

# soundings

1/04

Volume 7



## Beyoncé

at Nelson Mandela's  
46664 Concert

# Editorial



Dear Reader,

With great joy – and a little bit of pride – we announced the second generation of our evolution wireless series at Winter NAMM in January, held in Anaheim, CA. Three years of intensive developmental work by a team of dedicated RF wireless specialists have produced a series which has truly pushed the limits. More professional features and more value for money have positioned the evolution wireless G2 at the top of the market.

Soundings will introduce the second generation to you, and take you to the most interesting Sennheiser projects around the globe: Nelson Mandela’s 46664 concert in Cape Town; the 46th Grammy Awards; the MTV European Music Awards; and Super Bowl XXXVIII. Read about how state-of-the-art Sennheiser equipment has helped to make these mega-events a success. See dream cars in the Ferrari museum, visit the Biodôme in Montréal – or if you prefer, a bit of magic in the Paris Musée de la Magie.

Enjoy reading this latest issue of Soundings.

Yours,

Rolf Meyer  
President Marketing and Sales

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# Patron of the Arts

**The two domes rise majestically to the sky above Singapore.** The “Esplanade – Theaters on the Bay” is an architectural masterpiece in the heart of the Asian metropolis – as well as a gigantic concert and theater complex that delights visitors from all over the world. The audio technology is also in a class of its own. Sennheiser microphones and wireless systems, including 32 channels of the 5000 Series and 24 channels of the 3000 Series, guarantee superb sound quality. In close collaboration with the two engineers responsible for the sound system, Gerry van Hezewick and Robin Shuttleworth, Sennheiser Asia provided valuable assistance in equipping the new venue, which was officially opened in October 2002.

For its generous financial and technical support of this project, the company has now been presented with the Patron of the Arts Award 2003. It is the 20th time that the National Arts Council of Singapore has awarded this coveted prize, which honors organizations and individuals for their achievements in the arts in Singapore. The Guest of Honor at the award ceremony in September 2003 was the Minister for Information, Communications and the Arts, Dr. Lee Boon Yang. Thanks to all the sponsors, the people of Singapore were able to enjoy more concerts, performances and exhibitions last year than ever before.



Swee Fook Ho, President of Sennheiser Asia, receives the “Patron of the Arts” Award from Dr. Lee Boon Yang (r.)



# Gala Event to Celebrate 75th Anniversary

**Studio microphone experts Georg Neumann GmbH staged a gala event to celebrate their 75th anniversary last October.** In a specially rented TV studio on Eiswerder Island in Berlin, singer and entertainer Max Raabe and his Palace Orchestra welcomed guests from all corners of the world with hit songs from the company's early years. TV celebrity Kristiane Backer and Wolfgang Fraissinet, Director of Marketing and Sales at Georg Neumann GmbH, presented this varied entertainment program.

**Making the link to the present** was soul star Xavier Naidoo, who thrilled the audience with his performance on a floating outdoor stage. The top German act was followed by a gigantic fireworks display that was so impressive that it was talked about in Berlin for days afterwards. The fireworks exploded against the night sky accompanied by instrumental music and pop classics like, "Music Was My First Love", while at the same time images of the company's legendary products and video clips on the subject of sound were projected onto a huge waterfall curtain. This was followed by a music and show selection, during which the winners of the Neumann Sound Engineering Contest 2003 were presented with their prizes. The first prize, a chromium-plated "M 149 Tube" stereo set, was given to Gabriel Schmitt from Brazil.

**Professor Dr. Jörg Sennheiser** welcomed the guests and congratulated the Neumann team on their anniversary – and on their outstanding success. After all, the company can look back with pride on 75 years of innovation in audio technology: the famous Neumann "Bottle", acknowledged to be the best microphone of its time; phonograph record-cutting lathes; the first sound level meter (1934); the first switchable large-

diaphragm microphone, the U 47 (1949); the classic microphones U 67 and U 87 (1960 and 1967); phantom powering (1966); the dummy head (1973); digitally controlled, analog mixing consoles; direct metal mastering for records (1981); the first transformerless microphone, the TLM 170 (1993); and, last but not least, the wireless SKM 5000 N/KK 105 S with Sennheiser (2002) and the digital Solution D (2003) – all these form the long chain of technical milestones set by the company since its inception back in 1928.

Those who would like to read more about the history of Neumann – from the early years to the present day – will find a wealth of fascinating information in the 300-page fully illustrated anniversary book, "Neumann – The Microphone Company". Further details and an order form can be found at [\[www.neumann.com/book\]](http://www.neumann.com/book).



Wolfgang Fraissinet (l.) with the winner of the Neumann Sound Engineering Contest, Gabriel Schmitt

The young founder of the company, Georg Neumann. He is renowned for some of the most pioneering inventions in the field of microphone technology – and beyond (for example, the invention of the sealed nickel-cadmium rechargeable cell in 1947)



# German Future Award



Dr. Wolfgang Niehoff (l.) and Rolf Meyer

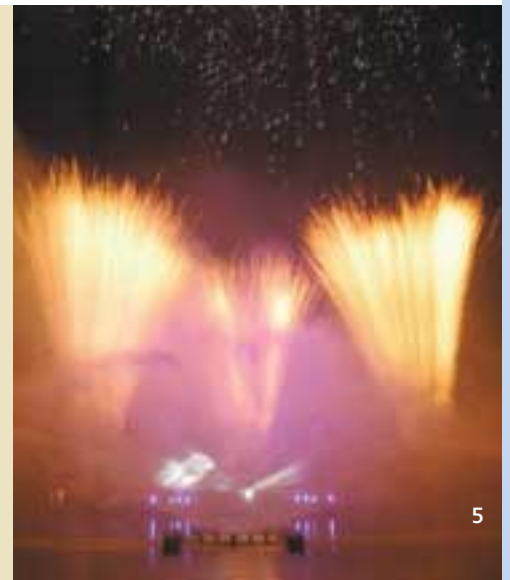
**Another Sennheiser innovation hit the headlines in November** – the GuidePort visitor guidance system. Rolf Meyer, President Marketing and Sales, and Dr. Wolfgang Niehoff, Director of Research, were nominated for the prestigious German Future Award, the “Deutscher Zukunftspreis 2003”, for this concept. Awarded annually by the German President to reflect the wide range of research and development in Germany, the Future Award celebrates outstanding achievements in innovation and pioneering technology and presents it to a wider audience.

The Deutsches Technikmuseum in Berlin buzzed with excitement on November 13 as four nominated teams, along with the short films of their innovations, were introduced. On November 14, the event was broadcast on the TV stations ZDF and Phoenix. It was not until just before the show that the jury agreed on a winner – not an easy task, as the President later commented. In the end, it wasn't to be Sennheiser's night: the Future Award went to the team from Merck for their “Liquid Crystals for Television Screens”.

The researchers from Merck were obviously overjoyed, but the other three teams were also more than happy to have gotten so far. As Rolf Meyer and Dr. Wolfgang Niehoff pointed out, “We are proud to have been nominated as one of the four most innovative research teams in Germany, and it was a great honor for us to be part of this award ceremony. We were particularly pleased that the founder of our company, Prof. Dr. Fritz Sennheiser, was able to experience this very special recognition for our company's achievements. It was his philosophy to allow his engineers the freedom to research and discover, which decisively characterizes our company and gives us the creative space to develop a system like GuidePort. Therefore, we can expect even more pioneering developments from Sennheiser in the future. And who knows – the next award might be just around the corner.”



German Soul star Xavier Naidoo and band



An impressive fireworks display



# Sennheiser Sound for *the Concert Event* of



L.: A spirit of collaboration: 46664 saw Brian May, Zucchero and Anastacia (in the foreground) perform for a good cause

M.: The Eurythmics

R.: Bono with Beyoncé Knowles and 14-year-old preacher Andrews Bonsu





© Getty Images

Nelson Mandela with (from the left)  
Dave Stewart, The Edge and Bono

# the Year



Reproduced by kind permission of 46664 Concerts. © 2004 46664 Concerts

**A concert which has already been termed historical:** on November 29, 2003, international stars turned the Green Point stadium in Cape Town, South Africa, into a pulsating music and charity arena. The sell-out concert attracted 40,000 fans who wanted to see Africa's top artists performing with Beyoncé, Peter Gabriel, Queen, The Corrs, Bono, The Edge, Anastacia, Bob Geldof, Paul Oakenfold, the Eurythmics and many more, and to celebrate Nelson Mandela, founder of the "46664 – Give One Minute of Your Life to AIDS" campaign. The complete microphone technology – both wired and wireless systems – was supplied by Sennheiser and Neumann.

