



Direct Attach connection

What about a permanent link ending with a RJ45 plug and not with a TO?

It's interesting to provide some additional information on this topic in order to avoid the risk of not knowing how to justify or certify a connection of this type.

The "Direct Attach" configuration is a modular plug-ended horizontal cable at the device. This type of configuration is currently not included in the regulations on the cabling system provided by ANSI/TIA/EIS-568-C with the exception of the standard dedicated to the cable infrastructure for building automation systems (BAS). The standard ANSI/EIA/TIA-862-A in fact allows this type of connection for interconnecting wireless access-points, access control devices, industrial sensors, lighting and video cameras control devices and all cases in which the use of a normal TO is impossible or too difficult.

In the TIA-568 the "device" was originally deemed for computers and telephones which were the only networked devices at the time of the standards' origination.

Nowadays new applications and other IP devices are being attached to the data/voice network and there are many reasons why patch cords and outlets cannot be deployed at the device end.

Here we want to emphasize what we believe is most important in a system of video surveillance, that is security and protection: an exposed patch cord to a security camera is easy to disconnect.

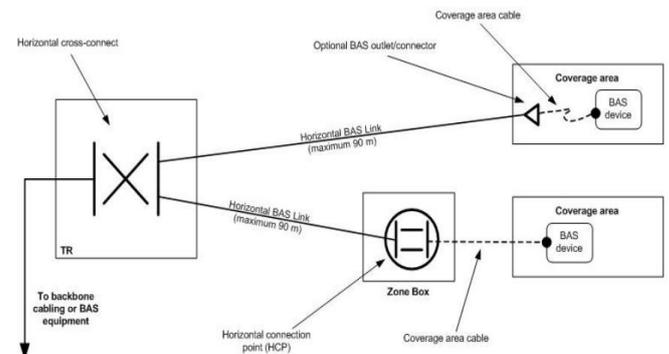
The TIA-862 BAS standard recognizes this and allows the elimination of an equipment cord in a coverage area when deemed unfeasible or unsafe. The allowance for Direct Attach connection was created for systems requiring specific non-tampering needs like IP cameras, alarm sensors, smoke detector sensor or ceiling access point.

Recognized horizontal cabling media components in the TIA-862 BAS are:

- ◆ 100 Ohm balanced twisted-pair cable, 22 or 24 AWG unshielded twisted-pair (UTP) cable is recommended (ANSI/TIA/EIA-568-B.2)
- ◆ Multimode optical fiber cable, either 62.5/125 or 50/125 µm (ANSI/TIA/EIA-568-B.3)
- ◆ Singlemode optical fiber cable (ANSI/TIA/EIA-568-B.3)

All associated connecting hardware shall comply with ANSI/TIA/EIA-568-B.2 or ANSI/TIA/EIA-568-B.3.

Here below a representative scheme of horizontal distribution:



Due to the rapid development of video surveillance applications, and more generally of electrical safety and security requirements (EES) the need to use the Direct Attach type of connections gets stronger and stronger. Many builders, designers and engineers are therefore doing their utmost to introduce this type of topology in new standards or updates of existing ones.

BICSI is planning the publication of a new standard (BICSI-005), scheduled for early 2013, dedicated to the EES cabling systems, which and allows the Direct Attach configuration in the following cases:

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- ◆ where there is no space to install TO
- ◆ when it is not safe to install a TO with relative patch cord
- ◆ when the client does not accept a TO for aesthetic or environmental reasons
- ◆ when the connection cable to the ESS devices runs inside a closed pipe, and this duct system is directly connected with the EES equipment

Allowing a direct attach the hurdle was formulating test procedures to meet certification requirements. The regulatory reference on how to behave when testing and certifying the system is provided by the American Underwriters Laboratories (UL).

However our advice is to use instrument as described in the picture here below and set the permanent link test as reference.

CCS connectivity and cabling system has developed a new “easy crimp” plug suitable for the Direct Attach.

CCS unshielded plug used to connect cables with solid conductors AWG 22-26.



With the tool-less Easy Crimp system, the connection is always fast and performing. Ideal for the realization of “Direct Attach” connection or “transition point” .

Characteristics meet and exceed CAT 5E - Class D requirements according to ISO/IEC 11801 and ANSI/TIA 568-B.2.



Item reference:

2012003: CAT 5E UTP Easy Crimp plug

