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SOUNDings

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4 394447 405006 11



3-4 Top News/Management Report



5 Awards

6-7 Cover Story



8-15 International Stories

16-17 New Products/Highlights



18-23 Music Scene



24 Reference Projects



25 Engineering Basics



26 Sennheiser Belux



27 Fairs & Exhibitions



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Dear readers,

In June, the Sennheiser Group had the pleasure of announcing sensational results for the 2000 business year: an increase in turnover of 24%, supported by all geographical markets, has proven Sennheiser as a leading force in the world market. Due to major investments in research and development as well as in our production technology, for example in clean room environments and laser welding, Sennheiser was able to expand its

technological lead and provide customers with more tailor-made, state-of-the-art audio solutions.

Recently, the history of our company was at the focal point of an exhibition in the Hanover district. A large number of visitors took this opportunity to become informed about the development of Sennheiser from its "humble" beginnings in Wennebostel to today's worldwide group with sales partners and sales subsidiaries. Talking about subsidiaries: in June, we celebrated a very special anniversary – 10 years of Sennheiser Belux!

In this issue of Soundings, we would like to invite you to have an "off-line" look at our new website. Travel around the world with our products and experience interesting applications stories, such as the use of headsets in the operating room, multimedia solutions for cars, our products at the opening of the hanging gardens in Israel, the Eurovision Song Contest and the Itaipu Binacional hydroelectric plant. Visit performances in Moscow, Gliwice, and at the Israel festival, and look over our sales partner Grothusen's shoulder as they work in former Yugoslavia.

The section entitled Music Scene awaits you with reports on stars in front of and behind popular productions throughout the world. Jamiroquai, Paul Carrack, Anjos and Rubén Blades sing with Sennheiser, and many famed sound engineers rely on wireless in-ear monitoring and microphones from Sennheiser and Neumann. We will take you to the Sennheiser sponsored Emergenza rock festival, and much more! Enjoy the magazine.

Yours sincerely,

Rolf Meyer, President of Marketing and Sales

To All Customers, Employees and Partners : Thank You for the Successful Year 2000

Compared to the 1999 figures, the Sennheiser Group increased its consolidated turnover in 2000 by 24 percent to reach DM 396 million, with profits almost doubling.

"In 2000 we solidified Sennheiser's market position in all business areas worldwide, and even considerably expanded activities in some areas," said Rolf Meyer, President of Marketing and Sales, at a press conference on June 13 on the occasion of the presentation of the group's annual financials. The increase in turnover by 24 percent shows Sennheiser's leading role as a solution provider for professional users of electro-acoustic systems, and can be attributed to successful marketing and the exceptional market acceptance of new products.

Sennheiser Thinks Globally

The exceptional growth proves Sennheiser as a leading supplier of electro-acoustic systems and solutions on the world market. Sennheiser's largest market, Western & Southern Europe and Africa, saw an increase of 21 percent, attaining a turnover of DM 115 million. With DM 104 million, the turnover for 2000 in America rose by 28 percent compared to the previous year. "The 1999 investments in a new production facility in Albuquerque, New Mexico, and an R&D office in California have been proven right," commented Meyer. The investments in the US ensure a close contact with the market and excellent logistics. In Central Europe, turnover increased by 25 percent, attaining DM 91 million. Rising by 17 percent and reaching DM 55 million, sales in Northern and Eastern Europe were more than satisfactory. The Asian and Australian markets also showed rapid growth, with Sennheiser being able to achieve an increase of 40 percent to DM 32 million. "Our consistency and dependability has earned us the trust of many customers, especially in Asia. We were thus able to considerably strengthen our market position," explained Meyer.

The Future Will Be Wireless

In 2000, wireless microphones had a 30 percent share in the turnover, with

the evolution™ wireless microphone series holding a prominent position. Dr. Heinrich Esser, President of Manufacturing: "The launch of evolution wireless in 1999 was very well received in the market, and the success continued in 2000."

According to an official survey (GfK, Nuremberg) Sennheiser is the market leader in Germany for headphones. This product group had a 16 percent share in the turnover, and also showed a clear trend towards cordless systems. Sennheiser's tried and tested wired microphones achieved 14 percent, conference and information technology 9 percent.

Research for a Promising Future

"The further development of audio and electronics technologies creates innovative products which help Sennheiser solidify its position as a global player," said Volker Bartels, President of Research and Development. Therefore, the current R&D emphasis is on RF wireless technology. Last financial year Sennheiser spent DM 19 million for

research and development, that is 5 percent of the total turnover.

Increase in Turnover Creates Jobs

In 2000 the Sennheiser Group employed an average of 1,281 of staff, among them 30 apprentices in various areas. 61 percent of the employees work at the German locations Burgdorf, Wennebostel and Berlin. In the past year, around 100 new jobs were created in Germany alone. There are about 40 vacancies, most of them in Research and Development.

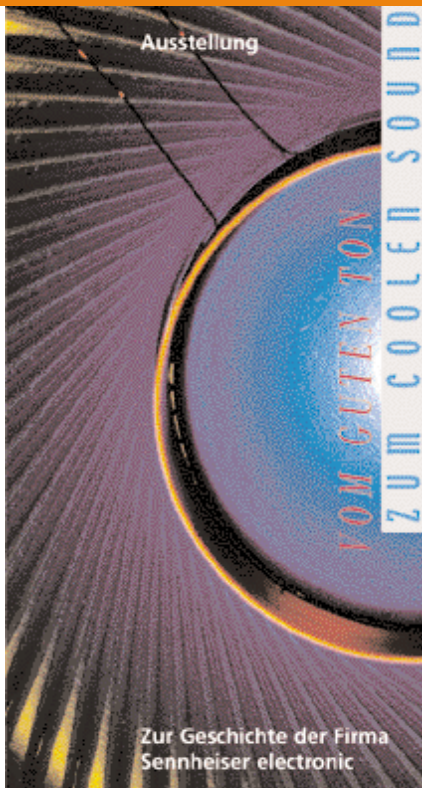
"The situation on the labor market is characterized by a lack of qualified engineers," said Bartels. "Sennheiser is a very innovative company that is active worldwide – we offer an attractive working environment with a promising future for a new generation of engineers."

The excellent results for 2000 and the further potential for growth motivate Sennheiser to continue on the path of quality and innovation. The executive board and the supervisory board wish to thank all who contributed to this extraordinary success.



Press conference of the Sennheiser Group in Wedemark
(l/r) Dr. Heinrich Esser, President of Manufacturing, Prof. Dr. Jörg Sennheiser, Chairman of the Supervisory Board, Rolf Meyer, President of Marketing and Sales, and Volker Bartels, President of Research and Development

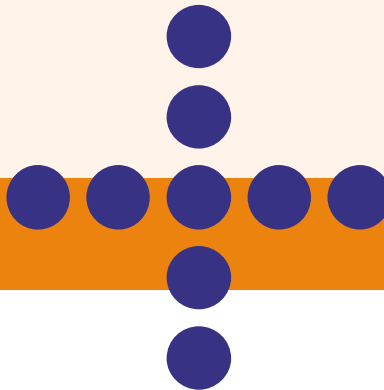
Hi-tech in a Renaissance Palace



The history of Sennheiser was at the center of an exhibition in the district of Hanover. In the rooms of the 16th century “Landestrost” Palace in Neustadt, visitors to the exhibition traced the development of Sennheiser as it grew from the small Laboratory W to become a global player. Products from more than 50 years of Sennheiser development, awards, experiments with sound, and an AudioBeam™ demonstration provided “hands-on” sound. During the early weeks of the exhibition in May it became obvious that it would be such a great success that it was extended through the end of July.



In an enthusiastically received opening address, company founder Prof. Fritz Sennheiser reviewed the early days of the company



Theater Party – 10 Years of Sennheiser Belux



On June 7, a large theater in Brussels was transformed into a very special party room: Sennheiser Belux celebrated its tenth anniversary with over 500 invited guests. The colorful mixture of customers, partners, VIPs, and employees was treated not only to culinary delights and official congratulations, but also to lots of music – but then that’s just what you’d expect at the birthday party of an audio specialist!

In their addresses, Prof. Dr. Jörg Sennheiser, President Alfred van der Kolk, and Sales Director Jacques Mestdag honored the achievements of Sennheiser Belux and its employees. Both the Sennheiser head office and the Georg Neumann company presented gifts to

the “birthday child” before the musical part of the evening began with singer Axelle Red and the country-blues-rock formation “PJ Junior Band”. The celebrations lasted till the small hours of the morning...

Also read our portrait of Sennheiser Belux on page 26!



Alfred van der Kolk, President of Sennheiser Belux and Sennheiser Nederland



Impressing the Canadian consumer magazine: the RS 40

RS 40 Test Winner

An independent jury made up of five members of "L'Association Montréalaise des Audiophiles" has awarded top honors to the Sennheiser RS 40 wireless headphones. Among the ten sets of wireless headphones tested, the RS 40 was considered the absolute best. The test was commissioned by the Canadian consumer magazine "Protégez-Vous". And it was not only in the overall assessment that the RS 40 achieved this excellent result; the Sennheiser unit also topped the individual categories of sound quality and ergonomics. This result goes to show that the RS 40 can compete in the face of tough international challengers.

