



Model 5200

Manual

MIDI / RS-422 to LAN interface
Remote Control Accessory for the Aphex 1788A & 188

P/N 5200-3200
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Manufactured By

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a DWV ENTERTAINMENT Company

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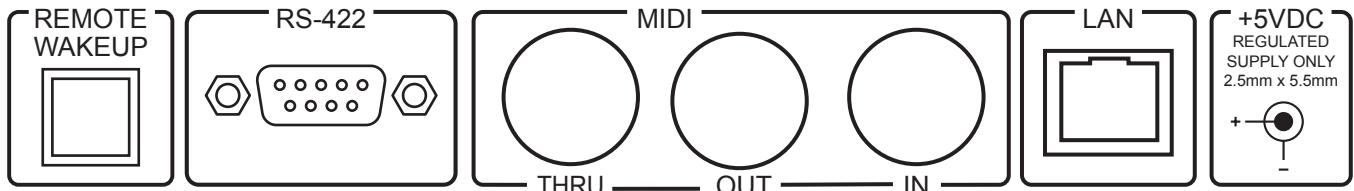
MODEL 5200 MIDI/RS-422 to LAN INTERFACE

Remote Control Accessory for Aphex 1788A & 188 Remote Preamps

USE ONLY THE +5VDC POWER SUPPLY PROVIDED WITH THE 5200

PROTECT FROM MOISTURE

NO USER SERVICEABLE PARTS INSIDE



Press this button to wake up the 1788A or 188's in your system. After you have pressed this button, your MIDI controller or DAW with MIDI will be able to control the pre-amps.

This is a balanced serial input only! It will work with any Yamaha console that has an RS-422 Serial port, such as the DM 2000.

MIDI I/O for DAW's with MIDI or any other MIDI controller.

Ethernet port. You will need to connect this to a ROUTER! The 5200 is a DHCP device and requires a router for IP addressing.

YAMAHA

Console Interface Operations

Using a Yamaha digital console to remotely control your Aphex 1788A or 188, remote controlled preamps. You will need to (depending on which Yamaha console you are interfacing with) come out of the serial RS-422 or MIDI data port of your Yamaha console into the Model 5200.

From the Model 5200, you will come out Ethernet into a router. The router will have to connect to an Ethernet switch at the preamps and the switch will need to have adequate connections to connect the amount of Aphex remote pres that you have.

Each Aphex 1788A or 188, will need to be set with it's own unique NET number, from 1 to 16. You cannot have two pres with the same NET number!

The Gain limits on the Aphex pres is 26dB to 65 dB. The gain range on the Yamaha faders is ∞ to +10dB.

*You must have the digital outs of the Aphex pres connected to the digital inputs of your Yamaha console!

On the DM 2000, you can program the midi out to Aphex midi protocol. Otherwise, you will need to connect the Model 5200, to a Yamaha console via an RS-422 serial cable. Then the 5200, will translate the Yamaha protocol to Aphex Ethernet commands.

Set up your Yamaha console for the Yamaha AD8HR remote pres as described in your Yamaha owners manual Slot 1, 1-8, Slot 2, 9-16. Ext. HA port select Slot 1, 1-8

Connect the Aphex pres to your console. Select the master clock source for your system and slave all of the other clocks from that clock source.

“Do not daisy chain the word clock!” Use a word clock distribution amplifier or if you have the Aphex Anaconda 828M, full word clock distribution is provided by it.

To control the Aphex remote pres by the faders on your Yamaha console you will need to set the fader mode to AUX/MTRX.

Now you have to press the Remote Wakeup button on the Model 5200.

Adjusting the faders on your Yamaha console in the AUX/MTRX mode will control the gain of the Aphex pres. Putting the fader mode back to fader you are controlling the mix.

Important Notes

1. Be sure your DHCP server has ports 1198 and 1199 available and unlocked.
 2. Only one DHCP Server can be allowed to exist on the LAN. If any additional routers are attached to the LAN, they must have their DHCP servers disabled.
 3. We do not recommend using HUBS only switches on the LAN.
 4. If there are any fixed IP address on the LAN other than the Aphex 1788A's or 188's, or computers, you will need your network administrator to make sure they are not duplicated.
 5. There cannot be a firewall splitting up any part of the LAN. But the whole LAN can be inside a firewall.
- * The Yamaha M7CL is a single layer device and will not natively control our pres.!
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Avid/Digidesign Console Interface Operations

Using an Avid/ Digidesign control surface such as the Icon, D-Command or Pro Tools HD software to control your Aphex 1788A's or 188's via the Model 5200 is quite easy. The Model 5200 will accept and translate the remote protocols for Avid remote pres and allow you to control your Aphex preamps from your Avid control surface.

