This file contains the latest information on RACE and on the latest firmware for the Dx 38 !

(last update: 16.04.2004, Release V2.10)

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1. System Requirements

- PC computer system with Pentium (at least) 166 MHz
- Microsoft Windows 98 / Me / 2000 / XP or Windows NT 4.x or higher
- 128 MB RAM
- Hard disk with at least 5 MB of free space available
- CD-ROM drive
- Mouse
- VGA-monitor screen (1024 x 768)
- Graphic card, 256 colours
- COM-port or USB-port for RS-232 or RS-485 Communication
- MIDI-Port for MIDI Communication

2. Installation

If you are running Windows NT, Windows 2000 or Windows XP you have to be the PC's administrator to install RACE.
Installation from DC-ROM drive:

- Insert the CD into CD-ROM drive
- Run the setup program ("race_210.exe")
- Follow the setup notes

3. Connection PC <-> Unit

Generally, the editor software runs without the need of a Dx 38 being connected. For remote controlling a Dx 38 via PC please observe the following steps when establishing the connection:

RS-232-Communication:

- Examine which of your computer's COM-ports is accessible and not assigned to another application or external device. RACE allows to select COM1 to COM8.
- Use the supplied serial cable to connect the chosen COM-port and the RS-232 port on the Dx 38. In case the COM-port of your computer is not carried out as a 9-pole D-sub connector, please consult your local supplier for computer accessories to get a fitting adapter.
- If you have not COM port on your computer, it is possible to use USB to RS-232 converter to communicate with the device. In that case, you need to examine on which COM-port is converter installed and select that port for communication. Use the serial cable to connect the device and converter, and another cable to connect the converter and PC.

RS-485-Communication:

- Make sure your units have installed a firmware version 2.01 or higher. If not, you have to update the firmware using RS-232, first !
- Make sure that you have installed the RS-485 board in your Dx 38 unit(s).
- Examine which of your computer's USB- or COM-ports is accessible and not assigned to another application or external device. RACE allows to select COM1 to COM8.
- If you use a USB / RS-485 Converter connect it to the USB-port. In RACE choose **RS-485-Setup** in the Remote-Menu and select the COM-port assigned to the USB / RS-485 Converter. (*Read more about USB / RS-485 Converters in chapter 6*)
- If you use a RS-232 / RS-485 Converter connect it to the COM-port. In RACE choose **RS-485-Setup** in the Remote-Menu and configure the COM-port due to the converter's manual.
- Connect the RS-485 converter with the RS-485 port of the unit(s). If you have the DCN 485 you can use a standard twisted-pair Microphone-Cable. The DCN 485 is powered from a PC's standard PS/2 port. Connect the converter's PS/2 plug to a free PS/2 socket of your PC. If all your PS/2 ports are in use already (e.g. for the keyboard or mouse) you can then plug the keyboard or mouse to the DCN 485.
- Make sure, that the units' RS-485 IDs matches with the software's RS-485 IDs. Otherwise the communication won't work.

MIDI-Communication:

- Connect the PC's MIDI-Out port with the unit's MIDI-In port and vice versa. Be aware that both cables have to be connected, otherwise you'll get a "Communication Error".
- Make sure, that the unit's MIDI Rx channel matches with the software's MIDI Tx channel. Otherwise the communication won't work.

4. Sending a new firmware to the unit

RACE comes with the latest firmware. After installation, the firmware can be found in the folder "RACE\OS". Generally, it is strongly recommended, always to use the latest version of the firmware. This chapter describes, how to send a firmware to the unit. Your User Presets will not be erased !

- Check out our homepage for the latest firmware and store it in the "OS"-directory that has been created, when the Editor was installed.
- Unzip that file, also into that "OS"-directory.
- Connect your PC with a single unit via RS-232 or to several units via RS-485 as described in chapter 3.
- Start RACE
- In the "Remote"-Menu, select "Send firmware to unit" and choose "RS-232" or “RS-485” in the additional menu, that will pop up.
- Choose the appropriate firmware-file by double-clicking it and follow the messages that will appear on the screen, now. The display of the unit keeps clear while data-transfer.

When sending a new firmware to the unit and this process fails or has been interrupted, the unit may not work anymore. In that condition, the unit starts up in a so called Bootload-Mode. The Display stays clear in that mode! Please check all connections to be done. Then turn the unit off and on again and try again to send the firmware. If even that doesn't help, please contact EVI Audio.