**At the very beginning of the concert,** R&B meteor Beyoncé had the audience dancing to her smash hits, "Baby Boy", "Crazy in Love", and "Dangerously in Love". And the electric atmosphere in the stadium lasted all night long. The concert was characterized by excellent musical collaborations, by a spirit of togetherness and the commitment to a good cause. The Eurythmics took to the stage with, "Here Comes the Rain" and then sang, "Seven Seconds" with Youssou N'Dour. The Corrs performed with Ladysmith Black Mambazo, Zucchero with Queen and Thandiswa, Peter Gabriel with Youssou N'Dour and Yusuf Islam, Anastacia with Queen, Dave Stewart – together with Brian May and Roger Taylor, acting as Music Director – with Queen and Bono. The mood went back and forth from party to solemn, especially when Bob Geldof and Nelson Mandela, who was frenetically celebrated by the audience, made their speeches. For the brilliant finale of the show, all artists were on stage, performing the 46664 Chant.

**One of the biggest rock events ever staged in Africa, 46664 also broke all records as far as broadcasts were concerned.** The organizers had made the concert available rights-free. Live and time-relayed broadcasts – such as MTV's on World AIDS Day on December 1 – as well as webcasts made 46664 the most widely distributed media event in history, reaching a potential audience of more than two billion people.

## 46664

Four double six six four – that was Nelson Mandela's prison number in Robben Island jail, where the human-rights campaigner was incarcerated for 18 years. Now this number is used to spearhead a worldwide music campaign with which Nelson Mandela aims to raise awareness among the world's population of the devastating AIDS epidemic in Africa. Mandela officially launched the campaign in October 2003 in London.

Some artists have composed and recorded songs especially for this campaign. The first recording of this 46664 series is from Dave Stewart and Bono. A few weeks later, Stewart was joined in the recording studio by Brian May and Roger Taylor of Queen who also worked together with some of South Africa's premier musicians. About half a dozen songs were written especially for the event in Cape Town.

The audio for the concert was excellent. The sound crew was organized by Britannia Row, headed by Mike Lowe. Brit Row also provided the PA. Monitor engineers for 46664 were Tim Patterson and John James, FOH engineers were Rick Pope and Des Jabir. Of Sennheiser, Director of Engineering Dave Hawker and Worldwide Relationship Manager Paul Hugo had accompanied the concert since the rehearsals in October. They moved down with the rehearsals to Cape Town, where they were joined by RF specialist Klaus Willemsen.

The proceeds of the concert, including sales of CDs and DVDs, as well as donations went to the Nelson Mandela Foundation which uses the money to support AIDS programs. Rolf Meyer, President Marketing and Sales said, "We were very happy to have supported this important campaign. For the rehearsals held in London, we had provided equipment and expertise, but soon recognized that this cause deserved more than that and became a sponsor of 46664. It was an uplifting experience for everyone involved – and billions could share this event via TV."

[\[www.46664.com\]](http://www.46664.com)

### AIDS in South Africa

"AIDS is no longer a disease, it is a human-rights issue," says Nelson Mandela. "A tragedy of unprecedented proportions is unfolding in Africa and is claiming more lives than the sum total of all wars, famines and floods and the ravages of such deadly diseases as Malaria." Of the 40 million people who are HIV positive, five million alone live in Mandela's native country South Africa. AIDS is the most frequent cause of death, claiming more than 250,000 lives every year. Nevertheless, the disease is still a taboo in many regions. It also causes big social problems: over half a million of AIDS orphans – many of them infected as well – have been put in the care of relatives or orphanages. It is estimated that one third of all pregnant women are infected with AIDS.

The Sennheiser engineering crew: Klaus Willemsen, Dave Hawker and Paul Hugo (l/r)



Monitor engineers Tim Patterson (l.) and John James (center, in the foreground)



### Microphones and Wireless Monitoring

- 66 wired evolution instrument microphones (e 602, e 604, e 606, e 903)
- 28 wired evolution vocal microphones (e 935)
- 24 dynamic microphones (MD 421, MD 46)
- 31 RF condenser microphones (MKH 40, MKH 50, MKH 60, MKH 800)
- 12 conference microphones with goosenecks (ME 34, ME 36)
- 32 handheld transmitters, including 23 SKM 5000 N with KK 105 S microphone head
- 18 bodypack transmitters, including 12 SK 5012
- 8 evolution wireless Instrument Sets (ew 172)
- 2 evolution wireless HeadSets (ew 352)
- 15 twin receivers for the microphones, including 14 EM 3532
- 12 twin transmitters for wireless monitoring (SR 3056)
- 36 bodypack receivers for wireless monitoring (EK 3053) and 1 evolution wireless monitoring system with additional bodypack receiver
- 17 Neumann condenser microphones (TLM 103, TLM 127)





Uwe Agnes (l.) and Bernd Siering film an anaesthetized lioness

# Serengeti

The opportunity to film in the Serengeti Plain doesn't turn up every day – so one has to make sure that the footage is of the best possible quality and the soundtrack is in stereo, even if the budget is limited. These were the challenges that the small team of Topas Film Productions faced when they travelled to Tanzania to do a documentary on the work of Swiss zoologist Markus Borner. In their baggage: an MKH 418 S stereo shotgun microphone with basket wind-shield, two SKP 30 plug-on transmitters and two EK 3041 diversity receivers. Since there was no sound engineer accompanying the team, due to budgetary constraints, the two microphone signals were directly transmitted onto the camcorder. "The microphone and the RF wireless systems have definitely proved themselves during this tough and dusty shooting. Especially the two plug-on transmitters – which had a very exposed spot at the end of the microphone boom – really impressed us with their ruggedness, reliability and sound quality," says Uwe Agnes, scriptwriter and temporary "sound engineer".



From the shotgun microphone...



...directly onto the camcorder:  
with an SKP 30 – EK 3041 RF wireless link

# Berlin–Moscow Moscow–Berlin 1950 – 2000



Vladislav Mamyshev-Monroe: "L. P. Orlova after a creative meeting with sailors from the legendary cruiser 'Aurora' during a guest performance in Leningrad. 1936", 2000  
© Vladislav Mamyshev-Monroe/XL-Gallery, Moscow/courtesy Trilistnik, Moscow

A clever, unobtrusive guide was on duty in Berlin's Martin-Gropius-Bau museum and art gallery until January. Tirelessly, day in day out, the guide informed every visitor individually about more than 500 paintings, sculptures, photographs and installations in the exhibition "Berlin–Moscow/Moscow–Berlin 1950 – 2000", over an area of some 60,000 square feet. This discreet and well-informed companion was, in fact, the receiver for the GuidePort tourguide system. Visitors to the exhibition simply hung it round their neck and selected the volume – and the clever little box told them all they need to know about the cultural dialogue between Germany and Russia.

**The requirements set by the museum were very strict:** none of the technical equipment was to be visible to the visitors. And the museum didn't have an audio room. For this reason, the 37 single and three double cell transmitters – the "memories" for the audio information about the exhibits – were concealed in the individual exhibition halls. The identifiers, which have the job of triggering the right audio information at the right time, were also hidden behind covers, where they were activated via invisibly installed induction loops.

**The organizers rented a total of 1,000 receivers for the exhibition,** which successfully continued the theme of its predecessor "Berlin–Moscow/Moscow–Berlin 1900 – 1950". Ute Weingarten, spokesperson for the Berlin Festival, said of GuidePort: "Visitors were not forced to march from room 1 to room 41. The audio system respected their freedom to choose."

From March 21 until June 15, "Berlin–Moscow/Moscow–Berlin 1950 – 2000" is on exhibition at the State Tretyakov Gallery Moscow.



View of the Martin-Gropius-Bau museum  
© Werner Zellien



Heinz Mack: "The 20th Industrial Exhibition in Berlin 1970" (I/IV), 1970 (2003)  
© Heinz Mack/VG Bild-Kunst, Bonn, 2003



Geli Korshew: "Hammer and Sickle", 1980  
© Geli Korshew/Krasnojarsker Surikov Art Museum/courtesy Trilistnik, Moscow



# MTV European Music Awards

© Getty Images/Dave Hogan

**In November, Sennheiser UK ensured the best-ever showing for Sennheiser and Neumann microphones at an MTV European Music Awards Ceremony.** At the awards show in Edinburgh, Scotland, all presenters used the SKM 5000 N, including lead presenter Christina Aguilera, who lived up to her promise to shake things up at this year's Music Awards and surprised everyone with several stylish outfits.

