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TECHNICAL SPECIFICATIONS

SECURITY SYSTEM

DIVISION 16 - ELECTRICAL

SECTION 16770 - CLOSED CIRCUIT TELEVISION (CCTV) SYSTEM

PART 2 – PRODUCTS

2.01 GENERAL

- A. All equipment and materials used shall be standard components that are regularly manufactured and utilized in the manufacturer's system.
- B. All systems and components shall have been thoroughly tested and proven in actual use.
- C. All systems and components shall be provided with the availability of a toll-free (U.S. and Canada) technical support number from the manufacturer. The number shall provide technical assistance for either the dealer/installer or the end user at no charge for as long as the product is installed.

2.02 UNSHIELDED TWISTED-PAIR DUAL VIDEO/AUDIO TRANSCEIVER, ACTIVE

- A. The UTP/CCTV Dual Video/Audio Transceiver device shall be capable of transmitting or receiving two line level audio and two baseband monochrome or color video signals over unshielded twisted-pair (UTP) telephone wire up to a distance of 1,000 feet (300 m) on the passive channel and up to 3,000 feet (1 km) on the active channel.
- B. The transceiver shall accept baseband video signals from 75-ohm coaxial cable and 600 ohm (or lower) audio signals.
- C. The transceiver shall deliver baseband video signals capable of driving a 75-ohm load, and audio signals capable of driving a 600 ohm (or higher) load.
- D. Each transceiver shall support two video and two audio paths, as follows:
  - a. Video "a" receive only, active
  - b. Audio "b" receive or transmit
  - c. Audio "c" receive or transmit
  - d. Video "d" receive or transmit, passive
- E. The transceiver shall be equipped with a non-keyed RJ-45 jack for connection to UTP telephone wire.
  - a. Video "a" signal pinouts shall be: Pin 1(+) and pin 2(-)
  - b. Audio "b" signal pinouts shall be: Pin 3(+) and pin 6(-)
  - c. Audio "c" signal pinouts shall be: Pin 4(+) and pin 5(-)
  - d. Video "d" signal pinouts shall be: Pin 8(+) and pin 7(-)
- F. Connectors
  - a. Video interface connectors shall be female BNC connectors
  - b. Audio interface connectors shall be female 1/4" (6.4 mm) phone jacks, with signal appearing on Tip (+) and Ring (-) conductors.
  - c. Power input connector shall be a 5 mm female power plug.
- G. Power: Transceiver shall require 100 milliamps external power. This power shall be provided by a UL Class II Transformer provided with the transceiver
  - a. Input Voltage           120 Volts AC
  - b. Input frequency       60 Hz

- c. Input connector North American 2-prong
  - d. Output voltage 12-24 Volts AC or DC
  - e. Output connector 5mm female power plug
- H. The transceiver shall have a Amber “Power-On” LED
- I. The transceiver shall have a Green “Active” LED, when a video signal is present on path “a”.
- J. The transceiver shall have adjustable sharpness and brightness trimpot controls for path “a”.
- K. The transceiver shall have the ability to operate in the same wire bundle as telephone, data, low voltage or other video signals.
- L. The transceiver shall meet or exceed the following design and performance specifications:
- a. Have typical common-mode rejection of 60 dB between the frequencies of 15 KHz to 5 MHz.
  - b. The transceiver shall have a frequency response from DC to 5 MHz for video and 20 Hz to 20 KHz for audio.
  - c. The transceiver shall have an attenuation of 0.5 dB typical for video path “d” and 1.5 dB typical for audio.
  - d. The transceiver shall be for indoor use or for use in an environmental enclosure and allow a maximum operating temperature range of 0-50 degrees Celsius.
- M. The transceiver shall be capable of utilizing 24-16 AWG (solid or stranded) UTP wire.
- N. The transceiver shall be capable of utilizing Category 2 or better UTP wire without compromising interference immunity or transmission distances.
- O. The transceiver shall have a weight of 0.52 lbs (0.24 kg).
- P. The transceiver shall be packaged with a 3 ft. (.91 m) RJ-45 patch cord.
- Q. The transceiver shall be packaged with an external power supply.
- R. The transceiver shall be packaged with Adhesive 3M Dual Lock™ strip for mounting.
- S. The transceiver shall be UL and CUL listed.
- T. The transceiver shall be CE compliant.
- U. The transceiver shall be provided with a limited lifetime warranty.
- V. The UTP dual video/audio transceiver shall be the NVT:
- a. NV-518A or
  - b. Approved equal

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- A. All equipment and materials used shall be standard components that are regularly manufactured and utilized in the manufacturer's system.
- B. All systems and components shall have been thoroughly tested and proven in actual use.
- C. All systems and components shall be provided with the availability of a toll-free (U.S. and Canada) technical support number from the manufacturer. The number shall provide technical assistance for either the dealer/installer or the end user at no charge for as long as the product is installed.