5. Updates

To get the latest version of RACE or of the unit's firmware, check out our homepage:

www.electro-voice.de

6. Important Notes

6.1 New Factory Presets:

Since RACE 2.05 the software contains 50 new factory presets (F1 to F50) that are stored permanently in the Dx38 with the installation of the new firmware. Please check the new preset list BEFORE you upgrade to the new firmware. If you are using a factory preset that you can’t find on the new list, please store this preset to a free User Preset.

In addition to the 50 new factory settings on the Dx38 (F1 to F50) you’ll find some additional settings in the editor software (folder RACE/factory). Most of these settings are including the speaker data, so the acoustic result of any modification is visible (and audible, if you are online) immediately.
This folders also contains a folder “Old Presets”. Here you’ll find all presets of previous releases.

What has changed?

The presets are representing settings for the most current EV speaker systems. All factory presets (with the exception of X-Line) have been designed to leave all input filters unused for customers preferences. We recommend to use only input filters for modifications, as changes of output- and cross over filters will also affect the time alignment of the whole system.

Limiter Settings

All presets have been set with Limiter thresholds on +2 dBu (0,98V). This value represents the “best” settings for appropriate EV amplifiers in a live music application at input sensitivity 0dBu (0,775V). As the limiter works in the digital domain, all output pots on the front panel should be on 0dB (full open). If the pots are at –6dB (center position) the output signal of the Dx38 will not exceed –4 dBu. If you use other amplifiers or other sensitivities, please make sure to adjust the limiters appropriate. The limiter is a very useful tool to protect speakers, however the setting depends also on the kind of music material used. For club, dance and techno music it is recommended to use lower thresholds in order not to “overload” the speakers.

6.2 USB-Interface to Serial Port Converter’s

There are two serial ports available for the units – a RS-232 port as standard interface and a RS-485 port as optional interface. The RS-232 interface should be used when controlling just one unit and for short cable runs. The RS-485 interface should be used when controlling more units (up to 31) and for long cable runs as it is a balanced interface.

To accommodate the possibilities on current computers, we support both USB-to-RS-232 and USB-to-RS485 interfaces. For USB-to-RS485 converters a PC software version V2.10 or higher is needed.

A) USB to Serial RS-232 Interface

This interface provides a RS-232 port from a USB laptop. The following converters have been tested successfully with PC software versions V2.06 and higher:

VISION SYSTEMS Vscom USB-COM, USB Serial Adapter

VISION SYSTEMS Vscom USB-2COM, USB Dual Serial Adapter

VISION SYSTEMS Vscom 232 PCMCIA, PCMCIA Card with 2 RS232 ports

More information can be found at:
http://www.visionsystems.de

SPECTRA PCA-70119, USB to RS232 Serial Bridge cable

More information can be found at:
http://www.spectra.de/newsdata/Bestellblatt-PCA-70119A-neu.pdf

DIGITUS DA 70119, USB-RS232 Adapter

More information can be found at:
http://www.digitus.de/international/index.htm

LASCAR ELECTRONICS USB^{2}serial Converter

More information can be found at:

