



BMS2

USER GUIDE



**For Technical Assistance
Please Phone: (07) 5596 5128**

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PACKING LIST

Your BMS2 unit is supplied with the following items :

- 1 x BMS2 unit
- 1 x 12V/1A Power Adaptor
- 1 x 3.5mm Audio Plug (for connection to speaker wire).
- 1 x 3.5mm to RCA Stereo Audio Cable (for connection to Amp).
- 1 x 2GB MMC/SD Flash Card (for Messages and High Rotation Songs)
- 1 x 2GB MMC/SD Flash Card (for Music Folders)
- 1 x User Guide

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DESCRIPTION

BMS2 is a High Quality Digital Message Player, designed specifically for Background Music and Messaging applications.

It is designed to play a mixture of MP3 based Music and Message files, where Messages are automatically played at a User Selectable frequency.

BMS-2 also allows for a separate Folder of HIGH ROTATION SONGS that can be loaded onto the MESSAGE CARD that can also be played at a User Selectable frequency. This additional folder does not need to be used.

As BMS-2 will only play Encrypted MP3 Files, all MP3 based Music and Message Files must be ENCRYPTED first with our Encryption program.

The heart of BMS2 is a professional quality MP3 engine, which is controlled by a powerful microprocessor in order to provide exceptional message output quality. It incorporates a powerful amplifier, with a Mono 100V output, designed to drive up to TEN 100V speakers (set at 1W) operating at background audio levels. BMS2 also has a Stereo Line Level output, for those sites which require an amplifier to drive more than TEN 100V Speakers.

MODEL OPTIONS

In addition to the Standard Model described above, there are TWO additional Models provided in the BMS2 range, as detailed below :

Model BMS2/T - Time Programmable Music Folder and Message play

Will allow you to set MUSIC FOLDERS and INDIVIDUAL MESSAGES to play on a Time Programmable Basis. You can program MUSIC FOLDERS and INDIVIDUAL MESSAGES to play :

- During a specific Time Period WITHIN a Single Day
- During specific DAYS of the WEEK.
- From a specified START DATE to a specified STOP DATE.
- To program the BMS2 to START and STOP playing on a daily basis.

Model BMS2/M - Incorporates an Internal Modem for Dial in Updates.

Has an internal Modem option which will allow you to connect it to a telephone line so that you can DIAL IN and ADD, or CHANGE a MESSAGE on the SD Flash Card. You can also send a new Time Programmable (see above) SET.TBL file which will allow you to change the frequency that a MESSAGE FILE or HIGH ROTATION FILE should play.

OPERATION

BMS2 is designed to be left ON at all times. Power consumption is minimal and there are no moving parts that will wear with use.

Upon connecting the supplied Power Adaptor (and after a short 'boot up' delay), BMS2 will begin randomly playing MUSIC FILES from your MUSIC FLASH CARD.

It will also play MESSAGE FILES and (if required) HIGH ROTATION FILES sequentially from your MESSAGE FLASH CARD at a user programmed frequency.

MUSIC FILES must be stored in Folders containing a MAX of 250 SONGS per folder. Up to 250 Folders can be stored on the MUSIC FLASH CARD.

On power up, MUSIC FILES are played from the first folder on a completely RANDOM basis, until the last file has played. Once all music files in the first folder are played, BMS2 will then begin playing Music files from the second Folder until all files have played before moving to the next Music Folder.

- **The First folder is the first folder transferred to the Music Flash Card.**
- **The Second folder is the second folder transferred to the Music Flash Card.**
- **The Third folder is the third folder transferred etc, etc.**

Once the last song in the last Music Folder has finished, BMS2 will then move back to the first created Folder again and then cycle on again as above. If power or either SD Flash Card is removed, it will restart from the first folder.

It will also SEQUENTIALLY play through all of your **MESSAGE FILES and all HIGH ROTATION FILES (if required)** before repeating again from the first one(s). Messages can be played after a preset number of songs (01-256) or after a preset number of minutes (0-256).

