wireless solution

POSTCARD EDITION 08/09

W-DMX™ PRODUCT RANGE

MADE AND DESIGNED IN SWEDEN

Are you wireless?

Greetings from

Singapore Flyer

Singapore, 2008

W-DMX™

Greetings from

Wicked

The Witches of Oz

Germany, 2008

MADE IN SWEDEN

Greetings from

A Night At The Pyramids

Egypt, 2007

POSTCARD EDITION 08/09

W-DMX™ PRODUCT RANGE

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The Company

CEO: Niclas Arvidsson

Wireless Solution Sweden AB was founded in 2003 by the people at the GSM Digital Network Industry, along with other professionals in the lighting industry. The company is responsible for the design and production of W-DMX™, the twice award winning wireless DMX system that is today becoming the standard for those that require the most dependable product available for transmitting DMX 512 wireless data and other lighting protocols

Wireless Solution makes large installations possible where running cable is not an option, as well as simplifying the set up in any other situation where time saves money in the lighting industry.

With W-DMX™ products on installations or rental projects it gives the user an interference free solution with simple plug-and-play technology. A complete range of products and accessories with world-class service and backup make W-DMX™ the number one choice of Wireless DMX technology.

The product range has indoor as well as IP65 rated outdoor models and can be used in even the most elaborate lighting situations. Products can be combined to distribute signals around corners and in multi-point situations, even with heavy radio traffic.

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W-DMX™ PRODUCT RANGE

The Technology

R&D Manager: Niclas Norlén

W-DMX™ is truly the only plug-and-play Wireless DMX product range on the market, using Time Division Multiple Access (TDMA) and sophisticated Frequency Hopping Spread Spectrum (FHSS) to avoid interference by jumping over 1000 times per second over 79 different channels. The product has been hailed by critics worldwide as the number one product for interference-free wireless DMX technology.

W-DMX™ was the first product in March 2007 to launch the interference free and Co-Existence technology. As the 2,45 GHz ISM freeband becomes more occupied it is important to offer a technical solution to work in Co-Existence with other wireless products like Wi-Fi Networks. With W-DMX™ you can do easy settings to avoid occupied space and work together without interference. W-DMX™ also supports new technology like RDM, but also supports Ethernet protocols like Art-Net and is prepared for future protocols such as ACN, ETC-NET and Strand showNET.

Our R&D Department offers advanced cell planning and on-site support for bigger projects, with the philosophy that nothing is impossible and we can make your projects both cost and time saving by using wireless technology instead of cables. Go Green, Go Wireless. Wireless Solution Sweden AB offers you the right way.

Wireless Solution Sweden AB has a complete in-house R&D department for software and hardware design and molding, and works closely with major manufacturers, lighting designers and production companies to produce what the market wants. And every product proudly carries the “Made in Sweden” brand.

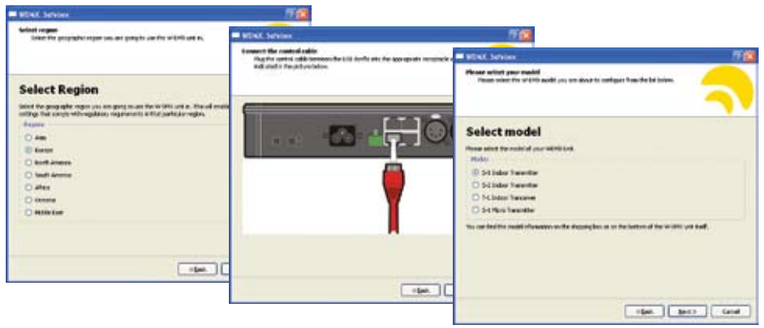
Interference Free

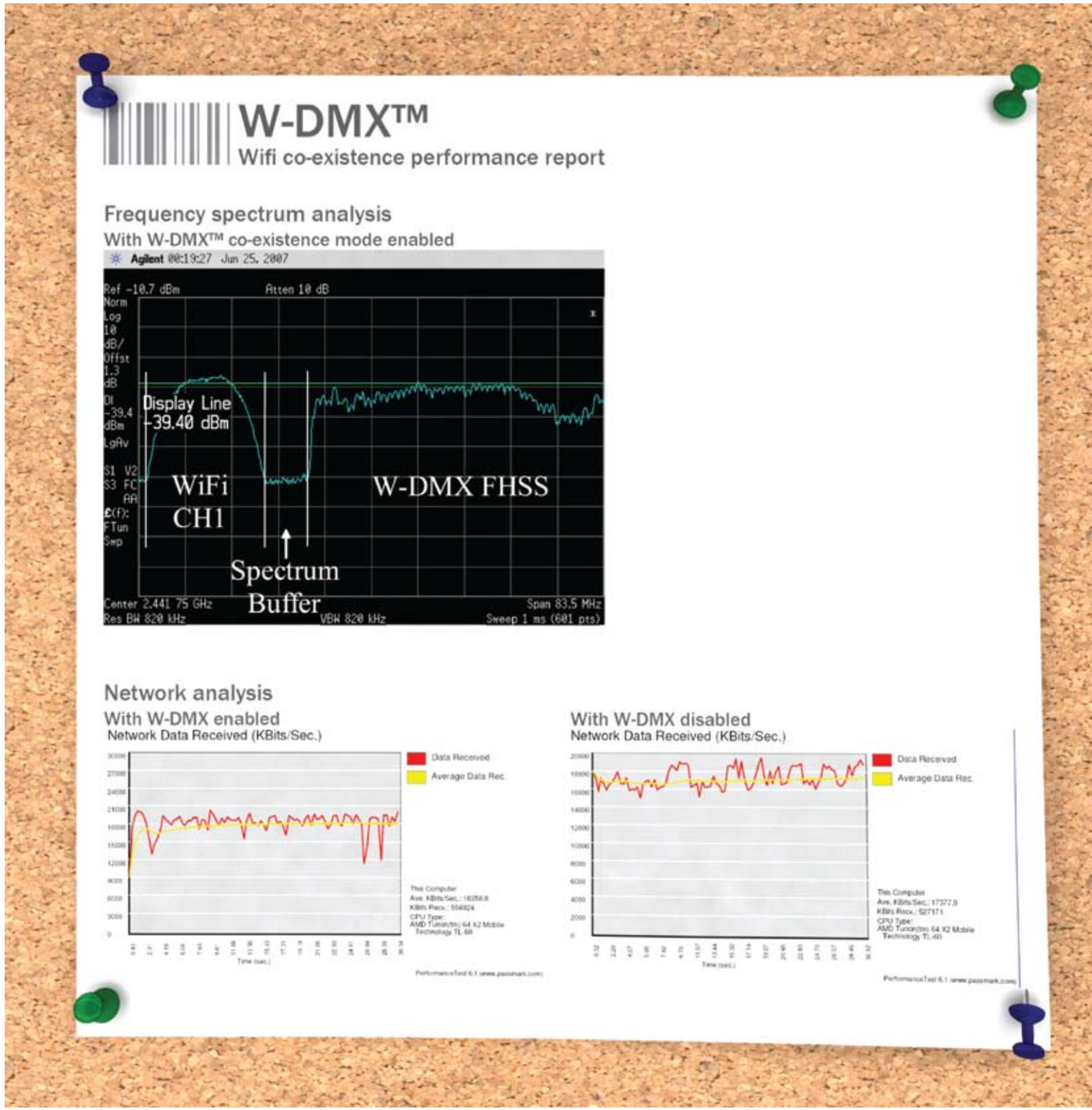
R&D Manager: Niclas Norlén

When we designed W-DMX™ we always had interoperability in mind, and when we look back at our experiences we could proudly say that we succeeded. With the Co-existence-mode enabled on the W-DMX™ products there is no barrier to perform perfectly with both W-DMX™ and W-LAN in the same area, with no interference between different wireless products on the same ISM freeband, for example W-DMX™ and Wi-Fi.

When you enable the Co-existence-mode, the W-DMX™ units will not use the W-LAN frequencies anymore and to be sure that no interference will occur it also skips the frequencies next to the W-LAN spectrum. As you can see on the charts on the next page, the W-LAN system in both scenarios was able to work at a bitrate of 18000 KBit/sec even if there was W-DMX™ system less then one meter away.

To activate the Co-Existence function, the user connects the W-DMX™ Transmitter to the computer with a USB Dongle and starts the W-DMX™ ToolBox. With the software you can do all settings in both basic mode for quick settings or in advanced mode that will give you more options and also control over the output power. You can also activate different software versions with different country regulations. A perfect toolbox that makes the job easy and quick.





BlackBox S-2000

Wireless Solution Sweden AB has done it again. The first company to launch a double universe transmitter that supports both RDM and Art-Net. BlackBox S-2000 is a 19" 1U Rack unit that is prepared for ACN Lite, ETC-NET and Strand ShowNET. BlackBox S-2000 is stackable for up to 32 DMX Universes and supports the W-DMX™ Co-Existence technology with plug-and-play technology.

With full RDM compatibility, the W-DMX™ BlackBox S-2000 is the only unit that supports remote addressing up to 512 fixtures in both Point 2 Point mode in daisy chain by cable and in Point 2 Multi-Point mode. This translates to major time savings in big rental productions. With the BlackBox S-2000, a new generation of Wireless lighting control products is born.

Before S-2000, the maximum number of universes one could operate wirelessly from one source was 16. Over the last few years, the size of productions that we've seen W-DMX™ used on has grown to monstrous sizes. Suddenly, 16 universes weren't enough. With BlackBox S-2000 you can now run 32 DMX Wireless Universes and still operate with the W-DMX™ Co-Existence mode to make sure that Wi-Fi and W-DMX™ work together without interference.

Also, with the emergence of more and more new technologies and protocols, we had to make the S-2000 compatible with everything, in order to integrate seamlessly into every application without worries of compatibility – the most notable being Wi-Fi, which is present in almost every corner of the world these days. W-DMX™ has always been designed and built to be interference free, and the S-2000 is the crown jewel of this achievement.

Total control
The easy understandable LED indicators on the front lets you quickly to get an overview of how the system is operating.

Prepared for a complex world
Beyond the DMX protocol the S-2000 is prepared for ACN Lite, ETC-NET Strand ShowNET.

RDM on unlimited fixtures with talkback for up to 512 fixtures.

Two is Better then one
The S-2000 has 2 separate DMX universes and can transmit 1024 DMX channels, without interference from W-LAN or other W-DMX™ units.

Co-existence with W-LAN & Wi-Fi
The S-2000 is compatible with coexistence which means you can work seamlessly in a W-LAN enabled area.

RP-SMA antenna
The S-2000 comes with a standard 2dBi indoor antenna

N antenna connector
All W-DMX™ products are delivered with a the industry standard connector type N.

