

# LOGIWIRE

## house cabling

In a new official order of Minister of Transport, Construction and Maritime Economy, the obligation of assembling fiber optic installation was imposed on the new buildings of public and educational utility as well as multi-family buildings.

In the digital world, it is difficult to keep up with continuously growing requirements set to new technologies. A few years ago no one was aware of the obligatory installations of telecommunication infrastructure for the future technologies. At that time, the emphasis was put on satisfying current needs, which had later consequences in change of suppliers or delivery of the new solutions connected with assembly of different telecommunication installations. It resulted in not only higher costs, but also decreased the building's aesthetics. In order to ensure the compatibility of installations in the buildings with modern services and various suppliers, a new order MTB and GM was launched on the market. It includes the minimal parameters

which should characterize power-law installations.

The most economically worthwhile solutions of fiber optic networks in multi-family building are DROP systems (for the small number of users) and EAC-RA (for larger number of users). The perfect complement of given solutions is Logiwire-multimedia cabling system.

### **Logiwire System:**

Main aim of this system is to integrate as many systems as possible in one place such as:

- fiber optic networks (e.g. DROP or EAC-RA),
- computer networks (DATA),
- telephone network (PSTN),
- monitoring (CCTV),
- audio system (AUDIO),
- cable television and antenna systems (SatTV/CATV),
- alarm installation,
- interphone installation,
- active appliances,
- other.

### Brief foredesign

#### Internal terminal

2x SM optical fiber, 2x twisted pair cable cat. 6 UTP, 2x coaxial cable

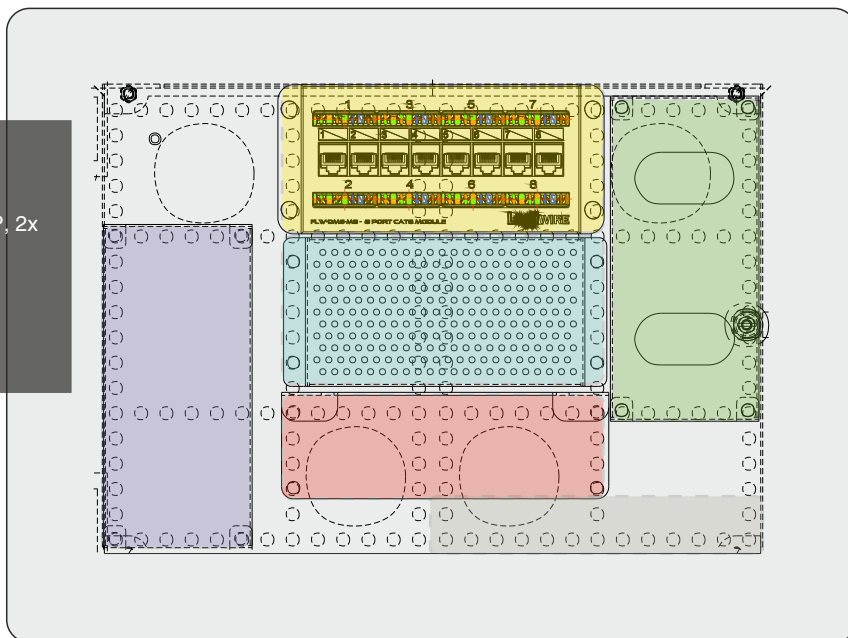
#### External terminal

Living room 1x coaxial cable, 3x twisted pair cable

Bathroom 1x coaxial cable, 1x twisted pair cable

Kitchen 1x twisted pair cable

Loggia 1x twisted pair cable



## Single-room flat

### Mount box

FLW-10N-EH - 370x270x100 mm- in a wall mount version which enables mounting up to 6 modules with additional supply.

### Mount box equipment

**FLW-BMP-T2 + VFTO** - D2- 221- 22- mount module for the optical fiber box mounting-external terminal with user's optical-fiber box-equipped with adapters and pigtails

**FLW- BMP-T1** - mount module for active equipment (GPON) which also functions as a cable guide.

**FLW-BMP-M1** mount module for VIDEO system distribution

**FLW-DM6-U8** - 8xRJ45 cat. 6 module in non-shielded version- for telecommunication system distribution inside the building

**FLW-APB-M1 + FLW-APF-M6**- cantilever's panel of adapter with a panel, 6x mounting opening for F connector - for Video system distribution inside the building

**PDU-3BB**- dedicated power strip  
7x XQP004.012OR31 + 4X XKP003.012GY- suitably selected 30cm copper patch cord cat. 6 and coaxial cable

1x G00-SX-SM2-18-Y-000.05-SCA-SCA optical fiber patch cord

### Electro-installation accessories

According to the interior design's assumptions- it is enough to use "keystone" RJ45 standard  
6x XQ100.400 – Fibrain DATA cat. 6 UTP for termination computer cables

