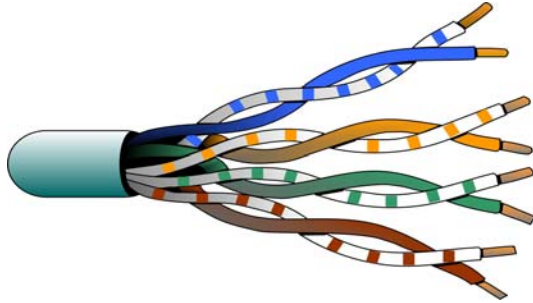


QuickMedia Transmission

CAT5e – Unshielded Twisted Pair (UTP) cable containing four twisted pairs, twisted together in the cable.



NOTE: Do not untwist the two wires in a single pair for more than 1/3-1/2" (0.84 – 1.27 cm) when making a connection. The twists are critical to canceling out interference between the wires.

RJ-45 Pin Number	Wire Color (EIA 586B)	QM Assignment RGB and Audio	QM Assignment Composite, S-Video and Audio
1	White/Orange	- RGB Red	- Chrominance (-C)
2	Orange	+ RGB Red	+ Chrominance (+C)
3	White/Green	- RGB Green	- Luminance (-Y)
4	Blue	+ Audio	
5	White/Blue	- Audio	
6	Green	+ RGB Green	+ Luminance (+Y)
7	White/Brown	- RGB Blue	- Composite
8	Brown	+ RGB Blue	+ Composite

Horizontal and vertical sync signals are transmitted differentially over the RGB lines, without processing. Sync signals are not transmitted until the end of the RGB transmission, eliminating the need for additional processing on the output end (as would have to be done if Sync was embedded within the green data. Differential transmission provides high noise immunity and enables additional signal processing via software tools.

The QuickMedia transport mechanism performs delay compensation on each video input to compensate for signal skew, and frequency/bandwidth compensation for cable length. Signal skew occurs when part of the signal is delayed with respect to other signal components. The amount of skew largely depends on the length and design of the wire. Because CAT5 consists of twisted pairs that are twisted together in the cable, unequal wire lengths are created. The maximum aggregate cable length from QM transmitter to QM receiver is limited by the loss of bandwidth over long distances and the amount of available skew compensation. A cable rated at 15 ns of skew per 100 meters (328 ft.) means that a cable will have no more than a 15 ns difference between the fastest and slowest RGB signals over 100 meters of cable. To determine the allowable maximum length of installed cable, the installer must first perform a calculation based on the skew rating of the cable. The use of low-resolution signals may allow increased cable length but must be tested with the sources to be used. To ensure sufficient bandwidth to support signal resolutions up to 1600 x 1200, the maximum aggregate cable length should not exceed 328 feet.

Skew compensation is primarily relevant to RGB sources; however, any/all video or VGA signals may experience a loss of quality over very long lengths of cable. This phenomenon is due to the added resistance and capacitance of longer cable lengths, and is not particular to either Crestron and/or QuickMedia systems.