

Technical Code Programme 2020 Awareness & Adoption of Technical Codes

Technical Standard And Infrastructure Requirements For Broadcast Network Facility

MCMC MTSFB TC G008:2017

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20 October 2020



AGENDA

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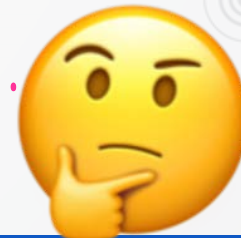
Background

What is broadcasting?

distribution of audio or video content to a dispersed audience via any electronic mass communications medium, but typically one using the electromagnetic spectrum (radio waves), in a one-to-many model.



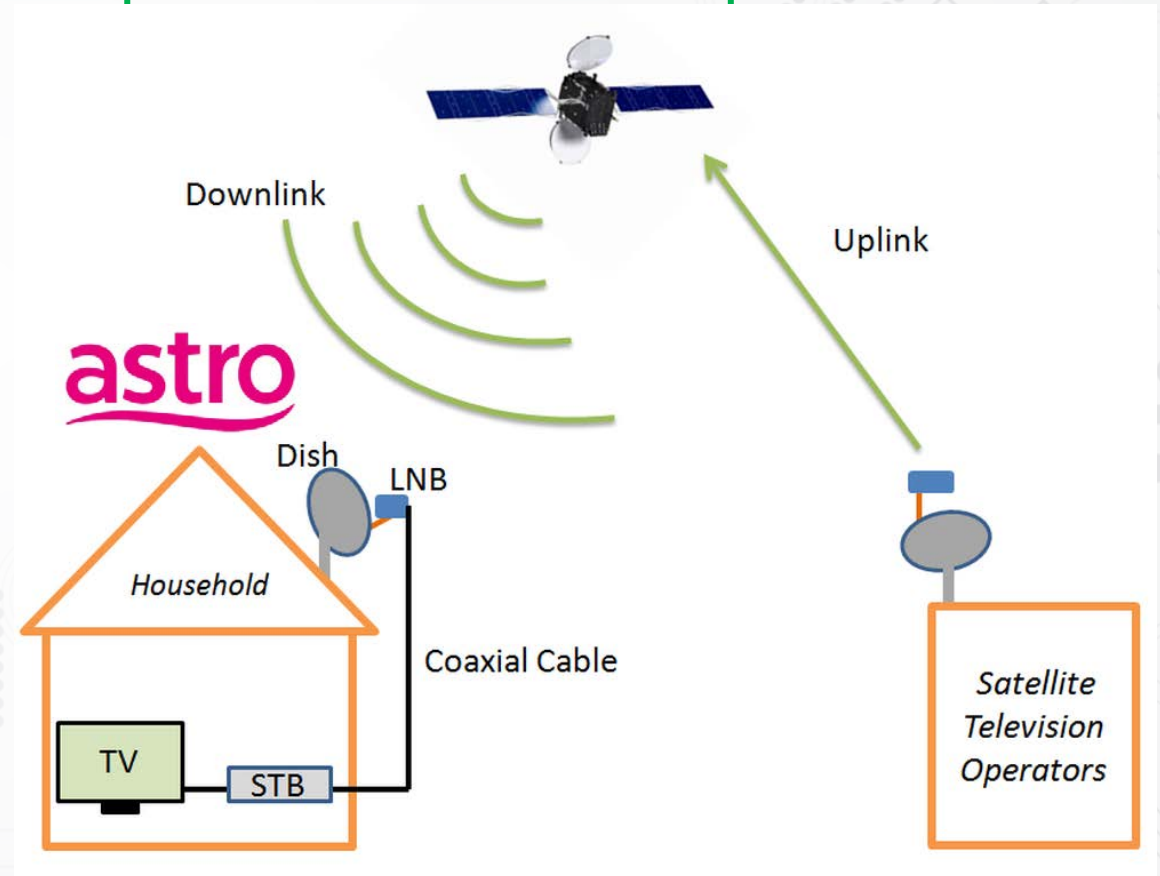
TV & Radio in Malaysia ...
in digital or analog?



..the analogy



Digital **TV**



Rumor: Malaysia goes full digital?

..the evolution



Astro Dish 65cm
DU)

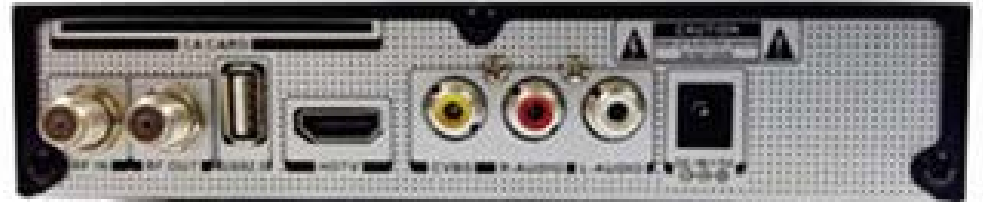
- 2 satellite input
- 2 cable from LNB into STB



STB (Non-PVR)



Remote Control Unit (RCU)



STB

(Personal Video Recording [PVR] + Ethernet +



Wi-Fi)
Let's collaborate @ MTSFB!



