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OWNER'S MANUAL

RM. Series

2 Ohm Stable, MOSFET 2/1 Channel Power Amplifier

Model RM V21

2 Ohm Stable, MOSFET 4/3/2 Channel Power Amplifier

Model RM V41

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Tel: +81-559-915130 Fax: +81-559-915139
e-mail: es-info@escorp.co.jp www.u-dimension.jp

SPECIFICATIONS

INDEX

MODEL: **RM V41 RM V21** Channels: 4 Output Power(RMS) 12.5VDC Power Supply 4 x 75 Watt Stereo @ 4 Ohms: 2 x 150 Watt 4 x 110 Watt Stereo @ 2 Ohms: 2 x 225Watt 2 x 225 Watt Bridged @ 4 Ohms: 1 x 450 Watt T.H.D. <0.05% < 0.05% 4 Ohm: 10Hz—50kHz 10Hz—50kHz Frequency Response: $> 90 \, dB$ S/N Ratio: > 90 dB Separation @ 1 kHz: >60dB >60dB Input Sensitivity: 200mV-6V 200mV-6V $0\sim18dB$ Bass EQ @ 45Hz: 0-18dB Crossover(Butterworth): HP50-250Hz HP50-250Hz LP 50-250Hz LP 50—250Hz >20kOhm Input Impedance: >20kOhm <2A <2A Idle Current: >200 Damping Factor: >200 Dimensions: 387X53X275mm 387X53X275mm W(heatsink/foot) X H X D 6.48kg Weights: 4.45kg

-16-

FEATURES	2
CONTROLS AND CONNECTIONS	3
CONNECTIONS	4
CONNECTIONS DESCRIPTION	4
INSTALLING INSTRUCTIONS	5
SAMPLE SYSTEM CONNECTIONS	6- 8
RM V41	
CONTROLS AND CONNECTIONS	09
CONNECTIONS	10
CONNECTIONS DESCRIPTION	10
INSTALLING INSTRUCTIONS	11

SAMPLE SYSTEM CONNECTIONS......12-15

-1-

RM V21

FEATURES

Circuitry

100%POWER MOSFETs drived high efficiency switching power supply. And SEPP output stage constructed by real Darlington transistors.

Pulse Width Modulated Power Supply

The PWM power supplies inside these amplifiers are both high efficiency and low noise since high performance power MOSFETs and PHOTO ISOLATED technology are used. Output signal is very clean as a result of very low noise interference and lower distortion from the power supply.

Audio Stage Design

Excellent power supply noise rejection ability for voltage amplification stage due to the use of constant current drived differential amplifier. Low negative feedback circuitry reduces overall distortion and greatly lessens harmful high order harmonics.

Protection Circuitry

Every piece of amplifier incorporates a 4-Way Protection Circuitry.If driven below 1 ohm; shorted the speaker outputs, DC voltage appears on the speaker outputs , over-voltage connected from battery input or overheated the amplifier , the protection circuit will shut off the amplifier to prevent damage and the Protection LED indicator in front panel will turn RED , It will automatically reset after the amplifier cools down or can be manually reset by simply switching the power off and on.

MIL Spec P.C.Board

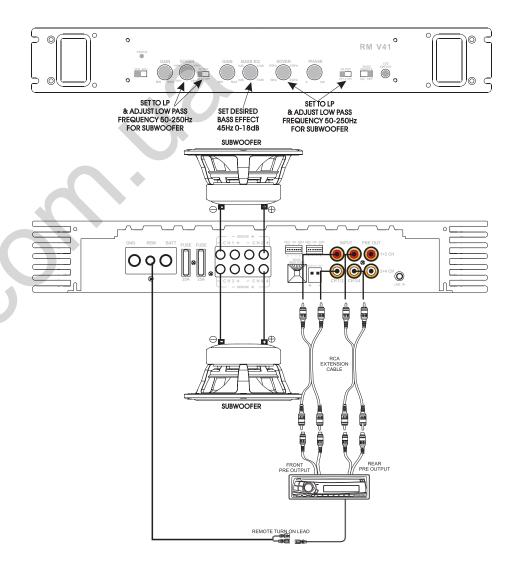
The components are all assembled by hand onto FR4 fiberglass P.C.Board. This assures that all high current carrying traces are of uniformly controlled dimension. The P.C. boards are double sided to utilize space efficiently.

