

**Audio over IP from BARIX**

**vol. 2**

**Make sound connections, send messages.  
Intelligent communications and sound systems  
from BARIX:**

**7 recent success stories.**



BARIX brings sound to the new WESTSIDE centre in Bern  
 BARIX calls the tune in 920 Coop branches  
 BARIX replaces the old school bell  
 BARIX adds atmosphere in thirteen betting offices  
 BARIX strikes the right note in hotels and businesses  
 BARIX enables the blind to follow the action at Euro 2008  
 BARIX helps stage the world's largest youth event

Page 5  
 Page 8  
 Page 10  
 Page 12  
 Page 18  
 Page 20  
 Page 22



**You'll be hearing a lot more from us in future:**

**Seven amazing encounters on three different continents with innovative sound concepts from BARIX.**

Virtually nothing is impossible when it comes to providing a relaxing atmosphere, appropriate sound and an uninterrupted flow of information in large public spaces. Innovative communications and sound systems from BARIX using leading-edge technologies offer ideal solutions for virtually every application. BARIX delivers tailored technical concepts as well as, on demand, complete solutions for use in collaboration with expert partners. Using IP (Internet Protocol) technology, intelligent hardware from BARIX can normally be integrated into existing computer networks. The name BARIX is synonymous with the highest quality and lowest procurement and maintenance costs.

Welcome to a new acoustic dimension with BARIX.



**A milestone in modern architecture,  
a quantum leap in sound technology.**

**BARIX carries sound to the WESTSIDE centre.**

The WESTSIDE leisure and shopping centre, designed by world-renowned architect Daniel Libeskind and opened at the beginning of October 2008, forms the hub of a completely new district in the city of Bern. The majestic design and grand scale of this building complex make it more than just a giant shopping mall. With its unique architecture and excellent range of facilities, the complex as a whole is at the core of the Bern-Brünnen urban expansion project. It also includes a covered highway structure and the construction of around 800 new homes. WESTSIDE itself contains some 55 specialist retail outlets and boutiques, ten restaurants and bars, an eleven-screen multiplex cinema, a 144-room hotel, eleven seminar rooms and Switzerland's largest adventure pool and spa, complete with fitness park. This is the world's first commercially operated building complex designed by the New York architect Daniel Libeskind, whose earlier work included the Jewish Museum Berlin, the Denver Art Museum and the Imperial War Museum in Manchester. The CHF 500 million investment in WESTSIDE makes this the largest private construction project in Switzerland to date.

BARIX is involved in delivering the innovative sound technology installed within this magnificent architecture. The property developer Neue Brünnen AG commissioned Digital Media Distribution AG (DMD<sup>2</sup>) to provide a tailored sound system for the shops, arcades and food court. In turn, DMD<sup>2</sup> used IP streaming components from BARIX to distribute the ten customised music channels, fine-tuning its "retailradio.fm" product to

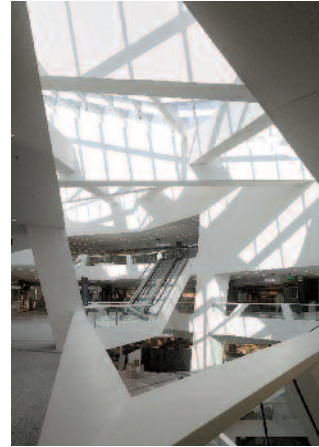
meet the needs of the WESTSIDE complex. This gives WESTSIDE ten music stations, offering a range of sounds including lounge mix, party tunes and classical music. Nine of these channels are regularly updated by skilled DMD<sup>2</sup> music editors.

They are interrupted at the customers' discretion by their own jingles or "Station IDs" – short announcements with brand advertising. DMD<sup>2</sup> uses the tenth channel for special occasions to broadcast the appropriate music, such as love songs on Valentine's Day, hip hop for a youth event or "Jingle Bells" during the festive season.