The one thing that you will need to purchase to make your system work with the Model 5200 and Aphex pre's is a MIDI interface for you Pro Tools system. Connect the MIDI IN's and OUT's from your MIDI interface into the Model 5200. MIDI out from Pro Tools to MIDI in of the 5200, MIDI out of the 5200, to MIDI in of your Pro Tools MIDI interface.

Connect your Model 5200 Ethernet port to a router. We suggest connecting your router to a switcher (that typically lives next to your Aphex pres).

Your Aphex pre's will need to be setup with their own unique "Net" number as explained in the Aphex 1788A or 188 owner's manual.

In Pro Tools you will need to configure your software for the Digidesign PRE as described in their owner's manual.

Press the remote WAKEUP button

You now have control of your Aphex 1788A or 188's from your Avid Digidesign system.

MIDI Interface Guide

Using MIDI

Direct MIDI SysEx Strings

Direct MIDI SysEx strings are exactly the same as the parametric strings used for indirect MIDI control (described later). When filling in the three bytes in the grayed area, refer to reference data at the end of this chapter.

Understanding Ch, Dev and Net Offsets

Please observe two important facts about MIDI Channel, Device, and Net Numbers.

1. All three are used in decimal form on the 1788A and 188. Ch and Dev go from 01 to 16 and Net goes from 001 to 128. You will need to convert decimal to hexadecimal for use in SysEx strings. A handy conversion table is located in this chapter's reference data.

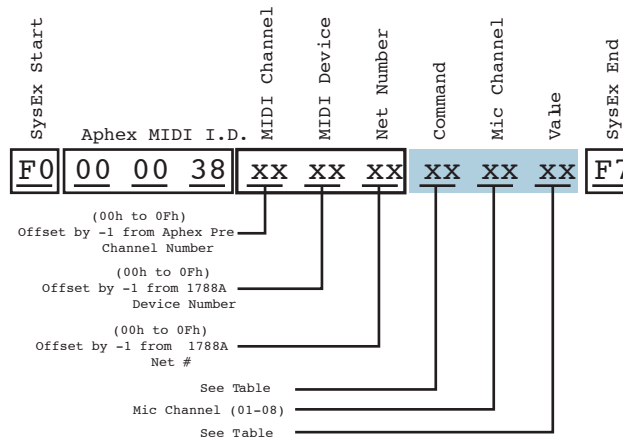
2. Channel, Device, and Net numbers in the SysEx strings must be programmed with an offset of -1 from the numbers that are indicated on the 1788A or 188 front panel readout. For example, if the 1788A or 188 is set to Ch 01, Dev 02, and Net 003, the SysEx code would look like 00 01 02, not 01 02 03. This may be confusing at first, but you will find it quickly becomes easy to deal with.

Setting Up The Controller

The method of programming a MIDI control varies from product to product. To successfully interface a MIDI control surface to an Aphex 1788A or 188, you will need to learn the control surface. Once you have determined the way to program your controller, you can begin applying SysEx strings to the controls. We will next illustrate this process by using a general purpose MIDI controller.

Here's how we're going to set it up. The MIDI controller will be set up to control the Input Gains of all eight channels of a 1788A or 188. The push buttons under each fader will be programmed to activate/deactivate the Mutes of each channel.

11- Byte Direct MIDI SysEx String



NOTE: We will refer to the Reference Data at the end of this chapter for command codes used by the 1788A.

When programming each control, use the following setup:

1. Single-byte transmit
2. Faders: string; Buttons: string toggle
3. Fader Limits: 26 to 65
4. Faders: use “pr” in the value byte. This is the PC1600’s code for grabbing the fader’s value.
5. For this demonstration, we’re using command code 00 for Input Gain and 07 for Mute. We’re declaring the 1788A is set for Channel 1, Device 1, Net 1.

Now program in the following strings:

Connections

Connect a professional MIDI cable from the PC 1600x’s MIDI OUT jack to the 1788A’s MIDI IN jack.

