DVR
Hardware Manual

FCC Compliance Statement
This device complies with Part 15 of the FCC Rules. Operation is Subject to the following two conductions: (1) The device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operations.

■ **WARNING**
- ■ Unauthorized reproduction of all or part of this manual is strictly prohibited.
- ■ The figures in this manual are for illustration purposes only (may differ from the actual product).
- ■ The specifications and design of the product are subject to change without prior notice for purposes of quality improvement.

■ **CAUTIONS**
- ■ To get the best use out of the product, be sure to read the cautions before using the product. For safety, please take note of the following.

● **Instructions before using the product**
1. To prevent electric shock when installing, moving, or opening the DVR and peripheral devices, connect and disconnect the cables as instructed. All cables must be connected to grounded power outlets.
2. If the product is installed near a power outlet, make sure it can be unplugged easily.
3. Do not use the DVR in water or in wet places.
4. Keep the plastic packing materials used for the DVR or other peripheral devices out of reach of children (may cause suffocation).

● **Installation Environment of the product**
1. Maintain the following conditions: operating temperature of 5˚C ~ 40˚C; operating humidity of 10% ~ 80%.
2. Install the DVR in a safe place that is free from external vibration.
3. Install the DVR in a well-ventilated place.
4. To protect the hard disk from data loss and breakdown, install the DVR away from magnetic materials.
5. When using a rack other than the standard one, use a separate table with sufficient spacing, i.e., 60cm from the floor, 50cm from the ceiling, and 20cm from the side and back walls and other objects.

● **Safety Notes on the Product**
1. When installing additional boards and HDD, separate the power cable and turn OFF power supplied to the DVR completely.
2. Keep the product away from heat-generating devices such as heaters.
3. Do not use a damaged power cord.
4. To prevent problems due to magnetic interference and electric surge, use only grounded cables and power outlets.
5. If the power cord is connected, do not touch the power unit. If the power cord is connected, electric current is still flowing internally even after the switch is turned OFF.
6. Do not place a heavy object on top of the product.
7. Do not drop a conductive object in the ventilation holes.
8. Allot sufficient space for system cabling.
9. Use only the parts indicated in the manual. Do not disassemble, repair, or modify the product without permission.
10. Incorrect system setup may cause malfunction.
11. Shut down the system normally as instructed in the manual.

● **Safety Notes on the Lithium Battery**
1. Replace lithium batteries as instructed to avoid danger.
2. Dispose used lithium batteries properly.

【Warning and Caution are indicated as follows.】

⚠️ Warning	Possible injury or product damage.
⚠️ Caution	Risk of minor injury or product damage.
⚠️	Cautions for the usage of the product.
📖	Information for the usage of the product.

Table of contents

Chapter 1. Introduction

1 - 1 Definition of maunal terms

Kute	DVR with 1 HDD Bay (Max 4TB supported)
Lite	DVR with 2 HDD Bays (Max 8TB per HDD supported)
Blue	DVR with 3 HDD Bays (Max 6TB per HDD supported)
Deluxe	DVR with 6 HDD Bays (Max 8TB per HDD supported)
With PoE	Built in PoE (4PoE, 8PoE, 16PoE)
Non PoE	Without PoE

1 - 2 Major Features
1 - 2 - 1 Kute Major Features
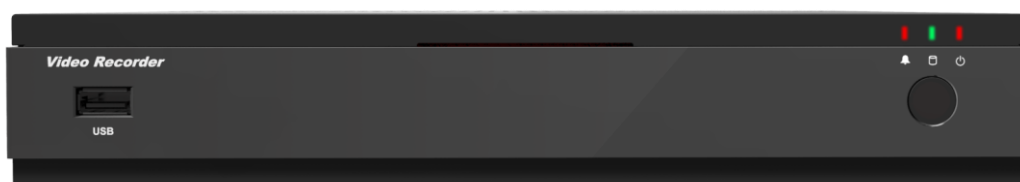
Specifications		5brid DVR (TVI, AVI, CVI, 960H, IPC)	3brid DVR (TVI, AVI, 960H)	
		4 CH	8CH	4CH
System	OS	Embedded Linux		
	Control	Mouse, Remote controller, Network		
	Hexaplex	Realtime monitoring, Recording, Playback, Backup, Network, Setup		
	Upgrade	USB2.0 Memory(FAT 32) Network		
Video	System	NTSC / PAL - Config switch		
	Video Input	4 BNC or 3 BNC+1 IPC	8 BNC	4 BNC
	Video Output	1 HD-MI, 1 VGA, 1 BNC		
Audio	Audio Input	1 RCA		
	Audio Output	HD-MI, RCA		
Video Recording	Compression	H.264		
	Recording Speed	1080p 15fps/ch / 720p, 960H real-time		
	Resolution	1080p, 720p, 960H, D1, 2CIF, CIF		
	Event	Motion, Sound Detecion		
	Recording Quality	5 Levels		
Audio Recording	Compression	G.711U		
	Audio Sampling Rate	8KHz		
Network	Network Connection	Ethernet 10/100/1G		
	Compression	H.264 / JPEG		
	Speed	Max. 1080p 6fps		
	Resolution	Max. 1080p		
Backup	Backup/Download	USB2.0, Network		
	Format	Video clip(rms, avi), JPEG still image, Log list, Setup data		

Alarm	Pre/Post-Alarm	5sec / 5sec~5min		
	Alarm Action	E-mail, Event Popup, Buzzer, Remote CMS, Front LED		
Display	HD-MI	FHD, XGA		
	VGA	FHD, XGA		
	TV	SDTV(720x480/576)		
	Mode	6/4/1/SEQ- LIVE, 6/4/1 –P.B.	8/4/1/SEQ- LIVE, 8/4/1 –P.B.	4/1/SEQ- LIVE, 4/1 –P.B.
External Interface	PTZ	RS485 - Terminal Block		
	ATM / POS	N/A		
Storage	Internal Device / External Device	1 HDD		
	ODD	N/A		
Feature	DDNS, DHCP, UPNP	Yes		
	VMS, RMS	Windows		
	Smartphone (3G/4G)	Android, iPhone, iPad		
	Mac Viewer	Apple Mac OS		
General	Power Supply	12V/2A		
	Consumption	24 Watts		
	Dimension	260 x 45 x 240 mm		

1 - 2 - 2 Kute Components

After unpacking the product, check whether following accessories are included.

- Mouse
- Quick Setup Guide
- CD (VMS, User manual)
- Power code: 12V 2A
- Remote Controller B-Type / AAA 1.5V batteries 2ea (Optional)

1 - 2 - 3 Kute EX-SDI Major Features

Specifications		EX-SDI (EX-SDI, HD-SDI, 960H)	
		8CH	**4CH**
System	OS	Embedded Linux	
	Control	Mouse, Remote controller, Network	
	Hexaplex	Realtime monitoring, Recording, Playback, Backup, Network, Setup	
	Upgrade	USB2.0 Memory(FAT 32) Network	
Video	System	NTSC / PAL - Config switch	
	Video Input	8 BNC	4 BNC
	Video Output	1 HD-MI, 1 VGA, 1 BNC	
Audio	Audio Input	8 RCA	4 RCA
	Audio Output	HD-MI, RCA	
Video Recording	Compression	H.264	
	Recording Speed	Max. 30 fps/ch	
	Resolution	1080p, 720p, 960H, D1, 2CIF, CIF	
	Event	Motion, Sound Detection	
	Recording Quality	5 Levels	
Audio Recording	Compression	G.711U	
	Audio Sampling Rate	8KHz	
Network	Network Connection	Ethernet 10/100/1G	
	Compression	H.264 / JPEG	
	Speed	Max. 1080p 20fps	
	Resolution	Max. 1080p	
Backup	Backup/Download	USB2.0, Network	
	Format	Video clip(rms, avi), JPEG still image, Log list, Setup data	

Alarm	Pre/Post-Alarm	5sec / 5sec~5min	
	Alarm Action	E-mail, Event Popup, Buzzer, Remote CMS, Front LED	
Display	HD-MI	FHD, XGA	
	VGA	FHD, XGA	
	TV	SDTV(720x480/576)	
	Mode	8/4/1/SEQ- LIVE, 8/4/1 –P.B.	4/1/SEQ- LIVE, 4/1 –P.B.
External Interface	PTZ	RS485 - Terminal Block	
	ATM / POS	N/A	
Storage	Internal Device / External Device	1 HDD	
	ODD	N/A	
Feature	DDNS, DHCP, UPNP	Yes	

	VMS, RMS	Windows
	Smartphone (3G/4G)	Android, iPhone, iPad
	Mac Viewer	Apple Mac OS
General	**Power Supply**	12V/2A
	Consumption	24 Watts
	Dimension	260 x 45 x 240 mm

1 - 2 - 4 Kute EX-SDI Components

After unpacking the product, check whether following accessories are included.