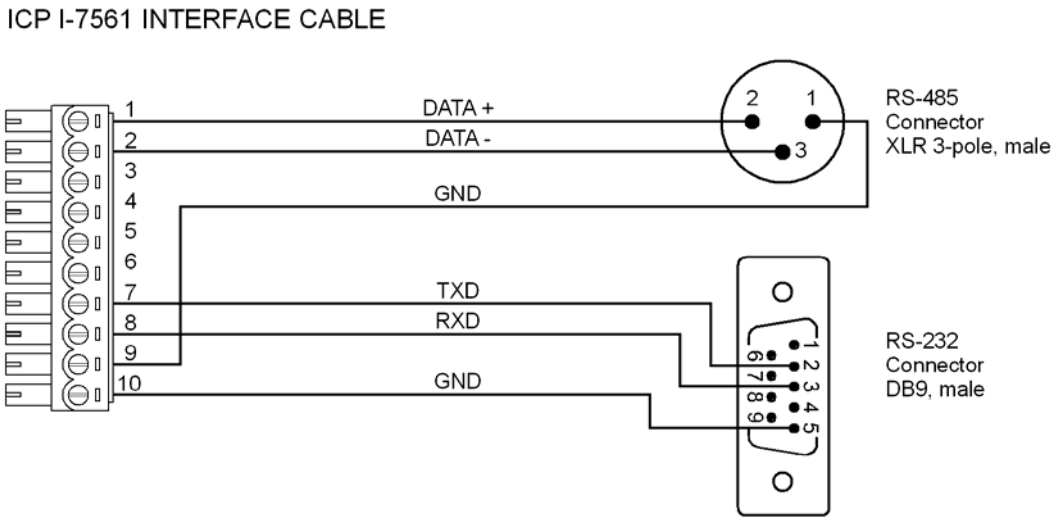
http://www.lascar.com

B) USB to Serial RS-485 Interface

This interfaces provide a RS-485 port from a USB laptop. The following converters have been tested successfully with PC software versions V2.10 and higher:

ICPCON I-7561 USB to RS-232/485 Converter

This is a converter for transferring serial data over USB. It allows you to connect your serial devices to a PC USB interface and it provides a RS-232 port and a RS-485 port within one converter. The output ports are provided on barrier strip terminals on the box. The wiring diagram below shows the pin assignments for RS-485 and for RS-232 interface cables.

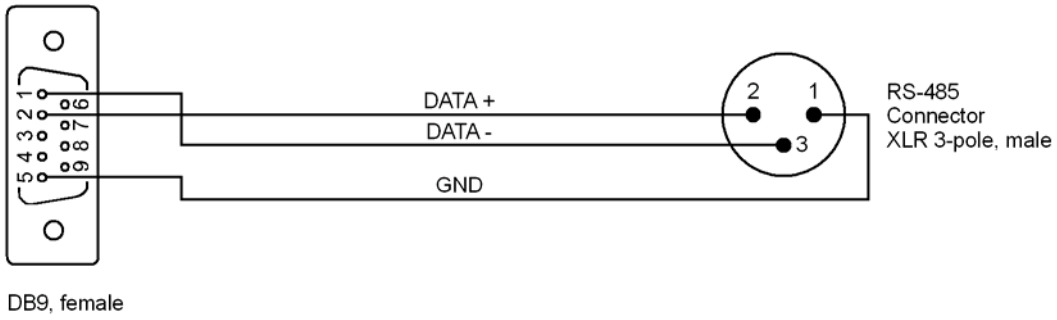


More ICPCON information can be found at:
http://www.spectra.de/
http://www.icpdas.com/products/7000/i-7561.htm

VISION SYSTEMS USB-COMi-SI USB to RS-485 Converter

This is a converter for transferring serial data over USB with optical isolation. Connecting to a USB port on your computer it provides a serial RS-485 port on a DB9 male connector. The following drawing shows the interface cable from DB9 to XLR.

USB-COMi INTERFACE CABLE



More USB-COMi-SI information can be found at:
http://www.visionsystems.de/produkte/623.html

The solutions outlined above have been tested with PC software version V2.10 on Windows 98, 2000 and XP. Other interfaces may work also, but these are the ones we have tested and would recommend. If you wish to use a different interface, or are a manufacturer who would like to supply a unit for evaluation, please contact us.

6.3 Disabling the FIFO-Buffer (when using DCN 485 Converter):

For the RS-485 communication to work proper with the DCN 485 Converter it is necessary to disable the COM-Port's FIFO-Buffer

Win 95/98/Me:

- Click on **Start** and point on **Settings** (**Einstellungen**)
- Click on **Control Panel** (**Systemsteuerung**)
- Double-click on **Device-Manager** (**Geräte-Manager**)
- Click on the "**+**" next to **Ports** (**Anschlüsse**) COM und LPT
- Double-click on the COM-Port you want to use for RS-485 communication
- Activate the tab **Port Settings** (**Anschlußeinstellungen**)
- Click on **Advanced**… (**Erweitert**…)
- Deactivate the FIFO-Buffer by disabling "**Use FIFO buffer**" **(FIFO-Puffer verwenden**)
- Close all open windows using the **OK** button
- Reboot your PC

Win NT:

- Click on **Start** and point on **Settings** (**Einstellungen**)
- Click on **Control Panel** (**Systemsteuerung**)
- Double-click on **Ports** (**Anschlüsse**)
- Click on the COM-Port you want to use for RS-485 communication
- Click on **Settings** (**Einstellungen**)
- Click on **Advanced**... (**Erweitert**…)
- Deactivate the FIFO-Buffer by disabling "**FIFO active**" (**FIFO aktiviert**)

