FieldCast Fiber Node System One - for 4 PTZ cameras

FieldCast Fiber Node System One is a compact turnkey solution for four 3G SDI PTZ camera systems with Ethernet control.

It provides you all the necessary fiber optic products to have your PTZ cameras controlled and monitored over fiber at different locations; a local strategic position in the field and a remote spot that can be further away from the venue, typically being an OB Van or control room.

The system is powerful and still mobile and flexible. It comes with one SMPTE cable and four lightweight fiber optic cables suitable for the world of small PTZ cameras.

The turnkey system contains the following products:
1x FieldCast Fiber Base One
1x FieldCast 100m/328ft SMPTE cable PUW-FUW on drum
1x FieldCast Fiber Node One
4x 100m/328ft FieldCast 2Core SM Hybrid on drum
4x FieldCast PTZ Monk

Overview

The basic concept behind the system is simple: collect all signals from one PTZ camera with FieldCast PTZ Monk, transport it over one cable per camera with FieldCast 2Core SM Hybrid on drum, create a local control spot at the other end of the cable with FieldCast Fiber Node One, and create a remote control spot with SMPTE cable connecting FieldCast Fiber Node One to FieldCast Fiber Base One.

FieldCast Fiber Base One is the unit that is the most far away from the PTZ camera. Typically, Fiber Base One will be placed in a control room or OB Van, in a 19-inch rack where it can connect to the switcher.
Fiber Base One is the unit that receives AC mains power from the power outlet and from there on basically delivers the power needed to power up converters, PTZ controllers and PTZ cameras, all along the way to the stage. It does so by transporting AC power over one *SMPTE 311M/304 fiber optic cable* to Fiber Node One, that in its turns does the AC/DC conversion for the rest of the equipment.

The SMPTE cable is also used to extend the monitoring and Ethernet functionality of the local Fiber Node One to the remote Fiber Base One. So all control data and SDI video that Fiber Node One processes from four PTZ cameras, are also sent to Fiber Base One, and all go over one SMPTE cable!

FieldCast Fiber Node One is in the middle of this turnkey solution, typically placed locally, at the venue, and mounted in a flight case that connects to a portable

multiviewer. Functioning as a central hub, it receives and sends signals from and to four PTZ cameras, using four **FieldCast 2Core SM Hybrid Main Cables**.

Fiber Node One brings you four channels of 3G SDI output so you can connect straight to your monitor or portable multiviewer. You can connect your PTZ controller directly to the Ethernet I/O port of Fiber Node One, and it will act as a standard Ethernet switch between your controller and your cameras, but now over fiber. Furthermore, Fiber Node One features a four channel 24VDC power supply to power all four cameras over the FieldCast hybrid cable.

And here it comes all together. For every channel, Fiber Node One connects to FieldCast hybrid cable, and this light and robust cable contains two strands of fiber for data transport and two copper conductors for power transmission. Just imagine, each camera only needs one flexible cable to transmit uncompressed SDI video, control data, and power!

At the other end of each hybrid cable you only need to attach **FieldCast PTZ Monk**, a one channel fiber optic converter with 3G SDI input, Ethernet I/O and 12VDC output. Once your PTZ camera is connected to FieldCast PTZ Monk, it can start up, it will listen to the PTZ controller you connected to FieldCast Fiber Node One, and a video signal will neatly show up at one of the Dock's four SDI monitor outputs.

Features

Features Fiber Base One

FieldCast Fiber Base One is a four channel fiber optic converter, designed as a remote unit for FieldCast Fiber Node One.

It sports one SMPTE connector and needs one SMPTE 311M/304 fiber optic cable to connect to Fiber Node One, to power it and to communicate with it. At its input, Fiber Base One accepts any voltage level between 100 and 240VAC, and the output level of the SMPTE connector is equal to the input level. So, when you plug into a 220V power outlet, the SMPTE connector simply offers 220V.

Fiber Base One brings you four channels of 3G SDI output and Ethernet i/o, just like Fiber Dock One and Fiber Node One, and you can connect straight to the switcher, plug in one or more PTZ controllers, add a multiviewer, recorders, whatever you want.

Communication with Fiber Node One is pretty straightforward. One fiber of the SMPTE cable is used to tap into the fiber optic Ethernet switch of Fiber Node. This means that a PTZ controller connected to Fiber Base is part of the same network as a PTZ controller connected to Fiber Node, and both can control any PTZ camera in the network. The

other fiber of the SMPTE cable forwards all four video signals that reached Fiber Node One to Fiber Base One, which means that the four SDI outputs of both Fiber Node One and Fiber Base One output exactly the same signals.

In other words, when connected, Fiber Base One, the remote system, and Fiber Node One, the local system, are functionally equivalent and can work together.

Typically, Fiber Base One will be placed in a control room or OB Van and connects to the switcher, where Fiber Node One will be mounted in a flight case and connects to a portable multiviewer.

Features Fiber Node One

FieldCast Fiber Node One is a four channel fiber optic converter designed as a local unit for FieldCast Fiber Base One.

Fiber Node One has exactly the same functionality as FieldCast Fiber Dock One, and it has all the inputs and outputs.