IP streaming components from BARIX provide the sound system for WESTSIDE by dividing the building into several zones. These zones are defined by the physical environment or its function, e.g. as a food court or an event area. A BARIX Exstreamer was installed for each zone by simply connecting it to the existing local area network. It receives an audio stream via the Internet, converts it into music and feeds the signal into the on-site audio system.

Just like a radio, the BARIX Exstreamer can be tuned to one of the ten channels by the user. This means that the whole of WESTSIDE can listen to the same sound, or chill-out music can be played in the mall at the same time as party music at a fashion show. Eight of the ten radio channels are also available in parallel to the specialist retail outlets and boutiques. They do not need their own Exstreamer, but receive the audio streams via the existing cable network. Eight additional Exstreamers form a type of head-end station. Each of the BARIX devices receives a different WESTSIDE music channel via the Internet, decodes the signal and feeds it into the cable network.

Anton Gäumann, CEO of Neue Brünnen AG and WESTSIDE Project Director, had this to say about this reliable, low-cost solution: "WESTSIDE is not only unique in terms of its facilities and architecture, but can also offer its visitors a special sound experience. The solution from DMD<sup>2</sup> and BARIX has exceeded our expectations. The BARIX equipment was as simple to install as it is to use. During the trials, the system proved to-



tally reliable and can easily be expanded as required."

Since BARIX components contain no moving parts, they are totally maintenance-free and durable. In the event of system failures, backup functions kick in immediately to maintain the flow of sound. And what's more, the

Exstreamer offers attractive pricing, starting at around EUR 160. As Anton Gäumann added: "The DMD<sup>2</sup> radio channels give us real-time, central control of the sound broadcasting system at all times. We can adapt the sound to suit the time of day, the season or special occasions. Even sound recordings such as the advertising jingles can easily be changed, offering a distinct advantage over playlist-based solutions."

## Music and advertising, synchronised with precision.

### Technology from BARIX calls the tune in 920 Coop branches, timed to perfection.

Thanks to its user-friendliness and low operating costs, particularly in large-scale networks the Exstreamer MP3 streaming box from BARIX is coming to replace the costly satellite technology that has dominated the market in the past. Innovative technology from BARIX has, for example, provided 920 Coop branches in the five sales regions of Bern, North-West Switzerland, Suisse Romandie, East Switzerland-Ticino and Central Switzerland-Zurich with a single-platform music system and a customised information and advertising program.

Around 1200 BARIX Exstreamers have replaced a vast array of CD players, radios and satellite receivers to control the programs in the shops via the Internet. The outstanding reproduction quality of the pleasant background music provides a relaxing atmosphere at the point of sale. Every seven minutes, customers are reminded of the latest offers and promotions through national or regional Coop advertising and shop-specific announcements.

August Harder, Head of IT at the Coop, has been won over by an impressive range of benefits: "The Exstreamer from BARIX offers the best value for money, is extremely user-friendly and totally reliable. BARIX provides the perfect solution for our requirements." Once again, the Exstreamer has beaten off the established competition and convinced everyone of its economic benefits. The purchase price of an Exstreamer is way below that of a costly satellite system of the type used by the major providers of in-store music broadcasting. With a maximum current



consumption of 4 watts, the Exstreamer is a low-power device that needs 24 times less power than one of the original alternative solutions, which proposed to equip each branch with its own, far more costly PC music server. The Coop is also

saving money on costly service engineers. Since the devices run on special technology from BARIX rather than a conventional operating system, they are totally resilient to network failures and other operating faults.

By using BARIX equipment, the Coop has also cut out the cost of monthly radio licence fees. The Coop Intranet incorporates the Exstreamer part of a closed user Intranet application, which has no radio reception facility and is not therefore subject to any licence fees under the Federal Radio and Television Act (RTVG). August Harder neatly summed up the key point: "With more than 920 branches throughout Switzerland, the low overall operating cost of an individual BARIX device was an offer we couldn't refuse."

## Sound communication goes back to school:

### The Excelsior Education Center swaps the school bell for an innovative sound system from BARIX.

In the Californian town of Victorville, just a stone's throw from the famous Silicon Valley, BARIX has brought about a quantum leap in communications at the local school. The simple ringing of the school bell produced by an antiquated audio tone generator has been replaced with a versatile sound system offering totally new sounds and an innovative concept for the flow of information.

