

*Pioneer* sound.vision.soul

**HIGH-END CAR AUDIO 2008**  
ODR (Optical Digital Reference) systems



**The Quest**

Achieving the ideal in-car sound was no more than a dream. The harsh cabin environment, with its irregular shape, narrow space, numerous listening positions and the inherent internal and external noises meant a compromise in sound quality.

Pioneer was intent on solving the dilemma of imperfect in-car sound. A team of top Pioneer engineers set out to design the ultimate hi-fi system, and then adapt it for the car. Entirely new techniques and materials were developed.

No compromises whatsoever. No expense was spared.

Pioneer's dedication to creating true original sound — where every signal is expressed in its purest form — resulted in the birth of Optical Digital Reference (ODR) systems, the finest entertainment systems ever built for the car.

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PIONEER ELECTRONICS ASIACENTRE PTE LTD  
www.pioneer.com.sg

## ODR (OPTICAL DIGITAL REFERENCE) COMPONENTS

*Demand the best*

Purist audiophiles and professional sound quality competitors choose Pioneer's unparalleled Optical Digital Reference (ODR) system for one reason: perfect in-car sound quality.

The essence of the system is an optical digital connection between the CD tuner and amplifier(s), which ensures the most accurate transmission of the audio signal. So the sound remains as pure as possible, as long as possible: until the signal is passed on to the speakers.

With the ODR system there is no deterioration in sound quality from D/A or A/D conversion, no noise typical of analogue or coaxial connections, and it is unaffected by electrical noise within the vehicle. Additionally, the high precision DSP offers total control of the sound stage, to further achieve ideal acoustics in the cabin.

### RS-D7RII Component CD Receiver



LIMITED DISTRIBUTION

- High precision sound master clock circuitry
- Hi-quality CD drive
- Hi-bit conversion
- Digital direct
- Frequency change: 96 kHz to 44.1 kHz
- Source DVD control
- Digital optical input/output
- IP-Bus input/output
- External unit control via IP-Bus (2 units)
- AUX-in (with optional CD-RB20)
- White dot-matrix OEL (Organic EL) display
- Auto-slide face
- Rotary volume (High quality feel is enhanced by using aluminum for the volume and cross key while adding spinning graved finish on it)
- Use of dual LED for button illumination (White or red selectable)
- Display off mode
- OFC power/ground cable
- Dual illumination (white or red selectable)



Red illumination

### RS-P90 Universal Digital Pre-Amplifier

DSP Hi-VOLT

LIMITED DISTRIBUTION



- Advanced Segment 24-bit D/A Converter
- Digital listening position selector
- Time Alignment
- Parametric bass/treble control
- 31-band L/R independent graphic equalizer (1/3 oct.) with level control (±12 dB/0.5 dB steps)
- 3-band L/R independent parametric equalizer (1/3 oct.) with level control (±12 dB/0.5 dB steps)
- 4-way independent L/R crossover network (high/mid/low/subwoofer)
  - Crossover frequency: 20 Hz to 20 000 Hz (1/3 oct.)
  - Crossover slope: 0 dB to -72 dB
  - Crossover presets: 5
- Gold-plated 8-channel RCA output (high/mid/low/subwoofer)
- Gold-plated screw-type power/ground terminals
- The one-sided terminals and the square aluminum bonnet that rotates by every 90 degrees considered for installation
- High-performance 32-bit floating binary point type DSP

### RS-A9

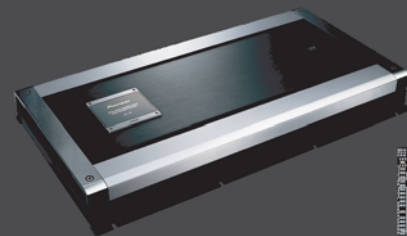
DSP

600 W MAX.

LIMITED DISTRIBUTION

#### Digital Integrated Power Amplifier

- 50 W x 4 (4Ω)/75 W x 4 (2Ω)/150 W x 2 (4Ω) (continuous power)
- 100 W x 4 (4Ω)/300 W x 2 (4Ω) (max. power)
- High-performance 32-bit floating binary point type DSP
- Built-in DSP (Digital Signal Processor) (FIR)
  - 31-band L/R independent digital graphic equalizer (±12 dB/0.5 dB steps)
  - 3-band L/R independent digital parametric equalizer (±12 dB/0.5 dB steps)
- 5-mode preset memory
- Time alignment
- Digital listening position selector
- Parametric bass/treble controls
- Digital compression
- 4-way L/R independent digital crossover network (high/mid/low/subwoofer)
  - Crossover frequency: 20 Hz to 20 000 Hz (variable)
  - Crossover slope: 0 dB to -72 dB
- 1 optical digital input
- 3 optical digital outputs (mid/low/subwoofer)



RS-A9



SHARC® DSP chip

#### Common Features

- Bridgeable 2/3/4-channel capability
- Current feedback amplifier
- Full balanced system (bridgeable connection)
- Multi 24-bit Burr Brown D/A converters
- IP-Bus input/output
- Gold-plated screw-type speaker terminals
- Gold-plated large screw-type power/ground terminals
- Low load impedance capability (2 ohm to 8 ohm)
- Copper-plated chassis
- L/R independent power supply
- Sound master clock
- DAC volume

### RS-A7

600 W MAX.

LIMITED DISTRIBUTION

#### Digital Power Amplifier

- 50 W x 4 (4Ω)/75 W x 4 (2Ω)/150 W x 2 (4Ω) (continuous power)
- 100 W x 4 (4Ω)/300 W x 2 (4Ω) (max. power)
- 2 optical digital inputs

Caution: To avoid damaging your amplifier/subwoofer system, please make sure that the continuous power output of the amplifier is lower than the nominal power handling of the subwoofer.