The front side contains 1 Ethernet i/o port to connect to a PTZ controller or Ethernet hub. You don't need to power the PTZ controller with its own power supply. You can have Fiber Base One supply the power for your PTZ controller. Just use the XLR connection at the backside of Fiber Node One and connect to the DC In of your PTZ controller. Now the PTZ controller is powered by Fiber Node One.

At the back side, Fiber Node One houses 4 FieldCast Hybrid Chassis Connectors to connect to 4 FieldCast Hybrid Main Cables. Each chassis connector contains two strands of fiber for data transport and two copper conductors for power transmission. Over fiber, each connector receives uncompressed SDI video from a PTZ camera and carries Ethernet (camera control data) i/o. Over the copper conductors, each chassis connector delivers 24VDC power output to power up a FieldCast PTZ Monk and a PTZ camera. Just imagine, each camera only needs one flexible cable to transmit uncompressed SDI video, control data, and power!

The backside of Fiber Node One also houses 4 channels of 3G SDI out, with dual SDI output per channel, for locally monitoring the SDI video generated by the PTZ camera.

So what's the difference with Fiber Dock One? Fiber Node One comes with an SMPTE connector for standard SMPTE 311M/304 fiber optic cable and this extra connector adds a lot of functionality to the converter. SMPTE cable is a hybrid cable similar to FieldCast hybrid cable. It also has two strands of fiber and two copper conductors for power transmission, but it uses way larger connectors allowing for AC power to be transmitted over it. Fiber Node One uses this feature to the max. If at the other end of the cable you connect a 100-240VAC power source, Fiber Node One will draw power from the cable and still can do everything a Fiber Dock One does, but without the need for local power.

This means that you can place the unit at any strategic position in the field, and the SMPTE cable simply acts as a long extension cord. But Fiber Node one also uses the two fibers of the SMPTE cable! One fiber is used for extending the fiber optic Ethernet network, and the other fiber carries all four video signals coming from the FieldCast PTZ Monk units.

Here is where Fiber Base One comes in. It connects to the remote end of the SMPTE cable, powers it, taps into the fiber optic Ethernet network, and receives the four video signals. It has Ethernet i/o and four 3G SDI output channels, just like Fiber Dock and Fiber Node, but it only has the SMPTE connector for fiber and power. Bottom line, Fiber Base One is designed to act as a remote unit for Fiber Node One and Fiber Node One acts as a local unit for Fiber Base One.

Features FieldCast 2Core Hybrid

100 meter of flexible fiber optic cable with two strands of fiber and two copper wires. The lightweight cable adds low voltage DC power to fiber and brings it into the field. Now you can power your converter, camera or other equipment over the cable.

Features FieldCast PTZ Monk

FieldCast PTZ Monk is a small one channel fiber optic converter designed for 3G SDI PTZ camera systems with Ethernet control.

PTZ Monk converts the 3G SDI video output of the PTZ camera to fiber and acts as a fiber media converter for the Ethernet control data.

When you connect a FieldCast hybrid cable coming from FieldCast Fiber Dock/Node One to the hybrid connector of PTZ Monk, it receives 24VDC at the input and converts it to a stable 12VDC at the XLR 4-pin output to feed the camera.

At the same time, the built-in media converter taps into the fiber optic Ethernet switch of Fiber Dock/Node One and the Ethernet i/o port on PTZ Monk becomes part of the network.

And lastly, the 3G SDI input on PTZ Monk is converted to fiber, and the signal will find its way to Fiber Dock/Node One.

PTZ Monk has separate standard connectors for power, SDI and ethernet, and patches easily to a PTZ camera.

Specs

Specs FieldCast Fiber Base One

• Dimension 1RU 19 inch box. Dimension (width x depth x height): 44 x 20 x 4.36 cm

• 110-220V A/C power input

• 1x Ethernet i/o port

• 4x 3G SDI out, with dual SDI output per channel.

• 1x Lemo SMPTE EDW connector

Specs FieldCast Fiber Node One

• Dimension 1RU 19 inch box. Dimension (width x depth x height): 44 x 20 x 4.36 cm

• 1x Ethernet i/o port

• 1x XLR for 12VDC power out

• 4x FieldCast Hybrid Chassis Connectors each carrying SDI-in video over fiber, Ethernet i/o over fiber, and 24VDC power out

• 4x 3G SDI out, with dual SDI output per channel.

• 1x Lemo SMPTE EDW connector

Specs FieldCast 2Core Hybrid Main Cable

• Two cores of protected fiber

• copper cable for power connection

• single mode 9/125

• outer cable diameter 7.2 mm.

• color coded
  (two yellow rings for 2Core single mode and two red rings for power)

• cable length 100 meters in total

• robust male cable connector on both sides

• wound on Schill GT310 drum

Specs FieldCast PTZ Monk

• One channel 3G SDI to fiber converter

• 1Gbit Ethernet to fiber converter

• 1 hybrid chassis connector
   carrying 24V DC input from FieldCast Fiber Dock/Node One,
   SDI-in video over fiber, and Ethernet i/o over fiber.

• 1 SDI input connector

• 1 Ethernet i/o connector

• 12VDC power out XLR connector