MORRELL®

MORRELL
SATELLITE
SYSTEM

CATALOGUE

Vol 22.0

Mr. Valerio
Welcome to Our Hotel

IPTV
SYSTEM

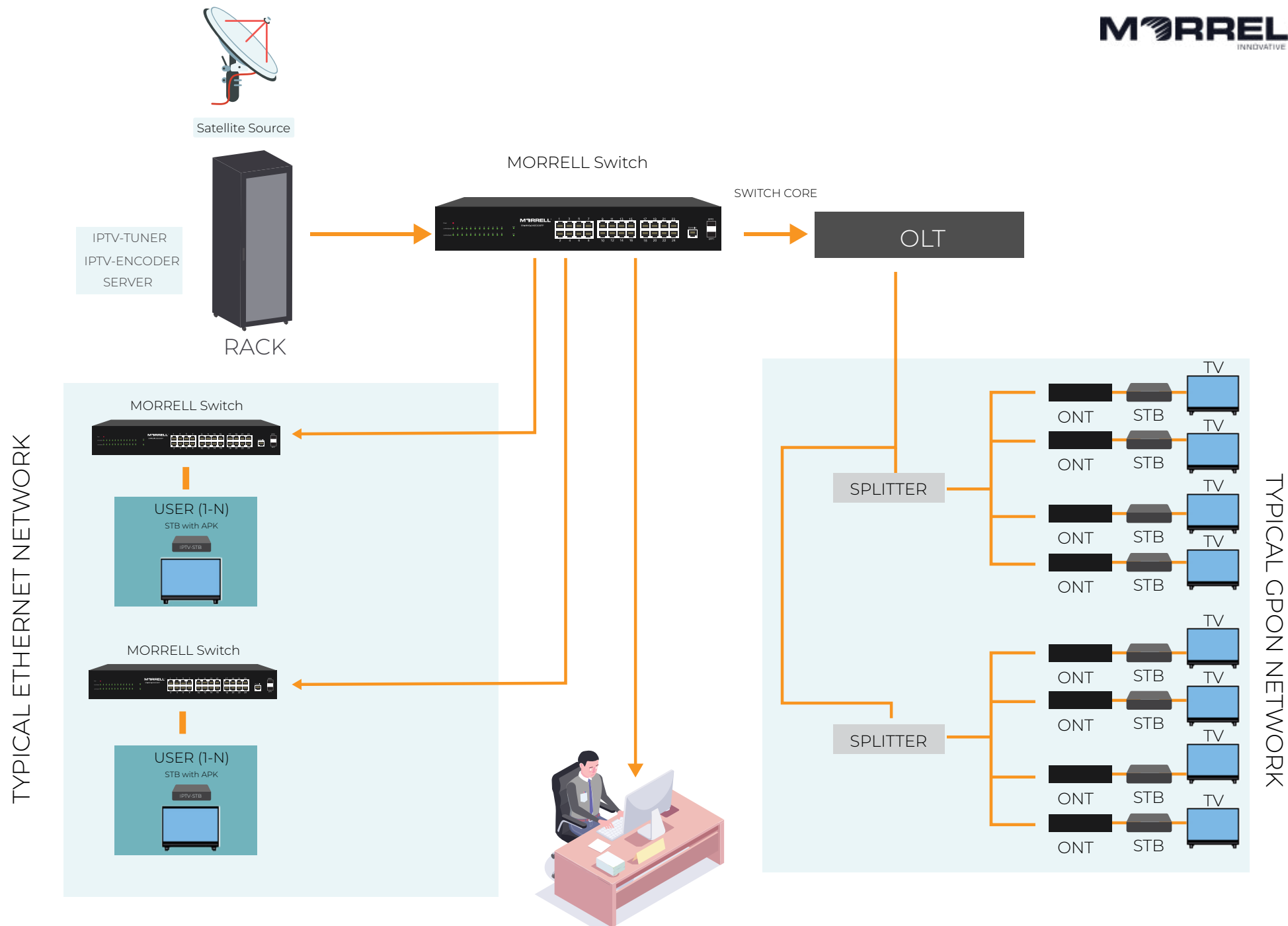## INTERNET PROTOCOL TELEVISION

MORRELL®

PRODUCT **OVERVIEW**

IPTV systems add to the TV solutions, the service of hotels, hospitals, and other buildings all over IP networks. Capturing the TV signal through terrestrial or satellite systems passing through the headend to finally reach the room or common areas of the facility. TV signal is combined with the services throughout the system server.

MORRELL IPTV system is open with the user's number, compatible with STBs, and easy to provide Live TV, VOD, room, food, and other services. Its main functions are:

· Manage IPTV channels and features.

· Create and manage users and groups.

· Manage and control players (add, remove and change users).

· Upload music and manage video on demand.

Satellite Source

MORRELL Switch

SWITCH CORE

IPTV-TUNER
IPTV-ENCODER
SERVER

RACK

OLT

TYPICAL ETHERNET NETWORK

MORRELL Switch

USER (1-N)
STB with APK
IPTV-STB

MORRELL Switch

USER (1-N)
STB with APK
IPTV-STB

TYPICAL GPON NETWORK

SPLITTER

TV
ONT   STB
TV
ONT   STB
TV
ONT   STB
TV
ONT   STB

SPLITTER

TV
ONT   STB
TV
ONT   STB
TV
ONT   STB
TV
ONT   STB

IPTV SYSTEM-PRODUCTS

01 | Tuner to IP Gateway
IPTV-Tuner
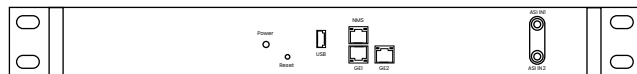
Features:

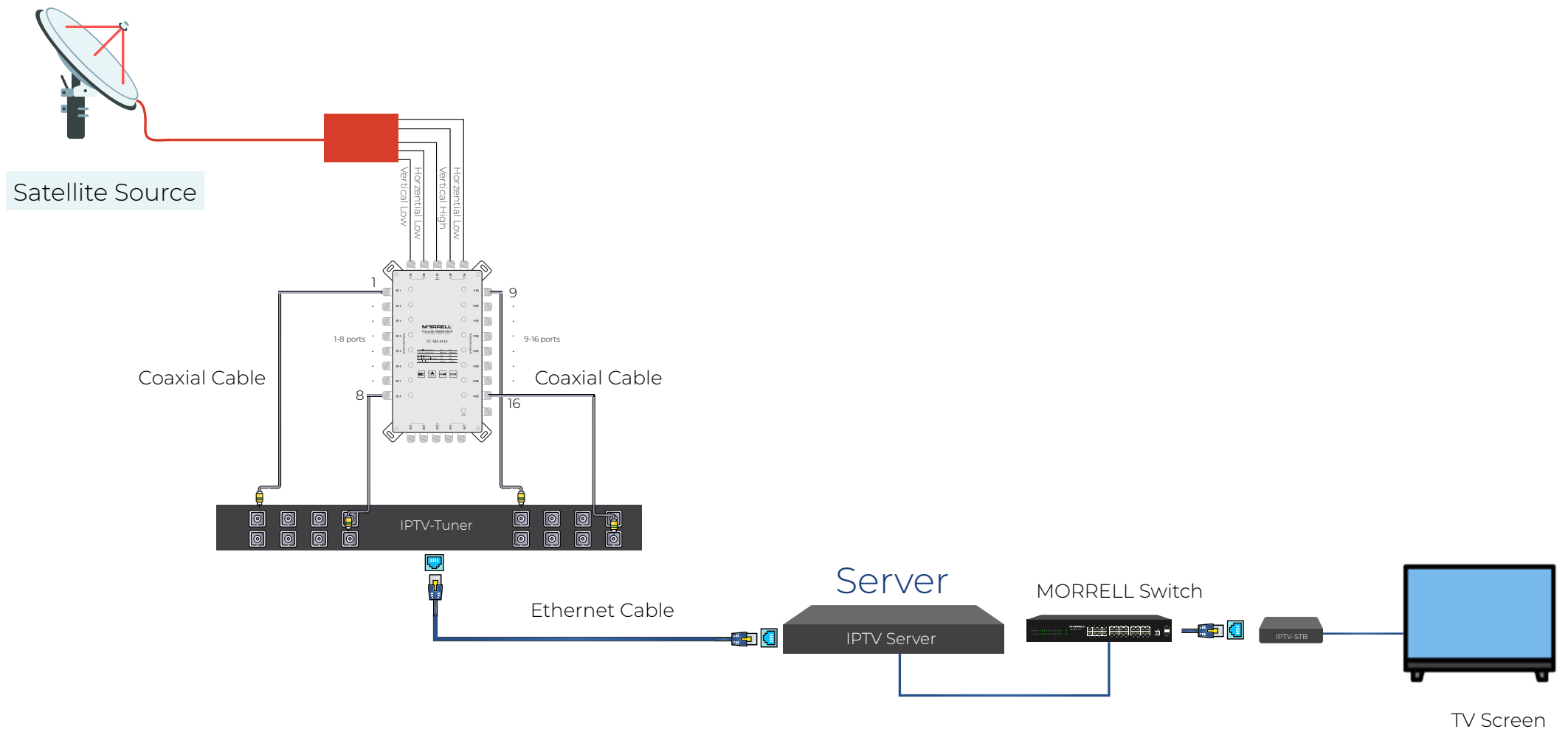◄ IPTV Tuner head-end convert up to 16 frequencies to a single Ethernet output port by using internet protocol.

◄ The device integrates tuner demodulation and IP gateway functionality, which can demodulate the signals 16 tuners into MPTS or SPTS via UDP and RTP/RTSP protocols.

◄ Support 16 FTA DVB- S/S2/S2X (DVB-C/T/(T)/ISDB-T/ATSC optional)input, 2 ASI input.

