

DIGITAL WIRELESS AUDIO NETWORK

















"The sound quality with XIRIUM has been the same as it would have been over a cable."

Pascal Lehner, Owner, Lehner Acoustik www.lehner-akustik.com

"Xirium is a cable replacement and a real money saver - after only a few projects the investment for XIRIUM has been payed off."

Peter Flückiger, Project Manager, tpc ag - technology and production center switzerland ag www.tpcag.ch







The Vision – the Technology – the Product

NEUTRIK - the vision

Neutrik, the worldwide leading supplier of professional entertainment connector products, establishes yet another milestone. Today, you can hardly imagine any stage, concert or public event without wireless applications. Therefore, Neutrik undertook intensive research looking into the subject of wireless audio data transmission.

The vision of a wireless transmission system between two connectors and to transmit audio signals in studio quality has been turned into reality by Neutrik with the help of the innovative DIWA technology and the product XIRIUM, a digital, wireless audio network.

ついら - the technology

With DIWA (Digital Wireless Audio) Neutrik has developed a technology which stands for digital data transmission without data compression but provides high-level sound quality. Though wireless, the audio signals are transmitted by DIWA in cable quality. As a result no compromise from an audio point of view needs to be made in situations where no cable can be used.

The technical data proves this impressively: 24 bit / 48 kHz sampling, THD (total harmonic distortion) < 0.01% @ 1 kHz, SNR (signal-to-noise ratio) > 105 dB @ 1 kHz (dynamic) and last but not least a very short delay of 3 msec.

Choosing the 5 GHz frequency band eliminated the need for time-consuming approval processes and extensive channel management. A transmission and receiving protocol specifically developed for DIWA as well as patented error correction functions guarantee a robust and noiseless transmission of the data packet and best functionality.

➤IRIUM - the product

With the digital, wireless audio network XIRIUM, the first product based on the DIWA technology, Neutrik ventures a glimpse into the future. XIRIUM combines digital transmission and receiving lines in one system and delivers highest sound quality, unique reliability and ease of handling.

A 4 channel base unit (XIRIUM TRX) together with mobile transmission (XIRIUM TX) and receiving units (XIRIUM RX) give first access to the XIRIUM network. With an extension unit the network can easily be upgraded to a total of 8 channels. Allocation and the selection of input and output channels are flexibly configurable and allow the versatile use of the network.

The innovative DIWA technology together with the usability and easy handling of the XIRIUM products deliver a unique flexible package that eliminates time-consuming planning and set-up work.

Eliminate cables keep pure sound





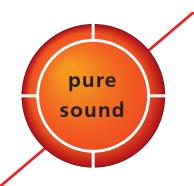






XIRIUM Pure Sound

Crystal clear highs and



Full frequency range

full lows

DIWA works on the 5 GHz band, this allows the transmission of the full frequency range of 20 - 20 kHz.

Sounds like a cable

No compression

With DIWA (Digital Wireless Audio) Neutrik has developed a technology which stands for digital data transmission without data compression but high-level sound quality.

Though wireless, the audio signals are transmitted by DIWA in cable quality.

Impressive technical data

DIWA provides 24 bit / 48 kHz sampling, THD (total harmonic distortion) < 0.01% @ 1 kHz, SNR (signal-to-noise ratio) > 105 dB @ 1 kHz (dynamic) and last but not least a very short delay of 3 msec.



XIRIUM used for measurement purposes

Crosby, Stills & Nash - Europe concert tour

"Just a quick email to let you know about the resounding success the XIRIUM system has been for us so far on the CSN tour. Measurements have been sped up drastically and the Xirium system has been very dependable and robust for our purposes. Thanks Kevin"

Kevin Madigan www.crosbystillsnash.com

Robust Transmission

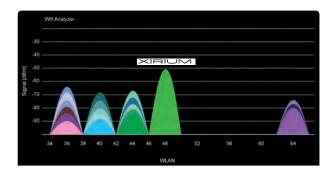
Interference-free transmission

Additional channels

Working on 5 GHz XIRIUM adds wireless connectivity on top of existing UHF channels.

