PIONEER

QX-9900

The ultimate four-channel stereo receiver, with total capability matrix decoding circuitry, large power output and built-in reverberation unit.

Four-channel finally comes of age with this versatile receiver from Pioneer, an outstanding achievement unusual in both capability and tremendous power output. Featuring a unique matrix decoding circuit, that reproduces all regular matrix records, as well as a second type of decoding circuitry for the SQ matrixed type of records, the QX-9900 is simply the most complete receiver for four-channel now available today. In addition to its matrix decoding capability, the QX-9900 may also be used for discrete four-channel reproduction as well as more conventional two-channel reproduction. Its FM tuner characteristics are equally superb, distinguished by excellent sensitivity of 1.8 μV (IHF), a wide linear FM dial scale, and superb selectivity of more than 70dB (IHF). There are no less than six easy-to-read meters contained in the QX-9900, four level indicators for judging the signal output to each channel, a signal strength meter and center tuning meter for pinpoint FM tuning. The receiver's high standards of versatility are further exemplified by its built-in reverberation amplifier, which permits reverberated sound to be selectively added to either front or rear speakers, or microphone. And because the QX-9900 is complete with two microphone inputs, microphone mixing is accomplished with ease. Completing this picture of quality, the QX-9900 features direct-coupled pure complementary OCL circuitry, the most advanced circuit technology now available, and it delivers up to 240 watts of music power at 4 ohms (IHF), or 30 watts x 4 continuous power (at 8 ohms with all channels driven). Carefully engineered to typically high Pioneer standards, the QX-9900 will give you many years of faithful musical reproduction. It moves you into the fascinating sound world of four-channel—and even a bit beyond.

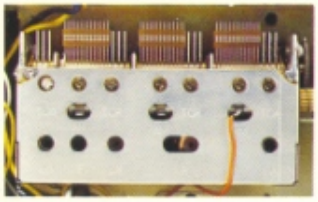
QX-9900

LINEAR FM DIAL SCALE AND TWO METER TUNING SYSTEM

The FM dial scale of the QX-9900 is the extra-wide linear type that enables precise selectivity of all FM stations. This outstanding selectivity is enhanced even more by the inclusion of a pair of easy-to-read meters—one the signal strength type, the other the center tuning type—which add immensely to precise station tuning at all times.

FET FM FRONT END

Employed in the front end section of the QX-9900 are a low-noise FET (field effect transistor) and a two-stage RF circuit. These solid state devices combine to produce an extremely high FM sensitivity (1.8μV, IHF) and improved signal to noise ratio (70dB) spurious rejection and cross-modulation resistance. It is the very receiver that can match these outstanding performance characteristics.



IF SECTION WITH CERAMIC FILTERS

Ceramic filters are utilized in both the AM and FM sections of the QX-9900 to suppress undesirable noise and inter-station noise, adding up to extremely sharp selectivity characteristics. Moreover, in the FM IF section, ICs (integrated circuits) are employed to ensure fine selectivity of more than 70dB (IHF) and excellent capture ratio of 2dB (IHF).

FET-EQUIPPED FM MUTING CIRCUIT

Compared with muting circuits utilizing ordinary transistors, the FM muting circuit of the QX-9900 reproduces little noise and, in fact, optimizes muting characteristics throughout the FM band. Under normal operating conditions the muting switch will be set to the "ON" position, so that irritating inter-station noise can be completely cancelled while tuning. To receive weak stations, the switch should be set to "OFF."

HIGH SENSITIVITY AM TUNER SECTION

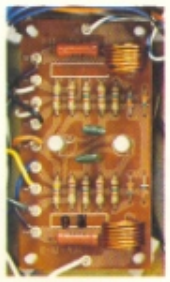
The AM tuner section of the QX-9900 matches the FM section in terms of sensitivity and selectivity. It, too, is equipped with advanced circuitry, including three-gang variable capacitor and ceramic filters for the IF stage. An AGC (Automatic Gain Control) circuit is also used to provide flat reception without reference to the intensity of the radio wave. And to assure quality reception at all times, the unit is equipped with a movable ferrite core antenna which can be rotated freely to obtain maximum sensitivity under all conditions.

