrial-grade relays are used to switch the speaker systems.

The **CONCEPT 16.5**. Truly the ultimate in sound reproduction.

16.5 Specifications

Power Amplifier Section*

Continuous power output of 165 watts per channel minimum RMS into 8 ohms (22.2 dBW), or 250 watts per channel minimum RMS into 4 ohms (24 dBW), both channels driven, from 20 to 20,000 Hz with no more than 0.1% total harmonic distortion.

Typical THD at Full Power: Less than 0.03%
Frequency Response: 20 to 20,000 Hz \pm 0.2 dB
IM Distortion (50 Hz: 7 kHz = 4:1): typically less than 0.05%

1V Peak-to-Peak Rise Time: 2 μ Sec.
Damping Factor: Greater than 450 at 20 Hz
Hum and Noise, weighted: — 90 dB
Outputs: Speakers A, B, C or any 2 together; 2 Lo-Z headphone

Preamp Section

Input Sensitivity:
Phono 1 & Phono 2, 1.9 mV;
Tape 1 & Tape 2, 160 mV
Phono Overload: 200 mV
Phono Frequency Response: 30 to 15,000 Hz, \pm 0.2 dB to RIAA curve
Tone Controls:
Bass, \pm 6 dB at 50 Hz in 2 dB steps;
Mid Bass, \pm 10 dB at 100 Hz in 1 dB steps
Treble, \pm 6 dB at 20,000 Hz in 2 dB steps
Mid Treble, \pm 10 dB at 10,000 Hz in 1 dB steps
Loudness Contour at —30 dB at maximum setting: +8 dB at 100 Hz, +4 dB at 10,000 Hz
High Filter: —10 dB at 7,500 Hz, 6 dB/octave
Volume Control Balance: within 0.3 dB tracking
Signal-to-Noise Ratio:
Phono 1 & Phono 2, 78 dB unweighted, 84 dB weighted;
Tape 1 & Tape 2, 85 dB
Main In, 90 dB
Residual Hum and Noise 0.5 mV
Crosstalk at 1 kHz: —65 dB

FM Tuner Section**

Sensitivity: 9.3 dBf (1.6 μ V) at 300 Ω
50 dB Quieting Sensitivity: mono, 13.2 dBf (2.5 μ V); stereo, 36.4 dBf (36 μ V)
Signal-to-Noise Ratio at 65 dBf: 72 dB
Stereo Separation: 52 dB at 1 kHz, 42 dB at 100 Hz, 40 dB at 10 kHz
Distortion at 65 dBf: mono, 0.08%; stereo, 0.1%
Frequency Response: 30 to 15,000 Hz \pm 0.5 dB
Capture Ratio: 0.9 dB
Alternate Channel Selectivity: 90 dB
Spurious Response Ratio: Better than 110 dB
Image Response Ratio: Better than 110 dB
IF Response Ratio: Better than 110 dB

AM Tuner Section

IHF Sensitivity: 175 μ V/m
Image Response Ratio: 67 dB
Signal-to-Noise Ratio: 50 dB

