

## 3-D Surround Sound & Audio Enhancement

### *Dynamic Sound & Natural Sound*

#### Multi-Speaker 3-D Surround System

##### **NJM2177A: Dolby Pro-Logic Surround Decoder**

The NJM2177A is a Dolby Pro-Logic Surround Decoder containing modified B-Type noise reduction circuit, input auto-balance controller, noise sequencer, adaptive matrix and more. The NJM2177A performs complete Dolby Pro-Logic Surround function combined with the NJU9702 digital delay IC.

##### **NJW1103/1104: Dolby Pro-Logic Surround Decoder**

The NJW1103 is a Surround processor which includes all the necessary circuits for Dolby Pro-Logic Surround decoding and digital delay. In addition to the Dolby Pro-Logic Surround mode, it easily performs other surround functions such as Hall, Live, Disco and other similar applications. It also includes echo and microphone mixing functions for Karaoke.

##### **NJU25005: Dolby Pro-Logic Surround Processor DSP**

The NJU25005 is a Dolby Pro-Logic Surround processor, performing Dolby Pro-Logic Surround and Various simulated surround sounds. Full digital processing is achieved by DSP technology. The NJU25005 incorporates a delay memory for Dolby pro-Logic Surround mode, requiring A to D and D to A converters as external components. It easily performs various simulated surround sounds by connecting an external memory.

#### 2-Speaker 3-D Surround System

##### **NJM2178/2179: SRS 3D Surround Audio Processor**

The NJM2178/2179 are SRS 3D Surround audio processors generating the 3D surround sound with two speakers. The NJM2178 generates the 3D Surround sound from either monaural or stereo input and the NJM2179 generates it from stereo input.

##### **NJM2180: TruSurround™ 3D Surround Audio Processor**

NJM2180/2181 are TruSurround 3D Surround Audio processors generating surround fields from two speakers in TruSurround™ mode, when either 5.1 channels Dolby Digital or 4 channels Dolby Pro-Logic is at the input. In addition, the NJM2181 generates the 3D surround sound from either monaural or stereo inputs and the NJM2180 generates 3D from stereo inputs.

##### **NJM2187/2188: Passive Matrix TruSurround™ 3D Surround Audio Processor**

NJM2187/2188 are Passive matrix TruSurround 3D Surround Audio processors, generating surround fields from two speakers in TruSurround™ mode when any kinds of surround-encoded stereo signal(LT/RT) is at the input. In addition, the NJM2187/2188 generates the 3D surround sound from normal stereo signal inputs.

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### **NJU25006: Virtual Dolby Surround Processor DSP**

The NJU25006 is a Virtual Dolby Surround Processor, performing Virtual Dolby surround and Dolby Pro-Logic Surround with digital processing utilizing DSP (Digital Signal Processor) technology.

The NJU25006 incorporates a delay memory for Dolby Pro-Logic Surround mode, requiring only A to D and D to A converters as external components.

### **NJU25007: VMAx 3D Virtual Theater Audio Processor DSP**

The NJU25007 is a VMAx™ (Virtual Multi-Axis sound) 3D Virtual Theater Audio Processor, performing VMAx 3D Virtual Surround and Dolby Pro-Logic Surround with digital processing utilizing DSP technology.

The NJU25007 incorporates a delay memory for Dolby Pro-Logic Surround mode, requiring only A to D and D to A converters as external components.

### **NJU25008: TruSurround™ 3D Surround Audio Processor DSP**

The NJU25008 is a TruSurround 3D Surround Audio processor, performing SRS TruSurround 3D Surround and Dolby Pro-Logic Surround with digital processing utilizing DSP technology.

The NJU25008 incorporates a delay memory for Dolby Pro-Logic Surround mode, requiring only A to D and D to A converters as external components.

### **NJU25018: TruSurround™ 3D Surround Audio Processor with BBE DSP**

The NJU25018 is a TruSurround 3D Surround Audio processor, performing SRS TruSurround 3d Surround, Dolby Pro-Logic Surround and BBE sound enhancement with digital processing utilizing DSP technology.

The NJU25018 incorporates a delay memory for Dolby Pro-Logic Surround mode, requiring only A to D and D to A converters as external components .

## **Sound Enhancement Audio Processor**

### **NJM2150/2150A: BBE Sound Enhancement Audio Processor**

The NJM2150/2150A are sound enhancement audio processors, generating high definition and high clarity sound. They include a BBE ON/OFF switch and two-grade boost switches in the low and high frequency band. They are suitable for audio equipment such as TV, A/V receiver, CD radio cassette system, car audio and other audio applications.

### **NJM2152: BBE Sound Enhancement Audio Processor**

The NJM2152 is sound enhancement audio processor, generating high definition and high clarity sound. It include a BBE ON/OFF switch and three-grade boost switches in the high frequency band. It is suitable for audio equipment such as TV, A/V receiver, CD radio cassette system, car audio and other audio applications.

