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smartexperience

IN

IN

ikusiflow

The first TV Smart
Headend

FLOW IN2

Dual universal input module (IN2)

The FLOW IN2 module's function is to tune two independent signals, each of which can be in DVB-T/T2 terrestrial, DVB-C cable, or DVB-S/S2 satellite format.

These signals are then processed and sent in SPTS (Single Program Transport Stream) form to an external network or other modules in the same headend via the backpanel of the Ikusi FLOW chassis.

Model		FLOW IN2
Ref.		4318
Inputs		
Number of inputs connectors		2
Number of tuners		2
Terrestrial mode		
Frequency band	MHz	47 - 862
Supported standards		DVB-T/T2
Cable mode		
Frequency band	MHz	47 - 862
Supported standards		DVB-C
Satellite mode		
Frequency band	MHz	950 - 2150
Supported standards		DVB-S/S2
IPTV output		
Total SPTS		62
Transmission protocols		UDP
SAP protocol		Yes
Interface type		Gigabit Ethernet
Standard		1000Base-T

General		
Power supply voltage	V_{DC}	24
Power consumption	W	6.5
Operating temperature	℃	0 ... +45
Weight	g	328
Dimensions (Height x Width x Depth)	mm	125 x 27 x 210

FLOW IN4

Quad universal input module (IN4)

The FLOW IN4 module's function is to tune four independent signals, each of which can be in DVB-T/T2 terrestrial, DVB-C cable, or DVB-S/S2 satellite format.

These signals are then processed and sent in SPTS (Single Program Transport Stream) form to an external network or other modules in the same headend via the backpanel of the Ikusi FLOW chassis.

Model		FLOW IN4
Ref.		4319
Inputs		
Number of inputs connectors		2
Number of tuners		4
Terrestrial mode		
Frequency band	MHz	47 - 862
Supported standards		DVB-T/T2
Cable mode		
Frequency band	MHz	47 - 862
Supported standards		DVB-C
Satellite mode		
Frequency band	MHz	950 - 2150
Supported standards		DVB-S/S2
IPTV output		
Total SPTS		60
Transmission protocols		UDP
SAP protocol		Yes
Interface type		Gigabit Ethernet
Standard		1000Base-T

General		
Power supply voltage	V_{DC}	24
Power consumption	W	8
Operating temperature	ºC	0 ... +45
Weight	g	460
Dimensions (Height x Width x Depth)	mm	125 x 27 x 210

FLOW SEC

Security module (SEC)

The FLOW SEC decrypts multiple services received from the backpanel of the Ikusi FLOW chassis.

For decrypting services, the FLOW SEC has two Common Interface slots where CAMs may be inserted. The total number of decrypted services depends on the CAM in use, the number of services, and the quantity of data flowing through the module.

The FLOW SEC module can encrypt the services on the output headend.

Model		FLOW SEC
Ref.		4311
IPTV Inputs/outputs		
Interface		Gigabit Ethernet
Standard		1000Base-T
VLAN support		Yes
Common interface		
Number of slots		2
Standard		EN50221
CAM Warm Reset		Yes
CAM Cold Reset		Yes
Transport processing		
Channels of decryption capacity / CAM		2
Output SPTS per CAM		15
Total output SPTS		30
Transmission protocols		UDP
CAM reset on decryption failure		Yes
General		
Power supply	V_{DC}	24
Consumption (without CAM)	W	5.9
Operating temperature	°C	0 ... 45
Weight	g	328
Dimensions (Height x Width x Depth)	mm	125 x 27 x 210

FLOW ENC

Quad HDMI encoder module (ENC)

The FLOW ENC can be configured to encode video content in a variety of resolutions and formats through the easy-to use Ikusi FLOW web interface. The encoded streams are then sent by ethernet over the Ikusi FLOW backpanel to external IPTV networks, or to other modules for further processing and inclusion in RF output multiplexes.