2

Introduction

Introduction



- Too many dishes
- Restriction by building owner
 - Public safety concern
 - Tarnish condo image

MDU Installation (Single Dish) in Apartment & Condominium



Technical Standard and Infrastructure Requirements For Broadcast Network Facility



No	Title	Technical Code number	Registration date
1.	Technical Standard and Infrastructure Requirements for Broadcast Network Facility	MCMC MTSFB TC G008:2016	5 October 2016

Revised version from previous document MTSFB 006:2005

mcmc.gov.my/en/legal/registers/cma-registers

Technical Codes on other matters under Section 185 of the Communications and Multimedia Act 1998

Title.	Title	Reference Number	Registered Date	Status
1	Technical Standard and Infrastructure Requirements : Fixed Network Infrastructure Final	MTSFB 008:2005 Revision 1	13 August 2008	Replaced by MCMC MTSFB TC G024:2020
2	Technical Standard and Infrastructure Requirements: Broadcast Network Infrastructure	MTSFB 006:2005 Revision 1	8 October 2008	Replaced by MCMC MTSFB TC G008:2016
	Technical Standard and Infrastructure Requirements for Broadcast Network Facility	MCMC MTSFB TC G008:2016 First Revision	5 October 2016	Current
3	Technical Standard and Infrastructure Requirements: Radiocommunications Network Infrastructure (External)	MTSFB 001:2009	21 May 2010	Current
4	Technical Standard of In-Building Fibre Cabling for Fibre-to-the-Premise	MTSFB 002:2009	23 August 2010	Replaced by MCMC MTSFBTC G007:2016

The Experts



AMP Connectors Sdn Bhd
Association of Consulting Engineers, Malaysia
CableView Services Sdn Bhd (Mega TV)
Celcom Communication Sdn Bhd
Construction Industry Development Board, Malaysia
Datacraft Malaysia Sdn Bhd
Department of Standards, Malaysia
Dewan Bandaraya Kuala Lumpur
Diamond Components Sdn Bhd
DiGi Telecommunications Sdn Bhd
Institution of Engineers, Malaysia
Jabatan Bomba Dan Penyelamat, Malaysia
Jabatan Kerja Raya, Malaysia
Leader Optic Fiber Cable Sdn Bhd
Malaysian National Computer Confederation
MAXIS Communication Sdn Bhd
Measat Broadcast Network Systems Sdn Bhd
MiTV Corporation Sdn.Bhd.
Natseven TV Sdn Bhd
SIRIM Berhad
Sistem Televisyen Malaysia Berhad (TV3)
Telekom Malaysia Berhad
Zettabits Technologies (M) Sdn Bhd

MTSFB
006:2005

Al Hijrah Media Corporation (TV Alhijrah)
Celcom Axiata Berhad
Dagang Teknik Sdn Bhd
Fraunhofer IIS
Global Invacom Sdn Bhd
LS Telcom
MEASAT Broadcast Network Systems Sdn Bhd (MBNS)
Media Prima Berhad
MYTV Broadcasting Sdn Bhd
Zettabits Technologies (M) Sdn Bhd

MTSFB
008:2016



MANUAL OSC 3.0 PLUS

Proses dan Prosedur
Cadangan Pemajuan
Serta Pelaksanaan
Pusat Setempat (OSC)

EDISI
PERTAMA
2019

SURAT PERAKUAN ORANG YANG MENGEMUKAKAN KEPADA SURUHANJAYA KOMUNIKASI DAN MULTIMEDIA MALAYSIA

Kepada:

(Masukkan alamat penuh Agensi/
Perakuan yang berkaitan)

Tarikh:

Tuan / Puan,

Dengan ini saya memperakui bahawa perincian komunikasi di dalam pelan bangunan bagi permohonan
(Tajuk Permohonan Cadangan Pemajuan)

di atas lot / lot-lot mukim
adalah termasuk penyediaan prasarana asas sivil (dalaman dan luaran) dan pendawaian (dalaman) bagi
membolehkan perkhidmatan komunikasi talian tetap disediakan dan mematuhi keperluan-keperluan SKMM iaitu;

- i) *Guideline on The Provision Of Basic Civil Works For Communications Infrastructure In New Development Areas;*
- ii) *Technical Standard and Infrastructure Requirements (TSIR) - Fixed Network Infrastructure (Part 1);*
- iii) *Technical Standards of In-Building Fibre Cabling for Fibre-to-the-Premise (MCMC MTSFB TC G007:2016)*
- iv) ***Technical Standard and Infrastructure Requirements for Broadcast Network Facility (MCMC MTSFB TC G008:2016) First Revision; dan***

saya bersetuju untuk menerima tanggungjawab penuh dengan sewajarnya.

Checklist for MCMC Approval

Orang Yang Mengemukakan

Nama :
Alamat :
No. Pendaftaran Profesional :

Nota : Salinan borang yang telah dilengkapkan hendaklah dikemukakan bersama-sama Borang A dan Borang B, Jadual Kedua UKBS 1984



-
- Covers the technical standards and infrastructure requirements for broadcast network facility for reception of broadcast services from satellite and terrestrial transmission.

- Developed to outline the infrastructure requirements (for the purpose of setting up a common and integrated broadcast distribution system) to consulting engineers, developers, owners and other responsible parties for the provisions to be made available in the buildings. It also provides the minimum technical specifications necessary for the broadcast broadband distribution system to function as required in buildings.



- Defines the in-building infrastructure requirement for premises (condo/apartment, low cost flats, single dwelling and office buildings) including the installation guidelines and standards, and performance specifications for the services as well as test procedures.