The RS 45 Wins US Award for Excellence

"Innovations" is name of the prestigious award for outstanding products that is presented each year at the US Consumer Electronics Show (CES). For the largest annual fair for consumer electronics, an expert jury examines all the newly introduced products and judges them according to criteria such as design, technology and customer benefit. This year, an "Innovations 2001 Design and Engineering Award" went to Sennheiser's RS 45. Apart from offering excellent sound and good bass response, the wireless headphones also feature the Sennheiser "Center Lock" auto-tuning system, an automatic channel search facility integrated in the headphones.



TILE Award



Sennheiser's GuidePort system has recently received the TILE Award, after its introduction to the public at TILE 2001 in London. The innovative system, which may revolutionize how museums and attractions present information, was awarded as an "outstanding new product". TILE is one of the largest fairs and congresses for event centers, museums and leisure parks. Now in its tenth year, the convention enjoyed a new record number of visitors, as interested persons from all over the world came to learn about the very latest trends in exhibitions and visitor attractions.

The prizes were presented by Malcolm Lewis, Chairman of the TILE conference. GuidePort won the "Award of Excellence" for

being a "uniquely flexible system for delivering programme audio (...) in an attraction or exhibition". With the GuidePort system, visitors to museums, for example, can find out about the exhibits according to their individual needs, as the information adapts to their route. The "heart" of the GuidePort system is the so-called cell transmitter, which stores audio information for the visitor. Connected antenna modules and optional directional antennas then send this information to the user-friendly GuidePort receiver, where it is stored. As soon as the visitor approaches an exhibit with his or her receiver, an identifier transmitter located nearby calls up the specified information from the receiver, which is then played to the visitor in optimum quality via headphones.



The GuidePort antenna module transmits the sound...

... to the EK 3000 receiver

www.sennheiser.

For the world's largest consumer fair, the IFA in Berlin, audio specialist Sennheiser electronic has launched its new website at www.sennheiser.com. With a multitude of functions and a whole host of product and service information, the site will set standards for the international audio industry. "The new website offers an excellent platform for interactive communication with our customers," explains Rolf Meyer, President of Marketing and Sales, on the strategic importance of the site. "The address www.sennheiser.com stands for qualified and up-to-date information from the audio sector and is therefore a major source of information for consumers and professionals."

For the first time, the new Sennheiser website uses a so-called content management system for generating the presented data. The entire information comes from dynamic databases, facilitating site management and helping to avoid errors.

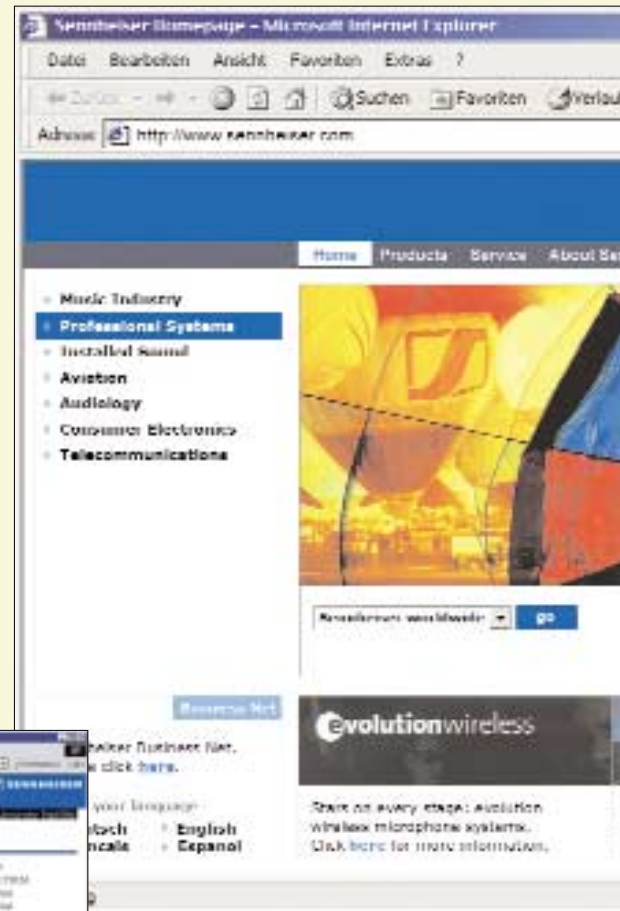
First-Hand Audio Information

The multi-lingual site in English, German, French and Spanish provides customers, sales partners and media representatives with clearly structured information on all Sennheiser products and business areas. Many pages have been created in close cooperation with the worldwide Sennheiser partners. For example, suggestions regarding additional product information have been implemented. Besides standard information such as product pictures, profiles and features, the new site will show diagrams, for example of frequency response curves and polar patterns, offer the possibility to view high resolution pictures and inform visitors about all items included in the

delivery. Operating instructions can now be downloaded conveniently. The website is rounded off by useful FAQ lists, a comprehensive glossary of technical terms and – as a special treat – a headphone guide which helps the music enthusiast to find his or her ideal headphones.



The Music Industry Portal will supply you with the latest industry information, current artists who work with Sennheiser equipment and give valuable tips, for example on miking.



Welcome to the Sennheiser homepage! From here, you can directly access the business area portals, the sites of



A look at the Sennheiser image database – the password-protected databank contains product images, application pictures, drawings, frequency response curves and polar patterns which can be conveniently downloaded.

Target Group Oriented Portals

Via various target group portals, which correspond to Sennheiser's main business areas, the website visitor is given access to ample background information, reports and lists of links for his or her area of interest. Besides the sections

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the international Sennheiser partners and the latest information and events.



A click on the main navigation, and you are in the product database. Detailed information is waiting here to be printed.



The press area contains the latest Sennheiser press releases – and the Soundings magazine for downloading! As in the Sennheiser Business Net, users can access the image database from here.

on the Music Industry, Consumer Electronics, Professional Systems, Installed Sound, Audioology, Aviation and Telecommunications, Sennheiser offers a PR database which supports media representatives in their investigation work.

Image Database

For many professional users product photos are the essential tools for their daily work. Journalists, design agencies and Sennheiser dealers will therefore be pleased with the new image database. A password provides access to printable

pictures which can be directly downloaded free of charge.

Sennheiser Worldwide

Sennheiser's worldwide sales network can be accessed from the homepage. Customers can directly visit the site of their country's Sennheiser partner. For the partners themselves, Sennheiser offers a special Business Net containing the latest sales news. Very soon, Sennheiser will offer possibilities for interactive exchange in this area as to create synergies within the large Sennheiser network.

The worldwide web lives from communication of users all over the world – please visit us at www.sennheiser.com! We will be delighted to receive your suggestions, comments and ideas, and we'll be pleased to stay in touch with you!

Sennheiser Porsche: Sensational Finish at Nürburgring

The 24-hour race at the Nürburgring, with its “Green Hell” – as the north loop with its forests and unpredictable weather is known – is considered the toughest racing event in the world. On the last weekend in May, after 24 grueling hours, 139 circuits of 25 km each, and 12 sets of tires, the team of the Sennheiser Porsche stood victorious upon the podium! The GM Sports Racing Team led by Gerhard Müller had won an undisputed class victory in the world’s largest automobile race and held an excellent second place in the overall ratings – against some other teams with a lot more horsepower.

The strategy of Gerhard Müller and his driving colleagues Kurt Thiim, Gerhard Mannsperger, and “Wolf Sylvester” of sticking to uniform circuit times was a complete success, enabling the team to push forward more and more, especially during the night hours. With its Sennheiser-blue design, the Porsche GT3 Cup model, which was modified in accordance with the rules, gave the well-trained team of mechanics no problems of any kind throughout the entire race. We congratulate them and will keep our fingers crossed for the rest of the season!



Lots of drivers were only able to admire the Sennheiser Porsche from behind



www.porsche.com

Impressions from the pits

EXPO Revival Party

One year after the opening of the Expo 2000, the world exhibition feeling again came alive at the Hanover exhibition grounds with two first-class concerts and two days of international performances, including colorful dancing and music shows!

On the evening of May 31, the Expo Revival Party was opened by “Girl in the Moon”, “Rednex”, and, as a special highlight, “The Scorpions”. Thousands of visitors cheered the first unplugged concert by this world-famous rock band. The following evening, “Right Said Fred”, “Orange Blue”, and “Die Söhne Mann-

heims” continued the tradition of successful Expo parties.

On the Eastern exhibition grounds, an international show program on June 1 and 2 once again revived the international spirit of the Expo. Thanks to a number of sponsors, including Sennheiser, the large crowd of visitors attended free of charge. Groups like “Flamencos Aires del Sur” from Spain, the drum group “Batimbo” from Burundi, the Yemen folk dancing group “Al Asaalah”, and many other international artists thrilled the audience, which also used this occasion to see how the Expo site is used now.

“Expo 2000 was a great success for our company, especially for the music industry business. So there was no question that we would also be present for the Expo Revival Party”, said Rolf Meyer, President of Marketing and Sales. Thus Sennheiser microphones ensured perfect sound on stage and during live broadcasts of this popular event.



Integrated OR System – with m@b Headset!



Photographs: Siemens AG

OR with typical SIOS configuration

In many work areas, ergonomics, holistic design and information flow of the workplace have been carefully considered for years. But despite the presence of ample high-tech equipment, these advances have remained little more than a pious hope for the surgical operating room. Now this shortcoming has been overcome by the integrated OR system SIOS from Siemens.