If Messages are selected to play at a fixed minute interval, then BMS2 will automatically 'fade out' the Music first, before playing the Message. Once the Message is complete, it will then 'fade back in' the Music from the same point that it stopped the Music File.

The frequency that MESSAGE FILES play, is programmed via the BMS Dealer Control Program, which creates a file known as SET.TBL, which will be written automatically to your MUSIC Flash Card.

FLASH CARD INFORMATION

BMS2 uses TWO standard SD-HC Flash Cards to store your MP3 based Music and Messages. They must be formatted as FAT32. This is automatically done when you use the 'Condition Flash Card' facility provided with our BMS Dealer Control program

Our unique SD card loading design allows your complete Music or complete Message programming (contained on the Flash cards) to be changed in seconds. You do not even need to power the device down before doing this.

MESSAGE Flash Card - Each unit is currently supplied with a 4GB SD-HC card for Messages. You should store all of the encrypted MP3 BASED MESSAGE FILES and HIGH ROTATION FILES on this card.

MUSIC Flash Card - Each unit is currently supplied with a 4GB SD-HC card. You can load up to 4000 minutes (33 hours) of encrypted Music at CD quality (Mono 128kbps) onto this card.

Our BMS Dealer Control program will write a small file known as a set.tbl file to the MUSIC Flash Card which will instruct BMS2 how frequently to play a MESSAGE and High Rotation Files (if required).

Alternatively, you can load up from 8000 to 32000 minutes (533 hours) of Audio by using an optionally available 8,16 or to 32GB SD Flash Card. You can also increase play time by using a lower sampling rate for your files.

These flash cards are completely non volatile, which means that your message is not lost in transport or when power is lost. They are designed to be over written many times without any deterioration in quality.

The supplied Flash cards are PRE-FORMATTED.

When reusing your Flash cards, it is important that you CONDITION each Flash card before loading replacement Music folders onto the card. This is necessary to ERASE the file directory of the Flash Card, as Windows does not do this and will not over write directory information when it is full.

The BMS Dealer Control Card provides a CONDITIONING SD CARD option, selected from the main menu.

FLASH CARD PROGRAMMER

Your MUSIC FILES and your MESSAGE FILES are transferred to the Flash Card using an SD flash card programmer.

These Flash Card programmers can be built into your PC, or an external unit can be connected to your PC via a USB port.

Flash Card programmers are treated by the PC as a Removable Hard Drive device.

Once connected to the PC, they are automatically allocated a separate DRIVE LETTER so that you can then COPY and DELETE files to the Flash Card inserted into this drive, just as you would do with any other Drive of your PC.

BMS DEALER CONTROL PROGRAM

The best way to do this is to use our BMS Dealer Control Program, which provides a simple user interface (see page 9).

You can also use Windows Explorer if you wish, however this is not recommended because you will then need to have a thorough understanding of where all Files, Folders and Timetables need to be placed to work correctly.

If you do not have a copy of BMS Dealer Control Program V2.01, please call (07) 5596 5128 or email : info@natcomm.com.au and request a copy of this free program.

MUSIC FLASH CARD

Music Plays Randomly

Because of the large volumes of Music that will normally be used, BMS2 uses MUSIC SUB-FOLDERS on the MUSIC FLASH CARD. Each Sub-Folders can have a **MAX of 250 SONGS** contained within it. Up to 250 Sub-Folders can be stored on the MUSIC FLASH CARD.

As BMS-2 will only play Encrypted MP3 Files, all MP3 based Music Files must be ENCRYPTED first with our Encryption program.

The Encryption facility incorporated in our BMS Dealer Control program will allow you to automatically encrypt a complete folder of Music at one time.

Our BMS Dealer Control Program will then allow you to TRANSFER complete folders onto your SD card, one at a time.

