Acceptance tests for ELine™ cabling systems

The acceptance tests for ELine™ cabling systems are carried out according to the requirements of ISO/IEC 11801 / EN 50173, 2nd Edition, for channels and permanent links.
Further standards related to acceptance tests (execution of tests): DIN EN 50346 and DIN EN 61935

Channel Class F

Frequency/MHZ	1	16	100	250	600
Attenuation/dB	4.0	8.1	20.8	33.8	54.6
Near-end cross-talk attenuation/dB	65.0	65.0	62.9	56.9	51.2
PS NEXT/dB	62.0	62.0	59.9	53.9	48.2
ACR/dB	61.0	56.9	42.1	23.1	-3.4
PS ACR/dB	58.0	53.9	39.1	20.1	-6.4
ELFEXT/dB	65.0	57.5	44.4	37.8	31.3
PS ELFEXT/dB	62.0	54.5	41.4	34.8	28.3
Reflection attenuation/dB	19.0	18.0	12.0	8.0	8.0
Asymmetry attenuation/dB	–	–	–	–	–
Time delay/µs	0.580	0.553	0.548	0.564	0.545
Time delay difference/µs	0.030	0.030	0.030	0.030	0.030

Max. loop resistance 25 ohm
Max. loop resistance asymmetry 0.75 ohm

Channel Class E

Frequency/MHZ	1	16	100	250	600
Attenuation/dB	4.0	8.3	21.7	35.9	–
Near-end cross-talk attenuation/dB	65.0	53.2	39.9	33.1	–
PS NEXT/dB	62.0	50.6	37.1	30.2	–
ACR/dB	61.0	44.9	18.2	-2.8	–
PS ACR/dB	58.0	42.3	15.4	-5.8	–
ELFEXT/dB	63.3	39.2	23.3	15.3	–
PS ELFEXT/dB	60.3	26.2	20.3	12.3	–
Reflection attenuation/dB	19.0	18.0	12.0	8.0	–
Asymmetry attenuation/dB	–	–	–	–	–
Time delay/µs	0.580	0.553	0.548	0.546	–
Time delay difference/µs	0.050	0.050	0.050	0.050	–

Max. loop resistance 25 ohm
Max. loop resistance asymmetry 0.75 ohm

In situ measurement according to Class F

In order to guarantee customer satisfaction, in-situ measurement is becoming more and more important for the approval of a system after installation. Customers who have installed a high-quality Class F system are increasingly demanding proof that the promised specifications are complied with over the entire frequency range of Class F up to 600 MHz as an expression of the high quality of their systems. With the two systems ELine 1200® and EC7 and ELine 600® GG45, KERPEN offers not one but two cabling platforms suitable for Class F. State-of-the-art in-situ measurement techniques are used for approval measurements and certifications according to Class F. In the field of Class F in-situ measuring, KERPEN works with the manufacturers Ideal and Fluke in order to measure the performance in the permanent link and in the channel. Measuring instruments from both manufacturers can also be used with their RJ45 adapters for measuring according to Draft Class E_A.

Standard Class F acceptance testing according to ISO/IEC 11801 and EN 50173 up to 600 MHz:
Recommended measuring instruments and adapters:

- IDEAL LANTEK 7G
  (ELine 1200® EC7 Fluke and ELine 600® GG45 adapters available from IDEAL Ind.)
- Fluke DTX1,800
  (ELine 1200® EC7 adapter available from KERPEN, Article number 9ZE30038)

IDEAL

Ideal Industries LANTEK 7G

Fluke

Fluke DTX1,800

Measuring adapter for the ELine 1200® EC7 cabling system:

Measuring adapter for the ELine 600® GG45 cabling system:

In the acceptance testing of a GG45 cabling system according to Class F, separate Class E testing of the RJ45 contacts is no longer necessary as full testing of the jacks is carried out by the manufacturer.

Acceptance testing ELine 250® RJ45 S
ELine 250® RJ45 U
ELine 250® MLS
ELine 250® MLU
ELine 250® MLU
ELine 250® FIXUM

Standard acceptance testing up to 250 MHz

- Acceptance testing according to Class E – 250 MHz permanent link
- Recommended measuring instruments (as of May 2004):

– Fluke: OMNIscanner2, OMNIscanner, DSP 4300, DSP 4100 or DSP 4000, DIX 1,800
IDEAL: LANTEK 7, LANTEK 6
(Information on other recommended measuring instrument on request)

For user information please go to:
www.idealindustries.de
www.fluke.com

A selection of measuring instruments (examples):

Fluke OMNIScanner2

Fluke DSP 4300

IDEAL Industries LANTEK 7