

致業餘電台牌照持有人及操作授權證明持有人通函

先生/女士：

**劃分頻帶予業餘無線電業務**

在考慮了 2015 年世界無線電通信大會的決議及徵詢無線電頻譜及技術標準諮詢委員會的意見後，通訊事務管理局劃分 5351.5 - 5366.5 kHz 頻段予作為次要業務的業餘無線電業務。使用 5351.5 - 5366.5 kHz 頻段的業餘無線電台的最大等效全向輻射功率不得超過 15 W。

隨函附上一份用以取代原有附表的已修改業餘電台牌照附表一(如情況適合)以供保存。

如有查詢，請致電 2961 6609 聯絡以下簽署人。

通訊事務管理局

(陳開美 [已簽署] 代行)

附件：業餘電台牌照附表一

2017 年 2 月 28 日

**附表 1 SCHEDULE 1**  
**業餘電台牌照 Amateur Station Licence**

頻帶 (兆赫) Frequency Bands in MHz	頻率劃分 Frequency Allocation (見備註 1) (See Note 1)	許可發射類別 Class of Emission Permitted (見備註 2) (See Note 2)	最大功率 (dBW) Maximum Power in dBW (見備註 3) (see Note 3)			
			載波 carrier	峰包功率 PEP		
1.8 - 2.0 ; 3.5 - 3.9	主要, 業餘業務 primary, amateur service	莫爾斯電報 Morse 話音通訊 Telephony 無線電傳印字機 RTTY 數據 Data 圖文傳真 Facsimile 慢掃描電視 SSTV	20	26		
5.3515 - 5.3665	次要, 業餘業務 secondary, amateur service		11.76 <sup>^</sup>	---		
7.0 - 7.1	主要, 業餘和衛星業餘業務 primary, amateur and amateur satellite service		20	26		
7.1 - 7.2	主要, 業餘業務 primary, amateur service					
10.1 - 10.15	次要, 業餘業務 secondary, amateur service					
14.0 - 14.25	主要, 業餘和衛星業餘業務 primary, amateur and amateur satellite service					
14.25 - 14.35	主要, 業餘業務 primary, amateur service					
18.068 - 18.168	主要, 業餘和衛星業餘業務 primary, amateur and amateur satellite service					
21.0 - 21.45	主要, 業餘和衛星業餘業務 primary, amateur and amateur satellite service					
24.89 - 24.99	主要, 業餘和衛星業餘業務 primary, amateur and amateur satellite service					
28.0 - 29.7	主要, 業餘和衛星業餘業務 primary, amateur and amateur satellite service					
50.00 - 51.50 52.025 - 52.11	主要, 業餘業務 primary, amateur service					
144.0 - 146.0	主要, 業餘和衛星業餘業務 primary, amateur and amateur satellite service				14 (14 / 7 *)	20
430.0 - 431.0	次要, 業餘業務 secondary, amateur service				20 (14 / 7 *)	26
435.0 - 438.0	次要, 衛星業餘業務 secondary, amateur satellite service					
435.0 - 439.8	次要, 業餘業務 secondary, amateur service					
2,400 - 2,450	次要, 衛星業餘業務 secondary, amateur satellite service					
5,650 - 5,670	次要, 衛星業餘業務, 只限地面至太空方向 secondary, amateur satellite service, limited to earth-to-space direction					
5,725 - 5,850	次要, 業餘業務, 使用者須接受工業, 科學及醫療 (工科醫) 使用者所產生的干擾 secondary, amateur service, users must accept interference from ISM users	6 #	---			
10,450 - 10,500	次要, 業餘和衛星業餘業務 secondary, amateur and amateur satellite service	7	13			
24,000 - 24,250	次要, 業餘業務, 使用者須接受工業, 科學及醫療 (工科醫) 使用者所產生的干擾 secondary, amateur service, users must accept interference from ISM users	Television & Pulse –only for frequency above 5,725MHz	20	26		
47,000 - 47,200	主要, 業餘和衛星業餘業務 primary, amateur and amateur satellite service					
76,000 - 77,500	次要, 業餘和衛星業餘業務 secondary, amateur and amateur satellite service					
77,500 - 78,000	主要, 業餘和衛星業餘業務 primary, amateur and amateur satellite service					
78,000 - 81,000	次要, 業餘和衛星業餘業務 secondary, amateur and amateur satellite service					

\* 見備註 3 (乙) see Note 3 (b)