Channel occupation

The constant DIWA data stream avoids interference with users of the 5 GHz frequency band.





Secure operation

Data redundancy

The specifically developed and patented protocol transmits redundant data packages effectively providing robust forward error correction on top of antenna diversity.

Concealment algorithm

Loss of up to 17 data packages without audio skips, delays or drops.

Robustness of XIRIUM confirmed in tough environment

POOLgroup - Mobile World Congress

"I was surprised that XIRIUM worked so perfectly in such an extreme environment and that a stable connection could be set up and kept up."

Johannes Roesel, Director POOLsound www.pool.de



XIRIUM Plug & Play



Saves time and money

Fast amortisation

The investment of XIRIUM pays off after a few projects.

Being a real cable replacement XIRIUM solves awkward and time-consuming cable runs.

Ready to use in seconds

Simple as a cable

The devices are linked with a push of a button and ready to go and the memory function allows quick future set-ups.

Hassle-free set-up

The licence-free automatic frequency management eliminates the need of channel request compared to conventional wireless UHF systems.



XIRIUM is the perfect solution for all kinds of galeries and balconies

MDS PAtec - Sportfreunde Stiller in concert at BMW museum

"XIRIUM brought us ease of work thanks to omitted cable connections over two floors, time saving and thereby more time for other tasks."

Marco Evert, MDS PAtec www.mdspatec.com

XIRIUM Multifunctional Use

Flexible audio network

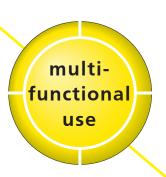
Easily adapted to your need

The XIRIUM network can run up to 8 transmitting or receiving audio channels or even 24 lines in broadcast mode.

Status information and remote control

Due to the exchange of control data, battery status and transmission quality can be monitored.

The XIRIUM configurator allows remote control of the devices.



The toolbox

Standard solution and problem solver

XIRIUM is the toolbox for awkward setup requirements and offers the flexibility to be used in whatever situation you may face.

No cabling through the audience seating area

British Pageant for the LDS Church

"You made it work so successfully at the Pageant, that it stuck in my mind. This first impression of XIRIUM resulted in my SKY Sports enquiry. We're using it ourselves now and it's all good!!""

Davie Dion, VME owner and SKY Senior Television Sound Supervisor







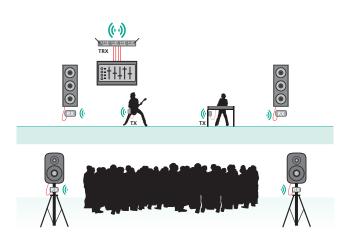






Quick set-up and reliable operation

Highest reliability yet facilitating rapid set-up and dismantling – this is the fundamental concept of XIRIUM. Conventional signal sources as well as active loudspeakers can be integrated in the set-up without complex wiring.