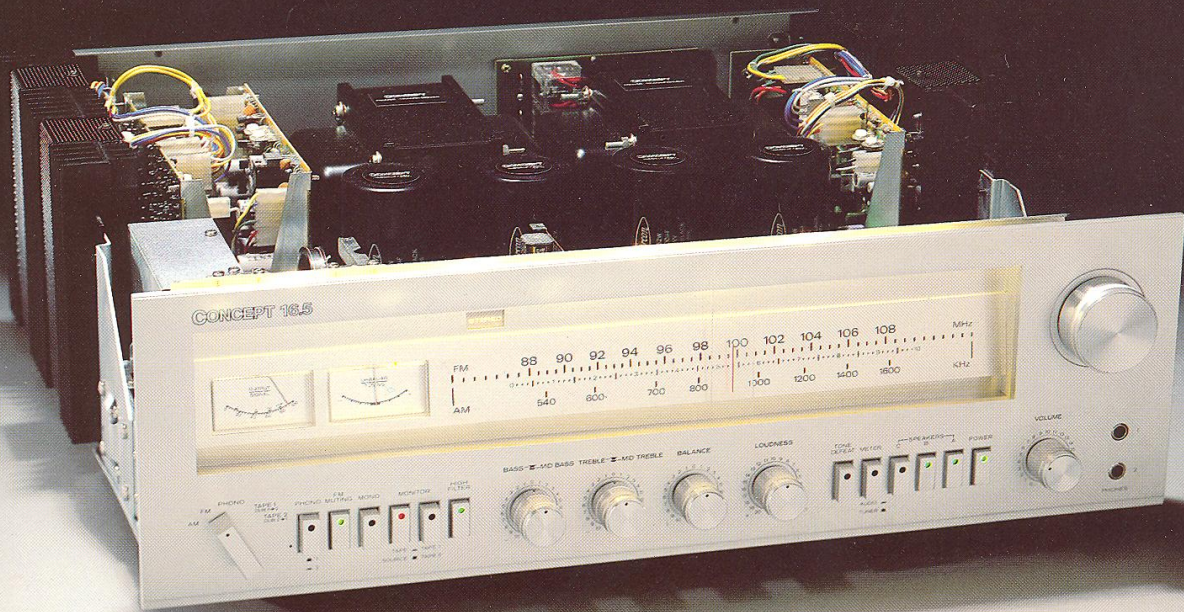
General

Dimensions:
Width, 21 $\frac{1}{2}$ " (53.7 cm)
Height, 7" (17.8 cm)
Depth, 17" (43.2 cm)
Weight: 67 lbs. (30.5 kg)

*Measured in accordance with the Federal Trade Commission rule on power output claims.

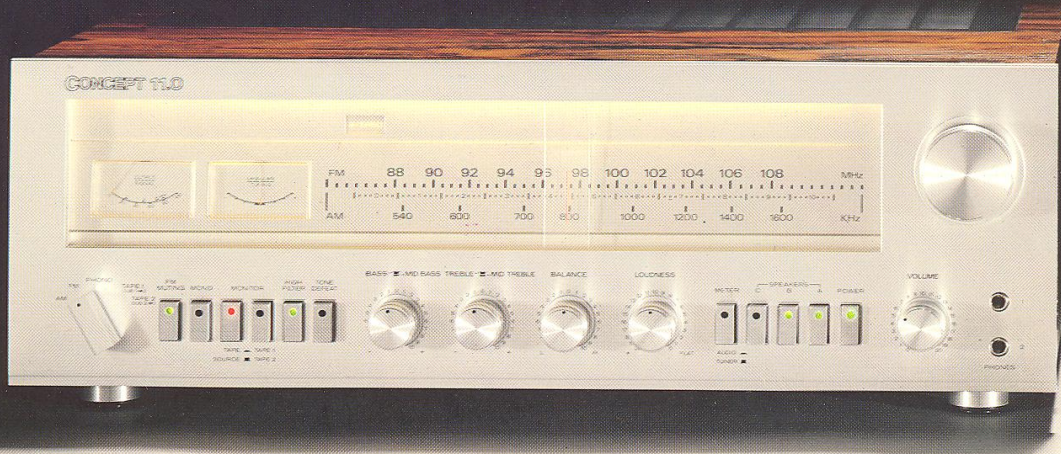
**Measured in accordance with the latest IHF standards.

CONCEPT 16.5



CONCEPT

11.0



Concept 11.0

The CONCEPT 11.0 is a notably high-powered receiver designed, as is the 16.5, to be a desirable alternative to the finest component "separates." The 11.0 augments its high power output with a superb tuner section and advanced circuitry in the phono preamp. Your music will take on a dimension and clarity attainable only with CONCEPT.

In addition to its audio excellence, the 11.0 has a number of unusual but highly desirable features. The two tuning meters also function as audio power meters to provide you a visual indication of the receiver's power output. The 11.0 also shares the innovative loudness control of the 16.5, a design that lets you adjust the amount of loudness compensation to precisely match your speakers and your listening room.

Like the 16.5, the CONCEPT 11.0 will satisfy the most discerning listener.

11.0 Specifications

Power Amplifier Section*

Continuous power output of 110 watts per channel minimum RMS into 8 ohms (20.4 dBW), or 175 watts per channel minimum RMS into 4 ohms (22.4 dBW), both channels driven, from 20 to 20,000 Hz with no more than 0.1% total harmonic distortion.