DIRECT-COUPLED PURE COMPLEMENTARY OCL CIRCUIT DESIGN IN POWER AMPLIFIER SECTION

The power amplifier stage of the QX-9900 is equipped with two separate DC power supplies and also features an all-stage direct-coupled OCL circuit. The direct-coupled circuit design means that coupling capacitors are completely eliminated between the individual stages and results in a super wide frequency response curve ranging from near DC to well beyond the audible sound range. The entire power bandwidth from 5 to 70,000Hz (8 ohms, harmonic distortion less than 0.5%, four-channels driven) is characterized by minimal distortion. The QX-9900 offers 30 watts x 4 continuous power output with all four channels driven with harmonic distortion rated at less than 0.5%.

ADVANCED PROTECTOR CIRCUIT WITH MUTING FUNCTION

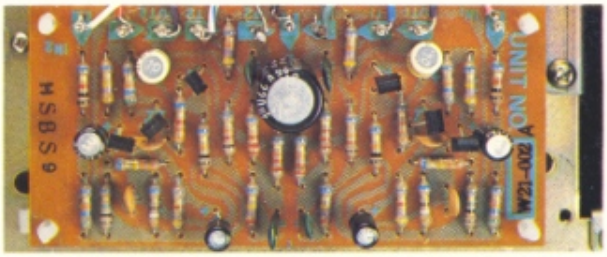
The QX-9900's direct coupled power amplifier is the key to vast improvements in stereo performance, but with this new circuitry it is vital that speakers be protected against often dangerous DC potential which could result in sound distortion and damage to the speakers through overheating of the voice coils (DC shock). To protect speakers and power transistors, Pioneer has perfected a protector circuit that allows the advantages of direct coupling circuitry to be exploited to the full. The protector circuit is composed of 9 transistors, 12 diodes and a power-relay switch. Its task is to protect the speakers from DC shock and the power transistors from short circuits in the speaker output terminals, as well as from excessive current at the output stage. This protector circuit also effects muting for about three seconds after power is switched on. Additionally, in the event of dangerous DC potential at the output stage, the differential amplifier detects the DC content and shuts off the relay circuit, preventing DC from flowing to the speakers. In the event that short-circuit speaker output terminals or excessive current is present at the output stage, the AC content is detected and the protector circuit functions to protect the power transistors. Finally, the muting effect serves to eliminate unpleasant noise that occurs when conventional amplifiers are turned on.



WIDE DYNAMIC RANGE HEAD AMP SECTION

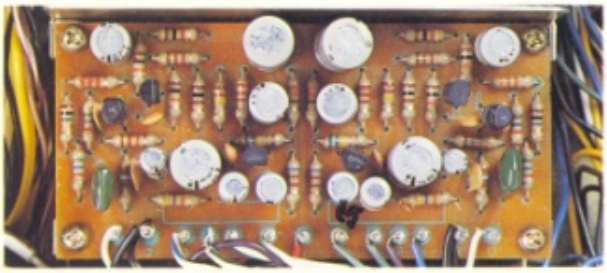
The QX-9900 employs three-stage direct-coupled equalizer circuit. And an extra high and stable power supply is applied

to this head amp section so that a wide dynamic range of the PHONO input can be obtained. This power supply lets you get the very finest sound from your recordings and is instrumental in eliminating clipping.



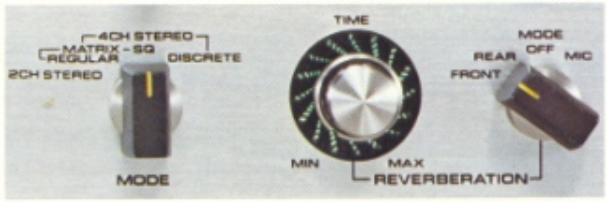
EFFECTIVE TONE CONTROL SECTION

An FET is adopted in the first stage of the tone control section to eliminate impedance variations which normally would cause distortion. NFB (Negative Feed Back) type tone control features individual bass and treble controls that permit individual adjustment for both front and rear channels.