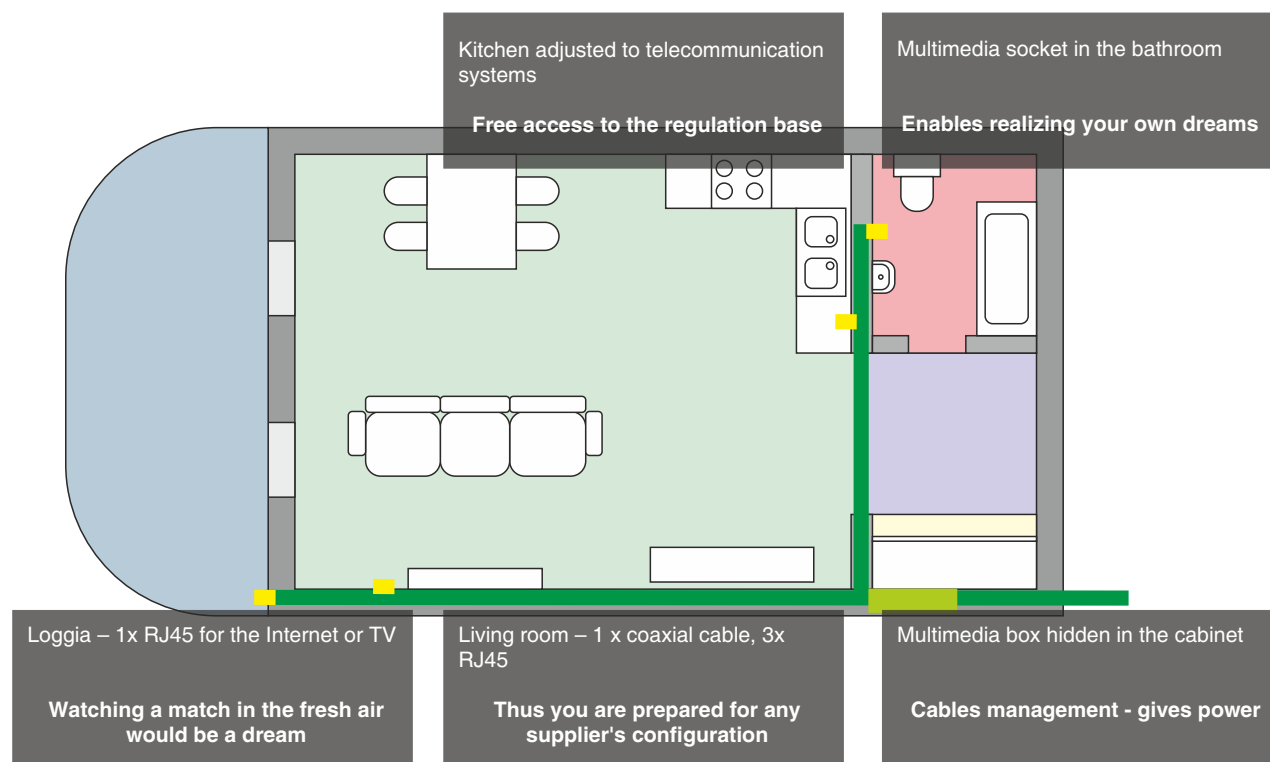
### Installation cables

External terminals- secured by the developer

Internal installation

XQ100.105- Fibrain DATA cat. 6 500 MHZ U/UTP LTH jacket- secured in case of fire – 120m