Dido also opted for the SKM 5000 N and gave an acoustic performance of her current hit, "White Flag". The White Stripes (evolution) performed a storming rendition of "Seven Nation Army" and picked up the award for Best Rock. Ever sensational Kylie Minogue (photo, SKM 5000 N) gave a stunning performance of "Slow", the first single from her current album, "Body Language", and Scottish band Travis (KM 150, e 935) sang "The Beautiful Occupation".

Awards were picked up by Justin Timberlake, who took home three EMAs (Best Album, Best Male, Best Pop), Christina Aguilera (Best Female), Coldplay (Best Group), Panjabi MC (Best Dance), Beyoncé (Best R'n'B), The White Stripes (Best Rock), Eminem (Best Hip Hop), Sean Paul (Best New Act) and Sigur Ros (Best Video). This was also the first time that viewers in 16 countries could vote via SMS for Best Song: it was Beyoncé together with Jay-Z who collected her second award on that night for "Crazy in Love".

When Pink, dressed in a red PVC devil outfit, performed "Trouble" for the ceremony's finale, the engineers were at least as content as the artists – there was no sign of trouble and the sound was just perfect. Sound designer Derek Zieba was once again delighted with the performance of Sennheiser and Neumann products and paid special praise to the support shown by Sennheiser UK's Chief Engineer, Andy Lillywhite and Artist Relations Coordinator, Mark Saunders.



Derek Zieba, Sound Designer for the MTV European Music Awards

# A Small Blue Box for the Prancing Horse



A warm welcome at the Ferrari museum



An identifier mounted inconspicuously under a front spoiler



Listen to the Ferrari story via GuidePort

**Maranello** – a name that is inseparably linked with Enzo Ferrari (1898 – 1988), who founded his legendary company in the town just 12 miles south of Modena. During the Formula 1 Grand Prix season, Maranello is transformed into a veritable place of pilgrimage for the “Ferraristi”, as the whole town celebrates each of the team’s victories in truly festive style. Located just a few feet away from the famous factory is the Galleria Ferrari, a museum that tells the story of the “Casa del Cavallino”, the home of the illustrious “Prancing Horse”.

Now, the story is told automatically as visitors stroll in awe around the museum – thanks to the GuidePort system, which was installed in September 2003. Small blue Sennheiser receivers tell the visitors all they need to know about the famous marque as they approach each of the 25 information points. Concealed identifier boxes trigger the recorded information in Italian, German or English. “It makes us particularly proud to know that our very first GuidePort project in Italy has been installed in one of Italy’s most popular museums,” said Alessandro Morello, managing director of Sennheiser’s Italian partner Exhibo.

The replica of Enzo Ferrari’s office, larger-than-life posters of Ferrari racing drivers, a pit-stop scene, engines, trophies from the company’s long racing history and, of course, the dreams of racing fans made real in metal and chrome, attract more than 180,000 visitors a year – and the trend is moving up.



# It's Magic...

Thick stone walls, cool, slightly damp air – an underground vault in an old part of Paris. The Rue Saint Paul is home to the Musée de la Magie, the Museum of Magic. Visitors to the museum – especially the many young ones – hold their breath in anticipation as they descend the steps into a world of illusion, magic and tricks of the senses.

A unique collection of ancient scientific games, old posters from the early twentieth century, copper engravings, mechanical slot-machines, famous magic tricks and historical objects all tell the fascinating story of magicians, conjurers and illusionists.

Some of the classic magic tricks like “Sawing the Lady in Half” or “The Vanishing Lady” go back more than a hundred years, as visitors discover when they examine the ornamentally decorated magic props. It shows that, even then, magicians used the very latest technology to create the perfect illusion. Now, visitors soon fall under the spell as they gaze in awe at the collection of optical illusions, magic wands and boxes of magic tricks, as well as wonderful posters that were once just everyday advertising material but now could easily be displayed in any art museum. Anyone who wanted to try their hand as a psychic back in the 19th century, but who lacked the necessary skills, simply needed the right equipment (preserved in glass cases in this museum) to make their secret messages appear as if by magic. One display case is dedicated to the country's most famous magician, Jean-Eugène Robert-Houdin (1805 – 1871), who is considered to be the father of modern magic. His theater was one of the capital's most popular attractions.

There is also a good deal of magic in the way that the visitors are told about the great illusions and illusionists. A GuidePort system “magically” triggers 13 narrative texts in five languages – automatically and individually for each visitor. The system demonstrates its live performance qualities in a presentation in the “Salle de Spectacle”, where the visitors are transformed into spellbound sorcerer's apprentices. Magical sound indeed for the Musée de la Magie!

[\[www.museedelamagie.com\]](http://www.museedelamagie.com)



GuidePort tells the story of the magic props



Colorful posters advertised the magicians' shows

© Getty Images/Frank Micelotta





# Grammy Stars with Sennheiser

At the 46th Grammy Awards show, telecast from Los Angeles' Staples Center on February 8, it was a female artist once again who was showered with trophies. Beyoncé Knowles took home five Grammys for her first solo project outside Destiny's Child, among them the awards for Best R&B Song, Best Female R&B Performance and Best Contemporary R&B Album.

The spectacular opening of the evening came from Prince, who sang his classic "Purple Rain" and was quickly joined by Beyoncé (see photo below) for a medley of his greatest hits plus her own "Crazy in Love", which picked up two trophies just moments later. Justin Timberlake, who won two Grammys, made two appearances: singing the backing line for the Black Eyed Peas on a 5000 Series handheld and then performing his solo hits "Señorita" and "Funky Child" with the e 935, while leading a full band, horn section and numerous backing singers.

Céline Dion (SKM 5000 N/KK 105 S) remained poised when an audio-patching problem slightly delayed her tribute to Luther Vandross, and then delivered a superb rendition of "Dance With My Father" (Luther Vandross/Richard Marx), which the Academy had voted Song of the Year. The Recording Academy's MusiCares 2004 Person of the Year honoree, Sting, delivered an updated version of The Police's breakthrough hit, "Roxanne", making use of an evolution e 935. That model of wired mic was also favored by the White Stripes who ripped through the duo's recent hit, "Seven Nation Army", and collected the awards for Best Rock Song and Best Alternative Album. A late addition to the show's line-up, Canadian singer/songwriter Sarah McLachlan (Neumann KMS 150) performed "Fallen", the first single from her current album "Afterglow".

[\[www.grammy.com\]](http://www.grammy.com)

## Awards with Sennheiser and Neumann microphones:

- Best Male Pop Vocal Performance: Justin Timberlake "Cry Me a River"
- Best Contemporary R&B Album: Beyoncé "Dangerously in Love"
- Best Female R&B Vocal Performance: Beyoncé "Dangerously in Love 2"
- Best R&B Song: Beyoncé "Crazy in Love"
- Best R&B Performance by a Duo or Group with Vocals:  
Beyoncé and Luther Vandross "The Closer I Get to You"
- Best Male Rap Solo Performance: Eminem "Lose Yourself"
- Best Rap Song Collaboration: Beyoncé and Jay-Z "Crazy in Love"
- Best Rap Song: Eminem "Lose Yourself"
- Best Pop Collaboration with Vocals: Sting and Mary J. Blige "Whenever I Say Your Name"
- Best Pop Vocal Album: Justin Timberlake "Justified"
- Best Traditional Pop Vocal Album: Tony Bennett and k.d. lang "A Wonderful World"
- Best Alternative Music Album: White Stripes "Elephant"
- Best Male Rock Vocal Performance: Dave Mathews "Gravedigger"
- Best Rock Song: White Stripes "Seven Nation Army"
- Best Chamber Music Performance: Kronos Quartet "Berg: Lyric Suite"
- Best Jazz Vocal Album: Dianne Reeves "A Little Moonlight"





As the Rainforest River Adventure Ride winds by the Asian Temple, an identifier (see inset photo) – carefully hidden in the ruins – triggers the audio playback

# Rainforest Café



Welcome: the Rainforest Café's own "volcano" erupts at dusk

The Rainforest Café® on Galveston Island, Texas is a restaurant and entertainment venue for the truly courageous. At the entrance, visitors are greeted by an erupting volcano, and inside, the Rainforest River Adventure Ride™ invites the patrons to explore the lush tropical jungle and mysterious temples along a river. Small rafts are waiting to take visitors on a voyage through real and artificial plant life, passing by cascading waterfalls, exotic animals – and an angry river god!

