

TECHNICAL INFORMATION

FOR

FREQUENCY PLANNING

OF

IN-BUILDING COAXIAL CABLE DISTRIBUTION

SYSTEM (IBCCDS)



**TELECOMMUNICATIONS AUTHORITY
HONG KONG**

FOREWORD

1. This document intends to provide relevant technical information to facilitate the frequency planning of the In-Building Coaxial Cable Distribution Systems (IBCCDS). To avoid undue interference, designers of the IBCCDS should take into account the radio transmissions in the broadcasting bands from the existing TV and sound broadcasting networks in Hong Kong, as well as other radio transmissions outside the broadcasting bands by other authorised radio transmitters. In this regard, ~~the technical parameters such as~~ the channel allocation, ~~transmitter location, transmitter power~~ of the TV and sound broadcasting services in Hong Kong are is given in this document for reference purposes.
2. The ~~Communications Telecommunications~~-Authority (TACA) may amend any part of this document as and when he deems necessary without prior notice.
3. While every endeavours have been made to ensure the correctness of the contents of this document as far as possible, the technical information is bound to be modified from time to time, especially for those information maintained by other Administrations. The ~~TA-CA~~ therefore accepts no responsibility for any errors or omissions on the information provided in this document. It is advisable that interested parties should consult their own professional advisers before taking action on any matters to which information provided in this ~~paper~~document may be relevant.
4. The HKCTA specifications ~~and other documents~~ issued by the ~~TA-CA~~ can be downloaded from the Office of the Communications Authority's website directly through OFTA's Internet Home Page at <http://www.ofca.gov.hk>.
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1. INTRODUCTION

In order to facilitate the frequency planning of the In-Building Coaxial Cable Distribution System (IBCCDS), this document provides the relevant technical information ~~of the following services~~on:-

- i) Frequency allocation plan of the IBCCDS for various categories of services;
- ii) Terrestrial TV broadcasting services in Hong Kong;
- iii) Sound broadcasting services in Hong Kong;
- iv) Other services operating outside the broadcasting bands in Hong Kong

2. FREQUENCY ALLOCATION PLAN OF THE IBCCDS FOR VARIOUS CATEGORIES OF SERVICES

2.1 The frequency allocation plan of the IBCCDS for various telecommunications and broadcasting services as adopted in Hong Kong is given in Annex 1.

3. TECHNICAL INFORMATION OF TERRESTRIAL TV BROADCASTING SERVICES IN HONG KONG

3.1 ~~In Hong Kong, the terrestrial TV broadcasting service operates in the UHF band (470 – 806 MHz). Details of the channel allocation are given in Annex 2.~~

3.2 ~~For technical details of the broadcasting network, please refer to the document “Television Broadcasting Network in Hong Kong” published on OFTA’s homepage at “www.ofca.gov.hk”. Following the switch-off of analogue TV services in November 2020, the relevant digital TV channels migrated in December 2021 to the 470 – 614 MHz band, making available the spectrum in the 614 – 806 MHz band for high value-added mobile telecommunications services. For technical details of the latest digital terrestrial TV broadcasting services, please refer to the document entitled “Frequency Table for Digital Terrestrial Television Broadcasting Services in Hong Kong”¹.~~

4. TECHNICAL INFORMATION OF SOUND BROADCASTING SERVICES IN HONG KONG

4.1 ~~In Hong Kong, analogue sound broadcasting services using amplitude modulation frequencies (526.5 – 1606.5 kHz) and frequency modulation frequencies (87 – 108 MHz) are available. For technical details of the latest analogue sound broadcasting network services, please refer to the document entitled “Frequency Table for Analogue Sound Broadcasting Services in Hong Kong”².~~~~Frequency Table for~~

¹ Available at:
https://www.ofca.gov.hk/filemanager/ofca/en/content_1087/tv_frequency_digital_en.pdf

² Available at:
https://www.ofca.gov.hk/filemanager/ofca/common/Industry/broadcasting/freq_table_sound_en.pdf

~~Sound Broadcasting Services in Hong Kong” published on OFTA’s homepage at “www.ofta.gov.hk”.~~

5. TECHNICAL INFORMATION OF OTHER SERVICES OPERATING OUTSIDE THE BROADCASTING BANDS IN HONG KONG

The immunity of the IBCCDS shall be properly designed such that the performance of the broadcasting or telecommunications services is not affected by other authorized radio transmitters. ~~The following table gives some~~ Typical values of the maximum effective radiated power (ERP) of transmitters operating within the ~~frequency~~ frequency range of 30 – 3000 MHz ~~but~~ outside the broadcasting bands are given in Annex 2.