Via ergonomically alignable graphical and menu monitors, the operating surgeon can view live images from the endocamera as well as ultrasound or x-ray images, can see the OR components that have been selected, and can read general status information. All integrated devices, such as endocamera, lighting, operating table, insufflator, pager, etc., can be controlled via a remote control device – or by

voice, via a voice recognition program developed by Siemens.

Since absolute dependability is essential in this area, high-quality medi@coustics headsets from Sennheiser are used for the voice control system. These headsets, which are optimized especially for voice recognition, help ensure reliable recognition of voice commands. The result: operating rooms worldwide can now benefit from improved efficiency and ergonomics.

Operating surgeon
with m@b headset

www.siemens.com

More Fun and Variety in Your Car

Some car journeys are not just long, they're boring – especially when you're not driving yourself, but just sitting in the back seat. For relaxation, or to make better use of your valuable time, a very special multimedia package for different types of vehicles is offered by INTAX, a company in Oldenburg, in northern Germany. For instance the new Renault Laguna II or the Mercedes S-Class can be equipped with a DVD player and a games console. The screen is integrated so conveniently in the headrest of the front seat that the back seat is soon likely to become the most popular seat in the car! The RF wireless headphones RS 45 from Sennheiser form part of the multimedia package. While multimedia fans are guaranteed a particularly pleasurable listening experience, the driver is protected from distracting noises. So, instead of "How much longer?", you'll now be hearing "Oh, too bad, we're already there!"



Photograph: Intax

First-class convenience: INTAX makes it possible

www.intax.de



Rock in the Heart of Spain

Almost 40,000 music fans from all over Spain had just one goal at the beginning of May: Villarrobledo. The town, to the south-east of Madrid and west of Valencia, was the venue for the “Viña Rock 2001” festival on May 4 and 5, the festival of the independent Spanish rock scene.

Despite the rainy weather, this year 71 professional and 200 amateur bands kept the audience rocking around the clock at four separate stages.

An event of this magnitude requires tremendous organization and technical support. More than 150 technicians and sound engineers in the background were responsible for providing optimum sound – no easy job when you’re battling with rain and mud! The team from Magnetron S.A. was also working non-stop. Sennheiser’s sales partner in Spain had not only provided all the microphones – 100 evolution™ microphones for the drums alone, as well as evolution wireless

wireless frequency coordination for the festival and organized excellent on-site service. The audience wasn’t left out either: Magnetron ran a headphones competition as well as presenting new products and giving advice to musicians in their own VIP tent. Meanwhile on the various stages, the sturdy evolution microphones with their warm, clear sound played their part in making the festival a grandiose success.

www.matarile.com



Hanging Gardens in Israel

In the ancient world, the Hanging Gardens of Babylon were one of the seven wonders of the world. Now, since May 22, 2001, the wonders of our age include the 19 glorious terraced gardens, which, over a length of more than a kilometer, flow artistically down the slopes of Mount Carmel in Haifa, Israel. The centerpiece of what are probably the most fascinating gardens in the world is the Shrine of Bab, with its glistening golden dome. The Shrine is one of the most holy sites of the Baha’i religion. Thousands of Baha’i followers, members of the youngest monotheistic world religion, which is based on the teachings of Baha’ullah (1817-1892), traveled to the opening ceremony from every corner of the world. Together with a further 1,000 international visitors and guests of honor, they were able to experience the opening ceremony in an amphitheater built specially for this very evening. The highlight of the evening was the world premiere of two specially commissioned music works performed by the Northern Symphony Orchestra, Haifa, together with instrumental and vocal soloists from all over the world.

MKH 40 condenser microphones and an SKM 5000/EM 1046 wireless system from Sennheiser as well as KM 140 microphones from Neumann ensured that the works by Lasse Thoresen and Tolib Shadidi were transmitted in perfect quality. And



Atmosphere of excitement at the opening ceremony of the new terraced gardens

since Kilim electronics Ltd., Sennheiser’s sales partner in Israel, also worked closely together with two recording studios and four TV stations, viewers in 157 countries were able to join the concert audience in enjoying the world premieres.

www.haifa.com

Sennheiser IR at Marriott’s Theatre

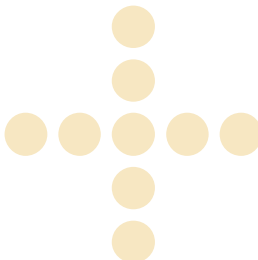
Mobile, reliable, comfortable – these are the three trump cards that Sennheiser’s new audio transmission system was able to play at Marriott’s Theatre in Chicago. The theater, winner of many awards for its musical productions, was a real challenge for audio designer T. C. Furlong.

Installing a sound system for the hearing impaired in a theater with a classic design – with the stage at the front and then the auditorium – is a relatively uncomplicated task. But at Marriott’s Theatre, the stage is right in the middle of the auditorium, and the set is redesigned for each play. The solution was to fix special magnetic brackets onto the lighting crossbeams to allow infrared radiators to be attached to all four sides of the stage. Thus, not only is the whole auditorium completely covered, the transmitter positions can be changed quickly and without complex assembly work whenever special stage sets are required.

“When it came to the transmission system, I insisted on Sennheiser – its reliability is legendary”, said Furlong. An SI 1015 modulator was connected to the

theater’s sound system and only four optimally located SZI 1015 IR radiators are enough to transmit the sound throughout the auditorium, where the audience is able to listen using RI 250 receivers. “We worked closely with Sennheiser to ensure that our envisioned coverage patterns would materialize. We were given invaluable insights regarding placement and product specifications, and Sennheiser even checked our entire installation over once again.”

The audience is delighted – and occasionally people even ask about infrared systems for home use!



Eurovision: Excitement in Denmark

Time and place: Copenhagen, May 12 2001, only a few more minutes until the Eurovision Song Contest begins. The nerves of the 23 bands and artists participating in Europe's biggest live broadcast are at breaking point. At audio supplier Sennheiser, the engineers get anxious as well – even though this is their 16th contest! Klaus Willemsen, RF wireless specialist from the Sennheiser headquarters: “You see, we rehearse for more than a week and everything goes off without a hitch. But with a live show, all that counts is the night of the broadcast. Usually, the greatest problems are not of a technical, but a human nature: the artists tend to get nervous, because the whole atmosphere is so different than in rehearsals.”

The team of the Danish Broadcasting Company, Danish Sennheiser partner Kinovox and specialists from the Sennheiser headquarters knew that it wouldn't be easy this time – but they were ready to meet the challenge in Copenhagen! For the first time, the live event was to be held open air, with the stage in the Parken stadium only being covered by a glass roof. Usually such shows are hosted

in large indoor venues, where walls and ceiling provide a certain protection against interfering outside RF sources. A glass roof may be a treat for the eyes but it is a real challenge for the audio crew, as it does not reflect RF frequencies and therefore does not help to ensure a solid signal. Then there were six huge LED screens whose spurious radiation reached into the UHF range, plus the usual sources of interference such as digital audio effects units and lighting controls.

The experienced team used a classical trouble shooting strategy: stay at a distance from sources of interference; choose optimum antenna positions, and take advantage of antenna polar patterns. With their know-how and optimum equipment – 48 RF wireless microphones of the 5000 Series and 16 in-ear monitoring systems of the 3000 Series – the team prepared the show.

On the night of the contest, the Sennheiser systems ensured perfect sound for more than 300,000 viewers at home and a live audience of 35,000. At the end of the magnificent show, the engineers of the Danish broadcaster, Kinovox and Senn-



Photograph: Ralph Lammann

An overwhelming atmosphere in the Parken stadium

heiser were just as happy as the winners Tanel Padar, Dave Benton & 2XL from Estonia!

www.kinovox.dk

Marvel of the Modern World



Photograph: Itaipu Binacional

Aerial photo of the hydroelectric plant

Itaipu Binacional Dam, located on the Paraná river between southern Brazil and Paraguay, really deserves the above title of “Marvel”. With enough concrete for 210 football stadiums, enough iron for 380 Eiffel towers and enough excavation for 8.5 Channel Tunnels, Itaipu stands 65 stories high and houses 18 generators. With a total capability of 12,600 MW of power, the dam's hydroelectric systems generated a mindboggling 93.4 billion kWh in 2000. Built in a partnership between the Brazilian and Paraguayan governments over a 15 year period, some say the lake it forms can be seen from the moon!

With an average of 1,500 visitors a day, Itaipu's PR department continually strives to improve its customer service. So it was no surprise that it chose a Sennheiser tourguide system for tours that include hearing (and feeling) the roars of the generators.

Carlos Augusto Braga, Public Relations at Itaipu, commented: “At Itaipu Binacional, we are using the Sennheiser tourguide system extensively; it has been of great help. We receive daily technical and special visits by groups of students, engineers, and specialists in the field of hydroelectric dams, as well as visits of authorities from all around the world. Our service to these groups has improved a lot by using the Sennheiser system, since we can now communicate with all visitors, even in noisy areas.”

www.itaipu.gov.br

Music Brings People and Cultures Together

Twenty years of partnership are good reason to celebrate, that's what the council chairmen of the partner regions Hanover, Germany, and Lower Galilee, Israel, thought. The celebration was held June 10–18 in Germany. There for the celebration – and for the first time in Germany: the “Northern Attraction” choir founded by Israeli council chairman Benny Gurfinkel. “Israel sings, rings, and gives the gift of culture”; such was the greeting for the Israeli guests in the partner region. Benny Gurfinkel: “With our music, we want to intensify the bonds between the partners, deepen our friendship, and express our hopes for peace.” The audience for the small six-city tour was carried away by pop music hits and traditional Israeli music. Along for the anniversary tour through the partner region: 12 evolution™ wireless ew 365 systems, which proved their resistance to interference during a concert in the vicinity of a radio station.

