YAMAHA

DME Remote Control Protocol Specifications

Ver. 3.1 2nd edition

* This protocol document relates to the DME64N, DME24N, and DME Satellite with DME firmware V1.2 or later.

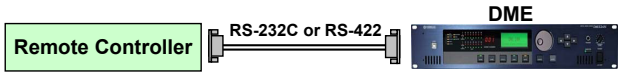
commercial audio

YAMAHA

1. Setup

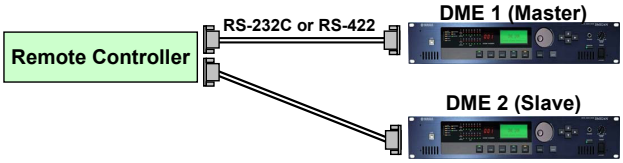
1.1 Connection

To control one DME

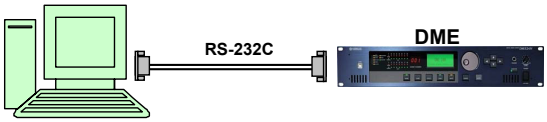


To control multiple DMEs

Multiple DMEs can be controlled individually by connecting them as shown below.

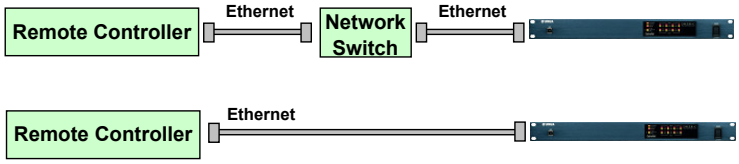


To debug the Remote Controller with a serial control application on a PC such as Hyper Terminal

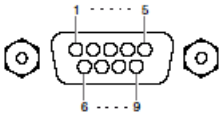


Connect the Remote controller/PC to the REMOTE connector on the rear panel of the DME using a RS-232C or a RS-422 crossing cable (D-sub; 9 pin female-to-female).

To use the NETWORK connector for Remote Control with the DME communication protocol
(Not supporting DME64N/24N V3.5 or earlier)



REMOTE connector pin assignment



RS-232C

Pin	Name	In/Out	Pin	Name	In/Out
1	Not in use	—	6	DSR	In
2	RxD	In	7	RTS	Out
3	TxD	Out	8	CTS	In
4	DTR	Out	9	Not in use	-
5	GND	—			

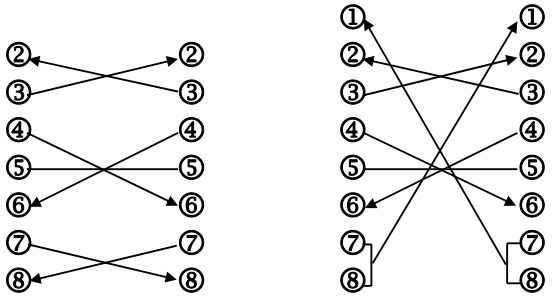
The pin 4 and 6 are internally shorted.
The pin 7 and 8 are internally shorted.

RS-422

Pin	Name	In/Out	Pin	Name	In/Out
1	Not in use	—	6	Rx+	In
2	Rx-	In	7	RTS	Out
3	Tx-	Out	8	CTS	In
4	Tx+	Out	9	Not in use	-
5	GND	—			

The pin 7 and 8 are internally shorted.

Available crossover cable wirings



(interlink cross)

1.2 Remote Controller Setting

The DME series can be controlled from an external device via the REMOTE connector or Ethernet (NETWORK connector; not supporting DME64N/24N V3.5 or earlier).
The Remote Controller settings for each connection are indicated as below.

Settings for control via the REMOTE connector

Baud Rate	: 38400 bps
Data	: 8bit
Parity	: none
Stop Bit	: 1bit
Flow Control	: none

Settings for control via Ethernet (the NETWORK connector; not supporting DME64N/24N V3.5 or earlier)

IP Address: Specify the IP address of the DME Satellite to be controlled.
IP Port No.: Specify the IP Port No. that is set to the DME Satellite to be controlled.

1.3 DME Setting

The DME series can be controlled from an external device via the REMOTE connector or Ethernet (NETWORK connector; not supporting DME64N/24N V3.5 or earlier).
The DME series settings for connection via the both connector are indicated as below.

1.3.1. DME series V3.8 or later

To display the setup window

From DME Designer
After going online between DME Designer and the DME series, open the [Hardware] menu -> [Utility] -> [Remote] page of DME Designer, then set the DME Remote Control parameter.

From the DME panel display (only for DME64N/24N)
Hold down the [Utility] button for three seconds to show the Utility display, then press the [Utility] button repeatedly until the Remote page is shown. On the page, set the Rmt Ctrl parameter.

To set the parameter values

For control via the REMOTE connector
Select "Remote (RS-232C)" to control the DME via the RS-232C connection.
Select "Remote (RS-422)" to control the DME via the RS-422 connection.
For only the DME Satellite, set the DIP switch (leftmost) on the rear panel to "RS-232C" (up) or "RS-422" (down) while the power is off as well. If the setting is changed, the DME Satellite needs to be restarted.

For control via Ethernet (the NETWORK connector)
Select "Network".
Generally the IP Port No. does not have to be set. However, it needs to be changed when the network consists of another network device than the DME series and the network device has the same IP Port No. as the DME series. Changing the port automatically resets the network connection on the DME, which means that DME Designer needs to be restarted.

1.3.2. DME64N/24N V3.5 or earlier (not supporting the control via Ethernet)

To display the setup window

From DME Designer
After going online between DME Designer and the DME series, open the [Hardware] menu -> [Utility] -> [Misc] page of DME Designer, then set the Remote parameter.

From the DME panel display
Hold down the [Utility] button for three seconds to show the Utility display, then press the [Utility] button repeatedly until the Misc page is shown. On the page, select the Remote parameter.

To set the parameter values

Select "Remote Ctrl (232C)" to control the DME via the RS-232C connection.
Select "Remote Ctrl (422)" to control the DME via the RS-422 connection.

1.3.3. DME Satellite V3.5 or earlier

To display the setup window

After going online between DME Designer and the DME series, open the [Hardware] menu -> [Utility] -> [Misc] page of DME Designer.

To set the parameter values

For control via the REMOTE connector
Select "Remote Ctrl (232C)" as the Remote parameter to control the DME via the RS-232C connection.
Select "Remote Ctrl (422)" as the Remote parameter to control the DME via the RS-422 connection.
Set the DIP switch (leftmost) on the rear panel to "RS-232C" (up) or "RS-422" (down) while the power is off as well. If the setting is changed, the DME needs to be restarted.

For control via Ethernet (the NETWORK connector)
Check the checkbox for [Remote Control via Ethernet].
Generally the IP Port No. does not have to be set. However, it needs to be changed when the network consists of another network device than the DME series and the network device has the same IP Port No. as the DME series. Changing the port automatically resets the network connection on the DME, which means that DME Designer needs to be restarted.

1.4 DME Designer Settings

A parameter or level meter should be registered in each index of the "Remote Control Setup List" dialog on the DME Designer to control the parameter or obtain the level meter. DME will identify a parameter or level meter to be controlled by including the index* in a command.

*** What is an index?**
An index is the row number in the Remote Control Setup List dialog. You will see each index number at the left column of the list.

1.4.1 DME Parameter Control

Register a DME parameter to be controlled.

An example:
To control ON/OFF of a Fader component and a Source Selector component:

Remote Control Setup List dialog

	Function	Parameter	Min	Max	Type
1	Parameter Value Edit	Component:Fader:Fader:1:1:On	OFF	ON	--
2	Parameter Value Edit	Component:Source Selector:Position:1:1:Position	1	4	--

Function: "Parameter Value Edit" is chosen.
Parameter: A parameter to be controlled is chosen.

To control a fader parameter, choose either "Curve Table method" or "dB method" for a parameter value in the Type column.

Curve Table Method
A method to assign a fader value from 0 to 1023. When Remote Controller transmits a value from 0 to 1023, DME will set the value (dB) converted by the internal fader curve table to a fader. Adopting this method will enable the user to control a fader easily without considering a fader dB curve.

dB Method
A method to assign a fader in dB units.

An example:
To control a Fader component level in accordance with a curve table and dB method:

Remote Control Setup List dialog

	Function	Parameter	Min	Max	Type
3	Parameter Value Edit	Component:Fader:Fader:1:1:Level	-INFINITYdB	10.00dB	Curve Table
4	Parameter Value Edit	Component:Fader:Fader:2:1:Level	-INFINITYdB	10.00dB	dB

Function: "Parameter Value Edit" is chosen.
Parameter: A parameter to be controlled is chosen.
Type: An assigning method for a fader parameter is chosen.

1.4.2 Obtaining DME Level Meter

Register a component for which the user would like to obtain a level meter value.

An example:
To obtain a level meter for a fader component and a Cascade Output component:

Remote Control Setup List dialog

	Function	Parameter	Min	Max	Type
5	Level Meter	Component:Meter	--	--	--
6	Level Meter	Component:Cascade Output	--	--	--

Function: Level Meter is chosen.
Parameter: A component for which the user would like to obtain a level meter is chosen.

2. Command List

Commands Notified to Remote Controller from the DME

No.	Category	Command	Definition
1	Parameter Control	PRM	To notify a parameter change
2		VOL	To notify a parameter change
3	Scene Control	SCN	To notify scene recall
4		CSN	To notify a scene recall number
5		SNM	To notify a scene name
6	Level Meter	MTR	To notify a meter position
7	Mute Control	MUTE	To notify mute set/cancel

Commands for Controlling the DME

No.	Category	Command	Definition
8	Parameter Control	SPR	To set a parameter
9		SVL	To set a parameter (curve table method)
10		RSPR	To relatively set a parameter
11		RSVL	To relatively set a parameter (curve table method)
12		GPR	To obtain a parameter
13		GVL	To obtain a parameter (curve table method)
14	Scene Control	RSC	To recall a scene (assigning a scene number)
15		RRSC	To recall a scene (assigning a relative value)
16		GCS	To obtain a current scene number
17		GSN	To obtain a scene name
18	Level Meter	GMT	To obtain a level meter position
19		GCMT	To set cyclical obtaining of a level meter position
20		QCMT	To stop cyclical obtaining of a level meter position
21		SMC	To set the cyclical period for obtaining a level meter position
22	Mute Control	SMUT	To set/cancel mute
23		GMUT (*1)	To obtain mute condition
24	GPI Control	SGO	To control GPI OUT
25	WAV FILE PLAYER Control	PWF	To play back a file
26		SWF (*1)	To stop playback of a file

Utility Commands

No.	Category	Command	Definition
27	For debug	ECHO	To set/cancel echo back

*1 Available only for DME firmware V3.11 or later

3. Command Specifications

3.1 Basic Command Specifications

A command type transmitted between the DME and the Remote Controller is in the following format:

<Command name> <Option 1> <Option 2> … <Option n><Line feed>

- LF (0 x 0A) will be needed at the end of a command as a line feed code.
- At least one space will be needed between a command name and an option or between options.
- A command must consist of only ASCII character strings. Other character strings cannot be used.
- Optional character strings for parameter values are shown in the following table.

Values	Character strings
-Inf	-13801
-18dB	-1800
-6.5dB	-650
0dB	0
10dB	1000
2kHz	2000
400Hz	400
Pan L 63	-63
Pan Center	0
Pan R 63	+63
ON	1
OFF	0
REVERSE	1
NORMAL	0

Character strings such as "ON" or "HARD" are not returned as a parameter value.

- A fader parameter value will take the following character strings using a curve table method.
(See chapter 1.4.1 for details on curve table methods and the Appendix at the end for values in dB and the character strings.)

A table for a fader of which maximum is 0 dB

Values	Character strings
-Inf	0
-60dB	173
-40dB	323
-30dB	423
-20dB	623
-10dB	823
0dB	1023

A table for a fader of which maximum is 10 dB

Values	Character strings
-Inf	0
-60dB	123
-40dB	223
-30dB	323
-20dB	423
-10dB	623
0dB	823
10dB	1023

3.2 Command Notified to Remote Controller from the DME

3.2.1 Parameter Control Command

1) PRM: Used to change a parameter other than a fader parameter, and a fader using a dB method.
2) VOL: Used to change a fader using a curve table method.