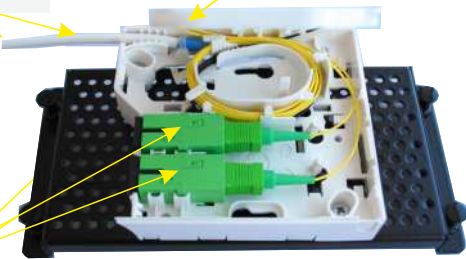
XK100.136- Fibrain DATA coax- 20m



## Termination of fiber optic cables

2x optical fiber SM2  
external terminal

place for the fiber stock

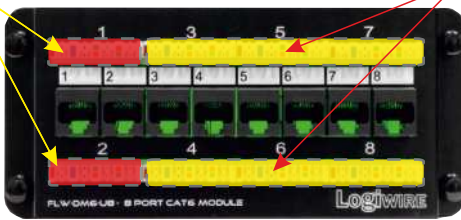


2x SC/APC adapter

## Termination of twist cables

2x cat 6 UTP  
external terminal

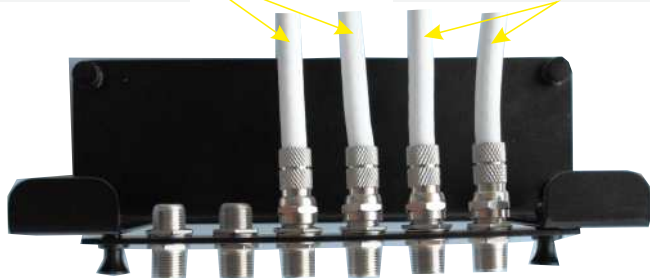
6x cat 6 UTP  
internal terminal



## Termination of coaxial cables

2x COAX  
internal terminal

2x COAX  
internal terminal



<b>FLW-MINII-KIT</b>	<b>MINI KIT assembly</b>	<b>1 pcs</b>
<b>Mount box equipment</b>		
<b>FLW-10N-EH</b>	370x270x100 - mount box in a wall mount version	<b>1 pcs</b>
<b>FLW-BMP-T2</b>	mount module for optical fiber box mounting - external terminal	<b>1 pcs</b>
<b>VFTO-D2-221-22</b>	fiber optic user's box- equipped with adapters and pigtails	<b>1 pcs</b>
<b>FLW-BMP-T2</b>	mount module for active equipment (GPON) mounting which also functions as cable guide	<b>1 pcs</b>
<b>FLW-BMP-M1</b>	mount module for VIDEO system distribution	<b>1 pcs</b>
<b>FLW-DM6-U8</b>	8xRJ45 cat. 6 module in non-shielded version- for telecommunication system distribution inside the building	<b>1 pcs</b>
<b>FLW-APB-M1</b>	cantilever's panel of adapters	<b>1 pcs</b>
<b>FLW-APF-M6</b>	panel 6x connector F	<b>1 pcs</b>
<b>PDU-3BB</b>	3 x 230V power supply strip	<b>1 pcs</b>
<b>XQP004.012OR31</b>	patch conductor cat. 6 in UTP version (length: 40 cm) gained	<b>7 pcs</b>
<b>XKP003.012GY</b>	COAX patch conductor (length: 30 cm)	<b>4 pcs</b>
<b>G00-SX-SM2-18-Y-000.05-SCA-SCA</b>	SM2 patch conductor (length: 50 cm)	<b>1 pcs</b>

## TWO-ROOM FLAT

### Mount box

FLW-14 N – EH – 370x370x100 mm - in a wall mount version which enables mounting up to 8 modules with additional supply.

### Mount box equipment

**FLW-BMP-T2 + VFTO- D2- 221- 22-** mount module the optical fiber box mounting- external terminal with user's fiber optic box- equipped with adapters and pigtails

**FLW- BMP-T1** - mount module for active equipment (GPON) mounting which also functions as cable guide.

**FLW-BMP-M1** - mount module for VIDEO system distribution

**2x FLW-DM6-U8** - 8xRJ45 cat. 6 module in non-shielded version- for telecommunication system distribution inside the building

**FLW-APB-M1 + FLW- APF- M6** - cantilever's panel of adapter with a panel, 6x mounting opening for F connector - for Video system distribution inside the building.

**PDU-3BB** - dedicated power strip

10x XQP004.012OR31 + 4X XKP003.012GY- suitably selected 30cm copper patch cord cat. 6 and coaxial cable

1x G00-SX-SM2-18-Y-000.05-SCA-SCA optical fiber patch cord

### Electro-installation accessories

According to the interior design's assumptions- it is enough to use "keystone" standard RJ45  
10x XQ100.400 – Fibrain DATA cat. 6 UTP for termination computer cables

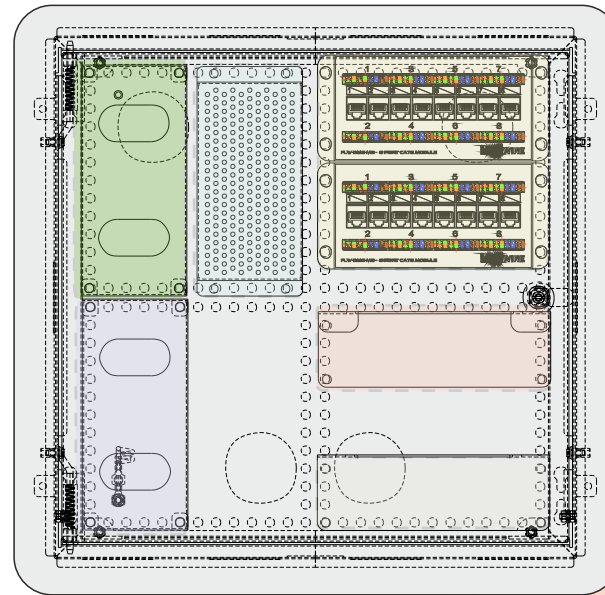
### Installation cables

External terminals- secured by the developer

### Internal installation

XQ100.105- FibrainDATA cat. 6 500 MHZ U/UTP LTH jacket- protected in case of fire – 160m

XK100.136- FibrainDATA coax- 60 m



### Brief foredesign

#### Internal terminal

2x SM optical fiber, 2x twisted pair cable cat. 6 UTP, 2x coaxial cable

#### External terminal

Living room 1x coaxial cable, 3x twisted pair cable  
Room 1x coaxial cable, 2x twisted pair cable  
Bathroom 1x coaxial cable, 1x twisted pair cable  
Kitchen 1x twisted pair cable  
Loggia 1x twisted pair cable

Multimedia point in each room

at the designing stage it is difficult to predict all the potential changes

Multimedia box hidden in the cabinet

cables management - gives power

Living room – 1 x coaxial cable, 3x RJ45

thus you are prepared for any supplier's configuration

Loggia – 1x RJ45 for the Internet or TV

watching a match in the fresh air would be a dream

Kitchen adjusted for telecommunication systems

Free access to regulation base

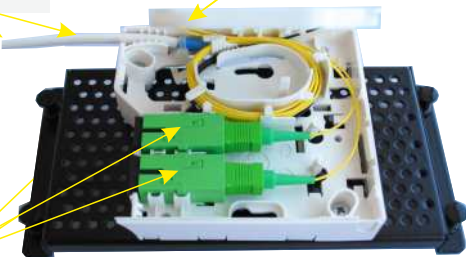
Multimedia socket in the bathroom

Enables realizing your own dreams

## Termination of fiber optic cables

2x optical fiber SM2  
external terminal

place for the fiber stock

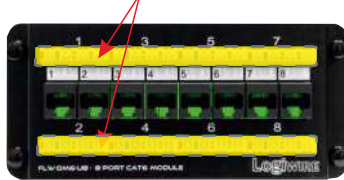
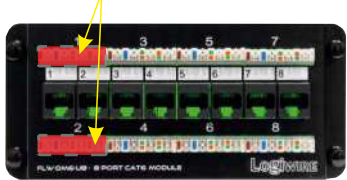