◄ Support BISS descrambling.

◄ Support DiSEqC function.

◄ 16 MPTS or 512 SPTS output (MPTS and SPTS output switchable).

◄ 2 GE mirrored output (IP address and port number of GE1 and GE2 are different), up to 850Mbps---SPTS.

◄ 2 independent GE output ports, GE1 + GE2---MPTS.

◄ Support PID filtering, re-mapping (Only for SPTS output).

◄ Support "Null PKT Filter" function (Only for MPTS output).

◄ Support Web operation.

Specifications:

Model No.		IPTV-Tuner
Input		Optional 1:16 tuners input +2 ASI input---SPTS output Optional 2:14 tuners input +2 ASI input --- MPTS output Optional 3:16 tuners input --- MPTS output
Tuner Sections		
Multi-mode Tuners switchable	DVB-C	Frequency In: 60~890MHz
		Standard: J.83A(DVB-C), J.83B, J.83C
		Constellation: 16/32/64/128/256 QAM
	DVB-T/(T)	Frequency: In 60~890MHz
		Bandwidth: 6/7/8 M bandwidth
	ISDB-T	Frequency: In 60~890MHz
Version 1	DVB-S	Frequency: In 950-2150MHz
		Symbol rate: 1~45 Msps
		FEC: 1/2, 2/3, 3/4, 5/6, 7/8
		Constellation: QPSK
	DVB-S2	Frequency In 950-2150MHz
		Symbol rate 1~45 Msps
		FEC: 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10
		Constellation: QPSK, 8PSK
BISS descrambling		Mode 1, Mode E (Up to 850Mbps) (descramble individual program)
Output		512 SPTS IP mirrored output over UDP and RTP/RTSP protocol through GE1 and GE2 port (IP address and port number of GE1 and GE2 are different) , Unicast and Multicast
		16 MPTS IP output (for Tuner/ASI passthrough) over UDP and RTP/RTSP protocol through GE1 and GE2 port, Unicast and Multicast
System		Web-based management
		Ethernet software upgrade
Miscellaneous		
Dimensions		482mm×410mm×44mm (W×L×H)
Approx weight		3.6kg
Environment		work: 0~45°C Storage: -20~80°C
Power requirements		100~240VAC, 50/60Hz
Power consumption		20W

Specifications:

Version 2		
	DVB-S	Frequency In: 950~2150MHz
		Symbol rate: 0.5~45Msps
		Signal Strength: - 65- -25dBm
		FEC: 1/2, 2/3, 3/4, 5/6, 7/8
		Constellation: QPSK
		Max input bitrate ≤125 Mbps
	DVB-S2	Frequency: In 950~2150MHz
		Symbol rate: QPSK/8PSK /16APSK: 0.5~45 Msps 32APSK: 0.5~34Msps
		FEC: QPSK: 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10 8PSK: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10 16APSK: 2/3, 3/4, 4/5, 5/6, 8/9, 9/10 32APSK: 3/4, 4/5, 5/6, 8/9, 9/10
		Constellation: QPSK, 8PSK, 16APSK, 32APSK
		Max input bitrate: ≤125 Mbps
	DVB-S2X	Frequency In 950~2150MH
		Symbol rate: QPSK/8PSK /16APSK :0.5~45 Msps 8APSK: 0.5~40Msps 32APSK: 0.5~34Msps
		FEC: QPSK: 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10, 13/45, 9/20, 11/20 8PSK: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10 8APSK: 5/9-L, 26/45-L 16APSK: 2/3, 3/4, 4/5, 5/6, 8/9, 9/10, 1/2-L, 8/15-L, 5/9-L, 26/45, 3/5, 3/5-L, 28/45, 23/36 , 2/3-L, 25/36, 13/18, 7/9, 77/90 32APSK: 3/4, 4/5, 5/6, 8/9, 9/10, 2/3-L, 32/45, 11/15, 7/9
		Constellation: QPSK, 8PSK, 8APSK, 16APSK, 32APSK
		Max input bitrate: ≤125 Mbps
	ATSC	Frequency In: 54~858MHz
		Bandwidth: 6M bandwidth
		Constellation: 8VSB

Satellite Source

Vertical Low
Horzential Low
Vertical High
Horzential Low
Vertical Low

1
9

1-8 ports
9-16 ports

MORRELL
Cascade Multiswitch
ST-MS-0516

Coaxial Cable
Coaxial Cable

8
16

IPTV-Tuner

Server

MORRELL Switch

Ethernet Cable

IPTV Server

IPTV-STB

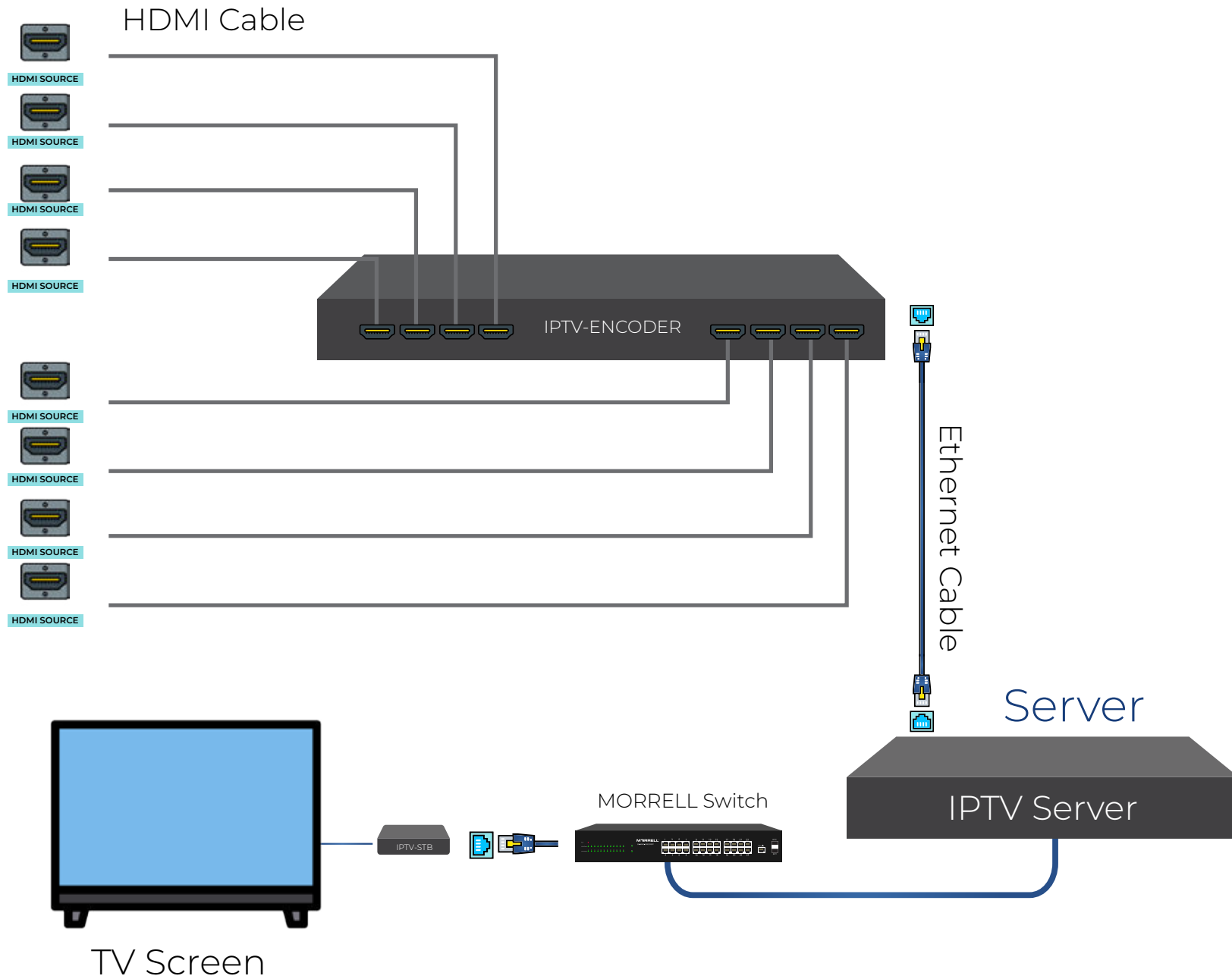TV Screen

02 | Multi-Channel Encoder
IPTV-ENCODER

Features:

◄ 8 HDMI inputs with 8 SPTS and 1 MPTS output (each encoder module), max 24 HDMI inputs.

◄ MPEG4 AVC/H.264 video encoding format.

◄ MPEG1 Layer II, LC-AAC, HE-AAC audio encoding format and AC3 Pass Through, and audio gain adjustment.

◄ IP output over UDP and RTP/RTSP protocol; 1 ASI out as mirror of MPTS (Optional).

◄ Support QR code, LOGO, caption insertion (Language Supported: 中文, English,Thai, Arabic, русская, اردو for more languages please consult us...)

◄ Support "Null PKT Filter" function.

◄ Control via web management, and easy updates via web

◄ IPTV Encoder head-end convert up to 16 HDMI Source to a single Ethernet output port by using internet protocol.

