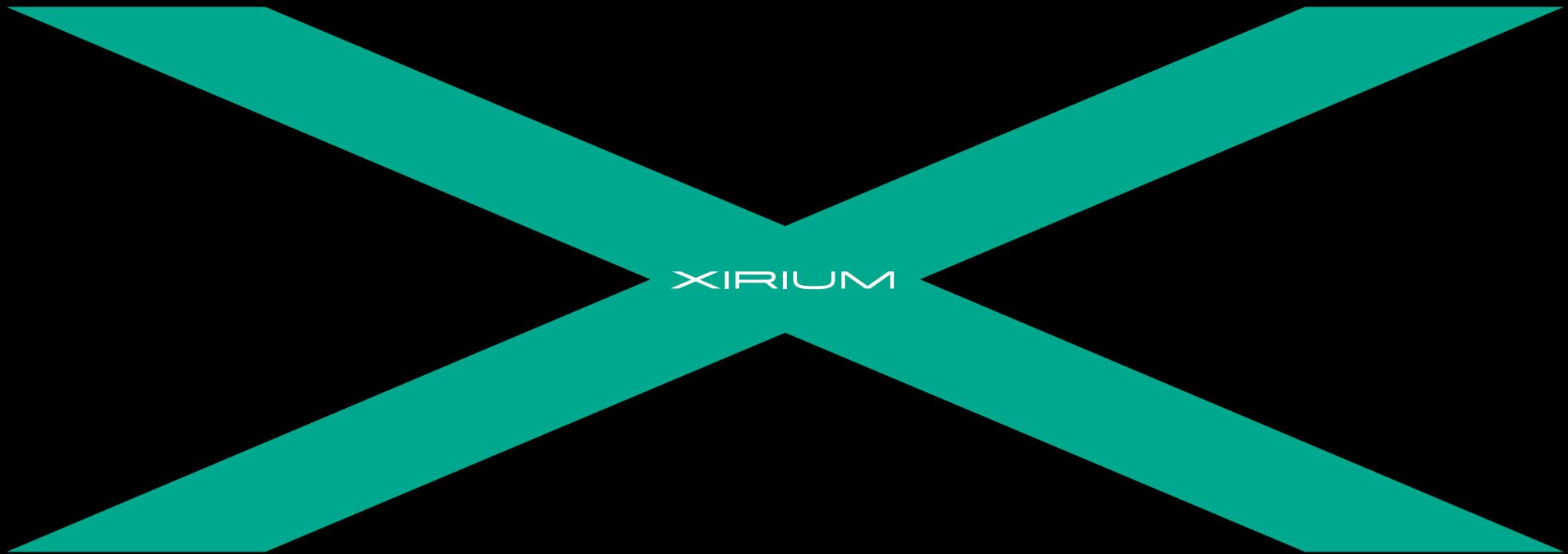


**NEUTRIK®**



DIGITAL WIRELESS AUDIO NETWORK



# Eliminate cables – keep pure sound

No matter if it is an event, stage, conference or church: XIRIUM X provides the perfect wireless solution for sophisticated audio transmissions.

## NEUTRIK – the vision

The vision of a wireless transmission system between two connectors and to transmit audio signals in studio quality has led to the development of the innovative DIWA technology. DIWA (Digital Wireless Audio) stands for digital data transmission without data compression but provides high-level sound quality. Though wireless, the audio signals are transmitted by DIWA in studio quality. As a result no compromise from an audio point of view needs to be made in situations where no cable can be used.

## XIRIUM X – the product

With XIRIUM X Neutrik introduces a new, innovative product to the market allowing for an easy entry into the DIWA technology. With two devices only, namely the transmitter (XTX) and the receiver (XRX), a wireless audio transmission can be established replacing audio cables cost effective in a few seconds.



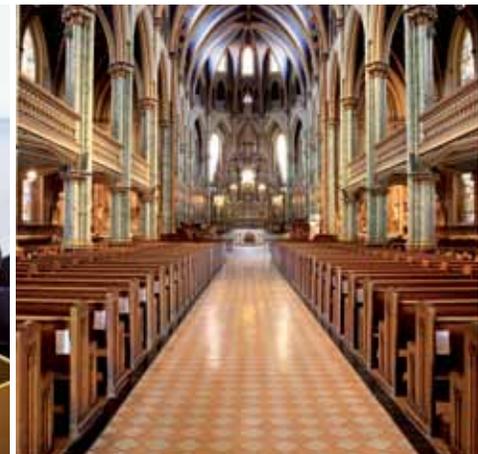
# Innovative technology – unique sound quality

**DIWA**  
DIGITAL WIRELESS AUDIO



## DIWA – the technology

With XIRIUM X, a digital wireless audio network based on DIWA technology Neutrik sets a new standard in professional wireless audio transmission. XIRIUM X combines digital reception and transmission facilitating the highest possible sound quality, unique reliability and outstanding handling in one network. Neutrik, known as the global leader in manufacturing connection technology for the professional entertainment industry becomes the competent partner for applications in the areas of copper connectors, fibre optic systems and wireless solutions.



pure**sound**



setting**standards**



robust**transmission**



plug**andplay**



multifunctional**use**





# The easy entry ...

... into the world of professional digital wireless audio transmissions works instantly with XIRIUM X.