- Close all open windows using the **OK** button
- Reboot your PC

Win 2000:

- Click on **Start** and point on **Settings** (**Einstellungen**)
- Click on **Control Panel** (**Systemsteuerung**)
- Double-click on **System**
- Activate the tab **Hardware**
- Click on **Device-Manager** (**Geräte-Manager**)
- Click on the "**+**" next to **Ports** (**Anschlüsse**) COM und LPT
- Double-click on the COM-Port you want to use for RS-485 communication
- Activate the tab **Port Settings** (**Anschlußeinstellungen**)
- Click on **Advanced**… (**Erweitert**…)
- Deactivate the FIFO-Buffer by disabling "**Use FIFO buffer**" **(FIFO-Puffer verwenden**)
- Close all open windows using the **OK** button
- Reboot your PC

Win XP:

- Click on **Start**
- Click on **Control Panel** (**Systemsteuerung**)
- Double-click on **System**
- Activate the tab **Hardware**
- Click on **Device-Manager** (**Geräte-Manager**)
- Click on the "**+**" next to **Ports** (**Anschlüsse**) COM und LPT
- Double-click on the COM-Port you want to use for RS-485 communication
- Activate the tab **Port Settings** (**Anschlußeinstellungen**)
- Click on **Advanced**… (**Erweitert**…)
- Deactivate the FIFO-Buffer by disabling "**Use FIFO buffer**" **(FIFO-Puffer verwenden**)
- Close all open windows using the **OK** button
- Reboot your PC

6.4 Encoder Type

In some cases, a problem due to the encoder may occur when upgrading the firmware to a version newer than 1.02. If the encoder behaves wrong and needs two steps for one value-incrementation or -decrementation, you can get rid of that problem by stepping through the service procedure as described in the following:

- Press the right SELECT button and the EDIT button simultaneously while switching power on. The unit will start in the SERVICE MODE.
- Step through the test menu using the SELECT button until you get to "ENCODER TYPE".
- Push RECALL, the unit will show "STEPS/DETENT 1" or STEPS/DETENT 2".
- Change with encoder to the different selection "STEPS/DETENT 1" or STEPS/DETENT 2", respectively.
- Press RECALL again and turn off the unit.

When turning the unit on again, the encoder should work the way it is supposed to.

6.5 Appearance

If RACE does not look the way it is supposed to, you may have old windows system files in your PC. Please launch the "40comupd.exe" file located in your Windows-System-Directory.

7. RACE Revision History

Version 2.10

- New Firmware Version included
- USB Interface implemented
- Firmware Upload improved (connection checking, information about current firmware version provided, selecting devices when sending Firmware via RS-485)
- RS-232 Remote improved (when going online, it is possible to synchronize data between PC and Device)
- Mute (channel mute and master mute) improved, working faster and more reliable.
- Bug fix: Program Names stored correctly now
- Bug fix: Going Offline with Save now works properly

Version 2.07

- In the Big Bode Window the Channel Names do not overwrite themselves anymore
- Choosing “close” from the File Menu works proper now

Version 2.06

- The terms “upload” and “download” are used correctly, now
- Several superflous messages do not appear anymore
- In the Big Bode Window the Channel Names do not overwrite themselves anymore
- Bug fix: RACE can now be closed properly in any situation
- Bug fix: When deleting single devices from a multi device project no wrong data gets lost
- Bug fix: When storing a User Preset into the unit, the Program Change menu is updated now
- Bug fix: Saving a preset using right-click on a device, the speaker data are also appended to the preset data
- Bug fix: When using master mute or a mute button on a virtual device, the mute button state is now updated in any dialog
- Bug fix: In a printout all delay times and distances are shown exactly the same as in the dialogs
- Bug fix: The master EQ’s are now correctly taken into the calculation of the bodeplot
- Bug fix: In master delay, us values can now be typed in properly

Version 2.05

- Bug fix: Loading a "*.x38" file works now also by right clicking a device and choosing the appropriate menu entry
- Bug fix: A "*.x38" does not cause RACE to crash anymore when clicking around in the configuration window
- Bug fix: Assigning "*.tlx" files to units works proper now on all kinds of PC's
- New: New Factory Presets (see sect. Important Notes)