On power up, ALL SONGS are played from the first folder on a completely RANDOM basis, until the last file has played. Once all Music file in the first sub-folder are played, BMS2 will then begin playing Music files from the second sub-Folder until all files have played before moving to the next Music Sub-Folder.

The First folder is the first folder transferred to the Music Flash Card. The Second folder is the second folder transferred to the Music Flash Card. The Third folder is the third folder transferred etc, etc. Once the last song in the last Music Folder has finished, BMS2 will then move back to the first created Folder and then cycle on again as above. If power is removed or lost or either SD Flash Card is removed, BMS2 will RESTART from the first folder.

The use of Folders presents a perfect opportunity to arrange your Music into separate GENRE groups.

With our Model BMS2/T (Time Programmed Music and Message Play) device, you can also program individual Music Folders to play during a specific time period (within a single day), or for specific days of the week or for a specified period (using a start date and stop date).

You can also use this option to START and STOP play to coincide with business hours. See page 14 for further information.

MESSAGE FLASH CARD

Messages Play Sequentially

*** You can load a MAX of 250 Messages onto the Message Flash Card.**

*** You can also load a MAX of 250 High Rotation Songs onto the Message Flash Card.**

MESSAGES must be located within a single folder, called MESSAGES . This folder is automatically is created on your MESSAGE CARD by using the 'Condition Message SD Card' facility of the BMS Dealer Control program.

HIGH ROTATION SONGS must be located within a single folder, called HITS. This folder is automatically created on your MESSAGE CARD by using the 'Condition Message SD Card' facility of the BMS Dealer Control program.

Note - You do not need to use the HIGH ROTATION FOLDER. If you do not plan to use High Rotation Songs, then leave this folder blank.

As BMS2 will only play Encrypted MP3 Files, all MP3 based Messages and High Rotation Songs must be ENCRYPTED first with our Encryption program.

MESSAGES and HIGH ROTATION SONGS (if used) will play IN THE ORDER they are LOADED ONTO THE FLASH CARD.

They will PLAY every 1-256 songs, OR Messages Only can be played every 1-256 minutes as programmed by your BMS Dealer Control Program.

Note : If you are using Windows Explorer

If the order that the files need to play is important, you MUST write them to the Flash Card one at a time, in the order required.

If you drag more than 1 file at a time to a folder, Windows MAY load the files randomly onto the card, in an alphanumeric fashion, based on the filename, which means they may not play in the order required.

We recommend that you use the BMS Control Program t do this.

FLASH CARD FOLDERS

You should use the BMS Dealer Control program (see page 10) to CONDITION your MUSIC and MESSAGE cards and to transfer your MUSIC Sub-Folder to the MUSIC card and your Messages (and optional High Rotation Files) to the MESSAGE card.

MUSIC CARD

1) You should ALWAYS prepare your MUSIC Flash Card by using the 'Condition Music SD Card' facility provided with the BMS Control Program.

This facility will REFORMAT the card and then create a MUSIC folder on your card.

2) LOAD your encrypted Music Folders, into the MUSIC Folder by using the 'Transfer Music Folders to SD Card' option of the BMS program.



These folders will then be loaded as Sub-Folders.

MESSAGE CARD

1) You should ALWAYS prepare your MESSAGE Flash Card by using the 'Condition Message SD Card' facility provided with the BMS Control Program.

This facility will REFORMAT the card and then create a MESSAGE folder

2) LOAD your encrypted Messages, into the MESSAGE Folder by using the 'Transfer Messages to SD Card' option of the BMS program.

3) The 'Condition Message SD Card' facility will also create a HITS folder, which is the destination of any High Rotation Songs that you may wish to use.