- Mouse
- Quick Setup Guide
- CD (VMS, User manual)
- Power code: 12V 2A
- Remote Controller B-Type / AAA 1.5V batteries 2ea (Optional)

1 - 2 - 5 Lite Major Features

Line Up		5brid DVR (TVI, AVI, CVI, 960H, IPC)		
Channels		**16CH**	**8CH**	**4CH**
System	OS	Embedded Linux		
	Control	Mouse, Remote controller, Network		
	Hexaplex	Realtime monitoring, Recording, Playback, Backup, Network, Setup		
	Upgrade	USB2.0 Memory(FAT 32) Network		
Video	Video Input	16 BNC, 8 IPC	8 BNC, 4 IPC	4 BNC, 2 IPC
	Video Output	1 HD-MI, 1 VGA, 2 BNC(TVI,CVBS)		
Audio	Audio Input	4 RCA		
	Audio Output	HD-MI, RCA		
Video Recording	Compression	H.264		
	Recording Speed	Max. 30 fps/ch		
	Resolution	Max. UHD(4K) / TVI, IP		
	Event	Motion, Sound Detection		
	Recording Quality	5 Levels		
Audio Recording	Compression	G.711U		
	Audio Sampling Rate	8KHz		
Network	Network Connection	2 x Ethernet 10/100/1G		
	Compression	H.264 / JPEG		
	Speed	Max. 1080p 20fps		
	Resolution	Max. 1080p		
Backup	Backup/Download	USB2.0, Network		
	Format	Video clip(rms, avi), JPEG still image, Log list, Setup data		

Alarm	Pre/Post-Alarm	5sec / 5sec~5min		
	Alarm Action	E-mail, Event Popup, Buzzer, PTZ Preset Relay, Spot, Remote CMS		
	Input/Output	4/1 – NC/NO		
Display	HD-MI	UHD, FHD, SxGA, XGA		
	VGA	UHD, FHD, SxGA, XGA		
	Spot	HD spot, SD spot		
	Mode	24/16/8/4/1/SEQ- LIVE, 24/16/8/4/1 –P.B.	12/8/4/1/SEQ- LIVE, 12/8/4/1 –P.B.	6/4/1/SEQ- LIVE, 6/4/1 –P.B.
External Interface	PTZ / Keyboard	2 RS485 - Terminal Block		
	ATM / POS	RS232C - Terminal Block / Ethernet POS		
Storage	Internal Device / External Device	2 HDD or 1HDD + 1 eSATA		
	ODD	N/A		

Features	DDNS, DHCP, UPNP	Yes		
	VMS, RMS	Windows		
	Smartphone (3G/4G)	Android, iPhone, iPad		
	Mac Viewer	Apple Mac OS		
General	Power Supply	12V/5A	12V/3.3A	12V/3.3A
	Consumption	60 Watts	40 Watts	40 Watts
	Dimension	340 x 60 x 300 mm		

1 - 2 - 6 Lite Components

After unpacking the product, check whether following accessories are included.

- Mouse
- Quick Setup Guide
- CD (VMS, User manual)
- Power Adaptor/Code (4CH: 12V 3.3A, 8/16CH: 12V 5A)
- Screws for HDD installation
- Remote Controller A-Type / AAA 1.5V batteries 2ea (Optional)

1 - 2 - 7 Lite EX-SDI Major Features

Line Up		EX-SDI (EX-SDI, HD-SDI, 960H)		
Channels		**16CH**	**8CH**	**4CH**
System	OS	Embedded Linux		
	Control	Mouse, Remote controller, Network		
	Hexaplex	Realtime monitoring, Recording, Playback, Backup, Network, Setup		
	Upgrade	USB2.0 Memory(FAT 32) Network		
Video	Video Input	16 BNC	8 BNC	4 BNC
	Video Output	1 HD-MI, 1 VGA, 1 BNC	1 HD-MI, 1 VGA, 1 BNC, 1 RCA (SPOT)	1 HD-MI, 1 VGA, 1 BNC, 1 RCA (SPOT)
Audio	Audio Input	16 RCA	8 RCA	4 RCA
	Audio Output	HD-MI, RCA		
Video Recording	Compression	H.264		
	Recording Speed	Max. 30 fps/ch		
	Resolution	Max. FHD		
	Event	Motion, Sound Detection		
	Recording Quality	5 Levels		
Audio Recording	Compression	G.711U		
	Audio Sampling Rate	8KHz		
Network	Network Connection	Ethernet 10/100/1G		
	Compression	H.264 / JPEG		
	Speed	Max. 1080p 5fps		
	Resolution	Max. 1080p		
Backup	Backup/Download	USB2.0, Network		
	Format	Video clip(rms, avi), JPEG still image, Log list, Setup data		

Alarm	**Pre/Post-Alarm**	5sec / 5sec~5min		
	Alarm Action	E-mail, Event Popup, Buzzer, PTZ Preset Relay, Spot, Remote CMS		
	Input/Output	4/1 – NC/NO		
Display	**HD-MI**	FHD, SxGA, XGA		
	VGA	FHD, SxGA, XGA		
	Spot	SDTV(720x480)		
	Mode	16/8/4/1/SEQ- LIVE, 16/8/4/1 –P.B.	8/4/1/SEQ- LIVE, 8/4/1 –P.B.	4/1/SEQ- LIVE, 4/1 –P.B.
External Interface	**PTZ / Keyboard**	2 RS485 - Terminal Block		
	ATM / POS	RS232C - Terminal Block / Ethernet POS		
Storage	**Internal Device / External Device**	2 HDD or 1HDD + 1 eSATA		
	ODD	N/A		
Features	**DDNS, DHCP, UPNP**	Yes		
	VMS, RMS	Windows		
	Smartphone (3G/4G)	Android, iPhone, iPad		

	Mac Viewer	Apple Mac OS		
General	**Power Supply**	12V/5A	12V/3.3A	12V/3.3A
	Consumption	60 Watts	40 Watts	40 Watts
	Dimension	340 x 60 x 300 mm		

1 - 2 - 8 Lite EX-SDI Components

After unpacking the product, check whether following accessories are included.

- Mouse
- Quick Setup Guide
- CD (VMS, User manual)
- Power Adaptor/Code (4/8CH: 12V 3.3A, 16CH: 12V 5A)
- Screws for HDD installation
- Remote Controller A-Type / AAA 1.5V batteries 2ea (Optional)

1 - 2 - 9 Blue Major Features

Line Up		5brid DVR (TVI, AVI, CVI, 960H, IPC)		
Channels		**16CH**	**8CH**	**4CH**
System	OS	Embedded Linux		
	Control	Mouse, Remote controller, Network		
	Hexaplex	Realtime monitoring, Recording, Playback, Backup, Network, Setup		
	Upgrade	USB2.0 Memory(FAT 32) Network		
Video	Video Input	16 BNC, 8 IPC	8 BNC, 4 IPC	4 BNC, 2 IPC
	Video Output	1 HD-MI, 1 VGA, 2 BNC(TVI,CVBS)		
Audio	Audio Input	4 RCA	8 RCA	16 RCA
	Audio Output	HD-MI, RCA		
Video Recording	Compression	H.264		
	Recording Speed	Max. 30 fps/ch		
	Resolution	Max. UHD(4K) / TVI, IP		
	Event	Motion, Sound Detection		
	Recording Quality	5 Levels		
Audio Recording	Compression	G.711U		
	Audio Sampling Rate	8KHz		
Network	Network Connection	2 x Ethernet 10/100/1G		
	Compression	H.264 / JPEG		
	Speed	Max. 1080p 20fps		
	Resolution	Max. 1080p		
Backup	Backup/Download	USB2.0, Network		
	Format	Video clip(rms, avi), JPEG still image, Log list, Setup data		

Alarm	Pre/Post-Alarm	5sec / 5sec~5min		
	Alarm Action	E-mail, Event Popup, Buzzer, PTZ Preset Relay, Spot, Remote CMS, Front LED		
	Input/Output	4/1 – NC/NO		
Display	HD-MI	UHD, FHD, SxGA, XGA		
	VGA	UHD, FHD, SxGA, XGA		
	Spot	HD spot, SD spot		
	Mode	24/16/8/4/1/SEQ- LIVE, 24/16/8/4/1 –P.B.	12/8/4/1/SEQ- LIVE, 12/8/4/1 –P.B.	6/4/1/SEQ- LIVE, 6/4/1 –P.B.
External Interface	PTZ / Keyboard	2 RS485 - Terminal Block		
	ATM / POS	RS232C - Terminal Block / Ethernet POS		
Storage	Internal Device / External Device	3 HDD, 1 eSATA,		
	ODD	DVD R/W		
Features	DDNS, DHCP, UPNP	Yes		
	VMS, RMS	Windows		
	Smartphone (3G/4G)	Android, iPhone, iPad		

	Mac Viewer	Apple Mac OS
General	**Power Supply**	12V/5A
	Consumption	60 Watts
	Dimension	430 x 86 x 270 mm

1 - 2 - 1 0 Blue Components

After unpacking the product, check whether following accessories are included.

- Mouse
- Quick Setup Guide
- CD (VMS, User manual)
- Power Adaptor (12V 5A)
- RACK Mount Handles
- Screws for HDD installation
- Remote Controller A-Type / AAA 1.5V batteries 2ea (Optional)

1 - 2 - 1 1 Deluxe Major Features

Line Up	5brid DVR (TVI, AVI, CVI, 960H, IPC)		
Channels	**16CH**		
System	OS	Embedded Linux	
	Control	Mouse, Remote controller, Network	
	Hexaplex	Realtime monitoring, Recording, Playback, Backup, Network, Setup	
	Upgrade	USB2.0 Memory(FAT 32) Network	
Video	Video Input	16 BNC, 8 IPC	
	Video Output	1 HD-MI, 1 VGA, 2 BNC(TVI,CVBS)	
Audio	Audio Input	16 RCA	
	Audio Output	HD-MI, RCA	
Video Recording	Compression	H.264	
	Recording Speed	Max. 30 fps/ch	
	Resolution	Max. UHD(4K) / TVI, IP	
	Event	Motion, Sound Detection	
	Recording Quality	5 Levels	
Audio Recording	Compression	G.711U	
	Audio Sampling Rate	8KHz	
Network	Network Connection	2 x Ethernet 10/100/1G	
	Compression	H.264 / JPEG	
	Speed	Max. 1080p 20fps	
	Resolution	Max. 1080p	
Backup	Backup/Download	USB2.0, Network	
	Format	Video clip(rms, avi), JPEG still image, Log list, Setup data	

Alarm	Pre/Post-Alarm	5sec / 5sec~5min		
	Alarm Action	E-mail, Event Popup, Buzzer, PTZ Preset Relay, Spot, Remote CMS, Front LED		
	Input/Output	16/4 – NC/NO		
Display	HD-MI	UHD, FHD, SxGA, XGA		
	VGA	UHD, FHD, SxGA, XGA		
	Spot	HD spot, SD spot		
	Mode	24/16/8/4/1/SEQ- LIVE, 24/16/8/4/1 –P.B.		
External Interface	PTZ / Keyboard	2 RS485 - Terminal Block		
	ATM / POS	RS232C - Terminal Block / Ethernet POS		
Storage	Internal Device / External Device	6 HDD, 2 eSATA,		
	ODD	DVD R/W		
Features	DDNS, DHCP, UPNP	Yes		
	VMS, RMS	Windows		
	Smartphone (3G/4G)	Android, iPhone, iPad		
	Mac Viewer	Apple Mac OS		

General	Power Supply	AC 100 ~ 250V, 50/60Hz
	Consumption	80 Watts
	Dimension	440 x 88 x 430 mm

1 - 2 - 1 2 Deluxe Components

After unpacking the product, check whether following accessories are included.

