Connection and General information

DMS3000 V2.20
MP3 Digital Audio Playback Card.

General
The DMS3000 is designed around industry standard MP3 compression technology. Audio data is stored on standard multimedia cards (MMC). The DMS3000 series sound stores can be recorded by the user with a suitable PC equipped with an MMC card reader and sound card.

Message playback can be initiated in a number of ways from a simple contact closure, RS485 or via text command files assigned to a particular trip input giving an incredible degree of control over the sound store.

Specification

Board Size	100x160x25mm
Supply	12-18v DC @ 200mA
Audio Compression	MP3 (Mpeg1 Layer3)
Memory	MMC 64MB to 1GB
Trip Input Lines	5v active HI or LOW selectable
Stop / Start input	5v active LOW
Run Output	Open Collector (Max 25v 150mA)
Control Output	Open Collector (Max 25v 150mA)
Audio Outputs Line	0db Nominal (600 ohms)
Treble Control	+/- 10dB
Bass Control	+/- 10dB
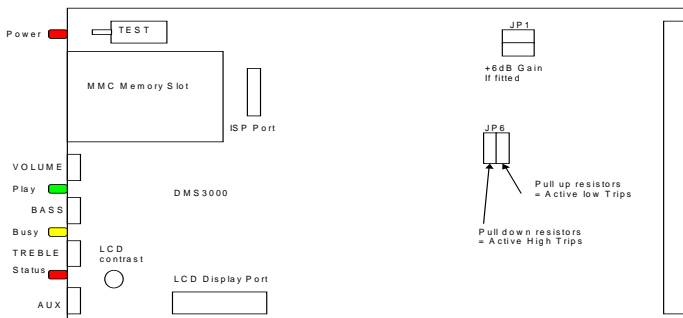
General PCB layout. (FIG 1)

ISP Port
In Circuit Programming port used to update the DMS3000 operating system. NO USER FUNCTION.

Display Port
2 x 16 character display port used on some cased unit models. VR4 offers display contrast adjustment.

Test Push Button
Plays message number stated In control configuration file CTL?name.txt (detailed later).

Gain Set Links
Links open give Line output level of 0dB nominal. With both links fitted line level is boosted by +6dB.

I/O Connections
Power, Audio and Control pins of the DMS3000 Playback Card all appear on the 64way DIN41612 edge connector (CON1) on the rear edge of the PCB. (If fitted)
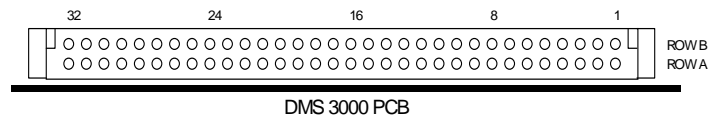
Trip Inputs - Pins A10-13 B10-13
Trip inputs can initiate playback of a stored message directly or start a command file which in turn can call any available messages. The eight trip inputs can be configured as ACTIVE HI or LOW via JP6 shown in **FIG 1** (default active LOW). Trip inputs can be individually configured as N/O or N/C inputs (default N/O) in the CTL.txt file stored on the MMC card. (detailed later)
Trip inputs can be configured as decimal or binary in the CTL.txt file
In decimal mode (default) 8 messages can be directly accessed.
In binary mode 255 messages are available.

Stop Input - Pin A14
A LOW pulse on this line will stop and reset playback of any running message or command file. If the stop input is held low it will prevent playback of any recorded message. (Stop input line 5v active low standard TTL levels)

Start Input -PinB14
When using binary trip inputs (255 messages) a LOW pulse on this line will clock in the binary code presented on the 8 trip input lines and initiate playback of the corresponding message.
When using decimal trip inputs (8 messages) this line is inactive.

RS485 Pins B15,A15
For future use. Do not connect.

FRAME Clock IN Pin A16
42Hz clock from master sound store is input to this pin when using sound stores in Master / Slave configuration.

FRAME Clock OUT Pin B16
Output 42Hz clock to Slave sound stores when used in Master/Slave configuration.

Run IN Pin B17
Receives control signals from master sound store at start and end of sound files for synchronisation when used in Master / Slave configuration

Run OUT Pin B18
The RUN Output will provide a negative going signal for the duration of any sound track that is playing. This signal is also used when using a Master / Slave configuration

Sync IN Pin A17
Sync control signals when used in Master/Slave configuration.

Sync OUT Pin A18
Sync control signals when used in Master/Slave configuration.

Control OUT Pin B19
Programmable Open Collector transistor (Max 25v 200mA) controlled via command.txt file *outp* command. (detailed later)

RS485 channel 1 Pins A19,20
Balanced pair A19 = positive A20 = negative 10MHz SYSCLK IN/OUT or RS485 Control.

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DIN41612 connection details.

Pin	ROW B	ROW A
1	Audio Line OUT Ch1 LEFT	Audio Line OUT Ch1 LEFT
2	Gnd Analogue	Gnd Analogue
3	N/C	N/C
4	Audio Line OUT Ch2 RIGHT	Audio Line OUT Ch2 RIGHT
5	Gnd Analogue	Gnd Analogue
6	N/C	N/C
7	N/C	N/C
8	N/C	N/C
9	N/C	N/C
10	TRIP 2 - INPUT	TRIP 1 - INPUT
11	TRIP 4 - INPUT	TRIP 3 - INPUT
12	TRIP 6 - INPUT	TRIP 5 - INPUT
13	TRIP 8 - INPUT	TRIP 7 - INPUT
14	START Line	STOP Line
15	RS485 + reserved	RS485 - reserved
16	FRAME CLOCK-OUT	FRAME CLOCK-IN
17	RUN-IN	SYNC-IN
18	RUN-OUT	SYNC-OUT
19	CONTROL-OUT	RS485 + Remote or sys clock
20	Logic supply 12-18v	RS485 - Remote or sys clock
21	0v IN Logic	Logic supply 12-18v
22	0v IN Logic	N/C
23	N/C	N/C
24	N/C	N/C
25	N/C	N/C
26	Gnd Analogue	Gnd Analogue
27	N/C	N/C
28	0v Logic	0v Logic
29	5v OUT	5v OUT
30	0v Logic	0v Logic
31	0v IN Logic	0v IN Logic
32	Logic supply 12-18v	Logic supply 12-18v

Creating MP3 files.

STEP 1
The usual way to create a .mp3 file is to record the soundtrack into the computer as a wav file using software such as "Adobe Audition"

STEP 2
Next edit the wav file so that any unnecessary silence is removed from the start and end of the soundtrack. All editing must be carried out while the file is still in a .wav format as it is not practical to edit an .mp3 file.
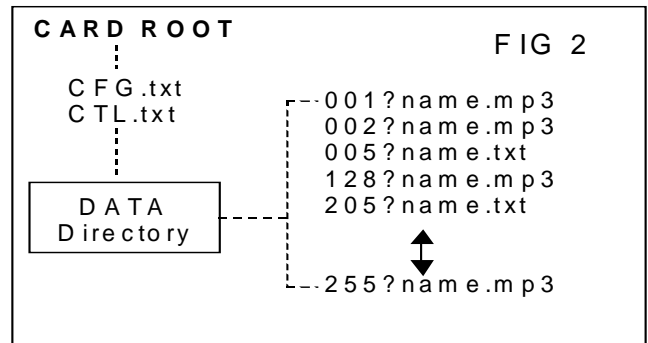
STEP 3
The third step is to encode the wav file to an mp3 file using "Audition" or similar encoder. It is this point that determines the quality of the finished mp3 file by selecting the most appropriate bit rate for the file. The lower the bit rate, the lower the quality and bandwidth of the output file but a lower bit rate would use less memory per second.
The usual bit rate for encoding mp3 files is 128Kbits per second which will provide a bandwidth of 20Hz to 15KHz.

Example running times using a 32 Mbyte memory card.

