



VIDEO & SOUND PROFESSIONAL BROADCAST

VK 66

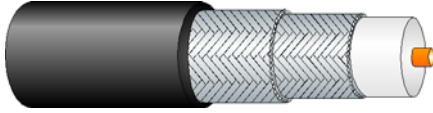
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DIGITAL COAXIAL VIDEO

CuSn + CuSn

### Aplicaciones / Application



Cable coaxial de vídeo para aplicaciones digitales móviles . Soporta transmisiones de datos seriados (SDI) y formatos de televisión de alta definición (HDTV) según SMPTE 259M (270Mbps), ITU-R BT.601 (Composite PAL 177Mbps) , SMPTE 292M (1,5Gbps) y SMPTE 424M (Prog. Scan. HDTV). También usados para circuitos analógicos críticos ofreciendo más de 100dB de atenuación frente a señales interferentes de naturaleza electromagnética debido a su doble pantalla de cobre pulido

Coaxial video cable for digital mobile applications. Can carry serial data interface (SDI) and high definition television formats (HDTV) according to SMPTE 259M (270Mbps), ITU-R BT.601 (composite PAL at 177Mbps) , SMPTE 292M (1,5Gbps) and SMPTE 424M (Prog. Scan. HDTV).. It is also used for analogue critical circuits offering over 100dB attenuation before electromagnetic interferences thanks to its double braided bare copper shield.

### Construcción / Construction

#### **1. Conductor**

Cu 7XAWG29 mm (AWG 20)  
UNE 21-011

#### **2. Aislante / Insulation**

Foam High Density FHDPE (GAS INJECTED)  
Ø 3,7 mm  
IEC 708

#### **3. Pantallas / Shields ( 2 pantallas/ 2 shields ):**

##### **3.1 Primera Pantalla /First Shield**

Braided CuSn 95% UNE 21-064

##### **3.2 Segunda Pantalla /Second Shield**

Braided CuSn 95% UNE 21-064

#### **4. Cubierta externa / General Jacket**

Ø 6,14 mm  
PTC / NBR UNE 21-031

#### Conectores recomendados / Suggested connectors:

**HDTV (HD-SDI) : 5182-HDTV**

*Peso/Weight ( Kg / Km ) : 70*

*Colors: Black*

**REVISION DATE: 28-01-2013**



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Datos Técnicos / Data Sheet

Propiedades Eléctricas / Electrical Properties

VIDEO COAXIAL CABLE DATA:

|   |                  |                       |        |       |         |        |
|---|------------------|-----------------------|--------|-------|---------|--------|
| Velocidad de Propagación/Velocity of propagation  | %                | 74,5118               |        |       |         |        |
| Retraso Nominal/Nominal Delay                     | ns/m             | 4,4690                |        |       |         |        |
| Impedancia Nominal / Nominal Impedance            | $\Omega$         | 75 $\pm$ 2,5 $\Omega$ |        |       |         |        |
| Capacidad Nominal / Nominal Capacitance           | PF/m             | 58,394                |        |       |         |        |
| Máxima tensión de trabajo/Max. Operation Voltage  | V                | 300                   |        |       |         |        |
| Inductancia nominal/ Nominal inductance           | $\mu$ H/m        | 0,3464                |        |       |         |        |
| Resistencia núcleo en DC/ Conductor DC resistance | $\Omega$ /Km     | 37,8845               |        |       |         |        |
| Resistencia malla en DC/Shield DC resistance      | $\Omega$ /Km     | 5,06987               |        |       |         |        |
| ATENUACION/ATTENUATION:                           | Freq (Mhz)       | dB/100m               |        |       |         |        |
|   | 1                | - 0.651               |        |       |         |        |
|   | 5                | - 1.958               |        |       |         |        |
|   | 10               | - 2.899               |        |       |         |        |
|   | 25               | - 4.695               |        |       |         |        |
|   | 71.5             | - 8.145               |        |       |         |        |
|   | 88.5             | - 9.014               |        |       |         |        |
|   | 270              | - 16.711              |        |       |         |        |
|   | 540              | - 24.222              |        |       |         |        |
|   | 720              | - 28.457              |        |       |         |        |
|   | 1500             | - 43.581              |        |       |         |        |
|   | 2000             | - 51.029              |        |       |         |        |
|   | 2250             | - 55.441              |        |       |         |        |
|   | 3000             | - 66.501              |        |       |         |        |
| Minimum STRUCTURAL RETURN LOSS (SRL)              | Sweep            | dB                    |        |       |         |        |
|   | 5Mhz – 300Mhz    | -24,12                |        |       |         |        |
|   | 300 Mhz- 650 Mhz | -16,31                |        |       |         |        |
|   | 650Mhz – 1100Mhz | -15,01                |        |       |         |        |
| <b>SMITH CHART (300Khz-270Mhz)</b>                |                  |                       |        |       |         |        |
| Frequency (Mhz)                                   | 13,78            | 26,80                 | 46,073 | 89,1  | 110,240 | 150,01 |
| Ohms ( $\Omega$ )                                 | 76,01            | 74,98                 | 75,51  | 74,43 | 75,01   | 75,54  |