Typical THD at Full Power: Less than 0.05%
Frequency Response: 20 to 20,000 Hz \pm 0.2 dB
IM Distortion (50 Hz : 7 kHz = 4:1): less than 0.05%

1V Peak-to-Peak Rise time: 2 μ Sec.
Damping Factor: Greater than 400 at 20 Hz
Hum and Noise, weighted: - 90 dB
Outputs: Speakers A, B, C or any 2 together; 2 Lo-Z headphone

Preamp Section

Input Sensitivity:

Phono, 1.9 mV;
Tape 1 & Tape 2, 160 mV

Phono Overload: 200 mV

Phono Frequency Response: 30 to 15,000 Hz, \pm 0.2 dB to RIAA curve

Tone Controls:

Bass, \pm 6 dB at 50 Hz in 2 dB steps;
Mid Bass, \pm 10 dB at 100 Hz in 1 dB steps
Treble, \pm 6 dB at 20,000 Hz in 2 dB steps
Mid Treble, \pm 10 dB at 10,000 Hz in 1 dB steps

Loudness Contour at -30 dB at maximum setting: +8 dB at 100 Hz, +4 dB at 10,000 Hz

High Filter: -10 dB at 7,500 Hz, 6 dB/octave

Volume Control Balance: within 0.3 dB tracking

Signal-to-Noise Ratio:

Phono, 78 dB unweighted, 84 dB weighted;
Tape 1 & Tape 2, 85 dB
Main In, 90 dB

Residual Hum and Noise 0.5 mV

Crosstalk at 1 kHz: -65 dB

FM Tuner Section**

Sensitivity: 9.3 dBf (1.6 μ V) at 300 Ω
50 dB Quieting Sensitivity: mono, 13.2 dBf (2.5 μ V); stereo, 36.8 dBf (38 μ V)
Signal-to-Noise Ratio at 65 dBf: 72 dB
Stereo Separation: 50 dB at 1 kHz, 40 dB at 100 Hz, 38 dB at 10 kHz
Distortion at 65 dBf: mono, 0.1%; stereo, 0.1%
Frequency Response: 30 - 15,000 Hz \pm 0.5 dB
Capture Ratio: 1 dB
Alternate Channel Selectivity: 88 dB
Spurious Response Ratio: Better than 100 dB
Image Response Ratio: Better than 100 dB
IF Response Ratio: Better than 100 dB

AM Tuner Section

IHF Sensitivity: 175 μ V/m
Image Response Ratio: 65 dB
Signal-to-Noise Ratio: 45 dB

General

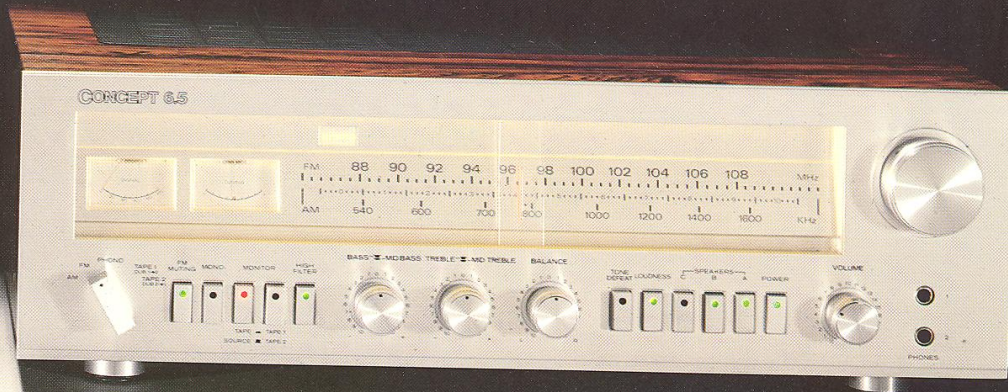
Dimensions:

Width, 20 $\frac{1}{16}$ " (50.9 cm)
Height, 7" (17.8 cm)
Depth, 17" (43.2 cm)
Weight: 48.6 lbs. (22.1 kg)

*Measured in accordance with the Federal Trade Commission rule on power output claims.

**Measured in accordance with the latest IHF standards.

CONCEPT 6.5



Concept 6.5

The CONCEPT 6.5 brings the same no-compromise quality as the 11.0 to situations that don't require such tremendous power. The 6.5 has a high-precision 4-gang tuning assembly nearly as sophisticated as that on the 11.0, and the sound will be identical on all but the most inefficient of speakers.

Most of the flexibility is also retained. The CONCEPT 6.5 has the unique CONCEPT four-range equalizer; you can make subtle adjustments to the frequency extremes to add more realism to the music while still preserving its integrity. The CONCEPT 6.5 also allows you to connect up to 3 sets of speakers, so you can enjoy the clear CONCEPT sound anywhere in your home.