For indoor antenna use we also supply an N-2-RP-SMA converter, free of charge.

Easy as always
Even if the S-2000 has 2 universes the ease of configuration hasn't changed.

The S-2000 has two function keys compared to the S-1, with one function key for each universe the configuration could not get much simpler.

Professional finish
Why should the best product on the market not have the best finish?

Well as you can see, it does.

Stackable
Some projects require thousands and thousands of DMX channels. Therefore the S-2000 W-DMX™ system is stackable up to 32 universes and still runt with Co-Existance with Wi-Fi and W-LAN.

19" rack model
S-2000 is the first truly 19" W-DMX™ unit on the market.

Configurations

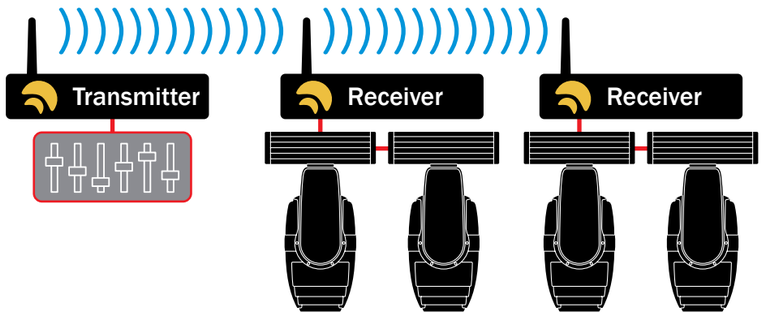
Wireless
Wired

Point-2-Point

Point-to-point systems are used when you want to send wireless DMX data from a console to a single receiver. As the receiver accepts all 512 DMX channels from the transmitter you can easily daisy chain more fixtures by cable from the original fixture that is wirelessly connected.

Point-2-MultiPoint

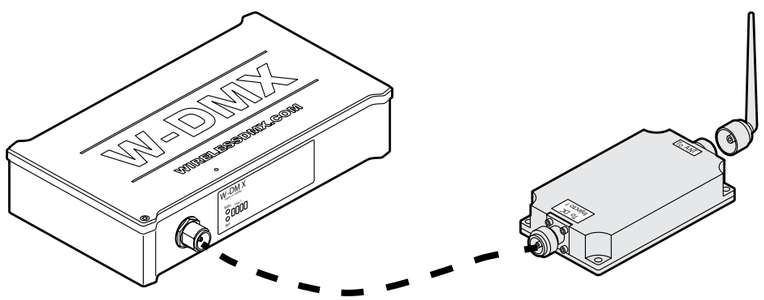
A multipoint W-DMX™ BlackBox system can support up to 512 individual receivers responding to a single W-DMX™ BlackBox transmitter. All receivers in a multipoint system will listen only to the designated transmitter and they will all receive the full 512 channels of the DMX universe. This makes it straightforward to connect single fixtures or daisy-chained groups of fixtures to any of the receivers in the system.



With W-DMX™ BlackBox S-1 you can stack up to 16 DMX Universes and with W-DMX™ BlackBox S-2 and S-2000 you can stack up to 32 DMX universes from the same console.

Booster

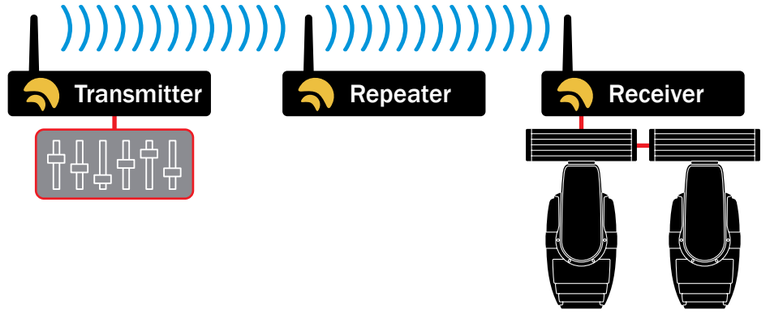
If the receivers is in the line of sight of the transmitter but the signal is not quite strong enough you can use a booster get a much more strong signal.

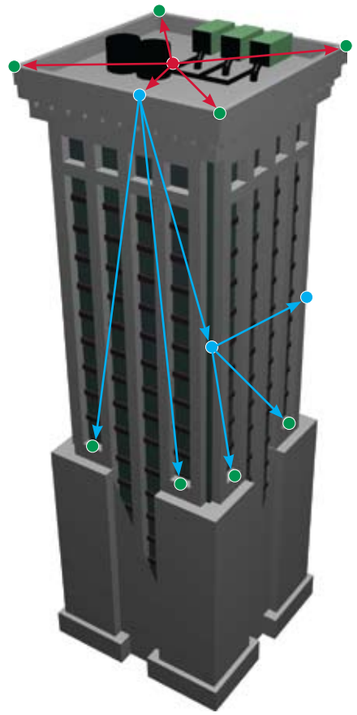


Repeater

Repeater configuration

Even if the W-DMX™ signal is very strong, sometimes corners or obstacles make it impossible for the signal to get to its destination. You can then set up a W-DMX™ repeater to repeat the signal. A repeater can also be used like a corner-bender when you want to cover all 4 sides of buildings and bigger objects.





In this scenario there is one transmitter on the ceiling which transmits a signal to four directly receiving receivers.

The transmitter also sends the signal to a repeater which in its turn sends the signal to two receivers and to one more repeater.

This pattern can be repeated as many times as necessary.

- Repeater (RP-512)
- Transmitter (T-1)
- Receiver (R-512)

W-DMX™ AROUND THE WORLD

Taking Chances Tour
Celine Dion World Tour

Evangel Cathedral
Upper Marlboro, Maryland

Cirque Du Soleil
Las Vegas, USA

Times Square
New York, USA

Hollywood Movies
Los Angeles, USA

Big Dam Bridge
Little Rock, Arkansa, USAs

Televisa
Mexico

Itaipu
Brazil & Paraguay.

Vino del Mar
Chile

Scandinavium
Göteborg, Sweden

Royal Albert Hall
London, UK

Wicked - The Witches of Oz
Tour, Germany

Dracula
Gävle, Swden

Eurovison Song Contest
Helsinki, Finland

60th Anniversary
Israel

Night at the Pyramids
Cairo, Egypt

Stardust Awards 2007
India

Olympic
Bejing, China

TED
Tokyo, Japan

Travel Happily in China
Tour, China

Singapore Flyer
Singapore

Singapore Paragon
Singapore

Sydney Harbour
Sydney, Australia

4x R-512 Receiver, 2x S-1 Transmitter

XXIX Olympiad in Beijing

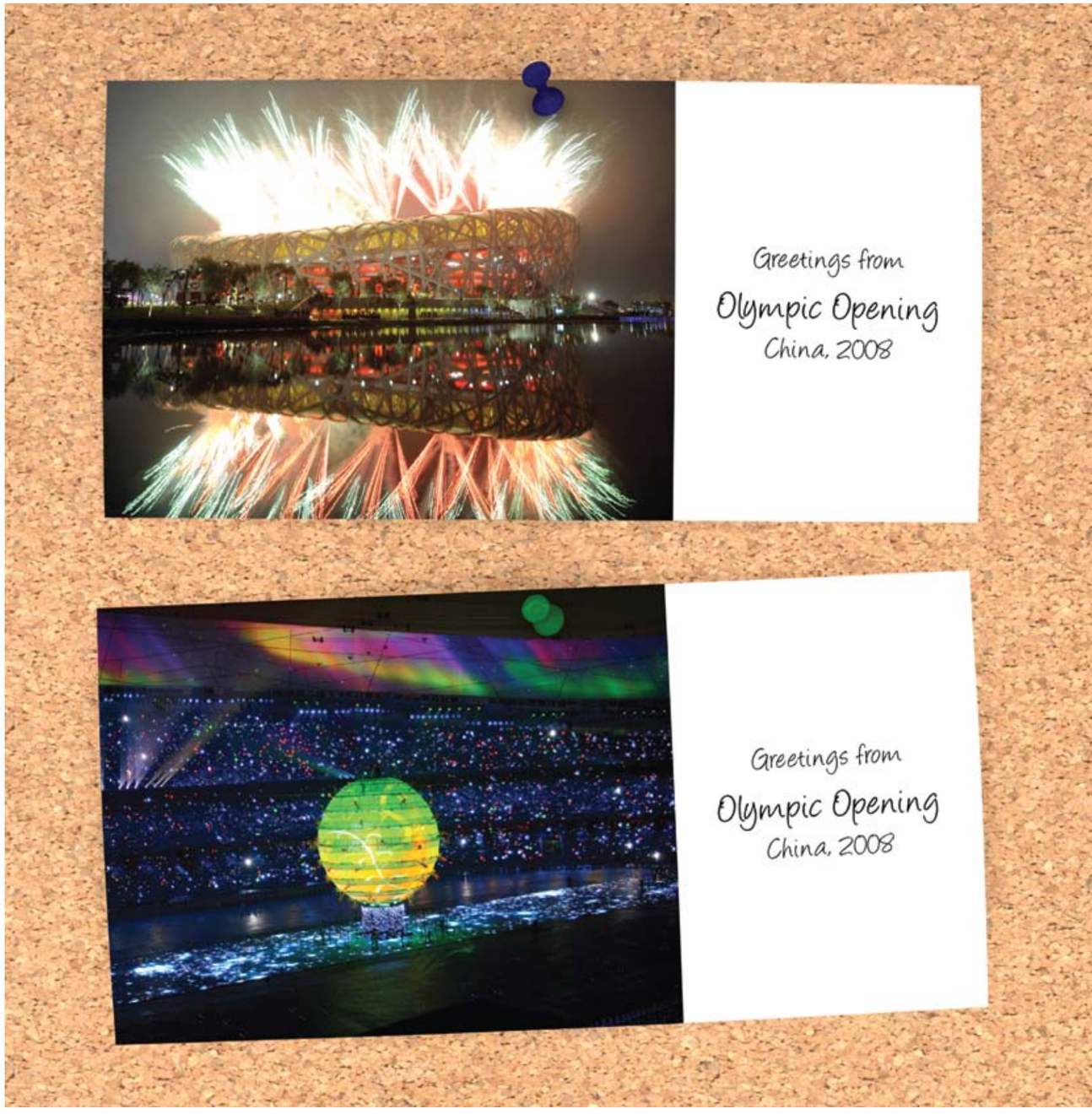
Lighting designer: Mr Sha Xiao Lan
Control System & Broadcast Lighting Consultant: Paul Collison
Lighting Assistants: Quan Xiaojie Zhang Wei, Wang Zhiyi Ma Jiebo, & Wang Tong
Supplier: Leifull, Guangzhou

In one of the most visually breathtaking Olympic Opening Ceremonies of all time, the “One World, One Dream” extravaganza rightfully claims the largest viewing audience of all time. The Opening Ceremony was held on 08.08.08 at 8pm in the Beijing National Stadium, - the “Bird’s Nest” - which can seat as many as 91,000 spectators. An estimated 22,000 performers took part in the gala, with 15,000 costumes used, implementing lighting, movement, and astounding choreography.