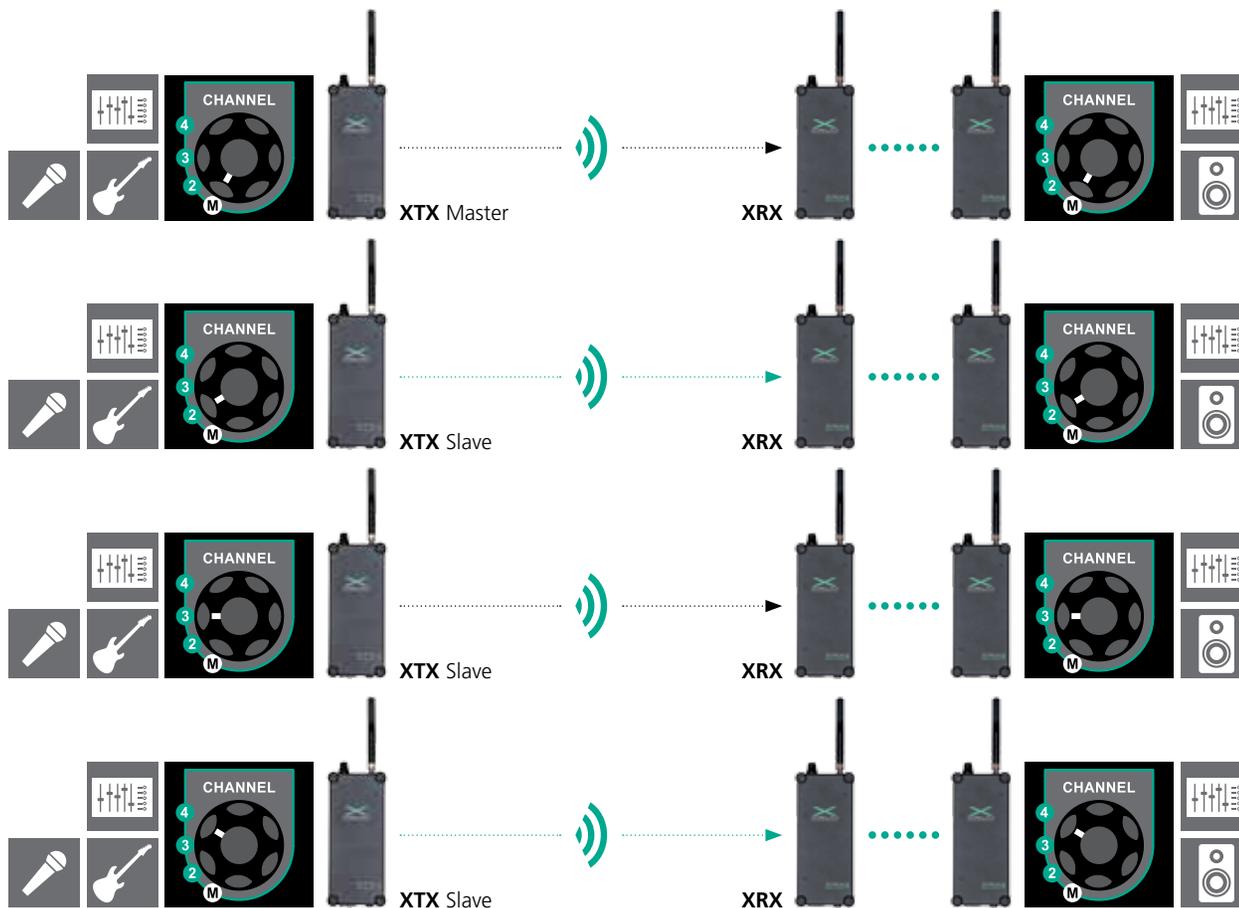


Transmitter XTX and receiver XRX are connected to each other within seconds – thus facilitating an easy introduction to the world of DIWA technology and providing the enjoyment of wireless audio transmission with high-level sound quality. The audio signal transmitted by the XTX can be received by an unlimited number of XRX receivers. Thus XIRIUM X becomes the preferred solution even with such a simple set up for numerous applications.



