Comments on Annex 113A

Page 204, Lines 19-21: Editorial

Current text:

Cable clamp electrical measurement - The clamp should be tested to measured to ensure the insertion loss and return loss are as specified in 113A.2. Electrical parameters of the clamp are measured between teh source connections and without cabling (that is, no cabling inserted in the clamp inner conductor).

Proposed new text:

Cable clamp electrical measurement - The clamp should be tested to ensure the insertion loss and return loss are as specified in Table 113A-1. Electrical parameters of the clamp are measured between the source input connections and without any cabling inserted in the clamp inner conductor.

Page 204, Lines 38: Technical

Current text:

The validation test hardware consists of the following:

Proposed new text:

The validation test hardware consists of the following. Note the frequency range of the equipment specifications may exceed the frequency sweep range of the standard-specific test limits.

Page 204, Lines 35-41: Technical

Current text:

c) Balun—4 ports, laboratory quality with a 100 Ω differential input and a 50 Ω single-ended, unbalanced output:

Insertion Loss (100 Ω balanced <->50 Ω unbalanced): < 4 dB (1 MHz-2000 MHz)
Return Loss: > 8 dB (1 MHz - 3 MHz), > 15 dB (3 MHz-2000 MHz)
Common-Mode Rejection: > 50dB (10 MHz-1000 MHz), > 40dB at 2000 MHz
Common-Mode Return Loss: > 8dB (1 MHz-2000 MHz)

Proposed new text:

c) Balun—3 ports, laboratory quality with a 100 Ω balanced differential input (Port 1), a 50 Ω unbalanced single-ended output for the differential component (Port 2), and a 50 Ω unbalanced single-ended output for the common-mode component (Port 3):

Insertion Loss (Port 1 <--> Port 2): < 4 dB (30 MHz-2000 MHz)
Return Loss (Port 1, Zref = 100 Ω): > 15 dB (30 MHz-2000 MHz)
Common-Mode Rejection (Port 1 <--> Port 2): > 45 dB (30 MHz-1000 MHz), > 40dB at 2000 MHz
Common-Mode Return Loss (Port 1, Zref = 25 Ω): > 8dB (30 MHz-2000 MHz)

Note 1: The use of two separate differential and common-mode signal component measurement configurations is permissible provided the above specifications are met for each measurement configuration

Note 2: The common-mode reference (termination) impedance may be standard specific. The common-mode return loss requirement does not change, but Zref (common-mode) may be 50 Ω or 75 Ω for UTP applications.

Page 204, Line 54: Technical

Current text:

h) Signal generator capable of providing a sine wave signal of 1 MHz to 2000 MHz

Proposed new text:

h) Signal generator capable of providing a sine wave signal of 30 MHz to 2000 MHz:

Output harmonic distortion: < -40 dBc
Maximum output power (while maintaining harmonic distortion specification: > 13 dBm
RF Envelope rise/fall time (output on/off transitions): 50 usec to 1000 usec

Note 1: The signal generator blocks shown in Figure 113A-3 and Figure 113A-4 may consist of separate signal generator, output power amplifier, and RF envelope modulator modules connected together.

Page 205, Line 3: Technical

Current text:

j) Receiver

Proposed new text:

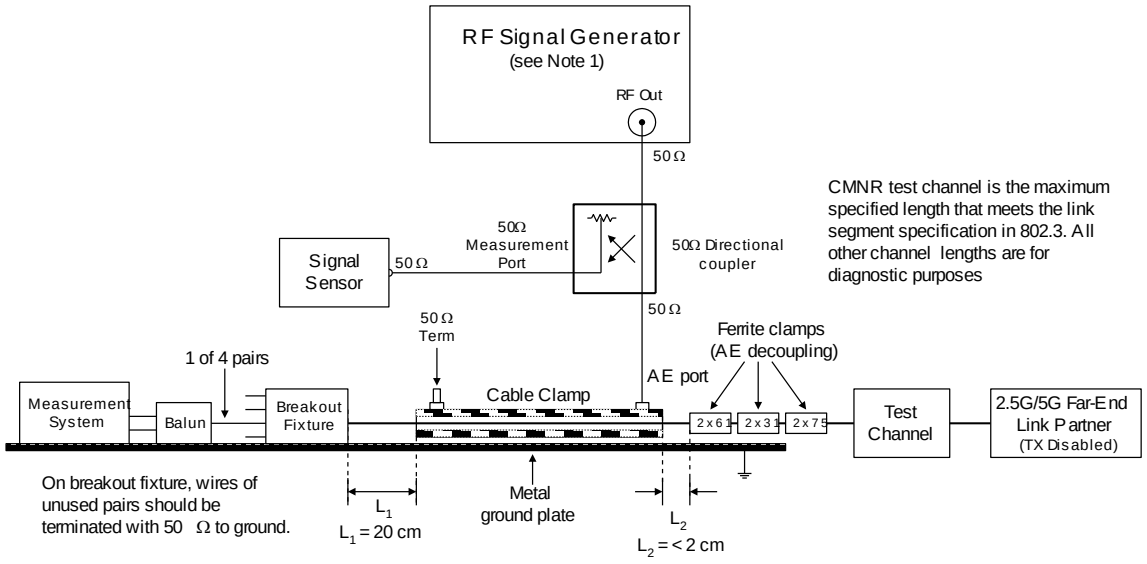
j) Directional coupler

Mainline Insertion Loss: < 2 dB (30 MHz-2000 MHz)
Coupling Loss: < 20 dB (30 MHz-2000 MHz)
Return Loss (Mainline Ports): > 20 dB (30 MHz-2000 MHz)
Return Loss (Coupling Port): > 15 dB (30 MHz-2000 MHz)

k) Receiver

Page 205, Figure 113A-3: Technical (Illustrative example)

Proposed modification to add directional coupler at clamp input:



Important note: This figure is not intended to be copied exactly into the standard document. Its main purpose is to show the insertion location for the added directional coupler.