MATRIX DECODING CIRCUIT

Because the majority of matrix four-channel program sources now available on the market consist of two kinds, regular and SQ, the ideal receiver, to achieve maximum versatility, should contain matrix circuitry for decoding both kinds. The matrix circuitry included in the QX-9900 offers this versatility, for it not only decodes the majority of regular matrix program sources now available, but also the SQ matrix records. The regular matrix decoder is also effective to achieve four-channel sound effects from conventional two-channel sources. For the SQ matrix decoder, Pioneer has employed a front/back logic circuit to afford clear sound localization.



BUILT-IN REVERBERATION AMPLIFIER

The QX-9900 is the only large-power four-channel receiver made today that includes a built-in reverberation amplifier. The function of this unique feature is to employ reverberated sound to your choice of front or rear speakers, or the microphone.

MICROPHONE MIXING

Because the QX-9900 has a pair of microphone input jacks, microphone mixing from your choice of program sources (records, tuner or tape) is easily achieved. But even when only one microphone is used, the reproduced sound is localized at the center of the two front speakers.

THREE KINDS OF BALANCE CONTROLS

The QX-9900 is equipped with three balance controls (front left/front right, rear left/rear right, front/rear). These controls give you complete control over the four-channel stereo sound field.

FOUR INDEPENDENT LEVEL METERS

Four large and easy-to-read level meters are located on the front panel to allow you to accurately judge the signal output to each of the four channels. These meters are variable according to the strength of the input signals, with positions of 0dB, −10dB, −20dB and −30dB provided. The −30dB sensitivity figured can be attained by pushing both the −10dB and −20dB buttons.

VERSATILE INPUT TERMINALS

The QX-9900 is an extremely versatile unit. It accepts up to two turntables, two tape decks, two other auxiliary terminals so that you can add your choice of additional components. The dual tape monitor circuits permit easy tape-to-tape duplication. And with the dual phono input terminals, it is possible to compare a pair of phono cartridges or employ continuous playback of two different turntables.

VERSATILE SUPPLEMENTARY FUNCTIONS

The dial needle of the QX-9900 is illuminated for ease-of-tuning. There are two loudness buttons for natural sound

contour at low volume levels for front and rear. And an FM multiplex noise filter, high/low filters for eliminating the undesirable noise, and a −20dB audio muting switch.

OTHER FEATURES

(1) PROGRAM INDICATORS

The program indicators of the QX-9900 adjust automatically to indicate your choice of program source. In addition, either the two-channel or four-channel mode is indicated by an illuminated indicator on the front panel. And when the reverb switch is functioning, the reverberation effect is illuminated near the reverb volume control knob.

(2) COLORFUL SPEAKER SELECTORS

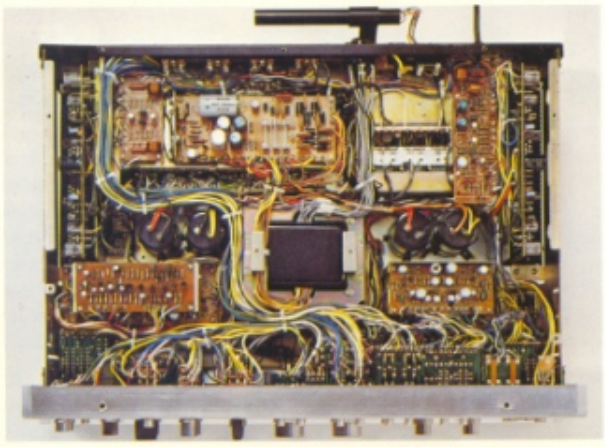
The QX-9900 will power two pairs of front speaker systems, and another two pairs in the rear besides. The speaker selector buttons indicate with colorful illumination which speakers are in operation. Additionally, the QX-9900 accepts two headphones, one for front channels and another for rear channels.