Built In Crossovers & BASS EQ Controls

For the purpose of saving your money to buy an extra crossover, each primension amplifier builds in a 18dB/oct slope, 50Hz to 250Hz continuously adjustable Two Way electronic crossover. There is an INT XOVER (internal crossover) selector switch for you to select High Pass, Low Pass or Full range (OFF) signal for internal power amplification. There are also BASS EQ controls that can be adjusted at bass 45Hz, 0-18dB.

RM V41 SAMPLE SYSTEM

2 CHANNEL (SUBWOOFER SYSTEM)

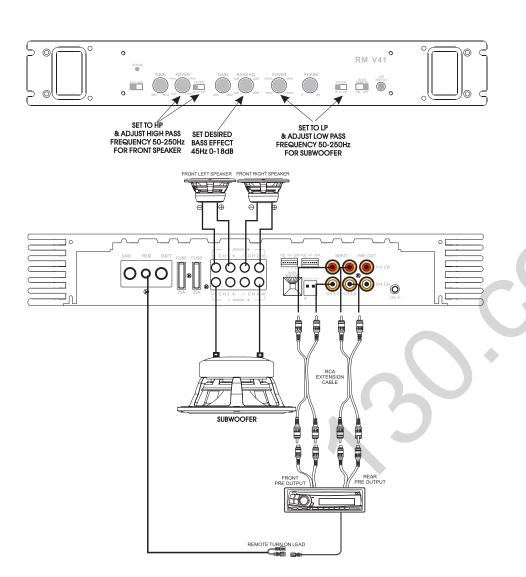


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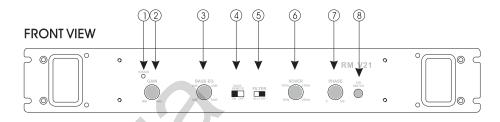
RM V41 SAMPLE SYSTEM

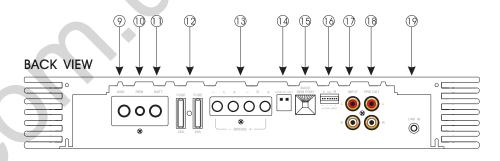
RM V21 CONTROLS AND CONNECTIONS

3 CHANNEL (FRONT & SUBWOOFER SYSTEM)



-14-



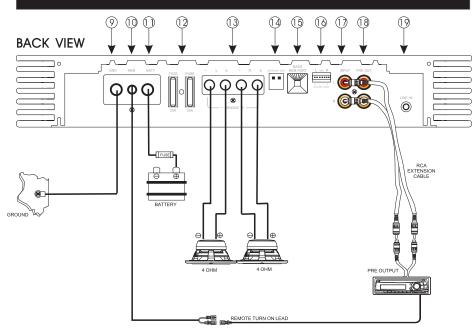


-3-

- 1 Power On Indicator
- 2 Gain Adjustment
- 3 Bass EQ Adjustment
- 4 Remote Control ON/OFF Switch
- (5) High/Low Pass X'over ON/OFF Switch
- 7 Phase Adjustment
- (8) LED Switch
- 9 Ground Lead Terminal
- 10 Remote ON Lead Terminal

- 1 Battery Lead Terminal
- 12 Fuse Terminals (25Ax2)
- 13 Speaker Output Terminals
- 14) Display out
- 15 Remote Bass Port
- (6) Speaker level input (L and R)
- (7) Input RCA Jacks
- 18 Pre-output RCA Jack
- 19 Line in

RM V21 CONNECTIONS



CONNECTION DESCRIPTIONS

13 Speaker Output Terminals

Make sure to observe correct speaker connections, maintaining the polarity of the speakers. Positive(+) and Negative(-) terminals.

17 RCA Input Jacks

The Line-Out leads of your head unit are connected here using RCA extension patch cords.Be sure to observe proper channel designation-Left to Left and Right to Right.

18 RCA pre-amplifier Output Jacks

RCA preout Jacks provide summed outputs which can deliver full Range Signal . Connect OUTPUT Jacks to the amplifier which drives Subwoofers.

11) Battery lead Connect(Red)

For the power terminal connection, an apropriate gague wire is run to the positive battery terminal via a fuse of adequate amperes. The Fuse must be placed close to the vehicle battery. And plugged in after all connections have been made to ensure maximun protection.

