

UHD Master Switcher

K2E's UHD Clean Master Switchers can automatically and simultaneously process 16ch from HD(1.5G) upto UHD(12G) signals. They also contain critical functions that every single broadcasting station requires.

UMC-2016M - 16ch (HD&UHD) inputs, 3 DSKs, Single-ch

UMC-2014 - 14ch (HD&UHD) inputs, 3 DSKs, Single-ch

UMC-2016D- 8ch (HD&UHD) inputs, 2 DSKs, Dual-ch

UDL-303M -4ch (HD&UHD) inputs, 3 DSKs, 3ch Logo & keyer

The upper all of models have Full Frame Synchronize function.

UHD & HD Switcher - Any type of signal, whether it is HD or UHD, UMC-2016M is the Master Switcher for 16channel.

Loudness Processor - Optional LKFS processor module can be added and controlled from the Switcher

Two controllers(UMC-2016C & HEC-1604) can both be used together as a main and backup controller

In order to contain those functions, usually it requires multiple devices. However, K2E's revolutionary Master Switcher only requires only one Master Switcher to use all those functions. This revolutionary Master Switcher will replace all existing UHD/HD Master Switcher.

케이투이의 UHD Clean Master Switcher는 HD(1.5G)부터 UHD(12G) 신호를 16채널까지 처리를 할 수 있는 장비입니다. 모든 방송사에서 요구하는 사양을 포함한 기능을 구현하여 고객이 편리하게 운용할 수 있는 장점이 있습니다.

- * 3가지 모델(UMC-2016[16ch], UMC-2014[14ch], UMC-2016D[8ch])로 구분되는데 모두 Full Frame Sync 기능 보유
- * UMC-2016M Master Switcher는 자동 Up & Down 변환기능을 가지고 있어서 HD 또는 UHD 신호 관계없이 자동으로 원하는 Format으로 변환하는 기능 보유
- * Loudness Processor - LKFS processor module을 선택사양으로 추가
- * 두개의 리모트(UMC-2016C, HEC-1604)를 함께 사용 가능

위의 기능을 구현하려면 많은 장비가 필요하지만 케이투이의 Master Switcher는 이러한 기능을 단지 1개의 장비만으로 실현해 드립니다. 이 혁신적인 Master Switcher는 사용자가 원하는 기능을 모두 구현함으로써 모든 Master Switcher의 대표적인 제품이 되어 여러분 옆에 있을 것입니다.



UMC-2016M UHD Master Switcher

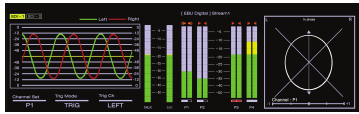
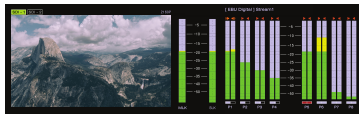


UMC-2016C Master Switcher Remote

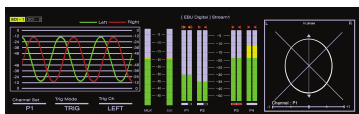
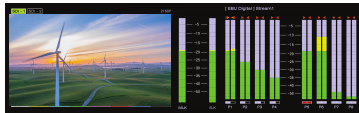
Feature & Functions

- UHD & HD automatic processing master switcher
- 16ch. UHD Full Frame Sync Function
- 16ch. Automatic up&down converting function
- Optional – Loudness processor can be added
- Optional – AES-EBU 2ch. External. Audio
- Optional – Dual CH waveform processor(PVW/PGM)

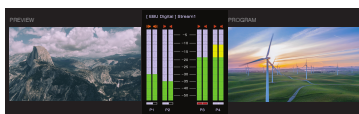
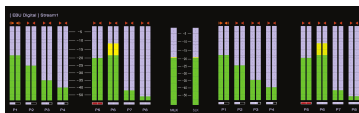
┌ PVW MODE : AUDIO&VIDEO METER ┐



