

IP409

**COM Express TYPE6
Baseboard**

USER'S MANUAL

Version 1.0

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Table of Contents

Introduction	1
IP409 Specifications	1
Board Dimensions	3
Installations	4
Setting the Jumpers	5
Connectors on IP409	11

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Introduction

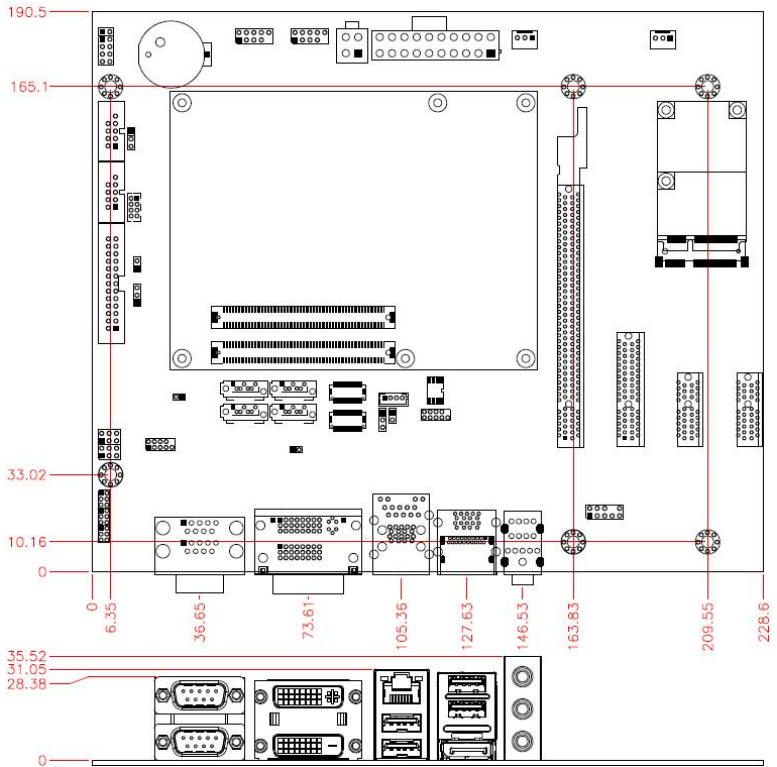
IP409 Specifications

Product Name	IP409(COM Express Rev. 2.1)
Form Factor	Flex ATX for COM Express CPU module(Pin-out Type 6) Compatible for COMe Basic(95 mm x 125mm) & Compact (95 mm x 95 mm)form factors
BIOS	AMI BIOS
Digital display interface	Derived from COM Express module (Max. VGA x 1, DDI x3) DVI-D x 1(Port #B); DVI-I x 1 (Port #C); DP x 1;
LVDS	Derived from COM Express module DF20-20 pins x 2 to support 18/24-bit dual channel
LAN	Derived from COM Express module as GbE #1
USB	Derived from COM Express module 4 x USB2.0 ports + 4 x USB 3.0
SATA	Derived from COM Express module 2 port SATA II + 2 x SATA III
Audio	Onboard ALC662 w/ 5.1 CH audio
Super I/O	Fintek F81846AD-I : COMx2 (RS232) , Parallel x 1, PS/2 KB/Mouse & Hardware monitor(3 x thermal inputs, 4 voltage monitor inputs, 2x fan headers)
Battery for RTC/CMOS	Lithium battery for RTC of COM Express module
Edge Connectors	Dual DB9 stack connector x 1 for COM1/2 (form super I/O) DVI-I + DVI-D stack connector x1 RJ45 + dual USB 3.0 stack connector x 1 Dual USB 3.0 stack connector + DP x 1 Audio connector x 1 (Line-in, Line-out & Mic.)
On Board Connectors / Headers	DF20-20pin x2 for LVDS 2x5 pin box-header x 2 for COM3/4 (From COMe, Tx/Rx only) DF11-10 pin connector x 1 for PS/2 KB/MS SATAIII [BLUE] connector x 2 SATAII connector x 2 2x5 pins header x2 for USB2.0 #3~#6 2x13 pins box header x 1 for Parallel 220-pin COM Express Type 6 connector x 2 3-pin FAN connector x1 for CPU Fan (No smart fan function) 3-pin FAN connector x 1 for SYS Fan (No smart fan function) 3 pins header for BIOS selection 8 pins BIOS socket

