

Project: IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs)

Submission Title: [TG15.6 Regulation Summary]

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Abstract: [A brief view on the TG15.6 related regulations]

Purpose: [To help forwarding the discussion in TG15.6]

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TG 15.6 Regulation Summary

Huan-Bang Li

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Motivations

- **Present a brief view on the regulation subcommittee report**
- **Follow current undertaking on regulation**
- **Seeking for any complementary or new information,**

Regulations Included In The Report

■ Countries and regions

- Australia, European Union, Japan, Korea, USA

■ Frequency bands

- Medical implant communication system (MICS)
- Wireless medical telemetry system (WMTS)
- Industrial, scientific, and medical band (ISM)
- Ultra-wideband (UWB)

Frequency Band For MICS (402-405 MHz)

	Power	Channel	Remarks
Australia	< 25 μ W e.i.r.p	\leq 300 kHz	Secondary use.
	< 100nW e.i.r.p	403.56 - 403.76 MHz	Medical implant telemetry systems
EU	< 25 μ W e.i.r.p	25 kHz/channel, one transmitter can use up to 300 kHz.	Secondary use.
Japan	< 25 μ W e.i.r.p	\leq 300 kHz	Secondary use.
Korea	< 25 μ W e.i.r.p	\leq 300 kHz	Secondary use.
	< 100nW e.i.r.p	403.5 -403.8 MHz	
USA	< 25 μ W e.i.r.p	\leq 300 kHz	Secondary use.

Frequency Band For MICS (401-402MHz and 405-406MHz)

- **In EU**, the 401-402 MHz and the 405-406 MHz frequency bands are allowed to be used for the emerging medical implant technologies, using Ultra Low Power – Active Medical Implants (ULP-AMI) and ULP-AMI-P (peripheral devices for ULP-AMI).
- The bandwidth can be from 25 kHz and up to 100 kHz with an e.i.r.p. of $-25\mu\text{W}$.

Frequency Band For WMTS

	Frequency Bands	Bandwidths	Remarks
Australia	433.05–434.79 MHz	N/A	Low Interference Potential Devices
EU	N/A	N/A	N/A
Japan	420.05MHz – 449.6625 MHz	8.5 - 320 kHz	WMTS
Korea	N/A	N/A	N/A
USA	608 – 614 MHz 1395 – 1400 MHz 1427 -1729.5 MHz	1.5 – 6 MHz No specification No specification	WMTS