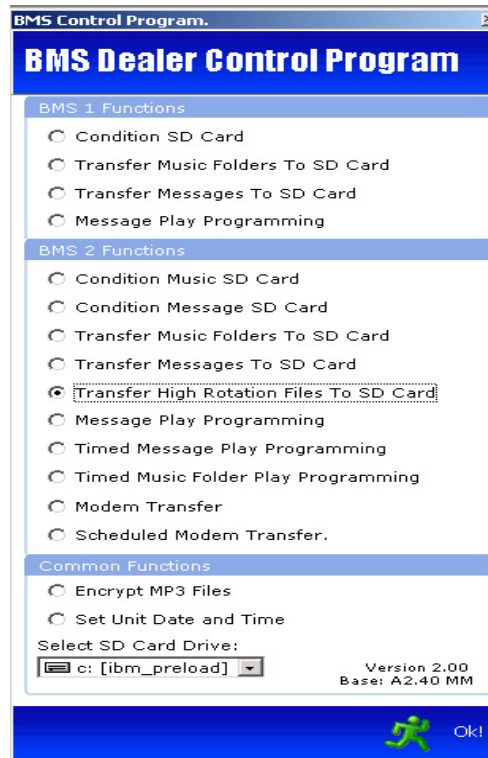
You can leave this folder blank if you wish, or you can transfer individual files into the HITS folder using the 'Transfer High Rotation Files to SD Card' facility provided with the BMS Control Program.

BMS CONTROL PROGRAM

The BMS Control Program has been developed to provide you with an easy to use, step by step procedure for programming up your Flash Cards.

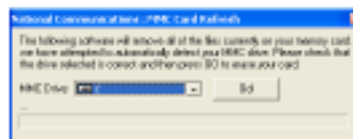
You will find this program (BMS Control Program Setup.exe) on the CD which has been supplied with your unit.

To Install this program, simply 'double click' this file and then follow the instructions.



STEP 1 - CONDITION YOUR SD FLASH CARD

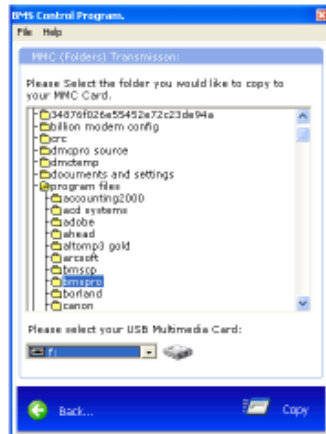
The first step for all programming is to CONDITION your SD Flash Card. This procedure ERASES all files from the Flash Cards.



Select the Drive Letter for your SD card on the first occasion that you enter this facility. It will then be remembered during future access, providing that the drive is not removed.

STEP 2 - TRANSFER MUSIC FOLDER TO YOUR MUSIC CARD

The second step is to TRANSFER COMPLETE FOLDERS of ENCRYPTED MUSIC to your MUSIC Flash Card.



You should navigate through to each folder that you require to be copied to the SD Flash Card and transfer them one at a time by highlighting them and then clicking the Send Icon.

Note - BMS2 will only play Encrypted Music Files, so you should Encrypt each folder first using the Encrypt MP3 files option from the Main Menu.

STEP 3 - TRANSFER MESSAGES TO YOUR MESSAGE CARD

The third step is to TRANSFER ENCRYPTED MESSAGES to your SD Flash Card.



You should navigate through to each MESSAGE that you require to be copied to the SD Flash Card and transfer them one at a time by highlighting them and then clicking the Send Icon.

Note - BMS2 will only play Encrypted Message Files, so you should Encrypt each message first using the Encrypt MP3 files option from the Main Menu.

STEP 4 - TRANSFER HIGH ROTATION SONGS TO YOUR MESSAGE CARD

If Required - The Fourth step is to TRANSFER ENCRYPTED High Rotation Files (HRF) to your SD Flash Card.



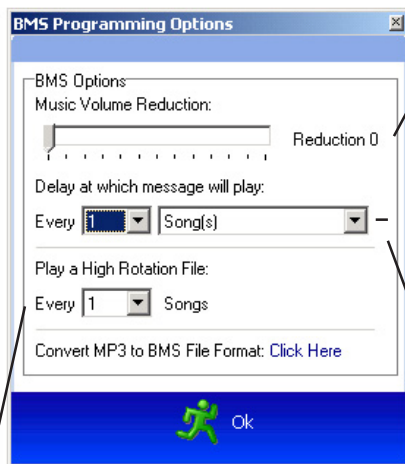
You should navigate through to each 'HRF' that you require to be copied to the SD Flash Card and transfer them one at a time by highlighting them and then clicking the Send Icon.