◄ The device integrates Encoder demodulation and IP gateway functionality, which can demodulate the signals 16 HDMI into MPTS or SPTS via UDP and RTP/RTSP protocols.
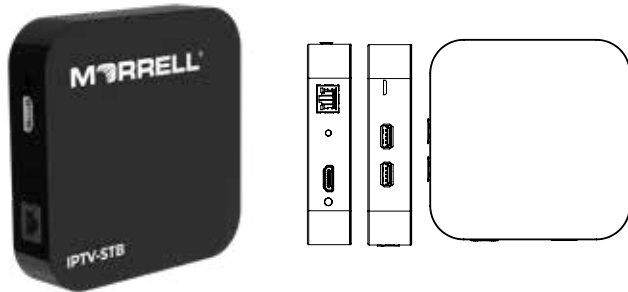
Specifications:

Model No.	IPTV-ENCODER
Input	8/16/24 HDMI inputs
Video	
Resolution Input	1920×1080_60P, 1920×1080_60i, 1920×1080_50P, 1920×1080_50i, 1280×720_60P, 1280×720_50P, 720 x 576_50i,720 x 480_60i
Resolution output	1920×1080_30P, 1920×1080_25P, 1280×720_30P, 1280×720_25P, 720 x 576_25P, 720 x 480_30P
Encoding	MPEG-4 AVC/H.264
Bit-rate	1~13Mbps each channel
Rate control	CBR/VBR
GOP Structure	IP…P (P Frame adjustment, without B Frame)
Audio	
Encoding	MPEG-1 Layer 2, LC-AAC, HE-AAC and AC3 Pass through
Sampling rate	48KHz
Resolution	24-bit
Gain	0-255 Adjustable
MPEG-1 Layer 2 Bit-rate	48/56/64/80/96/112/128/160/192/224/256/320/384 kbps
LC-AAC Bit-rate	48/56/64/80/96/112/128/160/192/224/256/320/384 kbps
HE-AAC Bit-rate	48/56/64/80/96/112/128 kbps
Stream	
Stream output	IP output through DATA (GE) over UDP and RTP/RTSP protocol (8 HDMI inputs with 8 SPTS and 1MPTS output for each encoder board) 1 ASI out as mirror of MPTS (Optional as order)
System function	Network management(WEB); Chinese and English language; Ethernet software upgrade;
Miscellaneous	
Dimensions (W×L×H)	482mm×328mm×44mm
Environment	Work: 0~45°C Storage: -20~80°C
Power requirements	AC 110V± 10%, 50/60Hz, AC 220 ± 10%, 50/60Hz

HDMI Cable

HDMI SOURCE

HDMI SOURCE

HDMI SOURCE

HDMI SOURCE

HDMI SOURCE

HDMI SOURCE

HDMI SOURCE

HDMI SOURCE

IPTV-ENCODER

Ethernet Cable

Server

IPTV Server

TV Screen

IPTV-STB

MORRELL Switch

03 | HD IPTV Set Top Box
IPTV STB

Features:

◄ The function of the STB is to convert the amenable incoming signal into the video signal which the user can watch on their televisions with the support of the HDMI cable cable.

◄ One end of the STB is connected to the TV while the other end is connected using an Ethernet cable via a network switch that is connected to the server.

◄ The set-top box has other many ports and characteristics.

◄ The set-top box can be connected with smartphones easily by using Wi-Fi networks.

◄ Personalized EPG interface for hotel, hospital, Community , and other industries.

◄ System wallpaper is changeable and EPG content is editable.

◄ Various business modes blend in the IPTV system.

◄ Support modular interface and convenient to docking with third part manage software.

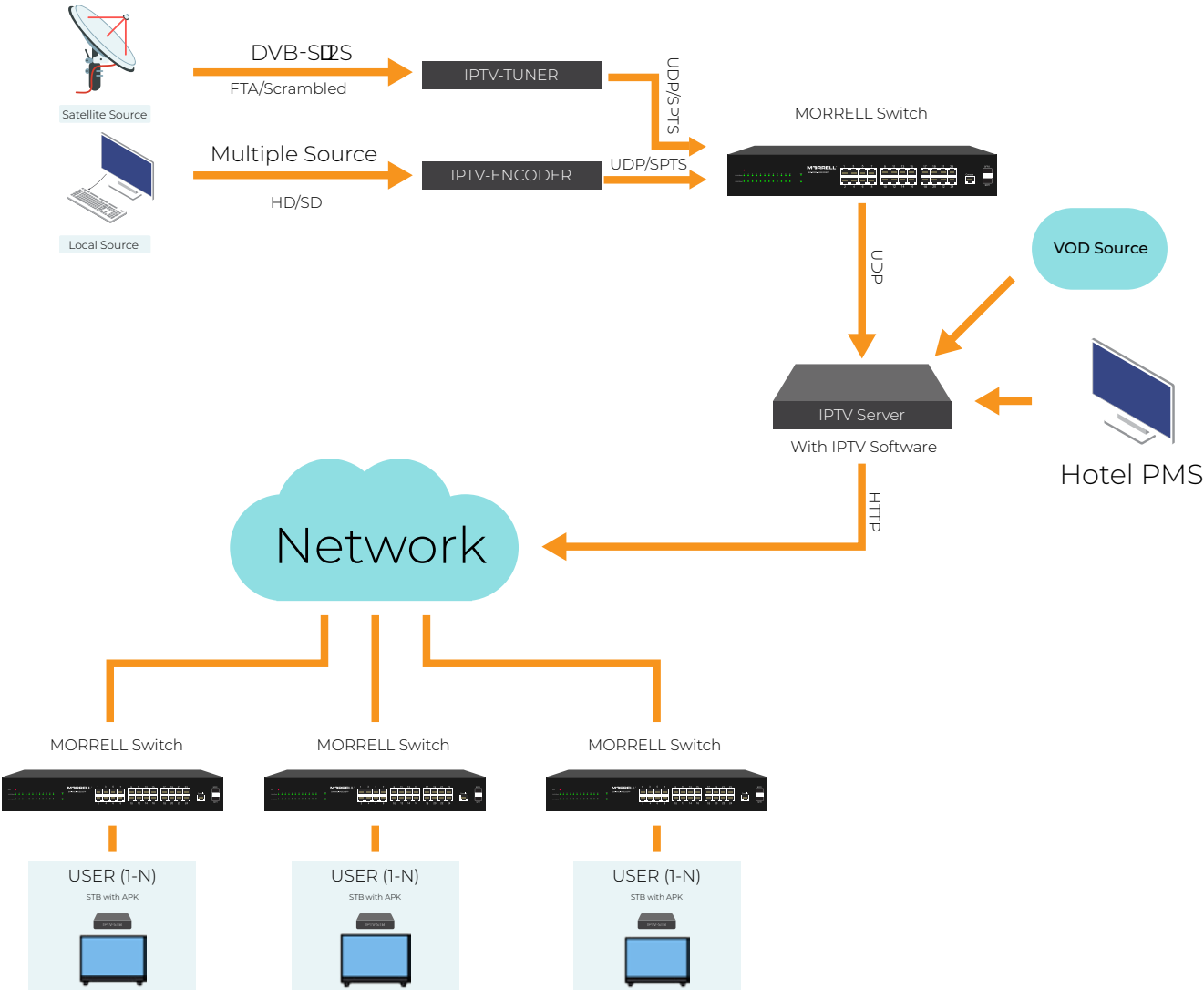◄ Hotel, hospital, and community version can support set up advertisement business to increase revenues.

Specifications:

Model No.	IPTV STB
CPU	RK3229, 28nm Quad-core Cortex A7, High-cost performance 4K OTT Box solution
GPU	ARM Mali-400 GPU
HDMI	Including an HDMI 2.0 for HDMI 2.0 for 4K YUV420@60Hz with HDCP 1.4/2.2 Support 4K 10-bit H.265/H.264/VP9 video playback and display
Memory	1GB DDRIII
Flash	8GB Nand Flash
WiFi	2.4G, 802.11 b/g/n,
Wired network	Ethernet GMAC 10/100/100M Ethernet controller Support 10/100/1000 data transfer rate and an RGMII interface Support 10/100Mbps data transfer rate and an RGMII interface
IR	Infra Remote control
Power supply	DC input 5V/2A
OS	Android 7.1
3D	Hardware 3D graphics acceleration
Video decoding	4K VP9 Video decoder, 4K 10-bits H.265/H.264 video decoder 1080P other video decoders (VC-1, MPEG-1/2/4, VP6/8) Support conversion from BT.2020 to Rec.709/Rec.601 Video post processor: de-interlace H.263/H.264 2160P@ 24fps VC-1 ,MPEG - 1 1080p @ 60fps MPEG- 2 2160P @ 24fps MPEG-4 1080P @ 60fps AVS 1080p @ 60fps MVC 2160P @ 24fps WMV,3GP,MKV,ASF,3G2M4V,MJPEG,RV8,RV9,RV10 1080P@60fps Support HEVC decoder Support Main/Main10 HEVC/H.265 decoder, 4K @ 60FPS Support 4096x2304 resolution Support HDMI 720P-2160P FUII 3D HD(2160P, 3840 * 2160), 4K+2 K Support flash11.1
Video decoder	H.264,H.265,VP8,MVC(1080P)
Video format	Supports DIVD/DIVX/REAL8 / 9 / 10, RV, RM, RMVB, PMP, FLV, MP4, M4V, VOB, VP6, VP8 2160P @ 24fps
Audio format	Supports MP1, MP2, MP3, WMA, OGG, AAC, M4A, FLAC, APE, AMR, RA, WAV, etc
Picture format	Supports JPG, JPEG, BMP, GIF, PNG, JFIF, etc Resolution 8192x8192
HDD file system	FAT16 / FAT32 / NTFS
Support subtitle	SRT, SMI, SUB, SSA, IDX+USB
XBMC/KODI	Support

Specifications:

DRM	Widevine Level1, DRM Play Ready, Verimatrix, built-in Trust zone, HDCP 2.2/1.4
Support language	Chinese, English, Germany, Japanese, Korea,.... etc. multilateral languages
1*HDMI 2.0	Built-in HDMI 2.0 transmitter including both controller and PHY with CEC and HDCP, 4K @ 60FPS max resolution output
1* SD Card	to 64GB
4*USB host	2High speed USB 2.0,support USB DISK and USB HDD
1*SPDIF	SPDIF output
1*RJ45	Ethernet:10/100M, standard RJ-45
1*Power input	5V/2A
Accessories	Gift box, Power charger, adapter, HDMI cable (optional), IR remote control (optional), User's Manual
Online	Browse all video websites, support Netflix, Hulu, Flixster, youtube, etc
Apps	Apps download freely from android market, amazon app store, etc
Media	Local Media playback, support HDD, U disk, SD card
Talk online	Support SKYPE video call, MSN, Facebook, Twitter, QQ, etc
Others	Support WiFi hotspot could be as a wireless router Support DLNA, Google TV Remote, LAN, 3D Movie, Email, OfficeSuite, etc
Dimensions	118*118*25 mm
Approx weight	400g

Live/VOD Program Unicast (HTTP)

Satellite Source

Local Source

DVB-S2S
FTA/Scrambled

Multiple Source
HD/SD

IPTV-TUNER

IPTV-ENCODER

UDP/SPTS

UDP/SPTS

MORRELL Switch

VOD Source

UDP

IPTV Server
With IPTV Software

Hotel PMS

HTTP

Network

MORRELL Switch

MORRELL Switch

MORRELL Switch

USER (1-N)
STB with APK

USER (1-N)
STB with APK

USER (1-N)
STB with APK

SYSTEM FEATURES

☀ | 19°

10:20
TUESDAY 2022/03/26

Scan to Connect

LIVE

VOD

SCENERIES

DINING

HOTEL

SONGS

APP

SERVICES
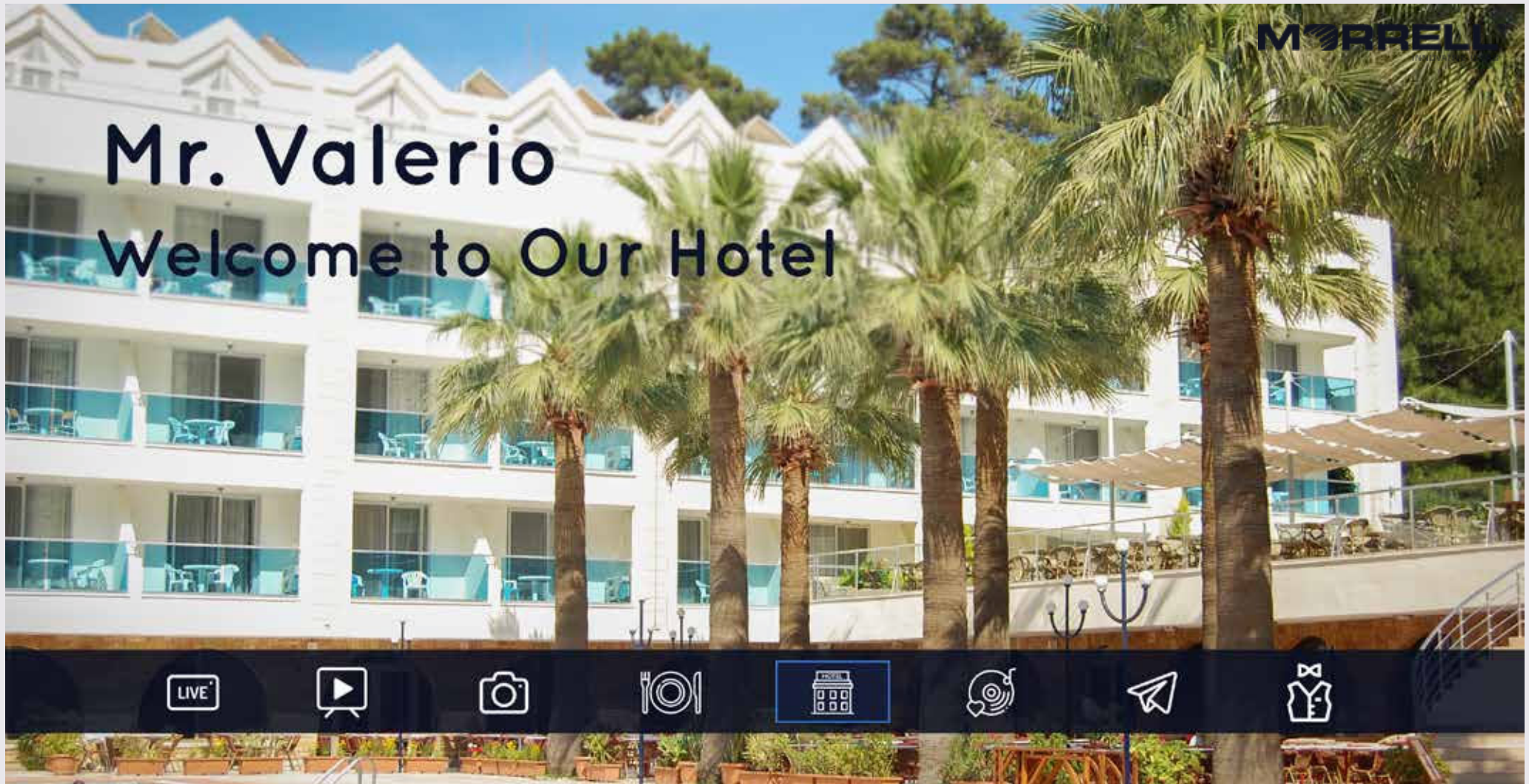
SYSTEM **FEATURES**

01 Welcome Message
A welcome message could be arranged in the form of video or photo messages.

TV Channels

MORRELL®
INNOVATIVE IDEAS

Media stream from satellite, HDMI source, and Internet protocol

01

02

Up to 250 channels can be added to the system

TV Live

Search/Menu

Channel 1
Channel 2
Channel 3
Channel 4

04

Support EPG import for channel

03

Support HD&SD channels TV program

05

Support multi-protocol for the channel Input

SYSTEM FEATURES

MORRELL®
INNOVATIVE IDEAS

01
Support up to
1080P/60Hz full HD video

02
Support play HD
videos smoothly

03
Support classify
movie files

04
Support convenient
for selecting

SYSTEM FEATURES
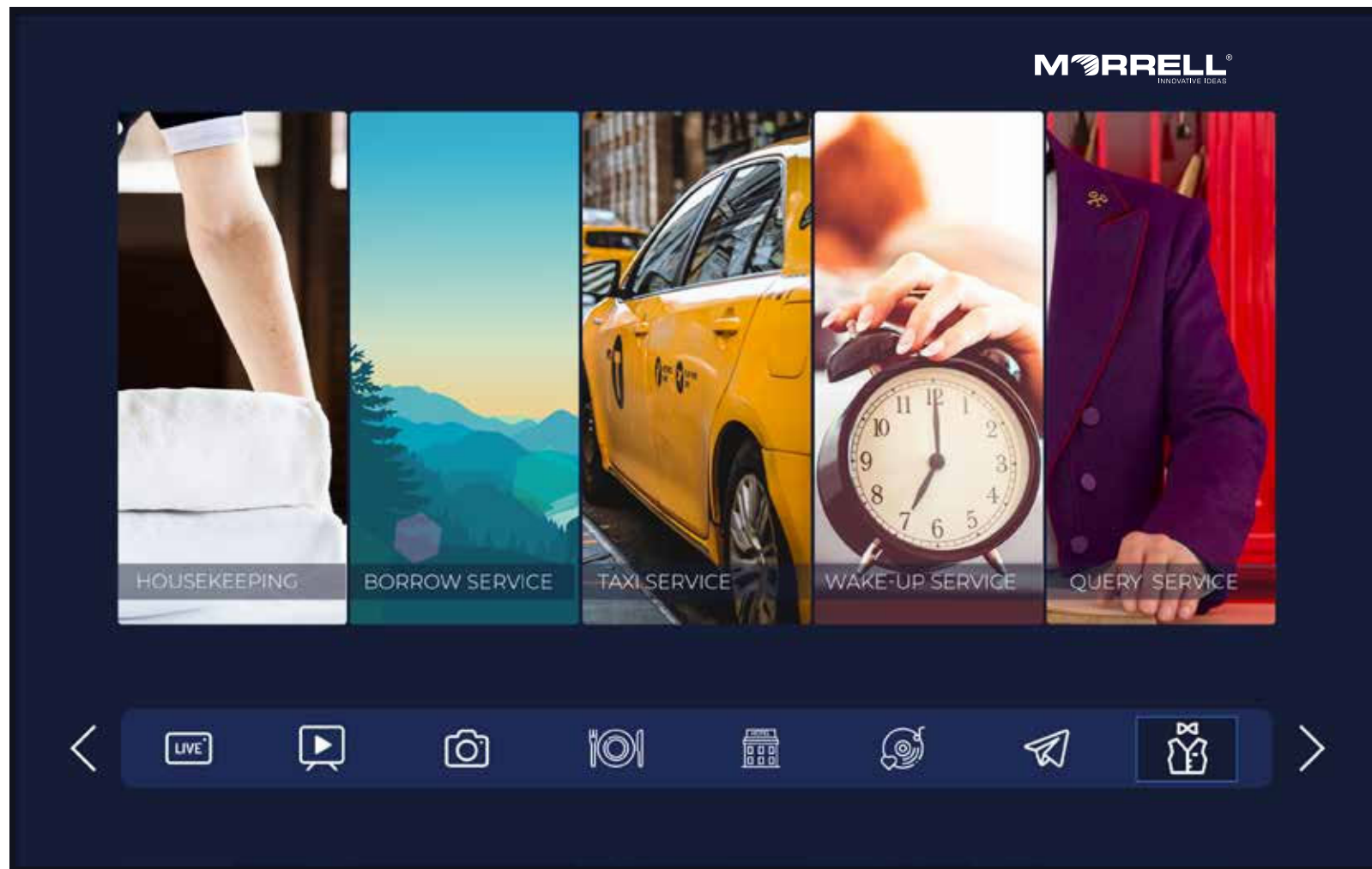
04 Service Option

A service request could be assigned from the server manager, such as the room services in the hotel, taxi services, or calling a hospital in case of some urgent needs.

