

EXAMEN : BACCALAURÉAT GÉNÉRAL	SESSION 2011
ÉPREUVE : Évaluation spécifique de langue en section européenne	
PHYSIQUE-CHIMIE en langue ANGLAISE	SUJET N°10

THE Bluetooth™ TECHNOLOGY

Bluetooth is a [wireless personal area network](#) technology (**WPAN** for short), a low-range wireless network technology used for linking devices to one another without a hard-wired connection. Bluetooth uses radio waves (in the 2.4 GHz frequency band) to communicate. Unlike the *IrDa* technology (which uses an infrared connection), Bluetooth devices do not need a direct line of sight to communicate, which makes them more flexible in use and allows room-to-room communication in small spaces.

The aim of Bluetooth is to transmit voice or data between devices with low-cost radio circuits, over a range of about ten to just under a hundred metres, using very little power.

Bluetooth technology is designed mainly for linking devices (such as printers, mobile phones, home appliances, wireless headsets, mice, keyboards, etc.), computers, or PDAs to one another, without using

a wired connection. Bluetooth is also becoming more and more commonly used in mobile phones, allowing them to communicate with computers and is especially widespread in hands-free accessories like Bluetooth headsets.

The Bluetooth standard actually defines 3 classes of transmitters, whose range varies as a function of their radiating power:

Class	Power	Range
I	100 mW	100 meters
II	2.5 mW	15-20 meters
III	1 mW	10 meters

CLASS	FREQUENCY	WAVELENGTH	ENERGY
Y	300 EHz	1 pm	1.24 MeV
HX	30 EHz	10 pm	124 keV
SX	3 EHz	100 pm	12.4 keV
EUV	300 PHz	1 nm	1.24 keV
NUV	30 PHz	10 nm	124 eV
NIR	3 PHz	100 nm	12.4 eV
MIR	300 THz	1 µm	1.24 eV
FIR	30 THz	10 µm	124 meV
EHF	3 THz	100 µm	12.4 meV
SHF	300 GHz	1 mm	1.24 meV
UHF	30 GHz	1 cm	124 µeV
VHF	3 GHz	1 dm	12.4 µeV
HF	300 MHz	1 m	1.24 µeV
MF	30 MHz	10 m	124 neV
LF	3 MHz	100 m	12.4 neV
VLF	300 kHz	1 km	1.24 neV
SLF	30 kHz	10 km	124 peV
ELF	3 kHz	100 km	12.4 peV
	300 Hz	1 Mm	1.24 peV
	30 Hz	10 Mm	124 feV
	3 Hz	100 Mm	12.4 feV

Legend		
γ= Gamma rays	MIR= Mid infrared	HF= High freq.
HX= Hard X-rays	FIR= Far infrared	MF= Medium freq.
SX= Soft X-rays	Radio waves	LF= Low freq.
EUV= Extreme ultraviolet	EHF= Extremely high freq.	VLF= Very low freq.
NUV= Near ultraviolet	SHF= Super high freq.	VF/ULF= Voice freq.
Visible light	UHF= Ultra high freq.	SLF= Super low freq.
NIR= Near Infrared	VHF= Very high freq.	ELF= Extremely low freq.
		Freq=Frequency

adapted from
<http://en.kioskea.net/contents/bluetooth/bluetooth-intro.php3>

1. Present and comment on this document
2. Do not forget to focus on the type of waves involved in the transmission of information by Bluetooth
3. Do you know any other uses for waves ?