Command	Option
PRM	0 [index] [parameter value]
VOL	0 [index] [level value]

The command names stand for "Parameter" and "Volume" respectively.

These commands will be sent from the DME when a parameter registered in Remote Control Setup List of DME Designer is changed

- The first option will always take "0." It can be ignored for the controller; it is reserved for future extensions to the command.
- [index], [parameter value] and [level value] should have appropriate character strings.
- A space will be needed between the command and the option, and between the options.

E.g.) A character string sent from the DME when a parameter for an index of 3 (using a dB method) is changed to -20dB.
PRM 0 3 -2000

A character string sent from the DME when a parameter for an index of 4 (using a curve table method, 10dB at the maximum) is changed to -20dB.
VOL 0 4 423

3.2.2 Scene Control Command

3) SCN: Used when a scene is recalled.

Command	Option
SCN	0 [scene number]

The command name stands for "Scene."

The DME will send the command when a scene is recalled.

- The first option will always take "0." It can be ignored for the controller; it is reserved for future extensions to the command.
- [scene number] will have an appropriate character string.
- A space will be needed between the command and the option, and between the options.

E.g.) A character string sent to the controller from the DME when Scene 8 is recalled.
SCN 0 8

3.2.3 Mute Control Command

7) MUTE: Used when mute condition is changed

Command	Option
MUTE	0 [ON/OFF]

The DME will send the command when Mute ON/OFF is switched.

- The first option will always take "0." It can be ignored for the controller; it is reserved for future extensions to the command.
- The second option will have a character string, either "ON" or "OFF".
- A space will be needed between the command and the option, and between the options.

E.g.) A character string sent to the controller from the DME when Mute is switched off.
MUTE 0 OFF

3.3 Command for the DME Control

3.3.1 Parameter Control Command

8) SPR: Used to set a parameter other than a fader parameter, and a fader using a dB method.
9) SVL: Used to set a fader using a curve table method.

Command	Option	The DME's ACKs when it succeeds	The DME's ACKs when it fails
SPR	0 [index] [parameter value]	SPR OK PRM 0 [index] [parameter value]	SPR ERR
SVL	0 [index] [curve value]	SVL OK VOL 0 [index] [level value]	SVL ERR

The command names stand for "Set Parameter" and "Set Volume" respectively.

- The first option will always take "0." It is reserved for future extensions to the command.
- [index], [parameter value] and [curve value] should have an appropriate number by a character string.
- One or more spaces are needed between the command and the option, and between the options.

E.g.) To change a parameter of an index of 5 to -30dB using a dB method.
SPR 0 5 -3000

To change a parameter of an index of 6 to -30dB using a curve table method (10dB at the maximum).
SVL 0 6 323

- The DME will return two lines of character strings if it succeeds.
  The first line should be a character string, either "SPR OK" or "SVL OK".
  For details on the character strings "PRM" and "VOL" in the second line, see chapter 3.2.1.
  The first line can be ignored; check the second line to find the value after a parameter is changed for a controller.
- The DME will return a character string of either "SPR ERR" or "SVL ERR" if it fails.

E.g.) ACK when it succeeds in changing a parameter of an index of of 5 to -30dB using a dB method.
SPR OK
PRM 0 5 -3000

ACK when it fails in changing a parameter of an index of of 5 to -30dB using a dB method.
SPR ERR

ACK when it succeeds in changing a parameter of an index of of 6 to -30dB using a curve table method (10 dB at the maximum).

SVL OK
VOL 0 6 323

ACK when it fails in changing a parameter of an index of of 6 to -30dB using a curve table method (10 dB at the maximum).

SVL ERR

10) RSPR: Used to relatively set a parameter other than that for a fader, and a fader using a dB method.
11) RSVL: Used to relatively set a fader using a curve table method.

Command	Option	The DME's ACKs when it succeeds	The DME's ACKs when it fails
RSPR	0 [index] [relative parameter value]	RSPR OK PRM 0 [index] [parameter value]	RSPR ERR
RSVL	0 [index] [relative curve value]	RSVL OK VOL 0 [index] [level value]	RSVL ERR

The command names stand for "Relatively Set Parameter" and "Relatively Set Volume" respectively.

- The first option will always take "0." It is reserved for future extensions to the command.
- [index] should have an appropriate number by a character string.
- An appropriate relative value should be given by a character string to [relative parameter value] and [relative level value].
- One or more spaces are needed between the command and the option, and between the options.

E.g.) When changing a parameter of an index of 5 to +30dB using a dB method.

RSPR 0 5 3000

When changing a parameter of an index of 5 to -30dB using a dB method.

RSPR 0 5 -3000

When increasing a parameter of an index of 6 by 10 steps using a curve table method.

RSVL 0 6 10

When decreasing a parameter of an index of 6 by 10 steps using a curve table method.

RSVL 0 6 -10

- The DME will return two lines of character strings if it succeeds.
  The first line will be a character string; "RSPR OK" or "RSVL OK".
  For details on the character strings "PRM" and "VOL" in the second line, see chapter 3.2.1.
  Ignore the first line but see only the second line to find a value after a parameter is changed for a controller.
  A value returned in the second line is the changed value (absolute quantity). Even a relative setting will not return the quantity changed.

- If it fails, the DME will return one line of a character string, either "RSPR ERR" or "RSVL ERR."

E.g.) ACK when it succeeds in changing a parameter of an index of 5, which is originally -20dB, to -30dB using a dB method.

RSPR OK
PRM 0 5 -5000

ACK when it fails in changing a parameter of an index of 5, which is originally -20dB, to -30dB using a dB method.

RSPR ERR

ACK when it succeeds in decreasing a parameter of an index of 6, which is originally at -20dB, by 10 steps in a curve table method (10dB at the maximum).

RSVL OK
VOL 0 6 413

ACK when it fails in decreasing a parameter of an index of 6, which is originally at -20dB, by 10 steps using a curve table method (10dB at the maximum).

RSVL ERR

12) GPR: Used to obtain a parameter using a dB method.
13) GVL: Used to obtain a parameter using a curve table method.

	Option	The DME's ACKs when it succeeds	The DME's ACKs when it fails
GPR	0 [index]	GPR OK PRM 0 [index] [parameter value]	GPR ERR
GVL	0 [index]	GVL OK VOL 0 [index] [level value]	GVL ERR

The command names stand for "Get Parameter" and "Get Volume" respectively.

- The first option will always take "0." It is reserved for future extensions to the command.
- [index] will have an appropriate number converted to a character string.
- One or more spaces are needed between the command and the option, and between the options.

E.g.) To obtain a parameter of an index of 5 using a dB method.
GPR 0 5

To obtain a parameter of an index of 6 using a curve table method.
GVL 0 6

- The DME will return two lines of character strings if it succeeds.
  The first line will have a character string: "GPR OK" or "GVL OK".
  For details on the character strings "PRM" and "VOL" in the second line, see chapter 3.2.1.
  The first line can be ignored; check the second line to find the parameter value for a controller.
- The DME will return a one-line character string of either "GPR ERR" or "GVL ERR" if it fails.

E.g.) ACK when a parameter of an index of 5 is obtained using a dB method and -30dB is returned.
GPR OK
PRM 0 5 -3000

ACK when it fails in obtaining a parameter of an index of 5 using a dB method
GPR ERR

ACK when a parameter of an index of 6 is obtained using a curve table method (10dB at the maximum) and -30dB is returned.
GVL OK
VOL 0 6 323

ACK when it fails in obtaining a parameter of an index of 6 using a curve table method (10dB at the maximum).
GVL ERR

3.3.2 Scene Control Command

14) RSC: Used to recall a scene.

	Option	The DME's ACKs when it succeeds	The DME's ACKs when it fails
RSC	0 [scene number]	RSC OK SCN 0 [scene number]	RSC ERR

The command name stands for "Recall Scene".

- The first option will always take "0." It is reserved for future extensions to the command.
- [scene number] will have an appropriate number converted to a character string.
- One or more spaces are needed between the command and the option, and between the options.

E.g.) To recall Scene 4:
RSC 0 4

- The DME will return two lines of character strings if it succeeds.
  The first line will have a character string, "RSC OK".
  For details on the character string "SCN" in the second line, see chapter 3.2.1.
  The first line can be ignored; check the second line to find if a scene is recalled for a controller.
- The DME will return a one-line character string of "RSC ERR" if it fails.
  (The DME will return ERR if the Remote Controller sends the RSC command for an unsaved scene.)

E.g.) ACK when it succeeds in recalling Scene 4:
RSC OK
SCN 0 4

ACK when it fails in recalling Scene 4:
RSC ERR

15) RRSC: Used to relatively recall a scene.

	Option	The DME's ACKs when it succeeds	The DME's ACKs when it fails
RRSC	0 [relative scene number]	RRSC OK SCN 0 [scene number]	RRSC ERR

The command name stands for "Relatively Recall Scene".

This command will perform relative scene recall. For example, it will enable the user to recall "the next scene" and "the second to last scene".

- The first option will always take "0." It is reserved for future extensions to the command.
- An appropriate number should be given by a character string to [relative scene number]. A plus sign can be omitted but not a minus.
- One or more spaces are needed between the command and the option, and between the options.

E.g.) To recall the next scene:
RRSC 0 1

To recall the second to last scene (two scenes prior to current one):
RRSC 0 -2

- The DME will return two lines of character strings if it succeeds.
  The first line will have the character string "RRSC OK."
  For details on the character string "SCN" in the second line, see chapter 3.2.1.
  The first line can be ignored; check the second line to find if a scene is recalled for a controller.
  A scene number after scene recall should be returned in the second line (absolute quantity).
  Even relative recall will not return the quantity changed.
- The DME will return a one-line character string of "RRSC ERR" if it fails.

E.g.) ACK when the current scene is "3" and it succeeds in recalling the next scene.
RRSC OK
SCN 0 4

ACK when the current scene is "3" and it fails in recalling the next scene.
RRSC ERR

16) GCS: Used to obtain a current scene number.

	Option	The DME's ACKs when it succeeds	The DME's ACKs when it fails
GCS	0	GCS OK CSN 0 [scene number]	GCS ERR

The command name stands for "Get Current Scene".

This command will enable the user to obtain a scene number currently being recalled for the DME using the controller.

- The option will always take "0." It is reserved for future extensions to the command.
- One or more spaces will be needed between the command and the option.

E.g.) To obtain a current scene number:
GCS 0

- The DME will return two lines of character strings if it succeeds.
  The first line will have a character string, "GCS OK".
  The second line will have a character string, "SCN [scene number]", and the [scene number] takes either a scene number from 1 to 999 or number 0.
  The scene number 0 indicates that a scene has not been recalled (no current scene).
  The first character string can be ignored for the controller.
- The DME will return a one-line character string of "GCS ERR" if it fails.

E.g.) ACK when it returns Scene 4 by obtaining a current scene number.
GCS OK
CSN 0 4 (The character string stands for "Current Scene Number".)

ACK when "no scene" is returned by obtaining a current scene number:
GCS OK
CSN 0 0

ACK when it fails in obtaining a current scene number.
GCS ERR

17) GSN: Used to obtain a scene name.

	Option	The DME's ACKs when it succeeds	The DME's ACKs when it fails
GSN	0 [scene number]	GSN OK SNM 0 [scene number] [a scene name]	GSN ERR

The command name stands for "Get Scene Name."

This command will enable the user to obtain a DME scene name of a specified number from the controller.

- The first option will always take "0." It is reserved for future extensions to the command.
- [scene number] will have an appropriate number converted to a character string.
- One or more spaces are needed between the command and the option, and between the options.

E.g.) To obtain Scene 4 name:
GSN 0 4

- The DME will return two lines of character strings if it succeeds.
  The first line will have the character string "GSN OK."
  The second line will have a scene number from 1 to 999 for the [scene number] and a new name for the [a scene name] by a character string.
  The first character string can be ignored for the controller.
  A scene name that is blank looks as a scene name is not returned.
- The DME will return one line of a character string; "GSN ERR" if it fails.