Las especificaciones están sujetas a cambio sin previo aviso

Specifications subject to change without prior notice



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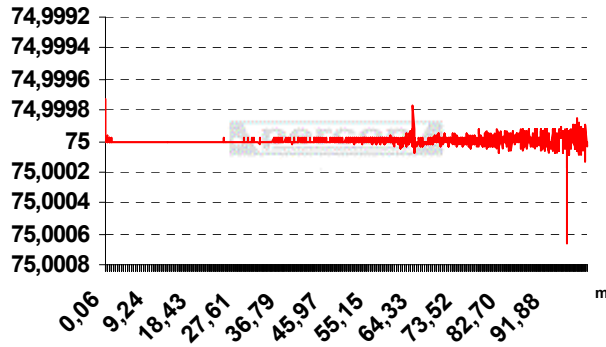
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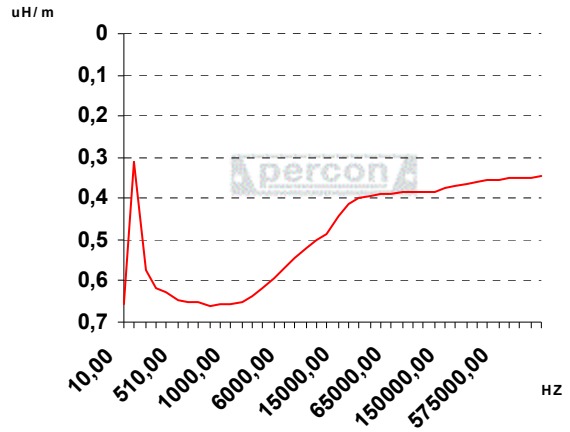
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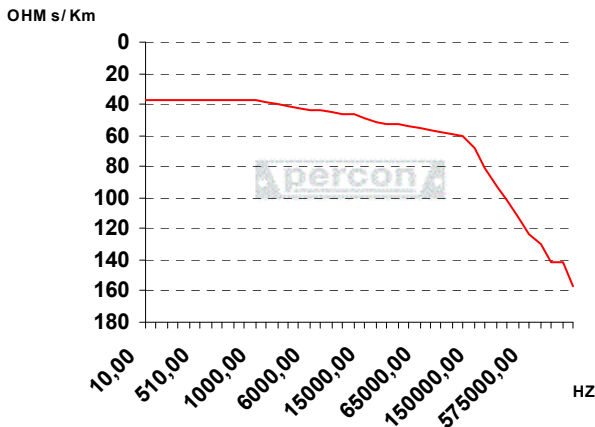
Nominal IMPEDANCE