INTRODUCTION

Expansion	PCIe(16x) slot x 1 PCIe(4x) slot x 1 PCIe(1x) slot x 2 MiniPClex1 (Full-sized, reserve one hole for half-sized mounting ; PCI-Express signal only, no USB signal)
Power Connector	20+4 pins connector for ATX
Others	Fixed stand-offs for COMe Basic & Compact module Compatible for ET950
Operation Temperature	0°C~60°C
Storage Temperature	-20°C~80°C
Relative Humidity	10% ~ 90% (non-condensing)
RoHS Compliant	Yes
Board Size	190mm x 228mm

Board Dimensions



Installations

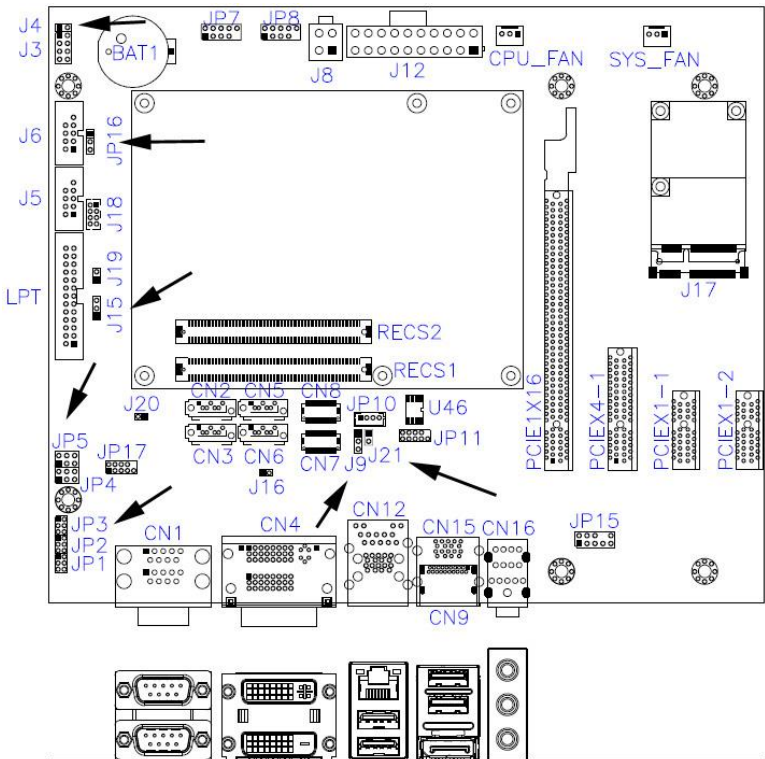
This section provides information on how to use the jumpers and connectors on the IP409 in order to set up a workable system. The topics covered are:

Setting the Jumpers.....	5
Connectors on IP409	11

Setting the Jumpers

Jumpers are used on IP409 to select various settings and features according to your needs and applications. Contact your supplier if you have doubts about the best configuration for your needs. The following lists the connectors on IP409 and their respective functions.

JP1, JP2, JP3: RS232/422/485 (COM1) Selection	6
JP4: COM1 RS232 +5V/+12V Power Setting.....	6
JP5: COM2 RS232 +5V/+12V Power Setting.....	7
JP16: PS2 mouse/keyboard Power Setting	8
J4: AT/ATX Power Setting.....	8
J9: LVDS Panel Power	8
J15: BIOS Boot Select.....	9
J21: LVDS Backlight Power Setting	9



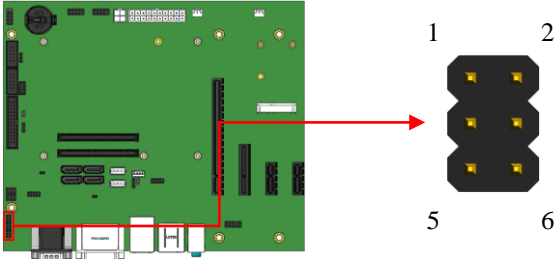
INSTALLATIONS

JP1, JP2, JP3: RS232/422/485 (COM1) Selection

COM2~COM4 are fixed for RS-232 use only.