3

Infra & Outdoor Requirement

Infra & Outdoor Requirements



- Outdoor Antenna
- Location
- Satellite Dish
- Space Required

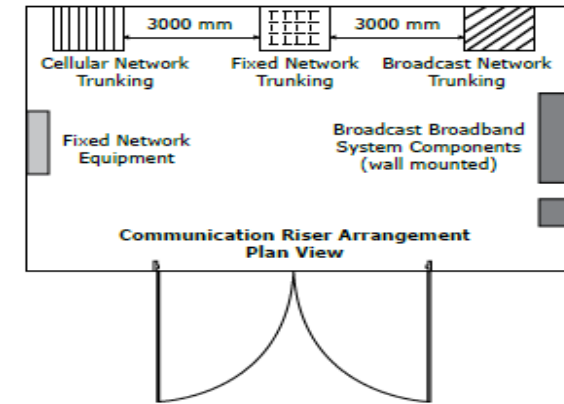
4.1.2 Antenna / Dish location

Where no suitable site can be found because of "shadowing" by other taller building, an aerial pole maybe erected. No link-up by overhead cable from aerial to block or block to block is allowed. Underground linking to another block for better TV reception is allowed.

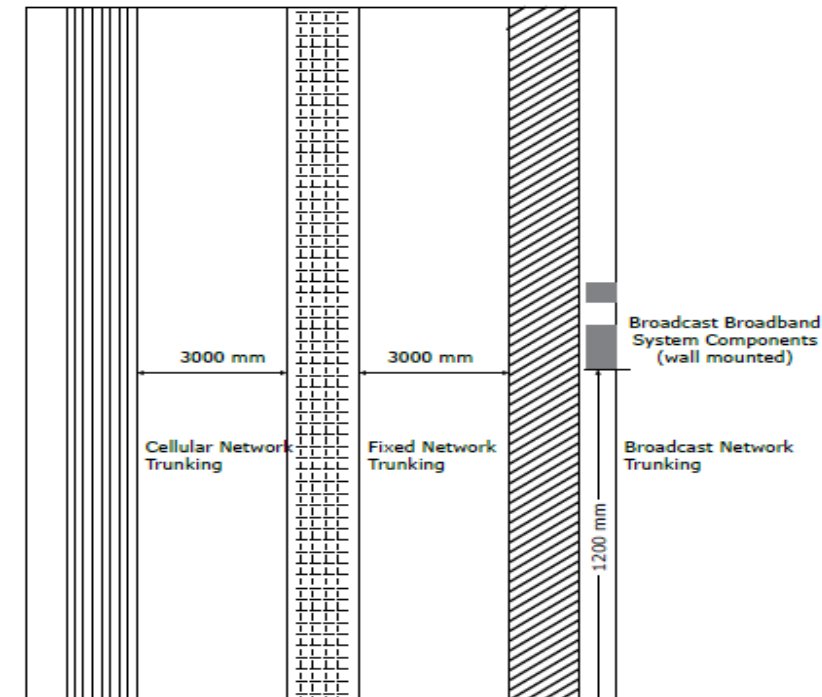
4.2.1 Space requirement

The developer must dedicate a room with security lock to locate all broadcast services head-end equipment, identified as the BROADCAST / TRANSMISSION HEAD-END room.

- Space Required
- MDU Riser



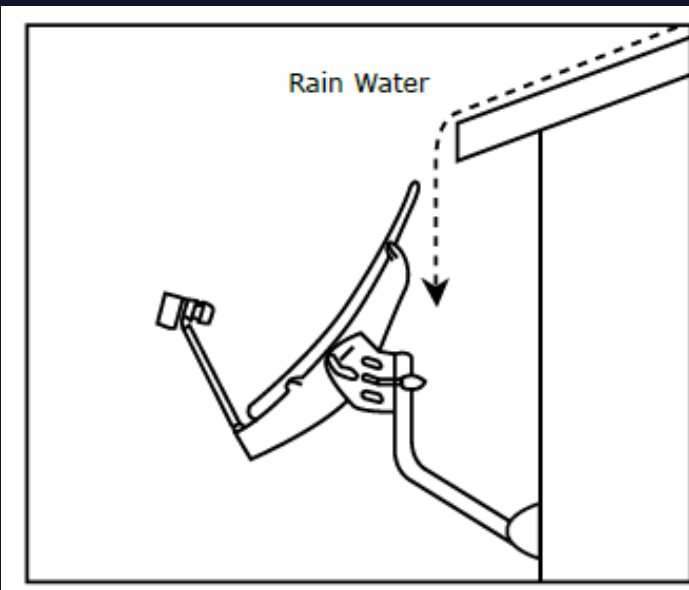
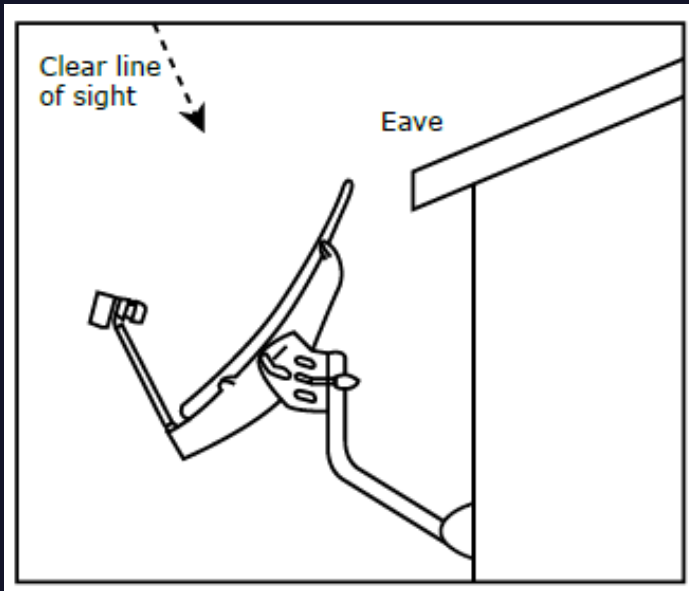
Communication Riser Arrangement
Front View