Frequency Range (MHz)	Typical Values of ERP (W)
30 – 87	25
108 – 279	25
279 – 281	100
281 – 470	25
806 – 960	100
960 – 3000	100

Frequency Allocation Plan for Various Categories of Services (5 – 54 MHz)

Frequency Range	Allocation
5 – 50 MHz	Upstream signals of TV and telecommunications services
50 – 53.275 MHz	Guard band
53.275 – 53.425 MHz	TV (downstream data)
53.425 – 54 MHz	To be planned

Annex 1B

Frequency Allocation Plan for Various Categories of Services
(54 – 470 MHz, Channel Width = 8 MHz)

Channel Number	Frequency Range	Allocation
C 1	54 – 62 MHz	TV or telecommunications services
C 2	62 – 70 MHz	TV or telecommunications services
C 3	70 – 78 MHz	TV or telecommunications services
C 4	78 – 86 MHz	To be planned
C 5	86 – 94 MHz	86-87 MHz (TV or telecommunications services)
C 6	94 – 102 MHz	87-108 MHz
C 7	102 – 110 MHz	(FM radio)
C 8	110 – 118 MHz	To be planned
C 9	118 – 126 MHz	To be planned
C 10	126 – 134 MHz	TV or telecommunications services
C 11	134 – 142 MHz	TV or telecommunications services
C 12	142 – 150 MHz	TV or telecommunications services
C 13	150 – 158 MHz	TV or telecommunications services
C 14	158 – 166 MHz	TV or telecommunications services
C 15	166 – 174 MHz	To be planned
C 16	174 – 182 MHz	TV or telecommunications services
C 17	182 – 190 MHz	TV or telecommunications services
C 18	190 – 198 MHz	TV or telecommunications services
C 19	198 – 206 MHz	TV or telecommunications services
C 20	206 – 214 MHz	TV or telecommunications services
C 21	214 – 222 MHz	TV or telecommunications services DAB radio
C 22	222 – 230 MHz	TV or telecommunications services
C 23	230 – 238 MHz	TV or telecommunications services
C 24	238 – 246 MHz	TV or telecommunications services
C 25	246 – 254 MHz	TV or telecommunications services
C 26	254 – 262 MHz	TV or telecommunications services
C 27	262 – 270 MHz	TV or telecommunications services
C 28	270 – 278 MHz	TV or telecommunications services
C 29	278 – 286 MHz	To be planned
C 30	286 – 294 MHz	TV or telecommunications services
C 31	294 – 302 MHz	TV or telecommunications services
C 32	302 – 310 MHz	TV or telecommunications services
C 33	310 – 318 MHz	TV or telecommunications services
C 34	318 – 326 MHz	TV or telecommunications services
C 35	326 – 334 MHz	TV or telecommunications services
C 36	334 – 342 MHz	TV or telecommunications services
C 37	342 – 350 MHz	TV or telecommunications services
C 38	350 – 358 MHz	TV or telecommunications services
C 39	358 – 366 MHz	TV or telecommunications services
C 40	366 – 374 MHz	TV or telecommunications services
C 41	374 – 382 MHz	TV or telecommunications services
C 42	382 – 390 MHz	TV or telecommunications services
C 43	390 – 398 MHz	TV or telecommunications services
C 44	398 – 406 MHz	TV or telecommunications services
C 45	406 – 414 MHz	TV or telecommunications services
C 46	414 – 422 MHz	TV or telecommunications services
C 47	422 – 430 MHz	TV or telecommunications services
C 48	430 – 438 MHz	TV or telecommunications services
C 49	438 – 446 MHz	Telecommunications services
C 50	446 – 454 MHz	Telecommunications services
C 51	454 – 462 MHz	Telecommunications services
C 52	462 – 470 MHz	TV or telecommunications services

Frequency Allocation Plan for Various Categories of Services
(470 – 862 MHz, Channel Width = 8 MHz)