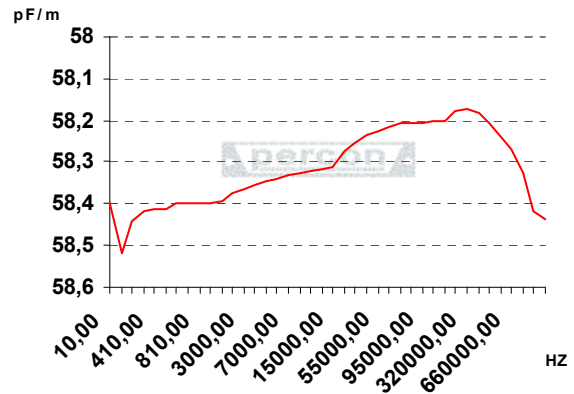
bulk INDUCTANCE



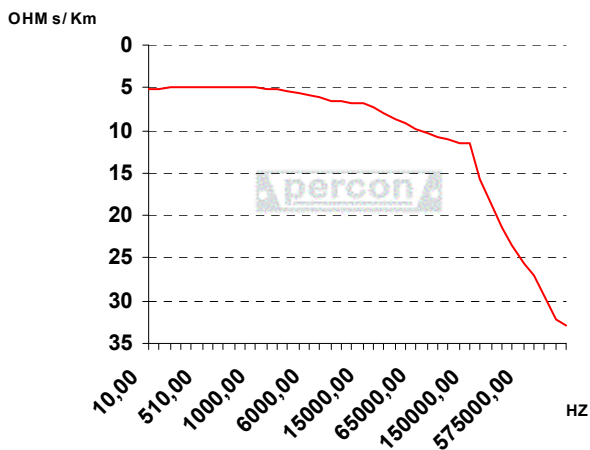
Bulk RESISTANCE



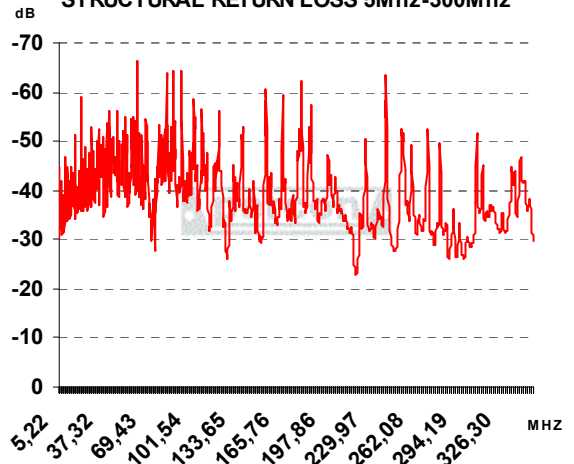
CAPACITANCE



Shield RESISTANCE



STRUCTURAL RETURN LOSS 5Mhz-300Mhz



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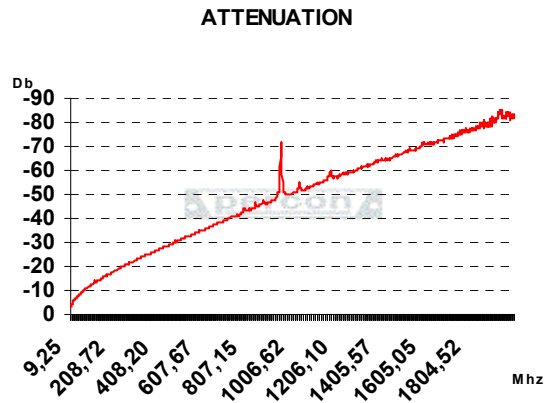
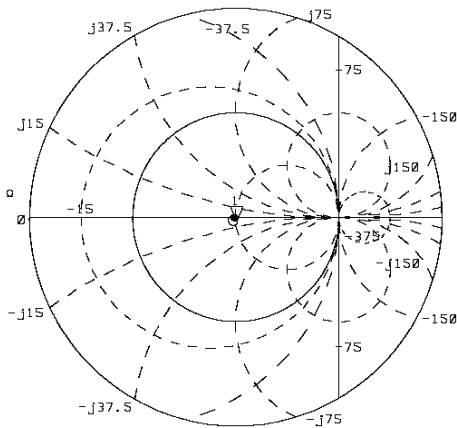
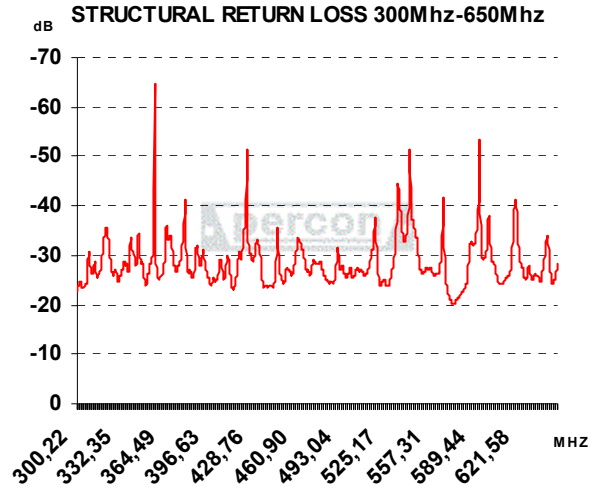
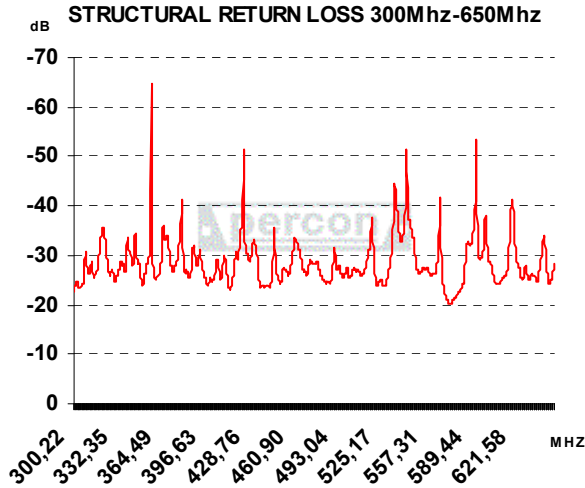


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**Datos de aplicación / Application Data:**

**Formato video digital / Digital video format:**

|   | MAXIMUM TRANSMISSION DISTANCE (meters) AT SERIAL DIGITAL DATA RATES (SDI) |
|---|---|
| 71,5 Mhz/143 Mbps (SMPTE 259M, Composite NTSC)                | 332.40  |
| 88,5 Mhz /177 Mbps (ITU-R BT. 601, Composite PAL)             | 295.56  |
| 135 Mhz/270 Mbps (SMPTE 259M, Component video)                | 232.73  |