More than 2,300 DMX-controlled fixtures were used for the show which included 112 Clay Paky Alpha Wash, 980 Martin Mac 2000 Wash, 162 Martin Mac 2000 XB Wash, 308 Vari*Lite 3500 Spot, 316 Vari*Lite 3000 Spot, 180 Vari*Lite 3500 Wash, 12 High End SHOWGUN, 20 Ushio 2k Xenon Follow Spot, 16 Kupo Super Sol 3k Xenon Follow Spot, 204 PureLight City Color, 80 FineArt Fine2000 Wash, 32 FineArt LED Par Can, and 46 Sliver Star LED bank. Lighting control was done on GrandMA consoles.

The video system was conducted under the creative direction of media artist Andree Verleger from Germany. Projected images and video were all driven by 120 High End Systems Axon Media Servers, controlled by 6 Wholehog 3 Consoles, using 37 universes of DMX. 78 of the projectors were each fit with HES Orbital Heads. The ring around the inside of the top of the stadium was rigged with 21 groups of triple stacked projectors. This helped to realize another record in this show: the world’s largest projection screen at around 600m2.

Guangzhou Leifull supplied W-DMX™ for the opening ceremony to positions where cable was not an option. There were thousands of spectators, actors and moving objects to coordinate together for the show, and W-DMX™ was the only safe solution. With the W-DMX™ Cloned system, wireless redundancy was created between transmitter and receivers. The team had 100% signal for the entire performance..



7x R-512 Receiver, 2x S-1 Transmitter

Wicked - The Witches of Oz

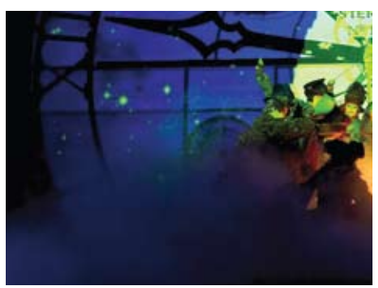
Lighting designer: Kenneth Posner
ALD: Michael Odam & Karen Spahn
Supplier: Lightpower GmbH

W-DMX™ held a major role on the set of “Wicked – The Witches of Oz” in the Palladium theatre, Stuttgart, Germany. Every evening, the Palladium would transform into a mythic world populated by witches, flying monkeys, a giant dragon and even a Billy goat. The high-energy musical was the perfect setting for W-DMX™.

Since many stage elements required both DMX signal and the ability to move about, W-DMX™ was the number one choice for signal. The show was controlled with one GrandMA full-size and one GrandMA light. The lighting rig included over 130 Rainbow PRO scrollers, which colored the stage in “Wicked-Green” and other colours. In addition, 34 Vari*Lite VL3000 Q spots, 34 Vari*Lite VL2500 spots, 30 Vari*Lite VL2500 wash lights, 3 Robert Juliat Cyrano, 329 ETC Source Four, 2 De Sisti Piccolo 10kW and 28 Major PAR Birdies lit the show. 46 major power distributions delivered the current for the whole rig.

The entire production ran without a single interruption and the show won rave reviews from both the audiences and the crew.

Photo: Copyright – Stage Entertainment



7x R-512 Receiver, 2x S-1 Transmitter, 8x B-1000 Outdoor (5dB antenna)

Céline Dion – Taking Chances

Lighting designer: Yves “Lapin” Aucoin
Lighting Project Manager: David Bergeron, Solotech
Supplier: Solotech

The Taking Chances Tour is the most recent concert tour by Canadian pop singer Céline Dion, in support of her latest album Taking Chances, released in November 2007. The yearlong tour visits 5 continents, 24 countries and 84 cities, with a total of 120 performances.

The show is directed by Jamie King, who lists Madonna’s Confessions Tour, Christina Aguilera’s Back to Basics Tour, as well as tours for Kanye West and the Spice Girls among his credits.

The tour setup is a 360-degree production, designed ”in the round” style, and includes about twenty LED screens, including one that orbits the stage, plus conveyor belts and elevators. The touring system is provided by Montreal, Canada-based Solotech, which is also the provider for various Cirque du Soleil productions and Dion’s resident show.

David Bergeron, Solotech Lighting Project Manager explains, “For the W-DMX™ we have a very simple setup, which is what I like from Wireless Solution – it’s very simple to use. We have 8 pods in the audience and we take the power for these units wherever we find it, so sometimes it is quite far away from dimmer city and we don’t want to run 1200 feet of DMX, so we have a transmitter in front with a BlackBox B-1000 Outdoor, Booster 1000mW and receiver with the 5db antenna, so we can cover a large range in the stadium. We also have props with lights in it that need to work wirelessly so we have 8 RC4 wireless dimmers who work with a Wireless Solution pico receiver.”

Bergeron continues, “I did Cirque du Soleil’s Delirium as head electric with several first versions of the W-DMX™ system and was extremely satisfied with the way it worked, but the second version is just perfect! It saved us a lot of cable and time.”

“Céline’s fans know they get a tremendous show,” says FOH engineer, Francois “Frankie” Desjardins. “She always delivers her best, and she demands the best from us, and from her equipment. That’s what we deliver.”

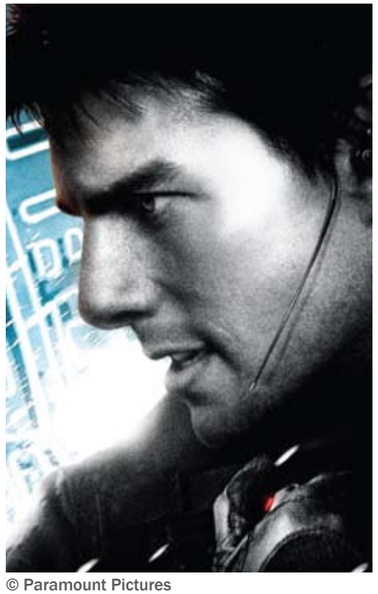
W-DMX™ Takes on Hollywood

We all think that big budget movie productions have the time and resources to make sure the results are perfect, but in reality, they actually have a lower threshold of mistakes than most people believe. So it's no surprise that W-DMX™ has been used on many major motion pictures over the last few years with great success. There are some talented individuals pushing networking and wireless technology into the lighting control of the films made by the major studios.

Joshua Thatcher with the Local 728 in Hollywood was the first to use W-DMX™ in a major feature film, Spiderman 3, and has continued to employ it in movies like Mission Impossible III, Transformers and Iron Man. "W-DMX™ is something that I don't hesitate to use at anytime," he explains, "I regularly use four to eight universes of it, due to the fact that most of the sets that we rig encompass a large amount of area. In these situations I have found it highly reliable and solid. With your reputation at stake on a large budget project with sometimes only one chance to get the shoot, this is important. The equipment makes otherwise situations that seem impossible possible. I have used it covering large areas, but also have placed it into very specialized situations. One example was a helicopter install for Mission Impossible III running Color Kinetic Color Blast LED's rigged off of battery power. I was on the ground and I was able to program an effect that ran as it landed and took off during a chase sequence. I was able to carry it for about half a mile while one camera was inside still recording. Even the last minute added piece of equipment really is saved by having a couple of W-DMX™ units on hand. The people in the company are great to deal with and I recommend this product to everyone."

Another user of W-DMX™ in major motion pictures is Jason McKinnon of Electric Aura Lighting Design, who has used W-DMX™ on the movies Fantastic Four 2: Rise of the Silver Surfer and many others soon to be released. McKinnon explains, "For Fantastic Four 2: Rise of the Silver Surfer we used six outdoor units in a downtown environment, which was a little scary considering the amount of frequencies bouncing around. I could see 25 wireless networks from the transmitter location alone. We were transmitting from rooftops to the street level, and also to the 25th floor of the building down the street. With all of the stunt work and cable rigs for special effects, running cable was not an option. The system performed incredibly well considering that for two nights, it was snowing and -22deg C, very unlike Vancouver. If there had been any problems, we would have been dead in the water."

He continues, "It is getting more common these days to have all lights on a set into dimming. When in an outdoor environment with multiple dimmer locations, W-DMX™ is becoming the ideal solution. Power is usually fed by multiple generators located close to each dimmer shack but control always has to go back to one point. W-DMX™ allows this to happen easily. W-DMX™ is simply the best available!"



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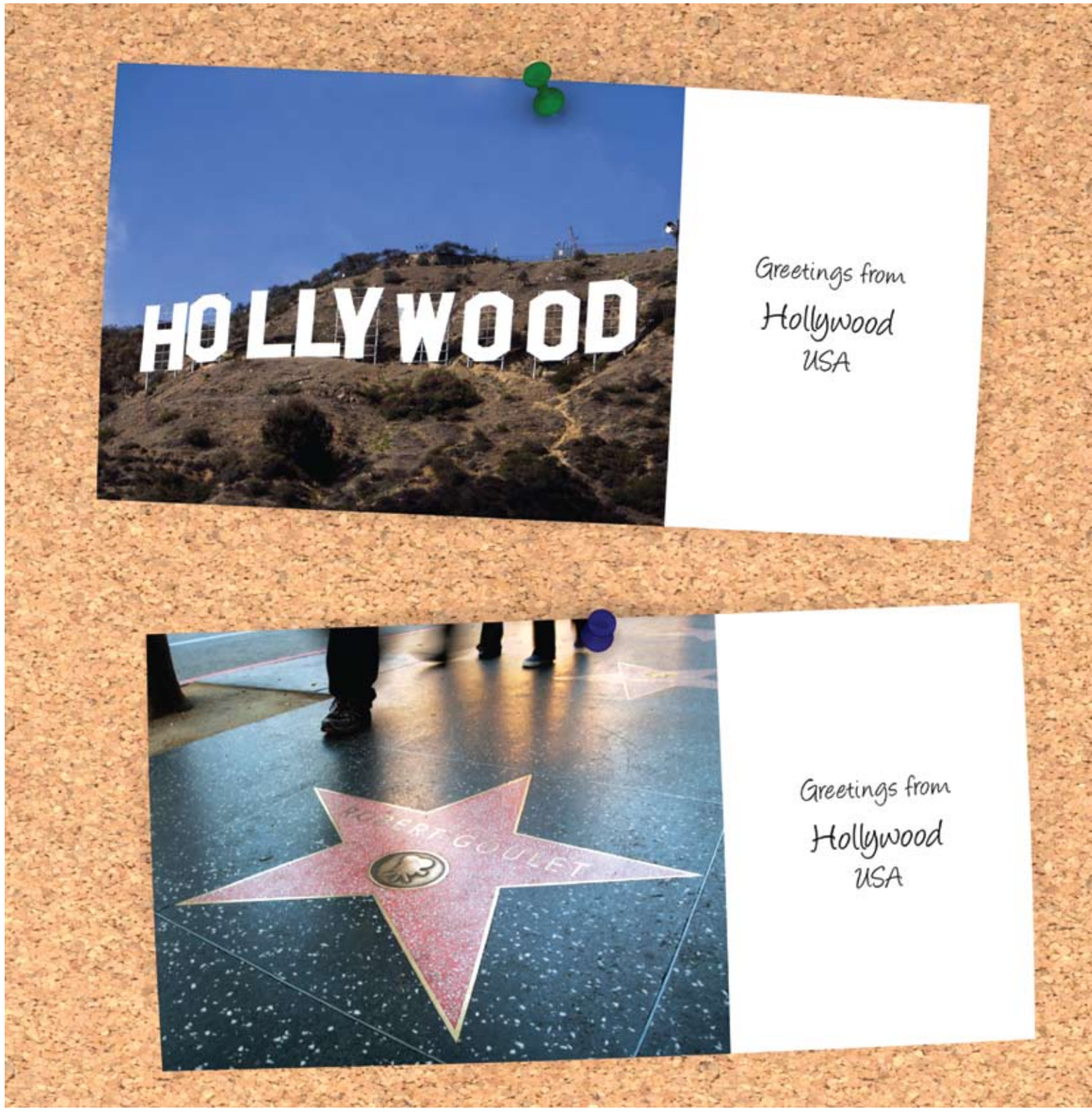


