

國家通訊傳播委員會

電信終端設備及低功率射頻電機審驗一致性彙整

提案編號：10103168

主旨：

現有一醫療設備 "病患監視器內建 2.4GHz Zigbee 無線介面(2405MHz ~2480MHz)", 使用場所是在醫院, 廠商在申請 CE 時是以 Class A 甲類 10m 限制值來檢測接收模式, 申請 FCC 時也是以 Class A 甲類 10m 限制值來檢測接收模式, 目前 FCC 與 CE 皆已通過測試並取證。產品在台灣做接收模式的 30~1000MHz 輻射強場測項時會有幾個不必要雜波無法通過 LP0002 第 2.8 節的限制值, 經實驗室檢測確認這些不必要雜波是由病患監視器的內部電路產生, 不是由 2.4GHz Zigbee 無線介面產生。因 LP0002 第 2.8 節 30~1000MHz 輻射場強只有 3m 距離, 也沒有分 Class A、ClassB 限制值, 所以廠商詢問做這類特殊醫療設備檢測接收模式時可不可以改用 CNS13438 Class A 10m 做檢測, 檢測無線介面時才採用 LP0002 第 2.8 節輻射 3m 限制值?

結論：

1. 同意個案處理, 本案設備使用場所為醫療院所, 檢測發射機時依 LP0002 檢測, 檢測接收機時依工業科學醫療用電波輻射性電機管理辦法第 6 條以 CNS13803 Class A 甲類 10m 限制值做電磁相容項目檢測, 認證時 LP0002 測報及 CNS13803 測報都須提出, 使用手冊並須依 CNS13803 標示警語。
2. 未來修訂 LP0002 時將一併考量修訂接收機限制值。

Service receiver that was manufactured prior to January 1, 1960, and which includes an 11-meter band shall not be considered to be a CB receiver.

(h) *Class A digital device.* A digital device that is marketed for use in a commercial, industrial or business environment, exclusive of a device which is marketed for use by the general public or is intended to be used in the home.

(i) *Class B digital device.* A digital device that is marketed for use in a residential environment notwithstanding use in commercial, business and industrial environments. Examples of such devices include, but are not limited to, personal computers, calculators, and similar electronic devices that are marketed for use by the general public.

NOTE: The responsible party may also qualify a device intended to be marketed in a commercial, business or industrial environment as a Class B device, and in fact is encouraged to do so, provided the device complies with the technical specifications for a Class B digital device. In the event that a particular type of device has been found to repeatedly cause harmful interference to radio communications, the Commission may classify such a digital device as a Class B digital device, regardless of its intended use.

(j) *Cordless telephone system.* A system consisting of two transceivers, one a base station that connects to the public switched telephone network and the other a mobile handset unit that communicates directly with the base station. Transmissions from the mobile unit are received by the base station and then placed on the public switched telephone network. Information received from the switched telephone network is transmitted by the base station to the mobile unit.

NOTE: The Domestic Public Cellular Radio Telecommunications Service is considered to be part of the switched telephone network. In addition, intercom and paging operations are permitted provided these are not intended to be the primary modes of operation.

(k) *Digital device.* (Previously defined as a computing device). An unintentional radiator (device or system) that generates and uses timing signals or pulses at a rate in excess of 9,000 pulses (cycles) per second and uses digital techniques; inclusive of telephone equipment that uses digital techniques or any device or system that generates

and uses radio frequency energy for the purpose of performing data processing functions, such as electronic computations, operations, transformations, recording, filing, sorting, storage, retrieval, or transfer. A radio frequency device that is specifically subject to an emanation requirement in any other FCC Rule part or an intentional radiator subject to subpart C of this part that contains a digital device is not subject to the standards for digital devices, provided the digital device is used only to enable operation of the radio frequency device and the digital device does not control additional functions or capabilities.

NOTE: Computer terminals and peripherals that are intended to be connected to a computer are digital devices.

(l) *Field disturbance sensor.* A device that establishes a radio frequency field in its vicinity and detects changes in that field resulting from the movement of persons or objects within its range.

(m) *Harmful interference.* Any emission, radiation or induction that endangers the functioning of a radio navigation service or of other safety services or seriously degrades, obstructs or repeatedly interrupts a radiocommunications service operating in accordance with this chapter.

(n) *Incidental radiator.* A device that generates radio frequency energy during the course of its operation although the device is not intentionally designed to generate or emit radio frequency energy. Examples of incidental radiators are dc motors, mechanical light switches, etc.

(o) *Intentional radiator.* A device that intentionally generates and emits radio frequency energy by radiation or induction.

(p) *Kit.* Any number of electronic parts, usually provided with a schematic diagram or printed circuit board, which, when assembled in accordance with instructions, results in a device subject to the regulations in this part, even if additional parts of any type are required to complete assembly.