The CONCEPT 6.5. A distinguished example of the no-compromise CONCEPT approach to audio perfection.

6.5 Specifications

Power Amplifier Section*

Continuous power output of 65 watts per channel minimum RMS into 8 ohms, both channels driven, from 20-20,000 Hz, with no more than 0.1% total harmonic distortion. (18.13 dBW)

Frequency Response: 20-20,000 Hz ± 0.5 dB
IM Distortion (50 Hz: 7 kHz = 4:1) typically less than 0.05%

1V Peak-to-Peak Rise Time: 2.2 μ Sec

Hum and Noise, weighted: -86 dB

Outputs: Speakers A, B, C or any 2 together;
2 Lo-Z headphone

Preamp Section

Input Sensitivity: Phono, 1.9 mV

Tape 1, Tape 2: 160 mV

Phono Overload: 200 mV

Phono Frequency Response: 30 to 15,000 Hz ± 0.2 dB to RIAA curve

Tone Controls:

Bass, ± 6 dB at 50 Hz in 2 dB steps

Mid-Bass, ± 10 dB at 100 Hz in 1 dB steps

Treble, ± 6 dB at 20,000 Hz in 2 dB steps

Mid-Treble, ± 10 dB at 10,000 Hz in 1 dB steps

Loudness Contour at -30 dB: +8 dB at 100 Hz, +4 dB at 10,000 Hz

High Filter: -10 dB at 7,500 Hz, 6 dB/octave

Volume Control Balance: within 0.3 dB tracking

Signal-to-Noise Ratio:

Phono, 76 dB unweighted, 82 dB weighted

Tape 1 & Tape 2, 85 dB

Main In, 90 dB

Residual Hum and Noise: 0.5 mV

Crosstalk at 1 kHz: -65 dB

FM Tuner Section**

Sensitivity: 9.3 dBf (1.6 μ V) at 300 Ω

50 dB Quieting Sensitivity: mono 13.2 dBf

(2.5 μ V); stereo, 36.8 dBf (38 μ V)

Signal-to-Noise Ratio at 65 dBf: 72 dB

Stereo Separation at 1 kHz: 48 dB

Distortion at 65 dBf: mono, 0.1%; stereo 0.1%

Frequency Response: 30-15,000 Hz ± 0.5 dB

Capture Ratio: 1.0 dB

Alternate Channel Selectivity: 85 dB

Spurious Response Ratio: 88 dB

Image Response Ratio: 90 dB

IF Response Ratio: 95 dB

AM Tuner Section

IHF Sensitivity: 175 μ V/m

Image Response Ratio: 50 dB

Signal-to-Noise Ratio: 40 dB

General

Dimensions

Width: 20 $\frac{1}{8}$ " (50.95 cm)

Height: 7" (17.78 cm)

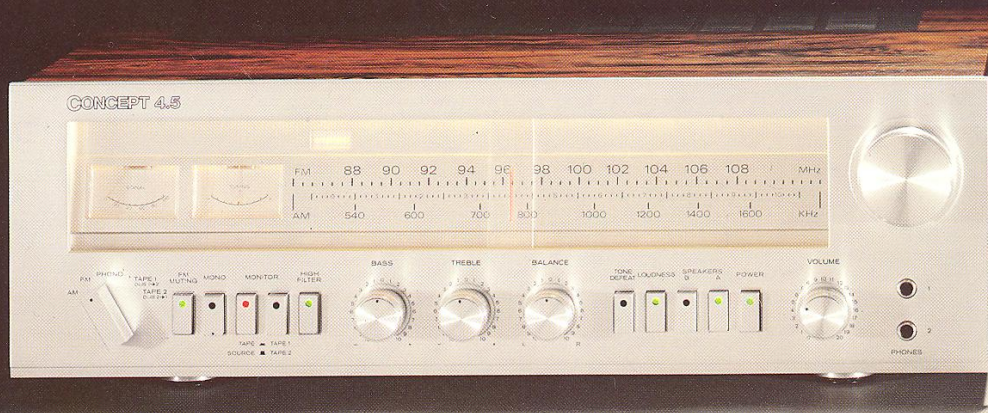
Depth: 17" (43.18 cm)

Weight: 51.6 lbs. (23.45 kg)

*Measured in accordance with the Federal Trade Commission rule on power output claims.