Sample Rate	Bit rate.	Bandwidth.	Running time.
44.1KHz	112Kbps	= 20Hz to 13KHz	= 38 Minutes
44.1KHz	128Kbps	= 20Hz to 15KHz	= 33 Minutes
44.1KHz	160Kbps	= 20Hz to 18KHz	= 26 Minutes
44.1KHz	192Kbps	= 20Hz to 20KHz	= 22 Minutes


```
C A R D   R O O T                        F I G  2

   C F G .txt              ┌── 0 0 1 ? n a m e .mp3
   C T L .txt              │   0 0 2 ? n a m e .mp3
                           │   0 0 5 ? n a m e .txt
   ┌──────────┐            │   1 2 8 ? n a m e .mp3
   │  D A T A │ ─ ─ ─ ─ ─ ─┤   2 0 5 ? n a m e .txt
   │ Directory│            │        ▲
   └──────────┘            │        ▼
                           └── 2 5 5 ? n a m e .mp3
```

Memory Card (MMC)
The DMS3000 currently supports MMC cards from 64MB to 1GB . We can supply fully compatible cards which we recommend as some makes of card are not compatible. Cards must be formatted with FAT16 only.
The MMC card used with the DMS3000 sound store must contain certain files and directories to operate. These files are detailed below.

ROOT files and Directories.
Files named **CFG.txt** (configuration data) and ***CTL*?*name*.txt** (control data) must be present in the ROOT DIRECTORY. A subdirectory named DATA must also be present to hold your .mp3 sound files and any command.txt file associated with any particular trip input.

CFG.txt contains Configuration data for the DMS3000 chip set. This file is set as READ ONLY and **MUST NOT BE MODIFIED**.

CTL*?name*.txt contains user settable parameters for the sound store such as trip input conditioning, tone control presets, RS485 addressing etc. the full list of available control commands are described later.

DATA SUB DIRECTORY
This Directory must contain all .mp3 sound files and any command files you require.
.mp3 Sound files. Must be named in the following manner to enable the sound store to identify message files.
The first 3 digits in the file name assign the message to it's trip input number, messages 001 to 255 are available.
The next string of characters are used for your message name if required, the first 16 of these characters will be displayed on the 2x16 LCD display if fitted.
File Extension the last 4 characters MUST ALWAYS BE **.mp3** for a valid file name.
Example 1,   001TEST MESSAGE.mp3
Example 2,   156This is a test.mp3
Both the above are valid file names for messages 1 and 156.

Command files
If required a command text file can be written and assigned to any trip input to provide access and control over any or all .mp3 sound files present in the DATA directory. Command files enable you to use features such as message selection / playback, delay timers, message sequencers, trip conditioning, random message selection etc (see command file section). An example command file name assigned to trip input 1 would be **001?name.txt**   When tripped command files take priority over any .mp3 sound file with the same message number.

eg. 001?name.txt would have priority over 001?name.mp3 however message 001?name.mp3 could still be played from within the command file.

Control file commands

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Control file commands CTLname.txt

Control file naming
The first 3 digits of the file name must be **CTL,** next if required a specific name can be used for identification purposes. The last 4 digits must always be **.txt**

eg. **CTLtest control file.txt** would be a valid control file name.

The following commands can be used in a **CTL**?name**.txt** file placed in the ROOT of the MMC card.

Command	Range	
osbe	00000000	One shot bit enable. 0 = loopable, 1 = one shot
ncbe	00000000	Normally closed bit enable. 0 = normally open, 1 = normally closed
cont	0-1	Interrupted cmd.txt or .mp3 file will continue after interrupt.
biny	0-1	Trips decimal or binary 1=binary.
pint	0-1	0=no priority, 1=lower trips priority (mint must be 0)
mint	0-1	0= Interruption not allowed. 1=interruption allowed.
pvol	1-255	Preset volume, if 00 the variable control operates.
ptre	1-255	Preset treble, if 00 the variable control operates.
pbas	1-255	Preset bass, if 00 the variable control operates.
pbal	1-255	Preset balance, if 00 the variable control operates.
mono	0-1	Mono's the output, the same signal appears on both channels.
tstb	1-255	Test push button trip number.
tnat	0-7	Overrides tone attenuator if 1 to 7 is set.
ncmd	0-1	Disable command file search if 1
self	0-1	Allows mp3 file to be interrupted by itself.
fast	0-1	Allows fast access to mp3 files (scratching)
nbuf	0-1	Prevent buffer flush to speed up access time
fixl	0-1	Fix left audio output at max level.
fixr	0-1	Fix right audio output at max level.
scn1	0-1	Sequence through trips once.
scnc	0-1	Sequence through trips continuously
bank	0-1	Enable banked message function.
wdog	0-1	Enable MMC card watchdog function
actl	0-1	Allows access to 3 control transistor outputs
sfat	0-1	Saves start cluster address of messages
mast	0-1	Sets card as master in multitrack systems.
slav	0-1	Sets card to slave in multitrack system (Trip87654321)
pian	0-1	Enables piano type trip inputs
orun	0-10	Piano type trip hold on period
fade	1-255	Fade in rate for "cont" and "hold" commands.
fado	1-255	Fade out rate for "cont" and "hold" commands. (v2.18-on)
autp	0-255	Plays an MP3 or runs a command file on power up, looped. (v2.11-on)
scrl	0-1	Scroll mode scrolls through mp3 files. (v2.14-on)
plal	0-1	Loop any selected mp3 file from a momentary contact even when trip released
16tp	0-1	Allows 16 direct trips by grounding the sync input. (v2.09-on)

pria	0-255	Primary RS 485 address of DMS.
seca	0-255	Secondary RS485 address of DMS.
r485	0-1	Enable RS485 control. Also sets ncmd bit. (v2.12-on)
vlmn	0-255	
vlmx	0-255	Set max and min volume for use with vlup and vldn commands.(v2.16)

Example control file for a DMS3000 Lite

/ncbe=00000010;	Trip 2 connected to normally closed contact.
/osbe=00001000;	Trip 4 is one shot enabled.
/mint=1;	Any message can interrupt any other
/tstb=5;	Test button activates message 5
)	End of file marker

Control file syntax information.
All commands must start with "**/**"
All commands must end with "**;**"
The last command must be followed by "**)** " on the next line.
There must be an "**=**" sign after the command and before the data.
There must not be any spaces within the command string.
All commands are lower case.
You may type remarks after the semicolon "**;**" but the remarks must not contain any control characters such as **/** or **)** or **;** or **=**.

Detailed explanation of each control command.

osbe   **One shot bit enable**
This command allows each of the eight individual trip inputs to be set up with one shot functions. This means that if a trip is one shot enabled, and that trip line is held active beyond the end of a file, the selected file will not run again. The trip line must be released before it can operate again. If the trip line is not one shot enabled, the selected file will loop if the trip is held on at the end of the file.
To select one shot mode, enter a "**1**" corresponding to the trip number otherwise enter a "**0**".
Trips 8...........1
/osbe=00000000;
For example, if trips **1,3,7,8** are one shot enabled the command would be: **/osbe=11000101;**

ncbe   **Normally closed bit enable**
This command allows each of the eight individual trip inputs to be set up to operate with normally closed contacts such as a PIR.
To enable a normally closed contact trip, enter a "**1**" corresponding to the trip number otherwise enter a "**0**".
Normally closed bit enable
0=Normally Open, **1**=Normally Closed
Trips 8...........1
/ncbe=00000000;
For example, if trip **1 & 2** are to be on normally closed contacts the command would be: **/ncbe=00000011;**

cont   **Continue after interrupt**
This command will allow an interrupted cmd.txt or mp3 file to resume from the point it was stopped after the interrupting file has finished. For example, a long background music file could be playing and then a voice instruction needs to be played. After the voice mp3 file has finished, the background track would fade back in at the point it was interrupted. This command will only work if either "**mint**" or "**pint**" is set.
Note. It is possible for a third file to interrupt the second file, in this case, the first file will always be the one that resumes. However if the third or subsequent file number is the same as the first file, the first file will fade back in and continue.