05 Food Service

The food menu in the hotel could be added to the IPTV system features by introducing the menu through the TV screen. By selecting the food type from the menu, its cost will be added to the guest's account.
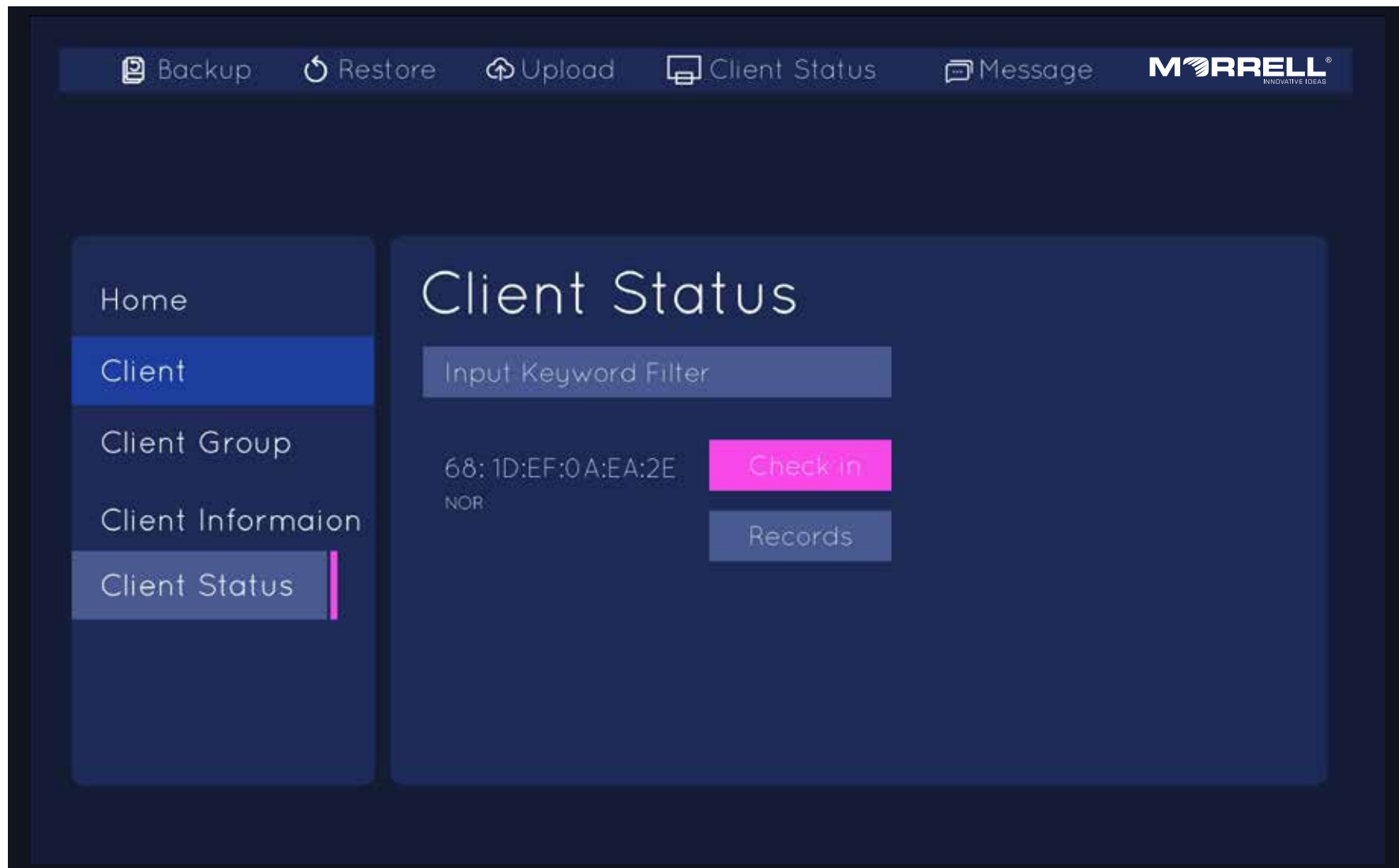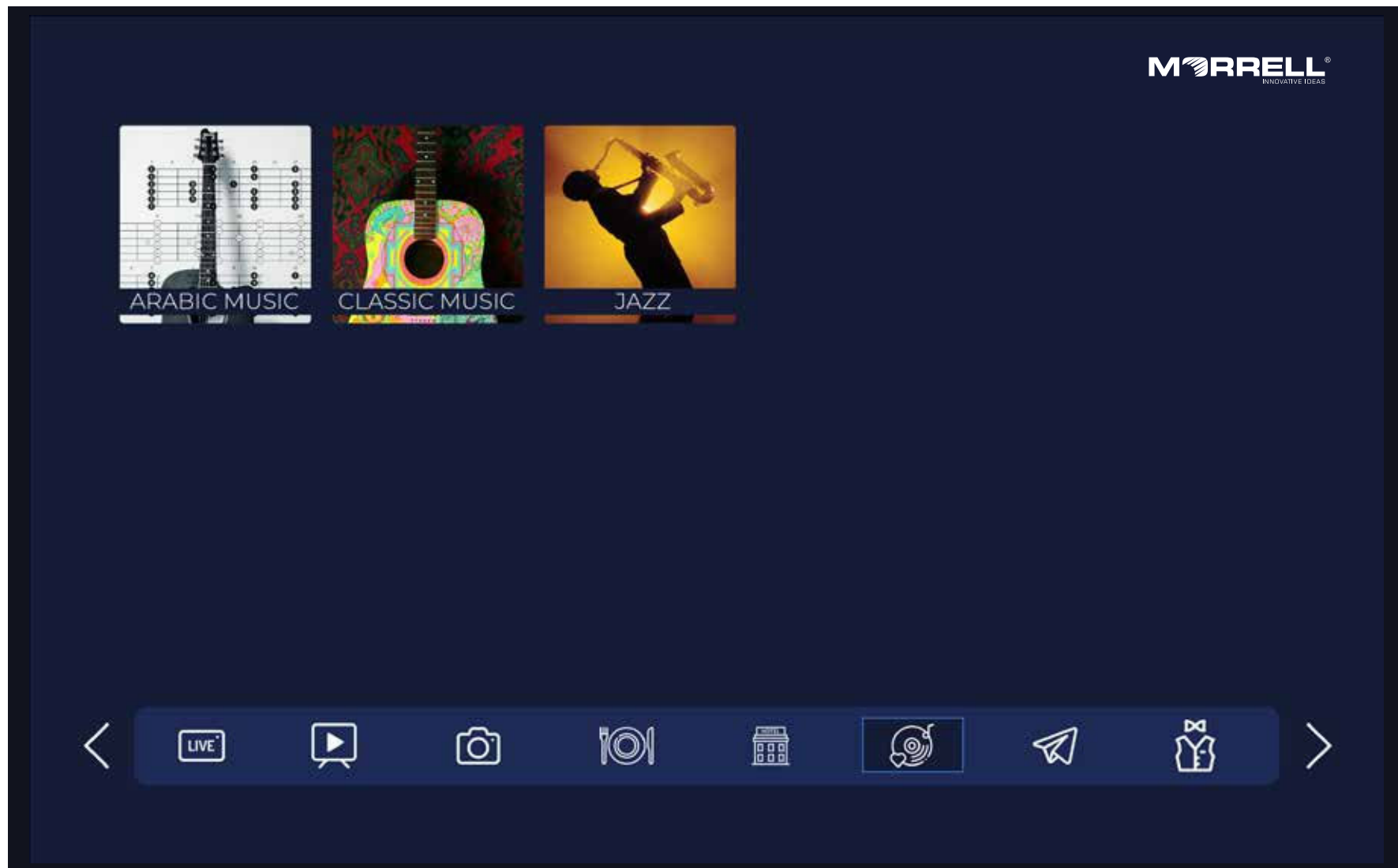
06 Login and Logout Option