# The expansion of the system ...

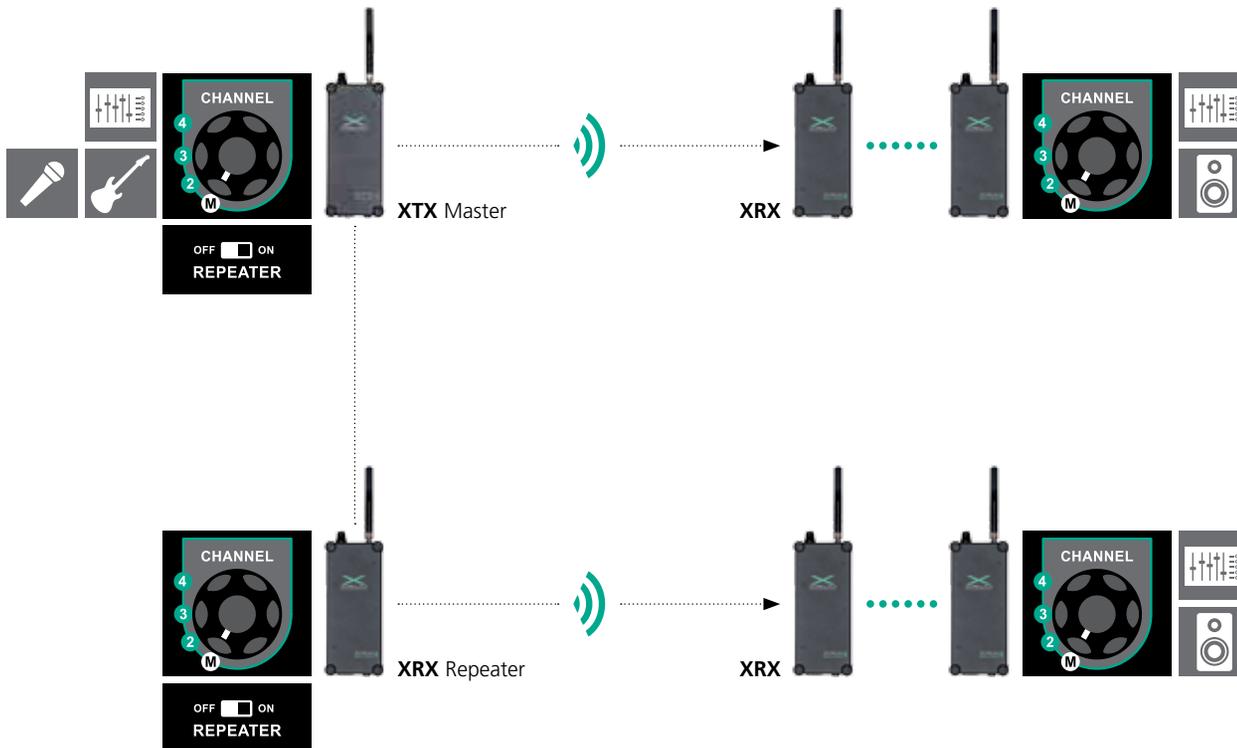
... to a digital wireless audio network with XIRIUM X is straightforward and cost efficient.



The system may be expanded to four sound channels for the transmission of several, different audio respectively stereo signals. For this purpose one of the XTX transmitters with the first audio channel assumes the role of the master, to which one may connect three more XTX transmitters that facilitate the transmission of the other audio channels. This set up also allows the use of a limitless number of XRX receivers, which can selectively receive one of the four audio channels.