W-DMX™ Rocks Pemfest 2008

How do you light a farmer's field that includes two stages, two enormous tents and enough camping for 40,000 people without ruining the festival atmosphere?

This was the question that Mark Laughton of Viridian Power, the site power and lighting contractor for Live Nation's Pemfest 2008, brought to Ian Gordon of Christie Lites Vancouver. The answer was to have the ability to control the entire site so that when performers such as Coldplay and Tom Petty were playing, the ambient level across the sight could be reduced. Also, because of the size of the site, the ability to remotely increase or decrease light levels in zones for security or other purposes was a huge advantage if achievable.

Jason McKinnon from Electric Aura Lighting Design was consulted to see if W-DMX™ from Wireless Solution might be able to achieve this goal. The site was huge to say the least with 19 lighting towers, with the furthest light tower being over 1 km (.6 miles) from the console position. McKinnon's experience with W-DMX™ had mainly been on film sets where unusual conditions prevail, so he was confident in the ability of the system.

Mike Dickenson and Ryan Sheeley from Christie Lites were responsible for installing the site lighting and had never used wireless DMX, so they were a little concerned at how hard it would be to operate. An hour in the shop was all it took to prep all 20 of the W-DMX™ units and both Dickenson and Sheeley were surprised at how straightforward it all was. McKinnon was also the Lighting Designer for the Bacardi Tent at the festival so he would be available if help was needed, which reassured the Christie Team.

McKinnon shared his story: "We used a variety of different antennas on the receivers depending on distances, and all of the units performed flawlessly. The only incident may have been Mike stuck in a lift during focus while a bear and her two cubs decided to sit at the base and investigate his bicycle, but the wireless was unaffected!"

28x R-512 Outdoor Receiver, 4x S-1 Outside Transmitter

Singapore Flyer

Lighting Designer: Douglas Brenan, Project Lighting Design
Project Manager: Tony Symms, CLA
Supplier: Creative Lighting Asia

The Singapore Flyer is a giant observation wheel on the southeast tip of the Marina Centre in Singapore. Reaching an astounding total height of 165 meters (541 ft), the wheel exceeds the height of the London Eye by 30 meters (98 ft). The observation wheel officially opened to the public on March 1, 2008.

The designers envisioned a dynamic display of light and changing colour with an eco-friendly solution. Project Lighting Design (PLD) worked together with Philips SSL Solutions for the lighting design. Philips SSL Solutions recommended the LED modules to don the spokes and capsules. The biggest challenge was getting the DMX signal to the units. This required some innovative wireless technology and after careful planning, W-DMX™ was chosen as the most reliable choice. 4 DMX Universes, 28 Receivers.

Because the wireless system was installed on a moving object, it required advanced cell planning by a Wireless Solution radio technician. It involved thousands of channels of DMX and it was essential to make sure that all LED had 100% signal when the wheel was moving and to make sure all wireless systems worked flawlessly without interference from each other or other public wireless equipment.

“Working on a large moving structure made this a very challenging project,” says Tony Symms of CLA, “All installation, testing and commissioning work had to be organized with the main contractor to get the wheel into the right position when required. We also had a very limited working period, as we could only work from late at night until early morning, in order to prevent delaying other work and the completion of the wheel.

“This Singapore Flyer installation would have been impossible using cable. W-DMX™ also gave the lighting designer new possibilities, for both indoor and outdoor installations, that were simply not possible in the past. We are all extremely pleased.”

36x SGM Palco 5 RGB LED (onboard W-DMX™ receivers), 1x S-1 Transmitter

Sydney Harbour

Lighting Designer: Mark Hammer, Hammer Lighting & Simon Crow, Chameleon Touring

Supplier: ULA

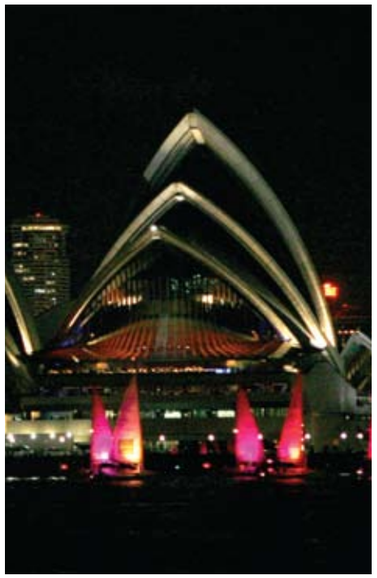
During the APEC summit in Sydney, Australia, an entire fleet of yachts sailing through Sydney Harbour were illuminated with SGM Palco 5 fixtures with OEM installed W-DMX™ receivers. The exhibition was part of a showcase for the leaders and ministers from 21 APEC economies, displaying the best that Sydney has to offer. The display was the first of its kind.

Hosted at the Sydney Opera House, the display was a formation and exhibition sail involving 5 tall ship and 18 30-foot yachts, which followed a massive fireworks display.

Each of the yachts had their sails illuminated by two SGM Palco 5 RGB LEDs with onboard W-DMX™ receivers, on either side of their sails. The effects included colour changing, rainbow effects, chases and the ability to light up each side differently. The LEDs were powered only by petrol generators.

DMX control was provided by Wireless Solution's W-DMX™ system. The entire fleet was controlled by one W-DMX™ transmitter that was fitted with an outdoor aerial and signal booster. This configuration was designed to transmit to the W-DMX™ receivers within a half-mile radius (1km), however it did better, and controlled the Palcos at much greater distances. At one stage the control boat containing Mark Hammer, a Grand MA console, and the W-DMX™ transmitter was located under the Harbour Bridge, while controlling the yachts in White Bay, an approximate 6.4 km (4 mile) distance. According to Hammer, even over this distance, the W-DMX™ "worked effortlessly and never skipped a beat."

Both Crow and Hammer agree that this project would have been impossible without the W-DMX™ system and low power consumption of the Palco 5. Crow asked, "What would I have done – put DMX controllers on every yacht? That would never have worked!" He goes further to say that the Wireless Solution system "worked all day and all night without a hitch, and continued to do so for the entire event." He even suggests that we will see a lot more events combining wireless systems and LED due to the flexibility and colour options such a system provides with the benefits of low power consumption.



10x R-512 Receiver, 5x S-1 Transmitter

Beladi – A Night at the Pyramids

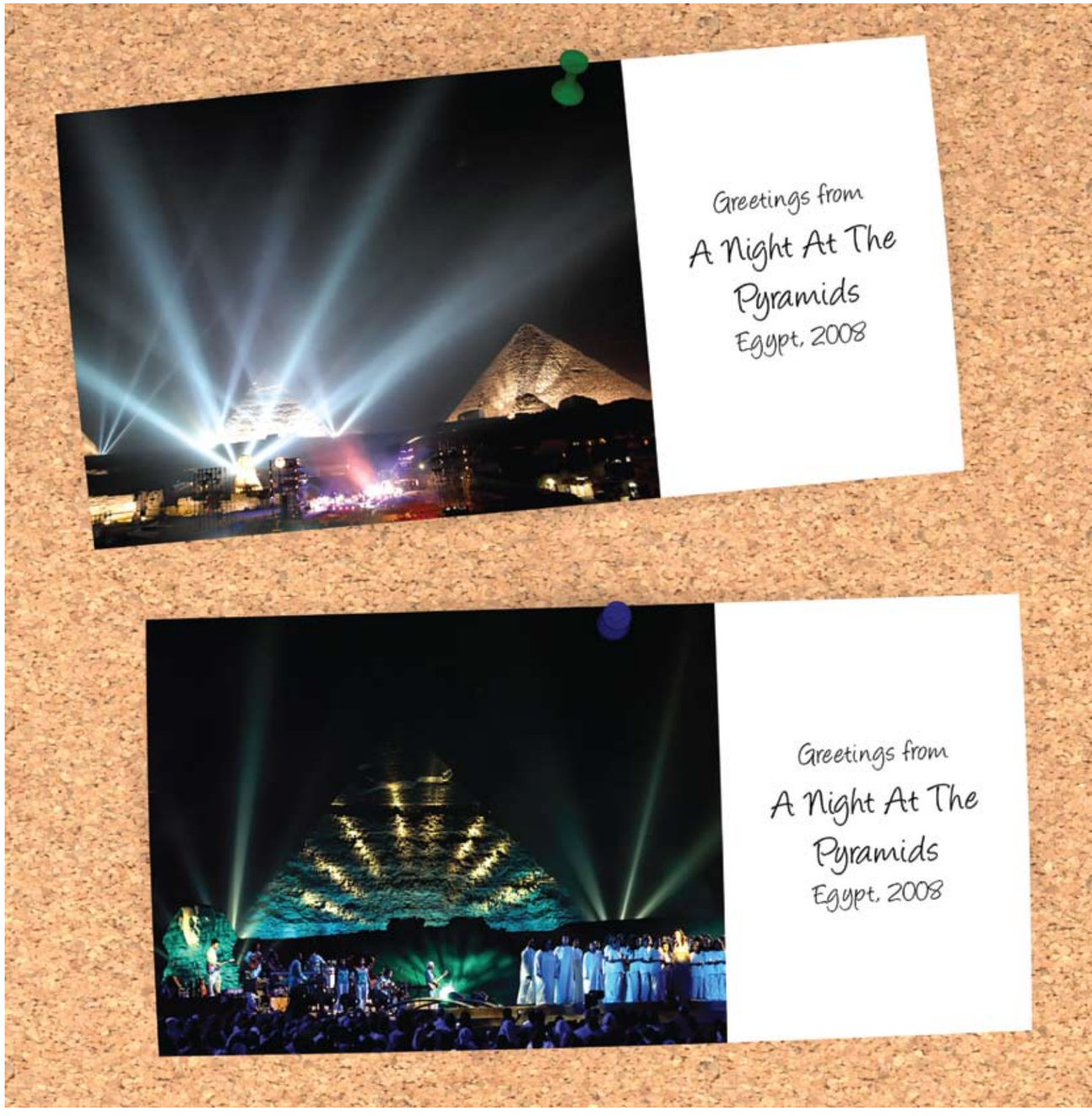
Lighting Designer: Matthieu Larivée, Luz Lighting Design
ALD: Valy Tremblay, Proluxon
Supplier: Procon Belgium