Note - BMS2 will only play Encrypted Files, so you should Encrypt each 'HRF' first using the Encrypt MP3 files option from the Main Menu.

STEP 5 - MESSAGE & HITS PLAY PROGRAMMING

Load your **MUSIC Flash Card** into your Flash Card programmer.

In this section, you specify how frequently you wish to play a Message and a HRF (if required). You can play a message after 1-256 songs, or at intervals of 1-256 mins. You can play a HRF file after 1-256 songs,



MESSAGE VOLUME

You can also program BMS2 to play Messages at a HIGHER VOLUME than the Music by Sliding the slide bar to the right. This actually DECREASES the volume of the MUSIC, relative to MESSAGES. There are 12 possible settings, each position represents a reduction of 1.5dB, providing you with a maximum reduction of 18dB.

MESSAGE FREQUENCY

The software defaults to SONGS. If you wish to change to MINUTES, you should use this drop down box.

HIGH ROTATION FILES FREQUENCY

You can play a High Rotation File after every 1-256 songs, as selected in this area.

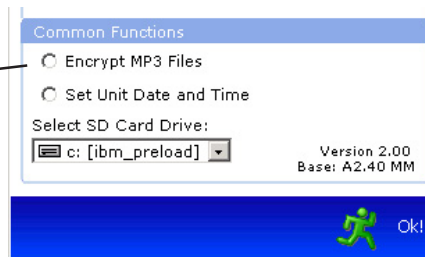
All settings that you have made from this page are then saved in a file called : SET.TBL, which is then saved on your **MUSIC Flash Card**.

ENCRYPTION FACILITY

This facility is used to ENCRYPT all MP3 based Music and Message files for use with our BMS devices.

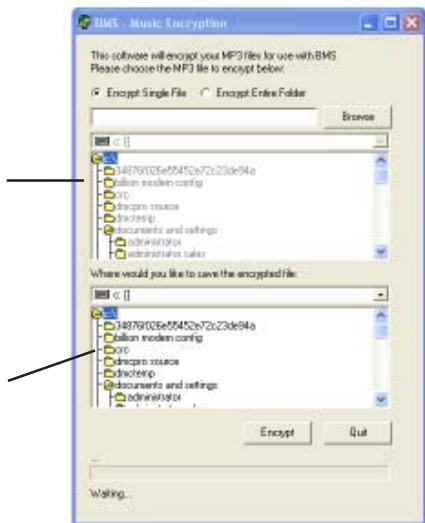
It is accessed via the Common Functions section of the BMS Dealer Control Program.

The Encryption process is a demanding mathematical manipulation of your original MP3 files and can be quite time consuming. Depending on the power of your PC, this can take 5-10 seconds of processing time, per minute of MP3 Music or Message.



You should first navigate through to the SOURCE FOLDER of the Music Folder, Message File or High Rotation File that you require to be encrypted and then select if it is a full folder or a single file to be encrypted

You should then navigate through to the DESTINATION FOLDER for the Music Folder, Message File or High Rotation File that it will be SAVED to once they have been encrypted



Note - Files that have been encrypted are renamed with the same filename, but the extension has been changed from .mp3 to .bms.

le: filename.mp3 - becomes - filename.bms
To save considerable time and effort, we recommend that you encrypt your Music Folders (genres) in a single run.

TIME PROGRAMMABLE MUSIC and MESSAGE CHANGE option

Our Model BMS2/T will allow you to set MUSIC FOLDERS and INDIVIDUAL MESSAGES to play on a Time Programmable Basis.