**Measured in accordance with the latest IHF standards.

CONCEPT 4.5



Concept 4.5

The 4.5 is the perfect receiver for installations in which high power is not a requirement, but CONCEPT-like quality sound is. The 4.5 has more than enough power for most high-quality speakers, and there's no sacrifice in any of the critical parameters essential to accurate sound reproduction.

Features of the 4.5 include a tone-control defeat switch that lets you compare the effect of the controls with the laboratory-flat setting; dual tuning meters for the easiest, most precise tuning; and a high filter that reduces objectionable background noise.

The CONCEPT 4.5: An intelligent alternative and an extraordinary value.

4.5 Specifications

Power Amplifier Section*

Continuous power output of 45 watts per channel minimum RMS, 20-20,000 Hz, both channels driven into 8 ohms with no more than 0.1% total harmonic distortion. (16.53 dBW)

Frequency Response: 20-20,000 Hz \pm 5 dB
IM Distortion (50 Hz: 7 kHz = 4:1): typically less than 0.05%

1V Peak-to-Peak Rise Time: 2.2 μ Sec
Hum and Noise, weighted: -88 dB
Outputs: Speakers A, B; 2 Lo-Z headphone

Preamp Section

Input Sensitivity:
Phono, 1.9 mV
Tape 1 & Tape 2, 160 mV
Phono Overload: 200 mV
Phono Frequency Response: 30-15,000 Hz, \pm 0.2 dB to RIAA curve

Tone Controls:
Bass, \pm 10 dB at 100 Hz in 1 dB steps
Treble, \pm 10 dB at 10,000 Hz in 1 dB steps
Loudness Contour at -30 dB: +8 dB at 100 Hz, +4 dB at 10,000 Hz

High Filter: -10 dB at 7,500 Hz, 6 dB/octave
Volume Control Balance: within 0.3 dB tracking
Signal-to-Noise Ratio:

Phono, 76 dB unweighted, 82 dB weighted
Tape 1 & Tape 2, 85 dB
Main In: 90 dB

Residual Hum and Noise: .6 mV
Crosstalk at 1 kHz: -65 dB

FM Tuner Section**

Sensitivity: 9.8 dBf (1.7 μ V) at 300 Ω
50 dB Quieting Sensitivity: mono, 14.8 dBf (3.0 μ V); stereo, 36.8 dBf (38 μ V)
Signal-to-Noise Ratio at 65 dBf: 72 dB
Stereo Separation at 1 kHz: 48 dB
Distortion at 65 dBf: mono, 0.1%; stereo, 0.1%
Frequency Response: 30-15,000 Hz \pm 0.5 dB
Capture Ratio: 1.2 dB
Alternate Channel Selectivity: 78 dB
Spurious Response Ratio: 75 dB
Image Response Ratio: 85 dB
IF Response Ratio: 93 dB

AM Tuner Section

IHF Sensitivity: 175 μ V/m
Image Response Ratio: 50 dB
Signal-to-Noise Ratio: 40 dB

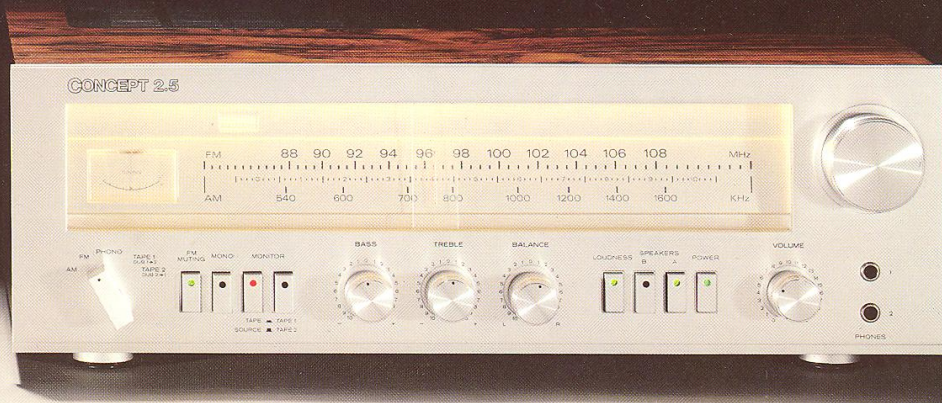
General

Dimensions
Width: 18 $\frac{3}{8}$ " (46.7 cm)
Height: 6" (15.2 cm)
Depth: 15" (38.1 cm)
Weight: 30 $\frac{1}{4}$ lbs. (13.75 kg)

*Measured in accordance with the Federal Trade Commission rule on power output claims.