W-DMX™ made a concert at the Pyramids of Giza worthy of a Pharaoh. “Beladi - A Night at the Pyramids” was the first “made for television” concert ever recorded at this historical site. The concert featured Quebec singing superstar Chantal Chamandy, accompanied by the Cairo Symphony Orchestra performing for thousands of spectators, with the pyramids and the Great Sphinx providing a spectacular backdrop.

Lighting Designer Matthieu Larivée of Luz Lighting Design and Assistant LD Valy Tremblay of Proluxon designed a colourful array of effects on the massive structures using almost 600 fixtures to achieve the perfect look to accompany this historical event. The landscape provided the biggest challenge, the shortest distance from console to fixture was approximately 1000 meters (.6 miles) and the longest more than 1800 meters (1.1 miles), consisting of rough desert hills and rocky terrain. The only logical solution for DMX control of the massive equipment list was W-DMX™ by Wireless Solution.

Tremblay was thrilled with W-DMX™, citing a number of reasons it was so valuable during the project. “I’ve worked with W-DMX™ in the past on elaborate shows such as Cirque du Soleil’s Delirium and knew it was reliable,” he says, “Not only is it impossible to run cable when dealing with set ups of this magnitude, but we were under extremely tight time constraints. We only had 8 days from the time the equipment arrived until the actual concert to get almost 600 fixtures up and running – and they were scattered over the span of an entire square mile of highly protected land. Even if we had that much cable, it would have taken weeks and made an unsightly mess.”

Tobias Rylander, lead on-site W-DMX™ technician, was equally impressed, “It’s easy to be skeptical when you see the size of these pyramids, not to mention the other factors like the intense heat and the amount of broadcast equipment, plus thousands of people with cell phones – we even had camels walking around the equipment! But the W-DMX™ signal was stable the entire time without a single interruption.”



13x R-512 Outdoor Receiver, 1x S-1 Outdoor Transmitter

Big Dam Bridge

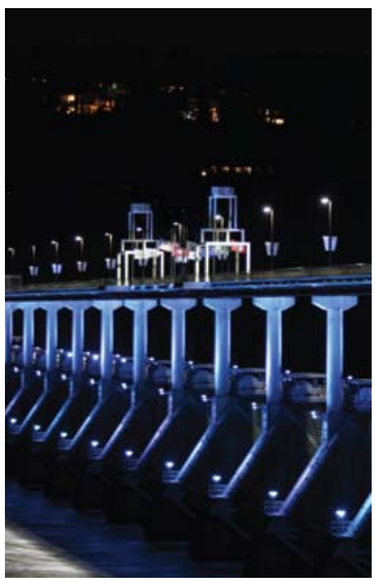
Lighting Designer: John Rogers, John Rogers Design
Supplier: Illumivision

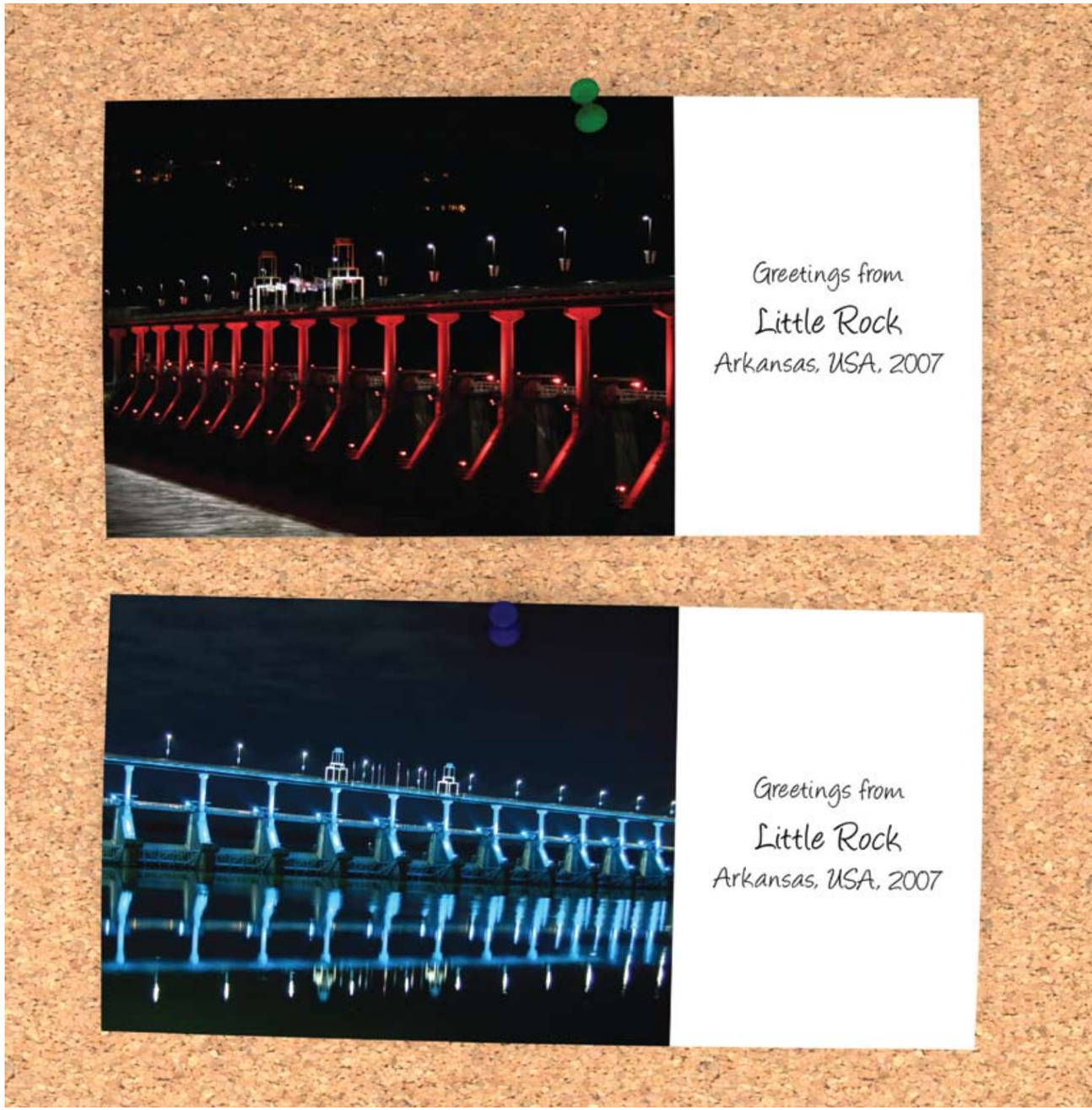
Wireless Solution Sweden AB and Illumivision, Inc. recently turned the Murray Lock and Dam Bridge in Little Rock, Arkansas into a spectacular tourist attraction. The newly constructed pedestrian and bicycle bridge over Murray Lock and Dam, dubbed the “Big Dam Bridge,” recently held a special ceremony to show off its new look, bejeweled with colored lights.

Illumivision, Inc. of Edmonton, Alberta worked in conjunction with lighting designer John Rogers of John Rogers Design in Little Rock Arkansas during the design and installation of the bridge lighting. 169 Illumivision fixtures are installed at the base of the 13 piers across the span of the dam. The fixture is an IP66-rated wall-washing LED that generates color-changing effects, perfectly suited for the application.

Derek Pogany of Illumivision explained, “Originally the lighting for the bridge was to be designed with 1000W metal halide lamps with blue dichroic filters. A mock up was completed in the fall of 2004 by Illumivision to demonstrate the effect and benefits of LED lighting. The Light Wave fixture, 84W and 108W RGB fixtures give the flexibility to control color-changing effects, which makes the overall effect that much more dynamic.”

The challenge was to provide DMX to 13 piers along the span of the bridge. The only practical solution was to use Wireless DMX. Pogany explained, “There was no question about choosing W-DMX™ by Wireless Solution for this install. It had to have an IP65 rating and operate without any interference.” One W-DMX™ transmitter with 100’ antenna cable, RF booster and a 14dBi antenna sent signal to 13 W-DMX™ receivers with 26’ antenna cables and a 2dBi antenna installed on every pier, each with a receiving antenna that feeds to an enclosure with 24 VDC power supplies and three-output DMX splitters. The distance is 300’ from the transmitter to first pier antenna, and 70’ between each pier. Pogany said, “Since the moment the lights turned on at the opening ceremony, we haven’t had a single problem, and everyone is thrilled with the results. The lighting makes the bridge a spectacular sight and a special attraction for the city of Little Rock.”





The BlackBox Indoor Range

- ✓ One-Button-2-Go
- ✓ 2,401 - 2,479 Ghz
- ✓ Optional built-in battery
- ✓ 512-1024 channels
- ✓ N-antenna
- ✓ W-DMX™ compatible
- ✓ W-DMX™ Co-Existance

The BlackBox indoor range features the superior W-DMX™ technology inside a compact shell.

All products use a combination of some of the most advanced technologies available, including Time Division Multiple Access (TDMA), sophisticated Frequency Hopping Spread Spectrum (FHSS), and Co-Existence with Wi-Fi. The Indoor range has a product for every situation, promising interference-free operation and plug-and-play ease of use.

The robust design and easy-to-understand controls make this a favorite product of users from around the world.