The unique opportunity to experience firsthand how these microphones are developed and produced was one of the high points for the singers of “Northern Attraction” during their visit. In a specially arranged guided tour through the Sennheiser factory in Wennebostel, they viewed the production facilities, the Hall of Fame, and the new production hall. Benny Gurfinkel was so impressed, he wished he could take along some of the proven ew 365s right from the factory.



Singing for peace: Northern Attraction

Photograph: Landkreis Hannover



A fable in a musical cloak:
Chanticleer

“Chanticleer”

At the premier in 1910 it was a flop with audiences, but in 2001 it was a big hit: at Moscow’s Satirikon, Edmond Rostand’s (“Cyrano de Bergerac”) play “Chanticleer” was produced as a musical! The piece, which is about a rooster with a swelled head, who thinks the sun rises only because he awakens it in the morning with his crowing, was transformed by Director Konstantine Raikin, composer and arranger Ilya Khmiz, choreographer Alexander Pepelyaev, set designer Boris Valuev, and costume designer Alla Kozhenikova into a colorful succession of exciting songs, dance scenes, stunts, unique sets, and wonderful animal costumes. The audiences of 20 completely sold-out performances were transported!

Of course, the success of such a musical and scenic event depends to a great degree on perfectly functioning technical equipment. The Satirikon relied on the audio experts from I.S.P.A., the Sennheiser partner for Russia. The I.S.P.A. engineers worked out all the specifications for the theater’s new sound system and also brought along twenty evolution™ wireless ew 522s. The RF systems proved their robustness as the darling flock of chickens subjected the microphones and transmitters to an extreme challenge: leaping, attempting to fly, and performing other stunts.

The only question left: why isn’t this play on Broadway yet?

Virtual Flight with Sennheiser

In the training center at Bombardier Aerospace in Montreal, seven state-of-the-art simulators provide training in flight technology and safety under completely realistic conditions. And the Sennheiser HMEC 25 KAP Noise-Gard™ noise canceling boomsets are always on board in the training facilities.

Jean Langlais, President of Sennheiser Canada, had an opportunity to see for himself just how realistic a simulated flight can be. Dan McWilliams, an experienced flight instructor at

Bombardier Aerospace, invited the hobby pilot to cross the Alps with him in a Bombardier Challenger 604 – also a good opportunity to test the HMEC 25 KAP! At the end of the flight, both pilots agreed on the effectiveness of the NoiseGard™ noise reduction system. McWilliams: “It is particularly impressive that it makes a big difference even in a relatively quiet cockpit such as that of the simulator.”



In the flight simulator:
Jean Langlais and Dan McWilliams

www.aerospace.bombardier.com

evolution

in the Gliwice Musical Theater

Finally! Thanks to the new Sennheiser equipment, the Teatr Muzyczny in Gliwice, Poland, now has the audio systems needed to awaken the enchantment of modern musicals. For many years this facility had to struggle with poor room acoustics and radio interference from neighboring hospitals and emergency services. Now evolution™ and evolution wireless have provided a cost-effective solution: the theater purchased 12 bodypack transmitters with clip-on microphones and seven handheld transmitters with MD 835 capsules. Some wired

and 835 instrument microphones round out their selection of audio equipment.

“We are really pleased with the new systems. Until now our audio wasn’t particularly exciting”, says Jerzy Puk of the musical theater in Gliwice. “Now everything works: performance, songs,



Colorful on-stage action – evolution wireless provides perfect sound

music, voice. The audience is very enthusiastic – not to mention the performers and sound technicians!”

www.gliwice.pl

Photograph: Iwona Podczaszy

Jerzy Puk at the mixing console

Photograph: Tomasz Zakrewski

Grothusen Active in Former Yugoslavia

The collapse of the multinational state of Yugoslavia in 1992 and the still unfinished process of forming independent successor



Alexander Kränkl, co-owner of Grothusen Ges. m.b.H., and Davor Defar of Croat Television

states has left deep marks upon population, infrastructure, and economy. Returning to “normal” circumstances is a challenge, which is being met by Grothusen Ges. m.b.H. Sennheiser’s sales partner for Austria is responsible for the Yugoslavian successor states, and is actively involved there.

In Slovenia, currently the most important area for Grothusen economically, the audio and video specialist employed the Slovene Peter Ogrinc in 1996. From his office in Ljubljana, Ogrinc is a permanent fixture of the audio business, not only in his homeland, but also in the other countries of ex-Yugoslavia. Freelance colleagues in the most important cities of the region complete the growing sales network.

The year 2000 was the best year yet for Grothusen for sales in Slovenia. The balance is still slanted in the direction of professional products (90%), but the consumer market is also beginning to develop. Most of the theaters and two of the most important conference centers of the country are using Sennheiser 3000 and 5000 Series RF systems. In Croatia, too, the situation is beginning to relax following the end of the Tudjmann era. The main customer is the state radio/TV organization. In the economically difficult market of Bosnia-Herzegovina, sales in the year



Meeting with a customer of many years, RTV Slovenija; from left to right: Roman Salomon, Joze Vesel (both RTV), Alexander Kränkl (Grothusen), Joze Mastnak (RTV), Peter Ogrinc (Grothusen)

2000 did manage to double the 1999 figures. There is still stagnation in Yugoslavia and Macedonia.

A continuous presence at trade fairs, local informational events, and presentations at the headquarters in Vienna – even in economically hard times – are beginning to bear fruit: from a share of 7.33% in 1996, Grothusen has been able to increase sales in the states of former Yugoslavia to 20% during the year 2000. The first third of 2001 already shows a 24% share – a very good success.

www.grothusen.com

Philippine President Opens RCBC Towers with MD 425

Sennheiser microphones get around – and they travel in the best circles. And that’s just how it was with the two MD 425s that were used to transmit the opening of the RCBC twin towers by Philippine President Gloria Macapagal-Arroyo. During the ceremony, the President opened one of the country’s premier business addresses.

The larger tower rises 48 floors above the main business street of Makati City; its sister tower is 43 stories high. The aluminum and green glass towers take their name from the Rizal Commercial Banking Corporation (RCBC), one of the largest Philippine banks, which has its new headquarters there. In addition the towers primarily provide office space for IT and insurance companies, but also house a museum, a large event hall, a chapel, a VIP lounge, and a generous sports area.



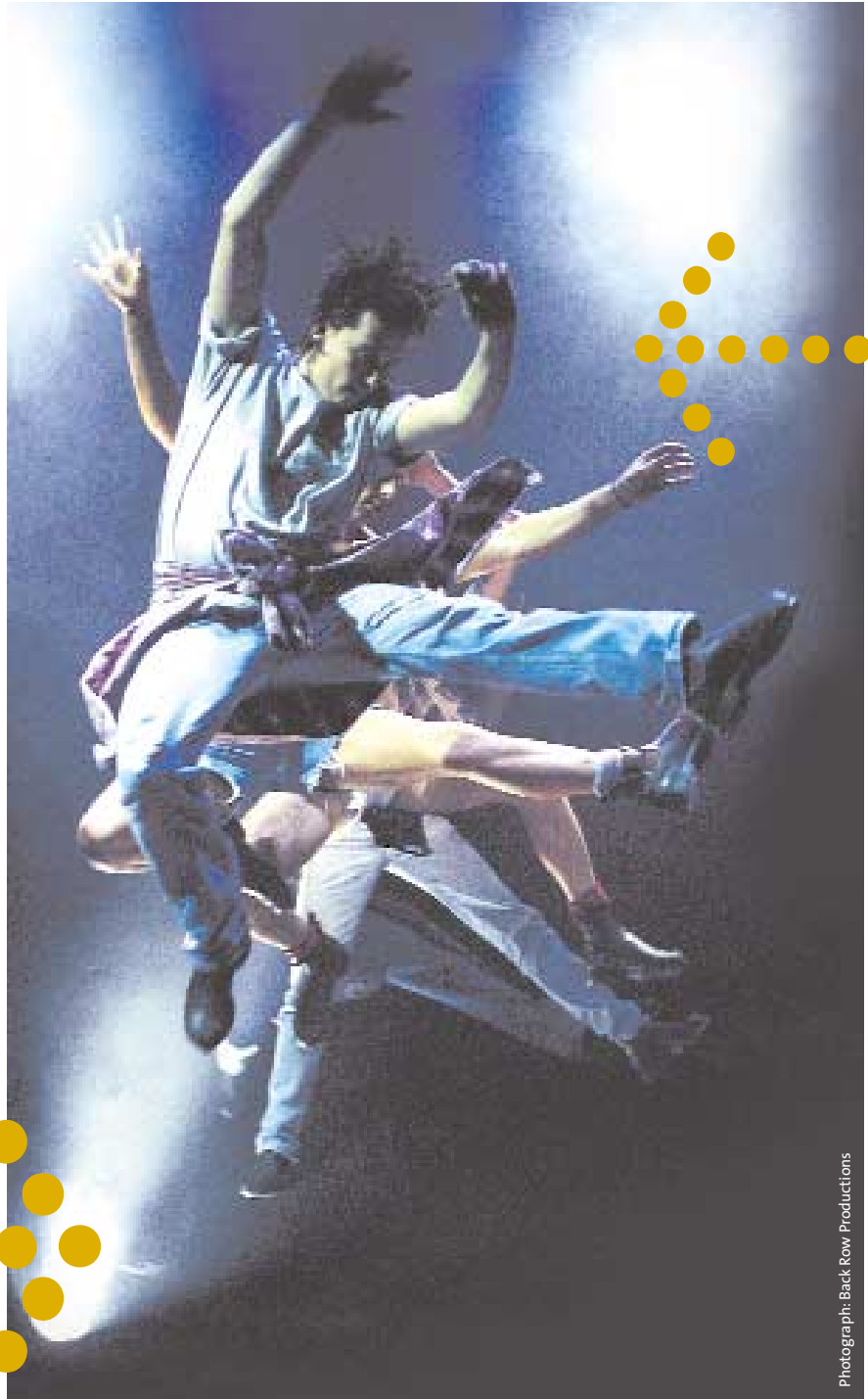
Cultural Highlights at the Israel Festival

Once each year, visitors to the Israel Festival in Jerusalem experience the latest and most exciting productions. From May through July, artists from around the world present a selection of cultural high points from the world of theater, music, and dance.