Version 2.02

- New: Saving a project now always includes the components
- New: Printout prints an additional "Project Page"
- Bug fix: No data is lost anymore when downloading it to the devices using RS-485
- Bug fix: Saving and loading of projects works proper now
- Bug fix: Receiving of RS-232 data does not disturb the Crossover dialog anymore
- Bug fix: RACE doesn't crash anymore when storing a program to the unit with a different name
- Bug fix: The Dynamics Graphs do not disappear anymore
- Bug fix: The Mute Buttons do not disappear anymore when being online
- Bug fix: Uploading a project from units with group ids different to 0 works correct now

Version 2.01

- Bug fix: Copy/Paste works proper now regarding channel delays
- Bug fix: Deleting a single device out of a bunch of devices works proper now
- Bug fix: When adding a device to a group, the data are copied to this device correctly now
- Bug fix: Saving and loading of a project with multiple devices works proper now
- Bug fix: RACE doesn't crash anymore after finishing a firmware update via RS-485
- Bug fix: Double-clicking a RACE-file opens the software proper now
- Bug fix: Print caused a crash on some machines
- Bug fix: When loading a project, the RS-485 Ids are correctly recovered now

Version 2.00

- New Feature: Rs-485 network support
- New Feature: Copy & Paste support for signal blocks or whole In- or Outputs
- Bug fix: Attacktime- and Releasetime limits of the Compressor/Limiter section now match to those of the Dx 38.
- Bug fix: MIDI Tx Channel work proper now
- Bug fix: Elder editor files can be opened now, too
- Change: SPL-Distribution is now drawn in absolute values
- Bug fix: Got rid of a communication error that occurred sometimes, when a whole program was downloaded
- Bug fix: Bypass of Limiters and Compressors aren't ignored anymore when sent to the Dx 38
- Bug fix: Allpass filters of 2^{nd} order are now sent correctly to the Dx 38

- Bug fix: RS-232 communication works proper now with Windows 2000
- Bug fix: MIDI communication works proper now with Windows 2000

Version 1.01

- Firmware version 1.19 included
- Got rid of “dead” menu entries
- Bug fix: X-Over frequencies are not editable anymore, when the filter is set to thru

Version 1.00

- first release

8. Dx 38 firmware Revision History

Version 3.20

- Limiter Hold Time set to 0 ms

Version 2.05

- The Dx 38 does not reset anymore when a Program Change is performed using MIDI
- New Factory Presets (see sect. Important Notes)

Version 2.02

- Bug fix: MIDI now works together with the contact closure option

Version 2.01

- New: RS-485 Network Support
- Bug fix: Midi-Tx-Channel does not reset the Dx 38 anymore

Version 1.19

- New DSP-program for increased RAM access time.

Version 1.18

- Config is stored with user program as long the routing is not changed. New service-mode intro.

Version 1.17

- Bug fix: Master Delay in unit feet was not editable if set to 2ft.
- New: Program names are listed to the PC Editor Software.

Version 1.05

- New Presets: F19, F20, F35 - F50

Version 1.03

- When sending a parameter set to the editor, also the mutes are transmitted, now.

Version 1.02

- Bug fix: Limiter threshold levels below -24dB are not inaccurate anymore in case of positive output level settings.
- New: VU-Meter-communication between unit and editor.
- New: Output levels now can be changed relatively.

Version 1.01

- Bug fix: The unit now can be unlocked without any problems.

Version 1.00

- Bug fix: Program names are limited to 16 characters. Program names will be truncated automatically if too long.
- Receive Buffer enlarged.
- New: Temperature Unit (Fahrenheit)
- New: LOCK with security confirmation.
- MIDI SYSEX Implementation: Program Dump, Parameter Link.
- MIDI Program Change for User and Factory Programs.
- Contact Closure support.
- Option mode cosmetics.
- Presets 35 - 40 and 42 - 46 have been modified.

Version 0.96

- Improved offset handling for Gain Ranging. Now no slight click after test signals anymore.
- Editing of level settings does not affect the MUTE status.
- New: MIDI program change for user programs.

Version 0.93

- Bug fix: SMUTE initialize (Converter mute)
- Bug fix: Level "Off" is now stored correctly.

Version 0.90

- First delivery. Midi not yet functional. Delivery with RS232 option.