# Going beyond boundaries ...

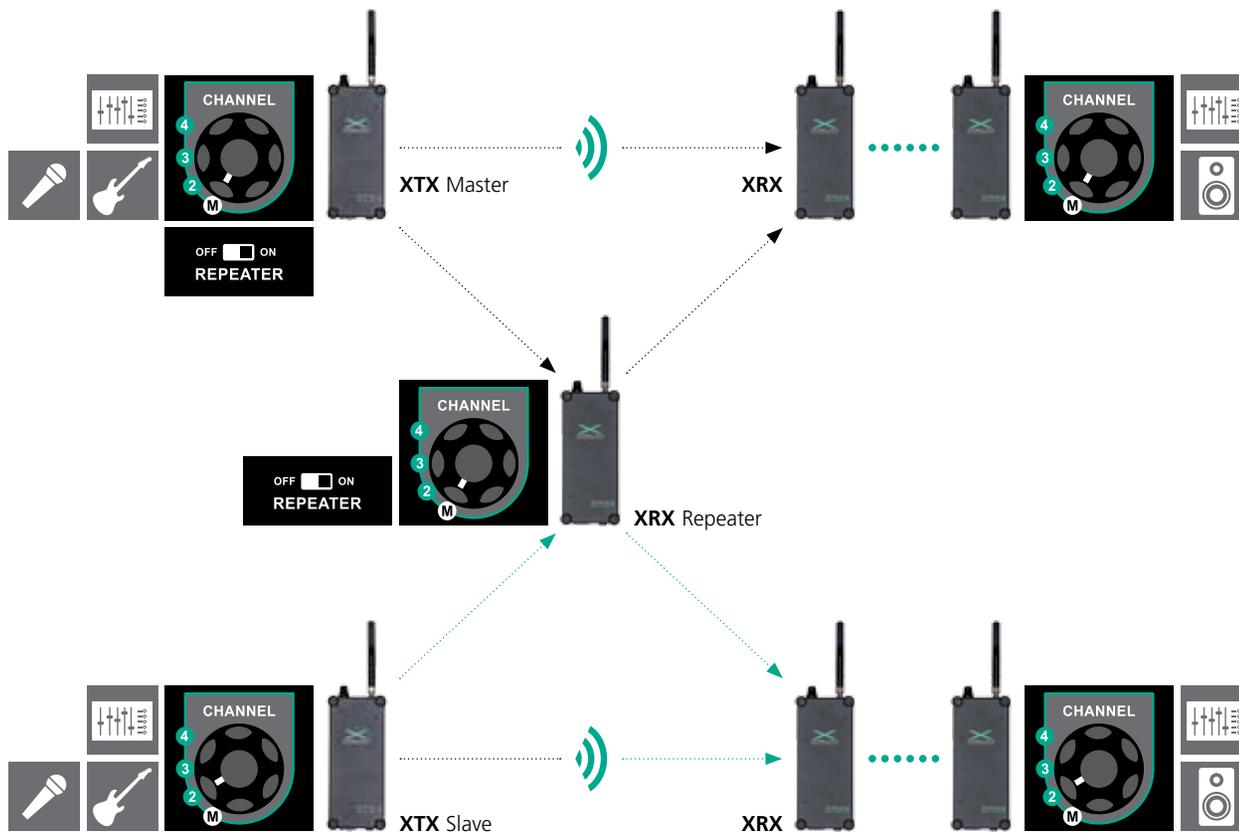
... is no longer a problem when using the repeater function of the XIRIUM X system.



The XRX can either be used as a receiver or as a repeater. In repeater mode the XRX forwards the audio signal received from the XTX without any changes, which in turn can now be received by an unlimited number of XRX receivers set to reception mode. The repeater represents the perfect addition to the system: it doubles the range of the system and helps to overcome walls, corners or other obstacles. In repeater mode the XRX transmits either two audio signals or one stereo signal.

# Even more reliable reception ...

... and perfectly dependable transmission is achieved with the “Extended Diversity Configuration”.



The XRX offers another feature when set to repeater mode: since the repeater duplicates and transmits the signals received from the XTX, it becomes a second redundant audio source for every other XRX. In other words, an XRX located within the reception area of an XTX and a repeater, can now choose one of two identical signals and automatically selects the one with the better signal quality. This set up can also be expanded to two audio channels or one stereo signal requiring only one repeater for both channels.

# Crystal clear highs and full lows

The DIWA modulation method assures a higher data rate and thus facilitates the transmission of the full frequency range from 20 Hz to 20 kHz.

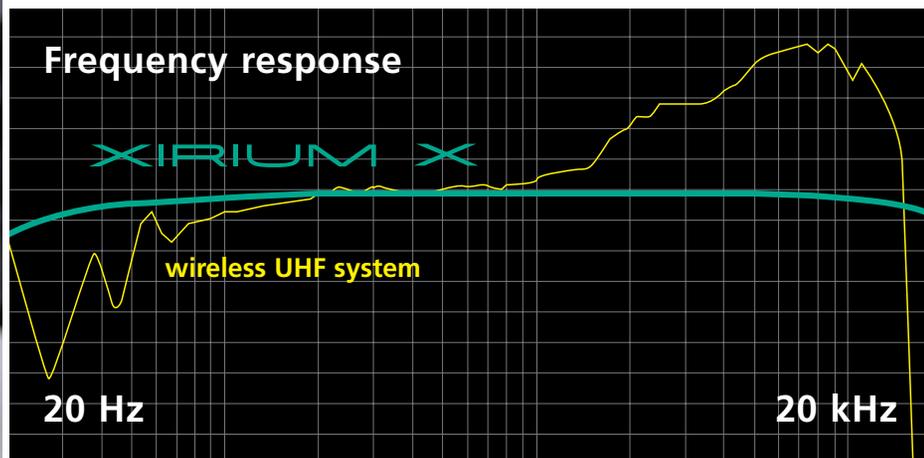


## Audio transmission with the quality of a recording studio – without compression

With DIWA (Digital Wireless Audio) Neutrik has developed a technology for digital data transmission achieving high fidelity without data compression. Despite employing wireless technology audio signals are transmitted at the quality level of a recording studio.