TX – Send RX – Receive





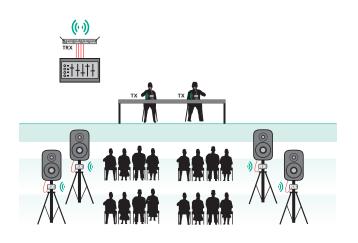




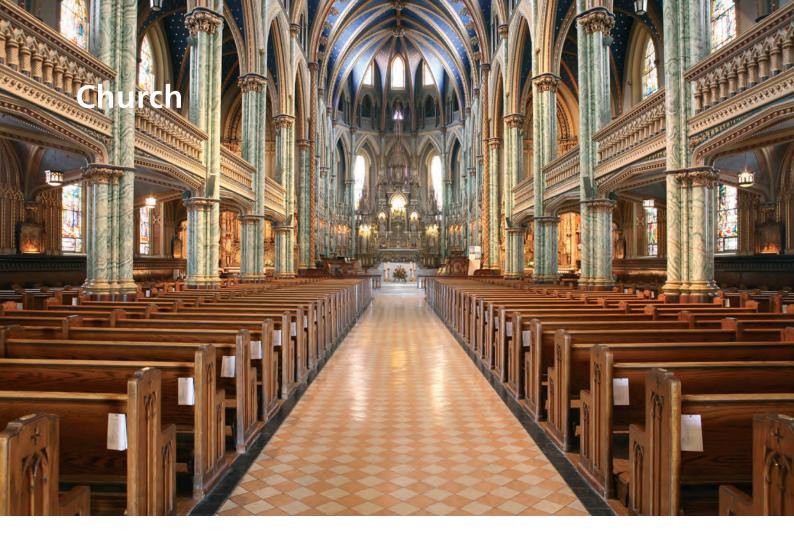


Easy to use and flexible application

Whether a conference, election event or a presentation, the XIRIUM network allows the successful operation of many applications without time-consuming technical planning and set-up work. The flexibility of the system is unique and enables swift and efficient set-ups without complex wiring.



TX – Send RX – Receive





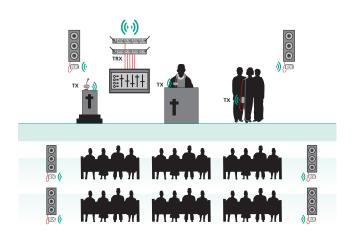






Inconspicuous and yet efficient

In churches or historical buildings post-wiring of an audio system is often not possible or only possible after considerable time-consuming technical effort. In such cases XIRIUM impresses not only with its concept but allows also the integration of microphones and loudspeakers in one system, which is both, easy to handle and efficient.



settingstandards

XIRIUM

Customer Feedback

"The design of the XIRIUM is absolutely suitable for the rental business. It has more than convinced us and we are confident that it will have a future in the rental business where there will be sufficient fields of application."

Jörg Birrfelder, Technical Director www.mediarent.ch

"Thanks for the transmission. Good job, good system."

Bruce Odland bruceodland.net

"I was very pleased with the performance of XIRIUM during the live broadcast on SKY Sports of the recent Rugby Super League match."

Davie Dion, VME owner and SKY Senior Television Sound Supervisor

"Three complex and extremely long distance connections were realized with XIRIUM. The system worked instantly and is a real plug and play solution."

René Gnann, Owner, LIGHT & SOUND PROJECT www.light-sound.ch

"One of our goals was to provide a 100 % trip-proof and wheelchair-accessible audience area which we attained with the help of XIRIUM."