┌ PGM MODE : AUDIO&VIDEO METER ┐



┌ PVW+PGM(LINE) MODE : AUDIO&VIDEO ┐

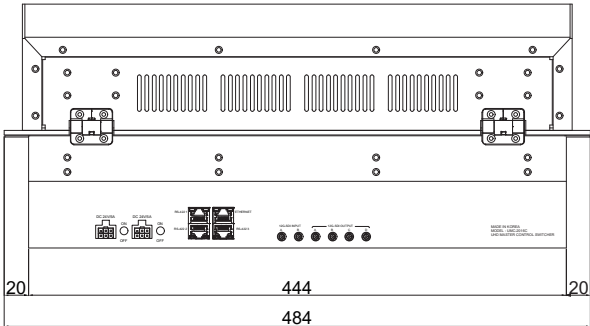
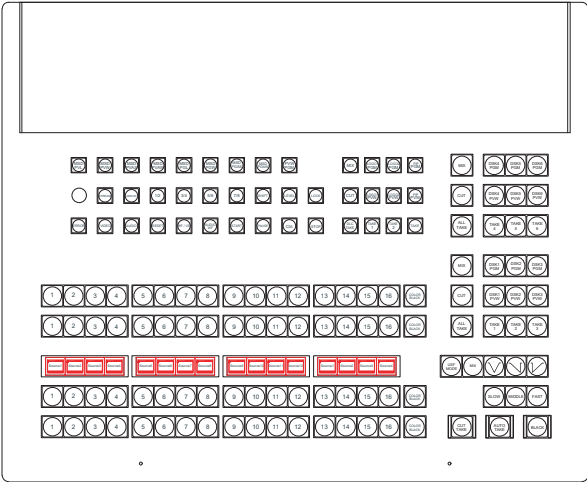


UMC-2016C Master Switcher Remote Controller

- 16 SDI input X 5 Control :
PGM 2ch, PVW 2ch, Clean 2ch, AUX 1ch, AES/EBU 2ch, Line 2ch
- 6ch DSK control : Basic 3ch, Ext. optional. 3ch
- LKFS Display 6 Mode hot buttons
(+9dB/+18dB. Level Meter, Pause, Control, Start, Stop)
- Master Measurement & LKFS Process Control on monitor of the
Control Panel (UMC-2016C – LKFS-out)
- 16 Buttons of Program & Preview
- AUX EXT, HDR WFM, PGM, PVW, CLEAN on AUX Block
(UMC-2016C – AUX-out)
- HDR Monitoring button from AUX
- Logo Generator 3ch or Logo 2ch with PIP 1ch (Option)
- 16LCD (64 X 32 pixel) for naming display
- Dual Power Supply (+24V DC x 2)
- 8 inch Single LCD
- System controlled by SNMP

UMC-2016M & UMC-2016C / Master Switcher Remote	
Image	
I/O Port	
SDI	Input 12G-SDI : Monitoring input 1ch & Loop output 1ch RCPDP 1ch(12G-SDI) & Loop out 1ch Output 3G-SDI : PGM 1ch, PVW 1ch, Loudness 1ch, AUX 1ch
Standard Equalization	12G, 3G-SDI SMPTE ST-2082-10, SMPTE 424M (Level-A, Level-B) 85m at 11.88Gb/s, 200m at 2.97Gb/s, 250m at 1.485Gb/s (Typical maximum equalized length of 5C Cable)
Ethernet RS422	RS-422 3ch, 100/10 Ethernet 1ch Data Format : 9600-115200 baud rate Connector : RJ-45
Switching Button & Monitor	
LCD	8 Different Monitoring (Video: PGM, PVW) (Audio: Embedeed Audio)
Switching Panel	PGM 16ch, PVW 16ch, DSK 3ch, DSK 3ch(Optional), Logo 3ch, Loudness control, Audio Gain Control, Playout automation, Main/Backup remote
Electrical & Miscellaneous	
Dimension	484(W) X 200(H) X 395(D)mm
Weight	10Kg (22lb)
Power	Dual Power, DC 24V