| 180 Mhz/360 Mbps (SMPTE 259M, widescreen)                     | 197.75  |
| 270 Mhz/540 Mbps (SMPTE 344M, widescreen)                     | 155.19  |
| 750 Mhz/1.5 Gbps (SMPTE 292M, HDTV)<br>HDTV BNC's             | 118   |
| 1,50 Ghz/3.0 Gbps (SMPTE 424M, Prog. Scan HDTV)<br>HDTV BNC's | 90  |

\*WE SUGGEST TO USE ONLY 85% OF THE RECOMMENDED DISTANCE

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**Formato video analógico / Analogue video format:**

|                                   | TRANSMISSION DISTANCE IN METERS OF ANALOGUE VIDEO SIGNAL WITH MINIMUM LOSSES (MAX -3 dB) |
|-----------------------------------|--|
| M-II (COMPONENT 5,0 Mhz BW)       | 143,06   |
| EBU-C (COMPOSITE 5,5 Mhz BW)      | 139,21   |
| BETACAM SP (COMPONENT 4,5 Mhz BW) | 147,20   |
| U-MATIC SP (COMPOSITE 4 Mhz BW)   | 151,05   |
| S-VHS (COMPOSITE 5,0 Mhz BW)      | 143,06   |
| ANALOG COMPONENT/RGB (5,0 Mhz BW) | 143,06   |