Marco Scandola, CEO www.scandola.ch

System Components



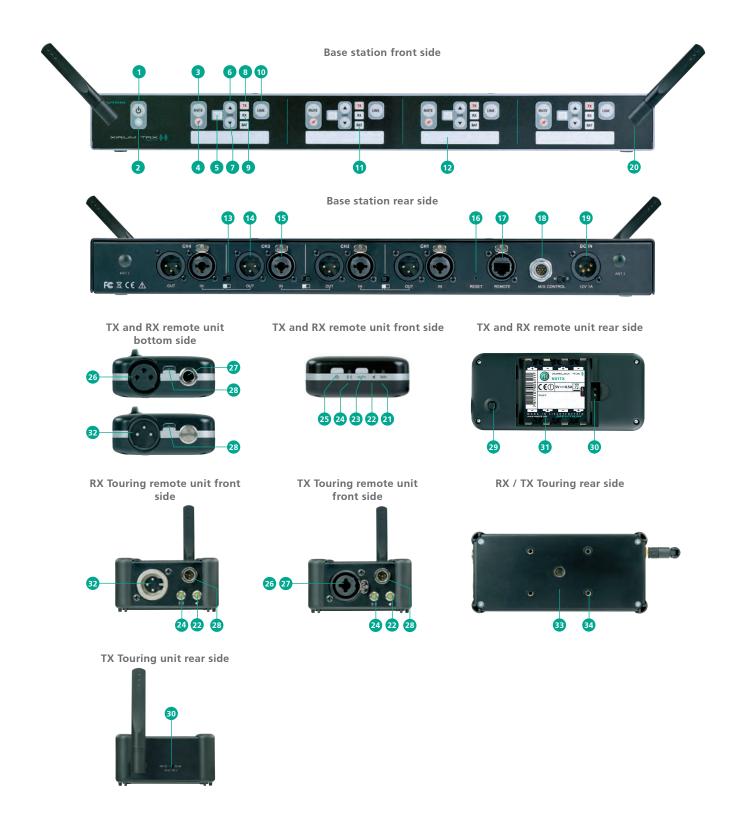


Ordering Information

Ordering Ir	formation				
Type No.	Description	Consisting of			
XIRIUM System	Components				
NX4TRX	XIRIUM Base Station 4CH	19" access point, 2 rod antennas, power supply, mounting hardware			
NX1TX	XIRIUM Remote Transmitter TX	Remote unit, power supply USB			
NX1RX	XIRIUM Remote Receiver RX	Remote unit, power supply USB			
NX1TX-T	XIRIUM Touring Transmitter TX	Remote unit, power supply MiniXLR, 1 rod antenna			
NX1RX-T	XIRIUM Touring Receiver RX	Remote unit, power supply MiniXLR, 1 rod antenna			
Accessories					
NXM-20	20 mm stand holder for remote unit				
NXM-35	35 mm stand holder for remote unit				
NKX-MS	Master / Slave link cable				
NXA-10-60-55	5 GHz Antenna 10 dBi 60°H 55°V	Antenna and cable combinations			
NXA-14-40-35	5 GHz Antenna 14 dBi 40°H 35°V	see table below.			
NXA-3-360	5 GHz Antenna 3 dBi Omnidirectional (Spare parts)				
NXA-10-360-10	5 GHz Antenna 10 dBi, 360°H 10°V, including mounting accessories for NXUC-M-15				
NKXA-4.5	Antenna cable RG142, SMA, 4.5 m				
NKXA-8	Antenna cable S04162B, SMA, 8 m				
NKXA-12	Antenna cable S04262B, SMA, 12 m				
NKXA-15	Antenna cable S04162B, SMA, 15 m				
NXBP-T-6	Battery Pack including power supply, cables and mounting accessories for NXUL-M-15				
NXUC-M-15	Manfrotto universal mounting clamp				
NPS-10W	Power supply Micro USB 5 V/2 A				
NPS-10W-T	Power supply XLR Tiny 5 V / 2 A				
NPS-24W	Power supply XLR 12 V/2 A				
CAS-NX-ALU	Xirium aluminium case				

Recommended combinations of antenna and cable								
Antenna Type	2	NXA-10-60-55	NXA-10-360-10	NXA-14-40-35				
Cable Type	Cable length (m)							
NKXA-4.5	4.5	•	•	-				
NKXA-8	8	•	•	-				
NKXA-12	12	-	-	•				
NKXA-15	15	-	-	•				

Technical Information



Operating el	lement	Function			
1 Power key	,	Powers the unit on / off	32	XLR male OUT	Output to destination audio device
2 Power LED)	Indicates powered unit	33	Mounting bore	M10 mounting bore
3 Mute key		Switches muting on / off	34	Mounting bore	M6 mounting bore
4 Mute LED		Indicates mute status			
5 Gain LED		Indicates gain level			
6 Gain Up ke	еу	Increases the gain in 8 dB steps			
7 Gain Down	n key	Reduces the gain in 8 dB steps			
8 TX Link LE	D	Indicates association to TX unit			
9 RX Link LE	D	Indicates association to RX unit			
10 Link key		Starts association process. Press short to see associated remote unit.			
11 Battery LE	D	Indicates battery life of associated remote unit.			
12 Title block		Labelling and marking			
13 Link switch	h	Connects adjacent audio channels			
14 XLR male C	DUT	Electrically balanced XLR output			
15 XLR Comb	o IN	Accepts balanced XLR or TRS input			
16 Reset swit	ch	Reset base station to factory default			
17 RJ45 conn	ector	Connects to computer for remote software operation			
18 M / S conr	nector	Interconnects two base stations (Master/Slave)			
19 Power sup	pply	DC power input 12V, 1A			
20 Antenna c	onnector	Connects antennas			
21 Battery LE	D	Indicates battery life			
22 Mute LED		Indicates mute and phantom power / Hi-Z status			
23 Mute key		Switches muting on / off			
24 Link LED		Indicates association status			
25 Power key	,	Powers the unit on / off and starts the association process. Press quickly to see associated channel on the base station			
26 XLR femal	e IN	Accepts balanced XLR input			
27 TRS 1/4" II	N	Accepts balanced (TRS) or unbalanced (TS) input			
28 DC power	input	Accepts DC power adapter			
29 XLR lock b	utton	Press to remove XLR cable			
30 Phantom HI-Z switch	h	Switches phantom power on and activates 1/4" connector HI-Z			
31 Battery ho	older	Allows insertion of 4 AA batteries			