**Measured in accordance with the latest IHF standards.

CONCEPT 2.5



Concept 2.5

The CONCEPT 2.5 is nearly as great an engineering achievement as the magnificent 16.5. The 2.5 puts the full CONCEPT audio quality into a popular price range. There have been no compromises with the sound, and a surprising amount of control flexibility is retained.

The 2.5 has a pair of tape monitor circuits and full dubbing capability, volume and tone controls with multiple detents for precise adjustments, a loudness contour, outputs for two sets of speakers and headphones, and more. The 2.5 also incorporates the highly sophisticated amplifier protection circuitry of the larger CONCEPT models.

The CONCEPT 2.5: No compromise with the CONCEPT design goal—the ultimate in sound reproduction.

CONCEPT cabinets are rosewood pattern vinyl, bonded to multi-ply wood. The front panel is a 6mm solid aluminum extrusion.

2.5 Specifications

Power Amplifier Section*

Continuous power output of 25 watts per channel minimum RMS, 20-20,000 Hz, both channels driven into 8 ohms with no more than 0.1% total harmonic distortion. (13.98 dBW)

Frequency Response: 20-20,000 Hz \pm 0.5 dB
IM Distortion (50 Hz: 7 kHz = 4:1): typically less than 0.05%

1V Peak-to-Peak Rise Time: 2 μ Sec

Hum and Noise, weighted: -90 dB

Outputs: Speakers A, B; 2 Lo-Z headphone

Preamp Section

Input Sensitivity

Phono: 1.9 mV

Tape 1 & Tape 2: 160 mV

Phono Overload: 200 mV

Phono Frequency Response: 30-15,000 Hz, \pm 0.2 dB to RIAA curve

Tone Controls

Bass: \pm 10 dB at 100 Hz in

1 dB steps

Treble: \pm 10 dB at 10,000 Hz

in 1 dB steps

Loudness Contour at -30 dB: +8 dB at 100 Hz, +4 dB at 10,000 Hz

Volume Control Balance: within 0.3 dB tracking

Signal-to-Noise Ratio:

Phono: 76 dB unweighted, 82 dB weighted

Tape 1 & Tape 2, 85 dB

Main In, 90 dB

Residual Hum and Noise: 0.65 mV

Crosstalk at 1 kHz: -65 dB

FM Tuner Section**

Sensitivity: 9.8 dBf (1.7 μ V) at 300 Ω
50 dB Quieting Sensitivity: mono, 14.8 dBf (3.0 μ V); stereo, 36.8 dBf (38 μ V)

Signal-to-Noise Ratio at 65 dBf: 70 dB

Stereo Separation at 1 kHz: Better than 45 dB

Distortion at 65 dBf: mono, 0.12%; stereo, 0.15%

Frequency Response: 30-15,000 Hz \pm 0.5 dB

Capture Ratio: 1.5 dB

Alternate Channel Selectivity: 75 dB

Spurious Response Ratio: 72 dB

Image Response Ratio: 62 dB

IF Response Ratio: 80 dB

AM Tuner Section

IHF Sensitivity: 200 μ V/m

Image Response Ratio: 45 dB

Signal-to-Noise Ratio: 38 dB

General

Dimensions

Width: 17 $\frac{1}{8}$ " (45.3 cm)

Height: 6" (15.2 cm)

Depth: 13 $\frac{1}{8}$ " (35.0 cm)

Weight: 26 lbs. (118 kg)

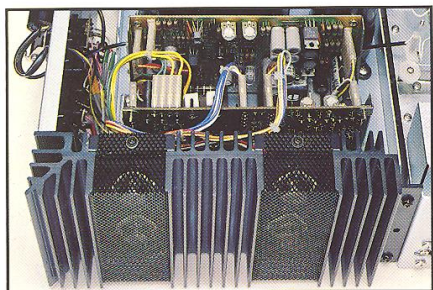
*Measured in accordance with the Federal Trade Commission rule on power output claims.

**Measured in accordance with the latest IHF standards.

The Circuitry

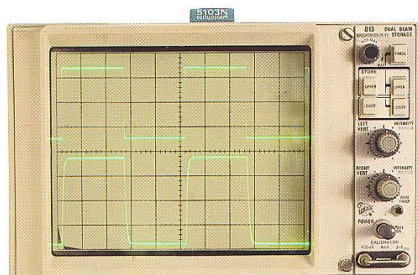
The hallmark of the CONCEPT receiver is a standard of accuracy unmarred by significant audible or measurable distortion. This standard has been achieved by selecting only premium-quality parts, and operating them at far below their rated capabilities. An added benefit of this approach is a dramatic increase in reliability.