Model			FLOW ENC
Ref.			4315
Input			
Number of video-audio digital inputs			4
Input video format			HDMI
Video standard			V1.4
Digital audio			Yes (HDMI)
Compression			
Vídeo compression			MPEG2 MP@ML, H.264/MPEG4 AVC MP L4.1
Audio compression			MPEG1 layer II, MPEG2_LE_ACC, MPEG4_HE_AAC
Video quality			SD and HD (480i, 576i, 480p, 576p, 720p50, 720p60, 1080i50, 1080i60, 1080p25, 1080p30)
Image format			4:3 / 16:9
Video codec			MPEG2, H.264
H.264 Profile			MPEG4 AVC MP, HP
H.264 Level			3.0, 3.1, 3.2, 4.0, 4.1, 4.2
Video Bitrate	MPEG2 H.264	kbps	2000-15000 2000-19000
Audio codec			MPEG1 Layer II MPEG2 AAC LE MPEG2 AAC HE MPEG4 AAC LE MPEG4 AAC HE
Audio Bitrate		kbps	96, 128, 160, 192, 224, 256, 320, 384
Coding format			CBR in MPEG2 VBR in H.264

IPTV output		
SPTS (Single Program Transport Stream)		4
Transmission protocols		UDP
SAP protocol		Yes
Interface		Gigabit Ethernet
Standard		1000Base-T
General		
Power supply voltage	V$_{DC}$	24
Consumption	W	12 with four 1080i60 inputs in H.264
Operating temperature	ºC	0 ... +45
Weight	g	525
Dimensions (Height x Width x Depth)	mm	125 x 27 x 210

FLOW OUT

Universal output module (OUT)

The FLOW OUT module generates 4 or 6 RF carriers (depending on the selected mode) in DVB-T, DVB-C or J.83 Annex B format.

When OUT4 mode is selected, 4 RF carriers wil be generated. Each carrier can convey up to 8 television or radio services (SPTS).

When OUT 6 mode is selected, 6 RF carriers will be generated, each one with 6 television or radio services (SPTS) as maximun.

Each Ikusi Flow headend may have several OUT modules, whose RF carriers are all combined and amplified by the FLOW BASE.

Model		FLOW OUT
Ref.		4313
Input IPTV		
Interface type		Gigabit Ethernet
Standard		1000Base-T
VLAN support		Yes
RF output		
Number of outputs RF carriers		4 in OUT4 mode 6 in OUT6 mode
Number of SPTS per RF carriers		8 in OUT4 mode 6 in OUT6 mode
Total SPTS		32 in OUT4 mode 36 in OUT6 mode
Standards supported		DVB-T EN 300 744 DVB-C EN 300 429 J.83 Annex B
MER	dB	> 42
General		
Power supply voltage	V_{DC}	24
Power consumption	W	21,5
Operating temperature	ºC	0 ... +45
Weight	g	400
Dimensions (Height x Width x Depth)	mm	125 x 27 x 210

FLOW HUB

Control module (HUB)

The FLOW HUB is the central connecting element of the Ikusi FLOW headend, with a dual routing and control function. It routes the ethernet traffic in the headend, both internally between modules, and between the modules and the outside world. It also performs centralized management and configuration of the entire Ikusi FLOW headend and exposes the web interface for configuration and control through dedicated Wi-Fi and wired ethernet connections.

It is also able to detect existing RF channels in a network to avoid using them in the headend out.

Model		FLOW HUB
Ref.		4314
Wi-Fi interface		
Interface type		Wireless LAN
Standard		Wi-Fi
Radio band	GHz	2,4
Reception/Transmission mode		SISO
TX power	dBm	-18
RX power	dBm	-96
Connection		SDIO controller
Layer 3 addresses assignment		SoftAP / DHCP
Security		WPA 2.0
External ethernet interface (control)		
Number of interfaces		1
Interface type		Gigabit Ethernet
Standard		1000BASE-T
VLAN support		IEEE VLAN
External ethernet Output (TV)		
Number of interfaces		2
Interface type		Gigabit Ethernet
Standard		1000BASE-T
VLAN support		IEEE VLAN
Backpanel ethernet interface		
Number of interfaces		10
Interface type		Gigabit Ethernet
Standard		1000BASE-T
VLAN support		IEEE VLAN

RF channels detection		
Terrestrial input		
Supported standards		DVB-T/T2
Frequency band	MHz	47 - 862
Input level in BASE	dBµV	> 45
Cable input		
Supported standards		DVB-C
Frequency band	MHz	47 - 862
Input level in BASE	dBµV	> 50
General		
Power supply voltage	V_{DC}	24
Power consumption	W	11
Remote mode		IP (Wi-Fi or BASE-T)
Operating temperature	ºC	0 ... +45
RF input connectors (backpanel)		F (x1)
External ethernet frontal connector (control)		RJ-45 single
External ethernet frontal connector (TV)		RJ-45 dual
USB frontal connector (control)		Type-A socket
Weight	g	454
Dimensions (Height x Width x Depth)	mm	125 x 27 x 210

FLOW BASE

Backpanel (BASE)

The FLOW BASE incorporates a hybrid ethernet/RF backpanel unique to Ikusi FLOW, and manages the RF connectivity and energy use of all elements in the headend. The intelligent chassis controls all RF signals, power supply, and module hot-swap functions.

