

## Chapter II of “PERDIRJEN POSTEL No. 2 Tahun 2019”

### WLAN Device Technical Requirements

#### A. GENERAL REQUIREMENTS

##### 1. POWER SUPPLY

Telecommunication device with WLAN can use AC or DC Power.

For device with AC Power, all parameters should be fulfilled when using AC Power 220 V ± 10% and frequency 50 Hz ± 2%. If using external power supply (such as AC/DC power converter), External power supply should not affect device's functionality to fulfill all technical parameters.

##### 2. NON-PENGLON RADIATION REQUIREMENT

WLAN device is mandatory to fulfill International Commission on Non-Ionizing Radiation Protection (ICNIRP). IF there's still no KAN-accredited local lab that is capable to do testing on non-pengion radiation, so this requirement is not mandatory to be fulfilled (voluntary).

##### A. SAR Requirements for subscriber station telecommunication device with WLAN

Table 1. Electrical and magnetic field exposure Limit for frequency range up to 10 GHz

Exposure Characteristic	Radio Frequency Range	Localized SAR (Head and Trunk ) ( $W \cdot Kg^{-1}$ )
Occupational Exposure	10 MHz – 10 GHz	10
General Public Exposure	10 MHz – 10 GHz	2

*Power Level : > 20 mW and distance from body : 20 cm*

Note:

1) Occupational Exposure is required for SS WLAN that is worn to body for occupational purpose (for example is manufacture Industry);

2) General Public Exposure is required for SS WLAN that is used close to the body by public.

##### B. EMF Radiation requirement for base station/access point of WLAN device.

Table 2. EMF Exposure Limit

Radio Frequency Range	E-Field Strength ( $V \cdot M^{-1}$ )	H-Field Strength ( $A \cdot M^{-1}$ )	B-Field ( $\mu T$ )	Equivalent Plane Wave Density Seq ( $W \cdot M^{-2}$ )
2-300 GHz	61	0.16	0.20	10

### 3. ELECTRICAL SAFETY

Electrical safety testing for WLAN Device is mandatory to fulfill requirements defined in IEC 60950-Parameters that have to be fulfilled are:

- A. Over Voltage; and
- B. Leaked current

WLAN device that should fulfill electrical safety parameter are:

- A. WLAN device with external power supply, AC/DC Power converter, or charger/power adapter, and
- B. WLAN device that works with SELV in environment that allows to use over voltage in telecommunication network. SELV refers to voltage that is not more than 42,4 V peak or 60 V DC.

### 4. EMC REQUIREMENTS

WLAN device should fulfill SNI ISO/IEC CISPR 32 - 2018.

For EMC assessment, testing lab should classify the WLAN device to devices for:

- A. Fixed (non mobile) purpose, driving purpose (terminal is connected to car charger or DC power supply); or
- B. Portable purpose (power supplied by internal battery)

This classification is used to decide which EMC requirement is applied (emission and immunity).

Electromagnetic Interference (EMI) or emission

- A. Emission Radiation Measurement should be conducted on additional/supporting equipment that is not classified in WLAN device with class B from §4 and table A.4 and A.5 from SNI ISO/IEC CISPR 32 - 2018.
- B. Conducted emission measurement should be conducted in DC power port from SS WLAN used for driving purpose with class B requirement from §4 and table A.10 from SNI ISO/IEC CISPR 32 - 2018.
- C. Conducted emission measurement at main port should be conducted to WLAN device that has charger or comply with class B requirements in §4 table A.10 from SNI ISO/IEC CISPR 32-2018. WLAN device with power port supplied by dedicated AC/DC port is treated as AC power supply.
- D. Conducted emission should be conducted in network cable port from WLAN device with class B requirement from Table A.12 FROM SNI ISO/IEC CISPR 32 - 2018 or §8.7 from ETSI EN 301 489-1.

*Note 1: If the WLAN device is module that will be marketed and sold separately from the housing, that module should be measured at least one time with the housing.*

*Note 2: Emission measurement conducted based on FCC part 15 Sub Part B for unintentional radiator (§15.105 and §15.106) can be accepted as alternative from SNI ISO/IEC 32-2018.*

**5. OPERATIONAL REQUIREMENTS**

Every WLAN device should comply with following general requirements:

- A. Not allowed to be made as external control facility or control facility that can be easily accessed and makes it possible for doing operational adjustment from WLAN device that is not complied with this regulation.
- B. Indoor base station/access point should use fixed and built in antenna
- C. Should not be equipped with country region selection feature
- D. Mandatory to be equipped with radio frequency locking feature (factory lock), so the device can be operated in allowed frequency only

**B. CONFORMITY REQUIREMENTS**

Every WLAN device is mandatory to fulfill main characteristics as followed.