Technical Information

XIRIUM - Specificat	tions
General specifications	
Radio frequency carrier range	IEEE 802.11a, 5.15-5.25 GHz, channels 36-48, licence-free
Data protocol	proprietary (DIWA technology)
Transmit power	ETSI compliant
Range	Typically 30 m line of sight, up to 300 m point to point Longer range depending on obstacles, reflexions, interferences
Audio Performance (analog to ar	nalog per wireless link)
THD + Noise (TX Gain = min.)	< 0.01 % @ 1 kHz, 4 dBu
	< 0.05 % @ 20 Hz – 10 kHz, 4 dBu
Frequency Response	+0.5 dB / -1.5 dB @ 20 Hz – 20 kHz ref. 1 kHz
Dynamic Range	> 105 dB @ 1 kHz, A-weighted
Crosstalk	< -90 dB @ 20 kHz
Number of audio channels	4 per TRX unit, max. 8 with two linked TRX units
Broadcast mode (RX only)	3 per audio channel (12 per TRX unit)
Converter Resolution (AD & DA)	24 bit
Sampling Rate	48 kHz
Latency (Delay)	3.4 msec
Transmission method	Compression-free, no reduction of converted data
Operating Temperature	0 °C to +50 °C
Storage Temperature	-20 °C to +80 °C

TRX specific characteristic	s							
Antenna	2 x 1/2 wave dipo	2 x 1/2 wave dipole with SMA male connectors						
Diversity	Antenna diversity							
Number of audio channels	4 per unit							
Analog Input / Output specs:								
In- / Output Type	Impedance	Rated Source /	Nominal	Max. Level	Connector type			
	$\mathbf{k}\Omega$	Load $\mathbf{k}\Omega$	dBu	dBu				
Line Input (balanced)	28	1	+4	+22	Combo XLR / TRS			
Line Output (balanced)	8.0	10	+4	+22	XLR			
Indicators	LEDs:	Mute status, tran status	smission quality le	evel, TX/RX mode,	remote battery			
Controls	Front panel:	On / Off, Mute, T	X remote audio ga	in, Link / Show as	soviated channels			
	Rear panel:	Reset, adjacent a	udio channel links					
Interface ports	Remote	Host connection	via UDP / IP protoc	col	etherCON RJ45			
		Master / Slave lin	k between TRX un	nits	12 pole miniCON			
Power Supply	12 V dc							
Max. Current Draw	610 mA							
Dimensions (w x h x d)	432 mm x 46 mm x 237 mm, without protruding antennas							
Weight	3.2 kg							

	Innut Imn	Rated	Sancitivity*	May **	Gain	Phantom	Connector
Input Mode			Input	Level			
Analog Input specs:							
Phantom Power (when activated)	48 V dc / 7 m/	Д					
Remote controlled preamp gain	8 dB steps via	TRX frontp	anel, 1 dB steps	via TRX Remo	te Software	!	
Number of audio channels	1						
TX specific characteristics							

Input Mode	Input Level						
	Input Imp.	Rated Source Imp.	Sensitivity*	Max.**	Gain	Phantom	Connector
	kOhm	Ohm	dBu	dBu	dB	Switch	type
Line (balanced)	10	1000	-36	+22	040		XLR, TRS
Mic (balanced)	2.5	200	-68	+1	2172		XLR, TRS
Mic Phantom Power (balanced)	2.1	200	-68	+10	12, 2072	Χ	XLR
Hi-Z (unbalanced)	2200	150000	-50	+8	10, 1854	Χ	TRS
Indicators	LEDs:	Mute status	, transmission	quality leve	el, TX/RX mod	e, remote ba	ittery status
Controls	On / Off / S	how-channel,	, Mute, Phant	om / Hi-Z er	nable switch		
Power Supply	4 x 1.2 V (A	A) rechargea	ble batteries ((recommend	led),		
	optional 4 x	1.5 V (AA) /	5 V DC / 2 A	via Micro-U	SB connector		
Continuous operation time	Typically 5.5 h @ rechargeable batteries 2500 mAh (SANYO Eneloop XXX)						
Dimensions (w x h x d)	138 mm x 62 mm x 25 mm (excluding antenna fin)						
Weight	120 g						