## 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.



# Interference-free transmission

Due to the transmission within the 5 GHz band XIRIUM X offers additional transmission options to the available UHF channels.

## Channel occupation

The constant DIWA data flow prevents disturbing influences by other users of the 5 GHz frequency band.

## Reliable operation

Specially developed and patented data protocols transmit redundant data packets assuring trouble-free transmission.

## Exceeding boundaries

The repeater is the perfect extension of the system: With its aid the system range can be doubled and walls, corners or other obstacles can be overcome.

## Extended diversity for even more reliable reception

Since the repeater duplicates and forwards the signals received from the transmitter it becomes a second, redundant audio source for every other receiver. Each receiver automatically selects the better signal.

## Correction algorithm

Even the loss of up to 17 data packets does not cause any interruptions, delays or blackout of the audio transmission.



# Saves time and money

The investment into XIRIUM X pays off after only a few projects. As a true replacement for cable bound systems it eliminates the often difficult and time consuming cable runs.



## Instantly ready for service – just like with a cable

Simply push a button for connecting the devices with each other, which are instantly ready for operation. The memory function simplifies the set up in future projects.

## Effortless installation

Thanks to the licence free, automatic frequency management channels do not have to be applied for as is the case with conventional UHF systems.

## Set up optimising

The XIRIUM X Companion software enables you to measure the radio signal power and to optimise the set up.

XIRIUM X

up to 75 % time saving

conventional installation with cable

# Flexible audio network

XIRIUM X is the ideal tool for the quick establishment of audio connections and offers the best possible flexibility.

## Expandable audio network

The XIRIUM X network can run up to 4 audio channels with the possibility to use an unlimited number of receivers.

## The toolbox – Standard solution and problem solver

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



# Quick setup and reliable operation



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



# Easy to use and flexible application



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

conference



# 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 X 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.





setting standards



applications



# XIRIUM used for measurement purposes

Robust and reliable transmission of uncompressed audio signals in perfect quality.



»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.«

Kevin Madigan / [www.crosbystillsnash.com](http://www.crosbystillsnash.com)

europ<sup>e</sup>concert<sup>o</sup>ur

crosby, stills & nash

# Robustness of XIRIUM in tough environment

Stable connection and reliable operation despite a number of disturbance factors.

»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](http://www.pool.de)



mobileworldcongress

pool group

# Perfect solution for galleries and balconies

XIRIUM X combines a quick and easy set up with brilliant audio quality.



»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](http://www.mdspatec.com)

mds patec

bmwmuseum

concert sportfreunde stiller

# No cabling through the audience seating area

Flexible installation, reliable operation and outstanding sound quality for video productions.

»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!!«

**Dion Davie** / VME / owner and SKY Senior Television Sound Supervisor



britishpageant

for the Ids church

# robusttransmission

»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](http://www.lehner-akustik.com)

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»WE WERE AMAZED BY THE PERFORMANCE OF THE SYSTEM.«

Stage Electrics / [www.stage-electrics.co.uk](http://www.stage-electrics.co.uk)

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»THANKS FOR THE TRANSMISSION. GOOD JOB, GOOD SYSTEM.«

Bruce Odland / [bruceodland.net](http://bruceodland.net)

»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](http://www.mediarent.ch)

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»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

# multifunctional use

»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](http://www.k-o-h-l.com)

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»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](http://www.scandola.ch)

»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** / Geschäftsinhaber, LIGHT & SOUND PROJECT  
[www.light-sound.ch](http://www.light-sound.ch)