**Giant saltwater aquariums**, simulated rain storms with thunder and lightning, and perfect robotic animals complete the indoor jungle. Only if the adventurers avert their eyes from the breathtaking surroundings would they notice some trappings of civilization – and some very high-tech ones at that for the narrative audio during this ride is transmitted by a Sennheiser GuidePort system. The audio system for the Rainforest River Adventure Ride was installed by Frattalone and Associates, Inc., an audio/visual/lighting firm that has handled the AV needs of the Rainforest Café properties since 1994. Initially, the company considered several traditional options, stated Troy Werth, one of the firm's technical designers. "One of the more challenging variables was a water-based fogging system, emitting thick fog continually during the ride. An electro-optic, sensor-based system or infrared system would have been problematic in this extreme environment. Basically, we chose not to use certain types of triggers, as we needed something that would be rugged enough to withstand the test of time in this type of environmental application."

**The GuidePort solution emerged in a rather unusual way.** Company owner Steven Frattalone spotted a story in an industry-trade publication about a recent installation of GuidePort in, of all places, Germany's Rainforest House. After reading the article, Werth said, "Steven got to thinking that GuidePort might be the solution to this rainforest dilemma as well." Frattalone opted for GuidePort and, working closely with Sennheiser engineers, configured a solution designed to transmit narration to an on-board speaker system installed in the visitors' rafts. Each of the ten watercraft was fitted with a GuidePort receiver and custom-designed speakers, built cleverly into one of the seatbacks. The technicians placed the rugged outdoor version of the GuidePort identifier on either side of the water channel, where it triggers the corresponding audio file to play from the receiver as soon as the boat passes. The audio is then routed to the boat's amplifier (also housed in the seatback) and finally to the 12-speaker system which surrounds the visitors with crisp, clean audio.

"Each pair of identifiers is programmed to match up with a certain soundtrack," Troy Werth stated. "The receiver always knows when and what to trigger, smoothly transitioning from one soundtrack to another. Marine batteries in the boat work in conjunction with a Sennheiser DC converter to step the voltage down for the receivers."

"The GuidePort system has saved money in both research and development. To design and customize another type of solution would have been extensive," Werth says. "The system has worked extremely well, and most importantly, it has surpassed all of our client's expectations."

[\[www.rainforestcafe.com\]](http://www.rainforestcafe.com)  
[\[www.guestlife.com/houston/dining/rainforest.html\]](http://www.guestlife.com/houston/dining/rainforest.html)



# Super Bowl XXXVIII

Only the costumes malfunctioned – Sennheiser wireless systems... flawless

**At the shows for the 38th Super Bowl, you couldn't rely on all the clothing – but the microphone and monitoring technologies were perfect.** In the hands of RF specialist James Stoffo of Professional Wireless Systems (PWS), and halftime-show sound reinforcement provider ATK Audiotek Corp., the shows at the largest event on the US sports calendar went off without any technical hitches. For the pre-game portion of the Super Bowl with Aerosmith, Josh Groban and Beyoncé Knowles, and the halftime show featuring Jessica Simpson, P. Diddy, Nelly, Kid Rock, and a headline-grabbing Janet Jackson and Justin Timberlake duet, PWS fielded an all-Sennheiser starting line-up of RF microphones and personal monitor systems.

"The number of RF devices and RF microphones on the field was just incredible," reported James Stoffo, who had about 100 frequencies, in addition to over 1,000 RF systems on the field, with production intercoms accounting for nearly half of those channels. "We had 14 hot RF microphones, all Sennheiser EM 1046 receivers with hand-holds – the SKM 5000s with Neumann elements," he said. There was one exception: "Steven Tyler from Aerosmith requested a Sennheiser dynamic element. Then we had 16 channels of wireless monitors."

**An additional challenge this year:** "The artists and producers wanted to do all the checks from the tunnel," revealed Stoffo. "So from my position, which was in the diagonal corner of the field, I had to not only cover the whole field but I



Beyoncé Knowles delivered a stirring rendition of the National Anthem

had to get the wireless monitors and the microphones into the tunnel so that they could do their checks." No problem with PWS's proprietary helical antennas and custom combiners for each of the four Sennheiser monitor transmitters. "We pumped out a Watt into the four-way combiner to have it kick out the full legal FCC limit, which is 250mW, per frequency. After the combiner, we had a very tight RF filter. This prevented our signal from creating interference on any of the other 1,000 RF microphones on the field. It is possible to have a powerful RF transmitting system and remain respectable to those around you, RF-wise."

He continues, "I had eight helical antennas, five for the wireless monitor transmitters and three for the wireless mic receivers. We generally have to lower all of our antennas to not obstruct any line of sight to the field. But we raised them up on mic stands two or three minutes before the halftime show. As soon as we raised them and pointed them in the right direction, voila, there's your RF," Stoffo enthusiastically reported. Frequency coordination is vital. "Luckily, there's a core group of people that show up every year and we coordinate and continuously field-test our gear to make sure there's no interference." But it's not all smooth sailing. "Every day someone new comes in, lights off and wipes out a couple of coach comms or wireless mics for the show. Something gives, so we just have to try to find out in advance and have back-ups in place. I would only attempt an event the size of the Super Bowl knowing that I have Sennheiser RF microphone and wireless monitor equipment. There is no substitute for the front end of a Sennheiser 1046 receiver rack."

Likes it dynamic:  
Steven Tyler of Aerosmith



Rap and hip-hop superstars P. Diddy and Nelly:  
duet with the Sennheiser/Neumann wireless mic combo



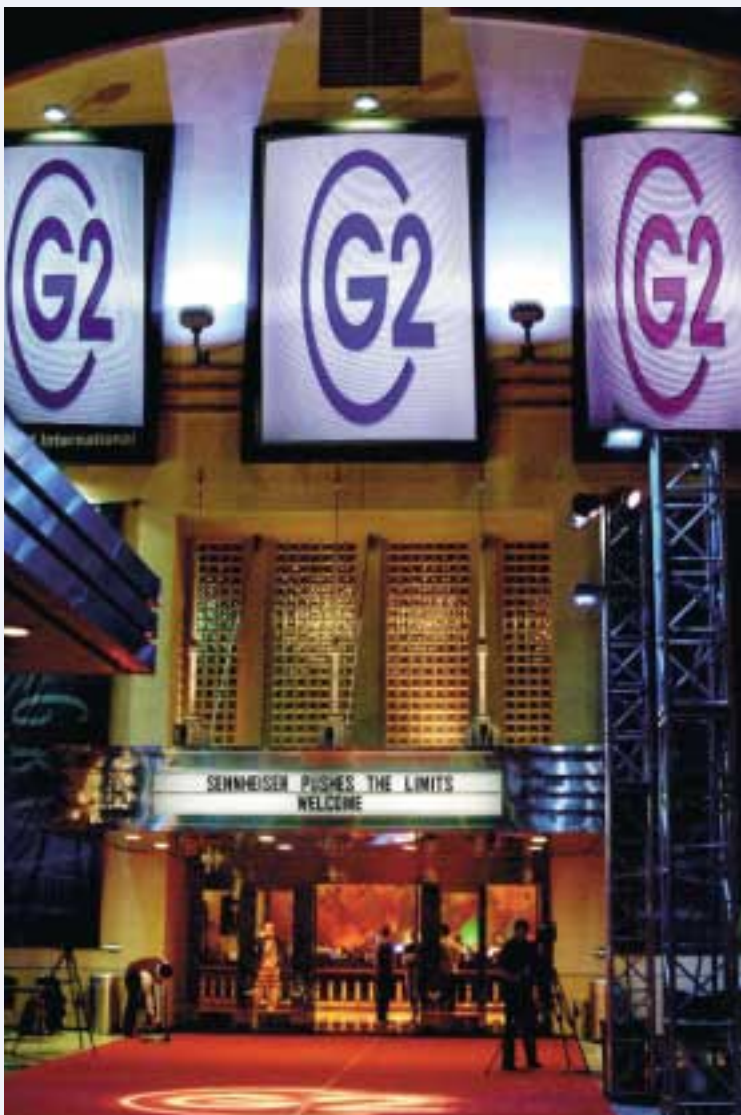
James Stoffo (r.) and his crew





# evolution wireless G2

## The Second Generation Has Arrived



The Grove of Anaheim plays host to the G2

Pushing the limits of feasibility – that’s what Sennheiser has achieved once again with the second generation of its highly successful evolution wireless series. One of the industry’s most closely guarded product secrets was finally unveiled when the evolution wireless G2 with its state-of-the-art wireless technology was presented to visitors, VIPs and journalists at the NAMM Show in Anaheim, California.