This option is used to control users by giving them the authority to enter the service or remove them from it through the login feature.
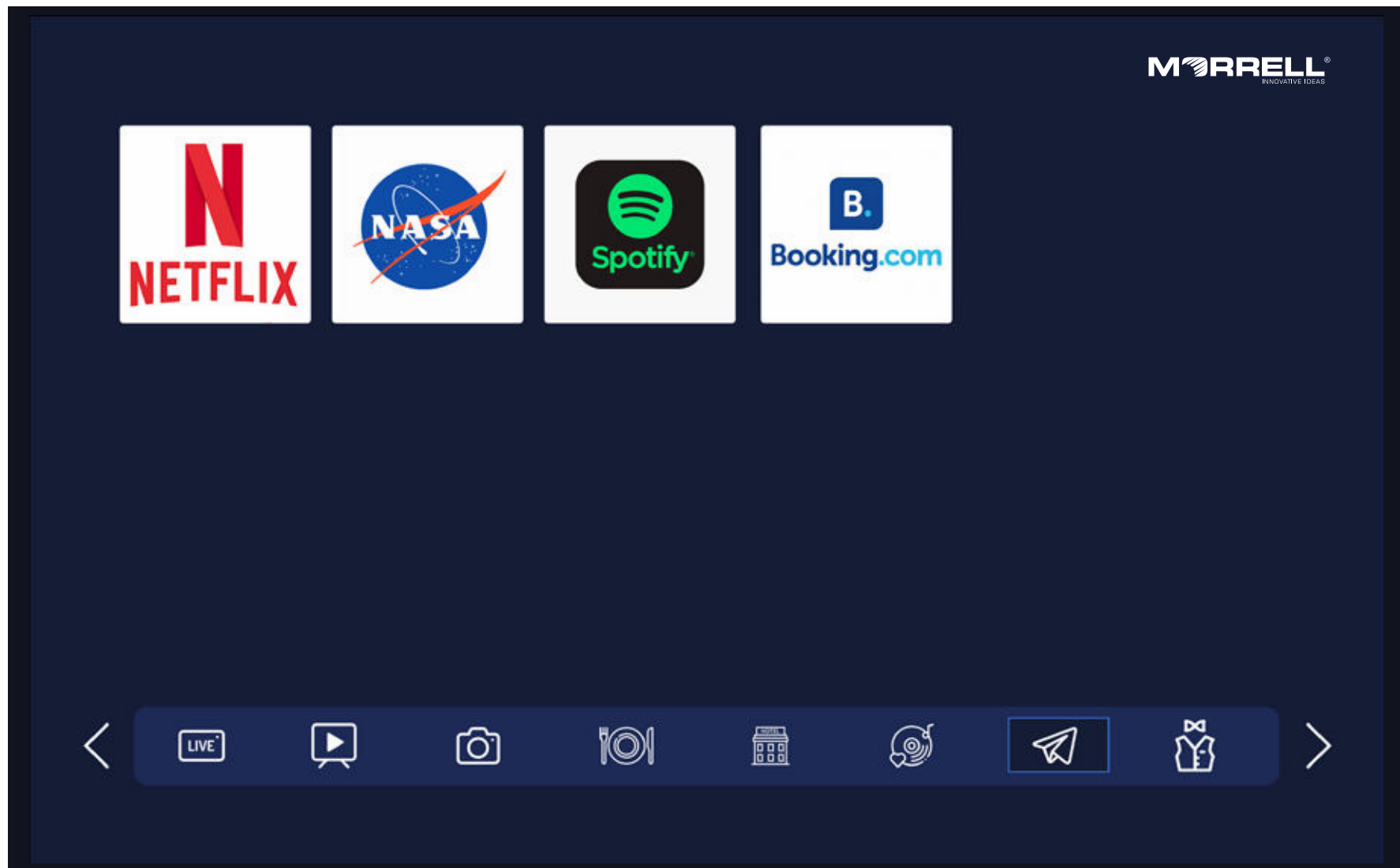
07 Adding App Option

This option is used to add apps you need it.

08 Music Option

This option that used to listen to your favorite music.

MULTISWICH SYSTEM

PART 2

MULTISWITCHES

5-WAY MULTISWITCHES

5-way multi switches are used for receiving four satellite signals and one ANT signal. Five inputs are distributed for the subscribers to be used simultaneously without mutual interference. They are widely used in digital satellite TV systems.

A 5-way multi-switch is supplied by an external 20V 1200mA DC power supply. For its special requirement, it is equipped with a switching power supply that can work with AC 110v-240v.

The Power supply has protection for short circuit. If the connection is a short circuit, the power supply will be cut off under the protection. It can work with a wide temperature range of -20 to +60 degrees C, It can be used indoors directly, waterproof protection will be needed when it is used for outdoor environments.
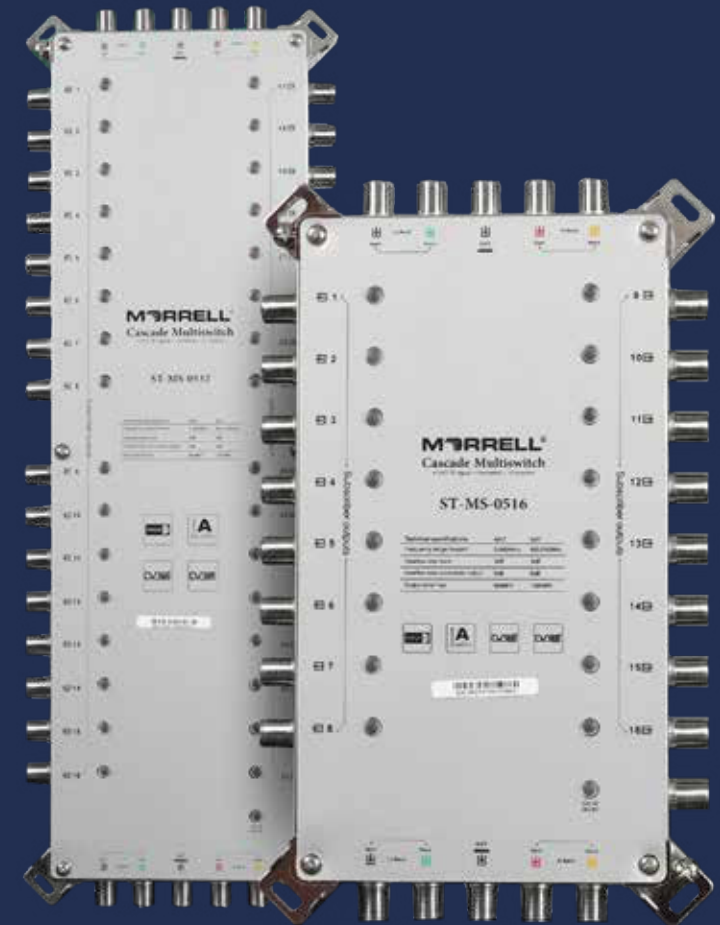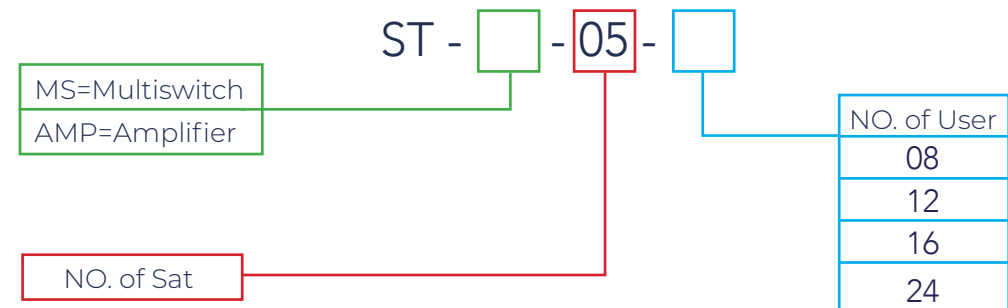
5-WAY MULTISWITCH

01 | ST-MS-0516
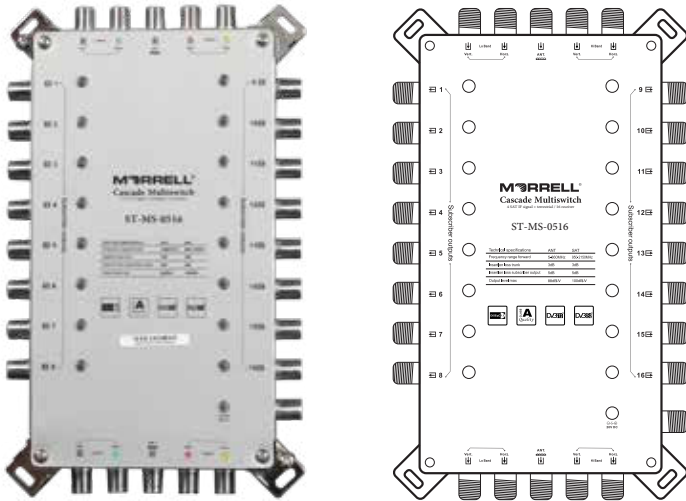
Features:

◄ 5-way multi switches for 16 or 32 subscribers.
◄ Excellent quality Kirkstie alloy housing, making installation convenient.
◄ Excellent quality component, professional amplification design, and low loss.
◄ External 20V 1200mA DC power offering more stable operation.
◄ 13/16V 0/22KHz DiSEqC 1.0/2.0 supplied by satellite receiver through coaxial cable to switch corresponding port.
◄ Capable of connecting four SATV signals, one ANT signal or FM broadcast simultaneously.
◄ Five input signals and distributed into different subscribers for simultaneous use and no mutual interference.
◄ Support multi-satellite, multi-receiver and cascadable usage.

Specifications:

Model	ST-MS-0508	ST-MS-0512	ST-MS-0516	ST-MS-0524	ST-MS-0532
Type	5*5*8	5*5*12	5*5*16	5*5*24	5*5*32
Frequency Range ANT(MHZ)			5-860 MHZ		
Frequency Range SAT(MHZ)			950-2150 MHZ		
Insertion Loss ANT (dB)	5	5	5	6	6
Insertion Loss SAT (dB)	4	4	4	5	7
Insertion Loss Trunkline (dB)	3	3	3	ANT:3,SAT:6	ANT:3,SAT:6
Isolation (Switch SAT in (dB))	28	28	28	28	28
Isolation Cross (dB)	25	25	25	25	25
Isolation (IN/OUT (dB))	25	25	25	25	25
Return Loss (input (dB))	12	12	12	12	12
Return Loss (output (dB))	8	8	8	8	8
Output Level (ANT(dBuv))	88	88	88	88	88
Output Level (SAT(dBuv))	100	100	100	100	100
Powering (Volt DC)			20V dc		
Protection Index			IP20		
Temperature (°C)			-20 °C - +60 °C		
Dimension (mm)	156*162*82	261*162*82	261*162*82	367*162*82	422*162*82

Order Information:

ST - ☐ - 05 - ☐

MS=Multiswitch
AMP=Amplifier

NO. of Sat

NO. of User
08
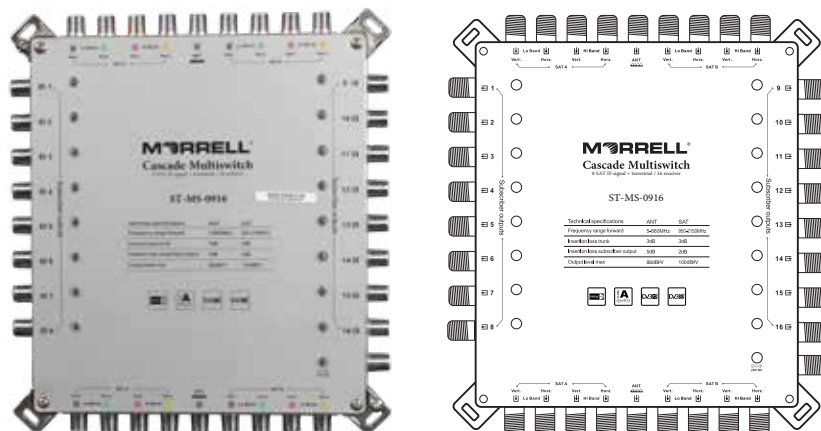12
16
24

9-WAY MULTISWITCHES

9-way multi switches are used for receiving eight satellite signals and one ANT signal. Nine inputs are distributed for the subscribers to be used simultaneously without mutual interference. They are widely used in digital satellite TV systems.