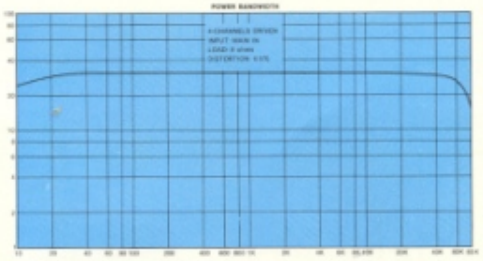
(3) QUALITY WORKMANSHIP

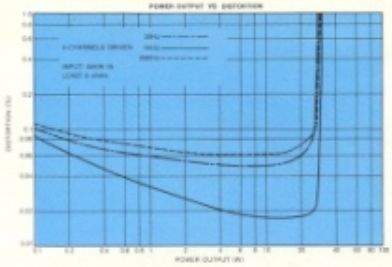
The power transformer is located on the center part of the chassis to enhance the functional balance as well as to improve the characteristics of the RF section. Great care has been paid to the wiring of the printed circuits, the functional appearance and layout of the entire control panel, and other materials.

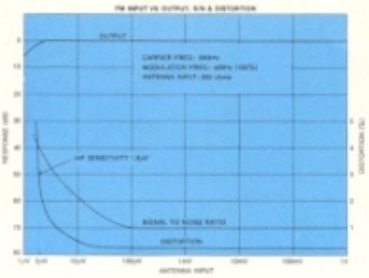
(4) CONTEMPORARY STYLING

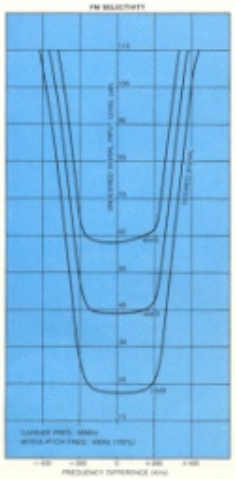
The appearance of the QX-9900 is distinctively modern, reflecting an excellence of craftsmanship that has long distinguished Pioneer stereo components. The entire unit is installed in a thick wooden cabinet that has been hand-polished for luster.