4

Installation Guidelines



6.1.3 Satellite dish installation

- The installation of a satellite dish requires attention to potential microwave interference sources, the exact satellite and transponders to be received.
- **Satellite Dish Positioning**

4.4.1 Broadcasting Outlet

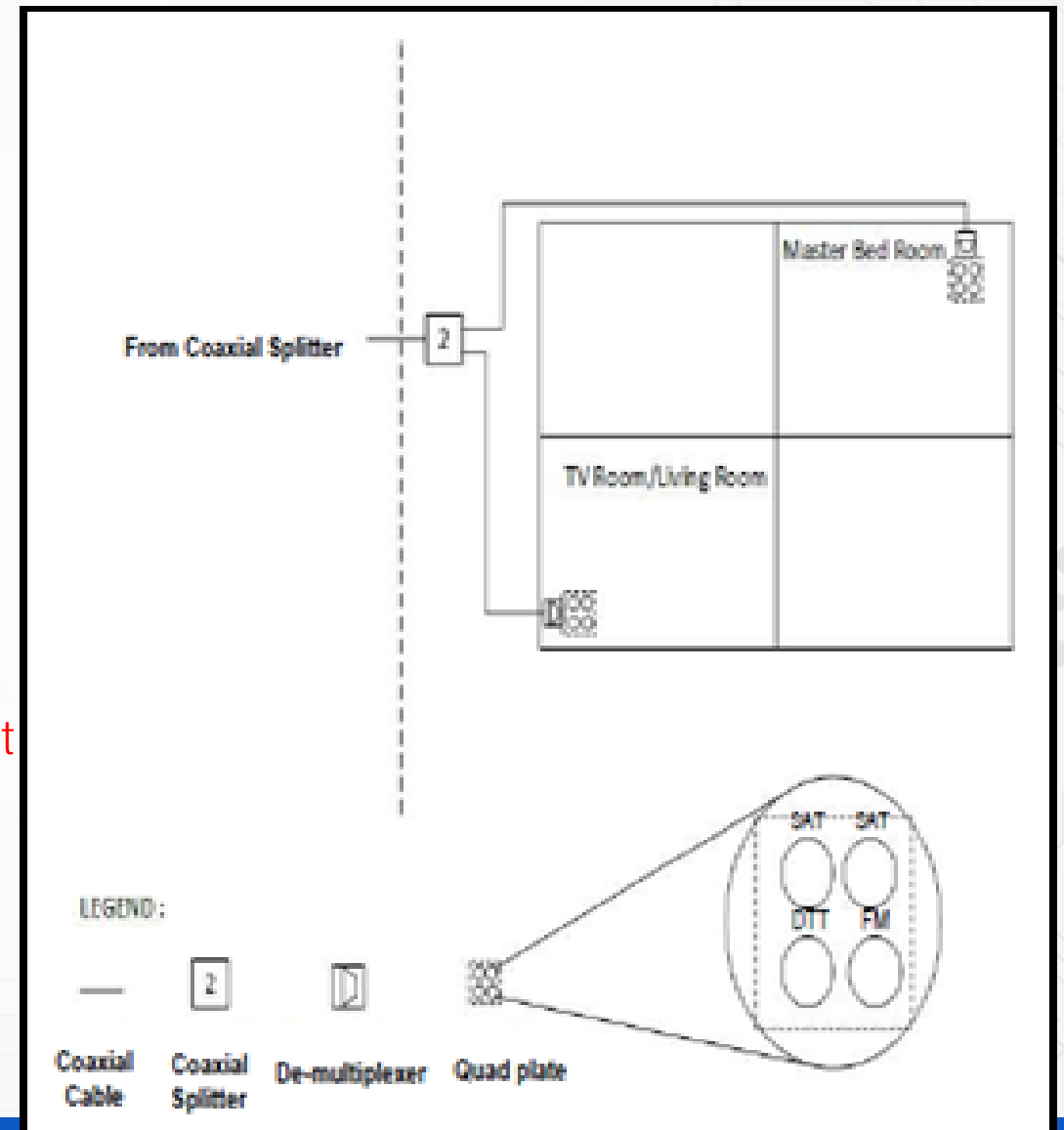
The minimum requirement number of ports per socket plate shall be as follows:

- 2 Satellite signal ports (SAT).
- 1 Digital Terrestrial Television (DTT) signal port.
- 1 Frequency Modulation (FM) signal port.

- Wall Socket faceplate



- Broadcasting outlet



6.2.1 Equipment Installation and arrangement

- Head-End is an area where a comparatively large number of equipment and cables are installed. All equipment and cable should be wall mounted or rack mounted and arranged in a proper manner to facilitate quick and effective maintenance.