# 見備註 3 (丙) see Note 3 (c)

^ 見備註 3 (戊) see Note 3 (e)

**附表 1 備註**  
**NOTES TO THE SCHEDULE 1**

**(1) 頻率劃分**

- (甲) 主要業務：— 在對任何其他認可的主要業務不構成干擾的條件下，一個頻帶可以劃分給業餘業務和／或衛星業餘業務作主要業務之用。
- (乙) 次要業務：— 在下列條件下，一個頻帶可以劃分給業餘業務和／或衛星業餘業務作次要業務之用：—
- (i) 不得對已經指配或將來可能指配頻率的主要業務或許可業務電台產生干擾；和
  - (ii) 不得要求保護不受來自已經指配或將來可能指配頻率的主要業務或許可業務電台的干擾。

**(1) Frequency Allocation**

- (a) Primary:- A frequency band is allocated to the amateur and/or amateur satellite service on a primary basis on condition that no interference is caused to any other authorized service on a primary basis.
- (b) Secondary:- A frequency band is allocated to the amateur and/or amateur satellite service on secondary basis on condition that :-
- (i) no interference is caused to stations of primary or permitted services to which frequencies are already assigned or to which frequencies may be assigned at a later day; and
  - (ii) no protection can be claimed from interference from stations of primary or permitted services to which frequencies are already assigned or to which frequencies may be assigned at a later day.

**(2) 發射類別**

根據國際電信聯盟（國際電聯）所出版的無線電規則，發射類別是以每組三個的字符加以標識。此處所界定的發射類型是根據第三個字符劃分的。

- (甲) 連續載波 (CW)：於主載波上以開／合鍵調幅方式並供人工收聽接收的發射類別。  
莫爾斯電報：採用任何以「A」作結的發射類別並供人工收聽接收的莫爾斯電報技術。  
話音通訊：採用任何以「E」作結的發射類別的話音通訊。  
電視：採用任何以「F」作結的發射類別的電視。此類型只可在 1 GHz 以上的頻段中使用。  
無線電傳印字機 (RTTY)：採用任何以「B」作結的發射類別的自動接收的電報技術，包括使用國際電報電話諮詢委員會的任何認可密碼的傳印字機，以及供自動接收的莫爾斯報。  
數據：採用任何以「D」作結的發射類別的數據。無線電規則規定不同國家的業餘電台互發訊息時，須使用明語。因此所有發射均只可使用國際電報電話諮詢委員會的認可密碼（使用明語）。  
圖文傳真：採用任何以「C」作結的發射類別圖文傳真。  
慢掃描電視：在窄帶寬中採用任何以「F」作結的發射類別的電視。
- (乙) 同時採用以上任何發射類型的組合，例如電話技術和數據，以「W」作結的發射類別。
- (丙) 脈衝：採用任何以「P」作結的發射類別的脈衝。此類型只可在 1GHz 以上的頻帶中使用。

**(2) Class of Emission**

Under the Radio Regulations published by the International Telecommunication Union (ITU) classification of emissions are designated by groups of three characters. The types of emissions defined here are grouped according to the third character.

- (a) Continuous Wave (CW) : Amplitude-modulated transmission by on/off keying the main carrier intended for aural reception.  
Morse : Morse telegraphy intended for aural reception using any classes of emission ending in A.  
Telephony : Telephony using any classes of emission ending in E.  
Television : Television using any classes of emission ending in F. This may only be used in frequency bands above 1 GHz.  
Radio Teleprinter (RTTY) : Automatic telegraphy using any classes of emission ending in B. This includes teleprinters using any CCITT recognized codes, and morse telegraphy intended for automatic reception.  
Data : Data using any classes of emission ending in D. The Radio Regulations require that transmissions between amateur stations in different countries shall be in plain language. All transmissions shall therefore be restricted to using CCITT recognized codes (in plain language).  
Facsimile : Facsimile using any classes of emission ending in C.  
Slow Scan Television (SSTV) : Television operating in a narrow bandwidth using any classes of emission ending in F.
- (b) Simultaneous use of combinations of any of the preceding types of transmission, e.g. Telephony and Data, are described as classes of emission ending in W.
- (c) Pulse: Pulse using any classes of emission ending in P. This may only be used in frequency bands above 1 GHz.