/cont=0; The interrupted file will not continue after interruption.
/cont=1; The interrupted file will continue.

Control file commands

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biny   Binary coded trips
Setting this command to "*1*" will allow access to 255 .mp3 sound files or command files by applying the appropriate binary code number on to the trip inputs and then applying the active low start signal.
/biny=0;   up to eight files can be accessed with the 8 trip lines
/biny=1;   up to 255 files can be accessed using binary codes

Binary equivalent value for each trip input.
Trip 1 = **1**,   Trip 2 = **2**,   Trip 3 = **4**,   Trip 4 = **8**,
Trip 5 = **16**,   Trip 6 = **32**,   Trip 7 = **64**,   Trip 8 = **128**.
Example.
To access file "043?name.mp3" you must activate trips 6,4,2,1 then apply an active LOW to the start Pin. This equates to 32+8+2+1=43

pint   Priority interrupt enable
This command if "*1*" will allow any other valid trip of a lower value to cancel a currently playing file and run the new file. The file can be a .mp3 sound or a command file.
If the command = "*0*" any new trip will be ignored until a currently playing file has finished.
/pint=0;   No priority interrupt allowed
/pint=1;   Priority interrupts allowed
NOTE: Mint must be set to "**0**"

mint   Interrupt enable
This command if "*1*" will allow any other valid trip to cancel a currently playing file and run the new file.
If the command = "*0*" any new trip will be ignored until a currently playing file has finished.

/mint=0;   No interrupt allowed
/mint=1;   Interrupts allowed

pvol   Preset volume
This command allows the output to be preset thus preventing operators from adjusting the front panel volume control. If this command is not used or set to zero, the front control will operate.
Formula for arriving at value for data byte.
value = 255 - (4 x ?dB)
Examples:
0dB Max Vol   */pvol=255;*
-6dB   */pvol=231;*
-40db   */pvol=95;*
-63dB Min Vol   */pvol=1;*
Front control active   */pvol=0;*

ptre   Preset Treble
This command allows the treble boost or cut to be preset thus preventing operators from adjusting the front panel treble control. If this command is not used or set to zero, the front control will operate.
Note. When the treble control is increased, you will notice that the overall volume will decrease by an equal amount. This is to allow maximum drive at the outputs without sacrificing quality. You may override this function with the "*tnat=?;*" command but the overall level will be reduced to allow headroom for the treble boost.

Treble Examples:

10.5 dB boost	*/ptre=240;*	1.5dB cut	*/ptre=112;*
9.0 dB boost	*/ptre=224;*	3.0dB cut	*/ptre=96;*
7.5 dB boost	*/ptre=208;*	4.5dB cut	*/ptre=80;*
6.0 dB boost	*/ptre=192;*	6.0dB cut	*/ptre=64;*
4.5 dB boost	*/ptre=176;*	7.5dB cut	*/ptre=48;*
3.0 dB boost	*/ptre=160;*	9.0dB cut	*/ptre=32;*
1.5 dB boost	*/ptre=144;*	10.5dB cut	*/ptre=16;*
Flat	*/ptre=128;*	Front control active	*/ptre=0;*

pbas   Preset Bass
This command allows the bass boost or cut to be preset thus preventing operators from adjusting the front panel bass control. If this command is not used or set to zero, the front control will operate.
Note. When the bass control is increased, you will notice that the overall volume will decrease by an equal amount. This is to allow maximum drive at the outputs without sacrificing quality. You may override this function with the "*tnat=?;*" command but the overall level will be reduced to allow headroom for the bass boost.

Bass Examples:

10.5 dB boost	*/pbas=240;*	1.5dB cut	*/pbas=112;*
9.0 dB boost	*/pbas=224;*	3.0dB cut	*/pbas=96;*
7.5 dB boost	*/pbas=208;*	4.5dB cut	*/pbas=80;*
6.0 dB boost	*/pbas=192;*	6.0dB cut	*/pbas=64;*
4.5 dB boost	*/pbas=176;*	7.5dB cut	*/pbas=48;*
3.0 dB boost	*/pbas=160;*	9.0dB cut	*/pbas=32;*
1.5 dB boost	*/pbas=144;*	10.5dB cut	*/pbas=16;*
Flat	*/pbas=128;*	Front control active	*/pbas=0;*

pbal   Preset balance
This command will preset the left and right balance of the outputs. When "mono" is selected in the control file, or a mono signal is stored, the balance control will still affect the output levels and not the mix from the D/A converter.
If this command is not used or set to zero, the front control will operate.
Examples:
Front control active   */pbal=0;*
Full left   */pbal=1;*
Equal   */pbal=128;*
Full right   */pbal=255;*

mono   Mix outputs to mono
This command will mix both left and right channels together to provide a mono output. The balance control will still alter the output balance.

/mono=0;   Stereo
/mono=1;   Mono

tstb   Test pushbutton code
The front mounted push button has a default select number of "1" but it can be assigned with any number from 1 to 255. This button will then access an mp3 file or command file with the same number.
If the value "*0*" is assigned or the command is not used, the button will default to code "*1*".
eg.   */tstb=1;*

tnat   Tone attenuator over-ride
This command if set will prevent the gain being altered when the bass or treble is increased but the overall output will be reduced by ?dB to allow headroom for the tone boost.
Attenuation = ? x 1.5dB
/tnat=0; Tone attenuator operates with onboard tone controls.
/tnat=1; Tone attenuator set to -1.5dB
/tnat=7; Tone attenuator set to -10.5dB (maximum)

WARNING. If insufficient attenuation is provided, it is possible for severe audible clipping to occur when the treble or bass is increased. The amount of attenuation is dependant on the audio content of the mp3 files.

ncmd   Disable command files
This command will prevent the DMS3000 from searching for command files. This will speed up the access time if there are several hundred mp3 files on the memory card and you do not require the use of command files.
/ncmd=0;   Command files available
/ncmd=1;   Command files disabled

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self — Self interrupt of MP3 files
This command will allow an MP3 file to be interrupted by itself if the trip is removed and then re-applied.
Note: The MP3 can still interrupt itself even if "mint" and "pint" are set to "0". This command is useful to achieve a "scratching" effect by re-tripping repeatedly,

/self=0;	Currently playing MP3 cannot be interrupted by the same trip number.
/self=1;	Currently playing MP3 will be interrupted by the same trip number if released and re-applied.

fast — Fast access of mp3 files
Using this command allows very fast interrupting or restarting of MP3 files. Files must be encoded at 48KHz sample rate and bit rate must be 192KBps stereo when using this mode.
Note. One shot mode does not work with this command and also the trip inputs are not debounced as thoroughly to improve access time therefore external trip wiring should be kept short and screened if possible.

/fast=0;	Normal operation
/fast=1;	Fast mode enabled

nbuf — No buffer flush
This command is normally used in conjunction with "*fast*" to speed up interrupting time by preventing the sound store from flushing its decoder data buffer. Files must be encoded at 48KHz sample rate and bit rate must be 192KBps stereo when using this mode.

/*nbuf=0;*	Decoder buffer is flushed when an MP3 is interrupted.
/nbuf=1;	Decoder buffer is not flushed when an MP3 is interrupted.

fixl — Fix left output to max level
This command can be used to prevent a control tone track or smpte track from being turned down with the volume control. This command will set the left output to maximum. The volume control will not affect the left channel although the Bass and Treble will still have an effect and the tone attenuator will also affect the output unless the tone attenuator is preset using the "*tnat*" command above.