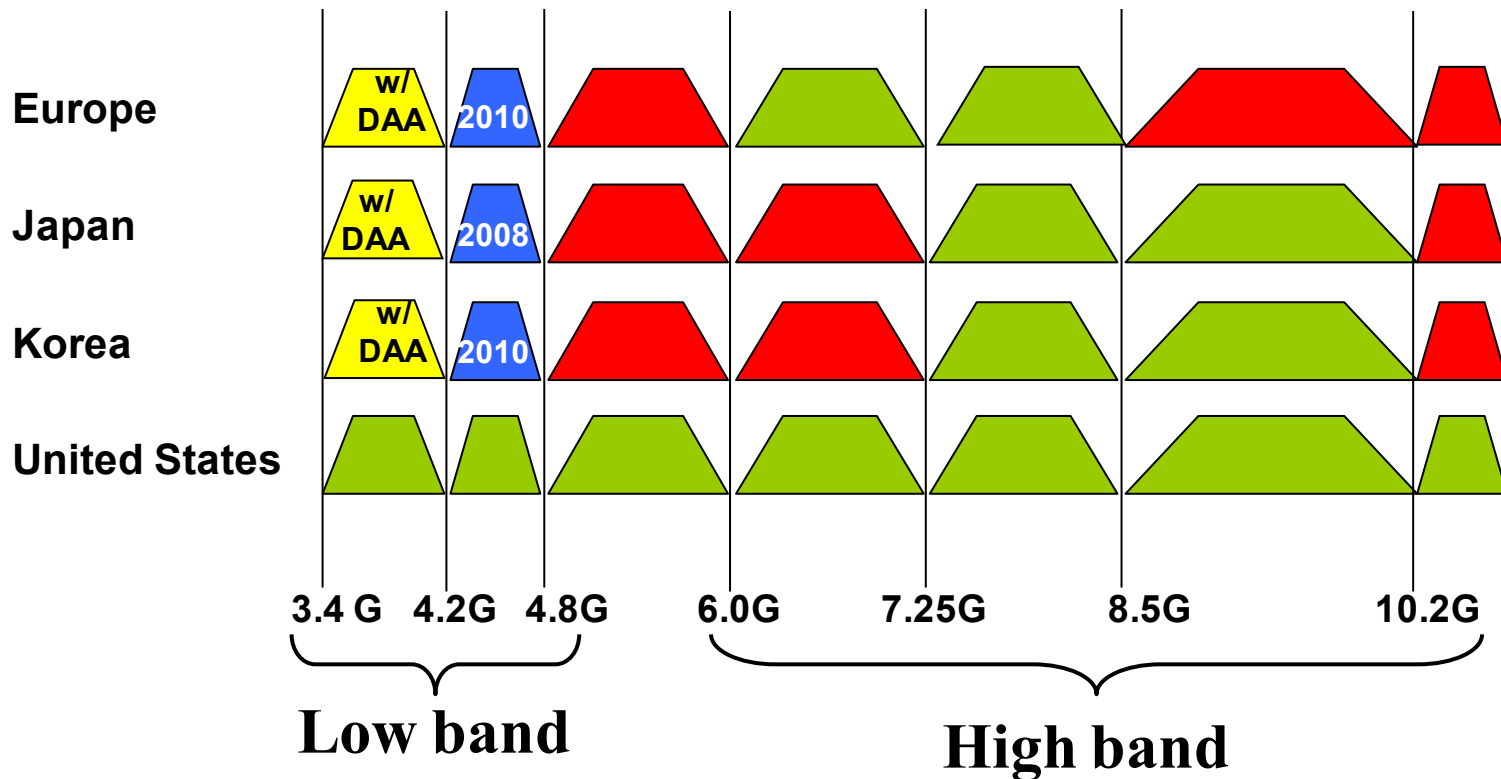
UWB Low Bands

	PSD	Frequency Bands	Remarks
Australia	N/A	N/A	N/A
EU	-41.3 dBm/MHz	3.4 - 4.8 GHz	LDC or DAA are applied
		4.2 - 4.8 GHz	By Dec. 31, 2010
Japan	-41.3 dBm/MHz	3.4 – 4.8 GHz	DAA is applied
		4.2 – 4.8 GHz	By Dec. 31, 2008
Korea	-41.3 dBm/MHz	3.1 - 4.8 GHz	LDC or DAA are applied
		4.2 - 4.8 GHz	By Dec. 31, 2010
USA	-41.3 dBm/MHz	3.1 -10.6 GHz	
Common	-41.3 dBm/MHz	4.2 -4.8 GHz	Time limitation

UWB High Bands

	Frequency Bands	PSD	Remarks
Australia	N/A	N/A	N/A
EU	6 - 8.5 GHz	-41.3 dBm/MHz	
Japan	7.25 – 10.25 GHz	-41.3 dBm/MHz	
Korea	7.2 -10.2 GHz	-41.3 dBm/MHz	
USA	3.1 -10.6 GHz	-41.3 dBm/MHz	
Common	7.25 -8.5 GHz	-41.3 dBm/MHz	