Inside the classrooms and around the campus, all the communication channels are open thanks to this state-of-the-art sound system. Increased safety is ensured by a range of customised alarm signals using pre-recorded messages to issue the required danger warnings and instructions in clearly understandable form to everyone on site. Important announcements can also be broadcast effortlessly across the campus or in selected areas. Furthermore, the sound system can transform the whole atmosphere of the campus at the push of a button. Music can be fed in directly in the form of a high-quality MP3 file from a PC or iPod. Maximum safety is built into the system, which automatically prioritises alarm signals in an emergency.

And the most remarkable aspect of this project is that the existing network was used to install the sound system, allowing the school to make savings of around USD 40,000 compared with a new conventional alarm system.



**Place your bets to the sound of pounding hooves.**

**BARIX creates a thrilling live atmosphere in the betting shop.**

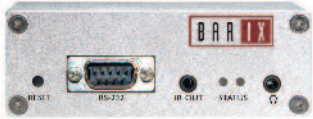
True gamblers need to savour the real atmosphere of the horse race, soccer match or Formula 1 event before they feel inclined to place their bets. Unfortunately, poor sound quality on the TV screens and high leased line costs are the scourge of the betting shops. Without high-quality sound, the punters aren't tempted to have a flutter. BARIX technology provides betting shops with a low-cost, high-quality technical solution with the scent of competition in the air.

To get its customers in the mood, the Albers betting exchange, for example, is relying on a new sound system at 13 of its sites, using the latest digital technology and streaming components from BARIX, customised and installed by Rahe-Kraft, a sound consultancy company specialising in electro-acoustic systems.

A new mixing system with sophisticated processing facilities was first developed to receive the sound for a wide range of visuals (such as horse racing) centrally in the studio, where it is mixed and distributed to the 13 offices. Using BARIX streaming equipment, the final audio product is coded in real-time as an MP3 stream and transmitted to the branches via a LAN/WAN network using a multicast protocol. The signal is received at its destination by the BARIX network MP3 client Exstreamer. From there it is connected via conventional audio cables to the sound system, so that no major alterations need to be made to the existing office set-up.



Maintenance costs are also minimised, since all components undergo a standard preconfiguration for all sites, meaning that no further work is required on delivery. Software updates can be downloaded automatically via the network.



### BARIX Instreamer 100

The BARIX Instreamer 100 or MP3 audio encoder is an intelligent streaming component that converts analog and digital audio into MP3, which it then transmits into the network. This is a great way to bring your analog audio into your network audio distribution setup. Think of the Instreamer IP audio encoder as a counterpart to the Exstreamer since it brings the sound into the network, rather than bringing the sound out!

- Has inputs for all sound sources for IP audio encoding from tuners to record, tape, MD and CD players
- Monitors and controls the directly attached equipment
- Is easily controlled using your standard web browser (PC, palm, etc.) or IR remote control (BARIX accessory)



### BARIX Exstreamer 100

With BARIX, networks get a voice. The Exstreamer 100 is an intelligent audio decoder that can pull your digital audio from the network while converting it into music or voice.

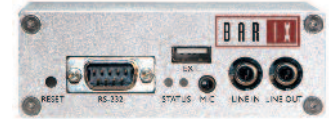
- 10/100 Mbit/s ethernet connection
- Streams from PC, Web, Shoutcast, Icecast and RTP servers in MP3 format
- Separate firmware for WMA and MP3 streaming (http, UDP, RTP) with automatic failover and USB playback available
- Is easily controlled over standard web browser (PC, palm, etc.), IR remote control or API (serial, TCP, UDP, cgi)



### BARIX Exstreamer 200

With BARIX you have an opportunity to find the right components to build your IP audio distribution system. The Exstreamer 200 is an intelligent MP3 player that can pull your digital audio from the network while converting it into music or voice. This device is the top of the line Exstreamer including its own built-in amplifier and speaker output for powerful sound. This unit is great when you want to connect the device to your speakers directly.