- Mouse
- Quick Setup Guide
- CD (VMS, User manual)
- Power Code
- RACK Mount Handles
- Screws for HDD installation
- Remote Controller A-Type / AAA 1.5V batteries 2ea (Optional)

Chapter 2. Installation and Connection

2- 1   Names and Features of Each Parts

2- 1 - 1 Kute Installation and Connection
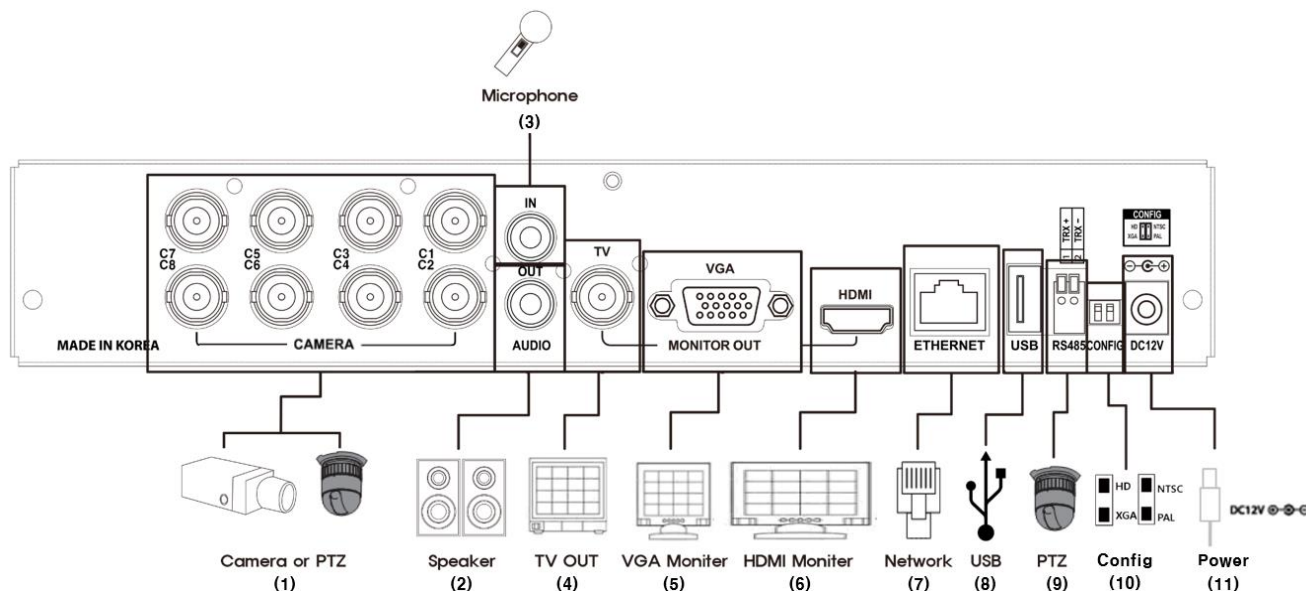
[Figure 1 Kute 4/8CH 1- 1 - 1 Kute Installation and Connection]

No.	Name	Features	Device can be connected	Type
1	**CAMERA IN**	Video camera connection	CCTV camera	BNC
2	**AUDIO OUT**	Audio outpput (Line-out)	Speaker	RCA
3	**AUDIO IN**	Audio input	Mic	RCA
4	**TV**	CCTV monitor connection	CCTV Monitor	BNC
5	**VGA-OUT**	VGA Monitor or LCD Monitor	VGA Monitor	D-SUB 15P
6	**HD-MI**	HD-MI output	HD-MI Monitor	HD-MI
7	**Ethernet**	Ethernet 10/100/1G Base-T	LAN cable	RJ-45
8	**USB**	USB 2.0	USB Mouse, Memory	USB Type-A
9	**Terminal Block**	RS-485	PTZ Camera	Terminal Block
10	**CONFIG**	NTSC/PAL FHD / XGA		DIP S/W, 2-pin
11	**Power**	DC 12V	Power Adapter	DC Jack

■ **Config Switch Setting**

		Switch 1	Switch 2
1 2		■ FHD	■ NTSC
		■ XGA	■ PAL

■ **Terminal Block**

1	TRX +
2	TRX –
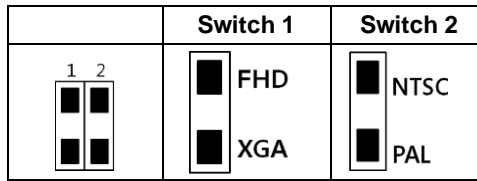
[Figure 2 Kute Series Terminal Block]

This is Termnial block located at the rear side to connect PTZ (RS-485) camera.
Kute series supports one PTZ control.

① PTZ Camera connection
TRX+/TRX- calbes from PTZ cameras can be input to the Termnial block No. 1&2. You can see the compatibility list of PTZ camera from APPENDIX of this manual.

2-1-2 Kute EX-SDI Installation and Connection
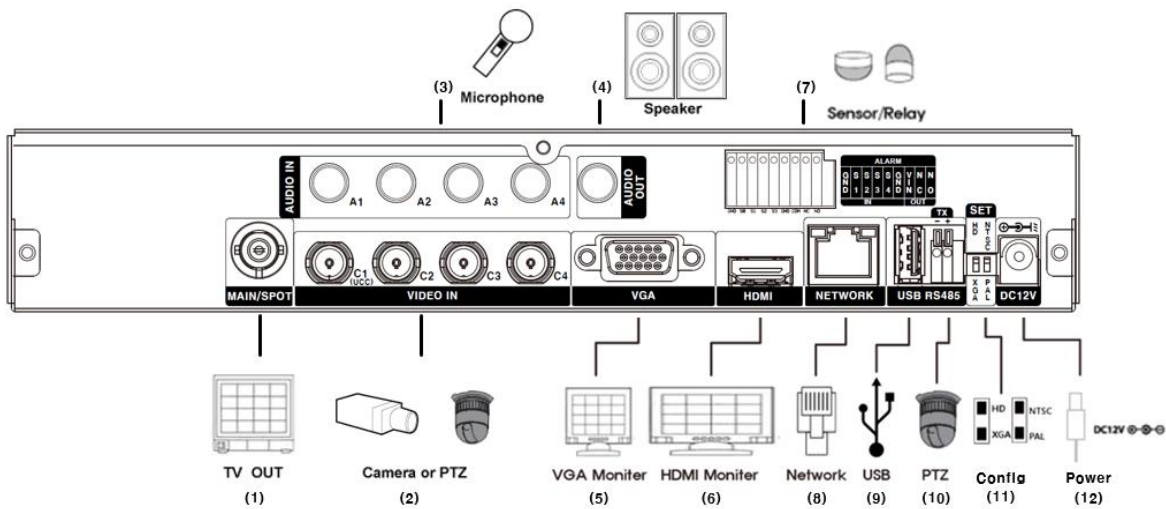
[Figure 3 Kute EX-SDI 4CH Installation and Connection]
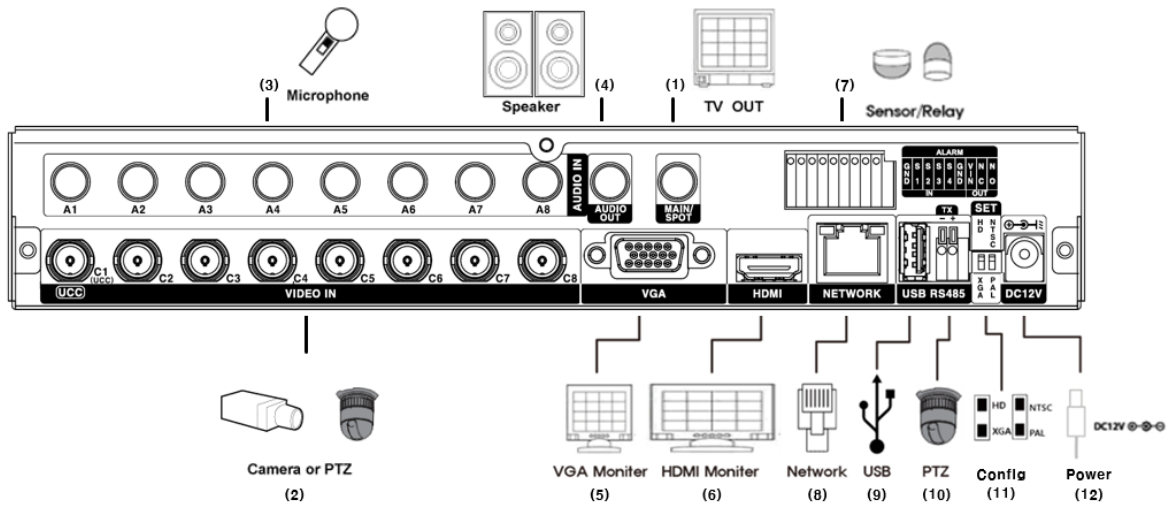
[Figure 4 Kute EX-SDI 8CH Installation and Connection]