2x SC/APC adapter

## Termination of twist cables

2x cat 6 UTP  
external terminal

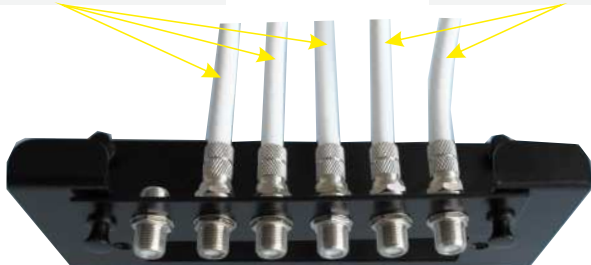
8x cat 6 UTP  
internal terminal



## Termination of coaxial cables

3x COAX  
internal terminal

2x COAX  
internal terminal



**FLW-MIDI-KIT**

Assembly MID-KIT with equipment

1 pcs

## Mount box equipment

**FLW-14N-EH**

370x270x100 - mount box in a wall  
mount version

1 pcs

**FLW-BMP-T2**

mount module for optical fiber box  
mounting - external terminal

1 pcs

**VFTO-D2-221-22**

fiber optic user's box- equipped with  
adapters and pigtails

1 pcs

**FLW-BMP-T2**

mount module for active equipment  
(GPON) mounting which also functions  
as cable guide

1 pcs

**FLW-BMP-M1**

mount module for VIDEO system  
distribution

1 pcs

**FLW-DM6-U8**

8xRJ45 cat. 6 module in non-shielded version-  
for telecommunication system distribution  
inside the building

1 pcs

**FLW-APB-M1**

cantilever's panel of adapters

1 pcs

**FLW-APF-M6**

panel 6x connector F

1 pcs

**PDU-3BB**

3 x 230V power supply strip

1 pcs

**XQP004.012OR31**

patch conductor cat. 6 in UTP version  
(length: 40 cm) gained

7 pcs

**XKP003.012GY**

COAX patch conductor (length: 30 cm)

4 pcs

**G00-SX-SM2-18-Y-  
000.05SCA-SCA**

SM2 patch conductor (length: 50 cm)

1 pcs

## FOUR-ROOM FLAT

### Mount box

FLW-10N-EH - 370x720x100 mm mount box in a wall mount version which enables mounting up to 16 modules with additional supply.

### Mount box equipment

**FLW-BMP-T2 + VFTO- D2- 221- 22-** mount module for the fiber optic box mounting- external terminal with user's fiber optic box- equipped with adapters and pigtails

**3x FLW- BMP-T1-** mount module for active equipment (GPON) mounting which also functions as a cable guide.

**FLW-BMP-M1-** mount module for VIDEO system distribution

**2x FLW-DM6-U8-** 8xRJ45 cat. 6 module in non-shielded version- for telecommunication system distribution inside the building

**2x FLW-APB-M1-** cantilever's panel of adapter

**2x FLW- APF -** M6-panel 6x connection F – distribution Video system inside the building

**2x FLW- APK -** M6- 6x keystone panel- for distribution other multimedia system

**FLW-OPT-R8-** telephone module, passive distribution of signals for 8 RJ45 outputs

**PDU-3BB -** dedicated power strip

10x XQP004.012OR31 + 4X XKP003.012GY- suitably selected 30cm copper patch cord cat. 6 and coaxial cable