The CONCEPT power amplifier ranks with the best separate models. Output circuitry is direct-coupled — a design that greatly contributes to CONCEPT's vanishingly low distortion. The rugged output transistors are mounted on aluminum heat sinks that provide the optimum surface area for maximum heat dissipation, promoting longer component life. The top-of-the-line 16.5 uses dual, fully independent power supplies for its prodigious output.



Massive extruded aluminum heat sinks.

CONCEPT amplifiers exhibit exceptionally good rise time for instantaneous response to an input signal. Even the sharpest musical transients (as a cymbal or harpsichord) are reproduced with the precise clarity of the original. This clarity is further enhanced by reducing transient intermodulation distortion (TIM) to insignificant levels.



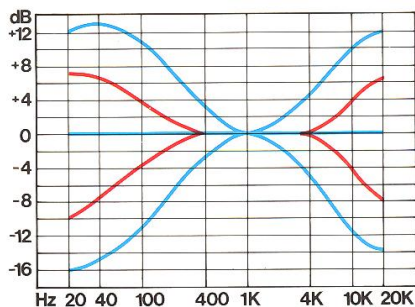
10 kHz square wave at full power. Top trace is generator, bottom is CONCEPT.

The amplifier circuitry is protected with an SCR (Silicon Controlled Rectifier) clamp that instantly shuts off the output power supply in the event of a short circuit. The expensive power transformers are separately protected as well.

CONCEPT power specifications are the *guaranteed* minimum for that receiver. CONCEPT receivers typically exceed their ratings by generous margins — further benefit of the ambitious design philosophy.

Engineering excellence extends to the phono preamplifier. CONCEPT receivers combine careful circuit layout with only the best low-noise transistors, resistors and capacitors, to achieve a superb signal-to-noise ratio and eliminate any trace of background noise, even at high volume. RIAA equalization, critical for accurate reproduction, is exact to within *two-tenths* of 1 dB. A wide dynamic range assures that the loudest musical crescendos won't introduce distortion into the preamp stage.

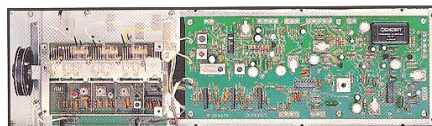
Only properly designed tone controls are of real value in adjusting the sound to your taste and room acoustics, and CONCEPT uses a negative feedback design to permit adjustment without adding distortion. The controls are calibrated in 20 increments of 1 dB each, and provide maximum effect at the most useful points of the frequency spectrum.



Effect of CONCEPT tone controls. Red lines are the additional extreme frequency controls of the 6.5, 11.0 and 16.5.

Even the volume control is a premium-quality part. It permits adjustment in discrete increments and preserves channel balance within $\frac{1}{3}$ dB over its full range, thus avoiding any differences in channel level that could affect musical perspectives. A reed relay mutes the output between functions to eliminate irritating thumps and pops.

CONCEPT's FM tuner section ranks with the best separate tuners. A dual-gate, low-noise MOS FET is used in the tuner's front end to give it both high sensitivity and excellent immunity from overload. The IF section makes optimal use of monolithic IC, hand-picked linear phase ceramic filter elements and a full Quadrature detector; the multiplex decoder uses the latest Phase-Locked Loop circuitry. These are just a few of the circuit features that contribute to CONCEPT's outstanding FM



Advanced tuner circuitry rivals the performance of the best separates.

specifications: superb signal-to-noise and capture ratios, flat frequency response, unusually low distortion, and outstanding stereo separation across the *full* frequency range. In fact, several of the 16.5 specifications *exceed the limits of the best test equipment*. Even the CONCEPT AM section has a hand-picked ceramic filter to lower its distortion.

Great care has also been taken to make finding a station as pleasant as listening to it; the FM muting circuit uses a reed relay to provide total silence when tuning between stations.

But the proof of a receiver is in the listening: Listen to CONCEPT, and discover the ultimate in sound reproduction.

CONCEPT

The Ultimate in Sound Reproduction

CBS Inc.
1601 W. Glenlake Ave.
Itasca, Illinois 60143