



HDBaseT Installation Guide





This document provides the best practices for installing Ethernet cable with HDBaseT setups.

- We strongly recommend to use ATEN HDBaseT certified cable (2L-2910) to provide best performance and to guarantee best quality.

The 2L-2910 has been verified to meet performance requirements set by the HDBaseT Alliance and POH standard.

The 2L-2910 utilizes SF/UTP design with four unshielded 23 AWG twisted pair conductors. Among the four unshielded twisted pair conductors, there is one cross filler to reduce cross talk. The outer metal layer and the braid protect signal transmissions from electromagnetic interference and reduce the impact caused by electrical noise.

With pure copper conductor and better cladding design, user does not need to worry the risk of fire when use POH transmits huge current.

Thus, 2L-2910 is your best choice for HDBT solution.

- Applying right cable type & length:

HDBaseT Type	Mode	Cat5e/6	Cat6a/7 & ATEN 2L-2910 Cat6	Model
HDBaseT 2.0	Standard mode	4K2K@90m 1080P@100	4K2K@100m 1080P@100m	CE620* /CE624* /CE820 /CE920 and future products NOTE: For HDBaseT2.0, Cat6/6a/7 on the same segment.
	Long Reach mode	1080P@150m	1080P@150m	
HDBaseT 1.0 Class A	Standard mode	4K2K@70m 1080P@100	4K2K@100m 1080P@100m	VE811 /VE812 /VE1812 /VE814 /VE814A /VE813 /VE813A /CE610* /CE610A* /VE2812T /VE2812EUT /VE2812UST /VE816R and future products
	Long Reach mode	1080P@150m	1080P@150m	
HDBaseT 1.0 Class B (lite)	Standard mode**	4K2K@35m 1080P@60m	4K2K@40m 1080P@70m	VE801/ VE802/ VE805R/ VE601*/ VE901 and future products

*VE601 and CE610/CE610A/620/624 have a maximum resolution of 1920x1200 & 1600x1200.

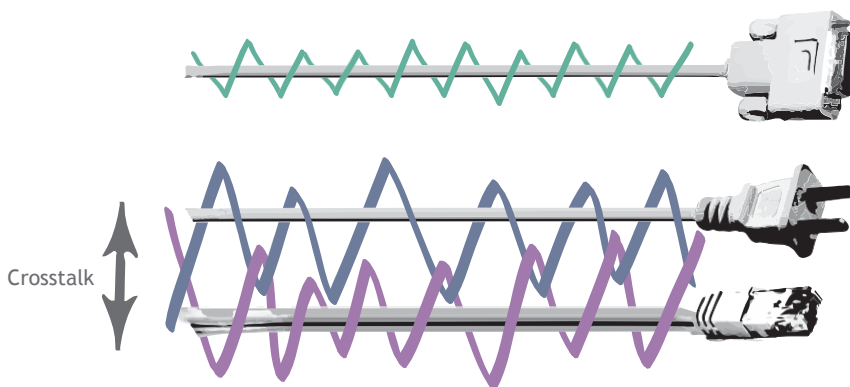
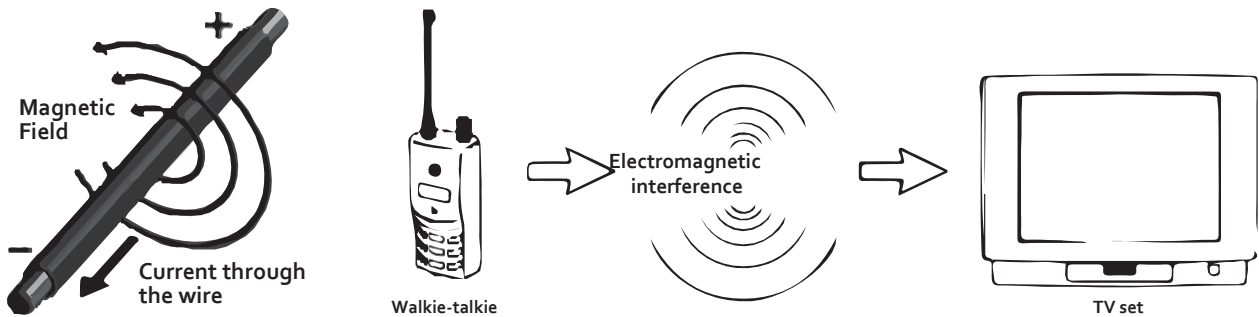
** HDBaseT1.0 ClassB do NOT support Long Reach mode

- The HDBaseT Alliance defines the maximum number of Ethernet cables in a bundle to be:

Type	30m	50m	70m	100m
CAT5e/6	6	4	2	1
CAT6a/7/2L-2910	6	6	6	6



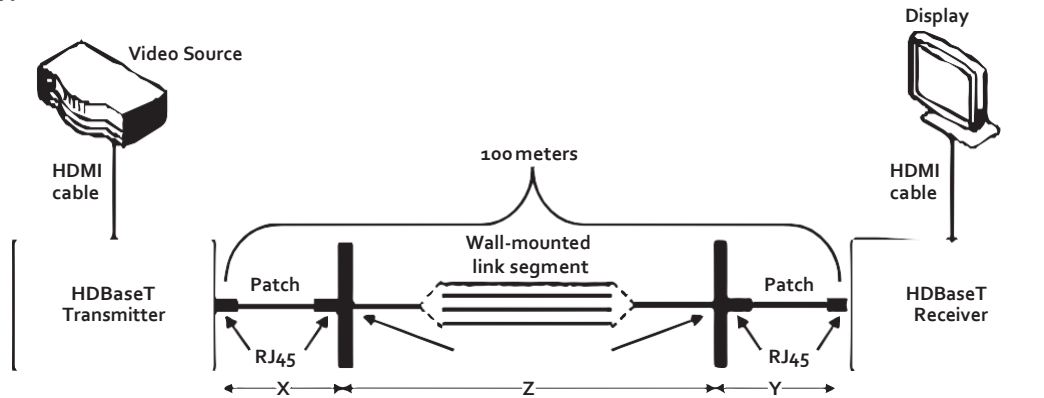
- Tie all cables loosely with appropriate cable wraps, leave space for the cable to move slightly, and do not pull hard on cable because that may cause pairs to untwist and degrade performance. Always try to minimize damage to the cable structure during installation and never drop or install anything on or over an Ethernet cable.
- Always keep cable away from equipment that may cause electromagnetic interference and magnetic fields, such as high voltage electric cables, electric motors, Walkie-Talkies, TVs and elevators.



- When installing in an environment with lots of structured cabling, do your best to separate out the Ethernet cable from all other cables to prevent crosstalk with other signals.



- The total run of an Ethernet cable may include up to two patch cables, typically serving as connections to RJ-45 wall jacks. This is referred to as a three-segment installation, as shown below:



X = Left-side patch cable length ≤ 5 [meter] (as short as possible)
 Y = Right-side patch cable length ≤ 5 [meter] (as short as possible)
 Z = Wall segment $\leq 100 - X - Y$ [meter]

***Depends on different criteria, please refer HDBaseT type table of Page1 for the real number of distance.

- Do not use patch cable for the wall segment. The wall segment requires AWG 24/23 infrastructure cable.



Patch cable
(N)

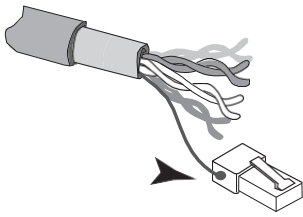


solid wire
(O)

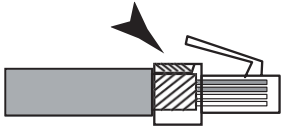


Shielded coupler

- If pass-through points are required, use shielded couplers.
- Apply T568A or T568B standards for straight through cabling.



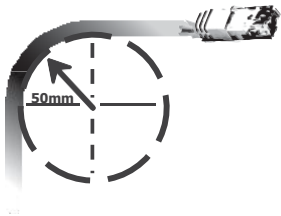
- When using STP/FTP cable, make sure the drain wire is well soldered to the metal casing of the RJ-45 connectors on both ends.



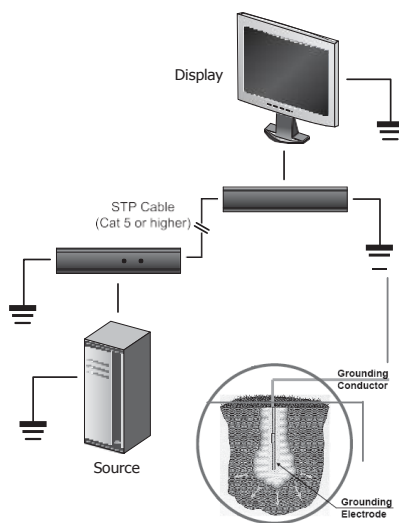
- Make sure the shielding makes tight contact with the top side in the RJ-45 connector.



- Install cable of the shortest length possible between the HDBaseT Transmitter and Receiver while leaving a little wiggle room to ensure the cable does not apply pressure to either device port. Always avoid using unnecessary rolls of cable which will result in performance degradation due to the increased length.



- Do not bend the cable beyond a bend radius of 50 mm.



- Ground all devices.
- Ensure that every source and cable is grounded so that electrical interference does not have a path through your main signal. Ensuring a proper ground will maintain your signal integrity for the life of the installation.