2.02 UNSHIELDED TWISTED-PAIR RACK MOUNT DUAL VIDEO/AUDIO TRANSCEIVER PLUG-IN CARD, ACTIVE

- A. The UTP/CCTV Rack Mount Dual Video/Audio Transceiver Plug-In Card device shall be capable of transmitting or receiving two line level audio and two baseband monochrome or color video signals over unshielded twisted-pair (UTP) telephone wire up to a distance of 1,000 feet (300 m) on the passive channel and up to 3,000 feet (1 km) on the active channel.
- B. The transceiver shall accept baseband video signals from 75-ohm coaxial cable and 600 ohm (or lower) audio signals.
- C. The transceiver shall deliver baseband video signals capable of driving a 75-ohm load, and audio signals capable of driving a 600 ohm (or higher) load.
- D. Each transceiver shall support two video and two audio paths, as follows:
  - a. Video "a" receive only, active
  - b. Audio "b" receive or transmit
  - c. Audio "c" receive or transmit
  - d. Video "d" receive or transmit, passive
- E. The transceiver shall be equipped with a non-keyed RJ-45 jack for connection to UTP telephone wire.
  - a. Video "a" signal pinouts shall be: Pin 1(+) and pin 2(-)
  - b. Audio "b" signal pinouts shall be: Pin 3(+) and pin 6(-)
  - c. Audio "c" signal pinouts shall be: Pin 4(+) and pin 5(-)
  - d. Video "d" signal pinouts shall be: Pin 8(+) and pin 7(-)
- F. Connectors
  - a. Video interface connectors shall be female BNC connectors
  - b. Audio interface connectors shall be female 1/4" (6.4 mm) phone jacks, with signal appearing on Tip (+) and Ring (-) conductors.
  - c. Power input connector shall mate with Rack Motherboard power distribution.
- G. Power: Transceiver shall require 100 milliamps of power, provided by the Rack Motherboard.

UNSHIELDED TWISTED-PAIR RACK MOUNT DUAL VIDEO/AUDIO TRANSCEIVER  
PLUG-IN CARD, ACTIVE - Page 2

- H. The transceiver shall have a Amber “Power-On” LED
- I. The transceiver shall have a Green “Active” LED, when a video signal is present on path “a”.
- J. The transceiver shall have adjustable sharpness and brightness trimpot controls for path “a”.
- K. The transceiver shall have the ability to operate in the same wire bundle as telephone, data, low voltage or other video signals.
- L. The transceiver shall meet or exceed the following design and performance specifications:
  - a. Have typical common-mode rejection of 60 dB between the frequencies of 15 KHz to 5 MHz.
  - b. The transceiver shall have a frequency response from DC to 5 MHz for video and 20 Hz to 20 KHz for audio.
  - c. The transceiver shall have an attenuation of 0.5 dB typical for video path “d” and 1.5 dB typical for audio.
  - d. The transceiver shall be for indoor use or for use in an environmental enclosure and allow a maximum operating temperature range of 0-50 degrees Celsius.
- M. The transceiver shall be capable of utilizing 24-16 AWG (solid or stranded) UTP wire.
- N. The transceiver shall be capable of utilizing Category 2 or better UTP wire without compromising interference immunity or transmission distances.
- O. The transceiver shall have a weight of 0.40 lbs (0.18 kg).
- P. The transceiver shall be packaged with a 3 ft. (.91 m) RJ-45 patch cord.
- Q. The transceiver shall have an anodized panel secured by two captive screws for installation into UTP|CCTV Rack Mounting System.
- R. The transceiver shall be UL and CUL listed.
- S. The transceiver shall be CE compliant.
- T. The transceiver shall be provided with a limited lifetime warranty.
- U. The UTP rack mount dual video/audio transceiver plug-in card shall be the NVT:
  - a. NV-518AR or
  - b. Approved equal