You can program MUSIC FOLDERS and INDIVIDUAL MESSAGES to play :

- * During a specific Time Periods WITHIN a Single Day
- * During specific DAYS of the WEEK.
- * From a specified START DATE to a specified STOP DATE.

With this option, you can also program the BMS2 unit to

- * START and STOP PLAYING on a Daily Basis.

**A SEPARATE USER GUIDE IS SUPPLIED WITH THIS MODEL
WHICH PROVIDES FULL PROGRAMMING INSTRUCTIONS**

MODEM OPTION

to allow DIAL IN

MESSAGE or MUSIC CHANGES

Our Model BMS2/M device has an internal Modem which will allow you to connect it to a telephone line so that you can DIAL IN and :

- 1) ADD or CHANGE a MESSAGE File
- 2) CHANGE the SET.TBL file

This will allow you to change the frequency that a MESSAGE File should play.

It will also allow you to change the Time Programming

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BMS2 INSTALLATION

when using an Amplifier

Please refer to the Installation Diagram on page 16.

BMS2 provides a Stereo Line Level output, which is designed to connect direct to a separate Amplifier.

The separate Amplifier is then used to power the required number of speakers (usually 100V paging/music speakers)

The amplifier used should have a power rating (W), greater than the sum of the tapping setting of all speakers connected to it.

If higher volume is required on one or more speakers, then you may increase the tapping to a higher W setting.

SPEAKER CABLE

You should use figure 8 speaker cable with a power rating suitable for the amplifier which you plan to use.

You can use 'Light Duty', such as 14/0.14 for amplifiers with an output of 50W RMS or less.

For amplifiers with a power rating of greater than this, you should use 'Heavy Duty' 24/0.20.

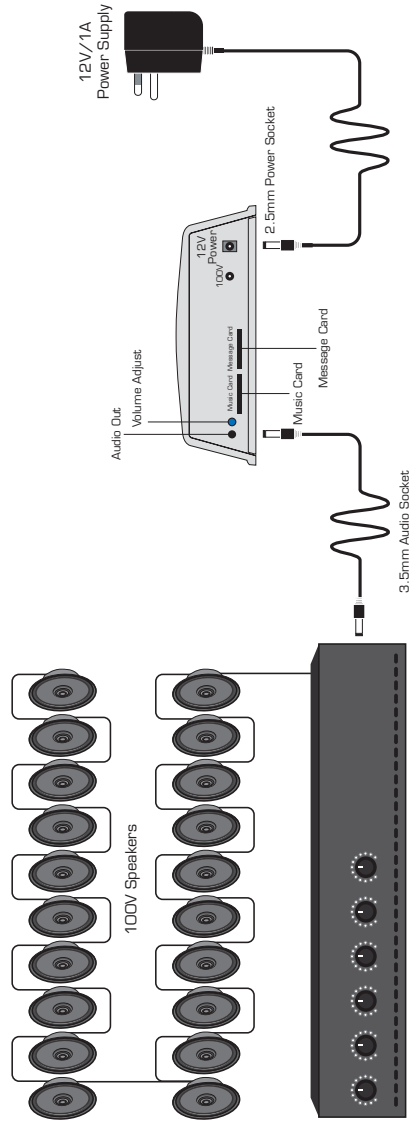
100V SPEAKERS

BMS2 units are designed to operate with standard 100V PA or Background Music speakers, which are typically Ceiling Mounted or Wall Mounted. 100V Speakers are designed to connect in Parallel fashion, as indicated on the Installation Diagrams.

This means that the amplifier connects to one speaker, direct onto the appropriate tapping of the 100V speaker transformer. The next speaker connects from that same point, and so on to the last speaker, in a 'daisy chain' type fashion.

BMS-2
INSTALLATION DIAGRAM

BMS - Line Level



Amplifier
Connect your amplifier direct to the Line Level Audio Out socket

NATIONAL COMMUNICATIONS

Units 11-12/39-47 Lawrence Drive Nerang Queensland 4211
Phone (07) 5596 5128 Fax (07) 5596 5121 www.natcomm.com.au

INSTALLATION

when fitting speakers direct

Please refer to the Installation Diagram on page 18.