Dimension





HEC 1604 Mini Master Switcher Remote



UMC-2016M UHD Master Switcher



UMC-2014 UHD Master Switcher

HEC-1604 Master Switcher Remote(3RU)

Feature & Functions

1 PGM	PGM	K-PGM	Lg-PGM	AUDIO	PG-LV	AUX	
	CAM-1	K-12	Lg-1234	NOMAL	-12DB	5S Keep	
	CAM-2	K- **	Lg-****	ST	0DB		
	Σ			L+L	+12DB		
	SOURCE			R+R			

2 PVW STATUS	PVW	K-PVW	Lg-PVW	AUDIO	PV-LV	AUX	
	CAM-1	K-12	Lg-1234	NOMAL	-12DB	5S Keep	
	CAM-2	K- **	Lg-****	ST	0DB		
	Σ			L+L	+12DB		
	SOURCE			R+R			

3 INPUT MODE	PGM	PVW	K-1	K-2	PIP	AUX	
	OK	OK	OK	OK	OK	5S Keep	
	Err	Err	Err	Err	Err		
	LOSS	LOSS	LOSS	LOSS	LOSS		

4 AUDIO STATUS	AUDIO	GROUP	PHASE	PGM-LV	PVW-LV	AUX	
	NORMAL	1234	NORMAL	-12DB	-12DB	5S Keep	
	L+L	****	REVERSE	0DB	0DB		
	R+R			12DB	12DB		

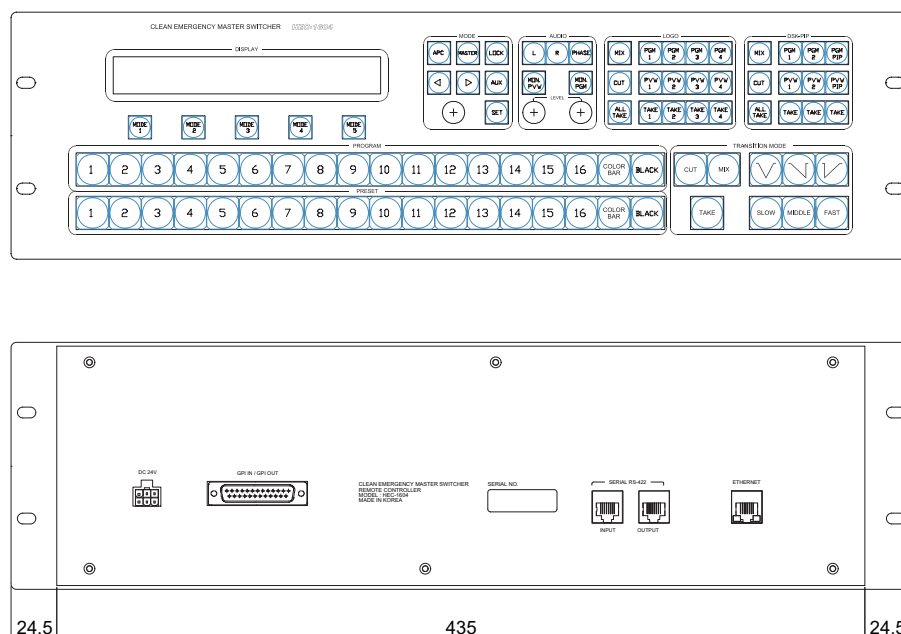
5 ETC.	REF.	APC.	LOGO PRESET	PIP.	AUX.	
	N/A	N/A	P1-P*-P*-P*	OFF	Source1	
	OK	OK	P2-P*-P*-P*	ON-LU	Source16	
	59.94		P3-P*-P*-P*	ON-RU		
	50H		Pn-P*-P*-P*	ON-LD ON-RD		