This year's top act in the area of special events was the Australian dance performance group "Tap Dogs". The "Tap Dogs", whose shows thrill audiences worldwide with their hammering beat, were accompanied at the festival by Kilim electronics Ltd., the Sennheiser sales partner in Israel. Numerous microphones picked up the breathtaking performance. The virtuoso tap dancers were especially pleased by the freedom of movement provided by the Sennheiser in-ear monitoring system SR 3056/EK 3053.

Much of the festival's particular charm comes from the events that take place at numerous outdoor venues, in addition to the performances on various stages. In pedestrian zones, on a lake, at the market, or on the beach, everywhere, visitors are enchanted by a wide variety of cultural offerings. Here too, Kilim electronics Ltd. was "mixed up" in many of the events...

www.euro-festival.com



Photograph: Back Row Productions

The Tap Dogs

New Headsets for the Professional User

With the closed HD 280 Professional, Sennheiser launches a pair of monitoring headphones especially designed for use in high-noise environments. Due to their excellent attenuation of up to 32 dB they are an ideal choice for outside broadcasts or as DJ headphones. A very rugged design, replaceable parts for long service life and swiveling, collapsible ear-pieces for space-saving transport make the HD 280 Professional a reliable tool for everyday work. Frequency response (8–25,000Hz) is very linear, and the sound pressure level is rated at 113 dB/1 V_{rms}. To give the professional user as much comfort as possible, the HD 280 Professional is fitted with very soft, circumaural ear pads and weighs in at only 285 grams.

The headset version of these headphones, the HMD 280 Professional, has been custom-tailored for communications applications. A noise-compensated, super-cardioid microphone ensures clearly intelligible communication even in very loud surroundings. Extremely low in handling noise, the dynamic microphone can be worn on either side and has a nearfield frequency response of 50–13,500 Hz. The HMD 280 headset is an ideal choice for live reports and presentations, talkback applications and intercom systems.

The HMD 281 Professional is a single-sided headset. It is the ideal choice for talkback situations in film and TV applications.

All three models are available with 64 or 300 ohms headphone impedance.



HMD 280 Professional

Beatman Plays with Sennheiser MX

The revolution in MP3 players comes from the Netherlands. The multimedia storage specialist Freecom Technologies, headquartered in Delft, has recently released the Beatman, an MP3 player that does not rely on expensive multimedia cards or memory sticks but instead uses inexpensive mini discs. These mini CDRs can also be played on standard hi-fi systems and PC CD-ROM drives – finally, MP3 media have become compatible! Archiving of music is now very simple: put all titles on mini CDs, and they can be played anywhere. And Beatman offers more storage space into the bargain: whereas standard MP3 players have only 64 MB, Beatman provides the music fan with a full 185 MB.

Of course the producers of the Beatman have put great emphasis on sound quality. That's why the Beatman is supplied complete with Sennheiser MX 300 in-ear headphones. A great success for Sennheiser Nederland!



www.freecom.com

Comfort in Inflight Entertainment

Airlines are now all set to provide increased onboard comfort for the passengers: with Sennheiser's new inflight headphones Maxi HD 03, HD 05, HD 16 and HD 18. All headphones feature good sound reproduction, robust construction, and compact size. In addition, they can be printed with a (one-color) company logo.

Besides an adjustable headband, the HD 18 and HD 16 feature swiveling ear-pieces for increased comfort. The HD 18 has a frequency response of 30–20,000 Hz and, like its brethren, a characteristic SPL of 90 dB and a nominal impedance of 300 ohms.



Maxi HD 03 – the smart clip-on headphones produce powerful sound

Design and color make the Maxi HD 03 stand out. The fresh blue earphones do not have a headband but are simply clipped to the ears, where they develop a full frequency response of 30–20,000 Hz. Another special: the Maxi HD 03 is fitted with a folding pin so that the plug can easily be converted from dual pin to single pin. Irritation caused by earbuds are a thing of the past with Maxi HD 03. Their excellent price-performance ratio makes them the ideal give-away earphones for inflight entertainment.

The Digital Innovation from Neumann

With the new microphone generation debuted by Solution-D, microphone specialist Georg Neumann has closed the last gap in the digital audio signal path. The high-quality Solution-D microphones are comparable to the best analog microphones, both sonically and technically.

At the heart of this revolutionary microphone technology is a new A/D con-

version process developed by Neumann (patent pending). The analog microphone signal is converted into a digital data stream directly after the capsule. The result is truly outstanding signal fidelity and – for the first time in a digital audio system – a dynamic range of 130 dB(A) which satisfies even the most stringent demands in studio technology. This

now makes external A/D converters and analog preamplifiers obsolete – sound engineers can now record smaller productions with excellent sound quality just with a microphone and a recording device.

Digital microphones open up completely new possibilities: standard parameters such as pick-up pattern, gain and

filters can now be remote-controlled, allowing for quick checks of how the mic signal could be optimized further. Other signal processing functions, such as mute and polarity reverse, which are usually found in a mixing console, have been integrated into the microphone. A very special feature is the transient limiter, which, for the first time, has been located at the most efficient point: the signal source.

Via data stream, Solution-D microphones inform the sound engineer about their “identity” (manufacturer, serial number), current software version, and a list of all available remotely controllable functions. The engineer can centrally control all microphones used, with all important parameters, including signal level, being displayed on a PC. It is also possible to add additional information, for example notes on the sound source and microphone position. Thus complete setups for entire recording sessions can be stored and recalled at a later time.



Solution-D: a new milestone in Neumann studio technology

www.neumann.com

Presented at IFA: PX 30 and PX 40

At the world's largest consumer electronics show, the IFA in Berlin, Sennheiser presented its new PX 30 and PX 40 mini headphones. The ideal upgrade for any portable player, the new lightweights impress with powerful sound at incredibly affordable prices.

With its bass driven sound, the PX 30 is the ideal choice for rock and pop music – but its frequency response of a full 30–20,000 Hz ensures that not only the bass is optimally reproduced, but also the whole range of audio. Thanks to their good sound quality, the comfortable PX 40 headphones (20–20,000 Hz frequency response) get the maximum



possible sound from compact music players. For listener convenience, the PX 40 features a volume control integrated into the cable. Both headphones have a two-year warranty and will be in the shops from this fall.

PX 40 mini headphones

EMERGENZA, the European Festival for Emerging Rock Talent

They're young and full of fresh ideas. They practice mostly in garages and basements and dream of making it big. These young emerging bands have enormous potential and could be among the top acts of tomorrow. At the Emergenza Rock Festival they have their big chance to present their music to a broad audience.

Over the past 10 years the Emergenza Festival has developed into Europe's largest competition for emerging talent. And it pays to take part, because the rewards can go beyond just gaining experience. The group MyBalloon, winner of the festival in 1999, got a recording contract with Turbobeat/BMG, and the group Glow shot into the charts with their debut CD "Superclass". This year's winner, the Swedish band "Willowtree", received a complete wireless stage system from the Sennheiser evolution™ wireless 500 series. That means they will take along a wireless lead microphone, three headset microphone systems, and three

instrument transmitters when they start the tour of the USA that has been organized for them by Emergenza.

Rolf Meyer, President of Marketing and Sales, explains Sennheiser's involvement as the main sponsor of the festival: "Sennheiser supported Emergenza in order to give young musicians the opportunity to work with high-quality, professional stage sets." Sennheiser provided support throughout the Festival in the form of equipment, know-how, and manpower, from the preliminaries in Rome, Paris, Brussels, and Berlin to the big finale August 10–12 2001 in Rothenburg ob der Tauber.

By the way: if you want to be there at the Emergenza Festival 2002, watch out: the registration deadline for all of Europe is December 31 2001. You can find more detailed information at www.emergenzarock.com. Good luck!

Opportunities with Professional Equipment

Interview with Massimo Scialo, founder and organizer of the Emergenza Festival

Mr. Scialo, what is the idea behind Emergenza?

Emergenza was founded by musicians who used the audience in a pub as a jury. Eventually it developed into a real band competition. Since then Emergenza has won its place among emerging bands.