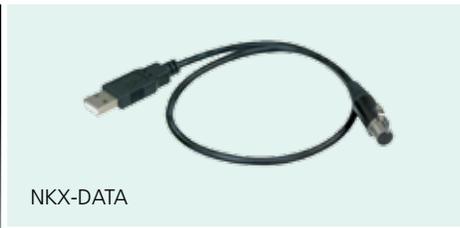
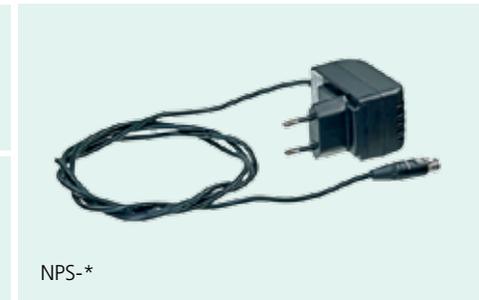
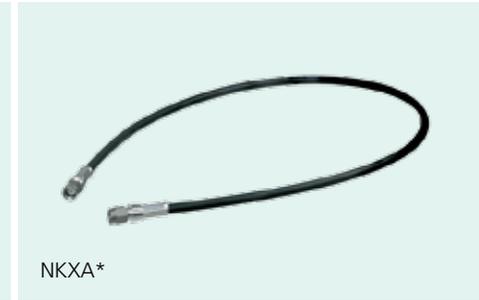
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»XIRIUM IS A CABLE REPLACEMENT AND A REAL MONEY SAVER – AFTER ONLY A FEW PROJECTS THE INVESTMENT FOR XIRIUM HAS BEEN PAID OFF.«

**Peter Flückiger** / Project Manager, tpc ag – technology and production center switzerland ag / [www.tpcag.ch](http://www.tpcag.ch)

plug and play

# XIRIUM X system components



# XIRIUM X ordering information

## XIRIUM X SYSTEM COMPONENTS

TYPE NO.	DESCRIPTION	CONSISTING OF
NXX1TX-T	XIRIUM X Touring Transmitter XT-X	Remote unit, power supply MiniXLR, 1 rod antenna
NXX1RX-T	XIRIUM X Touring Receiver XR-X	Remote unit, power supply MiniXLR, 1 rod antenna

## ACCESSORIES

NXA-3-360	5 GHz Antenna 3 dBi Omnidirectional (spare parts)
NXA-10-60-55	5 GHz Antenna 10 dBi 60°H 55°V, including mounting accessories for NXUC-M-15
NXA-14-40-35	5 GHz Antenna 14 dBi 40°H 35°V, including mounting accessories for NXUC-M-15
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
NKX-DATA	Data cable to connect the touring units with a computer (USB to Tiny XLR)
NPS-10W-T	Power supply XLR Tiny 5 V / 2 A
NXBP-T-6	Battery pack including power supply, cables and mounting accessories for NXUC-M-15
NXUC-M-15	Manfrotto™ universal mounting clamp
NXA-SMA-MM	Adapter (SMA male-male) for direct connection of antennas on NXX1RX-T
CAS-NXX-BASIC	XIRIUM X set is composed of flightcase, 1 x NXX1TX-T / 2 x NXX1RX-T / 3 x NXBP-T-6 / 3 x NXUC-M-15 / 1 x NXA-14-40-35 / 1 x NXA-SMA-MM Adapter

## RECOMMENDED COMBINATIONS OF ANTENNA AND CABLE

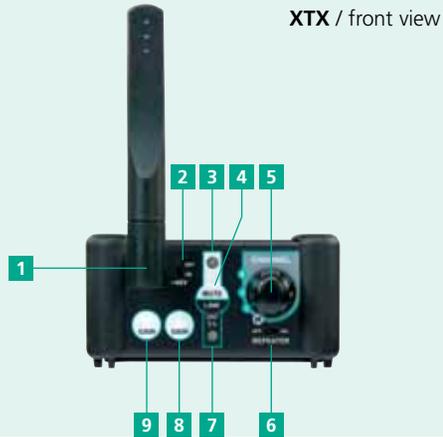
ANTENNA		NXA-10-60-55	NXA-10-360-10	NXA-14-40-35
Cable	Length			
NKXA-4.5	4,5 m	•	•	-
NKXA-8	8 m	•	•	-
NKXA-12	12 m	-	-	•
NKXA-15	15 m	-	-	•
NXA-SMA-MM	Adapter	• *	-	• *

\* For direct connection on XR-X, only on receivers.

# XIRIUM X technical information



XTX / NXX1TX-T (transmitter)



XTX / front view



XTX / rear view

## XTX / NXX1TX-T

OPERATING ELEMENT	FUNCTION
1 <b>Antenna connector</b>	SMA connector for antennas *)
2 <b>Impedance switch</b>	Switches between phantom power / Hi-Z or line level
3 <b>Mute LED</b>	Indicates mute status
4 <b>Mute/Link key</b>	Mute on / off; start / stop link process
5 <b>Channel Select</b>	Select audio channel M, 2, 3 or 4
6 <b>Repeater switch</b>	Switches Repeater mode on / off
7 <b>Status LED</b>	Indicates RF on / connection process / input signal (dBFS) / RF channel / RF channel switch
8 <b>Gain Up</b>	Increases the gain
9 <b>Gain Down</b>	Reduces the gain
10 <b>Combo receptacle</b>	Input for analogue audio source (XLR or ¼ " TS)
11 <b>Tiny XLR connector</b>	Connector for 5-V-power supply with Tiny-XLR