/fixl=1;	Left output fixed
/fixl=0;	Left output Variable

fixr — Fix right output to max level
This command can be used to prevent a control tone track or smpte track from being turned down with the volume control. This command will set the right output to maximum. The volume control will not affect the right channel although the Bass and Treble will still have an effect and the tone attenuator will also affect the output unless the tone attenuator is preset using the "*tnat*" command above.

/fixr=1;	Right output fixed
/fixr=0;	Right output Variable

scn1 — Scan trips once
This command allows the eight trip inputs to be scanned and played one after the other in ascending order.
Example: If trips 1,3,7,8 were all activated together, the sound store would play message 1 then 3 then 7 then 8 and then stop. To restart the sequence, either remove all trips and reapply or ground the stop input momentarily.
NOTE: Function only works in decimal trip mode
     Do not use *mint* or *pint* commands
     Test button will set sequencer to trip number assigned to it
     This function will sequence sound or command files

/scn1=1;	Multi trip scanning enabled
/scn1=0;	Not enabled

scnc — Scan trips continuously
This command allows the eight trip inputs to be scanned and played continuously one after the other in ascending order.
Example: If trips 1,3,7,8 were all activated together, the sound store would play message 1 then 3 then 7 then 8 and then start again. To restart the sequence, either remove all trips and reapply or ground the stop input momentarily.
NOTE: Function only works in decimal trip mode
     Do not use *mint* or *pint* commands
     Test button will set sequencer to trip number assigned to it.
     This function will sequence sound or command files

/scnc=1;	Continuous multi trip scanning enabled
/scnc=0;	Not enabled

bank — Banked trip inputs.
With banked trip inputs, it is possible to select up to 128 files divided into 16 banks of 8 files.
Banked trip inputs use 'sync in' (pin A17) to select banks 1-8 and 'run in' (pin B17) to select banks 9-16.
To operate, ground 'sync in' or 'run in' momentarily then activate a trip input to select a message bank (1 of 16). The next trip input entered selects the file within the bank. The bank remains valid until another bank is selected.
Note:
This only works with decimal trips ie /*biny=0*;
Bank selecting trip must be released before selecting the file to be played.
Busy led lights with **run/sync in** and goes out when bank is selected.

/bank=1;	Banked trips active
/bank=0;	Banked trips inactive

wdog — Multimedia Card Watchdog
In standby mode, the MMC card is checked every 5 seconds to ensure it is still inserted and functioning normally. The busy led will blink very briefly every 5 seconds.

/wdog=1;	Watchdog active
/*wdog=0;*	Watchdog inactive

actl — Alternative control
Disables the control output transistors from their normal modes.
'Run out' and 'Sync out' can be used as programmable outputs from within a command file. See *outp* command.

/actl=0;	'Sync out' and 'Run out' configured as standard
/actl=1;	'Sync out' and 'Run out' available for user control.

sfat — Save File Allocation Table
Saves in eeprom the start address of each file which will reduce access times to files if a large number of files are stored on the card. Maximum number of files allowed with this command is 128 files.
To save the addresses, ensure "*tstb=255*" is set in ctl.txt file and then press the test button at standby condition. The DMS3000 will light the busy led for about 30 seconds while scanning the MMC card.
Note.
It is only necessary to scan the card once unless any changes are made to the card content. If in doubt, scan the card again.

/sfat=0;	Normal operation
/sfat=1;	Save FAT enabled

mast — Synchronisation Master
This command is used to configure a DMS3000 as a master unit when connecting multiple sound stores together to achieve a multitrack system.

/mast=1;	Master Mode enabled
/mast=0;	Normal Operation

slav — Synchronisation Slave
This command is used to configure a DMS3000 as a slave unit when connecting multiple sound stores together to achieve a multitrack system.

/slav=1;	Slave Mode enabled
/slav=0;	Normal Operation

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pian   Piano style trip inputs.
This command will allow the eight trip inputs to function like a piano keyboard. When a trip is released, the mp3 that is playing will stop after a short delay set by the *orun* command.
/pian=1;   Piano mode active.
/pian=0;   Normal operation

orun   MP3 overrun after trip release (*pian*)
In Piano mode, this command sets the delay time before the mp3 will stop playing after the trip is released. The value can be 0 to 20 in 50ms increments.
eg. */orun=2;*   = 100ms overrun

fade   Fade in rate for cont and hold commands.
Normal values between 1-10
/fade=1;   Slow fade
/fade=10;   Fast fade

fado   Fade out rate for cont and hold commands.
Normal values between 1-10
/fado=1;   Slow fade
/fado=10;   Fast fade

autp   Automatically plays a file on power up
Plays an MP3 or runs a command file on power up and when no trips Are active. Can be stopped by stop input but will restart when stop pin is released. This mode can be cancelled within a command file by using "/**autp=0**;"
/autp=0;   MODE Inactive
/autp=?;   ? = 1-255 number of MP3 or command file to play on power up and when no other trip is active.

scrl   Scroll through MP3 files.
Preselect MP3 using '**sync in**' pin to scroll up and '**run in**' pin to scroll down. Activate '**start**' to play and '**stop**' to cancel a MP3. You must use a command file on power up to set the start and end limits for the scroll group. Any missing mp3's from the group will be skipped during scrolling. This function only works with MP3 files & not command files.
/scrl=1;   Enable scroll mode.
/scrl=0;   Disable scroll mode.

How to setup **'scrl'**
This example assumes twenty four messages on the card to play.
In the ctl.txt file, set '/autp=254;' Which will run a command file numbered 254 on power up.
Contents of command file **'254limits.txt'** in data folder.
/lims=1;   Assumes first mp3 in group is 001namename.mp3
/lime=24;   Assumes last mp3 in group is 024namename.mp3
/autp=0;   Disables this file from running again.
)

plal   Play looped
Loops any selected mp3 file from a momentary contact closure even when trip is released.
/plal=0;   MP3 will play once from momentary trip.
/plal=1;   MP3 will play looped from momentary trip.

16tp   16 direct inputs with external encoder
Allows 16 direct trip inputs by grounding the 'sync in' with switch inputs 9 to 16 using a diode OR function. This function only works with decimal mode. Lower trips have priority.
/16tp=1;   16 input mode active.
/16tp=0;   16 input mode inactive.

Pria   Primary RS485 address
Used when the DMS3000 is being controlled via a computer or control system with an RS485 serial port.
Assigns an individual address code of 1 to 255 for this DMS3000.
eg.   */pria=255;*

seca   Secondary RS485 address
Used when the DMS3000 is being controlled via a computer or control system with an RS485 serial port.
Assigns an address code of 1 to 255 for this DMS3000.
The secondary address allows several DMS3000 boards to be controlled simultaneously by setting the same secondary address on all boards to be controlled together.
eg.   */seca=255;*

r485   Enable RS485 control.
Contact Golding audio for protocol if this function is required.
/r485=1;   RS485 control enabled.
/r485=0;   RS485 control disabled.

vlmn   Minimum volume for vldn command
This command sets the minimum volume level selectable when using the 'vldn' command within a command file. See command file information for more detail.
Formula for arriving at value for data byte.
value = 255 - (4 x ?dB)
Examples:

-6dB	*/vlmn=231;*
-40db	*/vlmn=95;*
-63dB Min Vol	*/vlmn=1;*

vlmx   Maximum volume for vlup command
This command sets the maximum volume level selectable when using the 'vlup' command within a command file. See command file information for more detail.
Formula for arriving at value for data byte.
value = 255 - (4 x ?dB)
Examples:

0dB	*/vlmax=255;*
-6dB	*/vlmx=231;*
-40db	*/vlmx=95;*
-63dB Min Vol	*/vlmx=1;*

Command files

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Command files

If required a command text file can be written and assigned to any trip input to provide access and control over any or all .mp3 sound files present in the DATA directory. Command files enable you to use features such as message selection / playback, delay timers, message sequencers, trip conditioning, random message selection etc. An example command file name assigned to trip input 1 would be **001name.txt**. When tripped, command files take priority over any **.mp3** sound file with the same message number.

eg. 001name.txt would have priority over 001name.mp3 however message 001name.mp3 could still be played from within the command file.

