

UMC-2016M

UMC-2016C

HEC-1604



UHD 4K MASTER SWITCHER

‘Experience the New Vision’



UHD Master Switcher

K2E Master Switcher have 2 parts of Main (UMC-2016M) and Controller (UMC-2016C / HEC-1604). UMC-2016 is a 4K Clean Switcher that switches PGM and PVW outputs. Video Process displays the Signal Information, Waveform, CIE Chromaticity Diagram, and Audio Level Meter of the input signal using HDR.

Reference Error Free function, Switcher is Designed to not affect the output signal even if there is instant input reference loses.

Controller has 8"-inch LCD and it allows intuitive switching signal through the display.

Two controllers can be used to configure the backup system as Master & Sleeve.

UMC-2016C



UMC-2016M UHD Master Switcher



UMC-2016C Master Switcher Remote

Feature & Functions

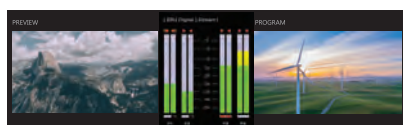
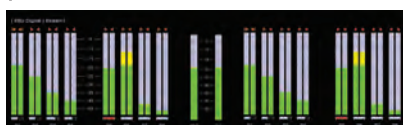
PVW MODE : AUDIO&VIDEO METER



PGM MODE : AUDIO&VIDEO METER



PVW+PGM(LINE) MODE : AUDIO&VIDEO

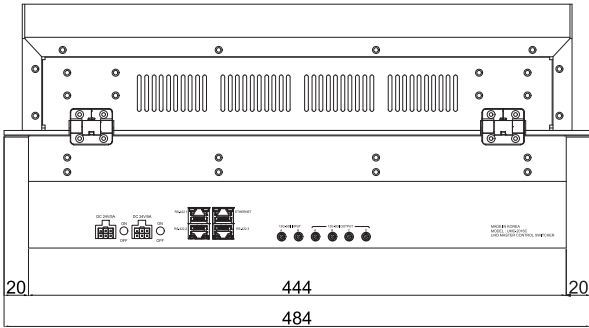
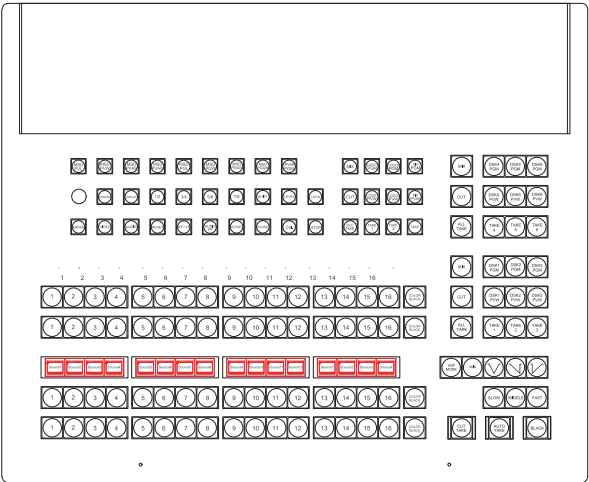


UMC-2016C Master Switcher Remote

- 18 SDI input X 5 Control : PGM 2ch, PVW 2ch, Clean 2ch, AUX 1ch, AES/EBU 2ch, Line 2ch
- 6ch DSK control : Basic 3ch, 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
- 16 Buttons of Program & Preview
- AUX EXT, HDR WFM, PGM, PVW, CLEAN on AUX Block
- 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-2016C / Master Switcher Remote	
Image	
I/O Port	
SDI	12G-SDI : Monitoring input 1ch & Loop output 1ch 3G-SDI : Loudness 1ch, PGM 1ch, PVW 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 6ch, Logo 3ch, Loudness control pack Audio Gain Control, Playout automation, Main/Backup remote
Electrical & Miscellaneous	
Dimension	484(W) X 201.12(H) X 396(D)mm
Weight	10Kg (22lb)
Power	Dual Power, DC 24V

Dimension



HEC-1604



HEC 1604 Mini Master Switcher Remote



UMC-2016M UHD Master Switcher



HES-1604 HD Master Switcher

Feature & Functions

1 PGM					MDL PGM	AUX
	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					MDL PVW	AUX
	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		