- An integrated multiswitch automatically routes satellite signals to the modules that require them.

- Universal F type connectors allow easy attachment to premises cabling.

A lightweight and robust design offers easy installation in a rack environment without the use of tools, and is also suitable for wall mount installations. Its modular structure allows it to be configured to meet almost any customer requirement.

Model		FLOW BASE
Ref.		4312
Terrestrial / Cable mode		
Number of inputs		2
Frequency range	MHz	47 - 862
Input level	dBµV	40 - 90
Impedance	Ω	75
Satellite mode		
Number of inputs		8
Frequency range	MHz	950 - 2150
Input level	dBµV	40 * - 98
Impedance	Ω	75
Output		
Number of outputs		1
Output frequency range	MHz	47 - 862
Output level adjustment	dBµV	78 - 108
Output level stability	dB	±1
Spurious signal in band	dBc	< -60
Broadband noise (Δ5 MHz)	dBc	< -65
Impedance	Ω	75
Output test	dB	-30
General		
Power supply voltage	V$_{DC}$	24
Power consumption	W	10

Preamplifier powering		
Inputs		TV1 and TV2
Adjustable voltage	V$_{DC}$	12/24
Max consumption per input	mA	100
Universal / Quattro LNB powering		
Inputs		SAT1 and SAT2
Voltage	V$_{DC}$	13V - 18V (selectable)
Tones insertion	kHz	0 - 22 (selectable)
Max consumption per input	mA	300
Quattro LNB powering		
Inputs		SAT3 to SAT8
Voltage	V$_{DC}$	12
Total max consumption	mA	600
Operating temperature	°C	0 ... +45
Mounting type		Wall-fixing / 19" Rack
Input/Output RF connectors		F (12)
Weight	kg	5
Dimensions (Height x Width x Depth)	mm	175 x 487.5 x 319

* For values less than 50 dBµB, the terrestial signal level can't be higher than 80 dBµV. Use an extenal attenuator if it was necessary.

FLOW PSU

Power supply module (PSU)

The FLOW PSU delivers power to the headend efficiently and reliably. It has the capacity to power the most demanding headend configuration.

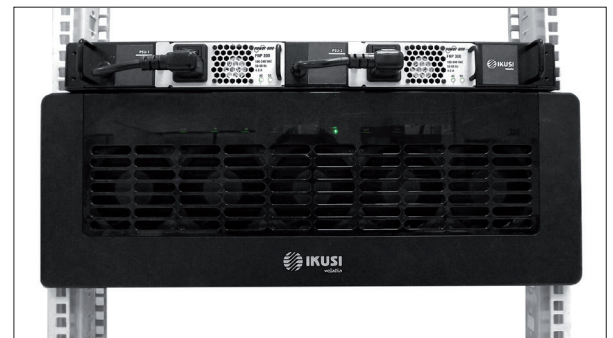| Model		FLOW PSU
Ref.		4308
Type		Switched-mode
Mains power supply voltage (50-60 Hz)	V_{AC}	100 - 240
Output voltage	V	24
Maximum power	W	180
Efficiency	%	90
Operating temperature	°C	0 ... +45
Weight	g	840
Dimensions (Height x Width x Depth)	mm	125 x 38 x 210

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FLOW PSU REDUNDANT

Redundant power supply module (FLOW RPSU REDUNDANT).

The FLOW RPSU REDUNDANT provides the power required for the most exigent headend, ensuring uninterrupted power in the event of failure of one of the two available power supplies. The damaged power supply can be changed without disconnecting the headend from the power.

The FLOW RPSU REDUNDANT integrates two identical power suplies in a 1RU (rack unit) chassis.

Model		FLOW RPSU REDUNDANT
Ref.		4320
Type		Switched-mode
Input voltage (50-60 Hz)	V$_{AC}$	85 - 264
Output voltage	V	24
Maximum power	W	2x 310
Efficiency	%	86
Power factor		0.96
Number of redundant power supplies		2
Operating temperature	℃	0 ... +55
Weight	kg	3.3
Dimensions (Height x Width x Depth)	mm	44.45 x 48.26 x 280

FLOW COVER

Cover to the chassis (COVER)

The FLOW COVER includes 5 variable-speed fans to automatically maintain the modules installed in the headend within their designed temperature ranges.