Command file naming   xxxname.txt

 NOTE: You cannot use command files if running multiple DMS3000's in sync with each other.

The first 3 digits of the file name relate to the trip input required to execute the file **001 to 255.** Next (if required) a specific name can be used for your identification purposes. The last 4 digits must always be **.txt**
Example:
A valid command file name for trip input 1 would be "**001 test command file.txt** " as could "**001.txt** "

The following commands can be used in a **command.txt** file placed in the DATA subdirectory of a MMC card.

Command	Range	
play	*1-255*	Play the mp3 file indicated.
stop	*1*	Stop playing mp3.
volm	*0-255*	Preset volume.
dltm	*1-99*	Delay timer, 1-99 seconds or minutes.
dlrg	*000-111*	Delay timer options and range
timv	*0-99*	Variable timer, or preset timer 1-99 seconds or minutes.
timr	*000-111*	Variable timer options and range.
mint	*0-1*	Interrupt enable.
pint	*0-1*	Priority interrupt enable.
outp	*000-111*	Output transistors on / off.
lims	*1-255*	Start mp3 for random or sequence play.
lime	*1-255*	End mp3 for random or sequence play.
rndm	*1*	Play random mp3 from group.
sequ	*0-2*	Play mp3's in sequence from group.
goto	*1-63*	Go to a previous command line.
loop	*0-255*	Number of times "goto" loops back.
plal	*0-1*	Play running MP3 in continuous loop
hold	*0-1*	Hold any running MP3 file
trip	*0-255*	Set trip value to wait for or branch on
wtan	*0000-1111*	Wait for all items that are set
wtor	*0000-1111*	Wait for any item that is set
cond	*0000-1111*	Conditional branch
true	*1*	Marker for start of true commands
endc	*1*	Marker for end of true commands
gseq	*1-8*	Multiple message sequencing
cmnd		Jump to another command file
autp		Modify or clear the auto run mode
Vldn	*1-10*	Decrement volume
Vlup	*1-10*	Increment volume

Note. *Maximum of 64 commands allowed in any one file.*

Command file syntax information.

All commands must start with "**/**'
All commands must end with "**;**"
The last command must be followed by "**)** " on the next line.
There must be an "**=**" sign after the command and before the data.
There must not be any spaces within the command string.
All commands are lower case.

You may type remarks after the semicolon "**;**" but the remarks must not contain any control characters such as **/** or **)** or **;** or **=**.
Example:
/play=123;   you may write anything after semicolon
/play=1;
)   end of file marker

Explanation of commands.

play   **Play selected .mp3 file**
Select and play the mp3 file indicated. Allowable range is 1 to 255. If the mp3 file does not exist, the next command will run.
/play=2;   plays sound file *002?name.mp3*

NOTE:
If an mp3 is started and then the same mp3 is selected again whilst still running, the playing mp3 will not be interrupted however loop mode '***loop***' will be cancelled if active. Any mp3 file called from within a command file will be cancelled if the command file ends before the MP3. A wait command such as '***wtan'*** or '***wtor'*** must be used to make the command file wait for the end of the mp3 file.

stop   **Stop playing any .mp3 file**
Will stop a currently playing message. Data byte should be 1.
/stop=1;   Stop any playing mp3
/stop=2;   Cancel a 'cont' held cmd file
/stop=3;   Cancel a 'hold' held cmd file

volm   **Volume control**
This command allows you to change the preset volume level within a command file.

Formula for arriving at value for data byte.
value = 255 - (4 x ?dB)

Examples:
/volm=255;   0dB
/volm=231;   -6dB
/volm=95;   -40dB
/volm=1;   -63dB
/volm=0;   Front panel control operational.

dltm   **Delay timer value**
This command provides a delay timer. Delays can be from 1 to 99 minutes or seconds depending on the range selected by the '***dlrg***' command (see below).
Every time this command is run, the delay timer will be set to the value declared by the data bytes (1 to 99).
/dltm=45;   Delay timer set to 45

dlrg   **Delay timer range and control**

x =	timer displayed	*0*=display off	*1*=display on
y =	single shot timer	*0*=single shot	*1*=continuous
z =	timer range	*0*=seconds	*1*=minutes

Command format :
/dlrg=xyz; Valid values for **x,y,z** can be *0* or *1*

Examples.
A continuous running 4 minute timer with count displayed.
 /dlrg=111;   *where x=1 / y=1 / z=1*
 /dltm=4;   delay timer value

A single shot timer of 20 minute without display.
/dlrg=001;   *where x=0 / y=0 / z=1*
/dltm=20;   delay timer value

A continuous timer 0f 30 second with display ON.
/dlrg=110;   *where x=1 / y=1 / z=0*
/dltm=30;   delay timer value

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timv   User variable or fixed timer
This timer can either use the front panel "aux" control or can be preset with a value within the command file. Delays can be from 1 to 99 minutes or seconds depending on the range selected by the "**timr**" command (see below). Every time this command is used, the variable timer will be set to the value declared by the data bytes. **If the data byte is zero, the value set by the aux control will be used to set the timer 0 to 64.** Turning the aux control whilst the timer is running will reset the timer to the new value set by the control. If the control is set to zero, the timer will pause and will not run again until the control is set to anything other than zero.
Note, If you intend using the aux control to set a variable timer, you must use the " **/pbal=128;** " **preset balance command** in the control file to fix the balance to central.

timr   Variable timer range and control
x =   timer displayed   **0**=display off   **1**=display on
y =   single shot timer   **0**=single shot   **1**=continuous
z =   timer range   **0**=seconds   **1**=minutes
Command format : **/timr=xyz;** Valid values for **x,y,z** can be **0** or **1**

Examples.
A continuous running variable minute timer with count displayed.
/timr=111;   **where x=1 / y=1 / z=1**
/timv=0;   time set via "aux" control variable 0 to 64

A single shot fixed timer of 20 seconds with LCD display.
/timr=000;   **where x=0 / y=0 / z=0**
/timv=20;   timer set at value of 20

A single shot variable second timer without LCD display.
/timr=100;   **where x=1 / y=0 / z=0**
/timv=0;   time set via "aux" control variable 0 to 64

mint   Interrupt enable
If the command = **1** this will allow any other valid trip to cancel a currently playing file and run the new file. The interrupting file can be an .MP3 sound file or a command .txt file.
If the command = "**0**" any new trip will be ignored until a currently playing file has finished.
/mint=0;   No interrupt allowed
/mint=1;   Interrupts allowed
Note.
This command over-rides the "/**mint;**" command used within the Control file.

pint   Priority interrupt enable
If the command = **1** this will allow any other valid trip of a lower value to cancel a currently playing file and run the new file. The interrupting file can be an .mp3 sound file or a command .txt file.
If the command = **0** any new trip will be ignored until a currently playing file has finished. eg.
/pint=0;   No priority interrupt allowed
/pint=1;   Priority interrupts allowed
Note: This command over-rides the "**/pint** " command used within the Control file.

outp   Output control transistors
The transistor output **Control-Out** (pin B19) is available for external use as are **Sync-Out** (pin A18) and **Run-Out** (pin B18)if their normal functions are not required.
Note: You must use "**actl**" in your 'control.txt' file to disable the normal functions of the sync-out and run-out transistors.

x =   Sync-Out Pin A18   **0**=output OFF   **1**=output Active
y =   Run-Out Pin B18   **0**=output OFF   **1**=output Active
z =   Control-Out B19   **0**=output OFF   **1**=output Active
Command format : **/outp=xyz;** Valid values for **x,y,z** can be **0** or **1**

Output will remain in its last state unless the stop line is activated in

which case it will be de-activated. The rating of outputs is 150mA max @ 30 volts max.
DO NOT FORGET TO FIT A DIODE ACROSS ANY INDUCTIVE LOAD ON THE OUTPUT TRANSISTORS.

lims   First message of group
Set the lowest message number of a group of messages to be included for sequence, random or scroll .mp3 file playback.
/lims=10;   First message in group set to 010?name.mp3

lime   Last message of group
Set the highest message number of a group of messages to be included for sequence, random or scroll mp3 file playback.
/lime=20;   Last message in group set to 020?name.mp3

Note. When applying the above group limit commands they will not reset the random number generator or the sequencer unless the generators are outside the limits being applied, in which case the number generators will be set to the start limit value.

rndm   Play a random mp3
A random mp3 file from the group defined above will be selected and played. Data byte should be 1.
/rndm=1;   Play a random message within group set by **lims**
                   and **lime**.

sequ   Play mp3 file in sequence
This command controls the mp3 sequencer. The sequencer allows you to play a number of mp3 files in numeric ascending order.