A 9-way multi-switch is supplied by an external 20V 2500mA DC power supply. For its special requirement, it is equipped with a switching power supply that can work with AC 11Ov-240v. The Power supply has protection for short circuit. If the connection is a short circuit, the power supply will be cut off under the protection. It can work with a wide temperature range of -20 to +60 degrees C. It can be used indoors directly, waterproof protection will be needed when it is used in outdoor environments.
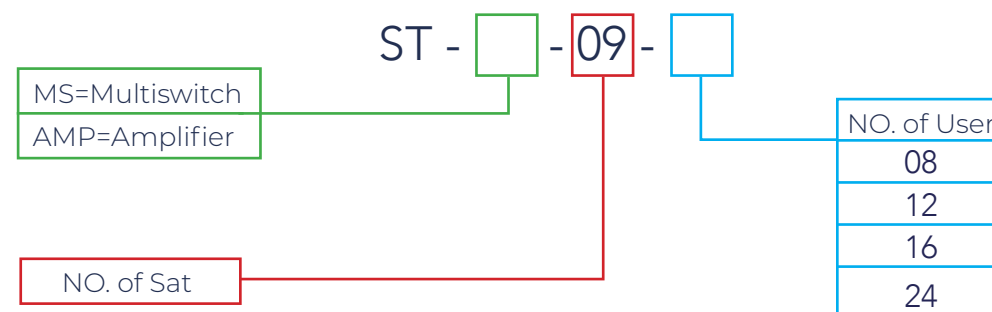
9-WAY MULTISWITCH

| ST-MS-0916

Specifications:

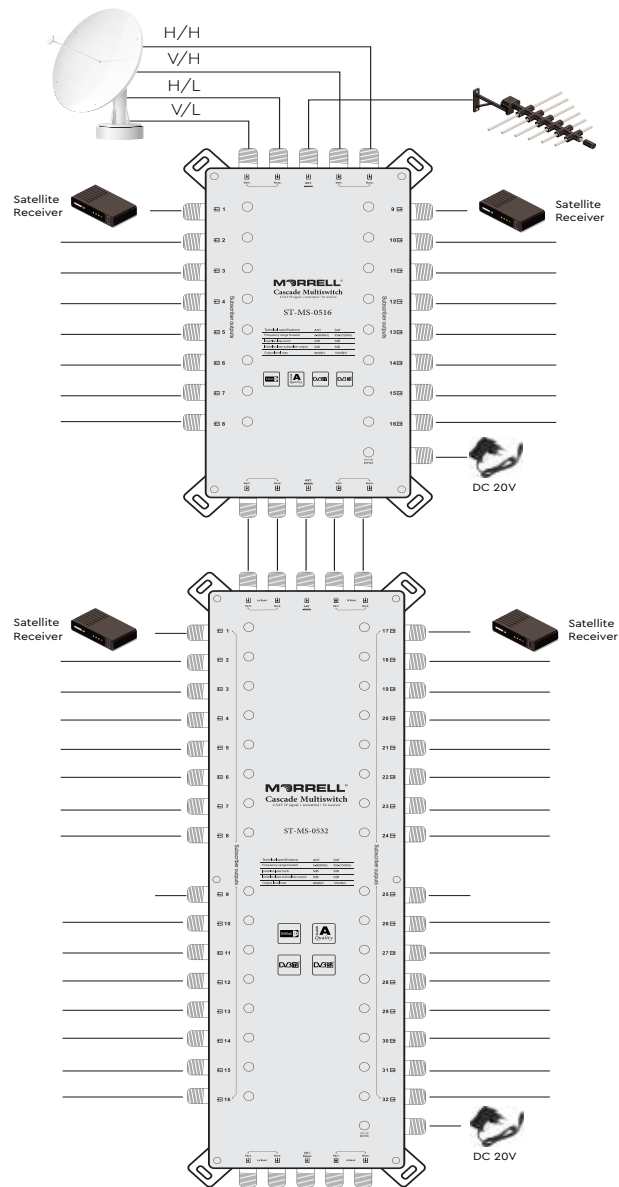| Model	ST-MS-0508	ST-MS-0512	ST-MS-0516	ST-MS-0524	ST-MS-0532
Type	5*5*8	5*5*12	5*5*16	5*5*24	5*5*32
Frequency Range ANT(M-HZ)			5-860 MHZ		
Frequency Range SAT(MHZ)			950-2150 MHZ		
Insertion Loss ANT (dB)	5	5	5	6	6
Insertion Loss SAT (dB)	4	4	4	5	7
Insertion Loss Trunkline (dB)	3	3	3	ANT:3,SAT:6	ANT:3,SAT:6
Isolation (Switch SAT in (dB))	28	28	28	28	28
Isolation Cross (dB)	25	25	25	25	25
Isolation (IN/OUT (dB))	25	25	25	25	25
Return Loss (input (dB))	12	12	12	12	12
Return Loss (output (dB))	8	8	8	8	8
Output Level (ANT(dBuv))	88	88	88	88	88
Output Level (SAT(dBuv))	100	100	100	100	100
Powering (Volt DC)			20V dc		
Protection Index			IP20		
Temperature (°C)			-20 °C - +60 °C		
Dimension (mm)	156*162*82	261*162*82	261*162*82	367*162*82	422*162*82

Features:

◄ 9-way multi switches for 16 or 32 subscribers.
◄ Excellent quality Kirkstie alloy housing, making installation convenient.
◄ Excellent quality component, professional amplification design, and low loss.
◄ External 20V 2500mA DC power offering more stable operation.
◄ 13/16V 0/22KHz DiSEqC 1.0/2.0 supplied by satellite receiver through coaxial cable to switch corresponding
◄ Capable of connecting four SATV signals, one ANT signal or FM broadcast simultaneously.
◄ Nine input signals and distributed into different subscribers for simultaneous use and no mutual interference.
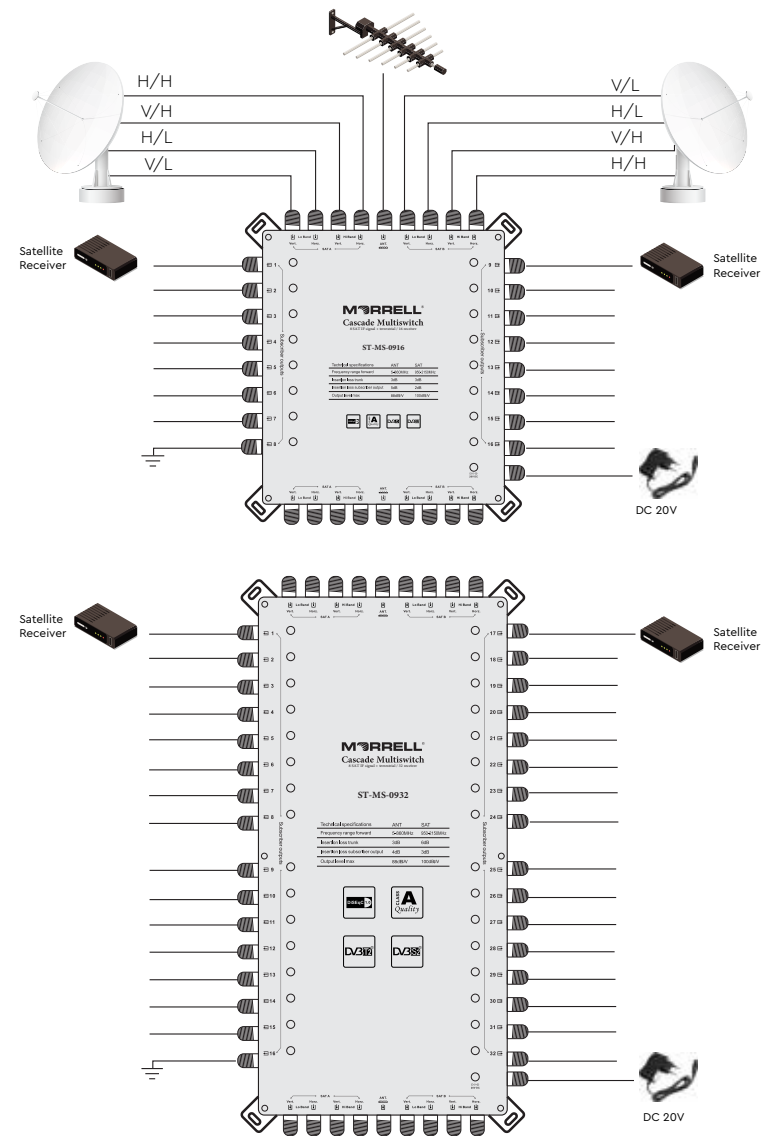◄ Support multi-satellite, multi-receiver and cascadable usage.