Controlling Multiple 1788A’s

Additional units can be stacked by connecting the MIDI THRU to the next MIDI IN, and so-on. If the added 1788A’s are kept on the same MIDI channel, they must be given different MIDI device numbers.

The next step would be to program the additional controls on the MIDI controller with SysEx strings associated with the additional MIDI device numbers. For example, if one additional 1788A is used, the second set of eight faders and buttons of the PC1600 could be coded

MIDI Strings for Demonstration

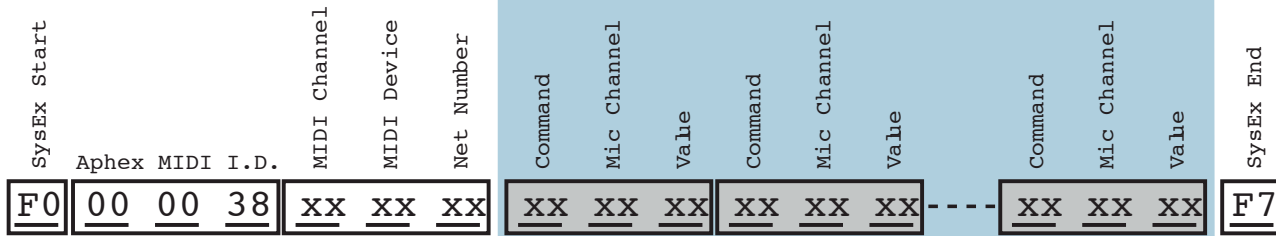
Fader 1	string	F0	00	00	38	00	00	00	00	01	pr	F7
Fader 2	string	F0	00	00	38	00	00	00	00	02	pr	F7
Fader 3	string	F0	00	00	38	00	00	00	00	03	pr	F7
Fader 4	string	F0	00	00	38	00	00	00	00	04	pr	F7
Fader 5	string	F0	00	00	38	00	00	00	00	05	pr	F7
Fader 6	string	F0	00	00	38	00	00	00	00	06	pr	F7
Fader 7	string	F0	00	00	38	00	00	00	00	07	pr	F7
Fader 8	string	F0	00	00	38	00	00	00	00	08	pr	F7
Button 1	string 1	F0	00	00	38	00	00	00	07	01	01	F7
	string 2	F0	00	00	38	00	00	00	07	01	00	F7
Button 2	string 1	F0	00	00	38	00	00	00	07	02	01	F7
	string 2	F0	00	00	38	00	00	00	07	02	00	F7
Button 3	string 1	F0	00	00	38	00	00	00	07	03	01	F7
	string 2	F0	00	00	38	00	00	00	07	03	00	F7
Button 4	string 1	F0	00	00	38	00	00	00	07	04	01	F7
	string 2	F0	00	00	38	00	00	00	07	04	00	F7
Button 5	string 1	F0	00	00	38	00	00	00	07	05	01	F7
	string 2	F0	00	00	38	00	00	00	07	05	00	F7
Button 6	string 1	F0	00	00	38	00	00	00	07	06	01	F7
	string 2	F0	00	00	38	00	00	00	07	06	00	F7
Button 7	string 1	F0	00	00	38	00	00	00	07	07	01	F7
	string 2	F0	00	00	38	00	00	00	07	07	00	F7
Button 8	string 1	F0	00	00	38	00	00	00	07	08	01	F7
	string 2	F0	00	00	38	00	00	00	07	08	00	F7

The Model 5200, will allow you to control your Aphex 1788A or 188 from any MIDI controller. You will need to be familiar be with the programming of your MIDI device.

Aphex Remote Pre Parametric MIDI Commands

Command	Control	Value Range
00h	Input Gain	1Ah to 41h (26 to 65)
01h	Main Max Out	00h to 1Bh (0 to 27)
02h	Aux Max Out	00h to 1Bh (0 to 27)
03h	Phantom Power	00h = OFF, 01h = ON
04h	Low Cut Filter	00h = OFF, 01h = ON
05h	Limiter (MicLim)	00h = OFF, 01h = ON
06h	Polarity Reverse	00h = OFF, 01h = ON
07h	Mute	00h = OFF, 01h = ON
08h	Pad	00h = OFF, 01h = ON
0Ah	Test Tone -20dB	00h = OFF, 01h = ON
0Bh	Test Tone 0dB	00h = OFF, 01h = ON
17h	Test Tone (alternative method)	00h = OFF, 01h = -20dB, 02h = 0dB
20h	Request Parameter SysEx Dump	01h (required)
56h	Request Extended SysEx Dump	00h (any value placeholder byte)

Put 1 to 64 3-byte Commands Here



System Exclusive (SysEx) Parametric Control String

MIDI Control Examples

Example 1

Direct MIDI. 1788A Ch set to 01, Dev set to 01, Net set to 001.