E.g.) ACK when a character string, "Scene 004" is returned by obtaining a name of Scene 4.
GSN OK
SNM 4 Scene 004 (The character string stands for "Scene NaMe".)

ACK when a character string, " " is returned by obtaining a name of Scene 4.
GSN OK
SNM 4

ACK when it fails in obtaining a name of Scene 4.
GSN ERR

3.3.3 Command to Obtain Level Meter

18) GMT: Used to obtain a level meter position.

	Option	The DME's ACKs when it succeeds	The DME's ACKs when it fails
GMT	0 [index] [a meter value]	GMT OK MTR 0 [index] CUR [CH1] … HOLD [CH1] …	GMT ERR

The command name stands for "Get Meter."
CUR stands for "Current meter value".
HOLD stands for "Peak hold value".

This command will enable the user to obtain a DME meter value.

- The first option will always take "0." It is reserved for future extensions to the command.
- [index] will have an appropriate number converted to a character string.
- The meter number to be obtained should be assigned to [a meter number].
  A value of "1" or greater should be assigned to a meter number to obtain specific meter data.
  See "DME Communication Protocol Specifications" for the meter numbers for each component.
  A value of "0" should be assigned to obtain meter data for every channel.
- One or more spaces are needed between the command and the option, and between the options.

E.g.) To obtain a level meter for a specific channel (index 1, parameter number 3)
GMT 0 1 3

E.g.) To obtain a level meter for every channel (index 1, parameter number 0)
GMT 0 1 0

- The DME will return two lines of character strings if it succeeds.
  The first line will have a character string of "GMT OK."
  The second line will have a character string of "MTR [index] CUR [CH1] [CH2] … HOLD [CH1] [CH2] … ".
  The first character string can be ignored for the controller.

  The same number of current meter levels as that of channels comes after CUR in the second line.
  The same number of current meter hold levels as that of channels comes after HOLD in the second line.
  The meter and hold level number ranges from -13801 to 1.
  The following table shows the relationship between character strings and levels sent from the DME.

Character strings	Level
-13801	-Inf
-13800	-138dB
-10000	-100dB
-8000	-80dB
-6000	-60dB
-4000	-40dB
-2000	-20dB
0	0dB
1	Over

To detect if an input level to the Audio Detector exceeds the threshold

If an input level to the Audio Detector exceeds the threshold, the meter level becomes "Over," which is different from conventional meter operation. Obtaining the character string "MTR 0 1 0 CUR **1** HOLD 1" indicates that the input level exceeds the threshold.

- The DME will return the one-line character string "GMT ERR" if it fails.

E.g.) ACK when it succeeds in obtaining a meter of an index of 5 (four channels) (The numbers below are examples)

GMT OK

MTR 0 5 CUR -13801 -2000 -3000 -13801 HOLD -13801 -1500 -2800 -13801

(The character string stands for "MeTeR".)

ACK when it succeeds in obtaining a meter of an index of 5 (eight channels) (The numbers below are examples)

GMT OK

MTR 0 5 CUR -1800 -2300 -200 1 -300 0 -13801 -13801 HOLD -1500 -2000 -0 1 -200 1 -13801 -13801

ACK when it fails in obtaining a meter of an index of 5 (four channels)

GMT ERR

19) GCMT: Used to set cyclical obtaining of a level meter.

	Option	The DME's ACKs when it succeeds	The DME's ACKs when it fails
GCMT	0 [index] [a meter value]	GCMT OK MTR 0 [index] CUR [CH1] … HOLD [CH1] …	GCMT ERR

The command name stands for "Get Cyclic Meter".
CUR stands for "Current meter value".
HOLD stands for "Peak hold value".

Registering a meter number to be obtained using this command will send the level meter value cyclically from the DME.
The level meter value will be sent until it is cancelled with a QCMT command described later. Up to 100 meters can be registered.

- The first option will always take "0." It is reserved for future extensions to the command.
- The same as [index] GMT.
- The same as [a meter number] GMT.
- One or more spaces are needed between the command and the option, and between the options.

E.g.) To register cyclical obtaining of a level meter for a specific channel (index 1, parameter number 3)

GCMT 0 1 3

E.g.) To register cyclical obtaining of a level meter for every channel (index 1, parameter number 0)

GCMT 0 1 0

- The DME will return two lines of character strings if it succeeds.
  The first line will have a character string of "GCMT OK."
  The second line will have the same character string as ACK when obtaining a meter using GMT.
- The DME will return a one-line character string of "GCMT ERR" if it fails.

E.g.) An example of the DME transmit and receive data when assigning a specific channel (index: 1, meter number: 3)

GCMT 0 1 3

MTR 0 1 CUR -1800 HOLD 0

: (Remote Controller will receive meter data cyclically from the DME.)

MTR 0 1 CUR -1700 HOLD 0

E.g.) An example of transmit and receive data when assigning all channels (index 1, meter number: 0)

GCMT 0 1 0

MTR 0 1 CUR -1800 -2300 -200 1 -300 0 -13801 -13801 HOLD 0 0 0 0 0 10

: (Remote Controller will receive meter data cyclically from the DME.)

MTR 0 1 CUR -1800 -2300 -200 1 -300 0 -13801 -13801 HOLD 0 0 0 0 0 10

20) QCMT: Used to stop cyclical obtaining of a level meter.

	Option	The DME's ACKs when it succeeds	The DME's ACKs when it fails
QCMT	0 [index] [a meter value]	QCMT OK	QCMT ERR

The command name stands for "Quit Cyclic Meter".

It will be used to cancel cyclic transmission of a level meter registered in the DME with the GCMT command.

- The first option will always take "0." It is reserved for future extensions to the command.
- [index] will have an appropriate number assigned with the DME Designer by a character string.
- "0" should be always assigned to [a meter number].
- One or more spaces are needed between the command and the option, and between the options.

E.g.) To discard registration of an obtained meter cycle:
QCMT 0 1 0

The DME will return a one-line character string of "QCMT OK" if it succeeds.
The DME will return a one-line character string of "QCMT ERR" if it fails.

E.g.) ACK when it succeeds in discarding meter number registration.
QCMT OK

ACK when it fails in discarding meter number registration.
QCMT ERR

21) SMC: Used to set the cyclical period for automatically obtaining all level meters.

	Option	The DME's ACKs when it succeeds	The DME's ACKs when it fails
SMC	0 [a cycle]	SMC OK	SMC ERR

The command name stands for "Set Meter Cycle".

This command will enable the user to set a cycle in ms units for sending all level meters set to be obtained cyclically.
The DME will send level meters at 100 msec intervals if the DME has not received this command.

- The first option will always take "0." It is reserved for future extensions to the command.
- The meter transmission interval from the DME should be assigned to [a cycle] in ms units.
- One or more spaces are needed between the command and the option, and between the options.

E.g.) To change the meter transmission interval from the DME to 200msec:
SMC 0 200

- The DME will return a one-line character string of "SMC OK" if it succeeds.
- The DME will return a one-line character string of "SMC ERR" if it fails.

E.g.) ACK when it succeeds in changing the meter transmission interval:
SMC OK

ACK when it fails in changing the meter transmission interval:
SMC ERR

Guide for setting the cycle
An appropriate cycle needs to be set in accordance with the number of the level meters to be obtained cyclically.
Follow the table below to find an appropriate cycle.

A table of the number of the level meters and the required time to be obtained

Number of level meters to be obtained by a single command	Required time to be obtained
64	239ms
32	122ms
16	64ms
8	34ms
4	20ms
2	12ms
1	9ms

The sum of "Required time to be obtained" in the table above for each command will be the guide for setting an appropriate cycle.
The cycle to automatically obtain a level meter, however, should be set to at least at 50 msec, since too short of a cycle will increase the load of the communication line.

Estimation of the cycle:

Example 1: To obtain 1 ch level meter of 16ch Fader component,
A required cycle for obtaining 1 level meter is 9 ms according to the table above.
However, since the minimum cycle must be at least 50 ms, set the cycle to 50 ms.

Example 2: To obtain 1 component (16 ch) level meters of 16ch Fader component,
A required cycle for obtaining 16 level meters is 64 ms according to the table above.
Set the cycle to 64 ms.

Example 3: To obtain 2 component (32 ch) level meters of 16ch Fader component,
A required cycle for obtaining 16 level meters is 64 ms according to the table above.
Set the cycle to 128 ms by multiplying 64 ms by 2 component cycles.

3.3.4 Mute Control Command

22) SMUT: Used to set/cancel the mute function.

	Option	The DME's ACKs when it succeeds	The DME's ACKs when it fails
SMUT	0 [ON/OFF]	SMUT OK MUTE 0 [ON/OFF]	SMUT ERR

The command name stands for "Set Mute".

- The first option will always take "0." It is reserved for future extensions to the command.
- The second option will have a character string of either "ON" or "OFF."
- One or more spaces are needed between the command and the option, and between the options.

E.g.) To turn on the mute function:
SMUT 0 ON

- The DME will return two lines of character strings if it succeeds.
The first line will have a character string of "SMUT OK."
The second line will have the same character string as that output to the controller from the DME when Mute ON/OFF is switched.
The first character string can be ignored for the controller.
- The DME will return a character string of "SMUT ERR" if it fails.

E.g.) ACK when it succeeds in switching the mute function on:
SMUT OK
MUTE 0 ON

ACK when it fails in switching the mute function on:
SMUT ERR

23) GMUT: Used to obtain the mute condition.

	Option	The DME's ACKs when it succeeds	The DME's ACKs when it fails
GMUT	0	GMUT OK MUTE 0 [ON/OFF]	GMUT ERR

The command name stands for "Get Mute."
This command only applies to DME firmware V3.11 or later.

- The option will always take "0." It is reserved for future extensions to the command.
- One or more spaces will be needed between the command and the option.

E.g.) To obtain the mute condition:
GMUT 0

- The DME will return two lines of character strings if it succeeds.
The first line will have a character string, "GMUT OK."
The second line will have the same character string as that output to the controller from the DME when Mute ON/OFF is switched.
The first character string can be ignored for the controller.
- The DME will return a one-line character string of "GMUT ERR" if it fails.

E.g.) ACK when it succeeds in obtaining the mute condition and the mute condition is ON:
GMUT OK
MUTE 0 ON

ACK when it fails in obtaining the mute condition:
GMUT ERR

3.3.5 GPI Control Command

24) SGO: Used to control GPI OUT.

	Option	The DME's ACKs when it succeeds	The DME's ACKs when it fails
SGO	0 [Port number] [ON/OFF] …	SGO OK	SGO ERR

The command name stands for "Set Gpi Out".

- The first option will always take "0." It is reserved for future extensions to the command.
- The second option will have a port number by a character string.
- The third option will have a character string of either "ON" or "OFF."
- One or more spaces are needed between the command and the option, and between the options.
- Multiple GPI outputs can be controlled by adding another option.
- SGO command changes GPI OUT port status without affecting any parameters in DME components.

E.g.) To set port 3 on:
SGO 0 3 ON

To set port 10 on, port 11 off:
SGO 0 10 ON 11 OFF

To set port 1 on, port 3 off, port 4 on and port 5 on:
SGO 0 1 ON 3 OFF 4 ON 5 ON

- The DME will return a one-line character string of "SGO OK" if it succeeds.
- The DME will return a one-line character string of "SGO ERR" if it fails.

E.g.) ACK when it succeeds in setting GPI port 3 on:
SGO OK

ACK when it fails in setting GPI port 3 on:
SGO ERR

3.3.6 WAV FILE PLAYER Control Command

25) PWF: Used to play back a file.

	Option	The DME's ACKs when it succeeds	The DME's ACKs when it fails
PWF	0 [An index to Wav File Manager]	PWF OK	PWF ERR

The command name stands for "Play Wav File".

This command will enable the user to play back a specified song in the DME's WAV File Player.
A file should be registered in WAV File Manager in advance to play the song.

- The first option will always take "0." It is reserved for future extensions to the command.
- The second option will have an index to Wav File Manager by a character string.
- One or more spaces are needed between the command and the option, and between the options.

E.g.) To play back a WAV file registered in Wav File Manager 4:
PWF 0 4

- The DME will return a one-line character string of "PWF OK" if it succeeds.
- The DME will return a one-line character string of "PWF ERR" if it fails.

