

# ITU-T

TELECOMMUNICATION  
STANDARDIZATION SECTOR  
OF ITU

# G.671

**Amendment 2**  
(12/2006)

SERIES G: TRANSMISSION SYSTEMS AND MEDIA,  
DIGITAL SYSTEMS AND NETWORKS

Transmission media characteristics – Characteristics of  
optical components and subsystems

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Transmission characteristics of optical components  
and subsystems

**Amendment 2**

ITU-T Recommendation G.671 (2005) – Amendment 2

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# **ITU-T Recommendation G.671**

## **Transmission characteristics of optical components and subsystems**

### **Amendment 2**

#### **Summary**

This amendment contains modifications to ITU-T Rec. G.671 (2005) to modify the definition of one parameter as well as to replace the parameter "group delay ripple" by a new parameter "phase ripple" and its definition.

#### **Source**

Amendment 2 to ITU-T Recommendation G.671 (2005) was approved on 14 December 2006 by ITU-T Study Group 15 (2005-2008) under the ITU-T Recommendation A.8 procedure.

## FOREWORD

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In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

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# ITU-T Recommendation G.671

## Transmission characteristics of optical components and subsystems

### Amendment 2

#### 1) Clause 2 References

*Add the following new reference:*

- [28] ITU-T Recommendation G.698.1 (2006), *Multichannel DWDM applications with single-channel optical interfaces*.

#### 2) Clause 3.2.8 channel frequency range

*Modify the text of clause 3.2.8 as shown below:*

**3.2.8 channel frequency range:** The frequency range within which a DWDM device is required to operate with a specified performance. For a particular nominal channel central frequency,  $f_{nomi}$ , this frequency range is from  $f_{imin} = (f_{nomi} - \Delta f_{max})$  to  $f_{imax} = (f_{nomi} + \Delta f_{max})$ , where  $\Delta f_{max}$  is the maximum channel central frequency deviation or the spectral excursion. Nominal channel central frequency and maximum channel central frequency deviation are defined in ITU-T Rec. G.692 and spectral excursion is defined in ITU-T Rec. G.698.1.

#### 3) Clause 3.2.36 group delay ripple

*Change the name and the text of clause 3.2.36 by the following text:*

**3.2.36 phase ripple:** The phase ripple of an optical device is the maximum peak-to-peak variation of the phase through the device with respect to a quadratic approximation of the phase characteristic within the channel frequency range (DWDM devices) or channel wavelength range (CWDM and WWDM devices).

Some optical devices exhibit chromatic dispersion within the channel frequency range. This means that the optical phase varies (approximately) in a quadratic manner with frequency. The phase ripple is therefore defined as the peak-to-peak variation in phase with respect to a quadratic change in phase with frequency.

The relationship between the phase ripple and the optical penalty it causes is dependent on factors such as the signal bit rate, modulation format, width of the optical spectrum, position of the signal within the channel frequency range, etc. This means that the value of this parameter must be determined from the application in the relevant transmission system Recommendation.

#### 4) **Clause 5.16 Tuneable (chromatic) dispersion compensator**

*Modify the table of clause 5.16 as shown below:*

Clause	Parameter	Max	Min	Test method
5.16.1	Dispersion compensation tuning range (ps/nm)	na	400	ffs
5.16.2	Channel frequency range (THz)	sba	sba	
5.16.3	Insertion loss	ffs	ffs	IEC 61300-3-4, IEC 61300-3-7
5.16.4	Reflectance (dB)	−27	na	IEC 61300-3-6
5.16.5	Polarization dependent loss (PDL) (dB)	ffs	na	IEC 61300-3-2, IEC 61300-3-12
5.16.6	Polarization dependent reflectance (dB)	ffs	na	IEC 61300-3-19
5.16.7	Allowable input power (dBm)	ffs (Note 2)	na	ffs
5.16.8	Polarization mode dispersion (PMD) (Note 7) (ps)	ffs	na	ITU-T Rec. G.650 (Note 3)
5.16.9	<del>Group delay</del> Phase ripple	sba	na	ffs





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