### Even More Sound at an Affordable Price

The second generation simply offers more of everything: more product features and a further enhanced design concept – while still maintaining the excellent price level of its illustrious predecessor. “More than any other RF microphone series, evolution wireless G2 keeps its promise of making genuinely professional technology affordable for every application”, said Michael Polten, Industry Team Manager for the music industry. Sennheiser offers five series for every conceivable application and a broad range of accessories leaving nothing to be desired, whether or not they are used for wireless transmission of vocals or instruments, for performances or presentations, to provide wireless systems for cameras or for wireless monitoring to keep the stage free of bulky monitors.

### The Most Important New Features

Thanks to a broader switching bandwidth (36 MHz), evolution wireless G2 now makes 1,440 channels available to the user. That means even more flexibility and even greater transmission reliability. The body-pack transmitters and mobile receivers have been reduced in size by about 30% – an absolute revolution in this price segment. A scan function automatically searches for free channels, and operation is made easy by the intuitive user menu and large backlit displays. An adjustable pilot tone squelch ensures that the transmitter microphone can be switched on and off without noise. A new reset function is particularly interesting for equipment rental companies. At the touch of a button, the system can be reset to its initial settings – ready for its next job. The mobile transmitters and receivers of evolution wireless G2 are powered by two AA-size batteries to ensure a longer operating period and stable RF performance.



Vertical Horizon at the launch party



Let it rock: evolution wireless G2

In addition, an extremely powerful rechargeable battery pack, the BA 2015, is now available. The True Diversity rack receiver, in its attractive new design, has eight fixed frequency banks which, depending on the system, provide up to 20 suggestions for free frequencies, as well as a freely programmable user bank. The audio outputs are designed as unbalanced 1/4" jack sockets and balanced XLR sockets. Two-color backlighting for the display (300 Series and above) immediately shows the transmission status. A green light indicates that everything is in order and that the audio signal is available at the receiver output, while a red light indicates that there is a fault, that the transmission has been interrupted, or that the transmitter is muted.

### Birthday Party

The birth of a new series has to be celebrated, of course. More than 1,000 international guests assembled at the launch party at the Grove of Anaheim, where they were treated to music by Vertical Horizon and John Jorgenson & Band. Their performances were, of course, optimally enhanced by the unmistakably rich sound of evolution wireless G2.



The 500 Series

### evolution wireless G2 – the Series

**ew 100 G2:** the affordable wireless series includes 11 complete systems (four suggested frequencies per channel bank).

**ew 300 G2:** also comprises complete systems (seven), including a rack mounting set, charging contacts on the bodypacks and a rack receiver with a two-color backlit display (eight suggested frequencies per channel bank)

**ew 500 G2:** freely combinable individual components complete with accessories, with the same features as the ew 300 G2, but with an additional soundcheck mode and four equalizer settings on the rack receiver, separately adjustable headphones output, clip-on transmitter with phantom power (up to 20 suggested frequencies per channel bank)

**ew 550 G2:** the top end of the evolution wireless G2 series, EM 550 double receiver (up to 20 suggested frequencies per channel bank)

**ew 300 IEM G2:** complete wireless monitoring system and individual receivers with earphones (up to 12 suggested frequencies per channel bank)

# The New 500 Series...

...made a big splash at the Consumer Electronics Show in Las Vegas, impressively confirming Sennheiser as the specialists for high-end headphones.

The entry-level model of the audiophile series, the HD 515, immediately won the CES Innovations Award – the sixth time in succession that Sennheiser has received one of the coveted design and engineering awards.

The new 500 Series, which includes the models HD 515, HD 555 and HD 595, uses Sennheiser's specially developed "Eargonomic Acoustic Refinement (E.A.R.) technology, which utilizes a transducer system that is placed at a slight angle to ensure that the sound is projected parallel to the ear. This direct "channeling" effect produces sound of incomparable quality.

The best materials, further improved diaphragms, a new design and maximum wearing comfort are the features that set the 500 Series apart. The HD 515 is the classic entry-level and all-round model, while the HD 555 is the specialist for home entertainment. It has a special Surround Reflector for a particularly spatial sound image. At the top end of the 500 Series, the HD 595 is the perfect choice for high-end connoisseurs and fans of SACDs and audio DVDs. Specific for these applications, the frequency response is an impressive 12–38,500 Hz, while harmonic distortion has been kept below 0.1 percent by the use of a highly constant compressed cellulose fleece. As an additional feature, the HD 595 comes with a special clip for vertical or horizontal mounting on a table or shelf – making sure that perfect sound is always within reach...

HD 595





## Gaming in the Fourth Dimension

**It has taken Sennheiser Communications less than a year to create a real stir on the worldwide gaming market.** With their superb sound and excellent workmanship combined with up-to-date yet unmistakable design, the headsets from the Danish joint venture have become a firm favorite among gaming fans. Now, Sennheiser Communications is launching three new USB interface headsets – and this small USB adapter has really got what it takes. A sound-card chip integrated into the cable allows the headset to function without a computer sound card, offering genuine plug-n-play performance. The system has a modular design, which means that the headsets can also be connected in a conventional manner using the 3.5 mm jack plug.

The new PC 135 USB already delivers the three-dimensional sound that is typical of all the USB models. It ensures that gamers can identify precisely where their fellow players and rivals are and respond accordingly. Sennheiser Communications also offers a neck-band version, the PC 145 USB. Its frequency response of 40–20,000 Hz is a guarantee for vivid, well-balanced sound reproduction.

The top-of-the-range model, the PC 155 USB, will make even professional gamers' hearts beat faster. Generously dimensioned ear cushions block out ambient noise and provide unbeatable comfort. For Johan Ryman, better known as Vesslan, one of the most successful Counter-Strikers worldwide, the PC 155 USB is a step into the future of gaming. "The PC 155 USB headset takes gaming into a completely new dimension," he stated enthusiastically.



## Quality and Freedom

**An innovative design, a new battery concept, and affordable prices:** all this was a sure guarantee that Sennheiser's new RF wireless headphones, the RS 110 and RS 120, were the center of attraction for fans of wireless audio at the Consumer Electronics Show 2004. The new RS Series of headphones combine perfect listening quality with absolute freedom of movement, whether they are used for hi-fi systems or for watching TV. The two dynamic open stereo headphone systems have a frequency response of 22–19,500 Hz and harmonic distortion of only 0.7 percent. Comfort is guaranteed by their simple operation and their light weight of a mere 8 ounces.

The RS 110 model is powered by two AAA batteries (included) or by two standard rechargeable cells (optional extra). The RS 120 goes a step further: this model is powered exclusively by rechargeable cells (included), as its transmitter is equipped with a clever charging system. The headphones are simply placed on the transmitter's metal bracket and the cells are recharged automatically.



Progressive design: the RS 120



Enjoy TV with absolute freedom with the RS 110



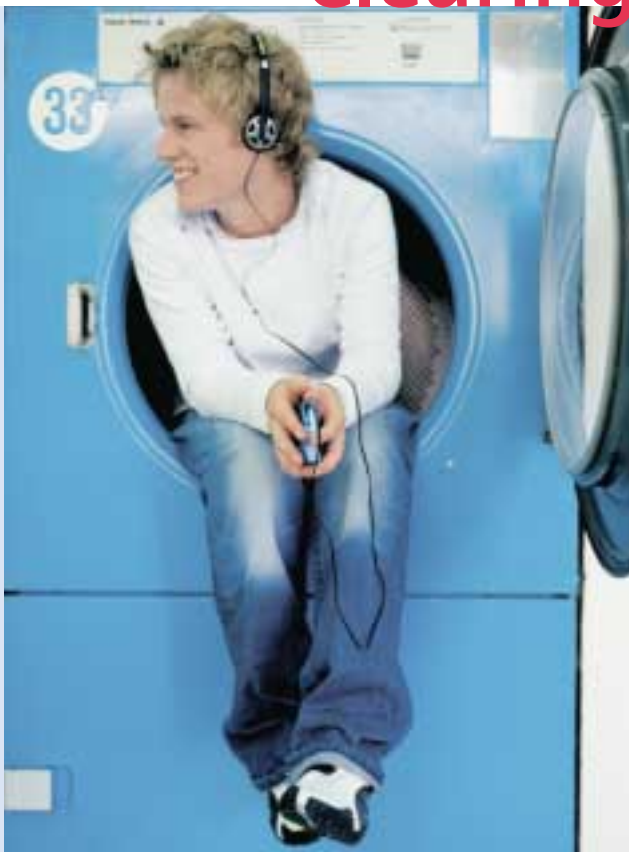
# Automotive: Hi-fi at 100 mph

"Rear seat entertainment" is a highly topical issue in the automotive industry – and at audio specialist Sennheiser. The company is already working together with one of the world's leading automakers, Volkswagen.