E.g.) ACK when it succeeds in playing back a WAV file registered in Wav File Manager 4:
PWF OK

ACK when it fails in playing back a WAV file registered in Wav File Manager 4:
PWF ERR

26) SWF: Used to stop playback of a file.

	Option	The DME's ACKs when it succeeds	The DME's ACKs when it fails
SWF	0	SWF OK	SWF ERR

The command name stands for "Stop Wav File."
This command only applies to DME firmware V3.11 or later.

This command will enable the user to stop playback of a song in the DME's WAV File Player.

- The option will always take "0." It is reserved for future extensions to the command.
- One or more spaces are needed between the command and the option.

E.g.) To stop playback of a WAV file
SWF 0

- The DME will return a one-line character string of "SWF OK" if it succeeds.
- The DME will return a one-line character string of "SWF ERR" if it fails.

E.g.) ACK when it succeeds in stopping playback of a WAV file:
SWF OK

ACK when it fails in stopping playback of a WAV file:
SWF ERR

3.4 Utility Command

3.4.1 Command for Debug

27) ECHO: Used to set/cancel Echo Back.

Command	Option	The DME's ACKs when it succeeds	The DME's ACKs when it fails
ECHO	0 [ON/OFF]	ECHO OK	ECHO ERR

A character string received by the DME can be echoed back to debug the controller.
Switching the Echo function on will cause a character string to be echoed back until the Echo function or the DME is switched off.
The default is OFF.
It may be controlled normally while it is echoed back.

- The first option will always take "0." It is reserved for future extensions to the command.
- [ON/OFF] will have a character string of either "ON" or "OFF."
- One or more spaces are needed between the command and the option, and between the options.

E.g.) To switch the DME Echo on:
ECHO 0 ON

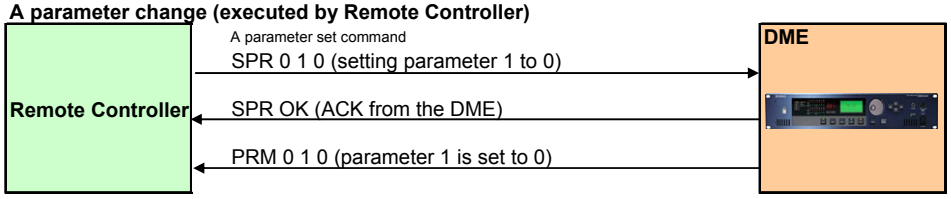
To switch the DME Echo off:
ECHO 0 OFF

A character string of "ECHO OK" will be output to the controller when it succeeds, or "ECHO ERR" when it fails.

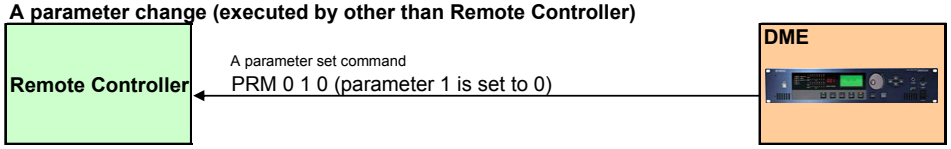
4. Command Sequence

The following are examples of the main command sequence.

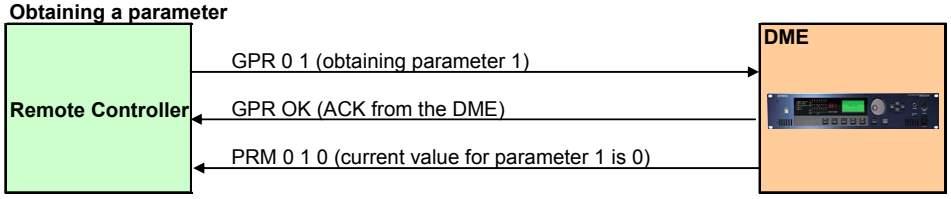
A parameter change (executed by Remote Controller)



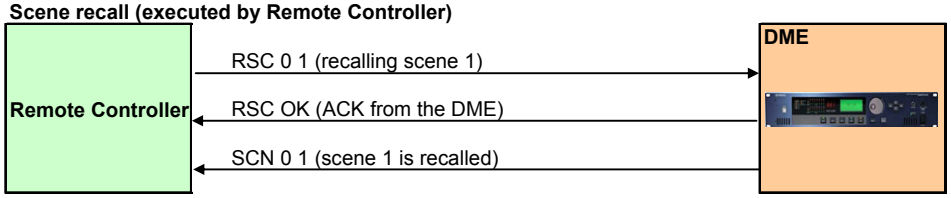
A parameter change (executed by other than Remote Controller)



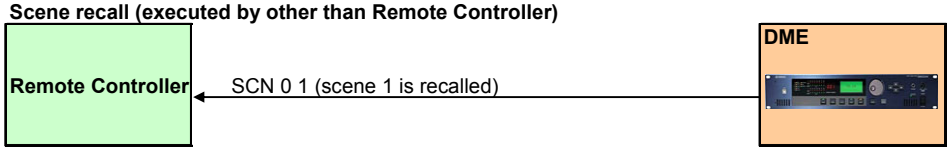
Obtaining a parameter



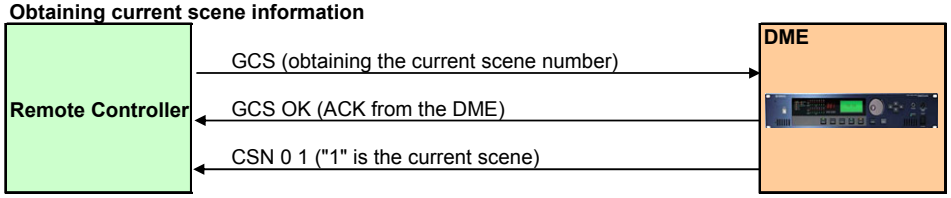
Scene recall (executed by Remote Controller)



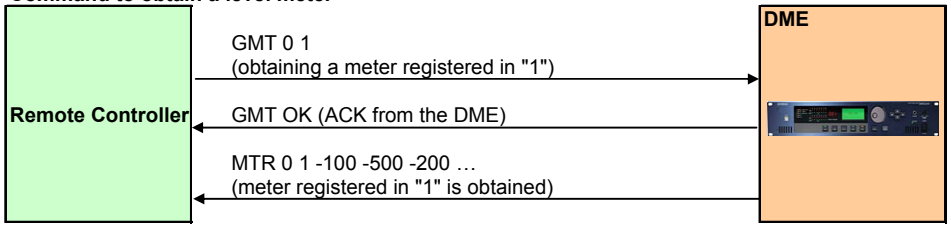
Scene recall (executed by other than Remote Controller)



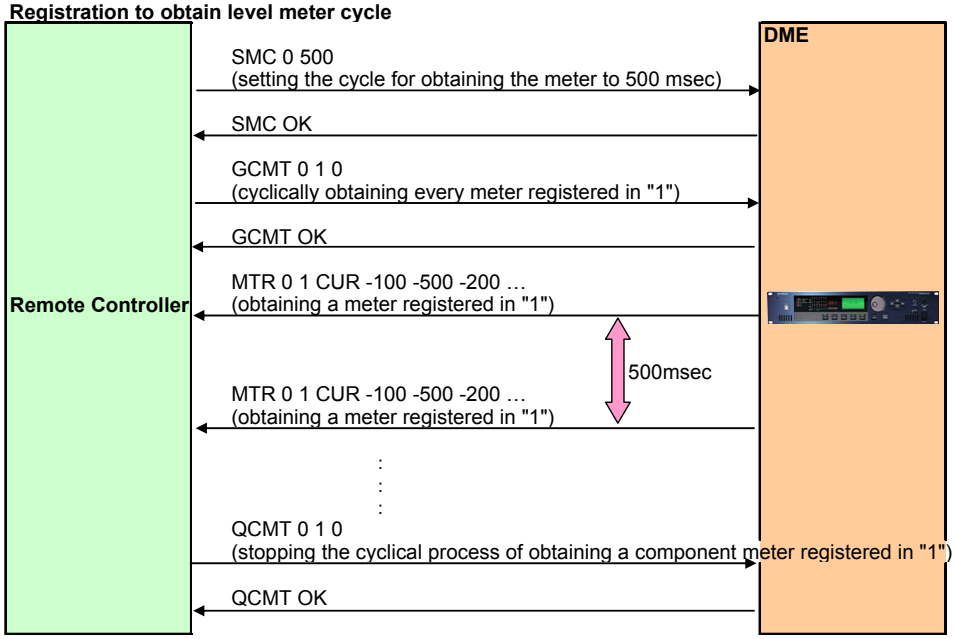
Obtaining current scene information



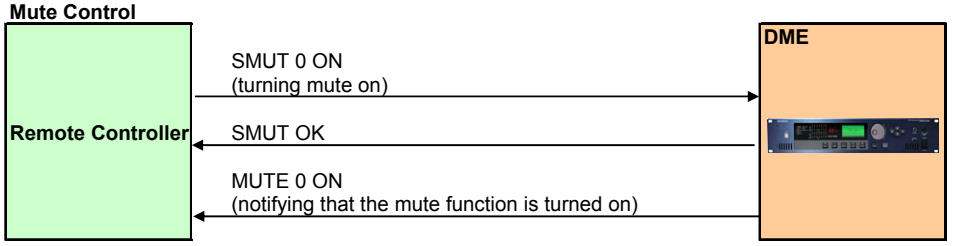
Command to obtain a level meter



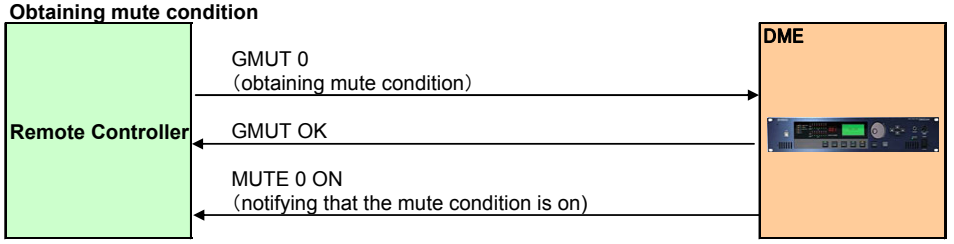
Registration to obtain level meter cycle



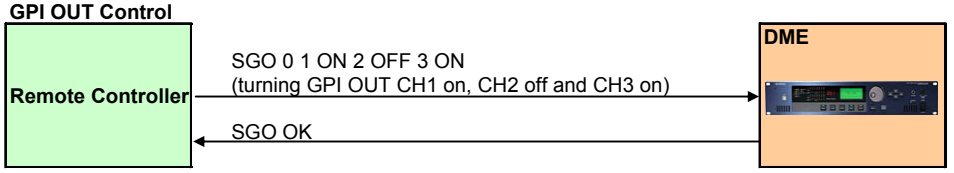
Mute Control



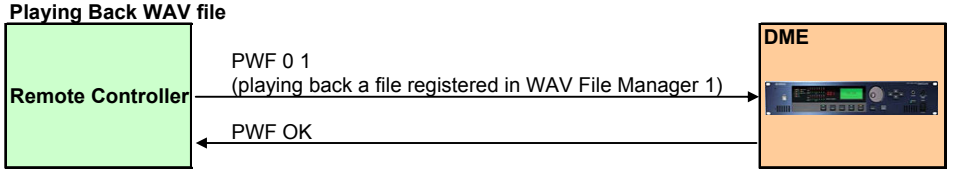
Obtaining mute condition



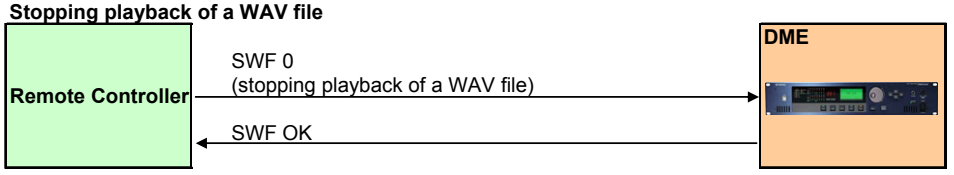
GPI OUT Control



Playing Back WAV file



Stopping playback of a WAV file



Troubleshooting (FAQ)

Q: Is it possible to communicate with the DME at a baud rate other than 38400bps for serial communication via the REMOTE connector?