TX-T specific characteristics					
Antenna	1 x 1/2 wave dipole with SMA male connectors				
Number of audio channels	1				
Remote controlled preamp gain	8 dB steps via TRX frontpanel, 1 dB steps via TRX Remote Software				
Phantom Power (when activated)	48 V dc / 7 mA				

Analog Input specs:								
Input Mode	Input Level							
	Input Imp.	Rated Source Imp.	Sensitivity*	Max.**	Gain	Phantom	Connector	
	kOhm	Ohm	dBu	dBu	dB	Switch	type	
Line (balanced)	10	1000	-36	+22	040		Combo XLR, TRS	
Mic (balanced)	2.5	200	-68	+1	2172		Combo XLR, TRS	
Mic Phantom Power (balanced)	2.1	200	-68	+10	12, 2072	Χ	Combo XLR	
Hi-Z (unbalanced)	2200	150000	-50	+8	10, 1854	Χ	Combo TRS	
Indicators	LEDs:	transmission	quality, Mute	/Phantom po	ower (blinking)	/Hi-Z (perma	nent) status	
Controls	Phantom / H	Hi-Z enable sv	witch					
Power Supply	5 V DC / 2 /	5 V DC / 2 A via Mini-XLR connector (4 pole male)						
Dimensions (w x h x d)	168 mm x 7	168 mm x 78 mm x 41 mm (excluding antenna)						
Weight	400 g							
Optional Accessories	Antenna + o	cable extension	on (see page 4	4)				



Technical Information

RX specific characteristics							
Number of audio channels	1						
Analog Output specs:							
Output Type	Output Imp. Ohm	Rated Load Imp. Load kOhm	Outpu Nominal dBu	t Level Max. Level dBu	Connector type		
Line Output (balanced)	800	10	-2	+16	XLR		
Indicators	LEDs:	transmission qual	ity, Mute and Bat	tery status			
Controls	On / Off / Show-	channel, Mute					
Power Supply	4 x 1.2 V (AA) re	chargeable batterie	es (recommended)),			
	optional 4 x 1.5	V (AA) / 5 V DC / 2	A via Micro-USB	connector			
Continuous operation time	typically 5.5 h @ rechargeable batteries 2500 mAh (SANYO Eneloop XXX)						
Dimensions (w x h x d)	138 mm x 62 mr	138 mm x 62 mm x 25 mm, excluding antenna fin					
Weight	110 g						

RX-T specific	characteristic	S
Antonna		1 v 1/2 ways di

1 x 1/2 wave dipole with SMA male connectors

Number of audio channels

Analog Output specs:							
Output Type	Output Type Output Level						
	Output Imp. Ohm	Rated Load Imp. Load kOhm	Nominal dBu	Max. Level dBu	Connector type		
Line Output (balanced)	800	10	-2	+16	XLR		
Indicators	LEDs:	transmission qual	ity, Mute status				
Power Supply	5 V DC / 2 A via	Mini-XLR connecto	r (4 pole)				
Dimensions (w x h x d)	168 mm x 78 mi	168 mm x 78 mm x 41 mm, excluding antenna					
Weight	400 g	400 g					
Optional Accessory	antenna + cable	extension (see belo	nw)				

Optional Antennas – Linear polarised directional WI-FI antenna

Туре	NXA-10-60-55	NXA-10-360-10	NXA-14-40-35
Gain	10 dBi	10 dBi	14 dBi
Beam width horizontal	60°	360°	40°
Beam width vertical	55°	10°	35°
Connector	SMA jack	N incl. SMA connector	SMA jack
Dimension (mm)	101 x 80 x 20	24 x 630	101 x 80 x 35
Weight	0.13 kg	0.20 kg	0.11 kg
Operating temperature	-40° C to +80° C	-40° C to +80° C	-40° C to +80° C

^{*:} Sensitivity corresponds to value where a nominal output voltage is achieved at maximum gain setting.