**(3) 功率**

- (甲) 最大功率是指供應給天線的無線電射頻功率。最大功率會以載波功率規定。對具有抑制、可變或減幅載波的發射，有關功率會在線性的情況下由峰包功率(p.e.p.)決定。至於脈衝發射，平均功率不得超過載波功率，而峰值功率則不得超過為該頻帶所訂定的 p.e.p。
- (乙) 144至146 MHz 頻帶和430至440 MHz 的劃分頻帶的移動操作，最大有效輻射功率限制為14 dBW。而手提式操作，限制為7 dBW。
- (丙) 5.725 - 5.850 GHz 頻帶的操作，最大等效全向輻射功率限制為6 dBW。
- (丁) 發射帶寬必須確保能最有效率地使用有關頻譜：一般來說，帶寬必須保持在科技及有關業務許可容許的最低值。若使用帶寬擴展技術，則必須採用符合有效率地使用頻譜的最低頻譜功率密度。不過，無論使用何種發射類別，所擬發射佔用的帶寬，須符合在認可頻帶以外不可超過其平均發射功率 1 % 的規定。這 1 % 不包括諧波和寄生發射所包含的功率。
- (戊) 5.3515 - 5.3665 MHz 頻帶的操作，最大等效全向輻射功率限制為11.76 dBW。

**(3) Power**

- (a) Maximum power levels refer to the radio-frequency power supplied to the antenna. These levels will be specified by carrier power. For emissions having a suppressed, variable or reduced carrier the power shall be determined by the peak envelope power (p.e.p.) under linear conditions. For pulse emissions the mean power shall not exceed the carrier power and the peak power shall not exceed the p.e.p. stipulated for that frequency band.
- (b) For mobile operation in the frequency band of 144 - 146 MHz and allocated bands in the 430 - 440 MHz a maximum of 14 dBW erp is permitted. For portable operation the corresponding limit is 7 dBW erp.
- (c) For operation in the frequency band 5.725 - 5.850 GHz, a maximum of 6 dBW equivalent isotropically radiated power (e.i.r.p.) is permitted.
- (d) The bandwidths of emissions shall be such as to ensure the most efficient utilisation of the spectrum : in general this requires that bandwidths be kept at the lowest values which technology and the nature of the service permit. Where bandwidth-expansion techniques are used the minimum spectral power density consistent with efficient spectrum utilisation shall be employed. However whatever class of emission is in use the bandwidth occupied by the intended emission shall be such that not more than 1% of the mean power of the transmission shall fall outside of the authorized bands. This 1% does not include the power contained in harmonic and spurious emissions.
- (e) For operation in the frequency band 5.3515 - 5.3665 MHz, a maximum of 11.76 dBW e.i.r.p. is permitted.

**(4) 無線電引致的意外**

- (甲) 由於強烈的射頻輻射可能會有有害，所以下列安全限制適用於人們暴露於該種輻射中的地點：—

頻率 f(以MHz計)	電場強 (V/m)	等效平面波功率密度 Seq(W/m <sup>2</sup> )
1-10	87/√f	-
10-400	28	2

400-2,000	$1.375\sqrt{f}$	$f/200$
2,000-300,000	61	10

至於脈衝發射，以脈衝寬度平均計算的等效平面波功率密度不得超過一千乘以上述為有關頻率所訂定的限制，條件是以為時六分鐘平均計算時，所規定的限制本身不會被超過而又可免除被射頻灼傷的危險。

(乙) 為避免射頻意外地燃著易燃的空氣，任何油站前的空地範圍內均不得使用三十兆赫以下的流動無線電台。

#### (4) **Radio Hazard**

(a) Since high intensities of radio-frequency radiation may be harmful, the following safety limits will apply in locations to which people will be exposed :-

Frequency range	E-field strength	Equivalent plane wave power density
$f$ (in MHz)	(V/m)	$\text{Seq}(\text{W/m}^2)$
1-10	$87/\sqrt{f}$	-
10-400	28	2
400-2,000	$1.375\sqrt{f}$	$f/200$
2,000-300,000	61	10

For pulse emissions, the equivalent plane wave power density as averaged over the pulse width shall not exceed 1,000 times the specified limit given above for the frequency concerned, provided that the specified limit itself is not exceeded when averaged over a period of 6 minutes, and hazards of radio-frequency burns are eliminated.

(b) To avoid inadvertent ignition of inflammable atmospheres by radio-frequency, mobile radio stations below 30 MHz should not be used in the forecourts of any petroleum fuelling stations.