A: No, it is not possible. Be sure to set the baud rate of the remote controller to 38400bps.
For more information, see the section "1.2 Remote Controller Settings."

Q: What should be used as a line feed code of a command?

A: LF (0x0A) can be used as a line feed code ("$0A" for AMX, "\x0A" for Crestron).
For more information, see the section "3.1 Basic Command Specifications."

Q: Up to how many parameters can be controlled with the communication protocol?

A: The maximum number of specifically defined controllable parameters is 256, as set in the Remote Control Setup List of DME Designer. Other controls such as scene recall are in addition to this.

Q: How can I control more than 256 types of parameters?

A: You can use MIDI and/or GPI signals in addition to the remote control protocol.

Q: Can the MIDI parameter change and/or control change be transmitted via Ethernet?

A: No, the MIDI parameter change and/or control change cannot be transmitted via Ethernet.
The SPR command can be used to change parameters. The RSC command can be used to recall a scene.

Q: Can the DME receive the parameter setting command SPR in the middle of scene recall processing?

A: No, the command is disabled during recall. All the commands transmitted to the DME in the middle of scene recall processing will be ignored. When scene recalls are complete, the DME will restart receiving the SPR command.
The parameter setting command can be transmitted after checking the SCN command notified from the DME when scene recalls are complete.

Q: Is there any difference in response time for parameter changing, depending on the type of component?

A: A component (such as Matrix Mixer 64x64) with various parameters may require longer time for parameter change than a component with a small number of parameters.

Q: If the response speed of the DME to a command is slow, what are the possible causes and solutions?

A: When a large number of commands are transmitted to the DME in a short time, processing time may be longer because data is accumulated in the receive buffer.
In this case, make sure that the transmission interval between the commands for the remote controller is long enough for optimum processing.

Q: If the response speed of the meter is slow, what are the possible causes and solutions?

A: The response speed of the meter will be slow when the number of meters displayed on the screen increases.
In this case, try the following solutions.

・If the cyclical period for automatically obtaining a meter is too short, the response speed will be slow due to the accumulation of data. Try to set a cycle as long as possible using the SMC command.
・The response speed will be faster by using the GCMT command that can obtain data cyclically than by using the GMT command that obtains data each time, because the volume of communication decreases.
・If you want to display multiple meters in the same component, you can ensure a faster response speed by assigning a value of "0" to a meter number to obtain data all at once, rather than by assigning a meter number to obtain data individually.
・If you want to display a meter in the Meter component, you can ensure a faster response speed by assigning the multiple-channel Meter component, rather than by assigning multiple one-channel Meter components.

For more information on commands see GMT and GCMT in the section "3.3.3 Command to Obtain Level Meter."

Q: If a parameter is assigned to "GPI OUT" and the port is controlled by the SGO command, does the parameter link?

A: No, the parameter does not link.
Only the GPI output from a port specified by the SGO command is controlled.

Q: Can the input level to the Audio Detector be detected if it exceeds the threshold?

A: Yes it can.
For more information on detecting the level see the section "3.3.3 Command to Obtain Level Meter."

Appendix

A Fader Table of -∞ to 0 dB

Value	Data	Value	Data	Value	Data	Value	Data	Value	Data	Value	Data	Value	Data	Value	Data
0	-InfdB	64	-87.50dB	128	-69.00dB	192	-56.20dB	256	-46.70dB	320	-40.30dB	384	-33.90dB	448	-28.75dB
1	-138.00dB	65	-87.00dB	129	-68.80dB	193	-56.00dB	257	-46.60dB	321	-40.20dB	385	-33.80dB	449	-28.70dB
2	-136.00dB	66	-86.50dB	130	-68.60dB	194	-55.80dB	258	-46.50dB	322	-40.10dB	386	-33.70dB	450	-28.65dB
3	-134.00dB	67	-86.00dB	131	-68.40dB	195	-55.60dB	259	-46.40dB	323	-40.00dB	387	-33.60dB	451	-28.60dB
4	-133.00dB	68	-85.50dB	132	-68.20dB	196	-55.40dB	260	-46.30dB	324	-39.90dB	388	-33.50dB	452	-28.55dB
5	-132.00dB	69	-85.00dB	133	-68.00dB	197	-55.20dB	261	-46.20dB	325	-39.80dB	389	-33.40dB	453	-28.50dB
6	-131.00dB	70	-84.50dB	134	-67.80dB	198	-55.00dB	262	-46.10dB	326	-39.70dB	390	-33.30dB	454	-28.45dB
7	-130.00dB	71	-84.00dB	135	-67.60dB	199	-54.80dB	263	-46.00dB	327	-39.60dB	391	-33.20dB	455	-28.40dB
8	-129.00dB	72	-83.50dB	136	-67.40dB	200	-54.60dB	264	-45.90dB	328	-39.50dB	392	-33.10dB	456	-28.35dB
9	-128.00dB	73	-83.00dB	137	-67.20dB	201	-54.40dB	265	-45.80dB	329	-39.40dB	393	-33.00dB	457	-28.30dB
10	-127.00dB	74	-82.50dB	138	-67.00dB	202	-54.20dB	266	-45.70dB	330	-39.30dB	394	-32.90dB	458	-28.25dB
11	-126.00dB	75	-82.00dB	139	-66.80dB	203	-54.00dB	267	-45.60dB	331	-39.20dB	395	-32.80dB	459	-28.20dB
12	-125.00dB	76	-81.50dB	140	-66.60dB	204	-53.80dB	268	-45.50dB	332	-39.10dB	396	-32.70dB	460	-28.15dB
13	-124.00dB	77	-81.00dB	141	-66.40dB	205	-53.60dB	269	-45.40dB	333	-39.00dB	397	-32.60dB	461	-28.10dB
14	-123.00dB	78	-80.50dB	142	-66.20dB	206	-53.40dB	270	-45.30dB	334	-38.90dB	398	-32.50dB	462	-28.05dB
15	-122.00dB	79	-80.00dB	143	-66.00dB	207	-53.20dB	271	-45.20dB	335	-38.80dB	399	-32.40dB	463	-28.00dB
16	-121.00dB	80	-79.50dB	144	-65.80dB	208	-53.00dB	272	-45.10dB	336	-38.70dB	400	-32.30dB	464	-27.95dB
17	-120.00dB	81	-79.00dB	145	-65.60dB	209	-52.80dB	273	-45.00dB	337	-38.60dB	401	-32.20dB	465	-27.90dB
18	-119.00dB	82	-78.50dB	146	-65.40dB	210	-52.60dB	274	-44.90dB	338	-38.50dB	402	-32.10dB	466	-27.85dB
19	-118.00dB	83	-78.00dB	147	-65.20dB	211	-52.40dB	275	-44.80dB	339	-38.40dB	403	-32.00dB	467	-27.80dB
20	-117.00dB	84	-77.80dB	148	-65.00dB	212	-52.20dB	276	-44.70dB	340	-38.30dB	404	-31.90dB	468	-27.75dB
21	-116.00dB	85	-77.60dB	149	-64.80dB	213	-52.00dB	277	-44.60dB	341	-38.20dB	405	-31.80dB	469	-27.70dB
22	-115.00dB	86	-77.40dB	150	-64.60dB	214	-51.80dB	278	-44.50dB	342	-38.10dB	406	-31.70dB	470	-27.65dB
23	-114.00dB	87	-77.20dB	151	-64.40dB	215	-51.60dB	279	-44.40dB	343	-38.00dB	407	-31.60dB	471	-27.60dB
24	-113.00dB	88	-77.00dB	152	-64.20dB	216	-51.40dB	280	-44.30dB	344	-37.90dB	408	-31.50dB	472	-27.55dB
25	-112.00dB	89	-76.80dB	153	-64.00dB	217	-51.20dB	281	-44.20dB	345	-37.80dB	409	-31.40dB	473	-27.50dB
26	-111.00dB	90	-76.60dB	154	-63.80dB	218	-51.00dB	282	-44.10dB	346	-37.70dB	410	-31.30dB	474	-27.45dB
27	-110.00dB	91	-76.40dB	155	-63.60dB	219	-50.80dB	283	-44.00dB	347	-37.60dB	411	-31.20dB	475	-27.40dB
28	-109.00dB	92	-76.20dB	156	-63.40dB	220	-50.60dB	284	-43.90dB	348	-37.50dB	412	-31.10dB	476	-27.35dB
29	-108.00dB	93	-76.00dB	157	-63.20dB	221	-50.40dB	285	-43.80dB	349	-37.40dB	413	-31.00dB	477	-27.30dB
30	-107.00dB	94	-75.80dB	158	-63.00dB	222	-50.20dB	286	-43.70dB	350	-37.30dB	414	-30.90dB	478	-27.25dB
31	-106.00dB	95	-75.60dB	159	-62.80dB	223	-50.00dB	287	-43.60dB	351	-37.20dB	415	-30.80dB	479	-27.20dB
32	-105.00dB	96	-75.40dB	160	-62.60dB	224	-49.90dB	288	-43.50dB	352	-37.10dB	416	-30.70dB	480	-27.15dB
33	-104.00dB	97	-75.20dB	161	-62.40dB	225	-49.80dB	289	-43.40dB	353	-37.00dB	417	-30.60dB	481	-27.10dB
34	-103.00dB	98	-75.00dB	162	-62.20dB	226	-49.70dB	290	-43.30dB	354	-36.90dB	418	-30.50dB	482	-27.05dB
35	-102.00dB	99	-74.80dB	163	-62.00dB	227	-49.60dB	291	-43.20dB	355	-36.80dB	419	-30.40dB	483	-27.00dB
36	-101.50dB	100	-74.60dB	164	-61.80dB	228	-49.50dB	292	-43.10dB	356	-36.70dB	420	-30.30dB	484	-26.95dB
37	-101.00dB	101	-74.40dB	165	-61.60dB	229	-49.40dB	293	-43.00dB	357	-36.60dB	421	-30.20dB	485	-26.90dB
38	-100.50dB	102	-74.20dB	166	-61.40dB	230	-49.30dB	294	-42.90dB	358	-36.50dB	422	-30.10dB	486	-26.85dB
39	-100.00dB	103	-74.00dB	167	-61.20dB	231	-49.20dB	295	-42.80dB	359	-36.40dB	423	-30.00dB	487	-26.80dB
40	-99.50dB	104	-73.80dB	168	-61.00dB	232	-49.10dB	296	-42.70dB	360	-36.30dB	424	-29.95dB	488	-26.75dB
41	-99.00dB	105	-73.60dB	169	-60.80dB	233	-49.00dB	297	-42.60dB	361	-36.20dB	425	-29.90dB	489	-26.70dB
42	-98.50dB	106	-73.40dB	170	-60.60dB	234	-48.90dB	298	-42.50dB	362	-36.10dB	426	-29.85dB	490	-26.65dB
43	-98.00dB	107	-73.20dB	171	-60.40dB	235	-48.80dB	299	-42.40dB	363	-36.00dB	427	-29.80dB	491	-26.60dB
44	-97.50dB	108	-73.00dB	172	-60.20dB	236	-48.70dB	300	-42.30dB	364	-35.90dB	428	-29.75dB	492	-26.55dB
45	-97.00dB	109	-72.80dB	173	-60.00dB	237	-48.60dB	301	-42.20dB	365	-35.80dB	429	-29.70dB	493	-26.50dB
46	-96.50dB	110	-72.60dB	174	-59.80dB	238	-48.50dB	302	-42.10dB	366	-35.70dB	430	-29.65dB	494	-26.45dB
47	-96.00dB	111	-72.40dB	175	-59.60dB	239	-48.40dB	303	-42.00dB	367	-35.60dB	431	-29.60dB	495	-26.40dB
48	-95.50dB	112	-72.20dB	176	-59.40dB	240	-48.30dB	304	-41.90dB	368	-35.50dB	432	-29.55dB	496	-26.35dB
49	-95.00dB	113	-72.00dB	177	-59.20dB	241	-48.20dB	305	-41.80dB	369	-35.40dB	433	-29.50dB	497	-26.30dB
50	-94.50dB	114	-71.80dB	178	-59.00dB	242	-48.10dB	306	-41.70dB	370	-35.30dB	434	-29.45dB	498	-26.25dB
51	-94.00dB	115	-71.60dB	179	-58.80dB	243	-48.00dB	307	-41.60dB	371	-35.20dB	435	-29.40dB	499	-26.20dB
52	-93.50dB	116	-71.40dB	180	-58.60dB	244	-47.90dB	308	-41.50dB	372	-35.10dB	436	-29.35dB	500	-26.15dB
53	-93.00dB	117	-71.20dB	181	-58.40dB	245	-47.80dB	309	-41.40dB	373	-35.00dB	437	-29.30dB	501	-26.10dB
54	-92.50dB	118	-71.00dB	182	-58.20dB	246	-47.70dB	310	-41.30dB	374	-34.90dB	438	-29.25dB	502	-26.05dB
55	-92.00dB	119	-70.80dB	183	-58.00dB	247	-47.60dB	311	-41.20dB	375	-34.80dB	439	-29.20dB	503	-26.00dB
56	-91.50dB	120	-70.60dB	184	-57.80dB	248	-47.50dB	312	-41.10dB	376	-34.70dB	440	-29.15dB	504	-25.95dB
57	-91.00dB	121	-70.40dB	185	-57.60dB	249	-47.40dB	313	-41.00dB	377	-34.60dB	441	-29.10dB	505	-25.90dB
58	-90.50dB	122	-70.20dB	186	-57.40dB	250	-47.30dB	314	-40.90dB	378	-34.50dB	442	-29.05dB	506	-25.85dB
59	-90.00dB	123	-70.00dB	187	-57.20dB	251	-47.20dB	315	-40.80dB	379	-34.40dB	443	-29.00dB	507	-25.80dB
60	-89.50dB	124	-69.80dB	188	-57.00dB	252	-47.10dB	316	-40.70dB	380	-34.30dB	444	-28.95dB	508	-25.75dB
61	-89.00dB	125	-69.60dB	189	-56.80dB	253	-47.00dB	317	-40.60dB	381	-34.20dB	445	-28.90dB	509	-25.70dB
62	-88.50dB	126	-69.40dB	190	-56.60dB	254	-46.90dB	318	-40.50dB	382	-34.10dB	446	-28.85dB	510	-25.65dB
63	-88.00dB	127	-69.20dB	191	-56.40dB	255	-46.80dB	319	-40.40dB	383	-34.00dB	447	-28.80dB	511	-25.60dB