- Plays MP3 files and streams from computers, web, Shoutcast, Icecast and RTP servers
- 10/100 Mbit/s Ethernet connection
- Control via standard web browser, IR remote control, API (serial, TCP, UDP, CGI)
- Separate firmware for WMA and MP3 streaming (HTTP, UDP, RTP) with automatic failover and USB playback available
- Fully programmable ABCL (BASIC dialect) firmware available on request



### BARIX Annunicom 100

Network intercom and PA component for commercial, industrial and security applications.

At BARIX, the sky is the limit when it comes to communication. BARIX Annunicom is an interface that bridges audio to Ethernet to allow people to communicate with each other and to inform others. You could call it an IP intercom and IP paging system.

- Transmits voice, pre-recorded announcements, alarm messages and music over the network to any specific location
- Two way communication is possible just like an ordinary intercom
- Communicates over a standard network connection (10/100 Mbit/s) and supports TCP/IP-Protocol
- Incorporates an integrated Web server for control and configuration
- Works in combination with other BARIX Annunicoms as an autonomous IP Intercom, IP Paging system or can be used by itself with a PC controlled solution



### Volume Source Control VSC

Universal wall mountable control accessory for the BARIX audio product range



### Multifunctional digital desktop paging station PS16

Master or Paging/Intercom station for use in security, paging and intercom system, targeting industrial, transportation, retail, pro audio and commercial applications. Features a flexible gooseneck microphone, a speaker (1W), 2x24 character backlit LCD and 16 user definable push buttons, each with LED indicators all housed in an impact and break resistant ABS plastic enclosure.



**Audio over IP technology:  
a universal genius in the realm of sound.**

**Ideal solutions for all requirements.**

With its leading-edge, futureproof audio over IP technology, BARIX offers ideal solutions for virtually all sound system applications. These solutions have a unique advantage over alternative technologies in that audio over IP is as simple to install and operate as a radio, and just as affordable to buy and run. The technology can cover extensive, multi-site areas with no need for costly satellite technology, and requires no data media, servers or PC infrastructure.

The only technical equipment required is an IP (Internet) connection (LAN/WAN). Any available Internet connection can be used to transmit music, spoken announcements, advertising or important warning messages over any distance to any required broadcasting location.

In two specific examples, innovative sound systems from BARIX have been adopted by famous names from the hotel industry and by leading chain stores with extensive branch networks. In the following two applications, BARIX is working together with DMD<sup>2</sup> (Digital Media Distribution AG), whose “hotelradio.fm” and “retailradio.fm” products can simultaneously broadcast individual sounds and commercials in any of the retail branches or hotels, using audio over IP technology.

DMD<sup>2</sup> has equipped the 60 branches of Sunrise in Switzerland with its “retailradio.fm” product. “retailradio.fm” is a solution geared specifically to the needs of chain stores, where the tailored music mix focuses on three key elements: the target audience, the Sunrise marketing message and the salesforce. “It was vital for us to identify the right kind of music,”



recalls Daniel Amstutz, Project Manger at Sunrise. “We had to choose music to match the Sunrise brand and the new look of the Sunrise centres.” Sunrise is already planning the next phase: once all the centres have been refitted, not just music but advertising jingles too will

be played. Depending on the region concerned, these will be broadcast in German, Italian or French. And as musical tastes differ from region to region according to the language spoken, in future localised sounds will be played in the various Sunrise centres. Luxury hotels such as the Giardino in Ascona or the Lenkerhof Alpine Resort in the Berner Oberland are using DMD<sup>2</sup>'s “hotelradio.fm”. The musical concept was developed in collaboration with renowned hotelier Philippe Frutiger specifically to meet the needs of the hotel industry. More than 30 channels provide suitable music for the lobby, restaurant, lounge or spa area, for younger or older audiences and for special events. An individual, relaxing atmosphere is created in every part of the hotel.