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

3 INPUT MODE					PIP	AUX
	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	LOSS	

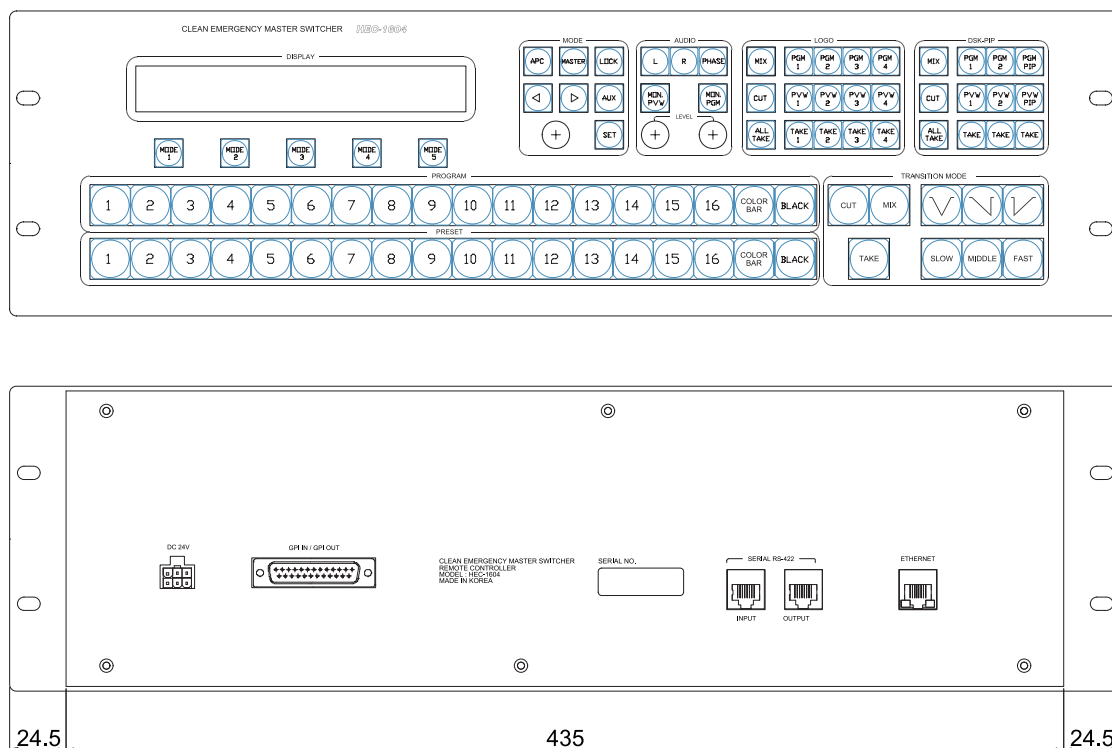
5 ETC.						
	REF.	APC.	LOGO PRESET	PIP.		
	N/A	N/A	P1-P*-P*-P*	OFF	Source1	
	OK	OK	P2-P*-P*-P*	ON-LU	} Source16	
	59.94		P3-P*-P*-P*	ON-RU		
50H			Pn-P*-P*-P*	ON-LD		
				ON-RD		