Value	Data	Value	Data	Value	Data	Value	Data	Value	Data	Value	Data	Value	Data	Value	Data
512	-25.55dB	576	-22.35dB	640	-19.15dB	704	-15.95dB	768	-12.75dB	832	-9.55dB	896	-6.35dB	960	-3.15dB
513	-25.50dB	577	-22.30dB	641	-19.10dB	705	-15.90dB	769	-12.70dB	833	-9.50dB	897	-6.30dB	961	-3.10dB
514	-25.45dB	578	-22.25dB	642	-19.05dB	706	-15.85dB	770	-12.65dB	834	-9.45dB	898	-6.25dB	962	-3.05dB
515	-25.40dB	579	-22.20dB	643	-19.00dB	707	-15.80dB	771	-12.60dB	835	-9.40dB	899	-6.20dB	963	-3.00dB
516	-25.35dB	580	-22.15dB	644	-18.95dB	708	-15.75dB	772	-12.55dB	836	-9.35dB	900	-6.15dB	964	-2.95dB
517	-25.30dB	581	-22.10dB	645	-18.90dB	709	-15.70dB	773	-12.50dB	837	-9.30dB	901	-6.10dB	965	-2.90dB
518	-25.25dB	582	-22.05dB	646	-18.85dB	710	-15.65dB	774	-12.45dB	838	-9.25dB	902	-6.05dB	966	-2.85dB
519	-25.20dB	583	-22.00dB	647	-18.80dB	711	-15.60dB	775	-12.40dB	839	-9.20dB	903	-6.00dB	967	-2.80dB
520	-25.15dB	584	-21.95dB	648	-18.75dB	712	-15.55dB	776	-12.35dB	840	-9.15dB	904	-5.95dB	968	-2.75dB
521	-25.10dB	585	-21.90dB	649	-18.70dB	713	-15.50dB	777	-12.30dB	841	-9.10dB	905	-5.90dB	969	-2.70dB
522	-25.05dB	586	-21.85dB	650	-18.65dB	714	-15.45dB	778	-12.25dB	842	-9.05dB	906	-5.85dB	970	-2.65dB
523	-25.00dB	587	-21.80dB	651	-18.60dB	715	-15.40dB	779	-12.20dB	843	-9.00dB	907	-5.80dB	971	-2.60dB
524	-24.95dB	588	-21.75dB	652	-18.55dB	716	-15.35dB	780	-12.15dB	844	-8.95dB	908	-5.75dB	972	-2.55dB
525	-24.90dB	589	-21.70dB	653	-18.50dB	717	-15.30dB	781	-12.10dB	845	-8.90dB	909	-5.70dB	973	-2.50dB
526	-24.85dB	590	-21.65dB	654	-18.45dB	718	-15.25dB	782	-12.05dB	846	-8.85dB	910	-5.65dB	974	-2.45dB
527	-24.80dB	591	-21.60dB	655	-18.40dB	719	-15.20dB	783	-12.00dB	847	-8.80dB	911	-5.60dB	975	-2.40dB
528	-24.75dB	592	-21.55dB	656	-18.35dB	720	-15.15dB	784	-11.95dB	848	-8.75dB	912	-5.55dB	976	-2.35dB
529	-24.70dB	593	-21.50dB	657	-18.30dB	721	-15.10dB	785	-11.90dB	849	-8.70dB	913	-5.50dB	977	-2.30dB
530	-24.65dB	594	-21.45dB	658	-18.25dB	722	-15.05dB	786	-11.85dB	850	-8.65dB	914	-5.45dB	978	-2.25dB
531	-24.60dB	595	-21.40dB	659	-18.20dB	723	-15.00dB	787	-11.80dB	851	-8.60dB	915	-5.40dB	979	-2.20dB
532	-24.55dB	596	-21.35dB	660	-18.15dB	724	-14.95dB	788	-11.75dB	852	-8.55dB	916	-5.35dB	980	-2.15dB
533	-24.50dB	597	-21.30dB	661	-18.10dB	725	-14.90dB	789	-11.70dB	853	-8.50dB	917	-5.30dB	981	-2.10dB
534	-24.45dB	598	-21.25dB	662	-18.05dB	726	-14.85dB	790	-11.65dB	854	-8.45dB	918	-5.25dB	982	-2.05dB
535	-24.40dB	599	-21.20dB	663	-18.00dB	727	-14.80dB	791	-11.60dB	855	-8.40dB	919	-5.20dB	983	-2.00dB
536	-24.35dB	600	-21.15dB	664	-17.95dB	728	-14.75dB	792	-11.55dB	856	-8.35dB	920	-5.15dB	984	-1.95dB
537	-24.30dB	601	-21.10dB	665	-17.90dB	729	-14.70dB	793	-11.50dB	857	-8.30dB	921	-5.10dB	985	-1.90dB
538	-24.25dB	602	-21.05dB	666	-17.85dB	730	-14.65dB	794	-11.45dB	858	-8.25dB	922	-5.05dB	986	-1.85dB
539	-24.20dB	603	-21.00dB	667	-17.80dB	731	-14.60dB	795	-11.40dB	859	-8.20dB	923	-5.00dB	987	-1.80dB
540	-24.15dB	604	-20.95dB	668	-17.75dB	732	-14.55dB	796	-11.35dB	860	-8.15dB	924	-4.95dB	988	-1.75dB
541	-24.10dB	605	-20.90dB	669	-17.70dB	733	-14.50dB	797	-11.30dB	861	-8.10dB	925	-4.90dB	989	-1.70dB
542	-24.05dB	606	-20.85dB	670	-17.65dB	734	-14.45dB	798	-11.25dB	862	-8.05dB	926	-4.85dB	990	-1.65dB
543	-24.00dB	607	-20.80dB	671	-17.60dB	735	-14.40dB	799	-11.20dB	863	-8.00dB	927	-4.80dB	991	-1.60dB
544	-23.95dB	608	-20.75dB	672	-17.55dB	736	-14.35dB	800	-11.15dB	864	-7.95dB	928	-4.75dB	992	-1.55dB
545	-23.90dB	609	-20.70dB	673	-17.50dB	737	-14.30dB	801	-11.10dB	865	-7.90dB	929	-4.70dB	993	-1.50dB
546	-23.85dB	610	-20.65dB	674	-17.45dB	738	-14.25dB	802	-11.05dB	866	-7.85dB	930	-4.65dB	994	-1.45dB
547	-23.80dB	611	-20.60dB	675	-17.40dB	739	-14.20dB	803	-11.00dB	867	-7.80dB	931	-4.60dB	995	-1.40dB
548	-23.75dB	612	-20.55dB	676	-17.35dB	740	-14.15dB	804	-10.95dB	868	-7.75dB	932	-4.55dB	996	-1.35dB
549	-23.70dB	613	-20.50dB	677	-17.30dB	741	-14.10dB	805	-10.90dB	869	-7.70dB	933	-4.50dB	997	-1.30dB
550	-23.65dB	614	-20.45dB	678	-17.25dB	742	-14.05dB	806	-10.85dB	870	-7.65dB	934	-4.45dB	998	-1.25dB
551	-23.60dB	615	-20.40dB	679	-17.20dB	743	-14.00dB	807	-10.80dB	871	-7.60dB	935	-4.40dB	999	-1.20dB
552	-23.55dB	616	-20.35dB	680	-17.15dB	744	-13.95dB	808	-10.75dB	872	-7.55dB	936	-4.35dB	1000	-1.15dB
553	-23.50dB	617	-20.30dB	681	-17.10dB	745	-13.90dB	809	-10.70dB	873	-7.50dB	937	-4.30dB	1001	-1.10dB
554	-23.45dB	618	-20.25dB	682	-17.05dB	746	-13.85dB	810	-10.65dB	874	-7.45dB	938	-4.25dB	1002	-1.05dB
555	-23.40dB	619	-20.20dB	683	-17.00dB	747	-13.80dB	811	-10.60dB	875	-7.40dB	939	-4.20dB	1003	-1.00dB
556	-23.35dB	620	-20.15dB	684	-16.95dB	748	-13.75dB	812	-10.55dB	876	-7.35dB	940	-4.15dB	1004	-0.95dB
557	-23.30dB	621	-20.10dB	685	-16.90dB	749	-13.70dB	813	-10.50dB	877	-7.30dB	941	-4.10dB	1005	-0.90dB
558	-23.25dB	622	-20.05dB	686	-16.85dB	750	-13.65dB	814	-10.45dB	878	-7.25dB	942	-4.05dB	1006	-0.85dB
559	-23.20dB	623	-20.00dB	687	-16.80dB	751	-13.60dB	815	-10.40dB	879	-7.20dB	943	-4.00dB	1007	-0.80dB
560	-23.15dB	624	-19.95dB	688	-16.75dB	752	-13.55dB	816	-10.35dB	880	-7.15dB	944	-3.95dB	1008	-0.75dB
561	-23.10dB	625	-19.90dB	689	-16.70dB	753	-13.50dB	817	-10.30dB	881	-7.10dB	945	-3.90dB	1009	-0.70dB
562	-23.05dB	626	-19.85dB	690	-16.65dB	754	-13.45dB	818	-10.25dB	882	-7.05dB	946	-3.85dB	1010	-0.65dB
563	-23.00dB	627	-19.80dB	691	-16.60dB	755	-13.40dB	819	-10.20dB	883	-7.00dB	947	-3.80dB	1011	-0.60dB
564	-22.95dB	628	-19.75dB	692	-16.55dB	756	-13.35dB	820	-10.15dB	884	-6.95dB	948	-3.75dB	1012	-0.55dB
565	-22.90dB	629	-19.70dB	693	-16.50dB	757	-13.30dB	821	-10.10dB	885	-6.90dB	949	-3.70dB	1013	-0.50dB
566	-22.85dB	630	-19.65dB	694	-16.45dB	758	-13.25dB	822	-10.05dB	886	-6.85dB	950	-3.65dB	1014	-0.45dB
567	-22.80dB	631	-19.60dB	695	-16.40dB	759	-13.20dB	823	-10.00dB	887	-6.80dB	951	-3.60dB	1015	-0.40dB
568	-22.75dB	632	-19.55dB	696	-16.35dB	760	-13.15dB	824	-9.95dB	888	-6.75dB	952	-3.55dB	1016	-0.35dB
569	-22.70dB	633	-19.50dB	697	-16.30dB	761	-13.10dB	825	-9.90dB	889	-6.70dB	953	-3.50dB	1017	-0.30dB
570	-22.65dB	634	-19.45dB	698	-16.25dB	762	-13.05dB	826	-9.85dB	890	-6.65dB	954	-3.45dB	1018	-0.25dB
571	-22.60dB	635	-19.40dB	699	-16.20dB	763	-13.00dB	827	-9.80dB	891	-6.60dB	955	-3.40dB	1019	-0.20dB
572	-22.55dB	636	-19.35dB	700	-16.15dB	764	-12.95dB	828	-9.75dB	892	-6.55dB	956	-3.35dB	1020	-0.15dB
573	-22.50dB	637	-19.30dB	701	-16.10dB	765	-12.90dB	829	-9.70dB	893	-6.50dB	957	-3.30dB	1021	-0.10dB
574	-22.45dB	638	-19.25dB	702	-16.05dB	766	-12.85dB	830	-9.65dB	894	-6.45dB	958	-3.25dB	1022	-0.05dB
575	-22.40dB	639	-19.20dB	703	-16.00dB	767	-12.80dB	831	-9.60dB	895	-6.40dB	959	-3.20dB	1023	0.00dB