Page 205, Lines 21-22: Technical

Current text:

With the test cable inserted in the cable clamp, a signal generator with a 50 Ω output impedance is connected to one end of the cable clamp and a signal sensor with a 50 Ω input impedance is connected to the other end.

Proposed new text:

With the test cable inserted in the cable clamp, a signal generator with a 50 Ω output impedance is connected to one end of the cable clamp through an intermediate directional coupler, and a 50 Ω termination is connected to the other end of the cable clamp. Measurement equipment (with a 50 Ω input impedance) for verification of the test signal power, harmonic distortion, and envelope rise/fall time is connected to coupled port of the directional coupler. It is assumed that the coupling loss and mainline loss of the directional coupler have been previously determined by measurement or other means, and these loss factors are used to correct all measurements to their proper value.

Page 205, Line 24: Technical

Change 1 MHz to 30 MHz

Page 205, Line 25: Technical

Change 20 MHz to 50 MHz

Page 205, Lines 26-27: Technical

Current text:

The cable pairs not connected to the balun are terminated in a resistor network.

Proposed new text:

The cable pairs not connected to the balun (or equivalent measurement network) are terminated in a resistor network.

Page 205, Line 38: Technical

Change 1 MHz to 30 MHz

Page 205, Table 113A-2: Technical

Proposed changes to table:

Eliminate the top entry for the validation requirements in the frequency range of 1 MHz to 30 MHz.

Page 206, Lines 3-5 (Note 1): Technical

Current text:

The signal generator output should be adjusted to the specified signal power (for example 6 dBm for 40GBASE-T) at 20 MHz on the signal sensor. When the frequency is varied from 1 MHz to 2000 MHz, the measured power should not vary more than ±10 %.

Proposed new text:

The signal generator output should be adjusted to the specified signal power (for example 6 dBm for 40GBASE-T) at 50 MHz on the signal sensor. When the frequency is varied from 30 MHz to 2000 MHz, the measured power should not vary more than ±10 %.

Page 206, Line 24: Technical

Change 1 MHz to 30 MHz

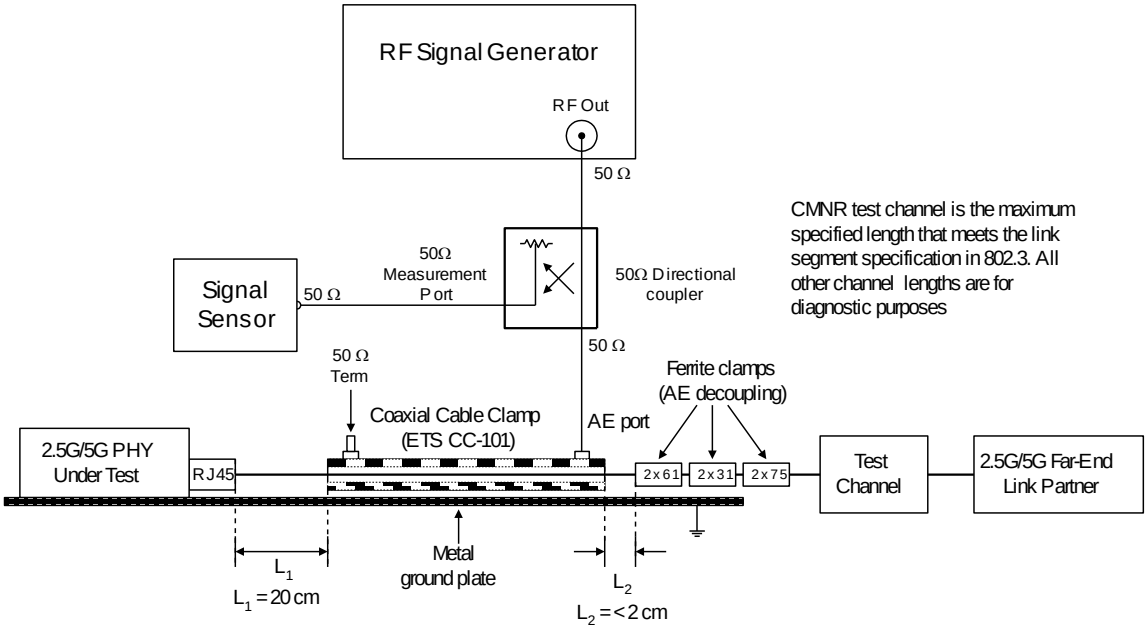
Page 206, Starting at Line 28: Technical

Proposed added new text:

The signal generator output frequency is swept incrementally from 80 MHz to 2000 MHz with a step size that should not exceed 1% of the preceding frequency value while using the signal level during the validation process. In any case, the frequency sweep shall use the same frequency point set used during the validation process. During the transition to the next frequency point, the signal generator output shall be off. When the transition is complete, the carrier envelope shall rise to its prescribed amplitude in no less than 50 usec but no more than 1.0 msec. Before the next frequency transition, the carrier enveloope shall fall to zero amplitude in no less than 50 usec but no more than 1.0 msec. The dwell time at each frequency shall not be less than the time necessary for the EUT to be exercised and to respond, but shall in no case be less than 0.5 seconds.

Page 206, Figure 113A-4: Technical (Illustrative example)

Proposed modification to add directional coupler at clamp input:



Important note: This figure is not intended to be copied exactly into the standard document. Its main purpose is to show the insertion location for the added directional coupler.