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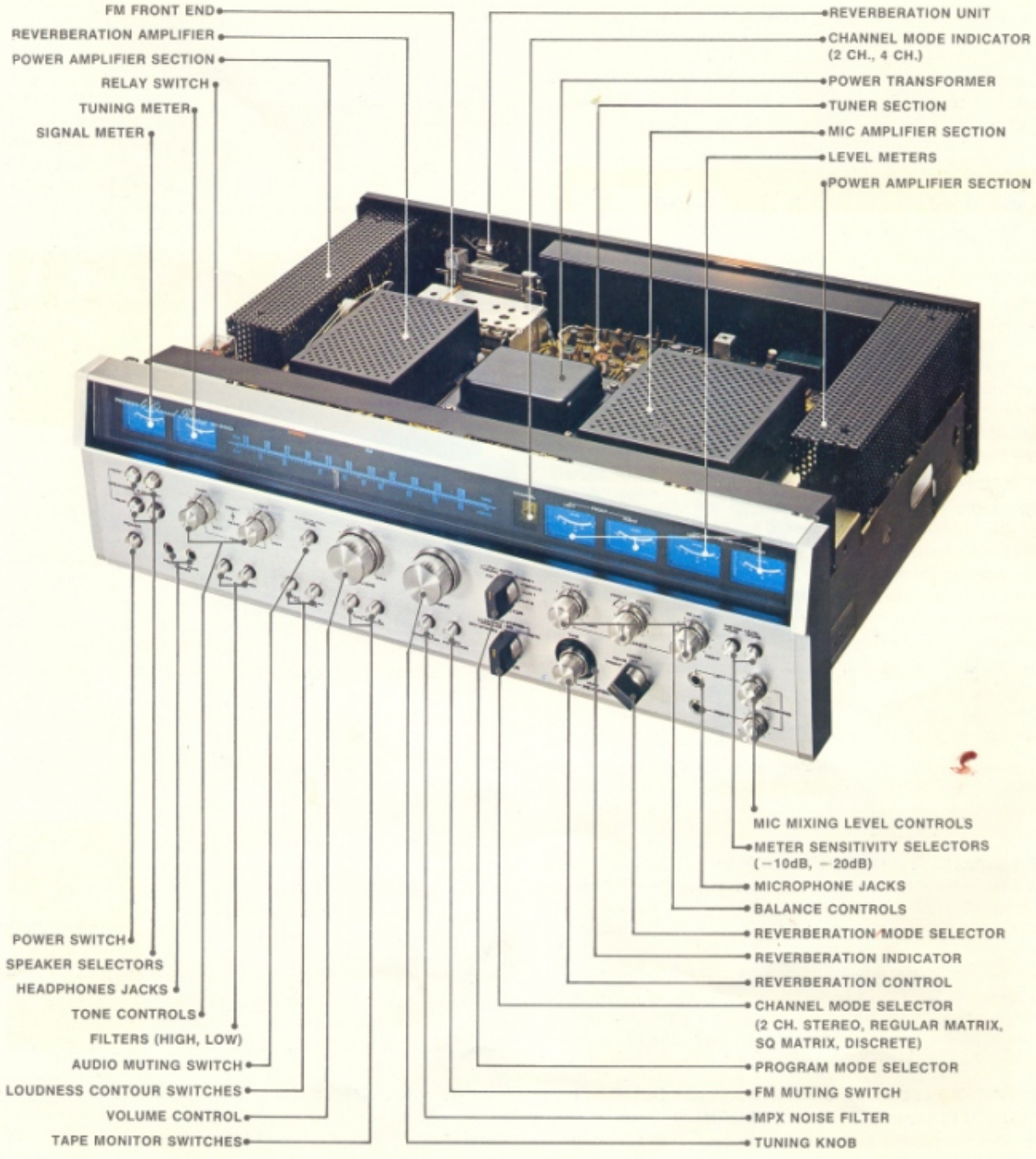
FM FRONT END
REVERBERATION AMPLIFIER
POWER AMPLIFIER SECTION
RELAY SWITCH
TUNING METER
SIGNAL METER
REVERBERATION UNIT
CHANNEL MODE INDICATOR (2 CH., 4 CH.)
POWER TRANSFORMER
TUNER SECTION
MIC AMPLIFIER SECTION
LEVEL METERS
POWER AMPLIFIER SECTION
MIC MIXING LEVEL CONTROLS
METER SENSITIVITY SELECTORS (−10dB, −20dB)
MICROPHONE JACKS
BALANCE CONTROLS
REVERBERATION MODE SELECTOR
REVERBERATION INDICATOR
REVERBERATION CONTROL
CHANNEL MODE SELECTOR (2 CH. STEREO, REGULAR MATRIX, SQ MATRIX, DISCRETE)
PROGRAM MODE SELECTOR
FM MUTING SWITCH
MPX NOISE FILTER
TUNING KNOB
POWER SWITCH
SPEAKER SELECTORS
HEADPHONES JACKS
TONE CONTROLS
FILTERS (HIGH, LOW)
AUDIO MUTING SWITCH
LOUDNESS CONTOUR SWITCHES
VOLUME CONTROL
TAPE MONITOR SWITCHES

SPECIFICATIONS

SEMICONDUCTORS

FETs:	8
ICs:	4
Transistors:	113
Diodes:	62

FM TUNER SECTION

Frequency Range:	88 to 108MHz
Usable Sensitivity (IHF):	1.8μV
Capture Ratio (IHF):	2dB
Selectivity (IHF):	More than 70dB
Image Rejection:	More than 85dB (98MHz)
IF Rejection:	More than 100dB (98MHz)
Spurious Rejection:	More than 90dB (98MHz)
AM Suppression:	50dB
Signal-to-Noise Ratio:	70dB
Harmonic Distortion:	Mono; less than 0.3% (100% mod.) Stereo; less than 0.5% (100% mod.)
Tuning Indicator:	Signal strength type and center tuning type
Muting:	Switchable to ON-OFF
Stereo Separation:	More than 40dB (1KHz)
Subcarrier Suppression:	More than 50dB
Noise Filter:	Switchable to ON-OFF
Antenna Input:	Impedance 300 ohms balanced and 70 ohms unbalanced