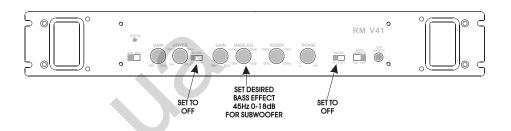
Remote Input/Output Leads

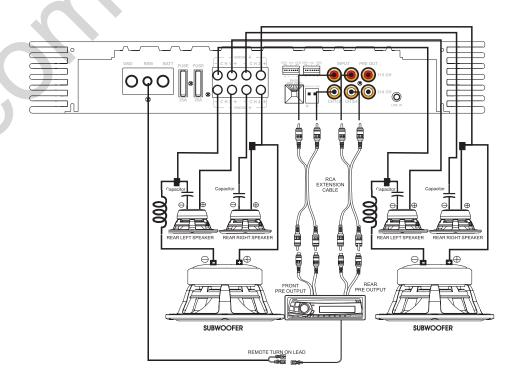
Connect remote input to the remote turn-on lead of your head unit and in turn connect remote output lead to turn on the other amplifier(s)which use crossover output signals and thus eliminating noise caused by asynchronous turn on timing.

Secure the connection of this lead to a clean bare metal spot on the vehicle's chassis. Verify this point to be a true ground by checking for continuity between the point and the negative terminal of the vehicle's battery.

RM V41 SAMPLE SYSTEM

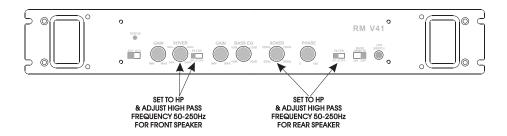
4 CHANNEL MIXED MONO SYSTEM (FRONT, REAR& SUWOOFER)

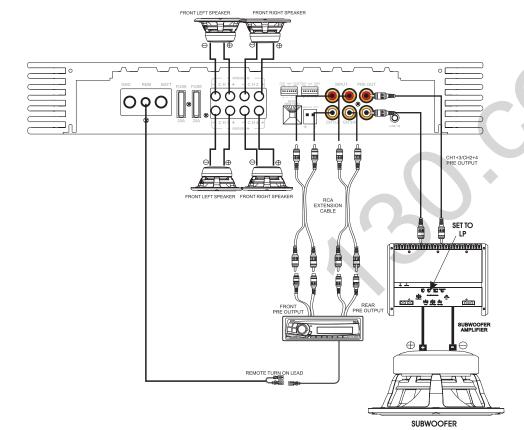




RM V41 SAMPLE SYSTEM

4 CHANNEL (FRONT& REAR SYSTEM) PREOUTPUT TO SUBWOOFER AMPLIFIER





RM V21 INSTALLING INSTRUCTIONS

Please read the for lowing installation instructions carefully. This will ensure your MDIMENSION equipment to function optimally for many years.

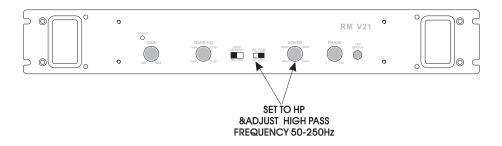
- 1.Make sure that the unit has sufficient ventilation.Do not mount the amp near hot engine compartment or electronic devices.
- 2. Run the black ground wire to the nearest good chassis ground point.
- Be sure to remove paint and rust to make a high quality connection to the Chassis
- The lug which you attach to the black wire must be crimped well and Soldered.
- 3. The red wire must be extended with an appropriate gauge wire and run to the positive battery terminal via the optional fuse.
 - The fuse must be located near the battery for absolute protection.
- DO NOT use any over-rated fuse value.
- Connect the REMOTE ON connector lead to the remote output wire from the head unit.
- 5.Make sure that the amplifier is securely mounted.Run the RCA inputs to the outputs of the preceding piece of equipment by using only quality patch cords. Be sure to observe the proper channel destination.
- Select proper switch position.LP means low pass,HP means High pass, OFF means Full range.
- Tune the preout crossover frequency (XOVER FREQ) to the selected frequency point.
- Select the Amp filters to proper position. HP means High pass,
 LP means low pass and OFF means full range for amplifier filter...
- ◆Set the amp gain(sensitivity from 200mV-6V) to the level which matches that of the head unit (and other amplifiers).
- 6.Connect the speaker systems to the terminal block. Observe the polarity carefully so as to keep the speakers in phase.
 - Connecting the amplifiers for subwoofer operation with satellite speakers ie Mixed mono -mode please see warning.
- Any MDIMENSION 2/1 channel amplifier may be used in this mode. The crossover Frequency for the subwoofer is determined by the values of the coils, capacitors and speaker impedance.