How does it differ from other festivals and competitions?

Emergenza really gives all bands a chance to play. Many of these bands face their first audience at Emergenza. We don't filter them in advance by quality or style. The bands can just come and play.

What about the competitors' performance?

Those musicians who do not yet receive any support from the music industry usually do not find any good audio or lighting equipment where they perform. We believe that emerging professionals also need support in order to perform well. With sponsors like Sennheiser, we can offer the musicians use of outstanding

microphones and other technical equipment.

The festival has been going on for many years now. Why is Emergenza so successful?

The musicians all want to make it to the top and become famous. Some of the 10,000 Emergenza participants have succeeded in doing so. We make sure that the newcomers receive contacts to producers and other important people in the music industry. That can be the start of a great career.

Does Emergenza want to be a mediator between representatives of the established music industry and new talent?

Not just that. The musicians also use the Emergenza festival to communicate with each other. In Berlin, Brussels, et cetera, several hundred bands meet at every Emergenza Festival. For them Emergenza is also a forum for exchanging information and ideas.

How many people work to make the festivals

a success?

We have offices in 24 European cities with a total of several hundred fulltime and volunteer workers.

How is Emergenza financed? What is the role of the sponsors?

We get most of the money we need for the festivals through ticket sales for the concerts. As to the sponsors, we put great value upon quality. That is also the reason we decided to work with Sennheiser. We can offer the artists the advantage of professional consulting and – with the microphones of the evolution™ wireless series – top quality stage equipment.

How do you think the festival should develop in the coming years?

We will make the festival known outside Europe. Next year, for the first time, we will organize an Emergenza Festival in Canada.



Big Tingsagwan won the preliminary competition in Paris

Reality Touring

What would you do if you were an FOH engineer, touring with Matchbox 20, and the manager of Tom Petty and the Heartbreakers calls you because he wants you for their tour, right now? Facing this dilemma, FOH Robert Scovill may have thought “necessity is the mother of invention” — and a solution was not far away!

“It was pretty amazing,” commented Scovill. “In the beginning, it didn’t look like it would be possible for me to do both, so I agreed with Tom’s manager to put together an equipment spec for the tour. Meanwhile, they would start to look for a replacement mixer. As I began working on the list, I had sort of an epiphany. The input list, layout and PA spec I had for Matchbox 20 were nearly identical to what I was proposing for Petty. I mean you could literally unplug the snake from one show, plug in the snake from the other, turn the console on and you’d be at a pretty good starting place. Guess what? Matchbox 20 ended their leg on May 8 and the first Petty show started on May 9. Excellent!”

If the equipment was very similar, there was nevertheless one special difference... At Scovill’s prompting, Petty had become a convert to the Neumann KMS 150 during an earlier tour. “Before the KMS 150, I would need as many as three different equalizer settings for Petty’s vocal range as well as one for his speech,” recalled Scovill. “These settings were radically different, and consequently the drums and guitars bleeding into the vocal mic during the performance sounded very odd. With the KMS 150, I’ve dispensed with all that processing, and Petty’s warm rapport and intimacy with the audience come shining through.”

Matchbox 20 vocalist Rob Thomas started out on the KMS 150 as well but decided to go wireless for stage freedom. He and Scovill went with the Sennheiser evolution™ wireless 565 handheld microphone system. “While I tend to prefer wired microphones to their wireless brethren, I have to admit that Sennheiser has done a fantastic job with the evolution wireless series. It was the only wireless mic that made the cut and its sound is open and defined. Sennheiser’s frequency palette is wide and robust — we’ve had no wireless problems at all,” commented Scovill. Two bands, one solution with an individual touch — fantastic timing, Mr. Scovill!



Rob Thomas of Matchbox 20

www.tompetty.com

www.matchbox20.com

Paul Carrack, “Anonymous” Superstar

“The bane of my life, if there is one, is that people know the voice or the songs but don’t really know who Paul Carrack is. It makes it tricky when you want to do something, but it hasn’t been too bad. I’ve been doing this since I was 15 and I’ve managed to carve out some kind of niche, so I’m not grumbling.”

His voice and his songs may be better known than he is, but “niche” is definitely typical British understatement. The Sheffield singer/songwriter and multi-instrumentalist has sung with, written for and performed with more rock, pop and soul stars than hardly any other artist. The long list of talents he has worked with includes The Eagles, Elvis Costello, Diana Ross, Rod Stewart, Roxy Music, The Smiths, Madness, The Pretenders, Michael McDonald and Tom Jones, to name but a few. As a member of Mike and the Mechanics he rocketed the charts with the album “The Living Years”, and is very much in demand as a session musician. For example with Elton John, Van Morrison and Eric Clapton. His prolific songwriting has brought him numerous music awards and several Grammy nominations.



The unknown face behind many hits: Paul Carrack

Paul Carrack about Sennheiser’s evolution™ wireless Series: “I’ve always liked Sennheiser equipment, and I like the sound I’ve been getting back on stage, using their new in-ear system. The microphones are superb; very clear, good presence, and plenty of nice warm tone.”

www.carrack-uk.com

Rubén Blades:

Salsa, Folklore and Poetic Lyrics

If you only associate Latin American music with party nights, you have not yet experienced the huge variety of this genre – or, put simply, you don't know Rubén Blades!

One of the most prominent figures in Latin music today, Rubén Blades rose to stardom in the late 70s and throughout the 80s by elaborately combining fiery and rhythmic salsa music with political, yet lyrical texts. In the 90s he began to experiment with folk elements and world music, much like Peter Gabriel and Sting, and created a new type of Latin pop. Rubén Blades won the Latin Grammy on several occasions, last in 2000 with his production "Tiempos" produced entirely in Costa Rica.

In his latest concert, given on June 15 in Los Angeles' Universal Amphitheater, Blades and his band "Editus" showed once more how fascinating, powerful and joyous Latin American music can be. Political issues also found exposure: a narrative inspired by Oscar Romero, a priest murdered by death squads in El Salvador, culminated in the message "You can kill people, but not their ideas." Rubén Blades proved in his own special way that pop culture does not exclude social responsibility and commitment.

Rubén Blades sings with an SKM 5000 and uses a 3000 Series in-ear monitoring system. "Editus" conjures up a magical Latin atmosphere with twelve evolution™ wireless in-ear systems and Sennheiser instrument microphones.



A dedicated musician – Rubén Blades

www.geocities.com/Broadway/Lobby/2922

Long gone are the times when disc jockeys simply played records to get a party going.

DJ Sound with Sennheiser

Most recently, DJs have created a whole new type of music. At party happenings, their sound attracts huge crowds, and the clubbing scene reveres them like pop stars. One of the new movers in the Portuguese scene is DJ Nuno Miguel, who has just released his brand-new CD "Antena 3". With energetic mixes of Artfull Dodger Featuring Michelle Escoffery "Thinking About Me" and Mr. Oxx "This Is California", the album is headed for huge success.

But one thing has remained the same. DJs still use headphones, and Nuno Miguel's phones are Sennheiser's: an HD 25-1 is his constant companion.

www.nunomiguel.net

Angels That Break Girls' Hearts

"Anjos", Angels, is the band name of two Portuguese brothers who are all set to break the hearts of their female fans. Nelson (25) and Sérgio (21), whose first album "Ficarei" won them triple platinum, were born into a very musical family in Lisbon. "Making

music together has always been a family dream," say the two brothers, who keep themselves fit with tennis, swimming and exercise.

And they definitely need fitness for their 200-show world tour! Accompanied by Sennheiser's Portuguese sales partner, Valentim de Carvalho Electronica S.A., and evolution™ wireless microphones, "Anjos On Tour 2001" is visiting the USA, Canada, Germany, Spain, Brazil and South Africa. With hits such as "Olhar-te uma só vez", Sérgio and Nelson are introducing their new album "Espelho" to an ever growing number of fans worldwide.



Sérgio and Nelson are touring with evolution wireless

www.anjosonline.com

Jamiroquai 2001 – “A Funk Odyssey”

Out of the studio and onto the stage! Jamiroquai recently returned to the live arena with a sell-out concert for 35,000 fans at Knebworth, around 30 miles from London. “It was nice to get back out and do a live show again,” commented Rick Pope, co-producer of Jamiroquai’s new album and, together with Chris Barton, responsible for FOH and monitors, respectively. “We’ve had a great time in the studio, recording the new album, but it’s always nice to get out and see the audience’s reaction to the new material.”

Jamiroquai and their charismatic lead singer Jay Kay got an incredible reception from the vast crowd. The band also played a few tracks from their eagerly awaited 5th album, released in the UK on September 3. Entitled “A Funk Odyssey”, the album showcases different styles from turbo powered disco to a new harder edged sound and some sweeping orchestral soundscapes, and is set to take the 16 million selling act to new heights.

Also on the legendary Knebworth stage: Sennheiser radio microphones. “Once again we’ve chosen to use the Sennheiser SKM 3072 for Jay’s vocal. It works very well for him and the technical back-up from Sennheiser UK has been excellent,” commented Rick Pope. “We’re



Rick Pope (l.) and Chris Barton ensured first-class audio – Jamiroquai a first-class performance!

also using 3072s on backing vocals, in conjunction with the excellent 3000 Series IEM systems. As with the last tour we also use a wide selection of microphones from the evolution range including e 865, e 604, e 609, e 602 and e 608.”