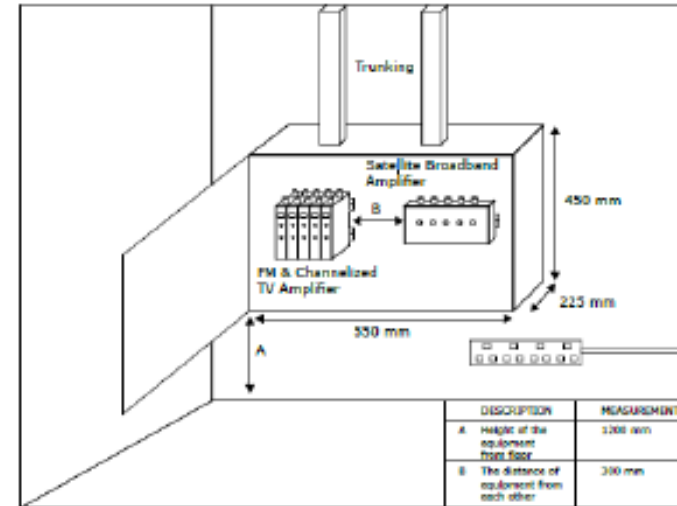


Figure 4. Recommended Head-end equipment arrangement (wall mounted type)



5

Technical Requirement & Specification

Technical Requirement & Specification



- Cable Type (Coaxial)

Annex C
(normative)

**Minimum Coaxial Cable Specifications
for RG 11**

Annex D
(normative)

**Minimum Coaxial Cable Specifications
for RG 6**

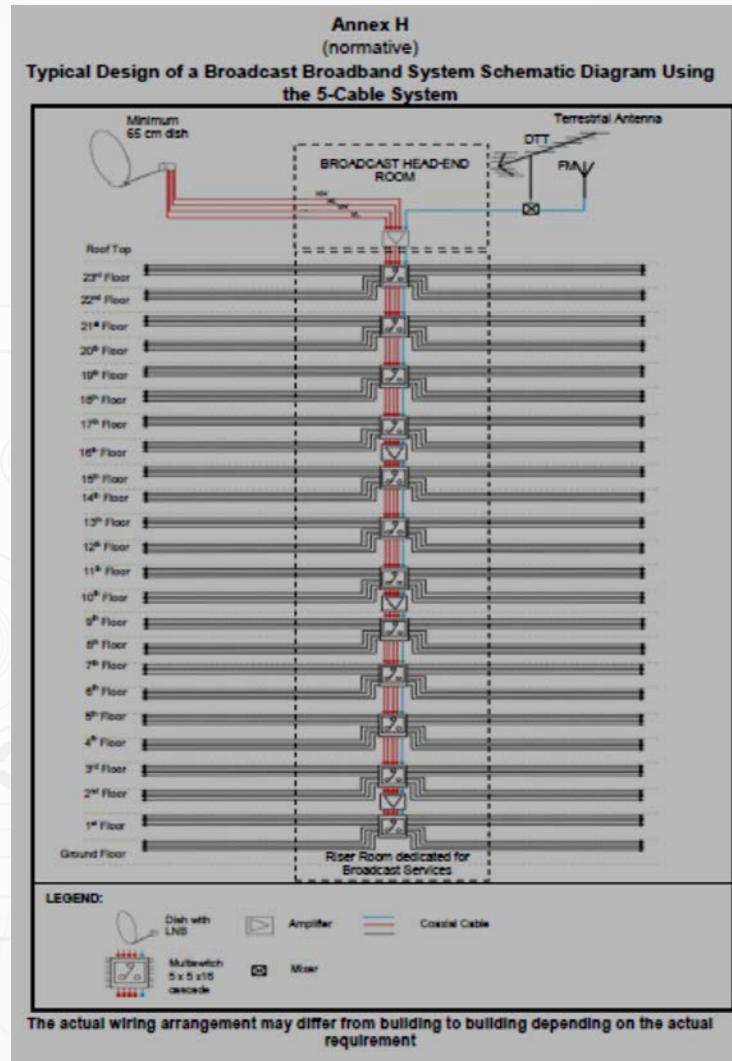
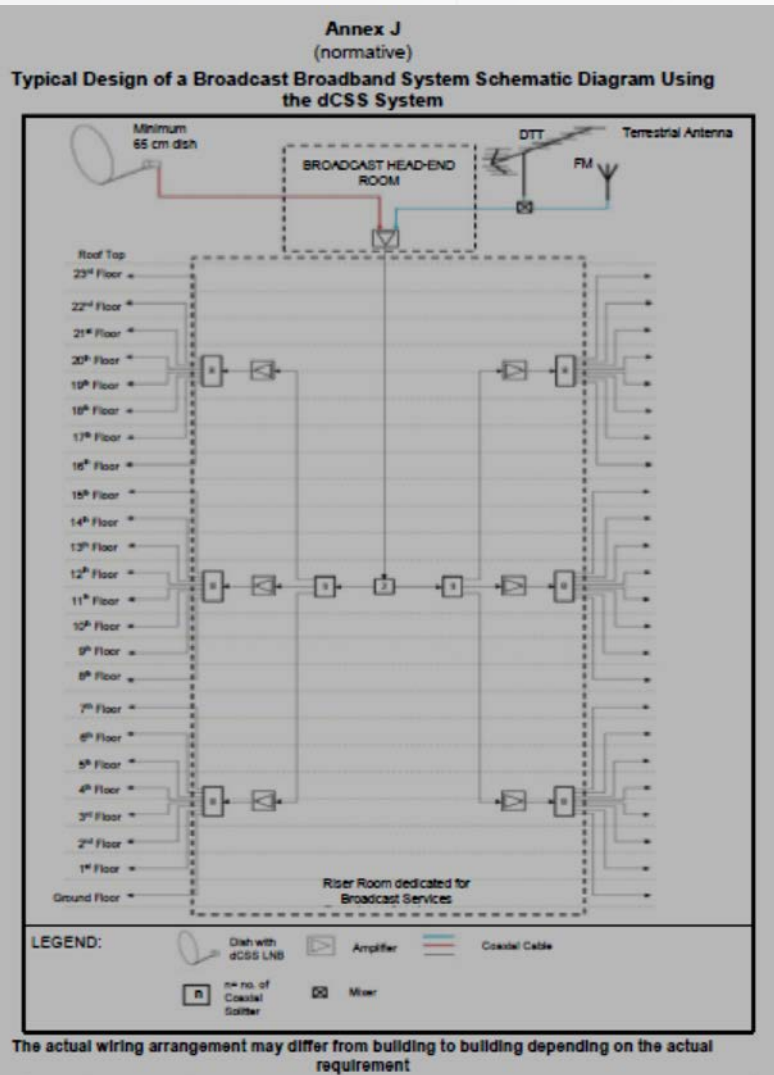
The general specification for for coaxial splitters shall be as follows:

Splitter type	:	2-way, 4-way, or 8-way
Frequency range	:	5 MHz to 2150 M
F Connector	:	Yes
Earthing connections	:	Yes
Impedance	:	75 ohm

- Multiway Splitter



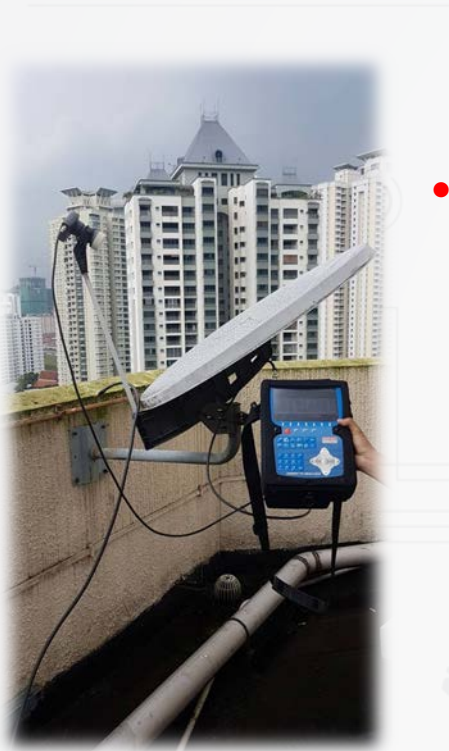
Samples



Examples of typical design for a BBS schematic diagram are as shown in:-

- Annex F** - Full fibre system;
- Annex G** - Hybrid system (integration of both coaxial and fibre connection);
- Annex H** - 5-Cable system (coaxial cable 5-wire);
- Annex J** - dCSS system (single wire)

Performance Specifications



- Testing Procedures



- Signal survey

- Fibre systems

Table 6. Performance specifications

Point of measurement	System / Services	Requirement
Minimum signal level at antenna / dish	Terrestrial analog	≥ 75 dB μ V
	Terrestrial digital	≥ 48 dB μ V
	FM Radio	≥ 60 dB μ V
	Satellite dish	≥ 75 dB μ V
Minimum signal level at the broadcast socket	Terrestrial analog	63dB μ V – 80dB μ V and CNR ≥ 40 dB
	Terrestrial digital	48dB μ V – 100dB μ V; CNR ≥ 28 dB and MER ≥ 20 dB
	FM Radio	≥ 54 dB μ V
	Satellite signal	65dB μ V – 80dB μ V; BER (after Viterbi) $\geq 2 \times 10^{-4}$ and MER ≥ 14 dB

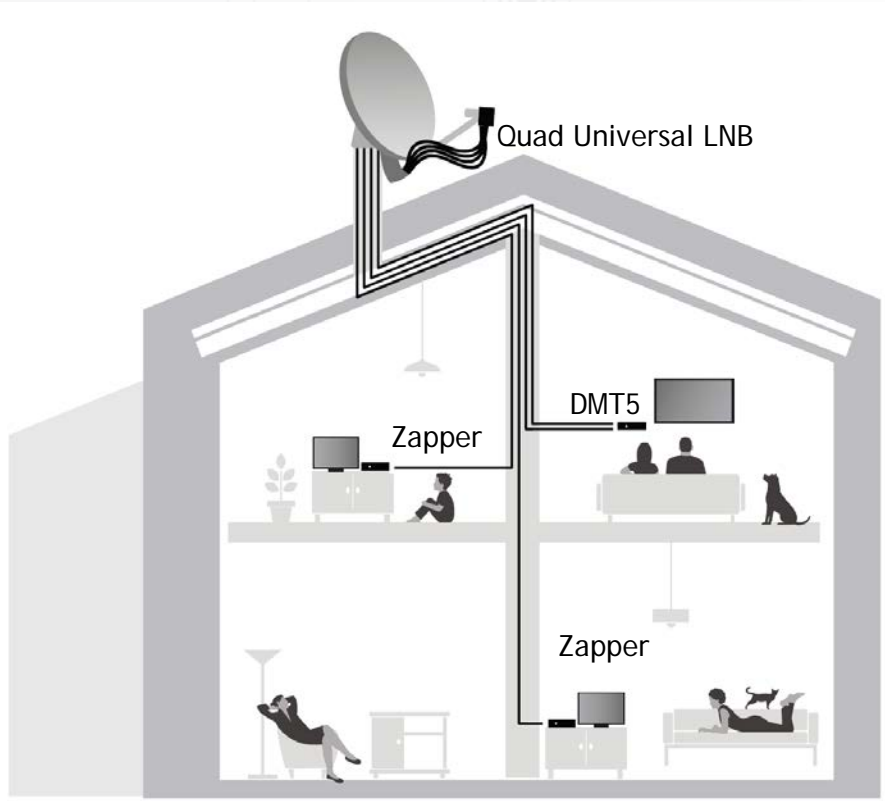
- Performance Specification

5-Cable system (coaxial cable 5-wire);