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



UMC-2016M Front

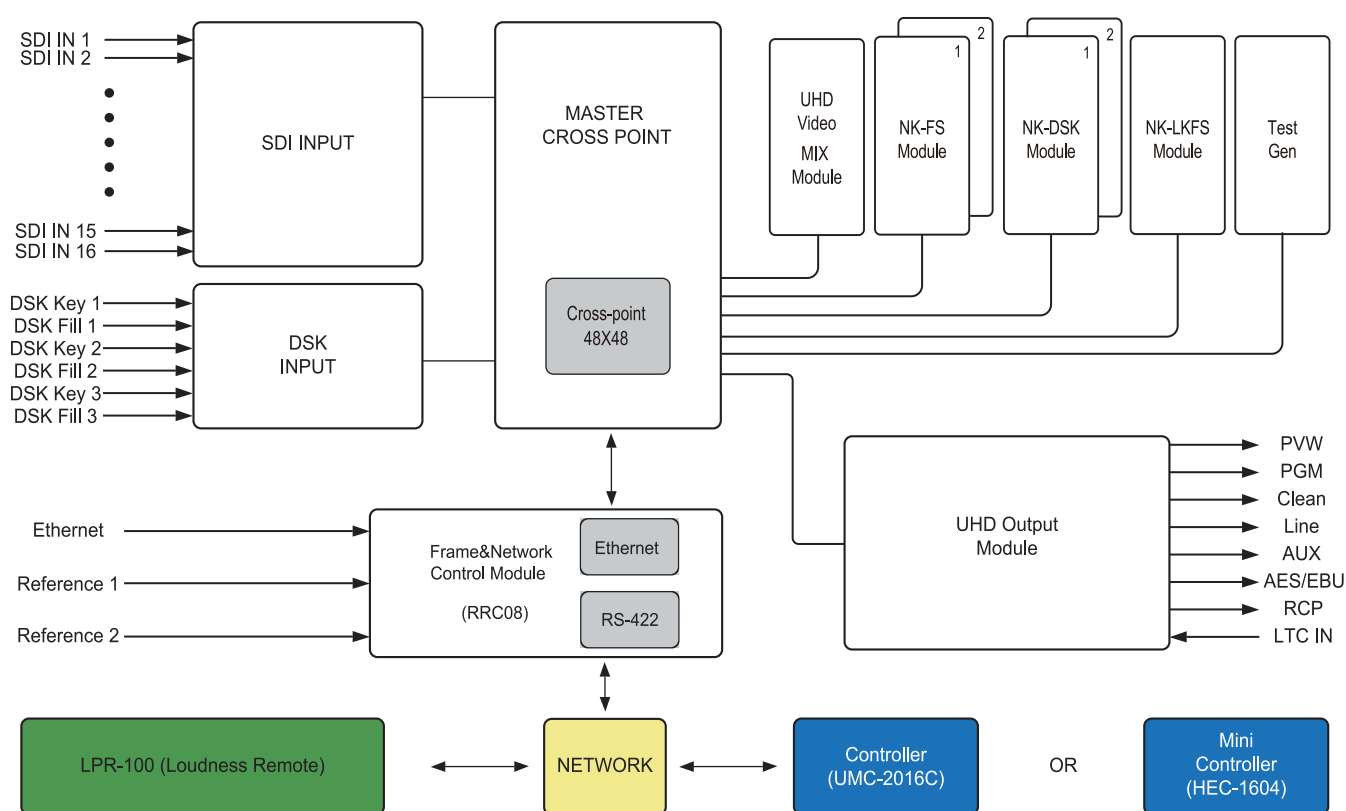


UMC-2016M Rear

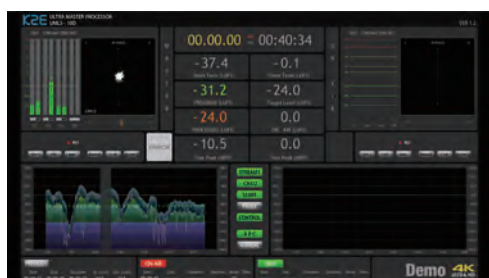
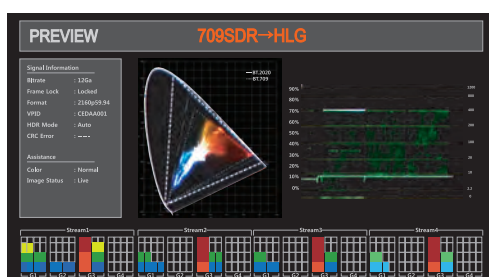
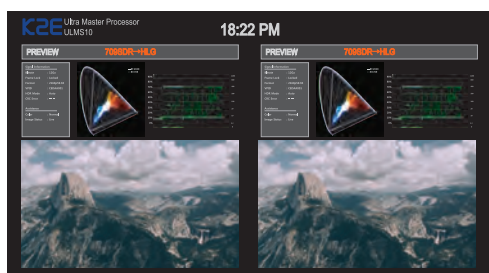
Feature & Functions

- UMC-2016M (UHD Master Switcher) is designed for Live broadcaster. Built as modular system it can be fit into Frame individually.
- UMC-2016M has 16ch 12G-SDI inputs, 9ch 12G-SDI outputs, Program 2ch, Preview 2ch, Clean 2ch, Line 2ch, Aux 1ch.
- 16ch Frame synchronizer and reference error free (REF) which means Keep the output SDI signal stable from the instant input reference loses.
- Audio Level can be controlled by PVW & PGM in real time (STEREO, MONO select / AUDIO LEVEL / PHASE / Volume Control)

Block Diagram



Feature & Functions



Master Switcher Main Frame (UMC-2016M)