1x G00-SX-SM2-18-Y-000.05-SCA-SCA fiber optic patch cord

### Electro-installation accessories

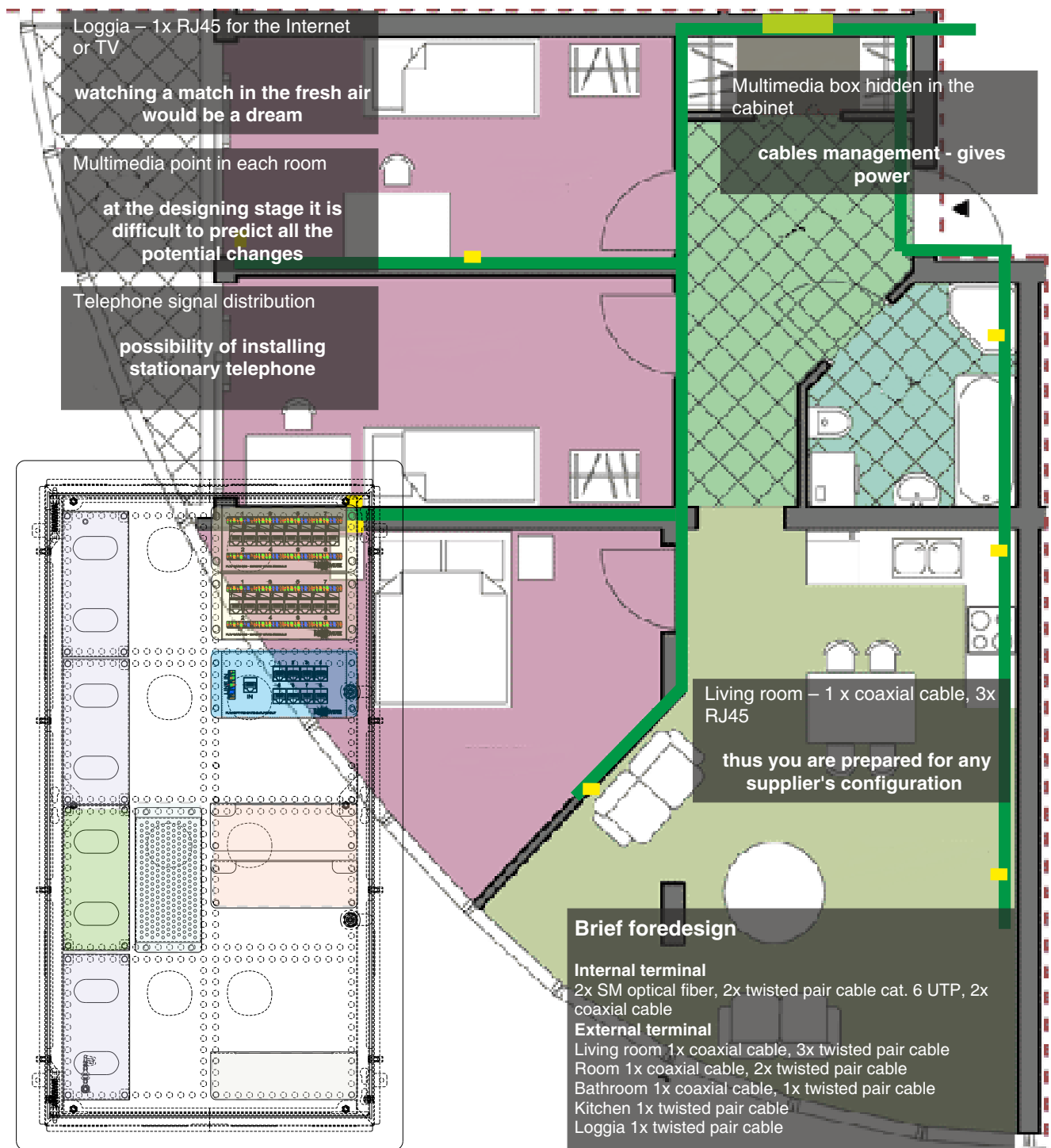
According to the interior design's assumptions- it is enough to use "keystone" standard RJ45  
10x XQ100.400 – Fibrain DATA cat. 6 UTP for termination computer cables

### Installation cables

External terminals- secured by the developer

### Internal installation

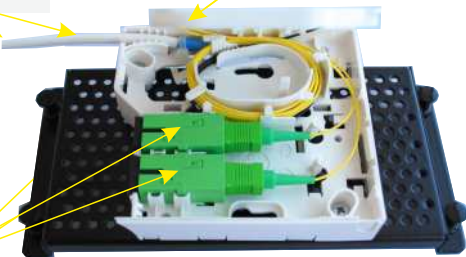
XQ100.105- FibrainDATA cat. 6 500 MHZ U/UTP LTH jacket- protected from fire – 160m  
XK100.136- FibrainDATA coax- 60m



## Termination of fiber optic cables

2x optical fiber SM2  
external terminal

place for the fiber stock



2x SC/APC adapter

## Termination of twist cables

2x cat 6 UTP  
external terminal

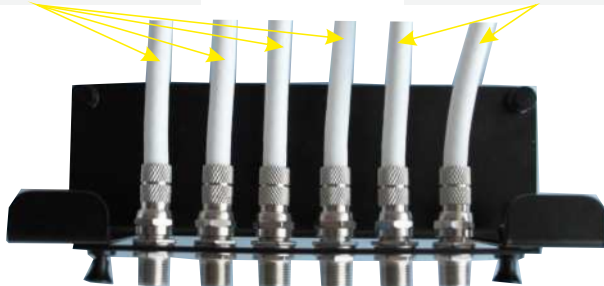
12x cat 6 UTP  
internal terminal



## Termination of coaxial cables

5x COAX  
internal terminal

2x COAX  
internal terminal



<b>FLW-MAXI-KIT</b>	Assembly MAXI-KIT with equipment	<b>1 pcs</b>
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## Mount box equipment