9. Factory Preset List

Factory F1 - F50	F01	STEREO 2-WAY	2-Way Stereo
	F02	3-WAY MONO	3-Way Mono + Fullrange
	F03	4-WAY MONO	4-Way Mono
	F04	2-IN-4	2-in-4
	F05	FRI122-64	2-Way Stereo
	F06	FRI152-64	2-Way Stereo
	F07	FRI+122-64	2-Way Stereo
	F08	FRI+122-66	2-Way Stereo
	F09	FRI+122-94	2-Way Stereo
	F10	FRI+152-64	2-Way Stereo
	F11	FRI+152-66	2-Way Stereo
	F12	FRI+152-94	2-Way Stereo
	F13	FRX+640	2-Way Stereo
	F14	FRX+660	2-Way Stereo
	F15	FRX+940	2-Way Stereo
	F16	QRX112-75	2-Way Stereo
	F17	QRX112-75-118	2-Way Stereo
	F18	QRX115-75	2-Way Stereo
	F19	QRX115-75-118	2-Way Stereo
	F20	QRX153-75	2-Way Stereo
	F21	QRX153-75-218	2-Way Stereo
	F22	QRX212-75	2-Way Stereo
	F23	QRX212-75-218	2-Way Stereo
	F24	RX112-75	2-Way Stereo
	F25	RX112-75-118	2-Way Stereo
	F26	RX112-75-218	2-Way Stereo
	F27	RX115-75	2-Way Stereo
	F28	RX115-75-118	2-Way Stereo
	F29	RX115-75-218	2-Way Stereo
	F30	RX212-75	2-Way Stereo
	F31	RX212-75-118	2-Way Stereo
	F32	RX212-75-218	2-Way Stereo
	F33	RX212-75-218-3W	3-Way Mono + Fullrange
	F34	Sx500+	2-Way Stereo
	F35	T221M	2-Way Stereo
	F36	T251+ Sb180	2-Way Stereo
	F37	XB XN	4-Way Mono
	F38	XDS XB XF	4-Way Mono
	F39	Xi1152-64	2-Way Stereo
	F40	Xi1152-64-XSUB	3-Way Mono + Fullrange
	F41	Xi1152-94	2-Way Stereo

	F42	Xi1152-94-1191	3-Way Mono + Fullrange
	F43	Xi1183-64-1191	4-Way Mono
	F44	Xi1183-64-2181	4-Way Mono
	F45	Xi1183-64-XSUB	4-Way Mono
	F46	Xi2123-106-XSUB	4-Way Mono
	F47	Xi2123-2W-1191	3-Way Mono + Fullrange
	F48	XSUB XCN	3-Way Mono + Fullrange
	F49	XW12 MONITOR	2-Way Stereo
	F50	XW15-MONITOR	2-Way Stereo
Other Factory (available only as a RACE File)		RX112-75-118-3W	3-Way Mono + Fullrange
		RX112-75-215	2-Way Stereo
		RX112-75-215-3W	3-Way Mono + Fullrange
		RX112-75-218-3W	3-Way Mono + Fullrange
		RX115-215-118	2-in-4
		RX115-75-118-3W	3-Way Mono + Fullrange
		RX115-75-215	2-Way Stereo
		RX115-75-215-3W	3-Way Mono + Fullrange
		RX115-75-218-3W	3-Way Mono + Fullrange
		RX212-75-118-3W	3-way Mono + Fullrange
		RX212-75-215	2-Way Stereo
		RX212-75-215-3W	3-way Mono + Fullrange
		XDS for XB XN	4-Way Mono
		XDS XCB XCN	4-Way Mono
		XDS XCN	3-Way Mono + Fullrange
		Xi1122-85	2-Way Stereo
		Xi1122-85-1191	3-Way Mono + Fullrange
		Xi1122-85-2181	3-way Mono + Fullrange
		Xi1152-64-1191	3-way Mono + Fullrange
		Xi1152-64-2181	3-way Mono + Fullrange
		Xi1152-94-2181	3-way Mono + Fullrange
			3-way Mono +

		Xi1152-94-XSUB	Fullrange
		Xi1183-64	3-way Mono + Fullrange
		Xi1191 FOR 1183-2181	4-Way Mono
		Xi2123-106-1191	4-Way Mono
		Xi2123-106-2181	4-Way Mono
		Xi2123-106-2W OL	3-Way Mono + Fullrange
		Xi2123-2W-2181	3-Way Mono + Fullrange
		Xi2123-2W-RX118	3-Way Mono + Fullrange
		Xi2123-2W-XSUB	3-way Mono + Fullrange
		2-WAY AC-ONE	2-Way Stereo

10. Contact

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