*\*DISTANCE BASED UPON THE LIMIT FREQUENCY OF 5,5 Mhz, 5 Mhz, 4,5 Mhz AND 4 Mhz.*

**Pruebas de HDTV a 118 metros de VK 66/ 118 meters of VK 66 under HDTV transmission: 1080i/720p**

| RATE NAME             | BIT RATE                   | H FREQ / V FREQ    |
|-----------------------|----------------------------|--------------------|
| 720 p 1280 x 720      | 1.485/1.001 (1.4835) Gbps  | 44.96Khz / 59.94Hz |
| 720 p 1280 x 720      | 1.4850 Gbps                | 45.00Khz / 60.00Hz |
| 1080i 1920 x 1080     | 1.4850/1.001 (1.4835) Gbps | 33.72Khz / 29.97Hz |
| 1080i 1920 x 1080     | 1.4850 Gbps                | 33.75Khz / 30.00Hz |
| 1080p 1920 x 1080     | 1.4850 Gbps                | 33.75Khz / 30.00Hz |
| 1080p 1920 x 1080     | 1.4850/1.001 (1.4835) Gbps | 33.72Khz / 29.97Hz |
| 1080p 1920 x 1080     | 1.4850 Gbps                | 27.00Khz / 24.00Hz |
| 1080p(sf) 1920 x 1080 | 1.4850 Gbps                | 27.00Khz / 24.00Hz |
| 1080p(sf) 1920 x 1080 | 1.4850/1.001 (1.4835) Gbps | 26.97Khz / 23.98Hz |

**Pruebas de 3G-SDI a 90 metros de VK 66/ 90 meters of VK 66 under 3G-SDI transmission: 1080p**

| RATE NAME           | BIT RATE   | V FREQ / FORMAT             |
|---------------------|------------|-----------------------------|
| 1080p (1920 X 1080) | 2.970 Gbps | 50 Hz / YCbCr 4:2:2 10 bits |
| 1080p (1920 X 1080) | 2.970 Gbps | 60 Hz / YCbCr 4:2:2 10 bits |



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## DIGITAL COAXIAL VIDEO

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**1080i/720p**

Se utiliza un generador de señal de video de alta definición EXTRON VTG400D con una tensión de salida de pico a pico de 800 milivoltios, una velocidad de datos de 1485Mbps o 1485/1001 Mbps, un jitter timing no superior a 1 UI (673 picosegundos) y un jitter alignment no superior a 0,2 UI (134,6 picosegundos) / We use an EXTRON VTG400D high definition video signal generator with an output peak-to-peak voltage of 800 millivolts, a data speed of 1485Mbps or 1485/1001 Mbps, a jitter timing under 1 UI (673 picoseconds) and a jitter alignment under 0,2 UI (134,6 picoseconds).

El receptor es un WFM700M de Tektronix / The receiver is WFM700M Tektronix

| Video Session - Channel 2 |   |                          |        |       |
|---------------------------|---|--------------------------|--------|-------|
| Input:                    | SDI Input 1A - 3Ga                                | Signal:                  | Locked |       |
| Effective:                | Auto 1080p 50 - YCbCr 422 10b - 425M-A 2.970 Gbps |                          |        |       |
| Selected:                 | Auto Format - Auto Structure - Auto Transport     |                          |        |       |
| 352M Payload:             | 89h C9h 00h 01h                                   |                          |        |       |
| SAV Place Err:            | OK  | Y Stuck Bits:            | -----  |       |
| Field Length Err:         | OK  | C Stuck Bits:            | -----  |       |
| Line Length Err:          | OK  | AP CRC:                  | 75CEh  | 7AD0h |
| Line Number Err:          | OK  | CRC Changed since reset: | No     |       |
| Ancillary Data:           | Y Present   |                          |        |       |