Set preamp gain to 45dB, mic channel 1

SysEx: F0 00 00 38 00 00 00 00 01 2D F7

Example 2

Direct MIDI. 1788A Ch set to 02, Dev set to 01, Net set to 001.

Set Limiter ON, mic channel 4

SysEx: F0 00 00 38 01 00 00 05 04 01 F7

Example 3

Direct MIDI. 1788A Ch set to 01, Dev set to 01, Net set to 001.

Set preamp gain to 45dB, mic channels 1 thru 8

**SysEx: F0 00 00 38 00 00 00 00 01 2D 00 02 2D 00 03 2D 00 04 2D 00 05 2D
00 06 2D 00 07 2D 00 08 2D F7**

Example 4

Indirect MIDI. 1788A-R Ch set to 02, 1788A Net set to 002.

Set preamp gain to 45dB, mic channel 1

SysEx: F0 00 00 38 01 00 01 00 01 2D F7

Example 5

Indirect MIDI. 1788A-R Ch set to 02, 1788A Net set to 002.

Set Limiter ON, mic channel 4

SysEx: F0 00 00 38 01 00 01 05 04 01 F7

Example 6

Indirect MIDI. 1788A-R Ch set to 01, 1788A Net set to 001.

Set preamp gain to 45dB, mic channels 1 thru 8

**SysEx: F0 00 00 38 00 00 00 00 01 2D 00 02 2D 00 03 2D 00 04 2D 00 05 2D
00 06 2D 00 07 2D 00 07 2D F7**

Example 7

Preset Recall to one or more 1788A-R's. All 1788A-R's Ch set to 1

Recall preset #1 SysEx: CO 01

Recall preset #2 SysEx: CO 02

Recall preset #1 SysEx: CO 01

Recall preset #2 SysEx: CO 02

Example 8

Preset Recall to eight 1788A-R's. 1788A-R MIDI Channels set 1 to 8

Recall preset #1 SysEx: CO 01 C1 01 C2 01 C3 01 C4 01 C5 01 C6 01 C7 01

Recall preset #2 SysEx: CO 02 C1 02 C2 02 C3 02 C4 02 C5 02 C6 02 C7 02

Example 9

Preset Recall to eight 1788A-R's. 1788A-R MIDI Channels set 1 to 8 and Banks set 1 to eight respectively.

This is an example of a complex recall.

Bank 1 preset 1, Bank 2 preset 2, Bank 3 preset 2, Bank 4 preset 4, Bank 5 preset 1, Bank 6 preset 6, Bank 7 preset 42, Bank 8 preset 60

SysEx: CO 01 C1 02 C2 02 C3 04 C4 01 C5 06 C6 2A C7 3C

Example 10

Direct MIDI. 4 1788A's with MIDI Channels set to 01, Dev set to 01, 02, 03, and 04. Net set to 001 (this is not important). Looped through MIDI Thru jacks.

Mute all 32 mic channels.

F0 00 00 38 00 00 00 07 01 01 07 02 01 07 03 01 07 04 01 07 05 01 07 06 01 07 07 01 07 08 01 F7 F0 00 00 38 00 01 00 07 01 01 07 02 01 07 03 01 07 04 01 07 05 01 07 06 01 07 07 01 07 08 01 F7 F0 00 00 38 00 02 00 07 01 01 07 02 01 07 03 01 07 04 01 07 05 01 07 06 01 07 07 01 07 08 01 F7 F0 00 00 38 00 03 00 07 01 01 07 02 01 07 03 01 07 04 01 07 05 01 07 06 01 07 07 01 07 08 01 F7

It's easier to it see this way:

F0 00 00 38 00 [00] 00 [07 01 01] [07 02 01] [07 03 01] [07 04 01] [07 05 01] [07 06 01] [07 07 01] [07 08 01] F7
F0 00 00 38 00 [01] 00 [07 01 01] [07 02 01] [07 03 01] [07 04 01] [07 05 01] [07 06 01] [07 07 01] [07 08 01] F7
F0 00 00 38 00 [02] 00 [07 01 01] [07 02 01] [07 03 01] [07 04 01] [07 05 01] [07 06 01] [07 07 01] [07 08 01] F7
F0 00 00 38 00 [03] 00 [07 01 01] [07 02 01] [07 03 01] [07 04 01] [07 05 01] [07 06 01] [07 07 01] [07 08 01] F7

Un-Mute all 32 mic channels:

F0 00 00 38 00 [00] 00 [07 01 00] [07 02 00] [07 03 00] [07 04 00] [07 05 00] [07 06 00] [07 07 00] [07 08 00] F7
F0 00 00 38 00 [01] 00 [07 01 00] [07 02 00] [07 03 00] [07 04 00] [07 05 00] [07 06 00] [07 07 00] [07 08 00] F7
F0 00 00 38 00 [02] 00 [07 01 00] [07 02 00] [07 03 00] [07 04 00] [07 05 00] [07 06 00] [07 07 00] [07 08 00] F7
F0 00 00 38 00 [03] 00 [07 01 00] [07 02 00] [07 03 00] [07 04 00] [07 05 00] [07 06 00] [07 07 00] [07 08 00] F7

Summary

We hope the information, references and examples in this chapter will make understanding MIDI control a lot easier for you. A little time spent studying this material may save you many hours of frustration and grief later on. Contact Apex tech support should you run into any problems we haven't covered here.

Safety Declarations

CAUTION: For protection against electric shock, do not remove the cover. No user serviceable parts inside.

WARNING: This equipment has been tested and found to comply with the limits for a class A digital device pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with this operating guide may cause interference to radio communications. Operation of this equipment in a residential area is likely to cause interference in which case the user will be required to correct the interference at his/her own expense.

The user is cautioned that changes and modifications made to the equipment without approval of the manufacturer could void the user's authority to operate this equipment.

Disclaimer

“YAMAHA” , “DM 2000” and “M7CL” Are registered trademarks of Yamaha Corporation. “Avid”, “Digidesign”, “Pro Tools” and “PRE” Are registered trademarks of Avid. Aphex is a registered trade mark DWC-Aphex and DWV Entertainment. All other trademarks contained herein are the property of their respective owners.

Warranty & Service

Limited Warranty

PERIOD

One year from date of purchase

SCOPE

All defects in workmanship and materials. The following are not covered:

- a. Voltage conversions
- b. Units on which the serial number has been defaced, modified, or removed
- c. Damage or deterioration:
 1. Resulting from installation and/or removal of the unit.
 2. Resulting from accident, misuse, abuse, neglect, unauthorized product modification or failure to follow instructions contained in the User's Manual.
 3. Resulting from repair or attempted repair by anyone not authorized by Aphex Systems.
 4. Occurring from shipping (claims must be presented to shipper).

WHO IS PROTECTED

This warranty will be enforceable by the original purchaser and by any subsequent owner(s) during the warranty period, so long as a copy of the original Bill of Sale is submitted whenever warranty service is required.

WHAT WE WILL PAY FOR

We will pay for all labor and material expenses for covered items. We will pay return shipping charges if the repairs are covered by the warranty.

LIMITATION OF WARRANTY

No warranty is made, either expressed or implied, as to the merchantability and fitness for any particular purpose. Any and all warranties are limited to the duration of the warranty stated above.

EXCLUSION OF CERTAIN DAMAGES

Aphex Systems' liability for any defective unit is limited to the repair or replacement of said unit, at our option, and shall not include damages of any other kind, whether incidental, consequential, or otherwise.

Some States do not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusions may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from State to State.

SERVICE INFORMATION

If it becomes necessary to return this unit for repair, you must first contact Aphex for a Return Authorization (RMA number), which will need to be included with your shipment for proper identification. If available, repack this unit in its original carton and packing material. Otherwise, pack the equipment in a strong carton containing at least 2 inches of padding on all sides. Be sure the unit cannot shift around inside the carton. Include a letter explaining the symptoms and/or defect(s). Be sure to reference the RMA number in your letter and mark the RMA number on the outside of the carton. If you believe the problem should be covered under the terms of the warranty, you must also include proof of purchase. Insure your shipment and send it to:

Aphex
11068 Randall Street
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