A Fader Table of -∞ to 10 dB

Value	Data	Value	Data	Value	Data	Value	Data	Value	Data	Value	Data	Value	Data	Value	Data
0	-InfdB	64	-71.80dB	128	-59.00dB	192	-46.20dB	256	-36.70dB	320	-30.30dB	384	-23.90dB	448	-18.75dB
1	-138.00dB	65	-71.60dB	129	-58.80dB	193	-46.00dB	257	-36.60dB	321	-30.20dB	385	-23.80dB	449	-18.70dB
2	-135.00dB	66	-71.40dB	130	-58.60dB	194	-45.80dB	258	-36.50dB	322	-30.10dB	386	-23.70dB	450	-18.65dB
3	-132.00dB	67	-71.20dB	131	-58.40dB	195	-45.60dB	259	-36.40dB	323	-30.00dB	387	-23.60dB	451	-18.60dB
4	-129.00dB	68	-71.00dB	132	-58.20dB	196	-45.40dB	260	-36.30dB	324	-29.90dB	388	-23.50dB	452	-18.55dB
5	-126.00dB	69	-70.80dB	133	-58.00dB	197	-45.20dB	261	-36.20dB	325	-29.80dB	389	-23.40dB	453	-18.50dB
6	-123.00dB	70	-70.60dB	134	-57.80dB	198	-45.00dB	262	-36.10dB	326	-29.70dB	390	-23.30dB	454	-18.45dB
7	-120.00dB	71	-70.40dB	135	-57.60dB	199	-44.80dB	263	-36.00dB	327	-29.60dB	391	-23.20dB	455	-18.40dB
8	-117.00dB	72	-70.20dB	136	-57.40dB	200	-44.60dB	264	-35.90dB	328	-29.50dB	392	-23.10dB	456	-18.35dB
9	-114.00dB	73	-70.00dB	137	-57.20dB	201	-44.40dB	265	-35.80dB	329	-29.40dB	393	-23.00dB	457	-18.30dB
10	-111.00dB	74	-69.80dB	138	-57.00dB	202	-44.20dB	266	-35.70dB	330	-29.30dB	394	-22.90dB	458	-18.25dB
11	-108.00dB	75	-69.60dB	139	-56.80dB	203	-44.00dB	267	-35.60dB	331	-29.20dB	395	-22.80dB	459	-18.20dB
12	-105.00dB	76	-69.40dB	140	-56.60dB	204	-43.80dB	268	-35.50dB	332	-29.10dB	396	-22.70dB	460	-18.15dB
13	-102.00dB	77	-69.20dB	141	-56.40dB	205	-43.60dB	269	-35.40dB	333	-29.00dB	397	-22.60dB	461	-18.10dB
14	-99.00dB	78	-69.00dB	142	-56.20dB	206	-43.40dB	270	-35.30dB	334	-28.90dB	398	-22.50dB	462	-18.05dB
15	-96.00dB	79	-68.80dB	143	-56.00dB	207	-43.20dB	271	-35.20dB	335	-28.80dB	399	-22.40dB	463	-18.00dB
16	-95.00dB	80	-68.60dB	144	-55.80dB	208	-43.00dB	272	-35.10dB	336	-28.70dB	400	-22.30dB	464	-17.95dB
17	-94.00dB	81	-68.40dB	145	-55.60dB	209	-42.80dB	273	-35.00dB	337	-28.60dB	401	-22.20dB	465	-17.90dB
18	-93.00dB	82	-68.20dB	146	-55.40dB	210	-42.60dB	274	-34.90dB	338	-28.50dB	402	-22.10dB	466	-17.85dB
19	-92.00dB	83	-68.00dB	147	-55.20dB	211	-42.40dB	275	-34.80dB	339	-28.40dB	403	-22.00dB	467	-17.80dB
20	-91.00dB	84	-67.80dB	148	-55.00dB	212	-42.20dB	276	-34.70dB	340	-28.30dB	404	-21.90dB	468	-17.75dB
21	-90.00dB	85	-67.60dB	149	-54.80dB	213	-42.00dB	277	-34.60dB	341	-28.20dB	405	-21.80dB	469	-17.70dB
22	-89.00dB	86	-67.40dB	150	-54.60dB	214	-41.80dB	278	-34.50dB	342	-28.10dB	406	-21.70dB	470	-17.65dB
23	-88.00dB	87	-67.20dB	151	-54.40dB	215	-41.60dB	279	-34.40dB	343	-28.00dB	407	-21.60dB	471	-17.60dB
24	-87.00dB	88	-67.00dB	152	-54.20dB	216	-41.40dB	280	-34.30dB	344	-27.90dB	408	-21.50dB	472	-17.55dB
25	-86.00dB	89	-66.80dB	153	-54.00dB	217	-41.20dB	281	-34.20dB	345	-27.80dB	409	-21.40dB	473	-17.50dB
26	-85.00dB	90	-66.60dB	154	-53.80dB	218	-41.00dB	282	-34.10dB	346	-27.70dB	410	-21.30dB	474	-17.45dB
27	-84.00dB	91	-66.40dB	155	-53.60dB	219	-40.80dB	283	-34.00dB	347	-27.60dB	411	-21.20dB	475	-17.40dB
28	-83.00dB	92	-66.20dB	156	-53.40dB	220	-40.60dB	284	-33.90dB	348	-27.50dB	412	-21.10dB	476	-17.35dB
29	-82.00dB	93	-66.00dB	157	-53.20dB	221	-40.40dB	285	-33.80dB	349	-27.40dB	413	-21.00dB	477	-17.30dB
30	-81.00dB	94	-65.80dB	158	-53.00dB	222	-40.20dB	286	-33.70dB	350	-27.30dB	414	-20.90dB	478	-17.25dB
31	-80.00dB	95	-65.60dB	159	-52.80dB	223	-40.00dB	287	-33.60dB	351	-27.20dB	415	-20.80dB	479	-17.20dB
32	-79.00dB	96	-65.40dB	160	-52.60dB	224	-39.90dB	288	-33.50dB	352	-27.10dB	416	-20.70dB	480	-17.15dB
33	-78.00dB	97	-65.20dB	161	-52.40dB	225	-39.80dB	289	-33.40dB	353	-27.00dB	417	-20.60dB	481	-17.10dB
34	-77.80dB	98	-65.00dB	162	-52.20dB	226	-39.70dB	290	-33.30dB	354	-26.90dB	418	-20.50dB	482	-17.05dB
35	-77.60dB	99	-64.80dB	163	-52.00dB	227	-39.60dB	291	-33.20dB	355	-26.80dB	419	-20.40dB	483	-17.00dB
36	-77.40dB	100	-64.60dB	164	-51.80dB	228	-39.50dB	292	-33.10dB	356	-26.70dB	420	-20.30dB	484	-16.95dB
37	-77.20dB	101	-64.40dB	165	-51.60dB	229	-39.40dB	293	-33.00dB	357	-26.60dB	421	-20.20dB	485	-16.90dB
38	-77.00dB	102	-64.20dB	166	-51.40dB	230	-39.30dB	294	-32.90dB	358	-26.50dB	422	-20.10dB	486	-16.85dB
39	-76.80dB	103	-64.00dB	167	-51.20dB	231	-39.20dB	295	-32.80dB	359	-26.40dB	423	-20.00dB	487	-16.80dB
40	-76.60dB	104	-63.80dB	168	-51.00dB	232	-39.10dB	296	-32.70dB	360	-26.30dB	424	-19.95dB	488	-16.75dB
41	-76.40dB	105	-63.60dB	169	-50.80dB	233	-39.00dB	297	-32.60dB	361	-26.20dB	425	-19.90dB	489	-16.70dB
42	-76.20dB	106	-63.40dB	170	-50.60dB	234	-38.90dB	298	-32.50dB	362	-26.10dB	426	-19.85dB	490	-16.65dB
43	-76.00dB	107	-63.20dB	171	-50.40dB	235	-38.80dB	299	-32.40dB	363	-26.00dB	427	-19.80dB	491	-16.60dB
44	-75.80dB	108	-63.00dB	172	-50.20dB	236	-38.70dB	300	-32.30dB	364	-25.90dB	428	-19.75dB	492	-16.55dB
45	-75.60dB	109	-62.80dB	173	-50.00dB	237	-38.60dB	301	-32.20dB	365	-25.80dB	429	-19.70dB	493	-16.50dB
46	-75.40dB	110	-62.60dB	174	-49.80dB	238	-38.50dB	302	-32.10dB	366	-25.70dB	430	-19.65dB	494	-16.45dB
47	-75.20dB	111	-62.40dB	175	-49.60dB	239	-38.40dB	303	-32.00dB	367	-25.60dB	431	-19.60dB	495	-16.40dB
48	-75.00dB	112	-62.20dB	176	-49.40dB	240	-38.30dB	304	-31.90dB	368	-25.50dB	432	-19.55dB	496	-16.35dB
49	-74.80dB	113	-62.00dB	177	-49.20dB	241	-38.20dB	305	-31.80dB	369	-25.40dB	433	-19.50dB	497	-16.30dB
50	-74.60dB	114	-61.80dB	178	-49.00dB	242	-38.10dB	306	-31.70dB	370	-25.30dB	434	-19.45dB	498	-16.25dB
51	-74.40dB	115	-61.60dB	179	-48.80dB	243	-38.00dB	307	-31.60dB	371	-25.20dB	435	-19.40dB	499	-16.20dB
52	-74.20dB	116	-61.40dB	180	-48.60dB	244	-37.90dB	308	-31.50dB	372	-25.10dB	436	-19.35dB	500	-16.15dB
53	-74.00dB	117	-61.20dB	181	-48.40dB	245	-37.80dB	309	-31.40dB	373	-25.00dB	437	-19.30dB	501	-16.10dB
54	-73.80dB	118	-61.00dB	182	-48.20dB	246	-37.70dB	310	-31.30dB	374	-24.90dB	438	-19.25dB	502	-16.05dB
55	-73.60dB	119	-60.80dB	183	-48.00dB	247	-37.60dB	311	-31.20dB	375	-24.80dB	439	-19.20dB	503	-16.00dB
56	-73.40dB	120	-60.60dB	184	-47.80dB	248	-37.50dB	312	-31.10dB	376	-24.70dB	440	-19.15dB	504	-15.95dB
57	-73.20dB	121	-60.40dB	185	-47.60dB	249	-37.40dB	313	-31.00dB	377	-24.60dB	441	-19.10dB	505	-15.90dB
58	-73.00dB	122	-60.20dB	186	-47.40dB	250	-37.30dB	314	-30.90dB	378	-24.50dB	442	-19.05dB	506	-15.85dB
59	-72.80dB	123	-60.00dB	187	-47.20dB	251	-37.20dB	315	-30.80dB	379	-24.40dB	443	-19.00dB	507	-15.80dB
60	-72.60dB	124	-59.80dB	188	-47.00dB	252	-37.10dB	316	-30.70dB	380	-24.30dB	444	-18.95dB	508	-15.75dB
61	-72.40dB	125	-59.60dB	189	-46.80dB	253	-37.00dB	317	-30.60dB	381	-24.20dB	445	-18.90dB	509	-15.70dB
62	-72.20dB	126	-59.40dB	190	-46.60dB	254	-36.90dB	318	-30.50dB	382	-24.10dB	446	-18.85dB	510	-15.65dB
63	-72.00dB	127	-59.20dB	191	-46.40dB	255	-36.80dB	319	-30.40dB	383	-24.00dB	447	-18.80dB	511	-15.60dB