HEC-1604 Mini Master Switcher Remote

- 16x4 Master Control Switcher
(Program 2Ch, Preview 2Ch, Clean 2Ch, AUX 2Ch)
- Always ‘Clean’ Output(Cut/Mixing) A/V Signals without instant loss of synchronizer will not effect final PGM signal.
- 3ch DSK
- 12G/3G/HD Embedded Audio Processing
(Gain, Delay, Master Fade and Mix)
- 12G/3G/HD Video Processing
(Frame Synchronizer, Line Buffer)
- 3G-SDI SMPTE 424M LEVEL A, LEVEL B Compliant
- 5 Status Monitoring Mode
- System controlled by SNMP
- GPIO 16ch, Logo 3ch, DSK 3ch control pin
- 19 inch standard rack mountable (3RU)

HEC-1604 / Mini Master Switcher Remote	
Image	
SDI	
Ethernet RS422	RS-422 1ch, 100/10 Ethernet 1ch & Loop out Data Format : 9600-115200 baud rate Connector : RJ-45
GPIO	GPIO editable 16ch, Logo 3ch, DSK 3ch control pin
Switching Button & Monitor	
VFD-Panel	5 Different monitoring mode
Switching Panel	PGM 16ch, PVW 16ch, DSK 3ch, Logo 3ch, Audio Gain Control, Payout automation, Main/Backup remote
Electrical & Miscellaneous	
Dimension	484(W) X 50(H) X 133(D)mm
Weight	1Kg (2.2lb)
Power	DC 24V