Item description	*Item no*	*Internal battery*	*DMX-universes*
BlackBox T-1 Transivier	A40003	Yes	1
	The W-DMX™ BlackBox T-1 is the world first transcevier which is perfect in the rental industry where you never know if you need a receiver or a transmitter.		
BlackBox S-1 Transmitter	A40001	No	1
	The W-DMX™ BlackBox S-1 is a user-friendly single DMX universe transmitter.		
BlackBox S-2 Transmitter	A40005	No	2
	The W-DMX™ BlackBox S-2 is the world´s first transmitter for dual DMX universes. It transmits two entire DMX universes - 1024 channels - at full refresh rate.		
BlackBox R-512 Receiver	A40102	No	1
	The W-DMX™ BlackBox R-512 indoor receiver is the original BlackBox R-512 is a user-friendly receiver with “One-Button-2-Go” technology. The R-512 receives all 512 channels.		

Radio	
Frequency	2,45 GHz
Antenna fitting	N & RP-SMA Antenna

Measurements	
Metric	219 x 45 x 131 mm
Imperial	8.6 x 1.8 x 5.2”

The BlackBox Micro Range

- ✓ One-Button-2-Go
- ✓ 2,45 GHz
- ✓ Built-in battery
- ✓ N-antenna
- ✓ W-DMX™ compatible
- ✓ W-DMX™ Co-Existance

The BlackBox Micro range features the superior W-DMX™ technology inside an even more compact shell with a sleek design.

The Micro range delivers all of the ease, dependability and interference-free operation of the full size BlackBox products, in a compact, lightweight casing, perfect for smaller applications.

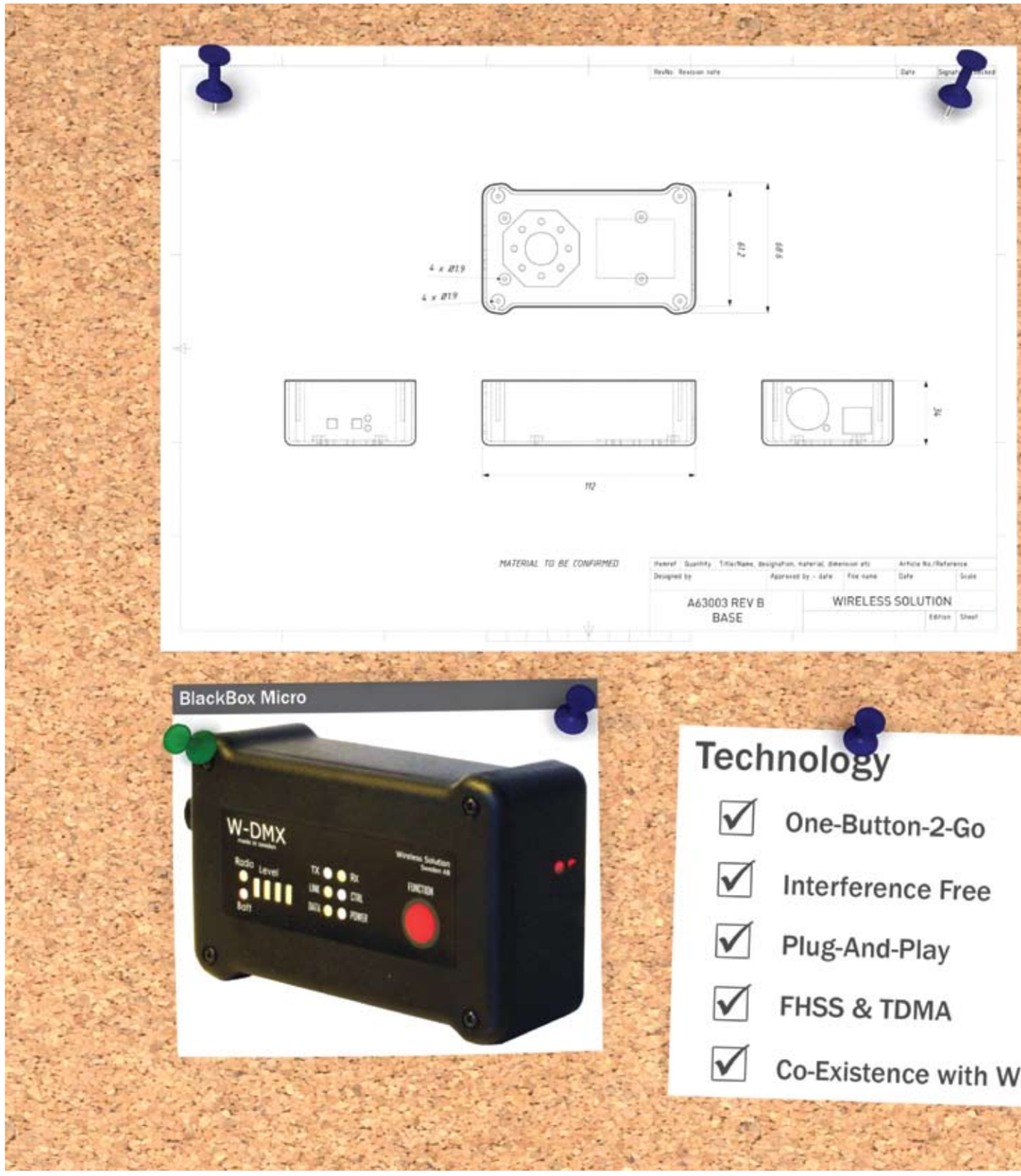
In spite of the compact size, the Micro still provides battery backup up to 6 hours* to operate seamlessly in the event of power loss.

*Not featured in the S-1 Lite Without Battery.

Item description	*Item no*	*Internal battery*	*DMX-universes*
BlackBox S-1 Lite Micro Transmitter Without battery	A40008	No	1
	The Micro S-1 Lite is the smallest of them all and have all the feature that Micro S-1 have but without a battery. Perfect for shorter distances up to 200 meters (600ft)		
BlackBox S-1 Lite Micro Transmitter With battery	A40006	Yes	1
	A complete W-DMX™ S-1 system in a compact package, that also inlcude a powerful battery backup, which will keep the sender active for up 6 hours.		
BlackBox R-512 Micro Receiver Without battery	A40101	No	1
	The W-DMX™ BlackBox R-512 Micro receiver is a lightweight and compact W-DMX™ receiver, but still have all the features of the incredibly popular W-DMX™ BlackBox R-512. The unit also features an internal battery backup to provide up to 6 hours of continuous operation without power input.		
BlackBox R-512 Micro Receiver With battery	A40100	Yes	1
	The W-DMX™ BlackBox R-512 Micro Lite receiver is the most lightweight W-DMX™ receiver ever, but still have all the features of the incredibly popular W-DMX™ BlackBox R-512.		

Radio	
Frequency	2,45 GHz
Antenna fitting	No Antenna connector, Built-in Antenna.

Measurements	
Metric	115 x 40 x 70 mm
Imperial	4,5 x 1,6 x 2,8”



The BlackBox Outdoor Range

- ✓ One-Button-2-Go
- ✓ 2,401 - 2,479 GHz
- ✓ 512-1024 channels
- ✓ N-antenna
- ✓ W-DMX™ compatible
- ✓ W-DMX™ Co-existance

For the really tough jobs, look no further than the BlackBox outdoor range, featuring the superior W-DMX™ technology inside ready-for-action casing.

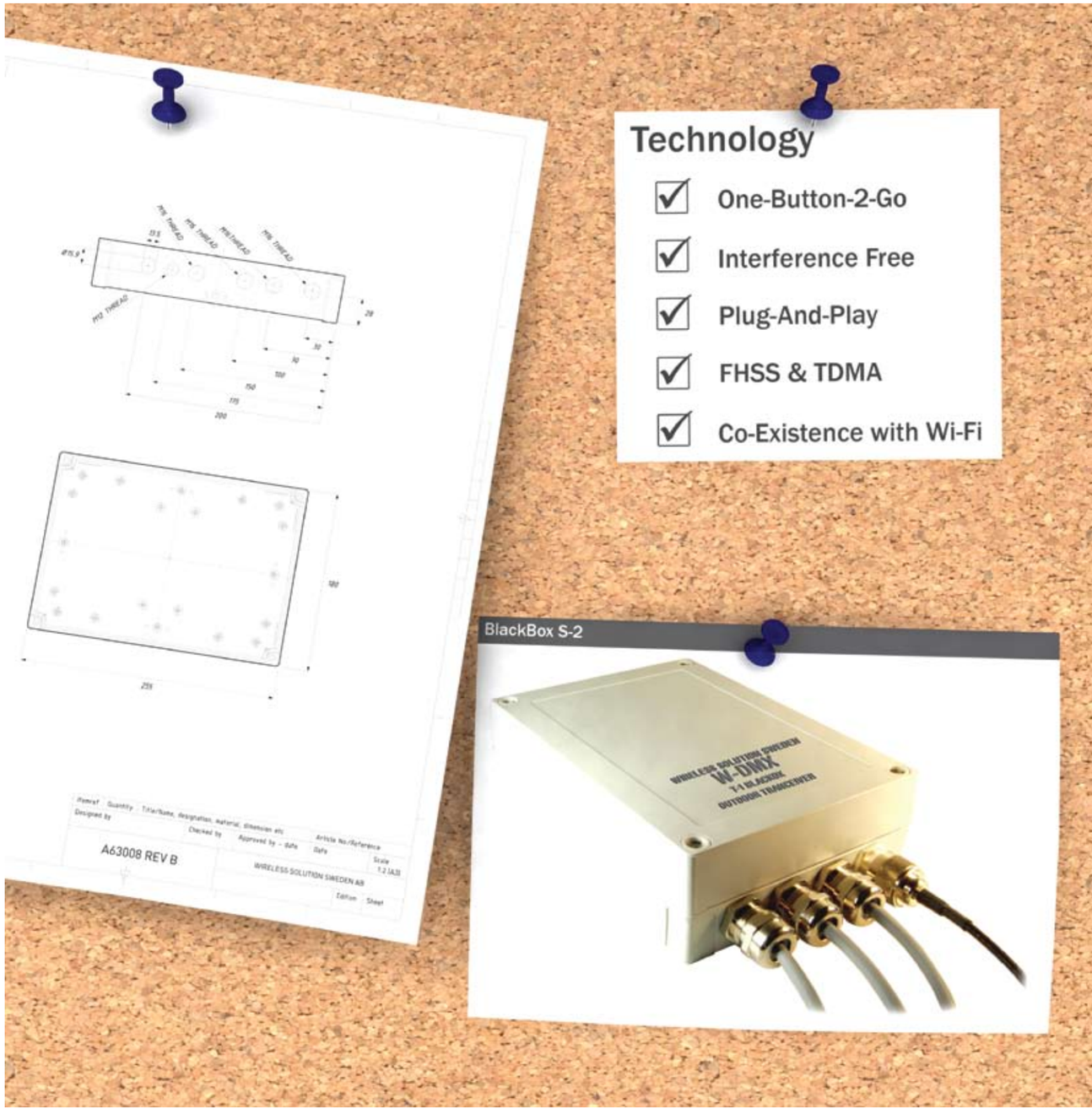
Designed with the most demanding applications in mind, the outdoor product line is built with robust features and superior enclosures, made to withstand the harshest weather conditions. All products are IP65 rated and tested in climates from extreme heat to the coldest conditions on earth.