**: Maximum input level corresponds to value where almost signal clipping occurs at minimum gain setting. 0 dBu = 0.775 V rms

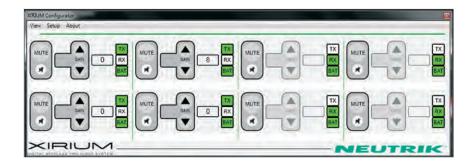


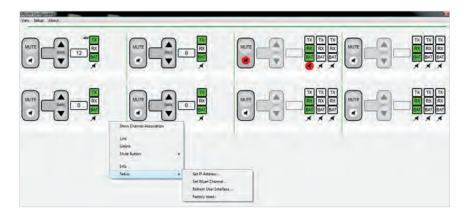
XIRIUM Configurator

The XIRIUM Configurator software (Windows only) allows the optional use and configuration of XIRIUM systems via a graphical user interface.

Configuration:	Set up of transmission and receiving channels (link and unlink TX / RX units) Fine adjustment of gain in 1dB steps
Advanced configuration:	IP address assignment WLAN channel selection
Operation:	ON / OFF Mute Gain adjustment

XIRIUM Configurator: Screenshot examples





Free Download of XIRIUM Configurator Software and Manual on the Web "www.neutrik.com" section "XIRIUM".







"We were amazed by the performance of the system."

Stage Electrics www.stage-electrics.co.uk

"I was thrilled and relieved as I witnessed the quick setup and easy operation of XIRIUM."

Matthias Pohl, freelancer at SOUNDHOUSE www.k-o-h-l.com

Liechtenstein (Headquarters)

NEUTRIK AG, Im alten Riet 143, 9494 Schaan T +423 237 24 24, F +423 232 53 93, neutrik@neutrik.com

Germany / Netherlands / Denmark / Austria

Neutrik Vertriebs GmbH, Felix-Wankel-Strasse 1, 85221 Dachau, Germany T +49 8131 28 08 90, info@neutrik.de

Great Britain

Neutrik (UK) Ltd., Westridge Business Park, Cothey Way Ryde, Isle of Wight PO33 1 QT T +44 1983 811 441, sales@neutrik.co.uk

France

Neutrik France SARL, Rue du Parchamp 13, 92100 Boulogne-Billancourt T +33 1 41 31 67 50, info@neutrik.fr

ΙΙςΔ

Neutrik USA Inc., 4115 Taggart Creek Road, Charlotte, North Carolina, 28208 T +1 704 972 30 50, info@neutrikusa.com

Japan

Neutrik Limited, Yusen-Higashinihonbashi-Ekimae Bldg., 3-7-19 Higashinihonbashi, Chuo-ku, Tokyo 103 T +81 3 3663 47 33, mail@neutrik.co.jp

Hong Kong

Neutrik Hong Kong LTD., Suite 18, 7th Floor Shatin Galleria Fotan, Shatin T +852 2687 6055, neutrik@neutrik.com.hk

China

Ningbo Neutrik Trading Co., Ltd., Shiqi Street, Yinxian Road West Fengjia Villiage, Yinzhou Area, Ningbo, Zhejiang; 315153 T +86 574 88250488 800, neutrik@neutrik.com.cn

India

Neutrik India Pvt. Ltd., Level 3, Neo Vikram, New Link Road, Above Audi Show Room, Andheri West, Mumbai, 400058 T +91 982 05 43 424, anklesaria@neutrik.com

Associated companies

Contrik AG

Steinackerstrasse 35, 8902 Urdorf, Switzerland T +41 44 736 50 10, contrik@contrik.ch

H. Adam GmbH

Felix-Wankel-Straße 1, 85221 Dachau, Germany T +49 08131 28 08-0, info@adam-gmbh.de



www.neutrik.com www.experience-neutrik.com