A unique magnetic connection system allows the FLOW COVER to be attached or removed as needed, easily and without tools.

Model		FLOW COVER
Ref.		4316
Power supply voltage	V$_{DC}$	24
Power consumption	W	11
Operating temperature	ºC	0 ... +45
Number of fans		5
Weight	g	1000
Dimensions (Height x Width x Depth)	mm	175 x 487 x 30

FLOW STB

Set Top Box (STB)

FLOW STB is a powerful Set-Top Box with efficient processor STiH207 and increased RAM memory. It is an optimal solution for IPTV/OTT projects.

Model		FLOW STB
Ref.		**1050**
Hardware		
Processor		STiH207
RAM	Mb	512
Flash memory	Mb	256
Software		
Operating system		Linux 2.6.23
		Built-in Media Portal with WebKit-based IPTV-functionality HTTP 1.1, HTML 4.01 XHTML 1.0/1.1; DOM 1, 2, 3, CSS 1, 2, 3; XML 1.0, XSLT 1.0, XPath 1.0 ; SOAP 1.1; JavaScript ECMA-262, revision 5; Media JavaScript API; C layer SDK
Interfaces		
Audio output S/PDIF HDMI 1.4-output Composite + stereo A/V output Ethernet 100 Mb/s USB 2.0 (WiFi-adapter can be connected)		
Sources of media content		
PC and NAS in local network, Stream media protocols (RTSP, RTP, UDP, IGMP, HTTP), USB-devices		
Supported Audio-Video formats		
Audio compression		MPEG-1 layer I/II, MPEG-2 layer II, MPEG-2 layer III (mp3), AC3, DTS (optional)
Audio formats		MP3, MPA, M4A, WMA (optional), Ogg, WAV
Video modes		1080i, 1080p, 720p, 576p, 480p, PAL, NTSC
Video compression		MPEG1/2 MP@HL, H.264 HP@level 4.1, MPEG4 part 2 (ASP), WMV-9 (optional), VC1 video, XviD; HD video supporting (up to 40 Mbit/s and above)
Video containers		MKV, MPEG-TS, MPEG-PS, M2TS, VOB, AVI, MOV, MP4, ASF, QT, WMV
Image formats		JPEG, PNG, BMP, GIF, RAW
Subtitles		DVB, SRT, text MKV
Playlist formats		M3U
General		
Operating temperature	ºC	1 ... 40
Dimensions (width x depth x height)	mm	127 x 87 x 30
Weight	g	190
Standard set		FLOW STB Set-Top Box, user manual, mini jack cable to RCA (A/V), Power adapter 12V 1A, remote control, 2 AAA batteries, packaging

FLOW STB AC3+

Set Top Box (STB)

FLOW STB AC3+ is a powerful Set-Top Box with efficient processor STiH207, increased RAM memory and AC3+ support. It is an optimal solution for IPTV/OTT projects.