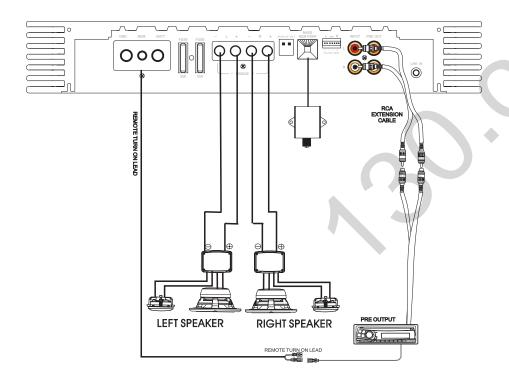
WARNING

- 1.In a mixed mono mode the amplifier "sees" the total impedance as the parallel of the satellite speaker impedance and half of the subwoofer impdance.
- 2.To get the total impedance on each channel above 2 ohms, the subwoofer must be 8 ohms and the satellites not less than 4 ohm.
- 3.It is highly recommended that correct passive crossovers are simultaneously used in the operation involving one pair of stereo satellites and one bridged Subwoofer.

RM V21 SAMPLE SYSTEM

2 CHANNEL STEREO SYSTEM





RM V41 INSTALLING INSTRUCTIONS

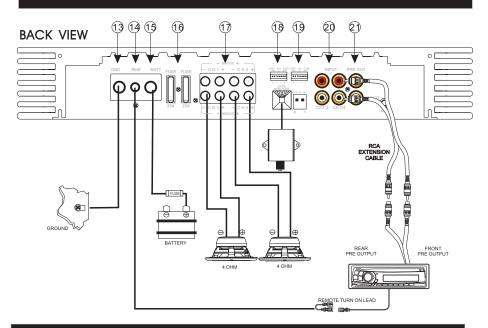
Please read the for lowing installation instructions carefully. This will ensure your MDIMENSION equipment to function optimally for many years.

- 1.Make sure that the unit has sufficient ventilation.Do not mount the amp near hot engine compartment or electronic devices.
- 2. Run the black ground wire to the nearest good chassis ground point.
- Be sure to remove paint and rust to make a high quality connection to the Chassis
- The lug which you attach to the black wire must be crimped well and Soldered.
- 3. The red wire must be extended with an appropriate gauge wire and run to the positive battery terminal via the optional fuse.
- The fuse must be located near the battery for absolute protection.
- DO NOT use any over-rated fuse value.
- Connect the REMOTE ON connector lead to the remote output wire from the head unit.
- 5.Make sure that the amplifier is securely mounted.Run the RCA inputs to the outputs of the preceding piece of equipment by using only quality patch cords. Be sure to observe the proper channel destination.
 - Connect OUTPUT jacks to correct amplifier inputs if they are used for driving other amplifiers.
 - Select proper switch position.LP means low pass,HP means High pass, OFF means full range.
- Set the amp gain(sensitivity from 200mV-6V) to the level which matches that of the head unit (and other Pre-amplifiers).
- 6. Connect the speaker systems to the terminal block. Observe the polarity carefully so as to keep the speakers in phase.
 - Connecting the amplifiers for subwoofer operation with satellite speakers ie Mixed mono-mode, please see warning.
 - Any Momentum 2 or 4 channel amplifier may be used in mixed mono mode. The crossover Frequency for the subwoofer is determined by the values of the coils, capacitors and speaker impedance.

WARNING

- 1.In a mixed mono mode the amplifier "sees" the total impedance as the parallel of the satellite speaker impedance and half of the subwoofer impdance.
- 2.To get the total impedance on each channel above 2 ohms, the subwoofer must be 8 ohms and the satellites not less than 4 ohm.
- 3.It is highly recommended that correct passive crossovers are simultaneously used in the operation involving one pair of stereo satellites and one bridged Subwoofer.

RM V41 CONNECTIONS



CONNECTION DESCRIPTIONS

20 RCA Input Jacks(CH1/2&CH3/4)

The Line-Out leads of your head unit are connected here using RCA extension patch cords.Be sure to observe proper channel designation-Left to Left, Right to Right, Front to CH1/2, and Rear to CH3/4.

21 RCA pre-amplifier Output Jacks(CH1+3/2+4)

RCA preout Jacks provide summed outputs which can deliver full Range Signal . Connect OUTPUT Jacks to the amplifier which drives Subwoofers.

(17) Speaker Output Terminals (CH1/2&CH3/4)

Make sure to observe correct speaker connections, maintaining the Right polarity of the speakers. Positive (+) and Negative (-) terminals.