LNB
Quad Universal LNB

- 2x PVR
- 1x PVR & 2x Zapper
- 4x Zapper

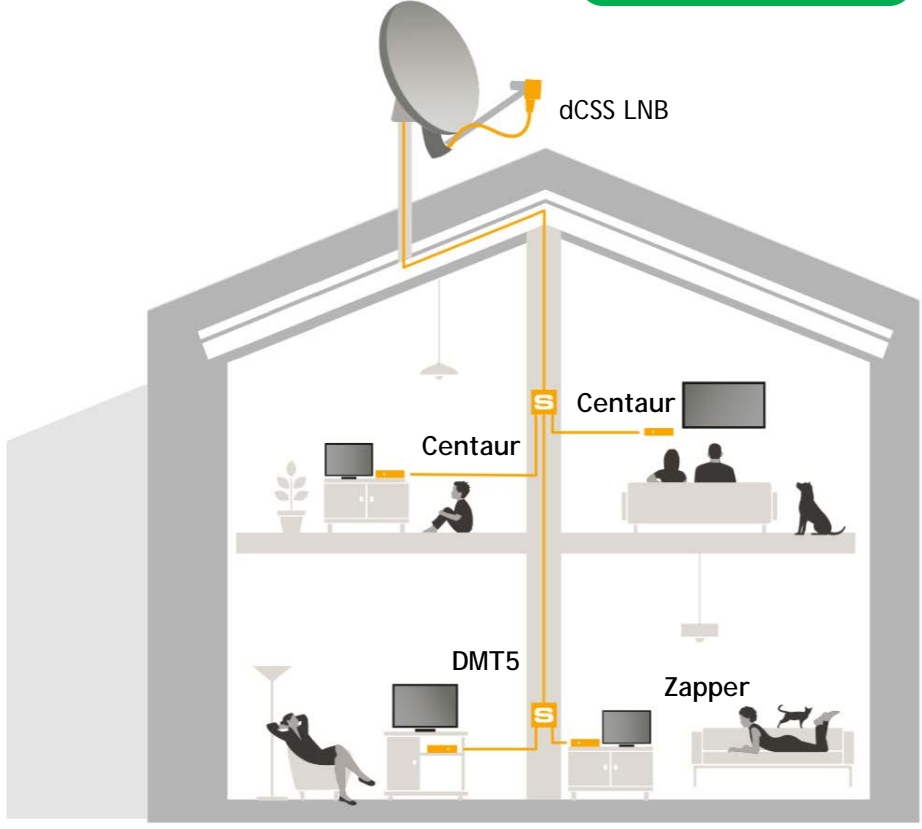
Possible MR Scenarios



dCSS system (single wire)

LNB
dCSS LNB & splitter

- Possible MR Scenarios
- 1x Centaur & PVR/Zapper





6 Extra

Fiber Solution in MDU

Hybrid Solution - Support both SD/HD Services

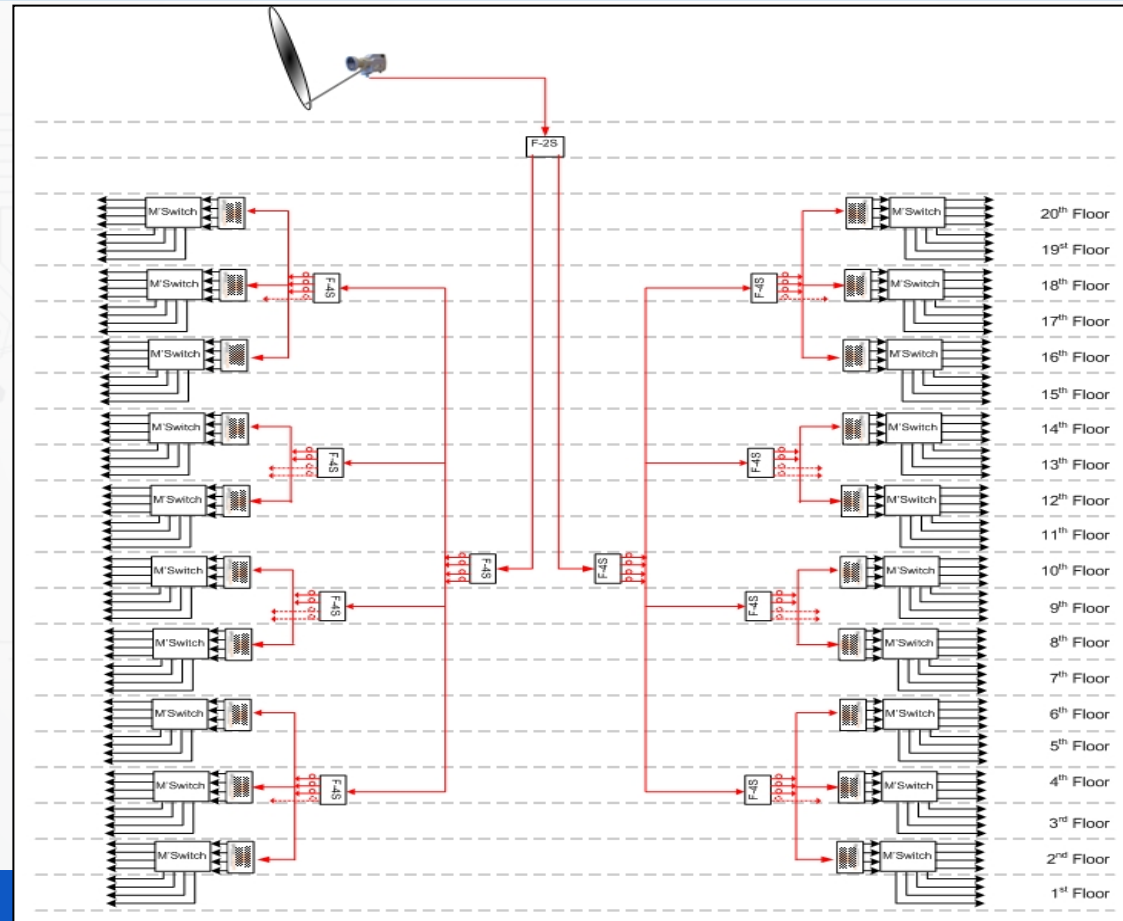
- Solving signal high loss issues due to distance limitation
- Fiber Optics technologies allows far connectivity between 2 points with almost zero losses. (for vertical distribution only)
- Support full frequencies band for future transponder/channels expansion
- Use of multi switch will enable additional of points/ports



