

LINK provides a perfect solution for Yamaha Motor Racing_

Abstract_

Following the world motorcycling championships, Yamaha Motor Racing has recently undertaken a major reorganisation of their touring facilities. The new facilities provide a range of services and hospitality options for technical personnel and VIP guests during the many appointments of the motoring season.

For the facilities, Yamaha specified a system that ensured simplicity in its wiring, a guarantee of performance and, above all, a level of robustness that would ensure operation under any weather conditions.

Thanks to their diverse range of products and specialisms, LINK has succeeded in fulfilling all of these requests by delivering a safe and high-performance installation to Yamaha Motor Racing - one that is arguably just as splendid as the bikes that the Yamaha team prepares for the track.

Case History...

Every race in the MotoGP brings with it an deluge of professionals, equipment and structures - something matched only by the events of the F1 calendar. Ensuring that the necessary hospitality services are provided for the technical personnel, journalists and numerous VIP guests present on the track is no easy task.

The structures for these events must be assembled and disassembled for each event of the season, within extremely tight deadlines. Not only this, but they must survive the most inclement of weather conditions - from the summer heat of southern Spain, to temperatures close to zero in European winter races - passing through mud, rain, wind and powder.

For every race, three large branded trucks are placed in the shape of a "C" where, in addition to the technical rooms, there are six offices, a fully equipped professional kitchen and a relaxation space that can be reconfigured between the three trucks. This area can seat 90 guests and is adaptable for use in catering as well meetings with the press. All of the hospitality areas are littered with LCD monitors and audio speakers, as well as featuring a comprehensive WI-Fi network alongside a series of specific services requested by Yamaha Motor Racing.

*"The customer's first requirement was in reference to the extreme simplicity of the installation in terms of wiring and installation. Any technician in tow, not necessarily specialised, had to be able to wire everything without any margin of error", begins **Alberto Viridis of LINK.***

Step one: synthesis and design...

Even before proceeding with the installation itself, the LINK technical team put themselves at the disposal of the client. Here, they acted as "consultants", in order to make the right decisions regarding fixtures and equipment, so as to create an environment that was congenial and functional to the needs of the Yamaha Motor Racing technicians.

*"The client had a clear idea of what the new hospitality area's AV system should do, but they needed concrete support to determine which fixtures were the most suitable to use. Above all, they needed a partner who was able to interpret and synthesise the project, providing a compact and practical system to use", explains **Luca Opizzi - project leader for LINK.***

"We put ourselves on the line, working hard to support the design and specifications communicated by the customer" continues Luca.

"There were various disciplines involved within the project - those who dealt with satellite connectivity, some with lighting and some who dealt with the preparation of offices and kitchens. LINK is committed to finding practical solutions to meet every requirement, providing a system which can be described as "turn-key" in the truest of senses" concludes Luca.

One of the main guidelines that was stipulated at the design stage was that of absolute simplicity, so as to allow for an optimised workflow in the preparation phase. This would of course need to be repeated each and every time that the system is assembled and disassembled.

In addition to this, the LINK team has had to work to find specific products on the market and, when these were not commercially available with the precise characteristics required, create tailor made solutions for the project.

Houston: the nerve center...

To meet the requirement for simplicity, the decision was initially taken to concentrate all of the machines into a main rack of 42 units. This would come to be known as "Houston", serving as the nerve center of the system, from where all the signals and commands would stem.

"Houston" contained a range of systems, including Black Magic video controller with attached matrix, a Yamaha MX5 mixer (controllable via WiFi remotely via specific App), a system allowing for online streaming and, of course, space for all connections to be organised and patched. This connection system was taken care of via a clear, pre-wired panel, which LINK designed and created specifically for the task.

In turn, the various zones had to be served by a variety of audio and video systems, as well as data (IT services and networking), RF signals for the transmission of television channels within the internal hospitality circuit (with both terrestrial and satellite receptions), as well as power supply for all peripherals.

Again, with the mantra of flexibility and simplicity at the system's core, a specially designed signal distribution system was provided, allowing for the assignment of the various video programs to devices scattered throughout the hospitality area. This was achieved through Vision Lite's Visionary Solution software, alongside a web interface and a management system for the drag and drop matrix, supported by a rackmount server to run the video output management service.

Many signals yet few cables...

The use of hybrid cables available within LINK's catalogue was essential for the construction of the system. These products made it possible to greatly simplify the cabling used - leading to the main infrastructure containing just 11 cable and 3 connector types. One example of these solutions is the **LK2CAT6SF 12/3 AD2 CVS** cable, able to transmit two pairs of digital audio, two CAT6A cables, as well as power over three 3.5mm² cables. This combination has proven to be the perfect choice within a system of this nature.

Eurocable CVS LK2CAT6SF 12/3 AD2 has been used with absolute flexibility.

Firstly, it has been used to distribute signals to loudspeakers through analog audio cables or conveying Dante over TCP/IP. Secondly, it has been used to distribute signal to the various televisions via TCP/IP connection, for use with IPTV decoders. The cabling has additionally been used for a range of other audio applications, such as to the microphone inputs and auxiliary outputs for journalists through analog audio cables, or by using CAT cables as multicores before breaking out to yet more analog connections. Finally, the cabling was also used for electrical distribution to the antenna.