UWB Band Highlight



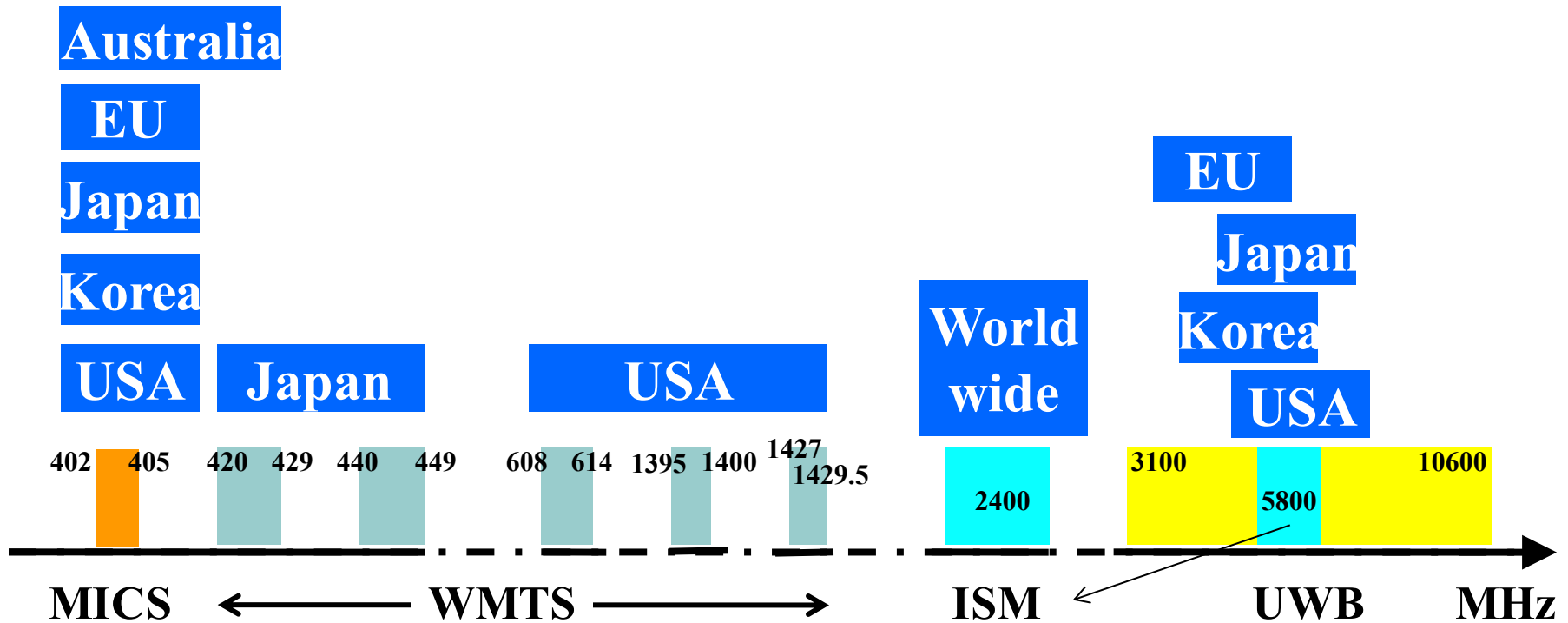
⚡ Currently, the data rate must be larger than 50 Mbps for UWB technology.

ISM Bands

The ISM bands are allocations for unlicensed operation. The interested ISM bands include

- 433.05–434.79 MHz (centre frequency 433.92 MHz)
- 2.400–2.500 GHz (centre frequency 2.450 GHz)
- 5.725–5.875 GHz (centre frequency 5.800 GHz)

Frequency Band Highlight



FCC NPRM and NOI

- July 18, 2006, FCC released Notice of proposed rulemaking (**NPRM**) and notice of inquiry (**NOI**) document [**FCC-06-103**]

✓ 402-405 MHz
✓ MICS use only

Current

✓ 401-406 MHz
✓ MedRadio = Medical
radio communication

New

FCC Public Notice (April 2008)

It follows the GE Healthcare's ex parte

- Proposed frequency band for MBAN (2360 -2400 MHz)
 - 2370 – 2390 MHz for **an inner set**
 - 2360 – 2370 MHz } for **an out set**
 - 2390 – 2400 MHz }

Proposed emission power is up to 0 dBm for a maximum 1MHz bandwidth.

**Any related information is
appreciated**

and

Thank you for your attention !