For Volkswagen, Sennheiser is offering a slightly modified version of its multi-award-winning folding headphones, the PXC 250, for the Phaeton and Touareg models. Its active noise compensation system, NoiseGard™, eliminates most of the low-frequency noise that might occur in a car – such as wind, tire or road noise. It thus provides maximum listening pleasure for passengers without disturbing the driver, as the closed system ensures that the sound remains within the headphones. The revolutionary NoiseGard™ noise-compensation system is the perfect partner for the innovative technology of the Phaeton luxury sedan and the Touareg SUV.



## Clearing the Board

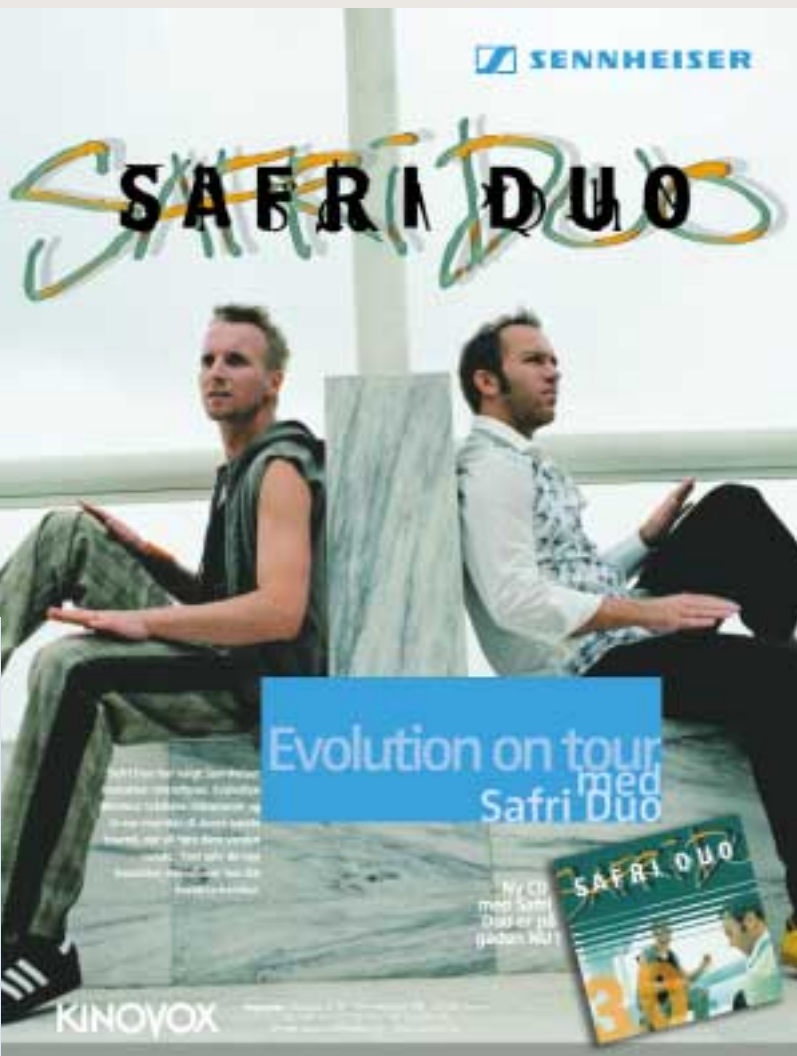


Since their market launch, the PX 100 mini-headphones have been praised in numerous reviews and have won several awards – and now these clever folding headphones, with their outstanding sound quality, have struck again: two British magazines, *What Hi-Fi* and *Boys Toys* have given the PX 100 their award for The Best Products of 2003.

*What Hi-Fi? Sound and Vision* chose the PX 100 as their 'Best Buy 2003'. The renowned magazine recommended the PX 100 as the perfect supplement for mobile music systems. For just £30, they said, "you'll get bags more bass, detail, and dynamics than you ever thought your personal hi-fi capable of reproducing."

"Far too many people fork out big money on a high-flying hi-fi system or portable music player and then ruin it all by listening to it with a pair of pants headphones," said John Archer in *Boys Toys*. The lifestyle magazine chose the PX 100 as its 'Headphones of the Year 2003' because of their excellent sound on any portable player as well as their sturdy and comfortable design.

# Safri Duo with evolution



The Safri Duo, Sennheiser evolution fans

**Uffe Savery and Morten Friis are the Safri Duo.** After their worldwide success in the charts with their percussion hit, "Played A-Live", they are no longer just known to fans of the classics. Fans of the classics? That's right, because before they turned to club sounds they made regular appearances in the concert halls of the world. They performed as a classical percussion duet in the Royal Albert Hall, Carnegie Hall and the Berlin Philharmonic Hall. After more than ten years in this field, Savery and Friis, who trained at the Royal Danish Conservatory, wanted to branch out. And their advance into new areas of music delighted dancers worldwide; their single, "Played A-Live", was a platinum hit, the album, "Episode II", was a gold hit and the band itself was awarded the Echo 2002 for the "Best International Dance Act".

**After nine months of intensive work, the two Danes have produced their latest baby – "Safri Duo 3.0".** Savery and Friis are looking forward to performing their album live for their fans. There will be four more musicians for these performances: Andy Treacey (Drums), Peter Buch (Bass), Mads Storm (Keyboards) and Clark Anderson (Vocals).

Steen Petersen, from the Danish Sennheiser partner Kinovox, said: "We are delighted at our association with the Safri Duo, Denmark's latest and greatest dance export! In their spectacular concerts, Uffe and Morten use various evolution wireless vocal and instrument sets, together with wired evolution microphones and an evolution monitoring system. We are excited that the tour dates will be announced shortly."



# Mariza



## The star from Portugal receives the BBC World Music Award and European Border Breakers Award

The big breakthrough came in 2002 with her debut album "Fado em mim" – although Mariza had long hesitated to record an album with fados at all. At that time, she was more committed to Soul and Funk, but then the producer and musician Jorge Fernando heard her sing one of the traditional Portuguese fados. He was blown away and managed to persuade her to include it on the album. The result was awesome. The Portuguese were soon comparing her to the great fado singer Amália Rodrigues. "I take that as a tremendous compliment. We are so very different," said Mariza. "She had a special approach but I have my own way of feeling music and viewing the world."

Mariza's distinctive fado interpretations soon gained her enthusiastic support beyond Portugal, and receiving the BBC World Music Award was an important milestone for her. "Fado em mim", twice distinguished in Portugal with a platinum award, was re-issued with a bonus live CD and since then it has reached even more old and new fado enthusiasts.

Mariza was awarded the European Border Breakers Award for "Fado em mim" at the music fair MIDEM in Cannes on January 25, 2004. This prize is awarded to European artists or bands whose debut album in the EU – but outside their own country – achieves the highest sales. Her next album "Fado Curvo" is already on the road to success and was number 3 in the Mojo 2003 Best World Music Chart. It was also number three among the highest selling albums in Portugal in 2003, and is well on the way to achieving double-platinum status this year.

Mariza and her band use Sennheiser and Neumann equipment: 1 x SKM 5000 N with super-cardioid microphone head KK 105 S, EM 3031 receiver, SR 3054/EK 3053 wireless monitoring System and 4 x KM 184. They will be on tour in the United States in April. You can get more information about their tour details at [\[www.ritmoartists.com/Tours/tour\\_mz.htm\]](http://www.ritmoartists.com/Tours/tour_mz.htm).

### Fado – The Portuguese Blues

The Portuguese soul expresses itself in the fado. The origin of this form of melancholy song are lost in the mist of time. All that is certain is that it goes back hundreds of years. It is generally believed that the Lisbon fado originates from the songs of the Moors. Another theory claims that the fado derives from the music of Brazilian slaves and some academics believe that its origins go back to medieval times and the age of the minstrels.

The fado seems to have originated in Lisbon and Porto. Students later took it to Coimbra where it developed differently, but it's still the music of students. Themes in the fado include love, death, the ups and downs of life, social criticism, politics, times remembered, parting of ways and desire. "Fado" comes from the Latin word for fate. Most of the black-clad performers – sad and melancholic – sing of fate thwarting their desires.