## **Speaker Elevation Audio processor**

### **NJM2184: SRS A/V Focus Speaker Elevation Audio Processor**

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The NJM2184 is a SRS A/V Focus processor, creating either raised or lowered stereo image from a pair of speakers. In addition, NJM2184 includes hard surface A/V Focus Filter to correct harsh sound when speakers are directly set on the hard floor. The NJM2184 is suitable for TV, radio cassette, game, keyboard and home stereo application.

### **NJM2189: SRS A/V Focus Speaker Elevation Audio Processor**

The NJM2189 is a SRS A/V Focus processor, creating either raised or lowered stereo image from a pair of speakers. In addition, NJM2189 includes hard surface A/V Focus Filter to correct harsh sound when speakers are directly set on the hard floor. The NJM2189 is capable of adjusting a difference in sound pressure level between FOCUS ON and OFF by independent audio input for Bypass MODE. The NJM2189 is suitable for TV, radio cassette, game, keyboard and home stereo application.

### **NOTE: Licensing Requirements**

1) NJM2177A, NJW1102A/1103, NJU25005/25006/25007/25008/25018/25201 Dolby and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation. The NJM2177A, NJW1102A/1103 and NJU25005/25006/25007/25008/25018/25201 are available only to licensees of Dolby Laboratories. Licensing and application information can be obtained from Dolby Laboratories. Please refer to the licensing application manual issued by Dolby Laboratories.

2) NJM2178/2179

The Sound Retrieval System (SRS) technology, incorporated in the NJM2178/2179 is owned by SRS Labs, a U.S. Corporation. The SRS technology is protected under U.S. Patent No. 4,866,774; 4,748,669; and 4,841,572 with numerous additional and pending foreign patents issued. The trademarks "SRS", "the SRS symbol" and "Sound Retrieval System" are registered in the U.S. and selected foreign countries. In order to purchase and implement the NJM2178/2179, all customers must enter into a license agreement directly with SRS Labs for the payment of royalties and to insure proper trademark usage. Neither the purchase of the NJM2178/2179, nor the corresponding sale of audio enhancement ICs conveys the right to commercialized recordings made with the Sound Retrieval System.

3) NJM2180/2181

The TruSurround technology rights incorporated in the NJM2180/2181 are owned by SRS Labs, a U.S. Corporation. The TruSurround technology is protected under U.S. Patent No. 4,748,669 with numerous additional pending domestic and foreign patents. TruSurround is a trademark of SRS Labs, Inc. in the United States. SRS and the SRS symbol are registered trademarks of SRS Labs Inc. in the United States and selected foreign countries. Neither the purchase of the NJM2180/2181, nor the corresponding sale of audio enhancement equipment conveys the right to commercialized recordings made with the TruSurround technology. SRS Labs requires that all users of the NJM2180/2181 must enter into a license agreement directly with SRS Labs and comply with all the rules and regulations as outlined in the TruSurround Trademark Usage Manual of SRS Labs, Inc.

4) NJM2184/2189

The A/V Focus Technology, incorporated in the NJM2184/2189 is owned by SRS Labs, a U.S. Corporation. The A/V Focus technology is protected under U.S. Patent No. xxxxxx; xxxxx; and xxxxxxxx with numerous additional and pending foreign patents issued. The trademarks "SRS", "the SRS symbol" and "Sound Retrieval System" are registered in the U.S. and selected foreign countries. In order to purchase and implement the NJM2184/2189, all customers must enter into a license agreement directly with SRS Labs for the payment of royalties and to insure proper trademark usage. Neither the purchase of the NJM2184/2189, nor the corresponding sale of audio enhancement ICs conveys the right to commercialized recordings made with the Sound Retrieval System.

5) NJM2187/2188

The Passive Matrix TruSurround technology incorporated in the NJM2187/2188 is owned by SRS Labs, a U.S. Corporation. This technology is protected by patents either issued or pending in selected countries worldwide. TruSurround is a trademark of SRS Labs, Inc. TruSurround technology is manufactured under license from SRS Labs.

6) NJU25007

VMAx is a trademark of Harman International Industries, Inc. and is based on patented technology from Cooper-Bauk Corporation. The royalty to Harman is included in the purchase price, however, the NJU25007 requires a Dolby license and can only be delivered to licensees of Dolby Laboratories. Please refer to the licensing application manual issued by Dolby Laboratories.

7) NJM2150/2150A/2152

The NJM2150/2150A/2152 are manufactured by New Japan Radio Co., Ltd under license from BBE Sound Inc. BBE is a registered trademark of BBE Sound Inc. A license from BBE Sound Inc. is required before the NJM2150/2150A/2152 can be purchased from New Japan Radio Co., Ltd.