Value	Data	Value	Data	Value	Data	Value	Data	Value	Data	Value	Data	Value	Data	Value	Data
512	-15.55dB	576	-12.35dB	640	-9.15dB	704	-5.95dB	768	-2.75dB	832	0.45dB	896	3.65dB	960	6.85dB
513	-15.50dB	577	-12.30dB	641	-9.10dB	705	-5.90dB	769	-2.70dB	833	0.50dB	897	3.70dB	961	6.90dB
514	-15.45dB	578	-12.25dB	642	-9.05dB	706	-5.85dB	770	-2.65dB	834	0.55dB	898	3.75dB	962	6.95dB
515	-15.40dB	579	-12.20dB	643	-9.00dB	707	-5.80dB	771	-2.60dB	835	0.60dB	899	3.80dB	963	7.00dB
516	-15.35dB	580	-12.15dB	644	-8.95dB	708	-5.75dB	772	-2.55dB	836	0.65dB	900	3.85dB	964	7.05dB
517	-15.30dB	581	-12.10dB	645	-8.90dB	709	-5.70dB	773	-2.50dB	837	0.70dB	901	3.90dB	965	7.10dB
518	-15.25dB	582	-12.05dB	646	-8.85dB	710	-5.65dB	774	-2.45dB	838	0.75dB	902	3.95dB	966	7.15dB
519	-15.20dB	583	-12.00dB	647	-8.80dB	711	-5.60dB	775	-2.40dB	839	0.80dB	903	4.00dB	967	7.20dB
520	-15.15dB	584	-11.95dB	648	-8.75dB	712	-5.55dB	776	-2.35dB	840	0.85dB	904	4.05dB	968	7.25dB
521	-15.10dB	585	-11.90dB	649	-8.70dB	713	-5.50dB	777	-2.30dB	841	0.90dB	905	4.10dB	969	7.30dB
522	-15.05dB	586	-11.85dB	650	-8.65dB	714	-5.45dB	778	-2.25dB	842	0.95dB	906	4.15dB	970	7.35dB
523	-15.00dB	587	-11.80dB	651	-8.60dB	715	-5.40dB	779	-2.20dB	843	1.00dB	907	4.20dB	971	7.40dB
524	-14.95dB	588	-11.75dB	652	-8.55dB	716	-5.35dB	780	-2.15dB	844	1.05dB	908	4.25dB	972	7.45dB
525	-14.90dB	589	-11.70dB	653	-8.50dB	717	-5.30dB	781	-2.10dB	845	1.10dB	909	4.30dB	973	7.50dB
526	-14.85dB	590	-11.65dB	654	-8.45dB	718	-5.25dB	782	-2.05dB	846	1.15dB	910	4.35dB	974	7.55dB
527	-14.80dB	591	-11.60dB	655	-8.40dB	719	-5.20dB	783	-2.00dB	847	1.20dB	911	4.40dB	975	7.60dB
528	-14.75dB	592	-11.55dB	656	-8.35dB	720	-5.15dB	784	-1.95dB	848	1.25dB	912	4.45dB	976	7.65dB
529	-14.70dB	593	-11.50dB	657	-8.30dB	721	-5.10dB	785	-1.90dB	849	1.30dB	913	4.50dB	977	7.70dB
530	-14.65dB	594	-11.45dB	658	-8.25dB	722	-5.05dB	786	-1.85dB	850	1.35dB	914	4.55dB	978	7.75dB
531	-14.60dB	595	-11.40dB	659	-8.20dB	723	-5.00dB	787	-1.80dB	851	1.40dB	915	4.60dB	979	7.80dB
532	-14.55dB	596	-11.35dB	660	-8.15dB	724	-4.95dB	788	-1.75dB	852	1.45dB	916	4.65dB	980	7.85dB
533	-14.50dB	597	-11.30dB	661	-8.10dB	725	-4.90dB	789	-1.70dB	853	1.50dB	917	4.70dB	981	7.90dB
534	-14.45dB	598	-11.25dB	662	-8.05dB	726	-4.85dB	790	-1.65dB	854	1.55dB	918	4.75dB	982	7.95dB
535	-14.40dB	599	-11.20dB	663	-8.00dB	727	-4.80dB	791	-1.60dB	855	1.60dB	919	4.80dB	983	8.00dB
536	-14.35dB	600	-11.15dB	664	-7.95dB	728	-4.75dB	792	-1.55dB	856	1.65dB	920	4.85dB	984	8.05dB
537	-14.30dB	601	-11.10dB	665	-7.90dB	729	-4.70dB	793	-1.50dB	857	1.70dB	921	4.90dB	985	8.10dB
538	-14.25dB	602	-11.05dB	666	-7.85dB	730	-4.65dB	794	-1.45dB	858	1.75dB	922	4.95dB	986	8.15dB
539	-14.20dB	603	-11.00dB	667	-7.80dB	731	-4.60dB	795	-1.40dB	859	1.80dB	923	5.00dB	987	8.20dB
540	-14.15dB	604	-10.95dB	668	-7.75dB	732	-4.55dB	796	-1.35dB	860	1.85dB	924	5.05dB	988	8.25dB
541	-14.10dB	605	-10.90dB	669	-7.70dB	733	-4.50dB	797	-1.30dB	861	1.90dB	925	5.10dB	989	8.30dB
542	-14.05dB	606	-10.85dB	670	-7.65dB	734	-4.45dB	798	-1.25dB	862	1.95dB	926	5.15dB	990	8.35dB
543	-14.00dB	607	-10.80dB	671	-7.60dB	735	-4.40dB	799	-1.20dB	863	2.00dB	927	5.20dB	991	8.40dB
544	-13.95dB	608	-10.75dB	672	-7.55dB	736	-4.35dB	800	-1.15dB	864	2.05dB	928	5.25dB	992	8.45dB
545	-13.90dB	609	-10.70dB	673	-7.50dB	737	-4.30dB	801	-1.10dB	865	2.10dB	929	5.30dB	993	8.50dB
546	-13.85dB	610	-10.65dB	674	-7.45dB	738	-4.25dB	802	-1.05dB	866	2.15dB	930	5.35dB	994	8.55dB
547	-13.80dB	611	-10.60dB	675	-7.40dB	739	-4.20dB	803	-1.00dB	867	2.20dB	931	5.40dB	995	8.60dB
548	-13.75dB	612	-10.55dB	676	-7.35dB	740	-4.15dB	804	-0.95dB	868	2.25dB	932	5.45dB	996	8.65dB
549	-13.70dB	613	-10.50dB	677	-7.30dB	741	-4.10dB	805	-0.90dB	869	2.30dB	933	5.50dB	997	8.70dB
550	-13.65dB	614	-10.45dB	678	-7.25dB	742	-4.05dB	806	-0.85dB	870	2.35dB	934	5.55dB	998	8.75dB
551	-13.60dB	615	-10.40dB	679	-7.20dB	743	-4.00dB	807	-0.80dB	871	2.40dB	935	5.60dB	999	8.80dB
552	-13.55dB	616	-10.35dB	680	-7.15dB	744	-3.95dB	808	-0.75dB	872	2.45dB	936	5.65dB	1000	8.85dB
553	-13.50dB	617	-10.30dB	681	-7.10dB	745	-3.90dB	809	-0.70dB	873	2.50dB	937	5.70dB	1001	8.90dB
554	-13.45dB	618	-10.25dB	682	-7.05dB	746	-3.85dB	810	-0.65dB	874	2.55dB	938	5.75dB	1002	8.95dB
555	-13.40dB	619	-10.20dB	683	-7.00dB	747	-3.80dB	811	-0.60dB	875	2.60dB	939	5.80dB	1003	9.00dB
556	-13.35dB	620	-10.15dB	684	-6.95dB	748	-3.75dB	812	-0.55dB	876	2.65dB	940	5.85dB	1004	9.05dB
557	-13.30dB	621	-10.10dB	685	-6.90dB	749	-3.70dB	813	-0.50dB	877	2.70dB	941	5.90dB	1005	9.10dB
558	-13.25dB	622	-10.05dB	686	-6.85dB	750	-3.65dB	814	-0.45dB	878	2.75dB	942	5.95dB	1006	9.15dB
559	-13.20dB	623	-10.00dB	687	-6.80dB	751	-3.60dB	815	-0.40dB	879	2.80dB	943	6.00dB	1007	9.20dB
560	-13.15dB	624	-9.95dB	688	-6.75dB	752	-3.55dB	816	-0.35dB	880	2.85dB	944	6.05dB	1008	9.25dB
561	-13.10dB	625	-9.90dB	689	-6.70dB	753	-3.50dB	817	-0.30dB	881	2.90dB	945	6.10dB	1009	9.30dB
562	-13.05dB	626	-9.85dB	690	-6.65dB	754	-3.45dB	818	-0.25dB	882	2.95dB	946	6.15dB	1010	9.35dB
563	-13.00dB	627	-9.80dB	691	-6.60dB	755	-3.40dB	819	-0.20dB	883	3.00dB	947	6.20dB	1011	9.40dB
564	-12.95dB	628	-9.75dB	692	-6.55dB	756	-3.35dB	820	-0.15dB	884	3.05dB	948	6.25dB	1012	9.45dB
565	-12.90dB	629	-9.70dB	693	-6.50dB	757	-3.30dB	821	-0.10dB	885	3.10dB	949	6.30dB	1013	9.50dB
566	-12.85dB	630	-9.65dB	694	-6.45dB	758	-3.25dB	822	-0.05dB	886	3.15dB	950	6.35dB	1014	9.55dB
567	-12.80dB	631	-9.60dB	695	-6.40dB	759	-3.20dB	823	0.00dB	887	3.20dB	951	6.40dB	1015	9.60dB
568	-12.75dB	632	-9.55dB	696	-6.35dB	760	-3.15dB	824	0.05dB	888	3.25dB	952	6.45dB	1016	9.65dB
569	-12.70dB	633	-9.50dB	697	-6.30dB	761	-3.10dB	825	0.10dB	889	3.30dB	953	6.50dB	1017	9.70dB
570	-12.65dB	634	-9.45dB	698	-6.25dB	762	-3.05dB	826	0.15dB	890	3.35dB	954	6.55dB	1018	9.75dB
571	-12.60dB	635	-9.40dB	699	-6.20dB	763	-3.00dB	827	0.20dB	891	3.40dB	955	6.60dB	1019	9.80dB
572	-12.55dB	636	-9.35dB	700	-6.15dB	764	-2.95dB	828	0.25dB	892	3.45dB	956	6.65dB	1020	9.85dB
573	-12.50dB	637	-9.30dB	701	-6.10dB	765	-2.90dB	829	0.30dB	893	3.50dB	957	6.70dB	1021	9.90dB
574	-12.45dB	638	-9.25dB	702	-6.05dB	766	-2.85dB	830	0.35dB	894	3.55dB	958	6.75dB	1022	9.95dB
575	-12.40dB	639	-9.20dB	703	-6.00dB	767	-2.80dB	831	0.40dB	895	3.60dB	959	6.80dB	1023	10.00dB