No.	Name	Features	Device can be connected	Type
1	**TV**	CCTV monitor connection	CCTV Monitor	BNC or RCA
2	**CAMERA IN**	Video camera connection	CCTV Camera	BNC
3	**AUDIO IN**	Audio input	Mic	RCA
4	**AUDIO OUT**	Audio output (Line-out)	Speaker	RCA
5	**VGA-OUT**	VGA monitor or LCD monitor connection	VGA Monitor	D-SUB 15P
6	**HD-MI**	HD-MI output	HD-MI Monitor	HD-MI
7	**Terminal Block1**	SENSOR IN / RELAY OUT		Terminal Block
8	**Ethernet**	Ethernet 10/100/1G Base-T	LAN Cable	RJ-45
9	**USB**	USB 2.0	USB Mouse, Memory	USB Type-A
10	**Terminal Block2**	RS-485	PTZ Camera	Terminal Block
11	**CONFIG**	NTSC/PAL FHD / XGA		DIP S/W, 2-pin
12	**Power**	DC 12V	Power Adapter	DC Jack

■ **Config Switch Setting**

	Switch 1	Switch 2
1 2	■ FHD ■ XGA	■ NTSC ■ PAL
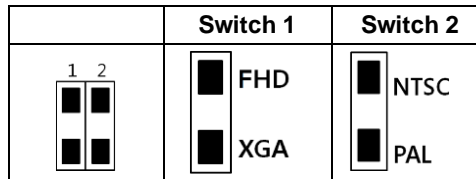
■ **Terminal Block**

[Figure 5 Kute Series TB1 Description]
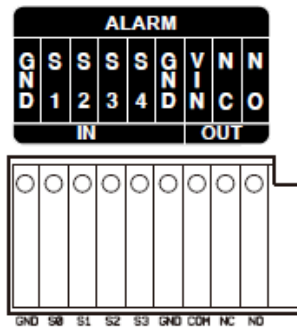
[Figure 6 Kute Series TB2 Description]

This is Terminal Block loatced at the rear to control PTZ, Sensor and Relay features.

    ① PTZ Camera connection

TRX+/TRX- calbes from PTZ cameras can be input to the TRX+ and TRX-. You can see the compatibility list of PTZ camera from APPENDIX of this manual.

    ② Sensor / Relay / POS

	Sensor and Relay type **NC(Normal Close)**: Normal close and Event open **NO(Normal Open)**: Normal open and Event close

A. Sensor connection
    I.   Sensors can be input to the Terminal Block S1 ~S16.
    II.   It can be connected regardless of channel numbers.

B. Relay connection
    I.   Relay can be input to the Terminal Block R1~R4.
    II.   Relay can be connected to the Alarm action devices like Siren or Light bar.

⚠️ Caution	Please note that relay might be not working depending on the types. In this case, power supply has to be connected to the relay.

2- 1 - 3 **Lite Installation and Connection**
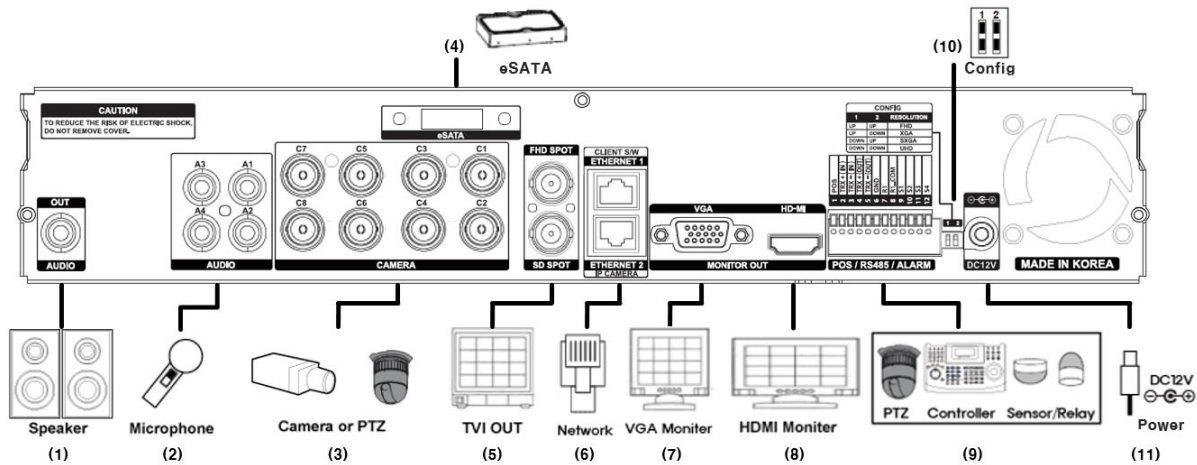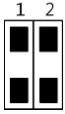
[Figure 7 Lite 4/8CH 1- 1 - 1 Installation and Connection]
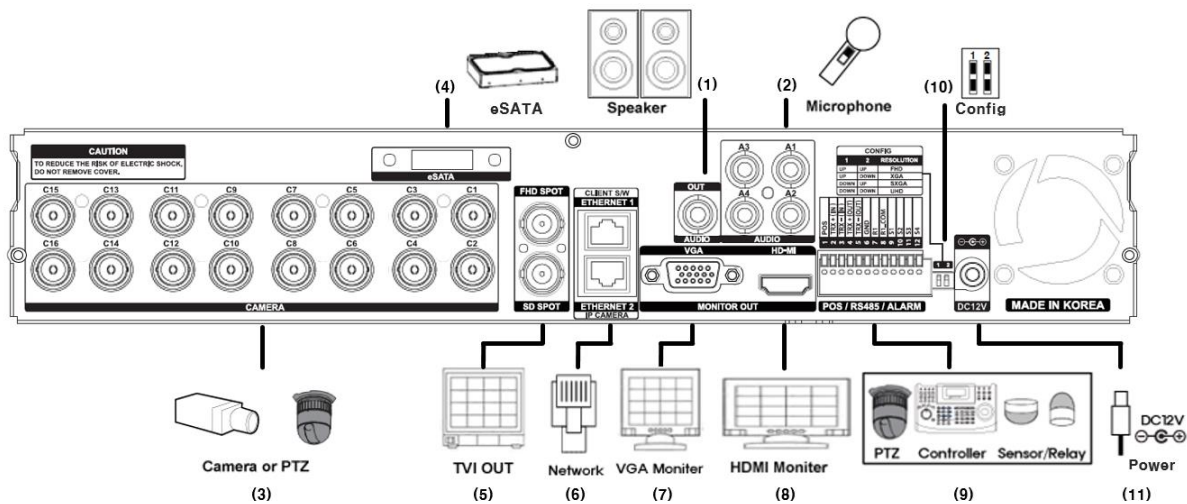
[Figure 8 Lite 16CH 1- 1 - 1 Installation and Connection]

No.	Name	Features	Device can be connected	Type
1	**AUDIO OUT**	Audio output (Line-out)	Speaker	RCA
2	**AUDIO IN**	Audio input (4CH)	Mic	RCA
3	**CAMERA IN**	Video camera connection	CCTV Camera	BNC
4	**e-SATA**	External SATA	e-SATA	e-SATA
5	**FHD SPOT SD SPOT**	FHD SPOT(TVI interface) SD SPOT(CVBS interface)	TVI input device CVBS input device	BNC
6	**ETHERNET**	Ethernet 10/100/1G Base-T UP : CLIENT S/W DOWN : IP CAMERA	LAN cable IP CAMERA	RJ-45
7	**VGA-OUT**	VGA monitor or LCD monitor connection	VGA monitor	D-SUB 15P
8	**HD-MI**	HD-MI output	HD-MI monitor	HD-MI
9	**Terminal Block**	RS-485 / SENSOR IN / RELAY OUT / POS	PTZ camera	Terminal Block
10	**CONFIG**	RESOLUTION setting UHD/FHD/XGA/SXGA		DIP S/W, 2-pin
11	**Power**	DC 12V	Power Adapter	DC Jack

■ **Config Switch Setting**

	Switch 1	Switch 2	RESOLUTION
	UP	UP	FHD
	UP	DOWN	XGA
	DOWN	UP	SXGA
	DOWN	DOWN	UHD
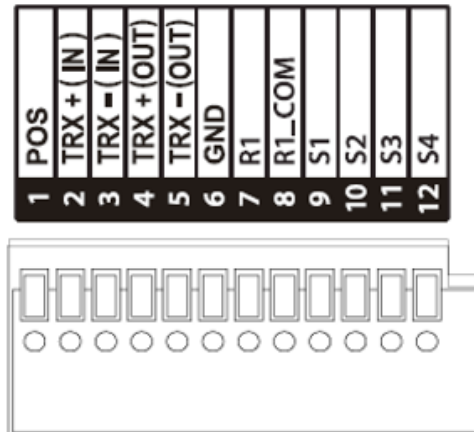
■ **Terminal Block**

[Figure 9 Lite Series Terminal Block Description]

This is Terminal Block loatced at the rear to control PTZ, Sensor, Relay and POS features

① PTZ camera/ Keyboard Controller

PTZ cameras can be input to the Termnial block No. 4&5&6(GND). You can see the compatibility list of PTZ camera from APPENDIX of this manual.
Keyboard Controller can be connected to the Terminal block No. 2&3.

> ⚠ **Caution** PTZ might be not working perfectly if there is no connection for GND

② Sensor / Relay / POS

> 📖 Sensor and Relay type
> **NC(Normal Close)**: Normal close and Event open
> **NO(Normal Open)**: Normal open and Event close

A. Sensor connection
   I. Sensors can be input to the Terminal Block S1 ~S4.
   II. It can be connected regardless of channel numbers.

B. Relay connection
   I. Relay can be input to the Terminal Block R1.
   II. Relay can be connected to the Alarm action devices like Siren or Light bar.

C. POS connection
   I. POS (RS-232c) can be input the Terminal Block No. 1

> ⚠ **Caution** Please note that relay might be not working depending on the types. In this case, power supply has to be connected to the relay.

■ **NTSC/PAL Setting**

Open the top case of DVR then change the setting with "2pin Jumper" on the board.

NTSC / PAL SELECT Direction : JP2	The way of setting	
	➕➕	**JUMPER OPEN : NTSC**
	➕➕	**JUMPER SHORT : PAL**

> ⚠ **Caution** Please don't change this setting without any reason as we provide the products with correct setting normally.