<b>FLW-28N-EH</b>	370x720x100 - mount box in a wall mount version	<b>1 pcs</b>
<b>FLW-BMP-T2</b>	mount module for optical fiber box mounting - external terminal	<b>1 pcs</b>
<b>VFTO-D2-221-22</b>	fiber optic user's box- equipped with adapters and pigtails	<b>1 pcs</b>
<b>FLW-BMP-T2</b>	mount module for active equipment (GPON) mounting which also functions as cable guide	<b>3 pcs</b>
<b>FLW-BMP-M1</b>	mount module for VIDEO system distribution	<b>1 pcs</b>
<b>FLW-DM6-U8</b>	8xRJ45 cat. 6 module in non-shielded version- for telecommunication system distribution inside the building	<b>2 pcs</b>
<b>FLW-OPT-R8</b>	telephone module, passive distribution of signals for 8 Rj45 outputs	<b>1 pcs</b>
<b>FLW-APB-M1</b>	cantilever's panel of adapter	<b>2 pcs</b>
<b>FLW-APF-M6</b>	panel 6x connection F – distribution Video system inside the building	<b>2 pcs</b>
<b>FLW-APK-M6</b>	6x keystone panel- for distribution other multimedia system	<b>2 pcs</b>
<b>PDU-3BB</b>	3 x 230v dedicated power strip	<b>1 pcs</b>
<b>XQP004.012OR31</b>	patch conductor cat. 6 in UTP version (length: 40 cm) gained	<b>14 pcs</b>
<b>XKP003.012GY</b>	COAX patch conductor (length: 30 cm)	<b>7 pcs</b>
<b>G00-SX-SM2-18-Y-000.05-SCA-SCA</b>	SM2 patch conductor (length: 50 cm)	<b>1 pcs</b>

# FIBRAIN

## Fiber optic technologies

Fiber optic systems for the multi-family housing also known as Fiber to the Home systems are state-of-the-art solutions, which ensure services of high quality. Thanks to our years of experience, we can offer our customers both technical and design support.

Optimization of the material costs, simple installation, limitations of required fiber quantity and delegation majority of responsibilities connected with installation to the producer of materials, which is strictly linked to growing importance of pre-fabricated materials, these are the major goals of these systems.

The crucial element in Fiber to the Home solutions is our years of experience backed by technical and design knowledge.

In order to build properly and trouble-free Fiber to the Home network, it is necessary to be aware of large number of challenges, which we will have to overcome and identify basic parameters of a such network. Fiber to the Home networks are still rather new and they are constantly evolving, consequently

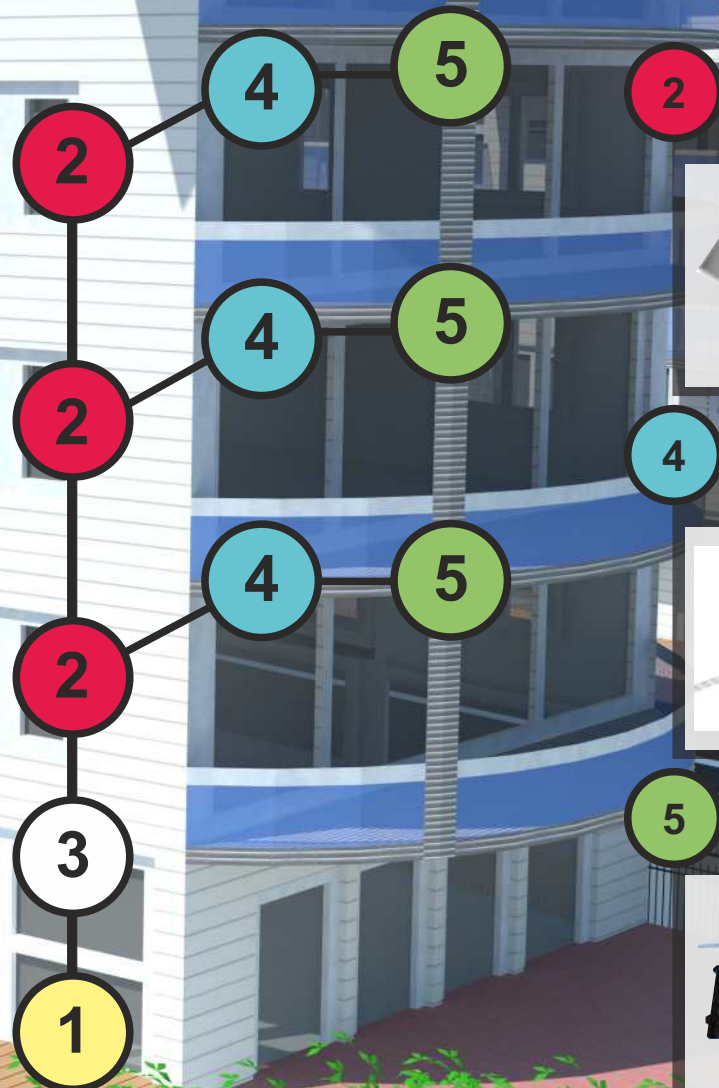
the knowledge about them is often incomplete.

**Easy Access Cable-Ra** - is innovative technology of fiber optic housing cabling which uses special construction of distribution system- easy access cables. System's installation in EAC-Ra technology involves taking an optical fiber from RISER ACCESS on a given building floor and based on installation method which delivers an optical fiber to the user's box. Apart from an easy access, technology also predicts total number of mount and distributive box equipment ( boxes, fiber concentric boxes, user's boxes etc.). Technology was created by Research and Development department in order to deliver optical fibers to the flats especially in multi-family and office buildings.

An essential element of EAC-Ra is the possibility of building vertical house cabling, which connects each user to the distribution point with reduced number and size of supportive as well as distributive equipment in a cable rail. Optical rail in EAC-Ra technology uses the group of fibers with G. 657-lowered bend radius. Technical and economical analyses have demonstrated that EAC-Ra technology is cheaper than other housing cabling systems. Furthermore, this technology can be used in building with small number of users as well as in buildings which have more than 10 floors.