Dimension





UMC-2016M Front

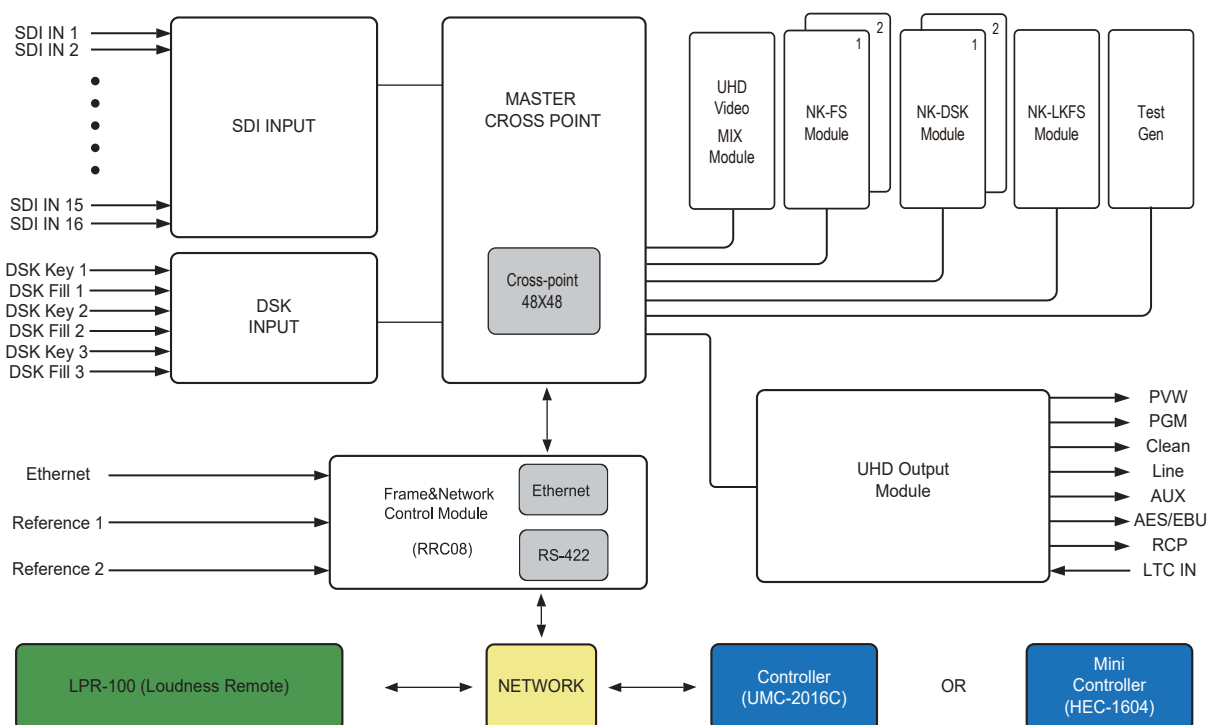


UMC-2016M Rear

Feature & Functions

- Modular system design. Depending on the functions, modules can be changed.
Mainly Designed for live broadcasting stations.
- 16ch 12G-SDI inputs, 9ch 12G-SDI outputs, Program 2ch, Preview 2ch, Clean 2ch, Line 2ch, Aux 1ch
- 2ch AES/EBU Audio Output Program 1ch, Monitor 1ch
- Full Frame Sync function on all 16ch SDI-IN(UHD&HD)
1.5G(HD) and 12G(UHD) signals can be processed simultaneously
- Optional Loudness module, that can process audio loudness signals, can be added(KULS20)
- Optional 2ch, CIE chromaticity & Waveform (WFM02)
- Reference Error Free (REF) function can keep SDI-OUT signals stable from sudden input reference lost
- Control Audio Level from PVW & PGM output
(STEREO, MONO select / AUDIO LEVEL / PHASE / Volume Control)
- Optional GPI/O module can be added for Tally-GPI/O function and Ext-AES/EBU 4ch audio
- 19" Standard Rack Mountable 2RU

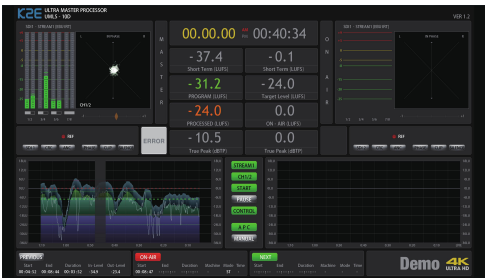
Block Diagram



Feature & Functions



PVW/PGM Dual Analyzer(Aux)

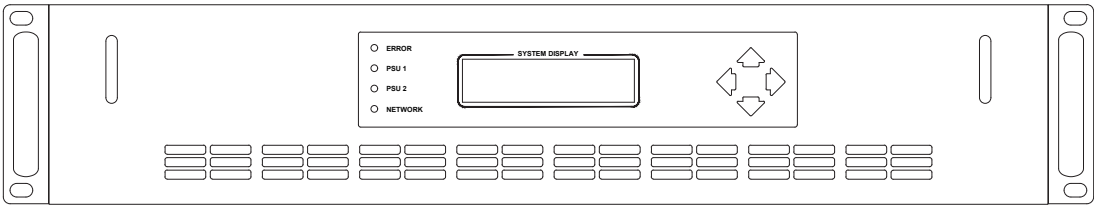


Line-Out Loudness Monitor (2016C)

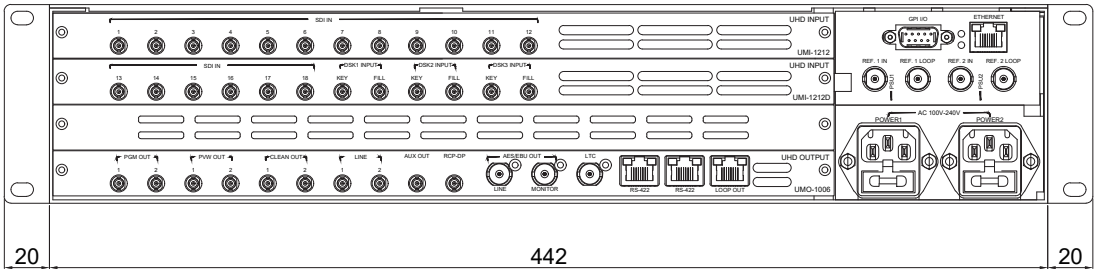
Master Switcher Main Frame (UMC-2016M)

