

## AN: 02-05-05

### Why use twist converters?

#### Introduction

A very frequent question of our customers is:

'Why do I have to use a twist converter when I have a twist UTP cable? It is just 50 m. That must work!'

The answer can be brief: 'It depends on a situation.'

If we look at the situation more closely we can summarize the problem this way:

- the signal transferred without using a converter is not matched to the cable which results in remarkable distortion
- with the increasing distance of transmission the signal level and intensity decreases with no possibility to adjust it. A certain decrease of the signal level in the cables may result in a complete loss of the signal if digital recording devices are used.
- no galvanic separation of the camera location and no overvoltage protection (part of BREAK converters) are provided

- when more camera signals are using the same cable the signal race results in significant crosstalk - see the pictures above.

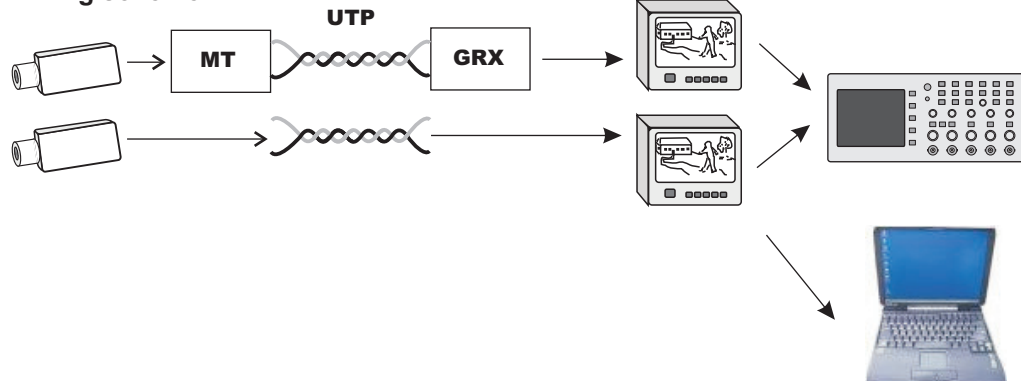
- incorrectly matched cables also cause interference to the default set pairs -see the pictures below



After disconnection of the mismatched pair



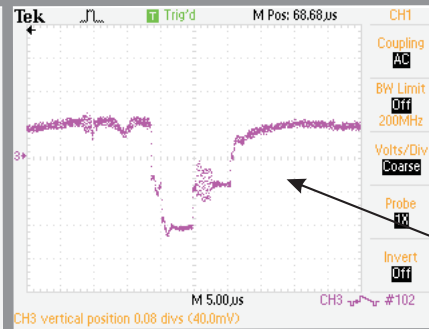
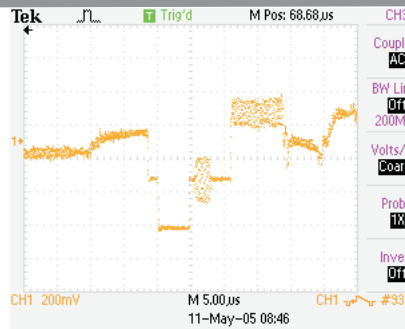
Wiring scheme



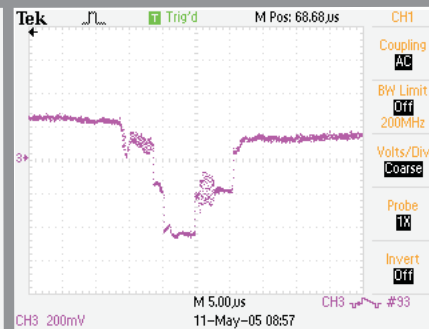
### With converter

### Without converter

50m UTP



100m UTP



150m UTP