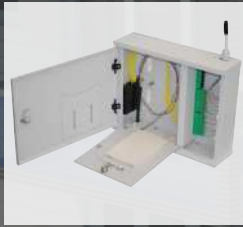


# Pattern 1 EAC-RA



1

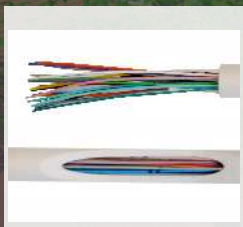
IFDT-B0-x



IFDT locker is dedicated as distribution point for optical fibers installed with FTTH - fiber optic systems. The locker capacity depends on the switching field, which is a demountable element and has 12-42 fibers.

3

EAC-RA



Easy access cable is dedicated for mounting fiber optic cabling. Special construction enables easy access to the fibers through "cutting the window-shaped holes in the jacket" with a simple tool and possibility of pulling fibers at 25m distance.

2

IFDB-A



Dedicated as a redistributive point for optical fibers installed with FTTH - fiber optic systems. Locker's input ports enable inserting bunch of users' cables and building's cable flexibly. The locker's capacity is up to 24 welds.

4

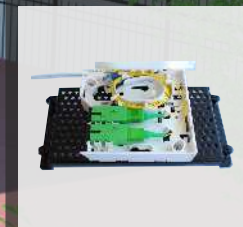
VC-TUB



Dedicated as a redistributive point for the optical fibers with FTTH fiber optic systems. Equipped with the guide pin which simplifies fiber's installation in the micropipe. External sheath is equipped with anti-static and anti-slip sheath. The tube has excellent crush-resistance.

5

VFTO-D2

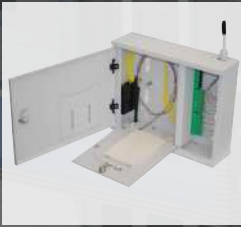


Dedicated for FTTH network as an end of optical rail up to max. 4 optical fibers in a house or in the office buildings. User's box enables inserting the cables of small diameters and connecting them with 2x SC or 4xLC pigtails.

# Pattern 2 EAC-RA + DROP

1

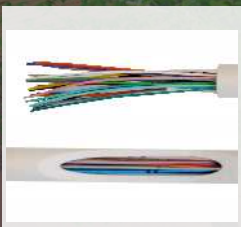
IFDT-B0-x



IFDT locker is dedicated as distribution point for optical fibers installed with FTTH - fiber optic systems. The locker capacity depends on the switching field, which is a demountable element and has 12-42 fibers.

3

EAC-RA



Easy access cable is dedicated for mounting fiber optic cabling. Special construction enables easy access to the fibers through "cutting the window-shaped holes in the jacket" with a simple tool and possibility of pulling fibers at 25m distance.

2

2

2

3

1

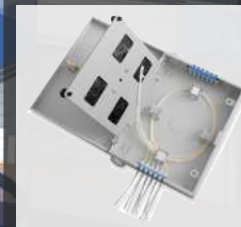
4

4

4

2

IFDB-A



Dedicated as a redistributive point for optical fibers installed with FTTH - fiber optic systems. Locker's input ports enable inserting bunch of users' cables and building's cable flexibly. The locker's capacity is up to 24 welds.

4

VFTO-D2

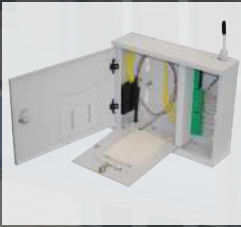


Wall outlet has been designed for FTTH systems. It is equipped with VC-D30, VC-DCS, VC-DCY and terminated with VFTO-D2 wall outlet.

# Pattern 3 DROP

1

IFDT-B0-x



IFDT locker is dedicated as distribution point for optical fibers installed with FTTH - fiber optic systems. The locker capacity depends on the switching field, which is a demountable element and has 12-42 fibers.

2

A01-XXX



The user's set dedicated for FTTH installation end points. It is equipped with any length of the cable (VC-D30, VC-DCS, VC-DCY and user's box which is terminated as manufactured box VFTO-D2. It is delivered in QuickBox for secure immediate installation.

2

2

2

1

## DROP Technology

Network technology in Fiber to the Home system uses special user's cables finished with fiber optic cables (DropCable). The main aim of building a network in DROP technology is the installation of user's cables finished with plugs (according to investor's requirements of standard) from the box which is installed in the lowest floor of the building. The box concentrates optical fibers through the cable shaft (flumes, installation pipes, cable shaft) up to user's box installed in the Logiwire locker. Next to prefabricated users' cables, technology assumes additional equipment for the assembly such as boxes concentrating the fibers, users' boxes etc. DROP technology imposes a rule 1 user = 1 user's cable. This rule enables us to lower the initial input but requires place in a cable section.

Input in the installation works connected with cable placing in the sections is significantly higher than cables of EAC technology. As a result, the method is recommended for low blocks of flats with low initial and final coefficient of filling.

Users' cables are available in a few standards which are distinguished by an external jacket's type. The construction of these cables is optimized for mechanical damages resistance. They include cables of G. 657 group -with smaller bend radiuses. Furthermore, each sheath of cable type is made of slow burning materials and do not emit poisonous halogens and (LSOH) fume. Excessive quantities which result from standardization are compensated with low price of cables' users and advantages of simplified logistics.