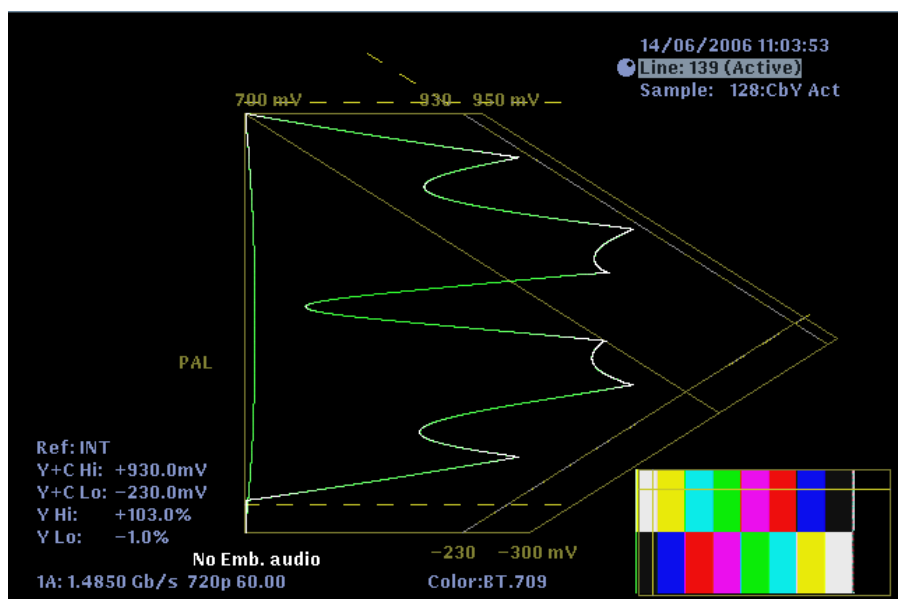
| Statistics           | Status | Err Secs | Err Fields | % Err Fields |
|----------------------|--------|----------|------------|--------------|
| RGB Gamut Error      | OK     | 0        | 0          | 0.0000 %     |
| Cmpst Gamut Error    | OK     | 0        | 0          | 0.0000 %     |
| Luma Gamut Error     | OK     | 0        | 0          | 0.0000 %     |
| Y Chan CRC Error     | OK     | 0        | 0          | 0.0000 %     |
| C Chan CRC Error     | OK     | 0        | 0          | 0.0000 %     |
| Y Anc Checksum Error | OK     | 0        | 0          | 0.0000 %     |
| C Anc Checksum Error | OK     | 0        | 0          | 0.0000 %     |

Changed since reset: No      Run Time: 0 d, 00:08:20      Running  
Press "SEL" to reset. Any "arrow key" stops/starts.

|   |                              |                                |   |                              |
|---|------------------------------|--------------------------------|---|------------------------------|
| 1080p 50<br>SDI Input 1A-3Ga<br>Ref: Internal | Embld: -----<br>TC: Disabled | Aug 31 15:42:34<br>1A 1B 2A 2B | 1080p 50<br>SDI Input 1A-3Ga<br>Ref: Internal | Embld: -----<br>TC: Disabled |
|---|------------------------------|--------------------------------|---|------------------------------|

Errores en tx. de señal de video / Video session errors.



Gamut Arrowhead.