- 12G, 3G, HD-SDI Embedded Audio Processing (Gain, Phase, Stereo & Mono)
- Loudness Processing except extra LKFS equipment
- HDR Process Function
HDR Process each 16ch inputs (Auto or Bypass)
PGM, PVW Output can display from HDR Dual Analyzer
- Logo Generator 3ch (Option)
- Selected 2ch on external AES/EBU 4ch embed PGM & PVW by
Overwrite mode or Mix mode (Option)
- External GPI input 20ch, GPI Output 40ch (Option)
- Dual Power Supply
- System controlled by SNMP
- 19 inch standard rack mountable (2RU)

Dimension



UMC-2016M - Front



UMC-2016M - Rear

Models	UMC-2016M	UMC-2016D	UMC-2014
Front View			
Rear View			
Serial Video Input			
Standard	12G, 3G, HD-SDI, ST-2082-10, SMPTE242M, SMPTE425M (Level-A, Level-B)		
Input Detection	Yes	Yes	Yes
Input	SDI 16CH, DSK 3CH	Channel A SDI 8CH, DSK 2CH Channel B SDI 8CH, DSK 2CH	SDI 16CH, DSK 2CH or SDI 14CH, DSK 3CH
LTC Input	SMPTE 12M-1	SMPTE 12M-1	SMPTE 12M-1 LTC available AES/EBU 1CH
Connector	HD-BNC(Video) BNC(Audio)		
Input equalization	Typical maximum equalized length of 5C cable 80m at 11.88Gb/s, 200m at 2.97Gb/s, 250m at 1.48Gb/s		
Loudness Process (Optional)	Loudness Module(KULS10) & software processing	software processing	software processing
CIE Chromaticity & Waveform (Optional)	Waveform Module(WFM02) & software processing	No	No
Serial Video Output			
Output	PGM 2CH, PVW 2CH, LINE 2CH, CLEAN 2CH, AUX 1CH, RCP-DP 1CH	Channel A & Channel B Out : PGM X2, PVW X2, AUX X2	PGM 2CH, PVW 2CH, CLEAN RCP, AUX, HDMI 2.0
Signal Level	800mV±10%		
Rise/Fall Time	<28ps nominal		
Overshoot	<10% of amplitude		
Wideband Jitter	<0.3 UI		
Timing Jitter	<2 UI		
Connector	HD-BNC(Video) BNC(Audio)		
Reference In/Out & RS-422 Ethernet			
Reference	Tri-Level : SMPTE 274M, SMPTE 296M, 600mVp-p normal, 75 ohm terminated through loop B&B : PAL & NTSC 1Vp-p normal 75 ohm terminated through loop		
Reference Port	Ref1 & Loop, Ref2 & Loop	Ref1 & Loop, Ref2 & Loop	Ref & Loop
RS-422	2-Port, 1 Loop 1-Port, 1 Loop (GPI Option)	1-Port, 1 Loop	1-Port, 1 Loop
Ethernet	1-Port, 10/100 Base-T	1-Port, 10/100 Base-T	1-Port, 10/100 Base-T
GPIO	GPI 32CH, GPO 40CH Optional : GPIO Board		GPI 24CH
AES/EBU In & Out			
AES/EBU Input	4CH (Optional :GPI Board)		2CH
AES/EBU Output	Monitor Out, Line Out	Monitor Out, Line Out	Monitor Out, Line Out
Electrical & Miscellaneous			
Dimension (mm)	483(W) x 88(H) x 495(D)mm	483(W) x 88(H) x 495(D)mm	483(W) x 44(H) x 300(D)mm
Weight	11.5 Kg(25.3lbs)	11.5 Kg(25.3lbs)	2.7 Kg(5.95lbs)
Power	Dual Power : KSMP-50 AC100V ~ AC240V	Dual Power : KSMP-50 AC100V ~ AC240V	Dual Power : AC Adapter AC100V ~ AC240V