\*) When using a remote antenna including antenna cable, it is recommended to attach the cable with a wrench (tightening torque = 1 Nm)



**XRX / NXX1RX-T** (receiver/repeater)

## XRX / NXX1RX-T

OPERATING ELEMENT	FUNCTION
1 <b>Antenna connector</b>	SMA connector for antennas *)
2 <b>Repeater LED</b>	Indicates Repeater mode
3 <b>Channel select</b>	Adjustment of audio channel M, 2, 3 or 4
4 <b>Repeater switch</b>	Switches Repeater mode on / off
5 <b>RF status LED</b>	Indicates quality of reception
6 <b>XLR OUT</b>	XLR output to analogue audio sink
7 <b>Tiny XLR connector</b>	Connector for 5-V-power supply with Tiny-XLR

\*) When using a remote antenna including antenna cable, it is recommended to attach the cable with a wrench (tightening torque = 1 Nm)

**XRX / front view**



**XRX / rear view**



## XIRIUM X – SPECIFICATIONS

### 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	Up to 500 m point to point (LOS), Longer range depending on obstacles, reflexions, interferences

### AUDIO PERFORMANCE (ANALOG TO ANALOG 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	Up to 4 TX possible, each with a separate audio channel
Number of receivers (RX only)	Unlimited number of XRX clients
Converter Resolution (AD & DA)	24 bit
Sampling Rate	48 kHz
Latency (Delay)	3 msec
Transmission method	Compression-free, no reduction of converted data
Operating Temperature	0 °C to +50 °C
Storage Temperature	-20 °C to +80 °C

## XIRIUM X – SPECIFICATIONS

### XTX SPECIFIC CHARACTERISTICS

Antenna	1 x 1/2 wave dipole with SMA male connectors
Number of audio channels	1
Phantom Power (when activated)	48 V DC / 7 mA

### ANALOG INPUT SPECS:

Input Mode	Input Level							
	Input Imp. kOhm	Rated Source Imp. Ohm	Sensitivity* dBu	Max.** dBu	Gain dB	Phantom Switch	Connector type	
Line (balanced)	10	1000	-36	+22	0..40		Combo XLR, TRS	
Mic (balanced)	2.5	200	-68	+1	21..75		Combo XLR, TRS	
Mic Phantom Power (balanced)	2.1	200	-68	+10	12, 20..75	X	Combo XLR	
Hi-Z (unbalanced)	2200	150000	-50	+8	10, 18..54	X	Combo TRS	
Indicators	LEDs:	Mute Status / Linking Process / Metering / RF channel view / RF channel switch / 48 V, Impedance View						
Controls	Phantom / Hi-Z enable switch / Repeater switch, Gain, Channel select, Mute							
Power Supply	5 V DC / 2 A via Mini-XLR connector (4 pole male) or Battery-Pack NXBP-T-6							
Dimensions (w x h x d)	178 mm x 78 mm x 41 mm (excluding antenna)							
Weight	520 g							
Optional Accessories	Antenna + cable extension, Battery-Pack, Mounting Clamp							

\* 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 X – SPECIFICATIONS

### XRX SPECIFIC CHARACTERISTICS

Antenna	1 x 1/2 wave dipole with SMA male connectors
Number of audio channels	1

### ANALOG OUTPUT SPECS:

Output Type	Output Level				
	Output Imp. Ohm	Rated Load Imp. kOhm	Nominal dBu	Max. Level dBu	Connector type
Line Output (balanced)	800	10	-2	+16	XLR
Indicators	LEDs:	transmission quality, Mute, Repeater Mode			
Controls	Channel select, Repeater switch				
Power Supply	5 V DC / 2 A via Mini-XLR connector (4 pole male) or Battery-Pack NXBP-T-6				
Dimensions (w x h x d)	178 mm x 78 mm x 41 mm (excluding antenna)				
Weight	510 g				
Optional Accessories	Antenna + cable extension, Battery-Pack, Mounting Clamp, SMA Adapter				

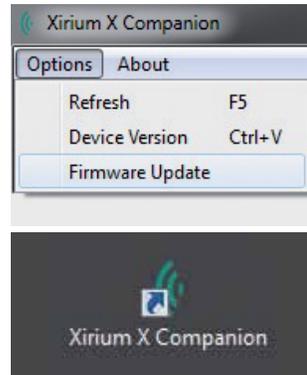
### OPTIONAL ANTENNAS – Linear polarised directional WI-FI antenna / Frequency band: 5.150 GHz - 5.875 GHz