(q) *Perimeter protection system.* A field disturbance sensor that employs RF transmission lines as the radiating source. These RF transmission lines

apply to carrier current systems operating as unintentional radiators on frequencies below 30 MHz. In lieu thereof, these carrier current systems shall be subject to the following standards:

(1) For carrier current systems containing their fundamental emission within the frequency band 535-1705 kHz and intended to be received using a standard AM broadcast receiver: no limit on conducted emissions.

(2) For all other carrier current systems: 1000 µV within the frequency band 535-1705 kHz, as measured using a 50 µH/50 ohms LISN.

(3) Carrier current systems operating below 30 MHz are also subject to the radiated emission limits in §15.109(e).

(d) Measurements to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines. Devices that include, or make provision for, the use of battery chargers which permit operating while charging, AC adaptors or battery eliminators or that connect to the AC power lines indirectly, obtaining their power through another device which is connected to the AC power lines, shall be tested to demonstrate compliance with the conducted limits.

[54 FR 17714, Apr. 25, 1989, as amended at 57 FR 33448, July 29, 1992; 58 FR 51249, Oct. 1, 1993; 66 FR 19098, Apr. 13, 2001; 67 FR 45670, July 10, 2002]

Frequency of emission (MHz)	Field strength (microvolts/meter)
30-88	90
88-216	150
216-960	210
Above 960	300

(c) In the emission tables above, the tighter limit applies at the band edges. Sections 15.33 and 15.35 which specify the frequency range over which radiated emissions are to be measured and the detector functions and other measurement standards apply.

(d) For CB receivers, the field strength of radiated emissions within the frequency range of 25-30 MHz shall not exceed 40 microvolts/meter at a distance of 3 meters. The field strength of radiated emissions above 30 MHz from such devices shall comply with the limits in paragraph (a) of this section.

(e) Carrier current systems used as unintentional radiators or other unintentional radiators that are designed to conduct their radio frequency emissions via connecting wires or cables and that operate in the frequency range of 9 kHz to 30 MHz, including devices that deliver the radio frequency energy to transducers, such as ultrasonic devices not covered under part 18 of this chapter, shall comply with the radiated emission limits for intentional radiators provided in §15.209 for the frequency range of 9 kHz to 30 MHz. As an alternative, carrier current systems used as unintentional radiators and operating in the frequency range of 525 kHz to 1705 kHz may comply with the radiated emission limits provided in §15.221(a). At frequencies above 30 MHz, the limits in paragraph (a), (b), or (g) of this section, as appropriate, apply.

(f) For a receiver which employs terminals for the connection of an external receiving antenna, the receiver shall be tested to demonstrate compliance with the provisions of this section with an antenna connected to the antenna terminals unless the antenna conducted power is measured as specified in §15.111(a). If a permanently attached receiving antenna is used, the receiver shall be tested to demonstrate compliance with the provisions of this section.

§ 15.109 Radiated emission limits.

(a) Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency of emission (MHz)	Field strength (microvolts/meter)
30-88	100
88-216	150
216-960	200
Above 960	500

(b) The field strength of radiated emissions from a Class A digital device, as determined at a distance of 10 meters, shall not exceed the following:

(g) As an alternative to the radiated emission limits shown in paragraphs (a) and (b) of this section, digital devices may be shown to comply with the standards contained in Third Edition of the International Special Committee on Radio Interference (CISPR), Pub. 22, "Information Technology Equipment—Radio Disturbance Characteristics—Limits and Methods of Measurement" (incorporated by reference, *see* §15.38). In addition:

(1) The test procedure and other requirements specified in this part shall continue to apply to digital devices.

(2) If, in accordance with §15.33 of this part, measurements must be performed above 1000 MHz, compliance above 1000 MHz shall be demonstrated with the emission limit in paragraph (a) or (b) of this section, as appropriate. Measurements above 1000 MHz may be performed at the distance specified in the CISPR 22 publications for measurements below 1000 MHz provided the limits in paragraphs (a) and (b) of this section are extrapolated to the new measurement distance using an inverse linear distance extrapolation factor (20 dB/decade), e.g., the radiated limit above 1000 MHz for a Class B digital device is 150 $\mu\text{V}/\text{m}$, as measured at a distance of 10 meters.

(3) The measurement distances shown in CISPR Pub. 22, including measurements made in accordance with this paragraph above 1000 MHz, are considered, for the purpose of §15.31(f)(4) of this part, to be the measurement distances specified in this part.

(4) If the radiated emissions are measured to demonstrate compliance with the alternative standards in this paragraph, compliance must also be demonstrated with the conducted limits shown in §15.107(e).

(h) Radar detectors shall comply with the emission limits in paragraph (a) of this section over the frequency range of 11.7–12.2 GHz.