# Little Dragons Would Choose Sennheiser...

Thanks to Sennheiser wireless technology, Tabaluga and his friends can speak!



Peter Maffay and his creation, the little dragon Tabaluga

Peter Maffay's fairy tale "Tabaluga" is about the little dragon Tabaluga who gives away his birthday presents, and it has won the hearts of audiences. So far more than 350,000 tickets have been sold and because of its sensational success, the tour will now be continued in March.

In the second part of the tour which includes more than 30 concerts, Sennheiser microphones (including the SKM 5000 N/KK 105 S) will once again ensure that the voices and music of the little dragon reach the audience. The actors and musicians will create the magical story of sharing happiness on-stage using about 20 handheld and instrument transmitters and a couple dozen wireless monitoring systems.

Since the success of "Tabaluga and Lilli" in 1994, Tabaluga fans have been awaiting new adventures from Greenland. In September 2002, Peter Maffay published his studio album, "Tabaluga," which forms the basis of the current stage production. The producer, Hannes Rossacher, has produced a DVD which tells the touching story and offers many extras. It has been available since the beginning of January.

In addition to Peter Maffay and his band, the stage show also includes top German actors Rufus Beck, Heinz Hoenig (as Arktos, Tabaluga's favorite enemy), Sissi Perlinger and Rolf Stahlhofen, supported by an ensemble of 55 dancers, acrobats and so on. Until May, audiences will discover whether you can pass on the happiness you have been given and what marvellous things can happen if you do.

Dragon fans will have to act quickly. The tickets are sure to be snapped up as quickly as they were for the autumn tour. You can visit [\[www.tabaluga.com\]](http://www.tabaluga.com) for more information, including tour dates.



# Biodôme – An Oasis in the Heart of the City

In Montréal, Canada it is possible to admire four of the most beautiful ecosystems of the Americas all in one spot, and in a big city at that. In the Biodôme, lush tropical rainforests and the polar worlds of the Arctic and Antarctic are waiting to be discovered. The Laurentian Forest changes with the seasons, transporting visitors into the Laurentian National Park, while the marine ecosystem is represented by a replica of the St. Lawrence Estuary and Gulf. More than 10 million visitors have already seen this wonder of scenery, water worlds, plants and animals, and many keep on returning, as just like in Nature, the Biodôme always promises new experiences and impressions.

**More than a Park** The Biodôme is much more than a park and a zoo. In its own laboratories, teams of committed researchers investigate the processes in ecosystems and the important role that micro-invertebrates play. These species are so poorly known that many have only now been discovered – one of them in the Biodôme itself (*Copidognathus Biodomus*). The water treatment for the Biodôme's giant water basins is carried out with the help of meiofauna and micro-organisms. The "oasis" is also involved in the conservation and restoration of threatened plants such as the American ginseng, and does much research on endangered species, particularly bats.

**Discover the Biodôme** Discovering the ecosystems is now even more attractive than before: since summer 2003, a GuidePort information system explains the plant and animal life as the visitors stroll through the Biodôme. For a small fee,





visitors can pick up a receiver at the audioguide counter, computer-programmed to one of five categories: French, English or Spanish for adults and French or English for children. Each day 300 receivers are on duty in the ecosystems.

The Biodôme has chosen a GuidePort chip with a longer playing time: 80 minutes of narrative audio are triggered by a total of 45 identifiers. The latter are hidden under the pathway or in small holes where they do not disturb the natural beauty of the Biodôme scenery. The audio information is stored in 13 cell transmitters which cover the vast area via 55 antenna units. And the GuidePort statistics software reveals the most interesting places for the visitors – how many have tried to catch a glimpse of the nocturnal American porcupine or spot the Canadian lynx. [[www.biodome.qc.ca](http://www.biodome.qc.ca)]



# Wireless Microphones

## in the Era of Digital Terrestrial Television

Digital Terrestrial Television (DTTV), also called DVB-T (Digital Video Broadcast – Terrestrial) in Europe and DTV (Digital Television) in the United States, is a milestone in the history of television broadcast. It requires a completely new broadcast infrastructure, with changes not only affecting TV stations but also the user, who may need an additional box for receiving TV programs. Where analog TV accommodated one TV program per channel, digital technology now transmits four different programs simultaneously in one TV channel due to sophisticated coding algorithms. Just as analog TV, DTTV transmits in the UHF range which will significantly affect the use of wireless microphones and wireless monitoring systems.

1. DTTV is a more spectrum-efficient way to broadcast programs and will save TV channels in the long run. However, numerous new services, which are not related to broadcast, hope to secure spectrum for themselves. In some cases, TV channels are made available for these new services, for example by auctions. Therefore, they are no longer available for wireless audio systems.
2. RF wireless systems cannot use other frequency bands. Moving to public frequencies (ISM bands) is not an option for professional applications, as these bands are congested with all kinds of wireless applications. Furthermore, the propagation of radio waves becomes more difficult the higher the frequency is. From the laws of physics, the UHF range is almost ideal for the transmission of analog wireless audio signals.
3. Due to their frequency agility, the ease of changing frequency windows and their unsurpassed multi-channel capability, Sennheiser wireless systems provide the optimum performance in the era of DTTV.

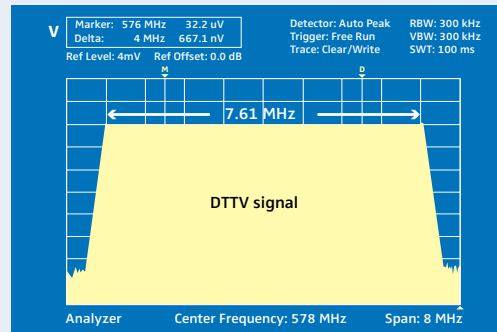
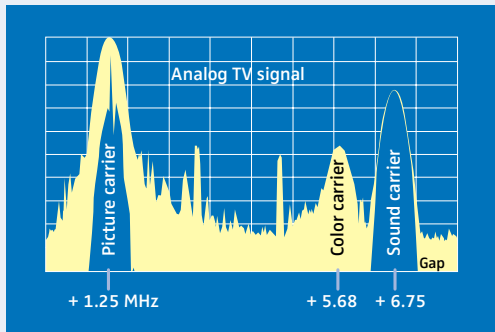
The changeover from analog to digital is going to be different from country to country and even from region to region. In most cases it will be a “soft” transition, with analog and digital transmission running in parallel on different channels (simulcast) for a limited time. Although DTTV is still not available in most countries, frequency planning is being done today, well in advance. The regulatory situation in the VHF and UHF bands has seen no major changes for decades, but new frequency plans will be drawn up soon.

### How will DTTV change the environment for wireless audio systems?

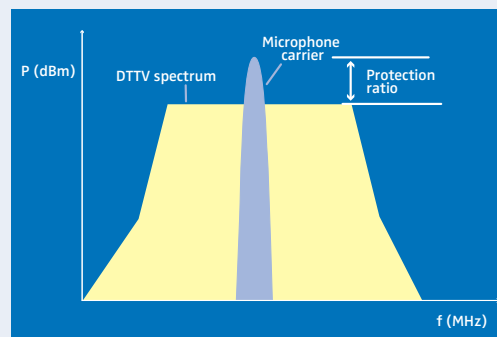
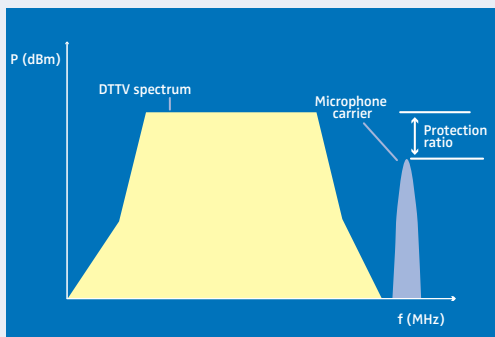
1. In Europe and Africa, the 1 MHz gap used for high-power reporting systems will disappear completely, as a digital TV channel occupies the entire 8 MHz window (see illustration).
2. The introduction of DTTV may require a frequency change of existing wireless audio systems because digital programs are usually on different channels than the analog ones. For the so-called “Region 1” (Europe, Africa and the northern part of Asia) a new frequency plan will be soon determined. The conferences commence in May 2004 in Geneva, Switzerland.
3. These conferences will also discuss the allocation of UHF spectrum to non-broadcast services. This spectrum would be lost for wireless audio, therefore it is important to support the broadcasters in keeping as much of the UHF range as possible. Note that every broadcaster uses the UHF spectrum twice: for broadcasting programs into the households, and for wireless microphone and monitoring systems during production.