Type	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°	-40° C to +80°	-40° C to +80°

### BATTERY PACK

Energy	33.3 Wh = 6.660 mAh
Operating time	12 h
Operating temperature	0 °C to +50 °C
Dimensions (w x h x d)	155 mm x 62 mm x 29 mm
Weight	254 g

# XIRIUM X Software



The XIRIUM X COMPANION facilitates the setting of all function parameters and the monitoring of the wireless devices with a computer. The software makes optimising the aerial alignment respectively determining the location of the repeater a breeze and also serves as a useful tool during set up. Future functional expansion or performance optimisation of the wireless devices can easily be accomplished via the firmware update function.

# XIRIUM X Mounting Examples

NXA-\*-60/40\*  
+ NXUC-M-15

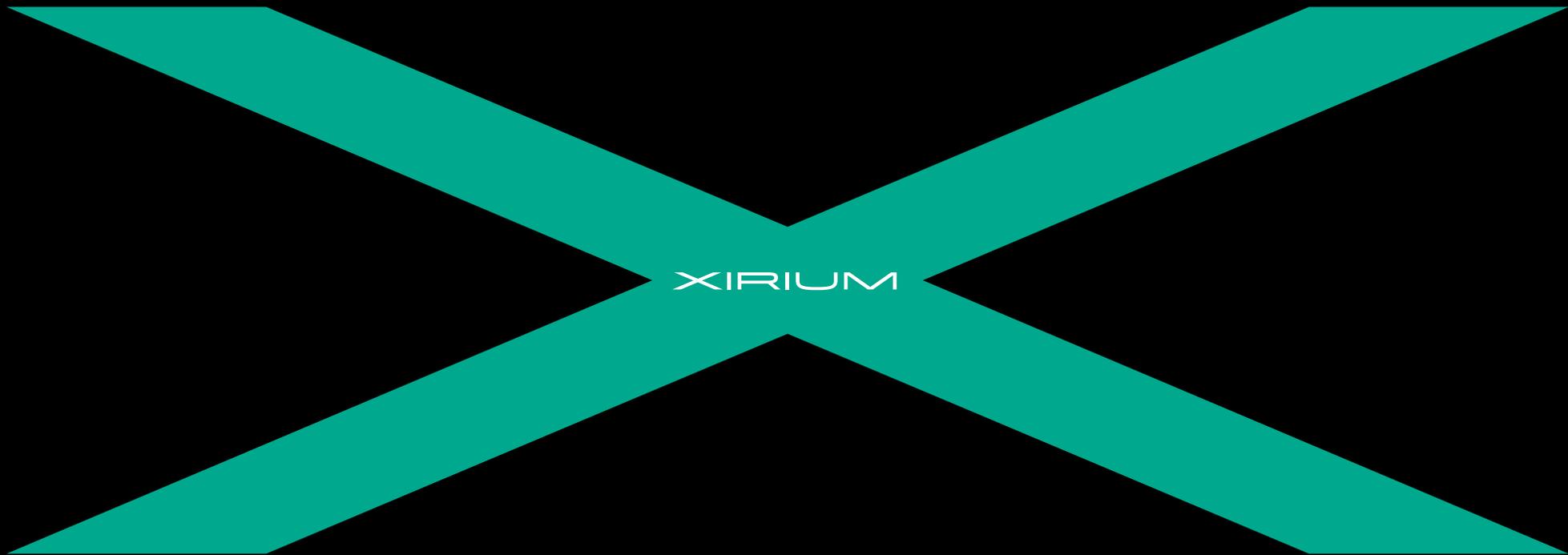


NXUC-M-15  
+ NXBP-T-6

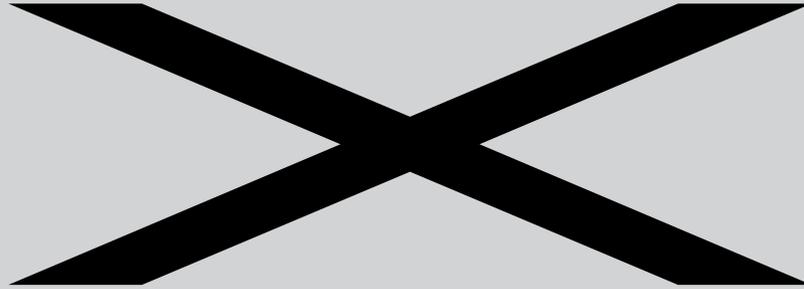


NXUC-M-15  
+ NXA-10-360-10





DIGITAL WIRELESS AUDIO NETWORK



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