## ► High-Precision Sound Master Clock Circuitry

RS-D7RII

The latest integrated circuits require superior clock signal quality to handle digital data accurately without distortion at ever-higher speeds. Dual independent Sound Master Clock Circuitry in the RS-D7RII generates clock waveforms to read and process digital signals with ultra-precision, and eliminate jitter noise in transmission.



Clock circuit board

The result: extraordinarily clear, pure sound.

## ► High-Performance SHARC® Digital Signal Processors

RS-P90

For remarkably precise 32-bit sound processing, the circuitry of the RS-P90 is mounted with three high-performance Analog Devices SHARC® DSPs, for left-channel, right-channel and coefficient calculation.



High-performance SHARC® DSP x 3

## RS SPEAKERS

*The Soul of Music*

The ODR system is only complete with Pioneer's individually handcrafted RS speakers. Specifically designed for the ODR system, only these legendary high-end speakers can reach the very highest level of sound performance.

Only with the ODR system and high-end RS speakers can you achieve the ideal sound reproduction, with the signals as pure as possible. For the first time, you will hear the subtlest sound details and the real contour of music in your car. True and pure, with the subtlest details intact ... the soul of music.

### TS-T01RSII

120 W MAX.

NEW

#### 3.5 cm Component Tweeter



- 3.5 cm tweeter with ion-plated DLC (Diamond-like Carbon)-coated dual arc ring diaphragm
- High-performance magnetic circuit features lightweight aluminum voice coil with neodymium magnet
- Zinc die-cast frame
- Tungsten cone holder with anti-resonance structure
- Aluminum die-cast mounting bracket included
- Gold-plated large screw-type terminals
- Use with UD-N01RSII 2-Way Passive Crossover Network

### TS-S01RSII

50W\*/60W\*\* MAX.

NEW

#### 7.7 cm Component Midrange Speaker



- 7.7 cm cone midrange speaker with multiple pulp fiber composite diaphragm
- Ion-plated DLC (Diamond-like Carbon)-coated titanium center cap
- Corrugated surround with damped coating on front and back edges
- High-Transient Short Voice magnetic circuit features copper ribbon short voice coil with neodymium magnet
- Bottom hold design zinc die-cast one-piece chassis
- Tungsten damper holder with anti-resonance structure
- Zinc die-cast back basket
- Gold-plated large screw-type terminals

\* With speaker unit only  
\*\* With back chamber

### TS-M01RSII

120 W MAX.

NEW

#### 17 cm Component Mid-Bass Speaker

- 17 cm cone mid-bass speaker with multiple pulp fiber composite diaphragm
- Ion-plated DLC (Diamond-like Carbon)-coated titanium center cap
- Corrugated surround with damped coating on front and back edges
- High-Transient Short Voice magnetic circuit features copper ribbon short voice coil with neodymium magnet
- Bottom hold design zinc die-cast one-piece chassis
- Tungsten damper holder with anti-resonance structure
- Gold-plated large screw-type terminals
- Use with UD-N01RSII 2-Way Passive Crossover Network



### TS-W01RSII

300 W MAX.

NEW

#### 25 cm (10") Component Subwoofer



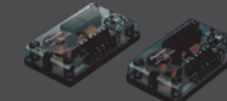
- 25 cm cone woofer with multiple pulp fiber composite diaphragm and integrated center cap
- Space-saving small-enclosure-type design (recommended enclosure: 14 l to 28 l/0.49 cu.ft. to 0.99 cu.ft.)
- Corrugated fiber surround with damped coating on front and back edges
- Large-sized ø140 mm voice coil with multiple neodymium magnets
- Shallow mounting aluminum die-cast basket
- Gold-plated large screw-type terminals

### UD-N01RSII

NEW

#### 2-Way Passive Crossover Network

- Use with TS-M01RSII and TS-T01RSII



## ► Large ø140mm Voice Coil

TS-W01RSII

The TS-W01RSII's magnetic circuit structure uses a voice coil with large ø140 mm diameter to drive the center part of the entire speaker cone to improve transient.

Multiple neodymium magnets creating powerful magnetic flux help drive the cone with exceptional strength and accuracy.

The large vent in the center of the speaker back is maximized for fine control to reduce air resistance.

The result: more accurate bass reproduction.

#### Compact Enclosure

We design our subwoofer cones for compact (14 to 28 liters) speaker enclosures.



Shallow mounting aluminum die-cast basket and large ø140 mm voice coil

## ► High-Quality Mid-Bass Speaker

TS-M01RSII

New ion-plated DLC (Diamond-like Carbon)-coated titanium center cap is superior in rigidity, and concave to suppress resonance in the magnetic circuit.

New High-Transient Short Voice magnetic circuit achieves excellent sound linearity from high to mid-range and features a high number of turns of wire in the short lightweight voice coil (for voice coil drivability that is 15 % better than its predecessor).

Corrugated surround with damped coating on front and back edge effectively absorbs unwanted vibration, achieves excellent linearity and reduces interference of cone and surround.



Corrugated surround

## ► Dual Arc Ring Tweeter Diaphragm

TS-T01RSII

The TS-T01RSII's Dual Arc Ring Diaphragm, based on Pioneer's Super Wide Range Tune innovation, reliably reproduces clear sound audible up to super-high 48 kHz frequency.

- The inside and outside of the center drive-type ring diaphragm are shaped differently from each other, and vibrate to varying degrees for various frequencies. These

frequencies are mixed to achieve smooth characteristics for superior sound reproduction. The light diaphragm has a surface that is ion-plated with DLC (Diamond-like Carbon) coating for extra rigidity and minimal distortion. 35mm in diameter, the diaphragm also contributes to excellent low frequency reproduction and precise, accurate sound staging.



Dual arc ring diaphragm