### What do you need to observe when using RF wireless systems in a DTTV environment?

1. The more flexible, the more future-proof a wireless system will be. Sennheiser RF wireless systems offer excellent frequency agility. Switching bandwidths of 24 to 36 MHz permit an easy frequency change on location. Furthermore, the systems of the 3000 and 5000 Series have an internal macro-range of 100 to 200 MHz, within which the Sennheiser service departments can adjust new frequency windows if required. Systems which are less flexible or have fixed frequencies will find it hard to survive in the era of DTTV.



PAL analog TV signal compared to PAL DTTV signal



Signal levels and safety margins of a microphone signal/DTTV signal

2. The detection of occupied digital TV channels requires new tests and different equipment, as a DTTV signal has an entirely different structure and spectrum than an analog signal. There is a high risk of working in a digital channel without noticing it, as the audio signal received by an analog microphone receiver will be almost identical to white noise. Therefore noise is no longer evidence of a free channel. Spectrum analyzers will only indicate precise figures if adjusted to a very wide resolution bandwidth. The most efficient way of detecting a DTTV signal is the use of a standard DTTV box, ideally one with a USB port to connect it to a PC. The boxes are already available on the market.

Wireless audio systems can be used as before, however, they must not interfere with the reception of broadcast signals (as before). As a rule of thumb: wireless audio systems must not be operated within a DTTV channel if a DTTV program can be received. The regulatory bodies have not yet determined official levels and thresholds. For reliable operation, RF wireless receivers need a transmitter signal which is stronger than the DTTV signal (see illustration). Precise figures are still under evaluation, but our experience and tests – for example during the recent skiing world championships in

St. Moritz, Switzerland – have shown that the use of Sennheiser wireless systems is possible even within a DTTV channel once the rules are obeyed and the reception of digital TV is not disturbed. The proper choice and positioning of antennas helps a lot. The use of Sennheiser systems in adjacent channels is easily possible due to the high quality of input filters.

Sennheiser is well prepared for the era of digital terrestrial TV. Due to the performance and flexibility of Sennheiser wireless systems, a high level of audio production quality will be maintained even in the presence of digital TV transmitters. In case you have any questions or remarks about this topic, please contact the experts from your local Sennheiser Service Team. They will be happy to assist you.



# Sennheiser's Partner in Spain: Magnetron



There was reason to celebrate last year on Magnetron's 30th birthday



Cardenal Siliceo No. 22 in Madrid



Technical support and after-sales service are a top priority at Magnetron: the picture shows a view of the workshop

**Whether it is Viña Rock, Bluescazorla, Almeriblues or the national round of Emergenza – Spain's most popular music festivals benefit from equipment supplied by Sennheiser's partner, Magnetron.**

The Madrid-based company supports these events with tremendous technical and personal commitment, in keeping with their motto, "Only the very best sound is good enough". Equally impressive is the huge number of companies and public institutions that Magnetron has equipped with conference systems from Sennheiser and Televic. Whether it is the Congress Palace in Madrid, the country's major banks or the most important universities – Magnetron is a guarantee for providing understanding without limits. The list of companies in which a Sennheiser guidance system provides top-quality sound transmission during guided tours is just as long, and includes many famous names and brands ranging from heavy industry and the automotive sector to food manufacturers.

**Magnetron was founded in 1973.** Since then, the company has enjoyed continuous expansion and now has 40 employees to take care of its customers' every need – and customer care is, indeed, a top priority at Magnetron. As co-founder Alfonso Ortiz points out, "Our customers can not only rely on the fact that we supply the world's best audio brands, we also offer complete on-site service. After all, personal technical support and frequency planning are absolutely vital when it comes to professional applications." In addition to the Sennheiser and Neumann brands and headset solutions from Sennheiser Communications, Magnetron also supplies conference systems from Televic, high-end hi-fi components from Musical Fidelity and microphone boom poles from VdB.

As a company with particularly close links to the music industry, it came as no surprise when Magnetron introduced an endorser program several years ago. Key acts include the top Spanish artist and musical star Paloma San Basilio and the bands Sôber, Sugarless and Las Niñas. All bands currently have albums riding high in the charts and will be on tour in Spain over the next few months – expertly supported, of course, by microphones from Magnetron.

	Name	Venue	Date	Target Group	Presented by
<b>March</b>	Ideal Home	London, UK	10.03. – 04.04.	Consumer	Sennheiser UK
	prolight+sound	Frankfurt/M., Germany	31.03. – 04.04.	Music Industry	Sennheiser electronic
<b>April</b>	AAA	Salt Lake City, UT, USA	01. – 03.04.	Audiology	Sennheiser Electronic Corporation
	Comms Channel Expo	Birmingham, UK	06. – 07.04.	Comms Headsets	Sennheiser UK
	Sun-N-Fun	Lakeland, FL, USA	13. – 19.04.	Aviation	Sennheiser Electronic Corporation
	The London Air Show	London, UK	16. – 18.04.	Aviation	Sennheiser UK
	NAB	Las Vegas, NV, USA	19. – 22.04.	Broadcast	Sennheiser Electronic Corporation
	ICMM	Toronto, Canada	20. – 21.04.	Call Centers	Sennheiser Canada
	Intermusic Canadian Museum Ass.	Valencia, Spain Quebec, Canada	21. – 24.04. 28.04. – 02.05.	Music Industry Installed Sound	Magnetron Sennheiser Canada
<b>May</b>	Home Entertainment	New York, NY, USA	03.05.	Consumer	Sennheiser Electronic Corporation
	ALFA	Chicago, IL, USA	05. – 07.05.	Audiology	Sennheiser Electronic Corporation
	CASLPA	Ottawa, Canada	05. – 08.05.	Audiology	Sennheiser Canada
	AAM Museum Expo	New Orleans, LA, USA	06. – 10.05.	Installed Sound	Sennheiser Electronic Corporation
	AES Convention	Berlin, Germany	08. – 11.05.	Pro Audio	Sennheiser electronic
	SvAF	Eskilstuna, Sweden	11. – 13.05.	Audiology	Sennheiser AB
	The Museums & Heritage Show	London, UK	12. – 13.05.	Installed Sound	Sennheiser UK
	Inspiration	Charlotte, NC, USA	12. – 13.05.	Installed Sound	Sennheiser Electronic Corporation
	ILA Canadian Hard of Hearing Ass.	Berlin, Germany Winnipeg, Canada	17. – 23.05. 27. – 30.05.	Aviation Audiology	Sennheiser electronic Sennheiser Canada
<b>June</b>	AOPA Flying	Frederick, MD, USA	05.06.	Aviation	Sennheiser Electronic Corporation
	NAS	Stockholm, Sweden	06. – 09.06.	Audiology	Sennheiser AB
	EUROSATORY	Paris, France	14. – 18.06.	Aviation	Sennheiser France
	ABTT Theatre Show	London, UK	16. – 17.06.	Installed Sound	Sennheiser UK
	CBAA	Toronto, Canada	21. – 23.06.	Aviation	Sennheiser Canada
<b>July</b>	COPA	Fredericton, Canada	16. – 18.07.	Aviation	Sennheiser Canada
	Farnborough Intl.	Farnborough, UK	19. – 25.07.	Aviation	Sennheiser UK
	Summer NAMM	Anaheim, CA, USA	23. – 25.07.	Music Industry	Sennheiser Electronic Corporation
	Oshkosh	Oshkosh, WI, USA	27.07. – 02.08.	Aviation	Sennheiser Electronic Corporation
<b>August</b>	CITT	Montreal, Canada	13. – 25.08.	Pro Audio	Sennheiser Canada
	ALPA	Washington, DC, USA	16. – 20.08.	Aviation	Sennheiser Electronic Corporation
	MIAC	Toronto, Canada	22. – 23.08.	Music Industry	Sennheiser Canada
<b>September</b>	IBC	Amsterdam, Netherlands	10. – 14.09.	Pro Audio	Sennheiser electronic
	PLASA	London, UK	12. – 15.09.	Music Industry	Sennheiser UK
	CCBE	Barrie, Canada	17. – 19.09.	Broadcast	Sennheiser Canada
	Muzika	Prague, Czech Republic	23. – 26.09.	Consumer	Panter s.r.o.
	Call Centre EXPO	Birmingham, UK	29. – 30.09.	Telecom	Sennheiser UK

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