Our BMS units are designed to power directly, up to TEN 100V speakers, each with a tapping setting of 1W or less. This setting will allow each speaker to provide clear background level audio.

If higher volume is required on one or more speakers, then you may increase the tapping to a higher W setting, but you must also reduce the number of speakers accordingly.

NOTE 1. You should not connect direct to these units speakers with a total tapping setting of more than 8W.

NOTE 2. You should not connect direct to these units speakers that do not have a 100V transformer. Doing so may damage the unit.

A 3.5mm Audio Plug is supplied to provide connection of your speaker wire to the BMS1 unit.

SPEAKER CABLE

BMS produces a maximum output of 10 watts. For this power level, you can use 'Light Duty' figure 8 speaker cable, such as 14/0.14 gauge standard or better .

100V SPEAKERS

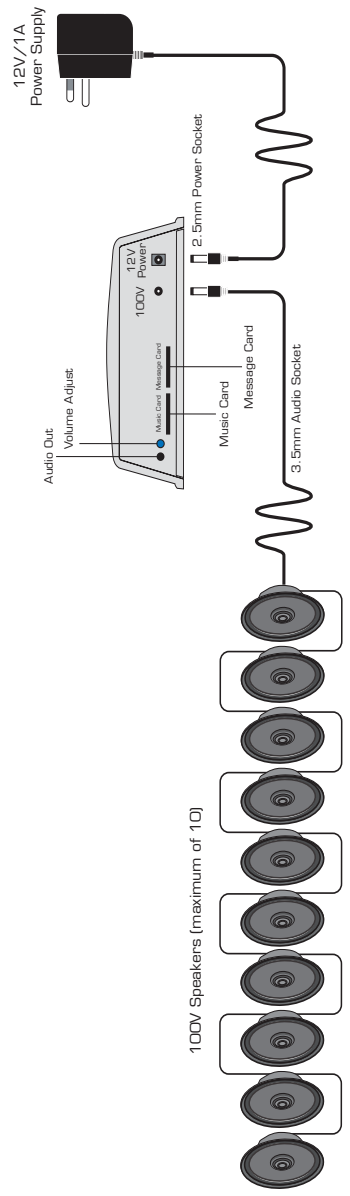
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This means that the amplifier connects to one speaker, direct onto the appropriate tapping of the 100V speaker transformer. The next speaker connects from that same point, and so on to the last speaker, in a 'daisy chain' type fashion.

BMS-2
INSTALLATION DIAGRAM

BMS - 100V output



You can connect up to 10 speakers direct to the 100V Audio Output.

SPECIFICATIONS

Dimensions	:	165w x 150d x 60h mm
Weight	:	415g
Power Supply	:	240VAC to 12VAC/1A
Audio Power Output	:	10W
Line Out Connector	:	3.5mm Mono Socket
100V out Connector	:	3.5mm Stereo Socket
ACMA COMPLIANCE	:	Supplier Number N 782

WARRANTY

This device is guaranteed against defects from workmanship for a period of two years (24 months) from the date of purchase. In the event of failure, you should return the product, along with proof of purchase date, and a written statement about the nature of the problem.

This Warranty shall not apply to any unit which has been subject to alteration, modification, abuse, negligence, accident, external voltage/ lightning surge or used in any manner contrary to these instructions.

The obligation is solely to repair or replace the product. The warrantor is not liable for any incidental or consequential damages due to such defects.

The user is responsible for freight costs to the repair point. The warrantor will be responsible for freight costs in returning this unit back to the user.

Damage caused to this device or attached equipment, by lightning strikes or over voltage surge is not covered under this warranty.

**CASE SEALED AT FACTORY
OPENING THE CASE VOIDS THE WARRANTY**