A full line of accessories including outdoor antennas are also available, and just as rugged as the rest of the line.

Item description	*Item no*	*Internal battery*	*DMX-universes*
BlackBox S-1 Transmitter	A40002	No	1
	The W-DMX™ BlackBox S-1 is designed for installation in both indoor and outdoor use and are delivered with wall bracket installation kit. Any products in the outdoor range can be order in custom request RAL colors.		
BlackBox S-2 Transmitter	A40004	No	2
	The W-DMX™ BlackBox S-2 Outdoor transmits two entire DMX universes - 1024 channels - at full refresh rate, and is compatible with all W-DMX™ products.		
BlackBox R-512 Receiver	A40103	No	1
	The R-512 Outdoor receives all 512 channels (one universe) DMX wireless through the W-DMX™ technology that is proven to be safe, reliable and easy to use.		

Radio	
Frequency	2,45 GHz
Antenna fitting	N

Measurements	
Metric	180 x 130 x 50 mm
Imperial	7.1 x 5.1 x 2.0”



The BlackBox Accessories

W-DMX™ is not only the most reliable product for transmitting wireless DMX. It also provides accessories for every situation to ensure that the signal will make it to its destination.

The BlackBox Booster is a high performance two-way amplifier that helps you to extend the effective radio range indoor. The wireless signal booster saves wiring costs and helps build wireless infrastructure by driving signals even into distant, reflective corners and hard-to-reach areas. No more dead spots!

Need a "corner bender"? – Try a W-DMX Repeater. The repeater receives the radio signal from a transmitter and does advanced signal processing before re-transmitting the signal, making any non line of sight installation possible where a normal transmitter/receiver setup would fail. The repeater is used to boost the signal when coverage drops, making virtually unlimited distances of wireless DMX possible.

Item description	*Item no*	*Antenna fitting*	*Measurements*
BlackBox RP-512 Outdoor Repeater	A40201	N	180 x 130 x 50 mm 7.1 x 5.1 x 2.0"
	The RP-512 is a 512-channel plug-and-play repeater that is compatible with the rest of the W-DMX™ product line. The repeater is easily controlled by "One-Button-2-Go" technology and the status of the radio link is indicated in a intuitive way.		
BlackBox B-500 Indoor booster	A40203	RP-SMA	75 x 56 x 25 mm 3.0 x 2.2 x 0.98"
	BlackBox B-500 Booster is as easy to use as any other BlackBox products. It is fully plug-and-play - no drivers or modifications to your setup are necessary.		
BlackBox B-1000 Outdoor booster	A40204	N	120 x 72 x 18 mm 4.7 x 2.8 x 0.71"
	The BlackBox B-1000 Booster is a high performance two way signal amplifier suitable for use with all BlackBox transmitters or receivers (except Micro models) in order to extend transmission range within demanding environments.		

Radio	
Frequency	2,45 GHz

The Antennas

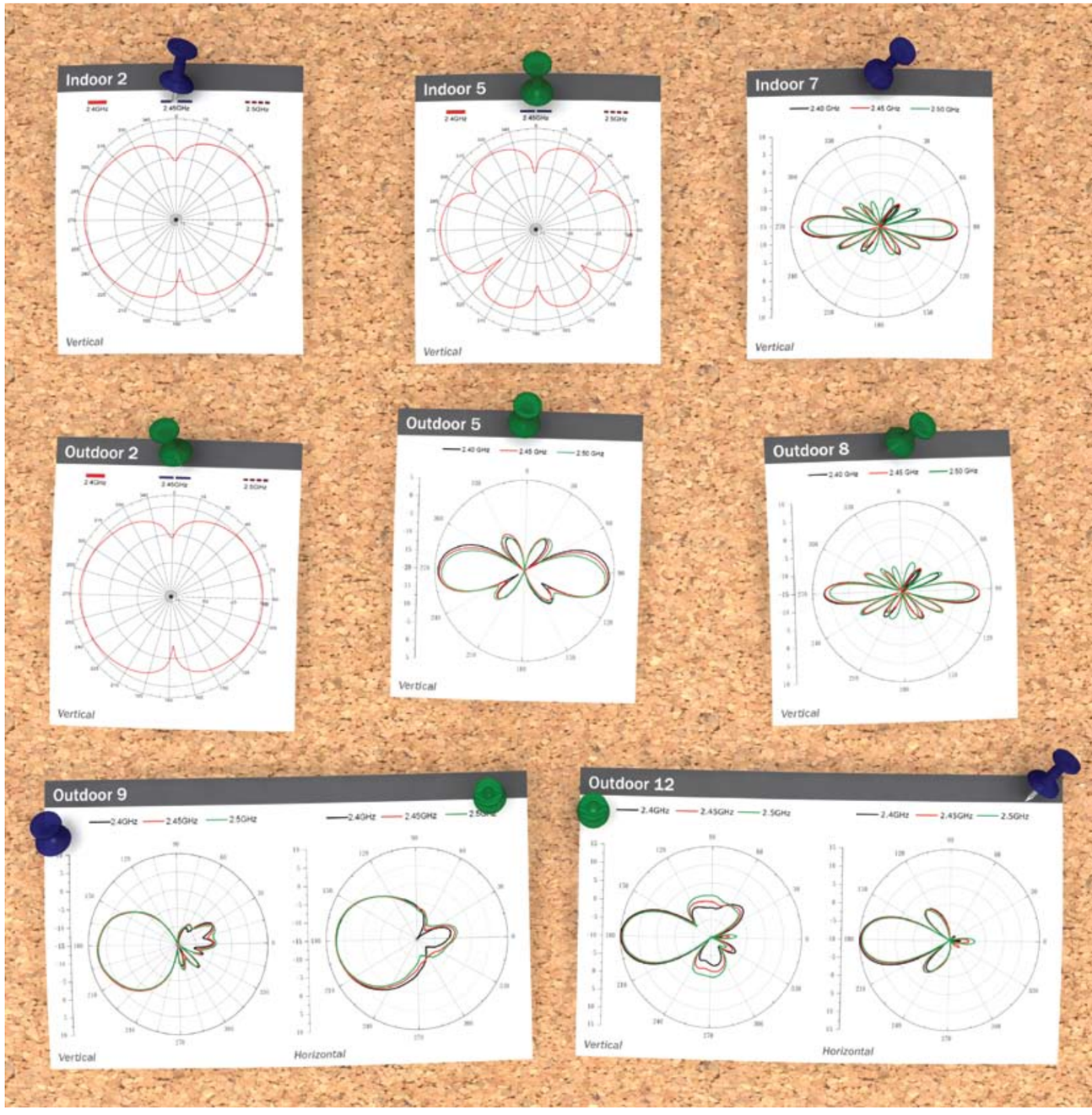
One of the critical choices in every W-DMX™ setup involves the antenna. For most applications, the standard antenna included with every BlackBox is sufficient. But for demanding situations, a variety of antennas is available.

Whether it be indoor or outdoor, omni- or directional, there is an appropriate antenna for you. Brackets are included.

Which antenna you need?

With the use of the W-DMX™ ToolBox Lite or PRO you can easily calculate how far the signal will be transmitted. Through walls, with repeaters or boosters.

Item description	Item No	Type	dBi	Radiation	Distance	Connector
Indoor 2	A40501	Omni	2 dBi	360x360	500 m 1 640 ft	RP-SMA
Indoor 5	A40502	Omni	5 dBi	360x90	1000 m 3 281 ft	RP-SMA
Indoor 7	A40503	Omni	7 dBi	360x20	1500 m 4 921 ft	RP-SMA
Outdoor 2	A40504	Omni	2 dBi	360x360	500 m 1 640 ft	N
Outdoor 5	A40505	Omni	6 dBi	360x30	1200 m 3 937 ft	N
Outdoor 8	A40506	Omni	8 dBi	360x20	1800 m 5 906 ft	N
Outdoor 9	A40509	Panel	9 dBi	45x45	2200 m 7 218 ft	N
Outdoor 12	A40507	Panel	12 dBi	30x30	3000 m 9 842 ft	N



Cables & Accessories

W-DMX™ has an entire selection of Indoor and Outdoor Cables from half-meter length up to 30 meters.

How many dB will get lost in my setup?

With the use of the W-DMX™ ToolBox Lite or PRO you can easily calculate how far the signal will be transmitted. Through walls, with repeaters or boosters.

Item description	Item No	Type	Signal loss	Connector
1,5 m	A40601	Cable	0,75 dB	N
3,0 m	A40602	Cable	1,50 dB	N
5,0 m	A40603	Cable	2,50 dB	N
10,0 m	A40604	Cable	5,00 dB	N
15,0 m	A40604	Cable	7,50 dB	N
20,0 m	A40604	Cable	10,0 dB	N
30,0 m	A40604	Cable	15,0 dB	N
Lighting Arrestor	A40622	Accessory	1,00 dB	N
Power divider	A40210	Accessory	1,00 dB	N

Software

Toolbox Lite (Freeware)

Since not all people are a radio engineers all W-DMX™ units are pre-packed with a version of Toolbox Lite (some units ship with the PRO version), an application to help you configure and calculate what kind of antenna and other accessories you need to get the proper transmission distance. The application lets you set up both the transmitting side and the receiving side with all cables, antennas, obstacles, boosters and repeaters to help you to calculate the distance without any problem.