AM TUNER SECTION

Frequency Range:	525 to 1,605KHz
Usable Sensitivity (IHF):	10μV
Selectivity (IHF):	More than 35dB
Image Rejection:	More than 80dB (1,000KHz)
IF Rejection:	More than 75dB
Signal-to-Noise Ratio:	50dB
Antenna:	Built-in ferrite loopstick antenna

PREAMPLIFIER SECTION

Output Voltage:	500mV (rated output), 4.5V (max.)
Harmonic Distortion:	Less than 0.5%
Frequency Response:	10 to 20,000Hz, ±1dB
Input Sensitivity/Impedance: (1KHz, for rated output):	PHONO 1 MAG; 2.9mV/45 Kohms PHONO 2 MM; 2.9mV/45 Kohms MIC; 3.8mV/50 Kohms AUX 1, 2; 200mV/60 Kohms TAPE MONITOR 1, 2; 200mV/60 Kohms
Recording Output:	TAPE REC 1, 2 (pin jack); 200mV TAPE REC (DIN connector); 35mV
BASS Control:	−10.5dB, +10.5dB/100Hz
TREBLE Control:	−10dB, +9.5dB/10KHz
Low Filter:	−8dB/50Hz (6dB/oct.)
High Filter:	−8dB/10KHz (6dB/oct.)
Equalization Curve:	PHONO: RIAA S.T.D.
Loudness Contour:	+7dB/100Hz, +4dB/10KHz with volume control set at −40dB position
Muting:	−20dB
Hum and Noise: (IHF, short-circuited A network):	PHONO; More than 75dB TUNER, AUX; More than 85dB

POWER AMPLIFIER SECTION

Music Power Output (IHF):	240 watts (4 ohms), 180 watts (8 ohms)
Continuous Power Output (1KHz, each channel driven):	50 watts/50 watts/50 watts/50 watts (4 ohms) 38 watts/38 watts/38 watts/38 watts (8 ohms)
Continuous Power Output (1KHz, 2-channels driven):	45 watts+45 watts/45 watts+45 watts (4 ohms) 35 watts+35 watts/35 watts+35 watts (8 ohms)
Continuous Power Output (1KHz, 4-channels driven):	36 watts x 4 (4 ohms) 30 watts x 4 (8 ohms)
Power Output in the range of 20 to 20,000Hz (2-channels driven):	33 watts+33 watts/33 watts+33 watts (8 ohms, harmonic distortion less than 0.5%)
Power Output in the range of 20 to 20,000Hz (4-channels driven):	28 watts x 4 (8 ohms, harmonic distortion less than 0.5%)
Harmonic Distortion:	Less than 0.5% (continuous power output) Less than 0.03% (8 ohms, 18 watts+18 watts/18 watts+18 watts power output)
Intermodulation Distortion:	Less than 0.5% (continuous power output) Less than 0.05% (8 ohms, 18 watts+18 watts/18 watts+18 watts power output)
Power Bandwidth (IHF) (2-channels driven):	5 to 80,000Hz (8 ohms, harmonic distortion less than 0.5%)
Power Bandwidth (IHF) (4-channels driven):	5 to 70,000Hz (8 ohms, harmonic distortion less than 0.5%)
Frequency Response:	5 to 90,000Hz, ±1dB
Input Sensitivity/Impedance (1KHz, continuous power output):	500mV/50 Kohms
Speaker Outputs:	2 pairs for Front, 2 pairs for Rear (4 to 16 ohms)
Headphone Jacks:	Front and Rear
Damping Factor:	50 (8 ohms, 1KHz)

MISCELLANEOUS

Power Requirements:	220V 50-60Hz, or 110, 120, 130, 220, 240V (switchable) 50-60Hz
Power Consumption:	480 watts (max.)
AC Outlets:	Switched ..... 1, Unswitched 2
Dimensions (overall):	22-1/16(W) x 6-11/16(H) x 16-15/16(D) inches 560(W) x 170(H) x 430(D) mm
Weight:	Without package; 46 lb. 14 oz./21.3kg With package; 56 lb. 12 oz./25.8kg
Furnished Parts:	FM T-type Antenna ... 1 Speaker Plugs ... 8 Polishing cloth ... 1 Operating instructions ... 1

NOTE: Specifications and design subject to possible modification without notice.

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