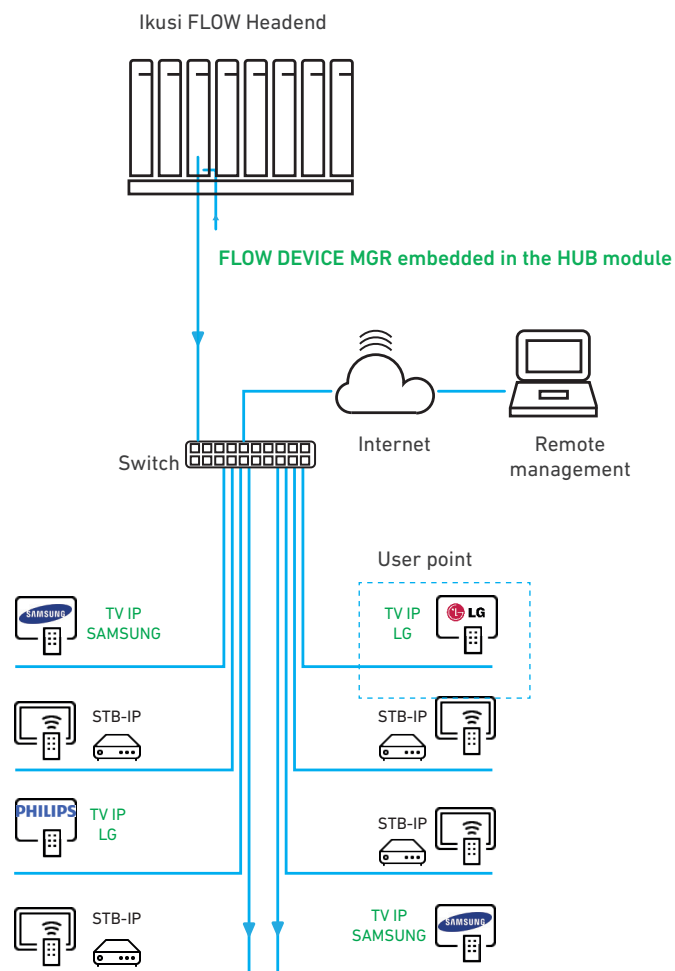| Model		FLOW STB AC3+
Ref.		**4329**
Hardware		
Processor		STiH207
RAM	Mb	512
Flash memory	Mb	256
Software		
Operating system		Linux 2.6.23
		Built-in Media Portal with WebKit-based IPTV-functionality HTTP 1.1, HTML 4.01 XHTML 1.0/1.1; DOM 1, 2, 3, CSS 1, 2, 3; XML 1.0, XSLT 1.0, XPath 1.0 ; SOAP 1.1; JavaScript ECMA-262, revision 5; Media JavaScript API; C layer SDK
Interfaces		
Audio output S/PDIF HDMI 1.4-output Composite + stereo A/V output Ethernet 100 Mb/s USB 2.0 (WiFi-adapter can be connected)		
Sources of media content		
PC and NAS in local network, Stream media protocols (RTSP, RTP, UDP, IGMP, HTTP), USB-devices		
Supported Audio-Video formats		
Audio compression		MPEG-1 layer I/II, MPEG-2 layer II, MPEG-2 layer III (mp3), AC3, AC3+, DTS (optional)
Audio formats		MP3, MPA, M4A, WMA (optional), Ogg, WAV
Video modes		1080i, 1080p, 720p, 576p, 480p, PAL, NTSC
Video compression		MPEG1/2 MP@HL, H.264 HP@level 4.1, MPEG4 part 2 (ASP), WMV-9 (optional), VC1 video, XviD; HD video supporting (up to 40 Mbit/s and above)
Video containers		MKV, MPEG-TS, MPEG-PS, M2TS, VOB, AVI, MOV, MP4, ASF, QT, WMV
Image formats		JPEG, PNG, BMP, GIF, RAW
Subtitles		DVB, SRT, text MKV
Playlist formats		M3U
General		
Operating temperature	°C	1 ... 40
Dimensions (width x depth x height)	mm	127 x 87 x 30
Weight	g	190
Standard set		FLOW STB AC3+ Set-Top Box, user manual, mini jack cable to RCA (A/V), Power adapter 12V 1A, remote control, 2 AAA batteries, packaging

FLOW DEVICE MGR

FUNCTIONALITY

DEVICE MANAGER

Management software (MGR)

The new functionality integrated into Ikusi Flow allows the STB-IP to be controlled in a centralized way.

Model	FLOW DEVICE MGR
Ref.	4317

Main features

- Integrated into the control module (HUB) of Ikusi Flow.

- It is activated through a license that never expires and does not need renewal.

- FLOW DEVICE MGR generates a list of multicast channels for the STB-IP from Ikusi flow

- This list is generated automatically in case of any change in the headend.

- When STB-IP is connected, the headend assigns automatically an IP address (DHCP protocol).

- In the same IP assignment response, the URL to which it should connect is indicated in order to download the updated channel list.

- The default channel that should be shown on the STB at startup, can be centrally fixed.

Ikusi FLOW Headend

FLOW DEVICE MGR embedded in the HUB module

Switch   Internet   Remote management

User point

TV IP SAMSUNG

TV IP LG

STB-IP

STB-IP

TV IP LG

STB-IP

STB-IP

TV IP SAMSUNG

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Multistandard

Ikusi Flow adapts to your present
and to your future

**High density
Small footprint per channel**

Capable of processing more than
200 SD services or 120 HD services

**Content driven
Manages content and
not technical parameters**

User friendly interface which
minimizes configuration time

**No need for
additional licenses**

**One platform for
all your TV needs**

Designed to convert any TV input
into any TV output standard

Double secure

Premium content always protected
by including DRM protection

International presence

Headquarters

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