[54 FR 17714, Apr. 25, 1989, as amended at 56 FR 373, Jan. 4, 1991; 58 FR 51249, Oct. 1, 1993; 66 FR 19098, Apr. 13, 2001; 67 FR 48993, July 29, 2002; 69 FR 2849, Jan. 21, 2004]

§15.111 Antenna power conduction limits for receivers.

(a) In addition to the radiated emission limits, receivers that operate

(tune) in the frequency range 30 to 960 MHz and CB receivers that provide terminals for the connection of an external receiving antenna may be tested to demonstrate compliance with the provisions of §15.109 with the antenna terminals shielded and terminated with a resistive termination equal to the impedance specified for the antenna, provided these receivers also comply with the following: With the receiver antenna terminal connected to a resistive termination equal to the impedance specified or employed for the antenna, the power at the antenna terminal at any frequency within the range of measurements specified in §15.33 shall not exceed 2.0 nanowatts.

(b) CB receivers and receivers that operate (tune) in the frequency range 30 to 960 MHz that are provided only with a permanently attached antenna shall comply with the radiated emission limitations in this part, as measured with the antenna attached.

§15.113 Power line carrier systems.

Power line carrier systems, as defined in §15.3(t), are subject only to the following requirements:

(a) A power utility operating a power line carrier system shall submit the details of all existing systems plus any proposed new systems or changes to existing systems to an industry-operated entity as set forth in §90.35(g) of this chapter. No notification to the FCC is required.

(b) The operating parameters of a power line carrier system (particularly the frequency) shall be selected to achieve the highest practical degree of compatibility with authorized or licensed users of the radio spectrum. The signals from this operation shall be contained within the frequency band 9 kHz to 490 kHz. A power line carrier system shall operate on an unprotected, non-interference basis in accordance with §15.5 of this part. If harmful interference occurs, the electric power utility shall discontinue use or adjust its power line carrier operation, as required, to remedy the interference. Particular attention should be paid to the possibility of interference to Loran C operations at 100 kHz.

below 30 MHz. In lieu thereof, these carrier current systems shall be subject to the following standards:

(1) For carrier current system containing their fundamental emission within the frequency band 535-1705 kHz and intended to be received using a standard AM broadcast receiver; no limit on conducted emissions.

(2) For all other carrier current systems: 1000 µV within the frequency band 535-1705 kHz, as measured using a 50 µH/50 ohms LISN.

(3) Carrier current systems operating below 30 MHz are also subject to the radiated emission limits in § 15.205, § 15.209, § 15.221, § 15.223, or § 15.227, as appropriate.

(c) Measurements to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines. Devices that include, or make provisions for, the use of battery chargers which permit operating while charging, AC adapters or battery eliminators or that connect to the AC power lines indirectly, obtaining their power through another device which is connected to the AC power lines, shall be tested to demonstrate compliance with the conducted limits.

[54 FR 17714, Apr. 25, 1989, as amended at 56 FR 373, Jan. 4, 1991; 57 FR 33448, July 29, 1992; 58 FR 51249, Oct. 1, 1993; 67 FR 45671, July 10, 2002]

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
Above 960	500	3

**Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.

(b) In the emission table above, the tighter limit applies at the band edges.

(c) The level of any unwanted emissions from an intentional radiator operating under these general provisions shall not exceed the level of the fundamental emission. For intentional radiators which operate under the provisions of other sections within this part and which are required to reduce their unwanted emissions to the limits specified in this table, the limits in this table are based on the frequency of the unwanted emission and not the fundamental frequency. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.

(d) The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

(e) The provisions in §§ 15.31, 15.33, and 15.35 for measuring emissions at distances other than the distances specified in the above table, determining the frequency range over which radiated emissions are to be measured, and limiting peak emissions apply to all devices operated under this part.

(f) In accordance with § 15.33(a), in some cases the emissions from an intentional radiator must be measured to beyond the tenth harmonic of the highest fundamental frequency designed to be emitted by the intentional radiator because of the incorporation of a digital device. If measurements above the tenth harmonic are so required, the radiated emissions above the tenth harmonic shall comply with the general radiated emission limits applicable to the incorporated digital device, as shown in § 15.109 and as based on the

§ 15.209 Radiated emission limits; general requirements.