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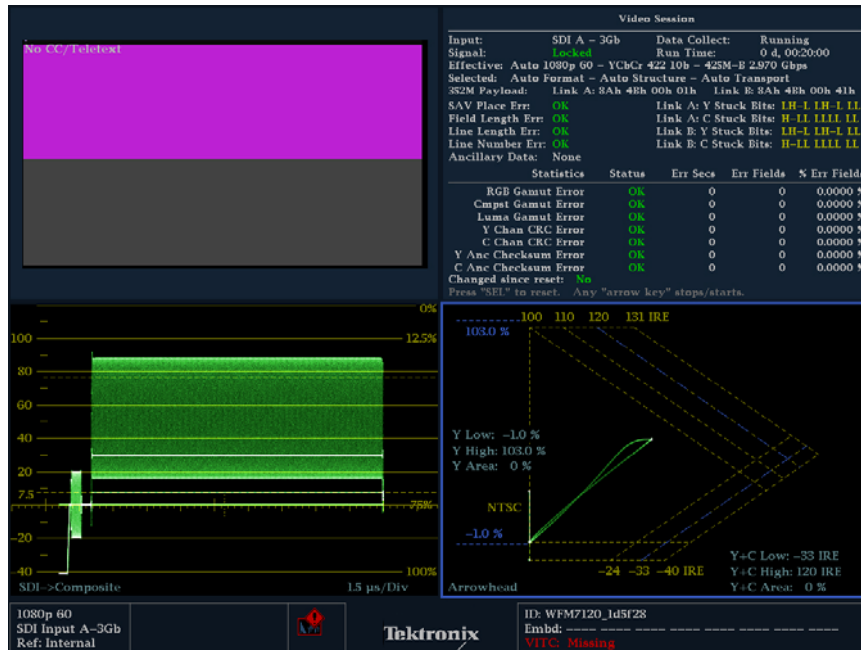
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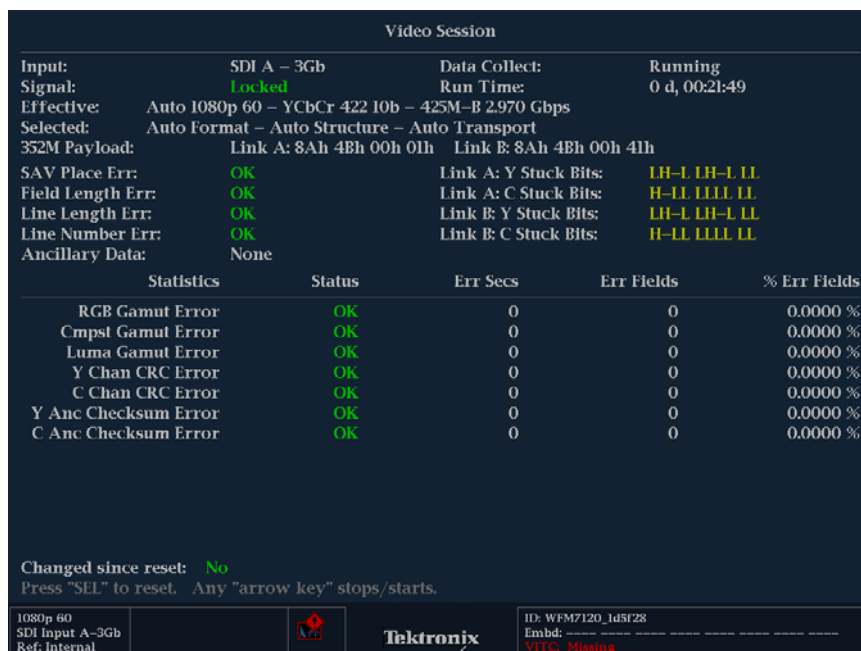
CuSn + CuSn **1080p**

Se utiliza un generador de señal de video progresivo de alta definición (3G-SDI) y monitor de forma de onda de la marca Tektronix, modelo WFM 7120, con una velocidad de transmisión de datos de 2.970 Gbps (SMPTE 424/425M) y un refresco de pantalla de 50/59.94/60 Hz.

We use a progressive high definition video signal generator (3G-SDI) and a Tektronix WFM 7120 waveform monitor, with a data transmission speed of 2.970 Gbps (SMPTE 424/425M) and a screen refresh rate of 50/59.94/60 Hz.



Picture / Report/WFM/Gamut Arrowhead



Errores en tx. de señal de video / Video session errors.

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