/sequ=0;   Play next message in sequence
If the data byte set to **0**, the next mp3 file from the group defined by the "**lims**" and "**lime**" commands will be selected and played. After the last file in the group has been played, the sequence will restart from the first number in the defined group.

/sequ=1;   Reset sequencer only
If the data byte is set to **1**, the sequencer will be reset to the first message set by "**lims**". No message will play at this time.

/sequ=2;   Reset sequencer and play first mp3 in group
If the data byte is set to **2**, the sequencer will be reset to the first message set by "**lims**" and the first mp3 in the group will play.

goto   Goto line number
This command will cause the command reader to return to a previous line number in the command file to allow a repeat of previous commands to be run until the loop counter reaches zero. When the counter reaches zero, the command after '**goto**' will run. The loop command should be set before this command is used. Do not count blank lines within the command files.
/goto=4;   Return to line 4

loop   Loop counter
This command sets the number of loops that the "**goto**" command will make.
eg.
/loop=0;   Goto command will be ignored
/loop=1;   Goto command will loop once
/loop=254;   Goto command will loop 254 times
/loop=255;   Goto command will loop ad infinitum
Note: maximum loops with exit to other code = 254 times

plal   Loop current MP3
This command will cause the currently playing mp3 file to run continuously.
It will be cancelled by any other play type command such as "**play=x**" "**sequ=x**" "**rndm=x**" "**plal=0**" or "**stop=1**"
The command file ending will also cancel this mode.

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hold   Temporarily hold MP3
This command will fade out and pause a currently playing mp3 file if '**hold=1**'.
This allows another mp3 file to be played such as an announcement and then resume the original file once again. The original file will fade back in when "**hold=0**"

/hold=1;	Fade out and pause mp3
/hold=0;	Fade back in and play the held mp3

trip   Set value for trip input to wait for
This command allows you to set the value of a trip input to wait for or branch on used by the "**wtan**", "**wtor**" and "**cond**" commands.
/trip=0; Continue if all trips released
/trip=7; Continue if trip 7 activated

wtan   Wait for all selected items to finish
This command will wait at this point in the command file until **all** of the selected items are satisfied.
Command format: **/wtan=wxyz;** Valid values for **w,x,y,z** can be **0** or **1**

w=	Wait for trip input	**1**= Wait for trip input to equal value set by **trip** in command file If **trip** command is not used, **trip** will default to the value that started the command file.	**0**= ignore
x=	Wait for Mp3 end	**1** = Wait for MP3 end	**0** = ignore
y=	Variable timer time out.	**1**= Wait for time out	**0** = ignore
z=	Delay timer time out.	**1**= Wait for time out	**0** = ignore

Example: To wait for the delay timer and an MP3 to finish;
/wtan=0101;

wtor   Wait for any selected item to finish
This command will wait at this point in the command file until **any** of the selected items are satisfied.

Command format: **/wtor=wxyz;** Values for **w,x,y,z** can be **0** or **1**

w=	Wait of trip input	**1**= Wait for trip input to equal value set by **trip** in command file If **trip** command is not used, **trip** will default to the value that started the command file.	**0**= ignore
x=	Wait for Mp3 end	**1** = Wait for MP3 end	**0** = ignore
y=	Variable timer time out.	**1**= Wait for time out	**0** = ignore
z=	Delay timer time out.	**1**= Wait for time out	**0** = ignore

Example: To wait for either the variable timer or the MP3 to finish;
/wtan=0110;

cond   Conditional branch
This command allows you to branch to one set of commands if the conditions are true or a different set of commands if false. When using this command, you must use the **true=1** and **endc=1** commands also.
If the conditions are not met then the commands following **cond** and upto the next **true** command will be run followed by the commands after **endc**
If the conditions are met then the commands following **true** and upto the command named **endc** will be run. This command is not nestable.

/cond=wxyz;   Values for **w,x,y,z** can be **0** or **1**

w=	Check for trip input	**1**= Check for trip input equal to value set by **trip** in command file. If **trip** command is not used, **trip** will default to the value that started the command file.

x=	Check for Mp3 end.	**1**= Check condition	**0**= ignore
y=	Check variable timer	**1**= Check condition	**0**= ignore
z=	Check delay timer	**1**= Check condition	**0**= ignore

Example: **/cond=0100;** Will branch to "**true**" if the MP3 has finished

The following three commands must all appear in this relative order when using the *cond* command within a command file.

/cond=xxxx;	
/????=x;	Other commands
/????=x;	Other commands
/true=1;	
/????=x;	Other commands
/????=x;	Other commands
/endc=1;	

Example command file using *cond*

/loop=255;	
/play=2;	Play MP3 two
/wtan=0100;	Wait for end of MP3
/cond=1000;	Test if trip still held on. If true then goto "/true=1" cmd If false then goto "/dlrg=000;" cmd
/dlrg=000;	
/dltm=10;	Start 10 second timer
/wtan=0001;	Wait for timer to end
/play=3;	Play MP3 three
/wtan=0100;	Wait for mp3 to end then goto "/endc=1;"
/true=1;	
Start of alternative commands if trip is still active.	
/goto=2;	Play it again
/endc=1;	
)	

true   Marker for conditional command
This command is a marker to indicate the start of the commands to run if a conditional branch was true and the end of the commands to run if the conditional branch was false.
/true=1;

endc   Marker for conditional command
This command is a marker to indicate the end of the commands to run if a conditional branch was true.
/endc=1;

gseq   Multiple group message sequencing.
Multiple message sequencing allows upto 8 separate seuquencers to run with upto 10 messages in each.
gseq=2 plays messages 21-29 from trip 2
gseq=5 plays messages 51-59 from trip 5
Set sequencer start and end limits to the number of messages in each group being played at the start of each command file using the 'gseq' command. See below for syntax.
Note. The sequencers follow a common counter so if you play the first message in sequencer group 1, the next trip received will play the 2nd message in what ever group was selected with the trip.

mp3 files	cmd file limits		Trip input
011name.mp3	lims=1	lime=3	1
012name.mp3			
013name.mp3			
021name.mp3	lims=1	lime=3	2
022name.mp3			
023name.mp3			
031name.mp3	lims=1	lime=3	3
032name.mp3			
033name.mp3			

<u>Command files</u>

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<u>**Example command file using gseq. '002commandfile.txt'**</u>

/lims=1;	**first message number of group will be named 021name.mp3**
/lime=3;	**Last message number of group will be named 023name.mp3**
/gseq=2;	**Trip 2 is calling this group sequencer**
/wtan=0100;	**Wait for end of MP3 before exiting**
);	

cmnd　　　　　　**Switch to new command file**

Cancels and saves any playing mp3 and also saves current position of command file. Searches for new command file and if found will run the new command file. It is possible to manually hold the mp3 and release it in the new command file using the 'hold' command. Or hold it in the first command file and release the mp3 after returning back to the original command file.