Channel Number	Frequency Range	Allocation
E 21	470 – 478 MHz	TV or telecommunications services
E 22	478 – 486 MHz	TV or telecommunications services
E 23	486 – 494 MHz	TV or telecommunications services
E 24	494 – 502 MHz	TV or telecommunications services
E 25	502 – 510 MHz	TV or telecommunications services
E 26	510 – 518 MHz	TV or telecommunications services
E 27	518 – 526 MHz	TV or telecommunications services
E 28	526 – 534 MHz	TV or telecommunications services
E 29	534 – 542 MHz	TV or telecommunications services
E 30	542 – 550 MHz	TV or telecommunications services
E 31	550 – 558 MHz	TV or telecommunications services
E 32	558 – 566 MHz	TV or telecommunications services
E 33	566 – 574 MHz	TV or telecommunications services
E 34	574 – 582 MHz	TV or telecommunications services
E 35	582 – 590 MHz	TV or telecommunications services
E 36	590 – 598 MHz	TV or telecommunications services
E 37	598 – 606 MHz	TV or telecommunications services
E 38	606 – 614 MHz	TV or telecommunications services
E 39	614 – 622 MHz	TV or telecommunications services
E 40	622 – 630 MHz	TV or telecommunications services
E 41	630 – 638 MHz	TV or telecommunications services
E 42	638 – 646 MHz	TV or telecommunications services
E 43	646 – 654 MHz	TV or telecommunications services
E 44	654 – 662 MHz	TV or telecommunications services
E 45	662 – 670 MHz	TV or telecommunications services
E 46	670 – 678 MHz	TV or telecommunications services
E 47	678 – 686 MHz	TV or telecommunications services
E 48	686 – 694 MHz	TV or telecommunications services
E 49	694 – 702 MHz	TV or telecommunications services
E 50	702 – 710 MHz	Telecommunications services
E 51	710 – 718 MHz	Telecommunications services
E 52	718 – 726 MHz	Telecommunications services
E 53	726 – 734 MHz	TV or telecommunications services
E 54	734 – 742 MHz	TV or telecommunications services
E 55	742 – 750 MHz	TV or telecommunications services
E 56	750 – 758 MHz	TV or telecommunications services
E 57	758 – 766 MHz	TV or telecommunications services
E 58	766 – 774 MHz	RF outputs of set-top boxes
E 59	774 – 782 MHz	RF outputs of set-top boxes
E 60	782 – 790 MHz	RF outputs of set-top boxes
E 61	790 – 798 MHz	TV or telecommunications services
E 62	798 – 806 MHz	TV or telecommunications services
E 63	806 – 814 MHz	TV or telecommunications services
E 64	814 – 822 MHz	TV or telecommunications services
E 65	822 – 830 MHz	TV or telecommunications services
E 66	830 – 838 MHz	TV or telecommunications services
E 67	838 – 846 MHz	TV or telecommunications services
E 68	846 – 854 MHz	TV or telecommunications services
E 69	854 – 862 MHz	TV or telecommunications services

**Frequency Allocation Plan for Upstream and Downstream Channels
for Carriage of Telecommunications Services**

Downstream Channel (6 MHz Bandwidth)	
Channel Number	Frequency Range
D1	150 – 156 MHz
D2	336 – 342 MHz
D3	438 – 444 MHz
D4	444 – 450 MHz
D5	450 – 456 MHz
D6	456 – 462 MHz
D7	702 – 708 MHz
D8	708 – 714 MHz
D9	714 – 720 MHz
D10	720 – 726 MHz

Upstream Channel (1.6 MHz Bandwidth)	
Channel Number	Frequency Range
U1	11 – 16 MHz
U2	16 – 21 MHz
U3	21 – 22.6 MHz
U4	22.6 – 24.2 MHz
U5	24.2 – 25.8 MHz
U6	25.8 – 27.4 MHz
U7	27.4 – 29 MHz
U8	29 – 30.6 MHz
U9	30.6 – 32.2 MHz
U10	32.2 – 33.8 MHz
U11	33.8 – 35.4 MHz
U12	35.4 – 37 MHz
U13	37 – 38.6 MHz
U14	38.6 – 40.2 MHz
U15	40.2 – 41.8 MHz
<u>U16</u>	<u>41.8 – 43.4 MHz</u>
<u>U17</u>	<u>43.4 – 45 MHz</u>
<u>U18</u>	<u>45 – 46.6 MHz</u>

Channels Allocated for Terrestrial TV Broadcasting Service in Hong Kong

	Channel	Channel Limits (MHz)	Nominal Vision-Carrier Frequency (MHz)
Band IV	21	470-478	471.25
	22	478-486	479.25
	23	486-494	487.25
	24	494-502	495.25
	25	502-510	503.25
	26	510-518	511.25
	27	518-526	519.25
	28	526-534	527.25
	29	534-542	535.34
	30	542-550	543.25
	31	550-558	552.25
	32	558-566	559.25
	33	566-574	567.25
	34	574-582	575.25
Band V	38	606-614	607.25
	39	614-622	615.25
	40	622-630	623.25
	41	630-638	631.25
	42	638-646	639.25
	43	646-654	647.25
	44	654-662	655.25
	45	662-670	663.25
	46	670-678	671.25
	48	686-694	687.25
	49	694-702	695.25
	50	702-710	703.25
	51	710-718	711.25
	52	718-726	719.25
	53	726-734	727.25
	54	734-742	735.25
	55	742-750	743.25
	56	750-758	751.25
	57	758-766	759.25
	58	766-774	767.25
	59	774-782	775.25
	60	782-790	783.25
	61	790-798	791.25
	62	798-806	799.25

**Typical Values of ERP of
Transmitters Operating outside the Broadcasting Bands**

<u>Frequency Range (MHz)</u>	<u>Typical Values of ERP (W)</u>
<u>30 – 87</u>	<u>25</u>
<u>108 – 279</u>	<u>25</u>
<u>279 – 281</u>	<u>100</u>
<u>281 – 470</u>	<u>25</u>
<u>614 – 698</u>	<u>2</u>
<u>698 – 806</u>	<u>100</u>
<u>806 – 825</u>	<u>100</u>
<u>825 – 3000</u>	<u>100</u>