(a) Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100**	3
88-216	150**	3
216-960	200**	3

表 4 乙類設備中，電信埠之共模(異對稱模式)傳導擾動限制值，頻率範圍從 0.15 MHz 至 30 MHz

頻率範圍 MHz	電壓限制值 dB(nV)		電流限制值 dB(μA)	
	準峰值	平均值	準峰值	平均值
0.15至0.5	84至74	74至64	40至30	30至20
0.5至30	74	64	30	20

備考1.在0.15 MHz至0.5 MHz的頻帶中，限制值隨著頻率的對數關係遞減。

2.電流與電壓的擾動限制值是使用阻抗穩定電路(ISN)檢測出來的，ISN對待測電信埠所顯現的共模(異對稱模式)阻抗為150 Ω(轉換因子為 $20 \log_{10} 150 / I = 44\text{dB}$)。

6. 輻射擾動之限制值

6.1 1GHz 以下之限制值

依第 10 節所規定之方法，在距離 R 之位置量測時，待測設備應符合表 5 或表 6 之限制值，若量測接收機的顯示值在限制值附近跳動，則對於每個量測頻率，皆應觀察顯示值 15 秒以上，並記錄最高的顯示值，但對於短暫出現的單獨高值，則忽略不記。

表 5 甲類資訊技術設備在 10 m 量測距離時之輻射擾動限制值

頻率範圍 MHz	準峰限制值 dB(μV/m)
30至230	40
230至1000	47

備考1.在頻率的轉換點，應採用較嚴之限制值。
2.在擾動發生時，可能須增加額外的規定。

表 6 乙類資訊技術設備在 10 m 量測距離時之輻射擾動限制值

頻率範圍 MHz	準峰限制值 dB(μV/m)
30至230	30
230至1000	37

備考1.在頻率的轉換點，應採用較嚴之限制值。
2.當擾動發生時，可能須增加額外的規定。

提案編號：10103169

主旨：

Mini PCI 802.11bgn+Bluetooth Combo card, 已取得 NCC LP0002 3.10.1 認證, 客戶在販售給 OEM or ODM 系統廠時, 會利用韌體 Firmware 或是驅動程式的不同而有不同的出貨版本：

版本 1, 卡片有 WLAN 與 Bluetooth 功能(同認證測試時的狀況)

版本 2, 卡片另有 WLAN 功能(利用韌體 Firmware 或是驅動程式關必 Bluetooth 功能)

版本 1 與版本 2 的 PCB、layout 與其他元件都相同, 型號也相同

針對版本 2 是否還須申請認證?

結論：

比照先前案例, 本案在硬體不改變僅以韌體減少射頻功能時, 以系列方式申請; 另外須依照器材實際的功能做不同器材名稱或不同型號的區別, 以利消費者辨別。

提案編號：10103170

主旨：

附於手機的電源供應器(充電器)其標示是否用中文標示?

結論：

1. 充電器提供 BSMI 證書時, 充電器本體依 CNS14336-1 規定標示。
2. 充電器併同手機檢測時, 充電器本體得以中文或英文標示。

作時可能造成之最大電流值之總合。

備考 3. 例如：

- 多種電壓標示之設備之標示：
110 / 220V ; 2.4 / 1.2 A
- 額定電壓範圍之標示：
110- 220 V ; 2.8 A
110 - 220 V ; 2.8 - 1.4 A
110 V ; 2.8 A
220 V ; 1.4 A
- 製造者名稱、商標或表徵
- 製造者機型或型號
- II 類結構符號 ，只適用於 II 類之設備使用。

只要不會造成混淆，則增加其他的標示是可接受的。

但所使用的符號都應符合 ISO 7000 或 CNS 12491 系列中所規定之符號。

1.7.2 安全說明書及標示

1.7.2.1 通則

製造商應對設備依製造商規定方法使用時，可能產生之危險提供本標準中所述方式的任何相關情況的足夠資訊予使用者。

若有須要，製造商應特別註明在設備的操作、安裝、放置、搬運或儲藏的安全指示，以避免危險。

備考 1. 特別的安全指示也許是須要的，例如：在連接電源時及連接其他分離的部分。

備考 2. 若有特別的要求，則安裝說明應包括相關電工法規之要求。

備考 3. 有關於安全之組裝說明及設備標示必須使用中文。維修資料只適用於維修人員。

操作手冊及插接式設備之安裝手冊，均須使使用者能使用。

1.7.2.2 切離裝置

當切離裝置並沒有裝在設備上(參照第 3.4.3 節)或者以插頭當做切離裝置時，則安裝說明必須說明如下：

- 對永久連接之設備，須安裝一可觸及之切離裝置；
- 對插接式之設備，插座必須接近安裝之地點而且是易於觸及的。

1.7.2.3 過電流保護裝置

對於 B 型插接式設備或永久連接式設備，除非設備內裝有合適的過電流保護裝置，否則安裝手冊必須指出所提供的設備外部的過電流保護裝置的最大額定值。

1.7.2.4 IT 電源系統

設備被設計或修改為可連接 IT 電源系統時，則設備組裝說明書應予以述明。

1.7.2.5 操作者使用工具可觸及

如果操作者必須使用工具才會觸及，則於本區域其他附帶危險之零組件不可被

標示本體銘牌標示



FWHK

3. 電源供應器的標籤圖樣