#### (5) **電台呼號**

(甲) 每次使用電台時，必須發送牌照第一頁所述的電台呼號。手提式操作須在電台呼號後面加上“/P”；移動操作須在電台呼號後面加上“/M”；水上移動操作須在電台呼號後面加上“/MM”。

(乙) 在每段發送的開始及結束時必須發出電台呼號以作識別，而每當射頻或發射類別有所改變時，亦須發出電台呼號。若使用電台的時間超過十五分鐘，必須在接著的每十五分鐘開始之時重覆(以同一方式)電台呼號。

(丙) 若使用電話技術發送電台呼號，可讀出詞首字母與電台呼號的詞首字母一樣的熟悉單字，以確定電台呼號的字母。不過，該等單字不得含有滑稽或不良的意識。

(丁) 若非利用電話技術或莫爾斯電報的方式發送訊號，電台呼號必須清晰可辨。

#### (5) **Call Sign**

(a) Whenever the Station is used the call sign mentioned on the first page of the Licence shall be transmitted, provided that the suffix "/P" shall be added to the call sign for portable operation, the suffix "/M" added to the call sign for mobile operation and the suffix "/MM" added to the call sign for maritime mobile operation.

(b) The call sign shall be sent for identification purposes at the beginning and at the end of each period of sending and whenever the frequency or the class of emission is changed. When the period of use exceeds 15 minutes the call sign shall be repeated (in the same manner) at the commencement of each succeeding period of 15 minutes.

(c) When telephony is used for sending the call sign the letters of the call sign may be confirmed by the pronouncement of well-known words of which the initial letters are the same as those in the call sign: but words used in this manner shall not be of a facetious or objectionable character.

(d) When sending signals in modes other than telephony or Morse telegraphy, the call sign shall be clearly identifiable.

#### (6) **紀錄**

(甲) 持牌人必須保存列明以下資料的永久紀錄：—

- (i) 發訊日期；
- (ii) 電台每日首次及最後一次發訊的時間（協調世界時）；
- (iii) 頻帶；
- (iv) 發射類別；
- (v) 功率；
- (vi) 彼此已建立通訊的業餘電台牌照的呼號；
- (vii) 按照牌照條件第11(乙)條的規定進行測試的詳情。

(乙) 移動和手提式操作無須留存紀錄，但使用低於30兆赫頻帶操作則除外。

(丙) 不論以何種方式留存紀錄，紀錄所載條目須能予以檢索及製成複製件，以便日後審核。

(丁) 根據牌照條件第15條的規定，持牌人必須由最後載入起計留存有關紀錄至少六個月。

#### (6) **Record**

(a) A permanent record shall be kept by the Licensee showing:-

- (i) Date of transmission;
- (ii) The times (in Co-ordinated Universal Time) during each day of the first and last transmissions from the Station;
- (iii) Frequency band;
- (iv) Class of emission;
- (v) Power;
- (vi) Call signs of licensed amateur stations with which communications have been established;
- (vii) Details of the tests carried out in accordance with General Condition No. 11(b).

(b) Except for operation in frequency bands below 30 MHz, there is no need to keep record for mobile and portable operation.

(c) Regardless of how the record is kept, entries in the record should be retrievable and available in hard copies for later inspection.

(d) Pursuant to General Condition No. 15, the Licensee shall keep the record for at least 6 months from the date of the last entry.

#### (7) **須予通知的資料**

(甲) 根據牌照條件第2(丁)條的規定，若電台資料有任何轉變，持牌人須在該轉變作出後72小時內通知通訊事務管理局。

(乙) 該些資料包括：

- (i) 所藏有的發送器材的數量，包括所擁有的手提器材（如有）的數量；及
- (ii) 每件器材的廠名、型號及機身編號。若持牌人自行製造器材，則須予通知的資料為有關器材可使用的發射類別、頻帶及最大功率。

#### (7) **Particulars to be Notified**

(a) Pursuant to General Condition No.2(d), the Licensee shall notify the Communications Authority of any change in his station particulars within 72 hours of such change.

(b) These particulars are:-

- (i) the quantity of the transmitting apparatus that he has in his possession, including the number of portable apparatus (if any); and
- (ii) the make, model and serial number of each of these apparatus. In case the Licensee has constructed his own apparatus, he should notify the classes of emission, frequency bands and maximum power with which the apparatus is capable of working.