In order to be able pick up the different signals at various strategic areas, "tiles" have been provided within the floating floor of the venues. These have been prepared with a wired trapdoor, under which can be found the most common connections such as XLR, Ethercon, LAN & Shuko - all ready to be patched and used immediately.

"Each tile is served via a single cable under the floor, which is connected to a pre-established connector on the "Houston" centre. This means that within a matter of minutes and with just a couple of simple gestures, users are able to access all available audio, video, data and power points at any of the pre-established areas" specifies Alberto Virdis.

A second fiber optic ring (with 4 SM cores featuring expanded beam connectors) provides added flexibility and durability, thanks to LINK's unbreakable fiber. This has been used for distribution between the three Extreme Networks ethernet switches, arranged with ring topography in order to guarantee redundancy. The cabling also takes care of RF signals, again with full redundancy. For this type of signal connection, LINK has developed a wired

rack drawer with two modulators and two DVB-T control units, used to manage all digital terrestrial signals. In more detail, the channels conveyed were essentially of three types:

1 - Content distributed by the track-side video team.

2 - The distribution of local digital and terrestrial channels, with the addition of the generation of a multiplex channel within the internal RF spectrum, for propagation of Sky satellite signals to all television stations.

These signals were distributed inside the mobile vehicles through the same multicore fiber cable that allows data to pass between the Ethernet switches.

3 - The final stream transported - the RF signal, via SCR protocol, from the satellite receiver to the Sky decoder located inside the "Houston" center.

This system is a prime example of LINK being able to provide the right product to allow for the passage of multiple signals, each very different, within a single cable.

Weatherproofing...

Another aspect that required a careful choice of materials and technologies was in relation to weather resistance, especially in three particularly exposed points:

1 - Under the floating floor.

2 - Under each TIR - located roughly one meter from the ground and near the wheels of the vehicles. Here, the connectors remain constantly exposed, even during long journeys around Europe.

3 - On the roof - connecting two motorised dishes for the reception of Sky channels, as well as for internet connection via satellite.

The supplier of these satellite systems, as planned, was requested to supply Yamaha Motor with a fast cabling system on a single multipolar connector with IP67 rating. It was therefore necessary to transport the RF signal through coaxial cables, from up to two antennas running in parallel, to allow the control of the motor through the serial port from the controller unit located inside the TIR. It was also imperative that the system featured a connection on the roof for the local control bypass and, finally, the connection of the power supply for the motorised dish.

"The installation itself was already quite complex, but the real challenge was to succeed in delivering to the customer a system that is "bombproof" and that offers simple and fast

commissioning, a margin of error equal to zero and retains the possibility of being able to carry out future upgrades "adds Alberto Virdis.

"I think it would have been impossible to achieve this result without the use of our hybrid cables and the robust solutions offered by the unbreakable fiber, something that is able to withstand extreme bending and flexing without the risk of breakage..." concludes Alberto.

Social Headline: Have you ever wondered what lies behind the track, beyond the @motogp boxes? Yamaha Motor Racing has recently created their new hospitality structure, with all the comforts you could imagine to accommodate journalists and VIP guests in their moments of relaxation. Yamaha has relied on Rome's cabling, connectors and distribution specialist, #LINK, to carry out an installation that was #simple, #fast and, above all, #reliable.

Short Social Media: How was this possible? #hybridcables, #unbreakablefiber and years of experience! Find out more via the link below...

About Link_

At Link we connect the Entertainment Industry. Our military grade (MIL5015) LK Connectors and Eurocable cabling is manufactured to the highest standards for audio, video, data, Ethernet and fiber optic connectivity. Link was founded in 1987 by two audio engineers, including Marco Piromalli, Link's current President. In the early days Link's focus was on providing a modular connector capable of surviving the harsh elements of concert touring while at the same time maintaining the precision fidelity required in the entertainment industry. Inspired by the military and avionics industry we developed a new breed of connectors that surpassed all requirements in the industry.

Link saw that the rise of digital data and fiber optic technology would transform the entertainment industry so we began to build solutions for the wiring and connectivity problems that existed within, and across, the audio, video and lighting industries.

Under the leadership of Mr. Piromalli and Link's current Managing Director, Assunta Fraticchi, the company focused on fundamentals and built its reputation on the basis of two world renowned brands: Eurocable and LK Connectors. Over the years, it has continued to innovate and provide its clients with both pre-built, and custom, cables, connectors and accessories to meet their every need.

Today Link provides a full range of best-in-class connectivity solutions. Its pre-built and custom cables and distribution systems connect and distribute audio, power, lighting, Ethernet and video signals for broadcast, film, studio and live entertainment applications. If you can imagine it, we can build it. Link takes pride in providing the best connectivity solution on time and on budget and in delivering the best customer service in the entertainment industry.

Contacts_

www.linkitaly.com

Jody Piromalli - Marketing & Online Sale

Mail: j.piromalli@linkitaly.com
Mobile: +39.06.22725202