Fiber LNB



Fiber Cable



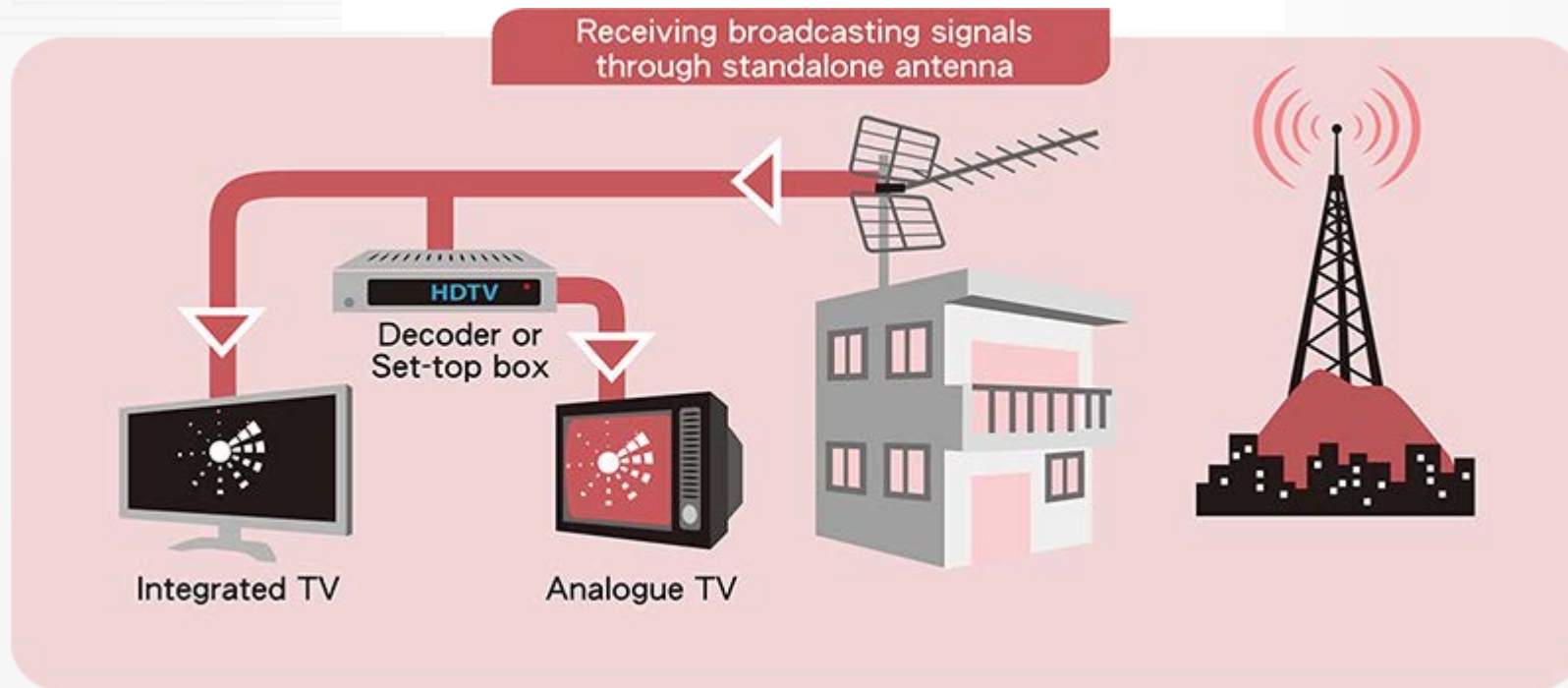
Virtual Quattro



Multi-switch



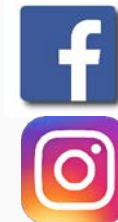
MYTV ADVANCE DECODER



Q&A

*Thank
You*

Let's Collaborate



MTSFB

mtsfb_cyberjaya