2- 1 - 4 Lite EX-SDI Installation and Connection
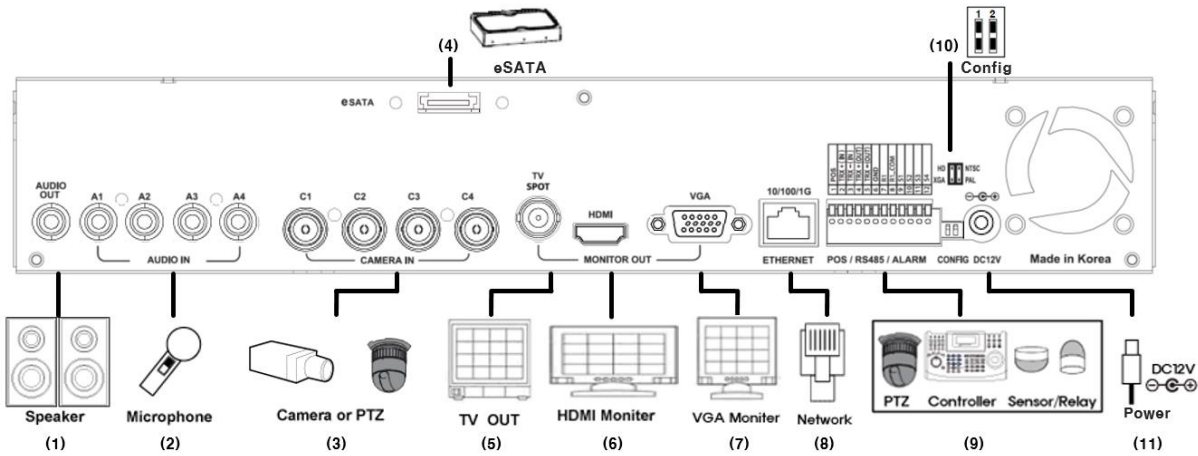
[Figure 10 Lite EX-SDI 4CH Installation and Connection]
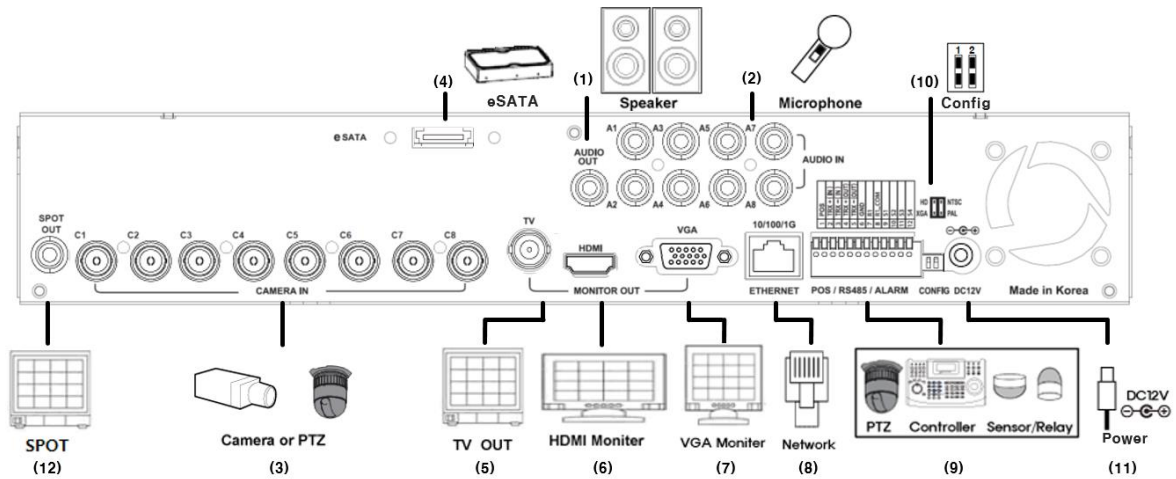
[Figure 11 Lite EX-SDI 8CH Installation and Connection]
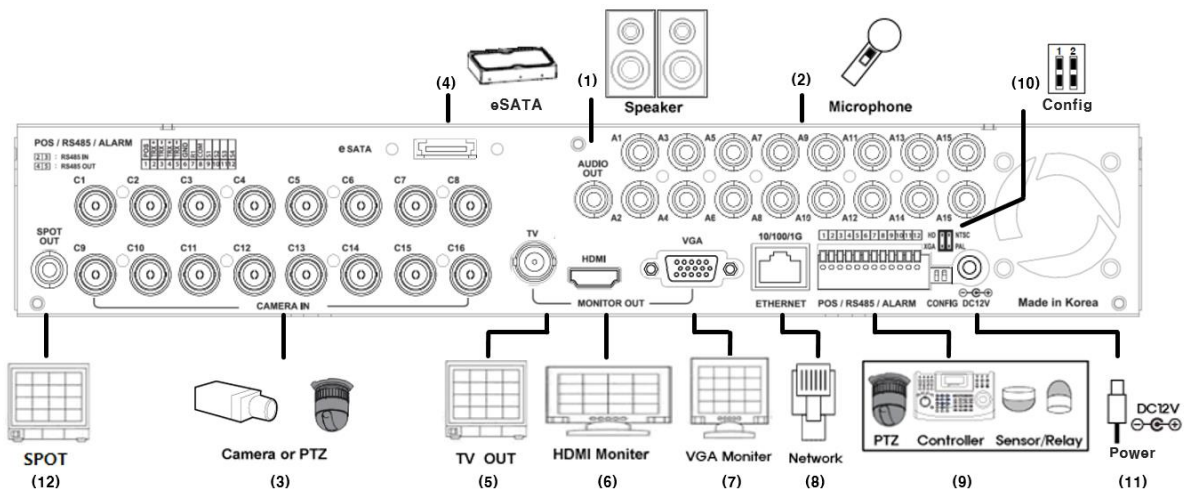
[Figure 12 Lite EX-SDI 16CH Installation and Connection]

No.	Name	Features	Device can be conneted	Type
1	**AUDIO OUT**	Audio output (Line-out)	Speaker	RCA
2	**AUDIO IN**	Audio input (4CH)	Mic	RCA
3	**CAMERA IN**	Video camera connection	CCTV Camera	BNC
4	**e-SATA**	External SATA	e-SATA	e-SATA
5	**TV**	CCTV monitor connection	CCTV Monitor	BNC
6	**HD-MI**	HD-MI output	HD-MI Monitor	HD-MI
7	**VGA-OUT**	VGA or LCD Monitor	VGA Monitor	D-SUB 15P
8	**HD-MI**	HD-MI output	HD-MI Monitor	HD-MI
8	**ETHERNET**	Ethernet 10/100/1G Base-T	LAN Cable	RJ-45
9	**Terminal Block**	RS-485 / SENSOR IN / RELAY OUT / POS	PTZ Camera	Terminal Block
10	**CONFIG**	RESOLUTION setting UHD/FHD/XGA/SXGA		DIP S/W, 2-pin
11	**Power**	DC 12V	Power Adapter	DC Jack
12	**SPOT**	Video output of the event signal channel	CCTV Monitor	RCA

■ **Config Switch Setting**
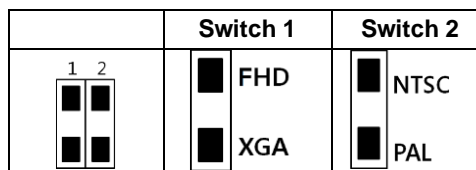
■ **Terminal Block**
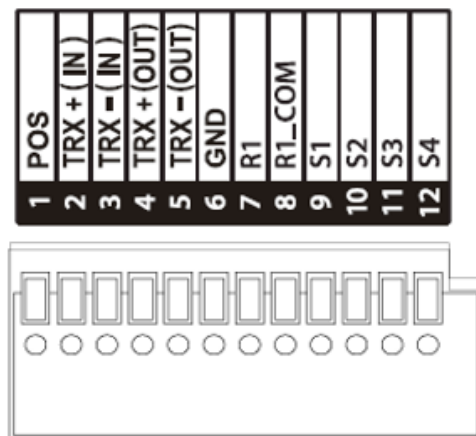
[Figure 13 Lite Series Terminal Block Description]

This is Terminal Block loatced at the rear to control PTZ, Sensor, Relay and POS features.

① PTZ camera/ Keyboard Controller
   A. PTZ cameras can be input to the Termnial block No. 4&5&6(GND). You can see the compatibility list of PTZ camera from APPENDIX of this manual.
   B. Keyboard Controller can be connected to the Terminal block No. 2&3.

⚠ Caution	PTZ might be not working perfectly if there is no connection for GND

② Sensor / Relay / POS

📖	Sensor and Relay type **NC(Normal Close)**: Normal close and Event open **NO(Normal Open)**: Normal open and Event close

A. Sensor connection
   I. Sensors can be input to the Terminal Block S1 ~S4.
   II. It can be connected regardless of channel numbers.

B. Relay connection
   I. Relay can be input to the Terminal Block R1.
   II. Relay can be connected to the Alarm action devices like Siren or Light bar.

C. POS connection
   II. POS (RS-232c) can be input the Terminal Block No. 1

⚠ Caution	Please note that relay might be not working depending on the types. In this case, power supply has to be connected to the relay.