Order Information:

ST - ☐ - 09 - ☐

MS=Multiswitch
AMP=Amplifier

NO. of Sat

NO. of User
08
12
16
24

Connection Diagram
5-Way Multiswitch

Connection Diagram
9-Way Multiswitch

AMPLIFIERS

01 | ST-AMP-05

Specifications:

Model	ST-AMP-05
Frequency Range ANT(MHZ)	5-860
Frequency Range SAT(MHZ)	950-2150
Gain (ANT (dB))	18
Gain (SAT (dB))	20
Slope Control SAT(dB)	0/6 Selectable
Slope Control ANT(dB)	0-10
Return Loss (dB)	10
Noise Figure (dB)	6
Gain Adjustable Range (dB)	0-10
Output Level SAT(dBuv)	110
Output Level ANT(dBuv)	105
Powering (Volt DC)	20V DC
Protection Index	IP20
Temperature (°C)	-20 °C - +60 °C
Dimensions (mm)	125*172*50

Features:

◄ Cascadable 5- way amplifier 20dB.
◄ Gain adjustable design.
◄ Can compensate the loss in the distribution system.
◄ External 20V, 1200mA DC power supply.
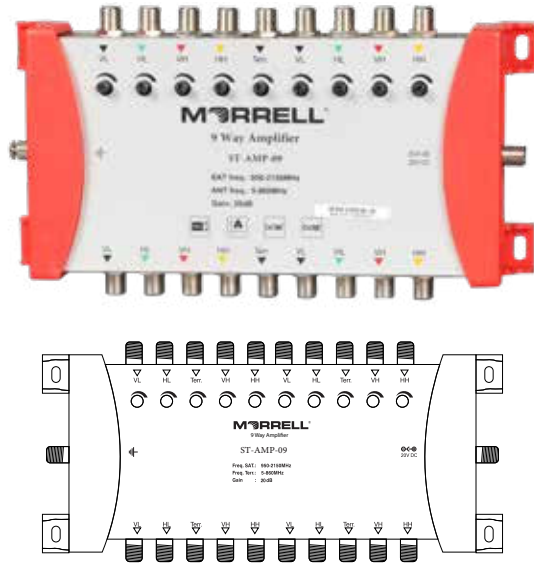◄ Red LED for power in, yellow LED for power link.

Order Information:

ST - ☐ - ☐

MS=Multiswitch
AMP=Amplifier

NO. of Sat
05
09

AMPLIFIERS

02 | ST-AMP-09

Specifications:

Model	ST-AMP-09
Frequency Range ANT(MHZ)	5-860
Frequency Range SAT(MHZ)	950-2150
Gain (ANT (dB))	18
Gain (SAT (dB))	20
Slope Control SAT(dB)	0/6 Selectable
Slope Control ANT(dB)	0-10
Return Loss (dB)	10
Noise Figure (dB)	6
Gain Adjustable Range (dB)	0-10
Output Level SAT(dBuv)	110
Output Level ANT(dBuv)	105
Powering (Volt DC)	20V DC
Protection Index	IP20
Temperature (°C)	-20 °C - +60 °C
Dimensions (mm)	125*237*50

Features:

◄ Cascadable 9- way amplifier 20dB.
◄ Gain adjustable design.
◄ Can compensate the loss in the distribution system.
◄ External 20V, 2500mA DC power supply.
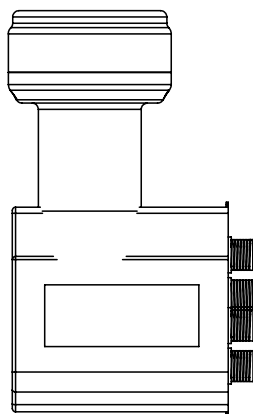◄ Red LED for power in, yellow LED for power link.

Order Information:

ST - ☐ - ☐

MS=Multiswitch
AMP=Amplifier

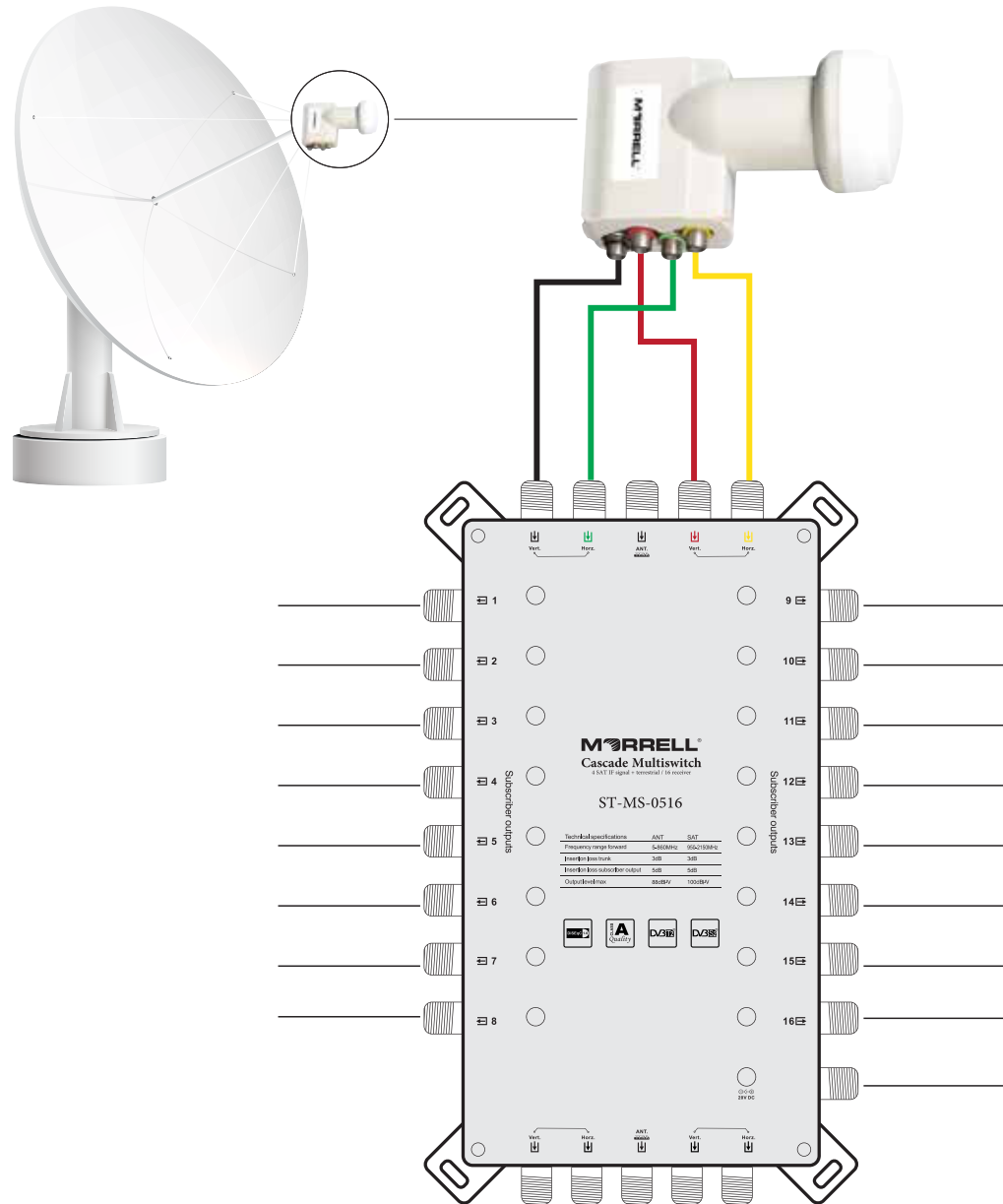| NO. of Sat |
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| 05 |
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LNB

01 | ST-LNB-KUQ

Features:

Universal Quattro LNBQ, equipped with four outputs, each with one specific polarity/band combination (High/H, Low/H, High/V, Low/V). Each output is marked with the respective color: Black for High/H, Red for Low/H, Green for High/V, and Yellow for Low/V.

Specifications:

Model	ST-LNB-KUQ
Input Frequency Range	Low Band:10.70~11.70GHz
	High Band:10.70~12.75GHz
Output Frequency Range	Low Band:10.70~11.70GHz
	Higt Band:10.70~12.75GHz
L.O. Frequency	Low Band:9.75GHz
	Higt Band:10.60GHz
L.O. Frequency Stability	±1.0MHz(Max.)@+25°C
	±2.0MHz(Max.)@-30°C +25°C
L.O. Phase noise	-60dBc/Hz@1KHz
	-80dBc/Hz@1KHz
	-100dBc/Hz@1KHz
Conversion Gain	60dB(Typ.)
Noise Figure	0.3dB(Typ.)
Gain Flatness	±0.5dB/26MHz
Cross POL. Isolation	25dB(Typ.)
Image Rejection	40dB(Min.)
Output VSWR	2.0:1(Max.)
PldB	0dB(Min.)
DC Current Consumption	180mA(Typ.)
	Low Band:0Hz
Low/High Band Switching	High Band:22KHz±4KHz
POL. Switching Voltage	10.5~14.0V@Vertical
	16.0~20.0V@Horizontal
Relative Humidity	0%~95%
Operation Temperature	-30°C ~±+70°C
Connector Type	75Ω Female Connector

Vert. Horz. ANT. Vert. Horz.

1 9
2 10
3 11

Subscriber outputs

4 12
5 13
6 14
7 15
8 16

MORRELL
Cascade Multiswitch
4 SAT IF signal + terrestrial / 16 receiver

ST-MS-0516

Technical specifications	ANT	SAT
Frequency range forward	5-860MHz	950-2150MHz
Insertion loss trunk	3dB	3dB
Insertion loss subscriber output	5dB	5dB
Output level max	88dBuV	100dBuV

Vert. Horz. ANT. Vert. Horz.

⎓ 28V DC

MULTISWITCH SYSTEM | 33

MORRELL®

INNOVATIVE IDEAS