If the new cmd file is non-existent, the next command line in the calling file will run.

This command also allows longer command files than 64 lines by daisy chaining them and also allows interaction etc.

If */cont=1* is set in the 'ctl' file the first cmd file will continue from where it Left from after the interrupting file has ended.

/cmnd=4;　　　　Jumps to command file 004xxxx.txt

autp　　　　　　**Modify or clear the auto run mode.**

This command modifies the '**/autp=?;**' command in the 'ctlxxx.txt' file which allows you to disable the automatically playing file.

/autp=1;

vlup　　　　　　**Increment volume by amount specified.**

This command will raise the volume by the amount specified following the command. This can be used to increase the volume while a trip line is held active by using the 'cond' command and 'trip' commands to create a conditional loop.

You must set **'vlmx'** in ctl.txt file to set the max limit for this command. The 'pvol' parameter must be set to the initial level for power up and it must not be set to 0.

/vlup=1;

vldn　　　　　　**Decrement volume by amount specified.**

This command will decrease the volume by the amount following the command. This can be used to decrease the volume while a trip line is held active by using the 'cond' command and 'trip' commands to create a conditional loop.

You must set **'vlmn'** in ctl.txt file to set the min limit for this command. The 'pvol' parameter must be set to the initial level for power up and it must not be set to 0.

/vldn=1;

Synchronisation multi-track applications

DMS3000 V2.20
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Syncronisation of Multiple DMS3000's

NOTE. PLEASE ADVISE GOLDING AUDIO LTD IF YOU INTEND TO SYNCHRONISE DMS3000'S TOGETHER AS WE MUST PERFORM A MINOR MODIFICATION TO THE PCB TO ALLOW SYNCHRONISATION.

The following conditions must be met when synchronising DMS3000 sound stores.
NOTE: You cannot use command files if running the DMS3000 in sync with each other.

1:   MP3 files must be 48KHz sample rate and 192 Kbps.
2:   Files must be exactly the same size.
         (right click and check properties for exact file size)
3:   The slave MMC cards must be the same capacity as the master MMC card and be the same format (fat12/16).
4:   All DMS3000's must be powered up and down together.
5:   Boards used must be **modified** DMS3000 iss4 boards or later.
6:   Trip must be at least 250mS duration.
7:   All inter board connections must be short and screened if possible.
8:   The sysclk must be a twisted pair between units.
9:   The last slave on the run must have the termination link fitted to the SYSCLK RS485 receiver. JP4 right pins.

It is strongly recommended that multi-track systems are built within rack mount card frames to ensure short cable lengths and synchronized power up.

Certain functions within the 'control.txt' file on both master and slave cards must also be set as active or inactive as outlined below:

Master card control.txt file.
These items must be active in the "control.txt" file.
/ncmd=1;   disable command file search
/mast=1;   enable master
These commands must be inactive.
/slav=0;   Not slave mode
/osbe=0;   disable one shot trips
/nbuf=0;   allow flush
/cont=0;   interrupted continue disabled
/scn1=0;   disable sequencer
/scnc=0;   disable sequencer
/fast=0;   disable fast interrupts
/self=0;   disable self interrupts
/bank=0;   disable banked message selection
/actl=0;   configure sync and run out to normal operation
/sfat=0;   don't save FAT entries
/pian=0;   disable piano mode
/r485=0;   no rs485 control
/wdog=0;   no watchdog
/16tp=0;   no multitrips
/autp=0;   no auto play
/scrl=0;   no scroll mode
/plal=0;   no auto loop

Slave cards control.txt file.
These items must be active in the "control.txt" file.
/ncmd=1;
/slav=1;
These commands must be inactive
/mast=0;   no master mode
/osbe=0;   disable one shot trips
/nbuf=0;   trip inputs N/O
/cont=0;   interrupted continue disabled
/scn1=0;   disable sequencer
/scnc=0;   disable sequencer

/fast=0;   disable fast interrupts
/self=0;   disable self interrupts
/bank=0;   disable banked message selection
/actl=0;   configure sync and run out to normal operation
/sfat=0;   don't save FAT entries
/pian=0;   disable piano mode
/r485=0;   no rs485 control
/wdog=0;   no watchdog
/16tp=0;   no multitrips
/autp=0;   no auto play
/scrl=0;   no scroll mode
/plal=0;   no auto loop

Signals between DMS3000 units.

SYSCLK (RS485) 10Mhz   pins A19 and A20
This is the decoder system clock from the master supplied to the slaves to prevent drift between boards. Essential for looped systems. Not essential for short tripped syncs

FRMCLK
This is a 41.6Hz clock from the master to the slaves to ensure that the mp3 files are all started at exactly the same time.

SYNC
Master card
This line outputs sync pulses at intervals to maintain synchronisation between sound stores.

Slave card
This line receives sync pulses from the master sound card at intervals to maintain synchronisation between sound stores.

RUN
Master Run out
This line goes low 1 frame before audio is output to tell the slaves to output audio on the next frame edge.

Slave Run in
This input receives a pulse indicating when to output audio.

TRIPS
Connect master and slave trips together and ensure the trip parameters match in the control file.
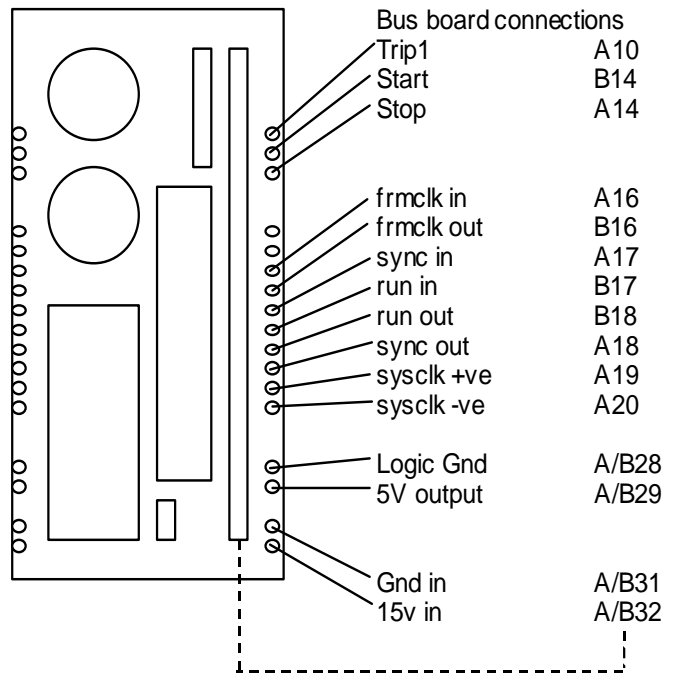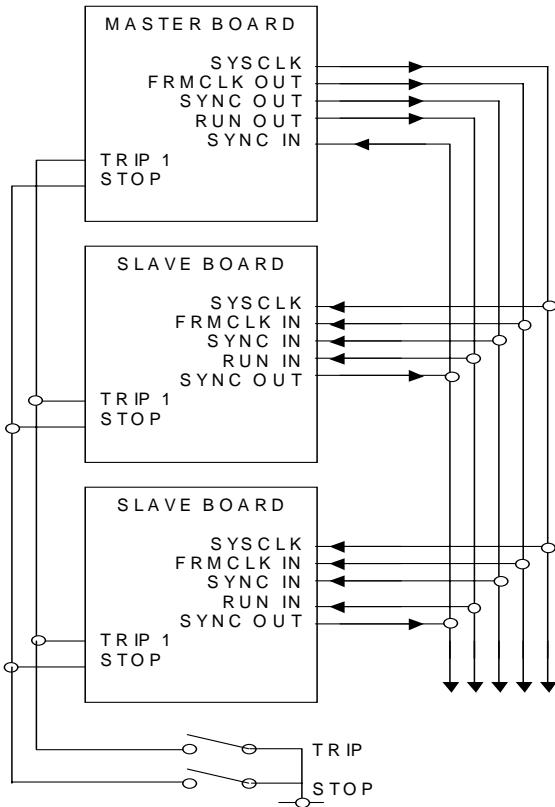
Synchronisation multi-track applications

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Digital Audio Playback Card

NEST UNIT SYSTEM
When multiple sound stores are required, boards can be housed in a 3U nest unit. All required connections are presented to a bus board as detailed below.