Jamiroquai’s new album will certainly confirm the band’s place in the international superstar big league – and Sennheiser will accompany them.

www.jamiroquai.co.uk



Trash Box

Glam rock with the glamorous evolution™ microphones: The Japanese band “Trash Box” – our picture shows singer Hisashi – swears by Sennheiser’s successful line of vocal and instrument microphones

Michael Bishop – a Star Behind the Scenes



The Neumann KU 100 dummy head microphone and the Sennheiser MKH 20 are among Bishop's favorite microphones

Classical Recording (1998), as well as three nominations in the same category (1996, 1999, 2000). Bishop launched his recording career during the late sixties. "My love of music and

These stars tend to keep in the background when the camera men hunt for pictures of bands and singers at Grammy Award celebrations. Sound engineers are the people behind the scenes – their extraordinary performances are acknowledged by professionals rather than the general public.

Michael Bishop, chief recording engineer at Telarc International, is just such a star. He has under his belt the Grammy Award for Best Engineered

its marriage with technology to bring music to the home is what attracted me to this line of work," he remembers. "My first recording sessions were with a partner of mine in 1968, in a studio that we built in his parents' barn loft. I was still in high school, but those first sessions were with artists such as Eric Carmen."

Since 1988 Bishop has been with Telarc, home to recording artists such as Oscar Peterson and Dave Brubeck. "I record a great deal of classical, jazz and blues, and I am fortunate to be working with the best artists in those genres," says Bishop. "The most recent session was the SuperBass live performances at the Blue Note in New York. The SuperBass event featured Ray Brown, John Clayton and Christian McBride – three of the most renowned bass players in jazz today. I used the Neumann KU 100 for the overall stage pickup, in addition to the Neumann U 149 for the pickup on one of the acoustic basses."

Bishop will often combine the KU 100 dummy head with Sennheiser MKH Series microphones "I have found the MKH 20 omnidirectional microphones to render a very effortless, non-hyped reproduction of the orchestra, and I depend on the KU 100 for its great imaging and "you are there" effect.

Ravi Shankar

Ravi Shankar first graced Carnegie's hallowed stage when he was just 18. To celebrate the famed sitarist's 80th birthday, and his role as ambassador of classical Indian music, his "anniversary concert" at Carnegie was recorded by Angel Records.

For "Full Circle – Carnegie 2000", Angel Records won eminent sound engineer Tom Lazarus, who has worked with Vladimir Horowitz and René Fleming. Owing to the importance of the event, surround sound fan Lazarus used the highest quality microphones, processors and recording equipment available. "I try to record everything in surround. It simply sounds excellent. Moreover, I wanted to envelop the listener with Ravi's music in particular."

What the listeners at home certainly missed was the colorful stage set and clothing. Ravi Shankar and his 19-year-old daughter Anoushka performed in traditional Indian dress. On either side of them were tabla players, and two tamboura players sat behind them. Microphone selection and placement has the greatest

impact on the quality of the end product in such a situation – a demanding challenge for the recording engineer. For the sitarists, Lazarus chose Sennheiser MKH 30s and MKH 40s in an M-S arrangement. "I couldn't use an X-Y configuration on the sitar because so much of the instrument's



A treat for audiophiles: Ravi Shankar's "Full Circle" album

color would end up off-axis," remarked Lazarus. "Moreover, a sitar recorded in X-Y doesn't have a natural image, it ends up with an exaggerated stereo spread. It's

better to have an excellent cardioid like the MKH 40 aimed at the sweet spot and then to "stereorize" that sound with M-S. Additionally, using M-S allowed me to adjust the stereo width in mixdown."

To capture the sound of the tablas, Lazarus used matched pairs of Neumann KMS 150 in an X-Y configuration. As was the case with the other instruments, the tablas are relatively quiet, and stage monitoring bleed became a prominent issue. The KMS 150s' tight hypercardioid pattern minimized the problem, even as monitoring levels crept up during the performance. The tambouras were picked up by Neumann KM 140 mics, four KM 130 were additionally hung from the ceiling. Two Sennheiser MKH 70 shotgun microphones facing out towards the audience rounded out the collection.

All of Lazarus' attention to detail – despite the limited set-up time – paid off: the recording has received much praise from audiophiles and the public alike.

www.ravishankar.org

First-Class Jazz with Neumann

Front and center in the “new guard” of female jazz vocalists, Diane Reeves won this year’s Grammy for Best Jazz Vocal Performance and has received reams of accolades in both the popular press and jazz circles alike. Small wonder that public radio station KUVU wanted to “lure” Reeves into their studios... Known as Denver’s “jazz oasis”, KUVU is one of the few full-time jazz stations in the USA to broadcast a wide variety of live studio performances.

At the beginning of April, the big moment had come: Diane Reeves performed at the KUVU studio, in front of an absolutely thrilled live audience. Her companion during this live recording: the Neumann KMS 105 vocal microphone. Earning a 2000 Tec Award, EQ’s Blue Ribbon Award and the PAR Excellence Award, the KMS 105 combines the clarity and richness of a studio microphone with the ruggedness of a live performance mic. Reeves comments: “My Neumann KMS 105 allows me to feel and hear the rich qualities and subtle nuances of my voice. This in turn inspires my performances.”

www.imnworld.com/reeves.htm

A wonderful voice: Diane Reeves with the KMS 105



A Stellar Recording

Unfortunately, we will have to wait until spring 2002 before we will be able to listen to Michael Feinstein and the Israeli Philharmonic Orchestra. But waiting will be more than worthwhile – the recently recorded CD contains an evening’s worth

of classics composed by such Jewish greats as Irving Berlin and the Gershwin brothers. This recording is bound to become a huge success, and will be the 18th album for the Grammy Award nominated Feinstein, who has played for three presidents at the White House and England’s Queen Mother. Equally venerated engineer Leslie Ann Jones did the recording for Concord Records. Jones chairs The National Academy of Recording Arts and Sciences and has worked with such legends as Herby Hancock, Bobby McFerrin and Rosemary Cloney.

Jones recorded the session twice: both with and without an audience. Jones on her microphone choice: “I wanted something lightweight that would still provide a nice, open sound. I had used Sennheiser MKH 80s in the studio for surround to great effect and thought I’d try out the new MKH 800s, as we were recording digitally at 88.2 kHz/24 bit.” A number of spot microphones from Neumann supplemented the Sennheiser choices. Feinstein himself was recorded with Neumann’s sought-after KMS 105 live vocal microphone, which couples studio sound with live specifications. Jones used two identical set-ups, one in front of the orchestra and one in front of the piano, since Feinstein sang from both locations. Combining the microphones with high quality recording equipment, Jones created a stellar recording of a tremendous performer. We’ll have to wait patiently...

www.michaelfeinstein.org



Photograph: Dann Thompson

Preparations for a unique recording in the Mann Auditorium, Tel Aviv

French Superstar Michel Sardou Chooses Sennheiser

A reference quality sound system, consisting of an impressive 36-channel in-ear monitoring system and 16 wireless Sennheiser microphone systems, delivered perfect sound on the tour of French artist Michel Sardou.

Sardou (54) is a singer, composer, and actor. For over 30 years he has piled up hit after hit to become a permanent fixture in French hit parades. His musical work has been honored with numerous awards, and as a top attraction, he fills the largest halls in France.

Before the concert series in the Palais Omnisport in Bercy, the largest concert hall in Paris, Soundings spoke with Sardou's sound technicians Xavier Gendron and Rémy Blanchet as well as with Jean Claude Thobois of Sennheiser France.

S.: Xavier Gendron, you are the head sound technician for Michel Sardou.

X.G.: Yes, I am also responsible for the six background singers and eight violinists. They all use in-ear monitoring. Altogether we have 36 systems in operation.

S.: A 36-channel in-ear monitoring system – that's impressive.

X.G.: All the more because it's the first concert in which Michel Sardou has used an in-ear system! We used it for the first time during rehearsals, and from the evening of the very first day, Michel didn't

want to do without its advantages. In the beginning there was just a slight "problem": Michel could hear himself so well, he was afraid he might be giving it too little voice. But once I had given him the right dosage in the mix, he saw that he would still have to give it his all! With the in-ear monitoring system there aren't any more delay problems. With monitor speakers, there are always reflections in the hall, then delays between stage and FOH console, between source and speakers. Naturally this temporal distortion always leads to lots of imprecision – and you don't have that with an in-ear system.

S.: Rémy Blanchet, since Xavier Gendron can't possibly take care of 36 mixes, you're at his side . . .

R.B.: Yes, I have all the other musicians under my wing, so to speak. I can confirm the precision of the in-ear system. With monitor speakers, you don't notice a spot here or there that isn't quite right, but the in-ear system doesn't let anything slip by! Every musician has to play with extreme precision. In addition to his own instruments, director Arnaud Dunoyer de Segonzac also hears the total mix. He hears every detail, and the musicians know it! Even during rehearsals, the system was an invaluable aid, because it enabled Arnaud to check his arrangements precisely.

S.: Mr. Thobois, can you tell us something briefly about the systems used?