2- 1 - 5 **Blue Installation and Connection**

To be updated soon.
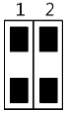
2-1-6 Deluxe Installation and Connection
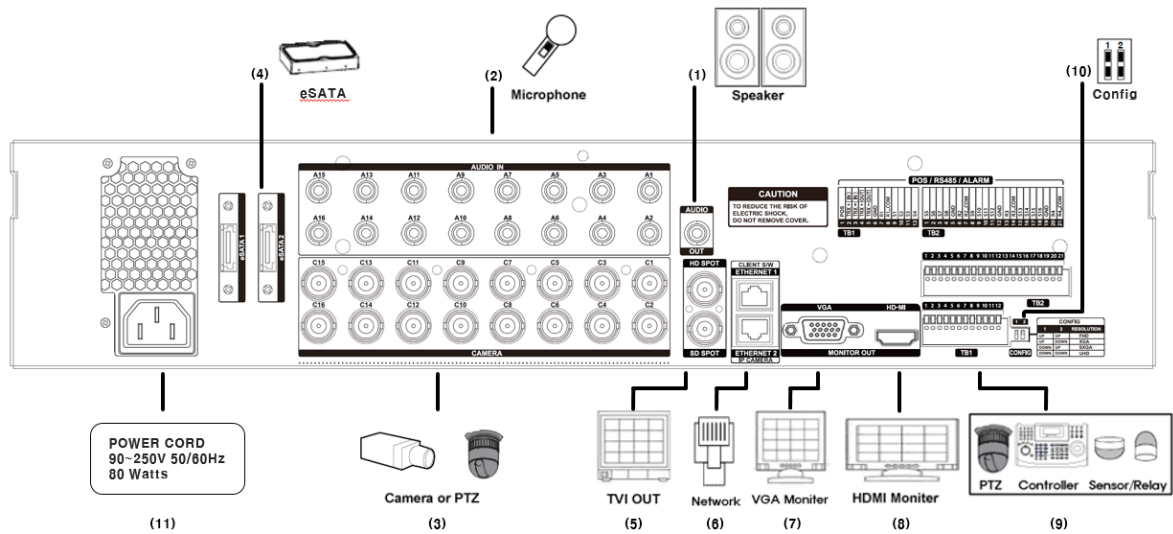
[Figure 14 Deluxe 16CH Installation and Connection]

No.	Name	Features	Device can be conneted	Type
1	**AUDIO OUT**	Audio output (Line-out)	Speaker	RCA
2	**AUDIO IN**	Audio input (16CH)	Mic	RCA
3	**CAMERA IN**	Video camera	CCTV Camera	BNC
4	**e-SATA**	External SATA	e-SATA	e-SATA
5	**HD SPOT**	TVI video output (SD/HD)	TVI Input Device	BNC
6	**ETHERNET**	Ethernet 10/100/1G Base-T UP : CLIENT S/W DOWN : IP CAMERA	LAN cable IP CAMERA	RJ-45
7	**VGA-OUT**	VGA or LCD Monitor	VGA Monitor	D-SUB 15P
8	**HD-MI**	HD-MI Output	HD-MI Monitor	HD-MI
9	**Terminal Block**	RS-485 / SENSOR IN / RELAY OUT / POS	PTZ Camera	Terminal Block
10	**CONFIG**	RESOLUTION Setting UHD/FHD/XGA/SXGA		DIP S/W, 2-pin
11	**Power**	Power Cord Connection	Power Cord	AC Power socket

■ **Config Switch Setting**

	Switch 1	**Switch 2**	**RESOLUTION**
	UP	UP	FHD
	UP	DOWN	XGA
1 2	DOWN	UP	SXGA
	DOWN	DOWN	UHD

■ **Terminal Block**

[Figure 15 Deluxe Series TB1 Terminal Block Description]
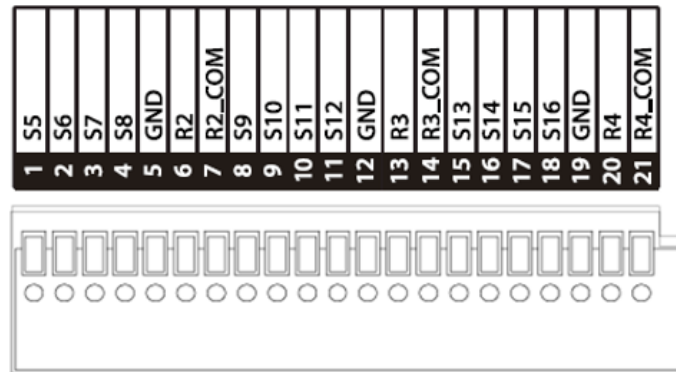
[Figure 16 Deluxe Series TB2 Terminal Block Description]

This is Terminal Block loatced at the rear to control PTZ, Sensor, Relay and POS features.

① PTZ camera/ Keyboard Controller
   A. PTZ cameras can be input to the Termnial block No. 4&5&6(GND). You can see the compatibility list of PTZ camera from APPENDIX of this manual.
   B. Keyboard Controller can be connected to the Terminal block No. 2&3.

⚠ **Caution**   PTZ might be not working perfectly if there is no connection for GND

② Sensor / Relay / POS

📖	Sensor and Relay type **NC(Normal Close)**: Normal close and Event open **NO(Normal Open)**: Normal open and Event close

A. Sensor connection
   I. Sensors can be input to the Terminal Block S1 ~S6.
   II. It can be connected regardless of channel numbers.

B. Relay connection
   I. Relay can be input to the Terminal Block R1~R4.
   II. Relay can be connected to the Alarm action devices like Siren or Light bar.

C. POS connection
   I. POS (RS-232c) can be input the Terminal Block No. 1

⚠ Caution	Please note that relay might be not working depending on the types. In this case, power supply has to be connected to the relay.

■ **NTSC/PAL Setting**

Open the top case of DVR then change the setting with "2pin Jumper" on the board.

NTSC / PAL SELECT Direction : JP2	The way of setting	
	[+][+]	**JUMPER OPEN : NTSC**
	[+][+]	**JUMPER SHORT : PAL**

⚠ Caution	Please don't change this setting without any reason as we provide the products with correct setting normally.

Chapter 3. Operation and Setup

DVR can be controlled easily by Front panel, Remote controller, Mouse.

3- 1 **Kute series front panel**
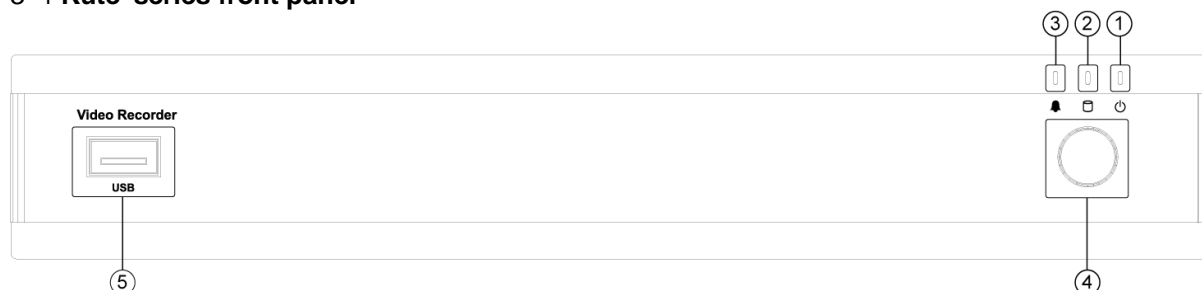
No.	Name	Function
1	**POWER LED**	System power LED
2	**RECORD LED**	HDD status LED
3	**ALARM LED**	Event or Motion LED
4	**IR Sensor**	Remote controller receiving sensor
5	**USB**	USB mouse, USB memory stick

3- 2 **Lite series front panel**
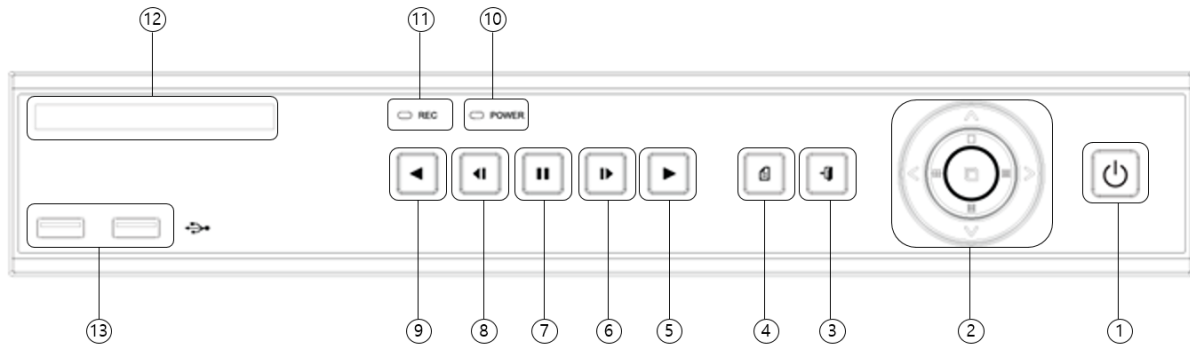
No.	Name	Function
1	**POWER**	Power on/off
2	**MOVE & DISPLAY & Select**	Moves from one category to antoher or changes the display mode
3	**ESC**	Exit the current menu or selects the upper menu
4	**MENU**	Various modes
5	**PLAY**	Backward Playback/Rewind (in the Playback Mode)
6	**Frame by Frame**	Playback frame by frame
7	**PAUSE**	Pause (in the Playback Mode)
8	**Reverse Frame by Frame**	Backward Playback frame by frame (in the Playback Mode
9	**Reverse Play**	Backward Playback/Rewind (in the Playback Mode)
10	**POWER LED**	System power LED
11	**RECORD LED**	HDD(recording) LED
12	**LABEL**	Badge space to be shown model number or brand
13	**USB**	USB mouse, USB memory stick