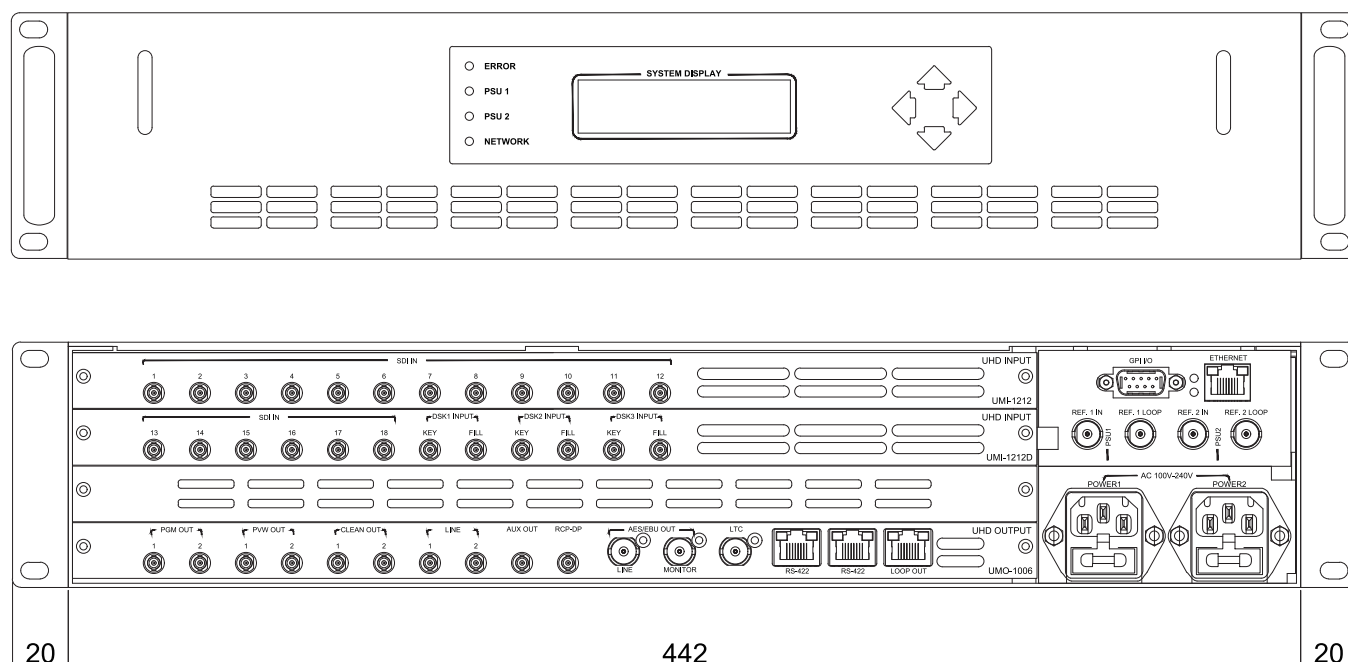
- 12G, 3G, HD-SDI Embedded Audio Processing (Gain, Phase, Stereo & Mono)
- Loudness Processing except extra LKFS equipment
- HDR Process Function

HDR Process each 16ch inputs (Auto or Bypass)

PGM, PVW Output can display from HDR Dual Analyzer

- Logo Generator 3ch or Logo 2ch with PIP 1ch (Option)
- Selected 2ch on external AES/EBU 4ch embed PGM & PVW by Overwrite mode or Mix mode (Option)
- External GPI/O 40ch (Option)
- Dual Power Supply
- System controlled by SNMP
- 19 inch standard rack mountable (2RU)

Dimension	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
5	1	2	3	4	5	6																																																																																														



UMC-2016M / UHD 4K Master Switcher Main	
Image	
SDI	
Number of Input	SDI 16ch
Equalization	85m at 11.88Gb/s, 200m at 2.97Gb/s, 250m at 1.485Gb/s (Typical maximum equalized length of 5C Cable)
Standard	12G, 3G, HD-SDI ST-2082-10, SMPTE242M, SMPTE425M (Level-A, Level-B)
SDI Output	UMC-2016C : PGM 2ch, PVW 2ch, Clean 2ch, AUX 1ch, AES/EBU 2ch, Line 2ch, DSK 3ch *(Optional 6ch) HEC-1604 : PGM 2ch, PVW 2ch, Clean 2ch, AUX 1ch, DSK 3ch
AES/EBU	
Number of Output	2ch (75Ω)
Number of Output Sampling rate	32kHz to 96kHz Asynchronous, 48kHz Synchronous (SRC = Off)
Standard	AES-1992 for balanced synchronous or asynchronous PCM/AES SMPTE 276M for single ended synchronous or asynchronous PCM/AES
REFERENCE	
Input & Loop	2ch & Loop 2ch
HD Sync(Tri-level)	SMPTE274M, SMPTE296M 600mVp-p nominal, 75 ohm terminated through loop
SD Sync(B&B)	PAL Black Burst ITU624-4/SMPTE318, Composite NTSC SMPTE 170M 1Vp-p nominal, 75 ohm terminated through loop
SERIAL Interface RS-422 & Ethernet	
Ethernet	1Port 10/100base-T
RS-422	2 port & loop
System Protocol	K2E Standard
Data Format	9600~115200 baud rate
LTC Input	
Number of LTC	1ch
Input	Linear Time Code per SMPTE 12M-1
Input Level	0.5Vp-p to 5Vp-p
Electrical & Miscellaneous	
Dimension	483(W) X 89(H) X 492(D)mm
Weight	11.5Kg(25.3lbs)
Fuse	250V / 3A
Power	Dual Power, AC100V - AC240V

Memo



Head Office

20-2, Seoksilro 336beongil, Wabueup,
Namyangjusi, Gyeonggido, Korea 12204

Tel.

+82 2 465 9204

Fax

+82 2 6005 9204

Web

www.k2e.tv