J.C.T.: The in-ear system is arranged in two racks, both equipped with seven Sennheiser SR 3056 U twin transmitters. Four channels each run to a combiner and can thus be transmitted via a common antenna, in our case passive A 2003 antennas. To keep cable loss as low as possible, we



Michel Sardou with the SKM 5000

use short RG 213 cables for the connection. Finally, a third rack holds the EM 1046 receiver system for the RF microphones. Michel Sardou and the background singers use SKM 5000 microphones with condenser capsules. The guitars and the violoncello are transmitted via evolution wireless 500 systems, the horns with SK 50s. Of course, all the frequencies of the monitoring system and the microphone systems are coordinated – in total we have calculated six frequency plans.

S.: What precautions have you planned for the receiving antennas?

J.C.T.: First of all they have a minimum distance of 1 meter from one another. We have arranged the antennas in groups of five – like the eyes on a die – to avoid direct intermodulation. The ground plan antennas for the singers are slightly inclined, because their microphones are never used in a perfectly vertical position either. At each side of the stage the antennas have a reverse inclination, which ensures that at least one antenna will receive a strong signal, no matter how the microphone is held.

S.: We thank you for the interview.

The Bercy Concert 2001 is available on a double CD and DVD.



A look at the workplace of Xavier Gendron and Rémy Blanchet

DVD Video, DVD Audio, Super Audio CD

The Audio Media of the Future

Ever since its launch in the early 1980s, the compact disc has successively pushed the good old vinyl record out of the market, turning the old format into a collector's item. But is the CD now facing a similar fate? New audio formats with superior sound are now competing with the CD, and the main contenders are detailed here:

DVD

The Digital Versatile Disc has established a firm place for itself in the market, especially in the field of video. It may look like a CD at first glance, but it actually has a much higher information density and can store the data of up to 25 CDs. In addition, the data can be read ten times faster than on a CD. The maximum possible resolution of a DVD is 24 bits with a sampling rate of 96 kHz.

DVDs with 5.1 Surround Sound offer an excellent spatial experience, and with speakers for center, front left and right, and surround left and right (all with the full audio frequency range), there is also a channel for "low frequency effects" (so-called LFE channel). This allows deep sounds to be reproduced even more impressively. For audio, a distinction is made between DVD Video and DVD Audio.

DVD Videos can be used not only for movies but also for purely audio recordings. In this case, only the audio track is recorded, and the rest of the DVD remains empty. The data for the audio material on such a DVD is compressed by up to eight times, although the latest compression processes have achieved such a high standard that only very well-trained ears can notice differences from the original.

On DVD Audio, with a wide-scale introduction about to take place, audio data can be stored without compression and without data reduction. For this purpose – as in the CD – Pulse Code Modulation (PCM) is used, and different sampling rates as well as resolutions can be selected in the encoding process. Loss-free compression is made possible by the Meridian Lossless Packaging Process (MLP). This allows particularly high-reso-

lution multi-channel formats (such as Dolby Digital 5.1 with 24 bits/96 kHz) to be put on DVD. DVD Audio recordings cannot be played on DVD Video players – a separate player is required.

Super Audio CD (SACD)

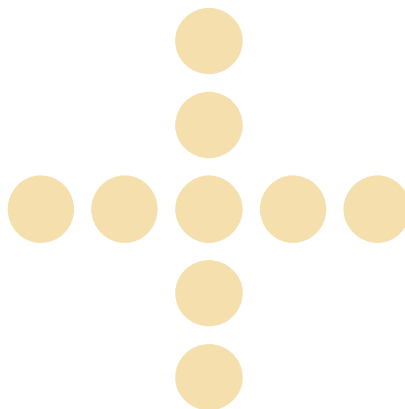
The third system for high-end audio, the Super Audio CD, comes from the inventors of the CD. Philips, together with

Sony, has developed a new type of CD which can store up to 74 minutes of music without losses. Also available – at a higher price – are hybrid discs containing a separate information layer that can be read by conventional CD players at CD quality. The main difference from the DVD lies in the fact that the Super Audio CD works with a constant data flow of 1 bit at a sampling rate of 2.8224 MHz.



Photograph: Sascha Lier, Hildesheim

Special 5.1 microphone pole (by SPL) with MKH 800 microphones for a 5.1 Surround Sound recording on DVD Audio and Video. With its wide frequency range of up to 50 kHz, the MKH 800 is the ideal microphone for recordings in the 96-kHz/24-bit standard



www.dvddemystified.com/dvdfaq.html



Sennheiser Belux

The Belgian capital of Brussels has developed into a focal point of European politics. Important institutions in the European Union and NATO have their headquarters in Brussels; so as Europe develops into a united continent, Brussels will grow in importance. Brussels is also known as a center of culture, with three separate nationalities represented along with three separate languages spoken throughout the region.

In this cultural melting pot, Sennheiser Belux has succeeded in achieving a top position in the area of electro-acoustic

systems solutions. As early as 1945 Sennheiser products have been represented in Belgium by partners such as Televic, Prolux, and Electronic Engineering. Due to the growing requirements on country-specific, individualized solutions, Sennheiser founded its own sales office in 1991, in Zellik, a small town outside of Brussels. For 10 years Sennheiser Belux has been a very successful partner in the distribution of all Sennheiser and Neumann products in Belgium and Luxemburg; additionally the company sells products from Klein & Hummel, IC Audio, Interkom, and RDL.

The Belgian customer list in recent years has included the European Union, the European Parliament, the Walloon Parliament, the European Court of Justice, the NATO press center, and many large theater productions. Since 1991 sales have doubled for Sennheiser Belux, making it one of the largest audio suppliers in the region. Under the motto "Expansion is the future" Sennheiser Belux has already planned the next step: in 2002, they will move into newer and larger premises, to prepare for future challenges.

www.sennheiser.be



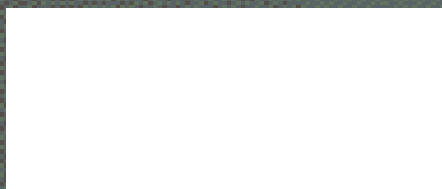
At home in the Brussels region, in the heart of Europe: Sennheiser Belux

Fairs and Exhibitions 2001/2002

NAME	VENUE	DATE	TARGET GROUP	REPRESENTED BY
		September		
INELTEC	Basel	04.09. – 07.09.	Pro Audio (Building Services)	Bleuel
CEDIA	Indianapolis, IN	05.09. – 09.09.	Consumer	Sennheiser Electronic Corporation
Futura	Linz	07.09. – 10.09.	Consumer, Telecommunications	Bleuel
PLASA	London	09.09. – 12.09.	Pro Audio	Sennheiser UK
PALM	Mumbai	11.09. – 13.09.	Pro Audio	Audio Plus
WAEA	Brisbane, QLD	11.09. – 14.09.	Aviation	Sennheiser electronic
The Hi-Fi Show	London	13.09. – 16.09.	Consumer	Sennheiser UK
IBC	Amsterdam	14.09. – 18.09.	Pro Audio	Sennheiser electronic
NBAA	New Orleans, LA	18.09. – 20.09.	Aviation	Sennheiser Electronic Corporation
Aviation Expo	Beijing	19.09. – 22.09.	Aviation	Sennheiser China
50+	Utrecht	19.09. – 22.09.	Consumer 50+	Sennheiser NL
Live 2001	Birmingham	20.09. – 23.09.	Consumer	Sennheiser UK
AES	New York City, NY	21.09. – 24.09.	Pro Audio	Sennheiser Electronic Corporation
		October		
Musikmesse	Zurich	12.10. – 15.10.	Music Industry	Bleuel
International Music Fair 2001	Kiev	Oktober	Pro Audio	Ukrainian Distrib. Ass.
BROADCAST SPAIN	Madrid	16.10. – 18.10.	Broadcast	Magnetron
HAK	Nuremberg	18.10. – 20.10.	Audiology	Sennheiser electronic
Mix Move	Paris	19.10 – 21.10.	DJs	Sennheiser France
CAPER	Buenos Aires	22.10. – 25.10.	Broadcast	ARS
SATIS	Paris	23.10. – 25.10.	Pro Audio	Sennheiser France
		November		
Music Live	Birmingham	02.11. – 04.11.	Music Industry	Sennheiser UK
Air Transport Ass. of Canada	Toronto, ON	04.11. – 06.11.	Aviation	Sennheiser Canada
Dubai Air Show	Dubai	04.11. – 08.11.	Aviation	Sennheiser electronic/Sennheiser UK
AOPA	Fort Lauderdale, FL	08.11. – 11.11.	Aviation	Sennheiser Electronic Corporation
SBES	Birmingham	14.11. – 15.11.	Broadcast	Sennheiser UK
ACF	Brussels	14.11. – 17.11.	Pro Audio	Sennheiser Belux
		January		
CES	Las Vegas, NV	08.01. – 11.01.	Consumer	Sennheiser Electronic Corporation
Winter NAMM	Anaheim, CA	17.01. – 20.01.	Music Industry	Sennheiser Electronic Corporation
		February		
SIEL	Paris	03.02. – 06.02.	Pro Audio	Sennheiser France
ENTECH	Sydney, NSW	04.02. – 06.02.	Broadcast	Syntec
		March		
DAGA	Bochum	02.03. – 08.03.	Acoustics	Sennheiser electronic
prolight+sound	Frankfurt	13.03. – 17.03.	Music Industry	Sennheiser electronic
Mondial Image Photo Son	Paris	22.03. – 26.03.	Consumer	Sennheiser France
SIB	Rimini	26.03. – 29.03.	Music Industry	Exhibo



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