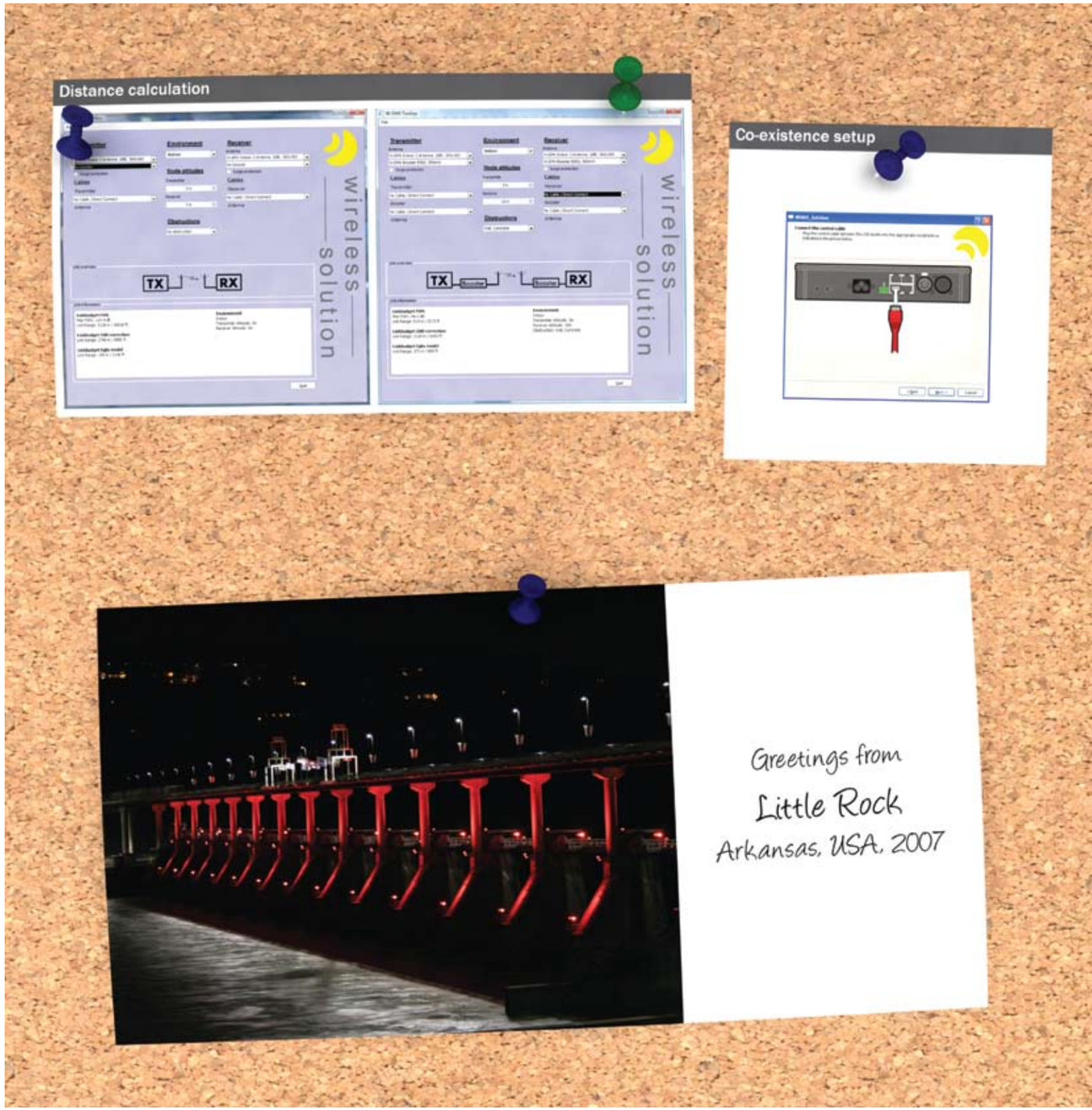
Toolbox PRO

The 2,4 GHz band is crowded and with the FHSS technology that W-DMX™ utilizes that's not an issue for the W-DMX™ systems. Other one-channel systems will on the other hand have trouble working with satisfying results as the W-DMX™ spreads its spectrum on all the 2,4 GHz channels. That's the reason why we developed W-DMX™ Co-existence, a configuration application that lets you choose to avoid some frequencies and let W-DMX™ and other 2,4 GHz systems work seamlessly in the same area.

The PRO version also includes the antenna configuration tools which helps you calculate the transmission distance.

The Toolbox PRO is shipped with T-1, S-2, S-2000, R-512 PRO.

Item description	Item No	Transmission help	Co-existence
Toolbox Lite	A40301	Yes	Yes
Toolbox PRO	A40302	Yes	Yes



OEM

Wireless Solution has to the greatest extent possible made regulatory compliance for end products incorporating the W-DMX™ OEM TRX cards effortless for the OEM. The W-DMX™ OEM TRX cards provide compliance with worldwide RF regulations like CE, FCC.

All W-DMX™ OEM TRX cards, model Pro, Micro, and Pico of Revision F have the same dimensions, as well as form and fit properties which mean you can design your products with different wireless functionality without having to think about physical differences.

Transmitter cards are equipped with a metal shield cage over the RF circuitry to meet regulatory requirements while receiver cards are not equipped with this shield and therefore exposes the underlying components.

Most models of the W-DMX™ OEM TRX card are available with a connector for an external antenna or with an on-board antenna. A wide range of antennas and standard, as well as custom, antenna cables with connectors and adaptors are available from Wireless Solution for applications that utilize external antennas.

OEM Partners: SGM, DTS, Antari, LSC Lighting, Futurelight, Elation, Lightronics, Doug Fleenor, RC4 Theatre Wireless, LSC Lighting Systems, Targetti, Advanced LED, Spanlite, MegaMan and many more

Item No	*Description*
A40900	Pico Receiver with Internal Antenna 2dBi
A40901	Pico Receiver with MCX Connector
A40902	Micro Transmitter MCX Connector
A40903	Micro Transmitter Internal Antenna 2dBi
A40904	Pro Tranceiver Tx MCX Connector. RDM
A40905	Pro Tranceiver Rx MCX Connector. RDM
A40920	OEM cable. MCX to Chassi N Connector
A40921	OEM cable. MCX to Chassi RP-SMA

Specification

	Outdoor	Indoor	Micro
DMX interface			
Compliance	Full compliance with USITT DMX-512 (1990) & 512-A standards	Full compliance with USITT DMX-512 (1990) & 512-A standards	Full compliance with USITT DMX-512 (1990) & 512-A standards
Max transceivers on single bus	32 (compliant with the EIA/TIA RS-485 standard)	32 (compliant with the EIA/TIA RS-485 standard)	32 (compliant with the EIA/TIA RS-485 standard)
Data rate	250 kbps (slew rate limited to minimise EMI)	250 kbps (slew rate limited to minimise EMI)	250 kbps (slew rate limited to minimise EMI)
Electrostatic discharge protection	±15kV	±15kV	±15kV
DMX frame rate and frame size	Auto sensing	Auto sensing	Auto sensing
Frame rate	1 (min) to 44 (max) frames per second	1 (min) to 44 (max) frames per second	1 (min) to 44 (max) frames per second
Frame size	1 (min) to 512 (max) channels	1 (min) to 512 (max) channels	1 (min) to 512 (max) channels
Loss of DMX input or radio link	After one second (if there is no resumption), the DMX output will cease to transmit and go into a high impedance mode	After one second (if there is no resumption), the DMX output will cease to transmit and go into a high impedance mode	After one second (if there is no resumption), the DMX output will cease to transmit and go into a high impedance mode
Recovery from loss of DMX input/radio link	Less than 1 second	Less than 1 second	Less than 1 second
Power characteristics			
High voltage input	90-260VAC	90-260VAC	90-260VAC
Low voltage input	12VDC	12VDC, T-1 Pro and S-2: 12-24VDC	12-24VDC
Low voltage output	12VDC @ 300mA maximum		
Average current (receiver)	200mA @ 12VDC	200mA @ 12VDC	200mA @ 12VDC
Average current (transmitter)	450mA @ 12VDC	450mA @ 12VDC	450mA @ 12VDC
Battery operation*			
Transmit mode	1 hour operation from fully charged in transmit mode	Receivers: 6 hours operation from full charge	N/A
Receive mode	2 hours operation from fully charged in receive mode	Transmitters: 2 hours operation from full charge	N/A
RF characteristics			
FHSS	Yes. Changes frequency every 910uS	Yes. Changes frequency every 910uS	Yes. Changes frequency every 910uS
Operational frequency range	2402-2479MHz (ISM band)	2402-2479MHz (ISM band)	2402-2479MHz (ISM band)
EU/ASIA RF output power	20dBm or 100mW	20dBm or 100mW	20dBm or 100mW
FCC RF output power	25dBm or 275mW	25dBm or 275mW	25dBm or 275mW
Channel bandwidth	1 MHz	1 MHz	1 MHz
Sensitivity at 0.1% Packet Error Rate	95dBm	95dBm	95dBm
Tested link range	450m, Low power EU mode using standard antennae in an urban area	450m, Low power EU mode using standard antennae in an urban area	450m, Low power EU mode using standard antennae in an urban area
Approvals			
CE	EN 301 489-1, 301 489-17, EN 300-328-1, EN 300-328-2, EN 609 50	EN 301 489-1, 301 489-17, EN 300-328-1, EN 300-328-2, EN 609 50	EN 301 489-1, 301 489-17, EN 300-328-1, EN 300-328-2, EN 609 50
FCC	15.247&68 Class B	15.247&68 Class B	15.247&68 Class B
Canada	ICES 003	ICES 003	ICES 003
Japan ARIB	STD-T66	STD-T66	STD-T66
Enclosure			
Casing	Injection moulded plastic casing, environmental rating: IP65	Diecast aluminium casing	Diecast aluminium casing
Operating temperature range	-30oC to +55oC (-22oF to 131oF)	0oC to +55oC (32oF to 131oF), T-1 Pro: -20oC to +55oC (-4oF to 131oF)	0oC to +55oC (32oF to 131oF)
Dimensions (W x H x D)	190 x 130 x 45mm (7.5 x 5.1 x 1.8”)	219 x 45 x 131mm (8.6 x 1.8 x 5.2”)	115 x 40 x 70mm (4.5 x 1.6 x 2.8”)
Weight	750g / 26.45oz	1005g / 35.45oz	250g / 8.8oz
Connectors			
	AC input: 3-pole 5mm terminal via cable gland (Ø4-8mm), DC in/out: 3-pole 5mm terminal via cable gland (Ø4-8mm), DMX in/out: 3-pole 3.5mm terminal via cable gland (Ø4-8mm), W-DMX™ bus: 5-pole 3.5mm terminal via cable gland (Ø4-8mm), External MMI interface: 3-pole 3.5mm terminal, N-type female radio antenna connector	N-type female antenna connector (N – RP-SMA adaptor included), 2 Neutrik® XLR 5-pin gold plated DMX connectors, 2 RJ45, DMX over Cat5 cable links, 1 DC input, pluggable terminal strip, Phonix® MSTB 2,5, 1 AC input, IEC-6C, T-1 Pro: 1 RJ45, W-DMX™ PC-link / Internal link	1 Neutrik® XLR 5-pin gold plated DMX connector, 1 RJ45, DMX over Cat5 cable link / power input
Supplied accessories			
	Standard antenna / 0.5 metre antenna cable / User guide	AC power cord / DC power connector / Standard antenna, Antenna adaptor / Mounting brackets / User guide	• RJ45 (DC) power cord / Mounting bracket / User guide

* Optional, optional only applies to some units.

POSTCARD EDITION 08/09

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Our only *competition* is the cable

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