# LOGIWIRE

## Space minimization

Detailed solutions can be found in:

- Logiwire catalogue
- Connectivity catalogue
- Catalogue FTXX

## 1. GPON Modules

It is a passive fiber optic network in which signal is sent to the particular users with the use of single-mode optical fiber- separated by splitters.

## 2. Assembling modules

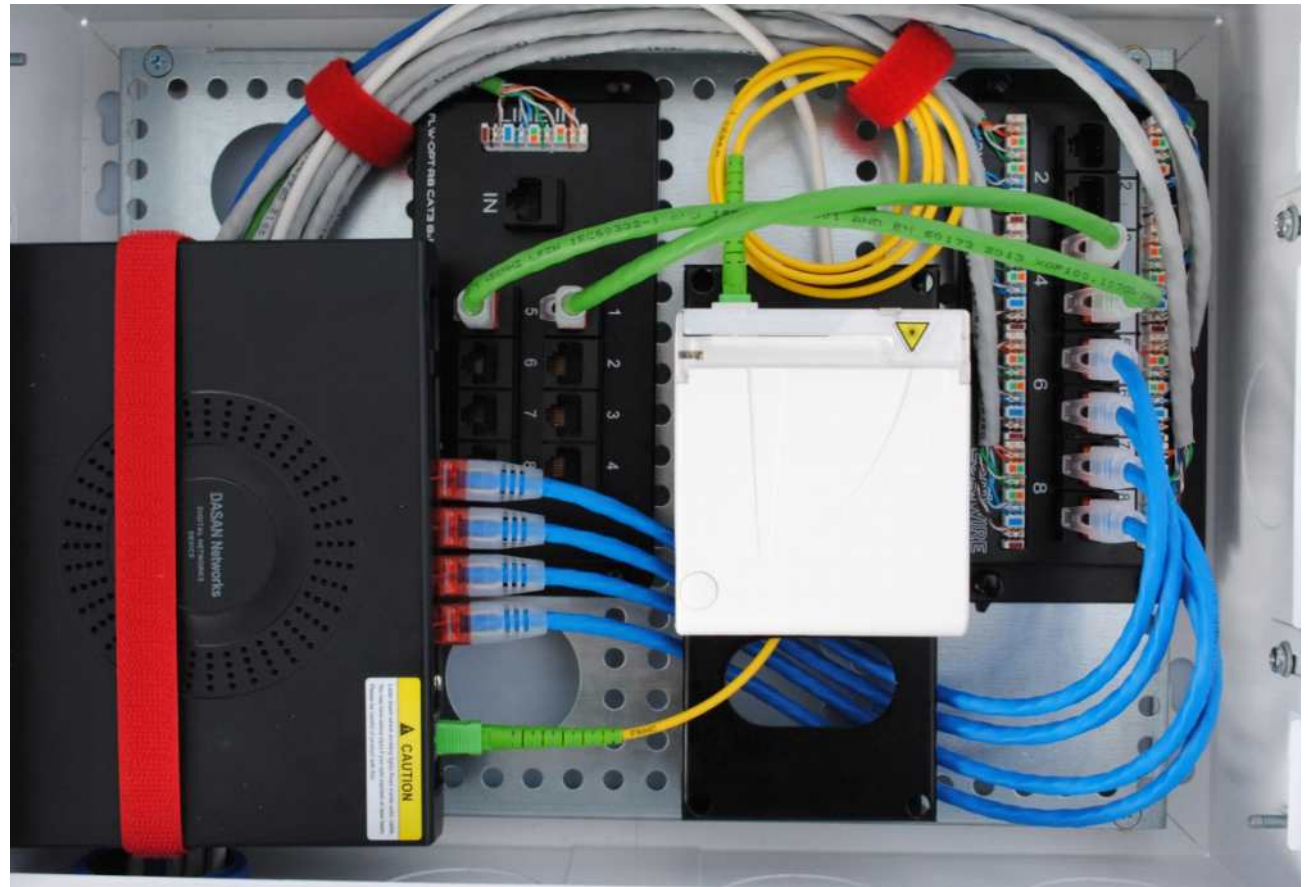
Telephone panel multiplies the entering signals. There is a possibility of termination 4 entering lines out of 8 RJ45ports or IDC connection.

## 3. DATA Modules

DATA modules (cat. 5e, 6) are used for termination installation cables inside the buildings. They function as a patch panel in a minimized form, which is dedicated for housing market.

## 6. Multimedia box

- made of powdered- coated steel sheet,
- large number of cable grommets
- lock protection
- horizontal and vertical modules assembly on a demountable back
- right or left door assembly
- available in wall or surface mount option
- standard height is 10, 14, 28 or 48 inches, there is a possibility of adjusting the box to the particular user's needs and requirements.



## 4. Fiber optic modules

Thanks to the possibility of using termination elements from Fibrain fiber optic systems- the system is ready to implement complete solution from the sending station.

## 5. Connecting elements

Specially selected short sections of patch panel cables enable the protection from the useless bunch of cables. Thanks to 2 levels of termination, we are able to separate the cables.

# LogiWIRE

HOME NETWORKING

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