**Helping the blind and visually impaired to follow the action.  
BARIX creates a unique live experience at Euro 2008.**

It is virtually impossible for blind and visually impaired spectators to follow the action at major events in sports stadiums when cheering and chanting fans turn up the volume. Neither TV transmissions nor radio commentaries can convey the emotions felt by a fan watching the action from the stands. But the match commentary provided by a sighted companion is frequently drowned out by the surrounding din of the stadium. BARIX AG has been working with UEFA to help partially sighted spectators savour the thrills of live matches during EURO 2008. UEFA chose IP streaming components from BARIX to providing the audio distribution. This special service was offered to blind and partially sighted spectators during the European football championship in all eight stadiums in Austria and Switzerland.

For all the games played at Euro 2008, sophisticated technology from BARIX ensured that match commentaries were not drowned out by the surrounding fans, so that visually impaired spectators could keep up with the action and enjoy the live thrills of the competition, including the vibrations when thousands of fans jump to their feet in the stands. Simple installations, outstanding economy: IP audio transmission between the BARIX Instreamers and Exstreamers is routed via existing IP/Ethernet networks or via the Internet using IP standard protocols, requiring minimal bandwidth and no additional servers or PCs. These were the key factors influencing UEFA's decision to adopt BARIX technology. "UEFA was instantly impressed by our system, which makes use of the existing



local area networks in the eight stadiums. As a result, installation is simple and affordable," explained BARIX founder and CEO Johannes G. Rietschel. "Not to mention the unbeatable value for money of BARIX IP streaming components."

**450,000 people can hear every word.**

**BARIX gets to work in 2008 at the world's largest youth event in Sydney, Australia.**

The World Youth Day events that are held every two to three years are among the world's largest mass gatherings, with the number of visitors even surpassing the legendary Woodstock Festival. The logistical and technical challenges facing all of the facilities used to control the flow of visitors and keep them informed of all the events on the programme are equally daunting. In 2008, the event took place in Australia, culminating with an address by Pope Benedict XVI in front of a sea of more than 450,000 young faces.

The Sydney-based company commissioned to provide the sound system decided to exploit the numerous benefits and flexibility of audio over IP technology from BARIX. The decisive factors were not only the substantial cost savings offered by the BARIX system compared with hardwired solutions, but also the essential requirement for reliability. BARIX delivered a highly cost-effective hardware solution offering complete operational stability combined with totally fault-free network performance at all times. Maximum reliability was also a top priority as the ability to communicate safety instructions had to be ensured at all times. Our partners in Australia were so pleased with the collaboration that they intend to carry on reaping the benefits of voice over IP technology from BARIX in future.



# PA System over GSM oder 3G Network

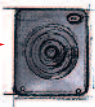
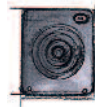


Command Center

Station A

**BARIX  
EXSTREAMER**

Station B



**GSM / 3G**



Station C

**BARIX  
EXSTREAMER**

Station D



**Control, monitor, communicate.**

## **BARIX AG.**

BARIX is a skills-based company offering expertise in leading-edge, IP-based communications and control technology. The company is based in Zurich/Switzerland and specialises in the research, development and production of system components.

Typical BARIX products include a range of devices which can be connected locally via standard networks or via the Internet, offering innovative, low-cost solutions for audio over IP applications (transmission and monitoring of audio signals), communications (intercom) and automation tasks (decentralised control, monitoring and maintenance operations). The wide range of available applications includes in-store music, supermarket advertising, religious service broadcasts, distance learning programs, audio transmissions in hotels, offices, museums and hospitals, intercom and PA systems, solutions for radio and studio broadcasting, M2M machine communications, lighting and door automation and security solutions such as surveillance and access control systems. BARIX AG provides its customers and partners with the latest technology in the form of standard or customised products, private labelling, licensing and OEM developments.

# Audio over IP from BARIX



BARIX AG  
Seefeldstrasse 303  
CH-8008 Zürich

info@barix.com  
T +41 43 43 322 11  
F +41 44 27 428 49

[www.barix.com](http://www.barix.com)