3-3 Blue series front panel
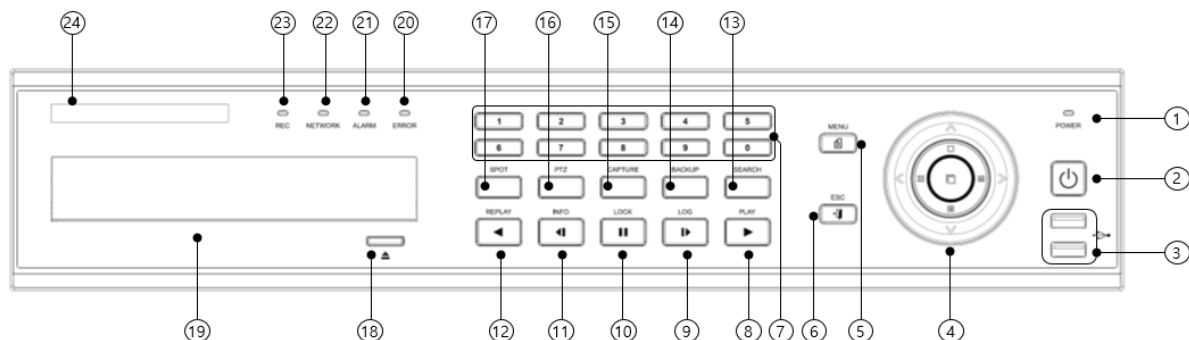
No.	Name	Function
1	**POWER LED**	System power LED
2	**POWER**	Power on/off
3	**USB**	USB mouse, USB memory stick
4	**MOVE & DISPLAY**	Moves from one category to antoher or changes the display mode
5	**MENU**	Various modes
6	**ESC**	Exit the current menu or selects the upper menu
7	**NUMBER**	Channel Selection or Number Input
8	**Forward Play / Fast Forward & PLAY**	Playback/Fast Forward (in the Playback Mode) Play back (in the Monitoring Mode)
9	**Forward Frame by Frame & LOG**	Playback Frame by Frame (in the Playback Mode) System Log View(in the Monitoring Mode)
10	**Pause & LOCK**	Pause (in the Playback Mode) Lock (in the Monitoring Mode)
11	**Reverse Frame by Frame & STATUS**	Backward Playback Frame by Frame (in the Playback Mode) View System Configuration (in the Monitoring Mode).
12	**Reverse Play / Fast Reverse & RELAY**	Backward Playback/Rewind (in the Playback Mode) Relay Control (in the Monitoring Mode)
13	**SEARCH**	Search the recorded Image.
14	**BACKUP**	Save the recorded image at other media.
15	**CAPTURE**	Capture the displaying image into USB
16	**PTZ**	Pan/Tilt/Zoom control
17	**SPOT**	Spot Control
18	**Eject**	CD, DVD Media
19	**ODD**	CD-RW, DVD-RW
20	**ERROR LED**	Fan, Recording error indication LED
21	**ALARM LED**	Event, Motion indication LED
22	**NETWORK LED**	Remote connection indication LED
23	**RECORD LED**	HDD operation indication LED
24	**LABEL**	Badge space to be shown model number or brand

3- 4 **Deluxe series front panel**
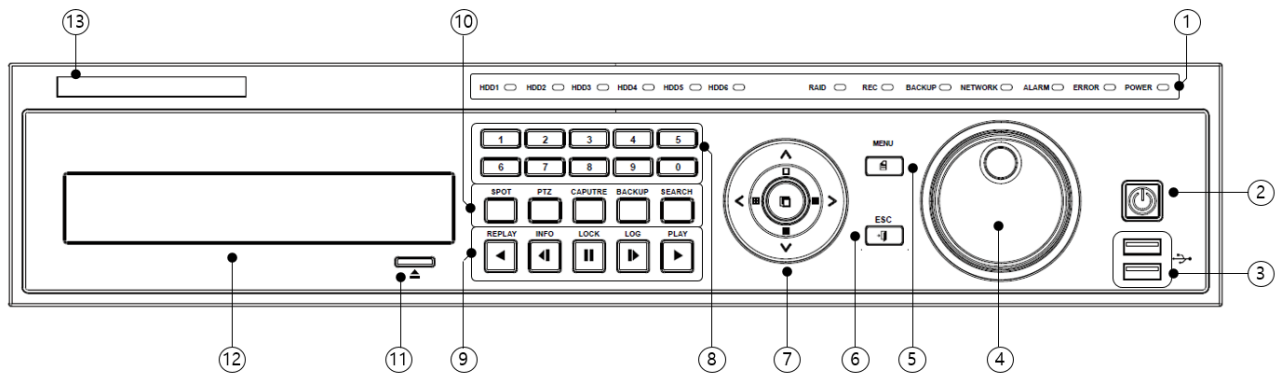
No.	Name	Function
1	LED DISPLAY	HDD and System Power and Status Indication LED
2	POWER	Turn the system power ON or OFF
3	USB	Connection port to the USB mouse and USB memory stick
4	JOG SHUTTLE	Speed in Playback Mode / Play Direction / Frame Play
5	MENU	Various Modes
6	ESC	Exit the current menu or move to the upper menu
7	MOVE & DISPLAY	Move from one category to another or change to the display mode or select
8	NUMBER	Channel Selection or Number Input
9	Reverse Play / Fast Reverse & RELAY	Backward Playback/Rewind (in the Playback Mode) Relay Control (in the Monitoring Mode)
	Reverse Frame by Frame & STATUS	Backward Playback Frame by Frame (in the Playback Mode) View System Configuration (in the Monitoring Mode).
	Pause & LOCK	Pause (in the Playback Mode) Lock (in the Monitoring Mode)
	Forward Frame by Frame & LOG	Playback Frame by Frame (in the Playback Mode) System Log View(in the Monitoring Mode)
	Forward Play / Fast Forward & PLAY	Playback/Fast Forward (in the Playback Mode) Play back (in the Monitoring Mode)
10	SPOT	Spot Control
	PTZ	Pan/Tilt/Zoom control
	CAPTURE	Capture the displaying image into USB
	BACKUP	Save the recorded image at other media.
	SEARCH	Search the recorded Image.
11	Eject	CD, DVD Media
12	ODD	CD-RW, DVD-RW
13	LABEL	Badge space to be shown model number or brand

3- 5 **Remote controller**

3- 5 - 1 **Remote controller A-Type**

① **Basic control button**

	POWER	System power on/off
	RECORD	Recording all channels or stop recording
1 ~ 0	NUMBER	Input numbers or channels
ID	ID	Selection DVR ID

② **System operation and setup button**

	MENU	Recording, Schedule, System setup
	ESC	Exit the current menu or Move to the upper menu.
Q	SEARCH	Search for the recording data
	SELECT	Select the category or execute sequence disply.
BACKUP	BACK UP	Copy for recording data
	PTZ	PTZ control
	MOVE	Move from one category to another or change to the display mode.

③ **Search Button (playback mode)**

PLAY ▶	**Play / Fast Forward**
LOG �	**Frame by Frame**
LOCK ‖	**Pause**
INFO ◀	**Reverse Frame by Frame**
RELAY ◀	**Reverse Play / Fast Reverse**

④ **Other buttons (Monitoring mode)**

PLAY ▶	**PLAY**
LOG ▮▶	**LOG**
LOCK ‖	**LOCK**
INFO ◀	**INFO**
RELAY ◀	**RELAY**

	※ **Setting up the remote controller ID**
📖	Example) in order to control DVR with ID#1, please set as same as below. Press ID button ➜ press the number 0 and 1 ➜ press ID button again. ID ⟶ 0 , 1 ⟶ ID In order to control all of DVRs having different ID at the same time, please set number 999. ID ⟶ 9 , 9 , 9 ⟶ ID

3- 5 - 2 **Remote controller B-type**

① **Basic Control Button**

⏻	**POWER**	Not Supported	
●	**MODE**	Not Supported	
▣	**FULL**	1ch mode	
▦	**QUAD**	4ch mode	
▦	**9 SPLIT**	9ch mode	
▦	**16 SPLIT**	16ch mode (if you press more, it will be extend like 24ch mode…so on)	
▣	**SEQ.**	Sequnce Mode ON/OFF	

② **System operation and setup button**

●	**MENU**	Reording, Schedule, System setting
●	**ESC**	Exit the current menu or Move to the upper menu
◀‖	**PREV**	Backward by frame
‖	**PAUSE**	Pause
‖▶	**FORWARD**	Forward by frame
◀	**BACKWARD**	Backward palyback
▶	**PLAY**	Playback

3- 6 **Mouse**
USB mouse point will be shown after connecting to the DVR.

⬚	**Click on the right button**	Monitoring Mode / Move from Play Mode to Monitoring Menu / Pop up or remove Play Menu. Show sub-folder of the certain Menu window.
	Click on the left button	Select Menu.
	Double click on the left button	Select Menu.
	Click the left button and drag	Move a certain window.

3-7 **Jog/Shuttle**

It is useful to control playback.

Front image	Side image
Speed and direction control **Frame control**	
	※ Play Direction Control This is available in the playback mode. Turning the jog right/left plays forward/reverse frame by frame.
	※ Speed and Direction Control This is available in the playback mode. Turning the jog right/left plays forward/reverse x1/x2/x4/x30.

Chapter 4. DVR HDD Installation
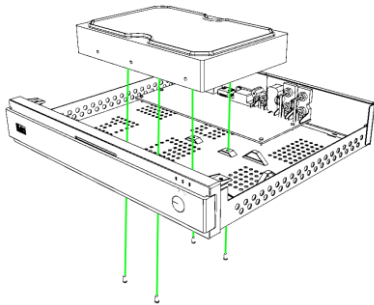
4-1 **Kute series HDD installation**
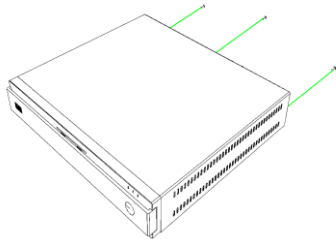
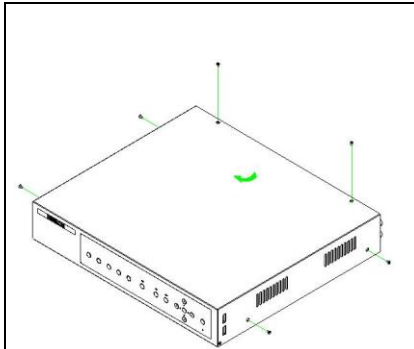|	
	※ Step 1 1) open the top case **⚠ Caution** 1) Normal termination of the system and fully unplugged power code are required before conducting HDD installation. 2) Touch a grounded metal substance or ground yourself before installing HDD in order to reduce static electricity. Static electricity may cause a malfunction of the product. 3) After installing HDD, Do not connect to power supply with the top case opened. The top case must be covered before usage.
	※ Step 2 2) Unscrew and separate the HDD bay from body. 3) Screw the additional HDD bay to current HDD bay 4) Connect HDD to HDD connector on the main board directly without cable. Reassemble the top case by reversing 1) to finalizing HDD installation.