15 Battery Lead Connect(Red)

For the power terminal connection, an apropriate gauge wire is run to the positive battery terminal via a fuse of adequate amperes. The Fuse must be placed close to the vehicle battery and plugged in after all connections have been made to ensure maximum protection.

(14) Remote Input/Output Leads

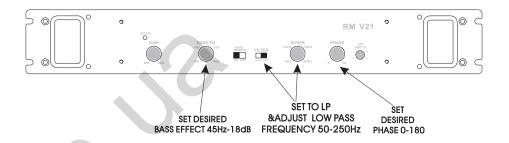
Connect remote input to the remote turn-on lead of your head unit and in turn connect remote output lead to turn on the other amplifier(s)which use crossover output signals and thus eliminating noise caused by asynchronous turn on timing.

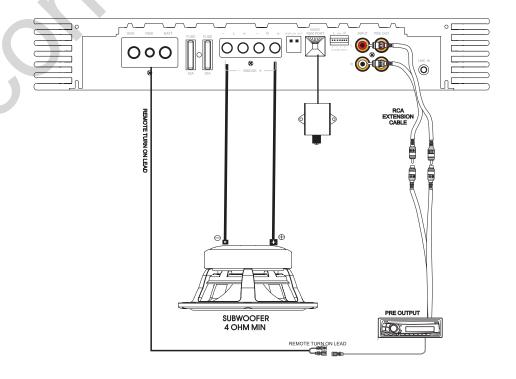
13 Ground Lead(Black)

Secure the connection of this lead to a clean bare metal spot on the vehicle's chassis. Verify this point to be a true ground by checking for continuity between the point and the negative terminal of the vehicle's battery.

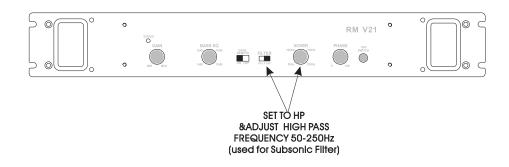
RM V21 SAMPLE SYSTEM

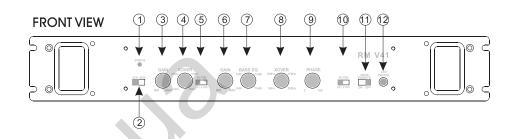
MONO SUBWOOFER SYSTEM

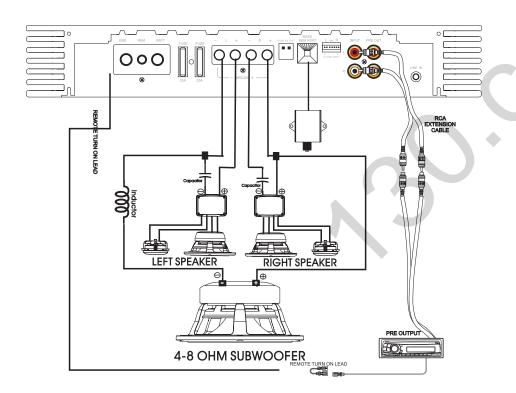


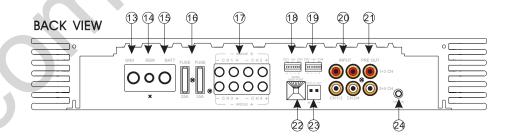


MIXED MONO SUBWOOFER SYSTEM









- 1 Power On Indicator
- 2 2CH And 4CH Switch
- (3) CH1/2 Gain Adjustment
- 4 CH1/2 Frequency Adjustment
- (5) CH1/2 Low/High Pass X'over ON/OFF Switch
- 6 CH3/4 Gain Adjustment
- 7 CH 3/4 Bass EQ Adjustment
- (8) CH 3/4 Frequency Adjustment
- 9 CH 3/4 Phase Adjustment
- 10 CH 3/4 Low/High Pass X'over ON/OFF Switch 22 Remote Bass Port
- (11) Bass Remote ON/OFF Switch
- 12 LED switch

- 13 Ground Lead Terminal
- 14) Remote ON Lead Terminal
- 15) Battery Lead Terminal
- 16 Fuse Terminal (25Ax2)
- (7) CH1/2/3/4 Speaker Output Terminal
- (18) Speaker level input CH1 and CH2
- (19) Speaker level input CH3 and Ch4
- 20 CH1/2/3/4 Input RCA Jack
- 21 CH1+3/2+4 Pre-output RCA Jack
- 23 Display out
- 24 Line in