Bus board connections

Trip1	A10
Start	B14
Stop	A14
frmclk in	A16
frmclk out	B16
sync in	A17
run in	B17
run out	B18
sync out	A18
sysclk +ve	A19
sysclk -ve	A20
Logic Gnd	A/B28
5V output	A/B29
Gnd in	A/B31
15v in	A/B32

Bus board connections
The diagram below illustrates how Master and Slave sound stores are connected together in synchronised multi-track applications.

Control and Command File Examples

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Control file example:

The following control file sets default values to all the DMS 3000's features. The file can be modified as a particular function is enabled. This file must be present on all MMC cards used with sound stores.

DEFAULT CONTROL.txt FILE

Command	Description
/ncbe=00000000;	normally closed enable bits 87654321
/osbe=00000000;	one shot enable bits 87654321
/cont=0;	Continue mp3 or cmd file after interrupt if 1
/biny=0;	Binary trips enable if 1
/pint=0;	Priority trips, lower trips have priority if 1
/mint=0;	any trip interrupt if 1
/pvol=0;	preset volume 0=variable 255=max
/ptre=0;	preset treble 0=variable 127=flat
/pbas=0;	preset bass 0=variable 127=flat
/pbal=0;	preset balance 0=variable 127=midway
/mono=0;	mono if 1
/tstb=1;	test push button file access number.
/tnat=0;	Over-ride tone attenuator if 1-7
/ncmd=0;	Prevent command file search if 1
/self=0;	Allows message to be interrupted by itself
/fast=0;	Enables fast message access for scratching etc. SEE MANUAL
/nbuf=0;	Prevents decoder buffer flush in fast mode when Interrupting. SEE MANUAL
/fixl=0;	Fix right output only to max if 1
/fixr=0;	Fix left output only to max if 1
/scn1=0;	Trip scanning runs once only if 1
/scnc=0;	Trip scanning runs continuously if 1
/bank=0;	Banked trip inputs if 1. Maximum of 128 files access
/wdog=0;	Card checked every 5 seconds in standby if 1
/actl=0;	Releases RUN & SYNC outputs for user control in command files
/sfat=0;	Saves fat table in eeprom if 1. IMPORTANT SEE MANUAL
/mast=0;	Configures DMS3000 as master in multitrack systems if 1. SEE MANUAL
/slav=0;	Configures DMS3000 as slave in multitrack systems if 1. SEE MANUAL
/pian=0;	Piano style trip inputs if 1. SEE MANUAL
/orun=0;	Overrun time delay for piano mode if 1-10.
/fade=5;	Slow fade
/fado=5;	Fade out speed from V2.18
/16tp=0;	16 direct trip inputs
/autp=0;	Play file on power up.
/pria=1;	Primary board address for rs485
/seca=1;	Secondary board address for rs485
/r485=0;	Enable rs485 control.
/scrl=0;	preselect mp3s using sync and run inputs
/plal=0;	Play any selected mp3 continuously
)	

Note: Loop mode with no connections required.
If you wish a file to run on loop from power up without making any trip connections, set the normally closed bit according to the file number being used for the message and leave the trip input open.

Help
The first command must be on the first line
Subsequent commands must be on individual lines
All commands must start with '/' and end with ';'
There must be an = sign after the command and before the data
There must not be any spaces within the command string
All commands are lower case
Data is decimal 0 to 255 (except trip bitmaps)

Leading zeroes are not required in data bytes
The last command must be followed by a ')' on the next line
You may write anything after the colon except '/' or ')' or ';'

Command File Examples.

EXAMPLE 1
Pir triggered message with variable lock out timer to prevent retriggering.

Command	Description
/timr=000;	Seconds timer, run once
/play=1;	Play 001xxxx.mp3
/wtan=0100;	Wait for end of mp3
/timv=0;	Start timer set by aux control
/wtan=0010;	Wait for end of timer
)	End of command file

Note
Don't forget to set the normally closed bit in the "ctl????.txt" file if the PIR is a standard NC type.
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EXAMPLE 2
This file plays a warning message followed by a variable delay and then plays an evacuation message. The file will end and the messages stopped if the contact closure is removed.

Scenario:
Staged fire evacuation system.

On a contact closure from a fire alarm panel, play a message to warn management of a possible fire situation. After the message has played, wait a defined time and then play an evacuation message continuously.

When the contact closure opens, the messages will stop playing and the command file will end.

Command	Description
/loop=255;	unlimited "goto" jumps
/trip=0;	look for trip release in wait and condition cmds
/timr=0101;	one shot minutes timer with display
/play=1;	play message 1
/cond=1000;	check for trip release
/goto=11;	if trip not released, go check for mp3 end
/true=1;	
/stop=1;	Trip released so stop message playing
/goto=23;	goto end of command file
/endc=1;	end of condition commands
/cond=0100;	check for mp3 end
/goto=5;	go back to other condition test if not ended
/true=1;	
/timv=0;	start variable timer if mp3 end
/endc=1;	end of condition commands
/wtor=1010;	wait for timer or trip release
/cond=1000;	check for trip release
/play=2;	play message 2 if trip still active
/plal=1;	play message continuously
/wtan=1000;	wait for trip release
/true=1;	
/stop=1;	stop message if trip gone
/endc=1;	
)	

Control and Command File Examples

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EXAMPLE 3
This file will play message 1 every 10 minutes.

/loop=255;	Run forever once started
/dlrg=011;	Minutes timer, run continuous
/dltm=10;	Start 10 minute timer
/play=1;	Play message 1
/wtan=0101;	Wait for end of mp3 and timer end
/goto=4;	Repeat
)	End of command file

EXAMPLE 4
This file will play a message from a group of 6 messages in sequence
each time it is tripped.

/loop=255;	Infinite loops
/lims=1;	First message of group
/lime=6;	Last message of group
/sequ=1;	Reset sequencer
/sequ=0;	Play a message in sequence group
/wtan=1100;	Wait for end of mp3 and trip input
/goto=5;	Loop back
)	End of command file

EXAMPLE 5
I want to fade up a dimmer then play a message, fade down the dimmer
and then go back to standby.
This command file will turn on the output transistor to call an external
relay. Wait for 2 seconds. Play a message then turn off the relay and wait
a further 2 seconds before exit.

/dlrg=000;	Delay range is run once seconds timer
/outp=001;	Turn on the control transistor
/dltm=2;	Start 2 second timer
/wtan=0001;	Wait for timer to end
/play=1;	Play the message
/wtan=0100;	Wait for end of mp3
/outp=000;	Turn off transistor
/dltm=2;	Start 2 second timer
/wtan=0001;	Wait for timer to end
)	Exit

EXAMPLE 6
This file will play a random message from 8 messages with a variable
time delay between. It will play 25 messages then stop.
To play forever, set "/loop=255;"

/loop=24;	Number of loops
/lims=1;	Start message of group
/lime=8;	End message of group
/timr=000;	Variable seconds timer, runs once,
/rndm=1;	Play random message
/wtan=0100;	Wait for end of mp3
/timv=0;	Start timer and wait for time out. Time set by aux pot on front of board
/wtan=0010;	Wait for end of timer
/goto=5;	Repeat
)	End of command file

Don't forget to set "/pbal=127;" in the "ctl????.txt" file to allow the balance control to be used for the variable timer.