4- 2 **Lite series HDD installation**

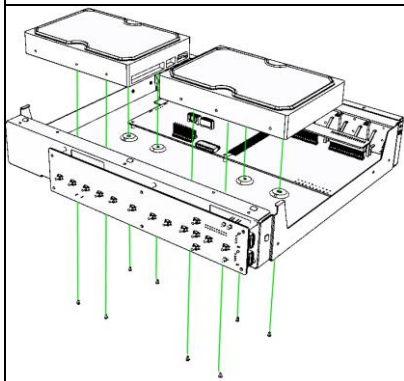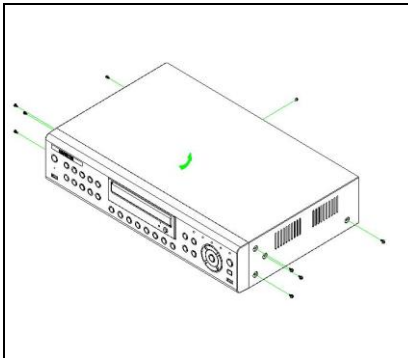|	
	※ Step 1 1) Open the top case by using screw driver. ⚠ **Caution** — 1) Normal termination of the system and fully unplugged power code are required before conducting HDD installation. 2) Touch a grounded metal substance or ground yourself before installing HDD in order to reduce static electricity. Static electricity may cause a malfunction of the product. 3) After installing HDD, Do not connect to power supply with the top case opened. The top case must be covered before usage.
	※ Step 2 2) Unscrew and separate the HDD bay from body. 3) Screw the additional HDD bay to current HDD bay 4) Connect HDD to HDD connector on the main board directly without cable. Reassemble the top case by reversing 1) to finalizing HDD installation.

4-3 **Blue series HDD installation**

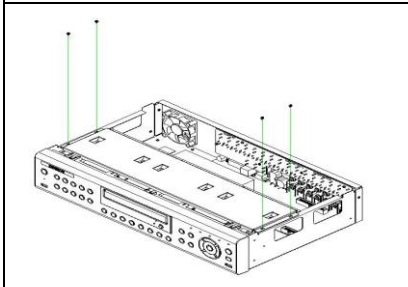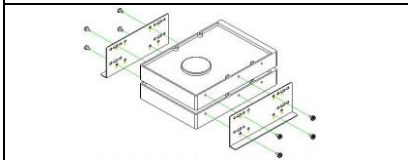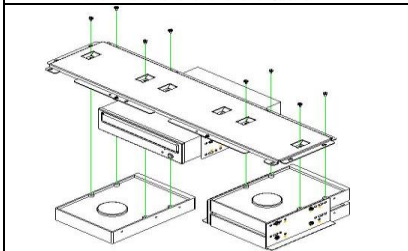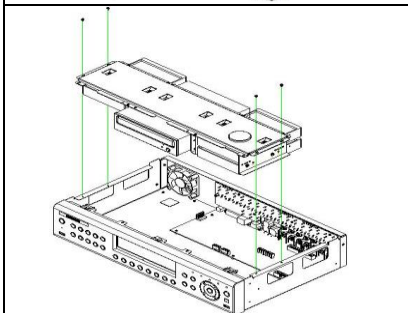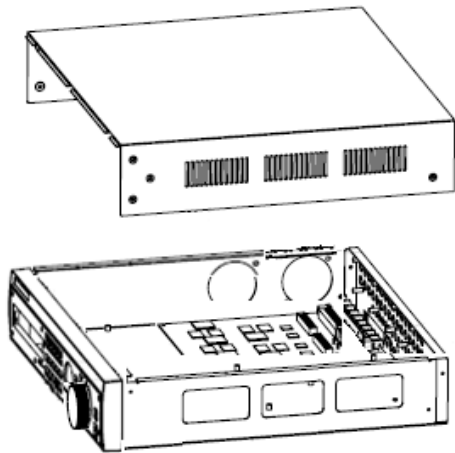|	
	※ Step 1 1) Open the top case by using screw driver. **Caution**: 1) Normal termination of the system and fully unplugged power code are required before conducting HDD installation. 2) Touch a grounded metal substance or ground yourself before installing HDD in order to reduce static electricity. Static electricity may cause a malfunction of the product. 3) After installing HDD, Do not connect to power supply with the top case opened. The top case must be covered before usage.
	※ Step 2 2) Unscrew and separate the HDD bay from body.
	※ Step 3 3) Screw the HDDs to the HDD bay.
	※ Step 4 4) As per the photo, Screw the HDD bay, HDD and DVD to the top bay.
	※ Step 5 5) Connect the power cable and data cable on HDDs and then reassemble the top case by reversing 1) to finalizing HDD installation.

4-4 **Deluxe series HDD installation**

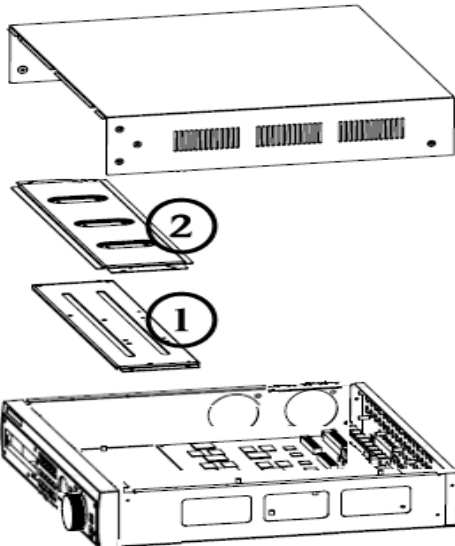|	
	※ Step 1 1) Using a screw driver, unscrew and take off the top case of the product. ⚠ **Caution** 1) Normal termination of the system and fully unplugged power code are required before conducting HDD installation. 2) After installing HDD, Do not connect to power supply with the top case opened. The top case must be covered before usage.
	※ Step 2 2) Using a screw driver, unscrew the fixing bolt of the top HDD bay ② and separate the top HDD bay② from the body. 3) Using a screw driver, unscrew the fixing bolt of the bottom HDD bay① and separate the bottom HDD bay① from the body.
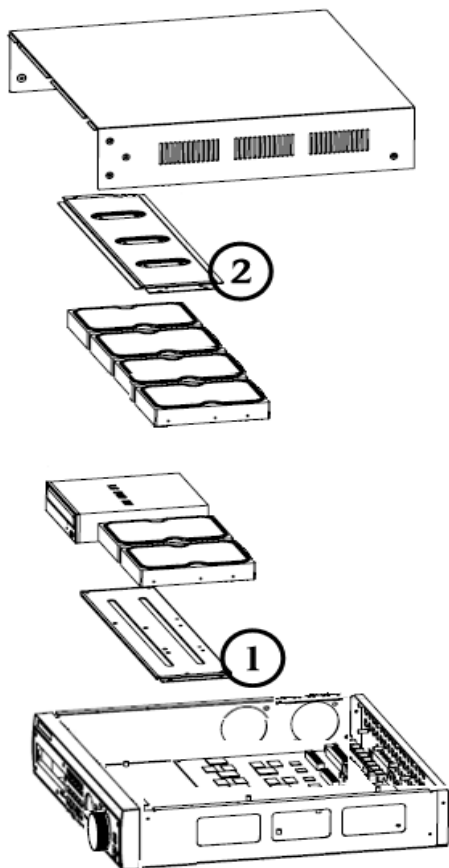
※ Step 3

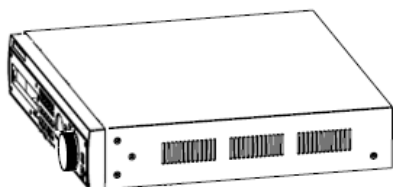4) Align screw holes and screw and fix HDD onto the bottom HDD bay①.

5) Align screw holes and screw and fix HDD onto the top HDD bay②

6) By reversing Step 2, combine both top② and bottom① HDD bay with the body.

⚠ Caution	1) HDD power and data terminal should face the inner direction.

※ Step 4

7) Reassemble the top case by reversing 1) to finalizing HDD installation.

APPENDIX

Recommended PTZ Camera Protocol

NO	Vendor	Model	Protocol
1	A.D.	ULTRA_7	SENSORMATIC
		ULTRA_8	
2	CHOU	COHU3925	COHU
3	Dongyang	Dongyang	DRX-500
			DY-255
4	DYNACOLOR	DSCP	DSCP
5	EYE VIEW	EYE VIEW	EYE VIEW
6	FINE SYSTEM	CRR-1600i/s	CRR-1600i/s
7	GE	GE	GE_KARATEL
8	GSP	GSP	CYBERSCAN_1
9	HITRON	FASTRAX2	FASTRAX2
10	HONEYWELL	SCANDOME2	HSDN-251
11	LG	LG	LG_MULTIX,
			LG_OLD
12	MIKAMI	MIKAMI	MIKAMI
13	ORIENTAL	ORX-1000	ORX-1000
14	PANASONIC	WVCS854	WVCS854
15	PELCO	PELCO	PELCO – D
			PELCO - P
16	PHILIPS	PHILIPS	PHILIPS
17	PROLINE	PROLINE	PROLINE_UK
18	RIFATRON	RIFATRON-1	RIFATRON
19	SAMSUNG TECHWIN	SAMSUNG	SPD-1600
			SCC641
20	SUNJIN	SUNJIN	SUNJIN
21	VICON	VICON	VICON
22	YOKO	YOKO	YOKO