**1. OUTDOOR WLAN DEVICE**

No	Parameter	Benchmark	Remark	
1	Radio Frequency Range	2400 – 2483.5 MHz 5725 – 5825 MHz	Mandatory	
2	Maximum Bandwidth	≤ 20 MHz	Mandatory	
3	Modulation Type	FSK/BPSK/QPSK/QAM/CCK	Voluntary	
4	Access Method	TDMA/FDMA/CDMA/CSMA-CA/OFDMA	Voluntary	
5	Multiplexing Techniques	OFDM/TDM/FDM	Voluntary	
6	Technology	DSSS/FHSS/OFDM	Voluntary	
7	Bit Error Rate	10 <sup>-8</sup>	Voluntary	
8	CNR for 1x 10 <sup>-6</sup> symbol error rate	≤ 10 dB	Voluntary	
9	Receiver sensitivity	≤ -58 dBm	Voluntary	
10	Radiation Emission Limit	≤ 500µV/M	Voluntary	
11	Interface	Minimum IEEE 802.3 Compliant (Ethernet) / E1/T1/RJ 45	Voluntary	
12	Frequency Hopping	≥ 75Hopping Frequencies	Voluntary	
13	Average occupancy time	≤ 0,4 s in 30 s period of distance	Voluntary	
14	Maximum Output Power	≤ 100 mW	Mandatory	
15	Maximum EIRP Outdoor	≤ 4 Watt (36,02 dBm)	Mandatory	
16	Transmitter unwanted emission in the spurious domain		Mandatory	
	Frequency Range	Maximum Emission		Bandwidth
	1 GHz – 12,75 GHz	-30 DBm		1 MHz
17	Transmitter unwanted emission in the spurious domain refers to ETSI EN 300 328 and EN 301 893		Mandatory	

## 2. INDOOR WLAN DEVICE

No	Parameter	Benchmark	Remark	
1	Radio Frequency Range	2400 – 2483.5 MHz 5150 - 5250 MHz 5250 - 5350 MHz 5725 - 5825 MHz	Mandatory	
2	Maximum Bandwidth		Mandatory	
	2400 – 2483.5 MHz	≤ 40 MHz		
	5150 - 5250 MHz 5250 - 5350 MHz 5725 - 5825 MHz	≤ 80 MHz		
3	It is required to have DFS and TPC availability that are set to be default, for dedicated access point at radio frequency 5150 - 5350 MHz		Mandatory	
4	Modulation Type	FSK/BPSK/QPSK/QAM/CCK	Voluntary	
5	Access Method	TDMA/FDMA/CDMA/CSMA-CA/OFDMA	Voluntary	
6	Multiplexing Techniques	OFDM/TDM/FDM	Voluntary	
7	Technology	DSSS/FHSS/OFDM	Voluntary	
8	Bit Error Rate	10 <sup>-8</sup>	Voluntary	
9	CNR for 1x 10 <sup>-6</sup> symbol error rate	≤ 10 dB	Voluntary	
10	Receiver sensitivity	≤ -58 dBm	Voluntary	
11	Radiation Emission Limit	≤ 500µV/M	Voluntary	
12	Interface	Minimum IEEE 802.3 Compliant (Ethernet) / E1/T1/RJ 45	Voluntary	
13	Frequency Hopping	≥ 75Hopping Frequencies	Voluntary	
14	Average occupancy time	≤ 0,4 s in 30 s period of distance	Voluntary	
15	Maximum EIRP Indoor for frequency 2400 - 24835 MHz	≤ 500 mW (27 dBm)	Mandatory	
16	Maximum EIRP Indoor for frequency: 5150 - 5250 MHz 5250 - 5350 MHz 5725 - 5825 MHz	≤ 200 mW (23 dBm)	Mandatory	
17	Transmitter unwanted emission in the spurious domain		Mandatory	
	Frequency Range	Maximum Emission		Bandwidth
	1 GHz – 12,75 GHz	-30 DBm		1 MHz
118	Transmitter unwanted emission in the spurious domain refers to ETSI EN 300 328 and EN 301 893		Mandatory	



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119	Power Supply		Voluntary
	Input AC	180 to 240 V, 50/60Hz	
	Input DC	a. Using Battery b. DC Adapter c. PoE; or d. USB Based on the device requirement	
120	WLAN device has to have security module (encrypt module) in radio frequency side.		Voluntary