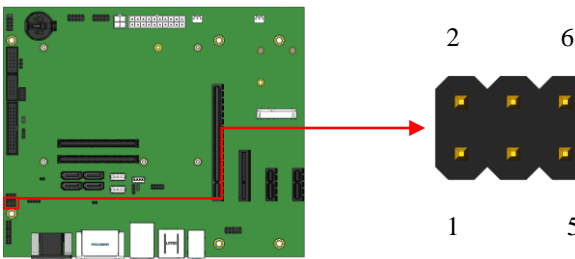
COM1 is selectable for RS232, RS-422 and RS-485.

The following table describes the jumper settings for COM1 selection.



COM1 Function	RS-232	RS-422	RS-485
Jumper Setting (pin closed)	JP1: 3-5 & 4-6	JP1: 1-3 & 2-4	JP1: 1-3 & 2-4
	JP3: 3-5 & 4-6	JP3: 1-3 & 2-4	JP3: 1-3 & 2-4
	JP2: 1-2	JP2: 3-4	JP2: 5-6

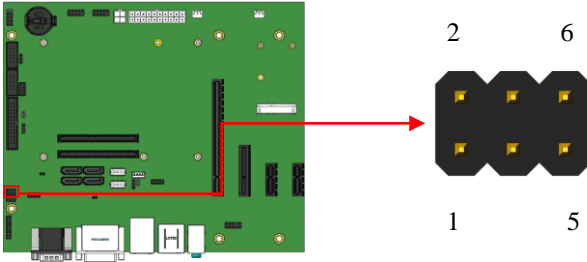
JP4: COM1 RS232 +5V/+12V Power Setting



JP4	Setting	Function
	Pin 1-3 Short/Closed	+12V(500mA)
	Pin 3-4 Short/Closed	Normal

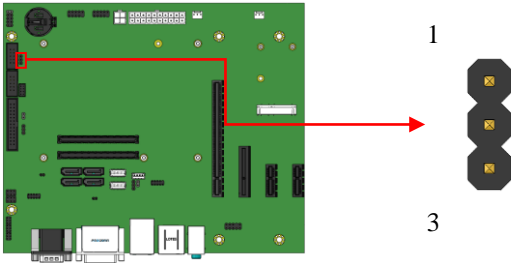
	Pin 3-5 Short/Closed	+5V(500mA)
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JP5: COM2 RS232 +5V/+12V Power Setting



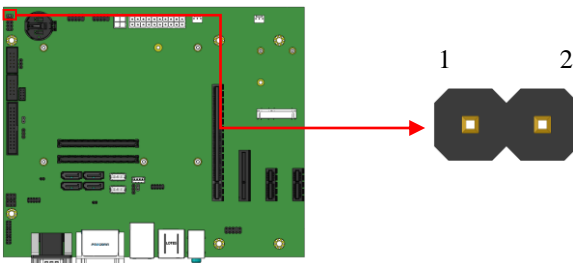
JP5	Setting	Function
	Pin 1-3 Short/Closed	+12V(500mA)
	Pin 3-4 Short/Closed	Normal
	Pin 3-5 Short/Closed	+5V(500mA)

JP16: PS2 mouse/keyboard Power Setting(2.54mm)



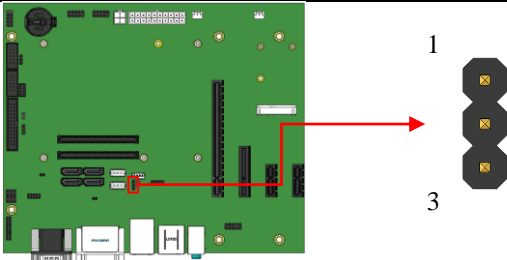
JP16	Setting	Function
	Pin 1-2 Short/Closed	+5VSB
	Pin 2-3 Short/Closed	+5V



J4: AT/ATX Power Setting



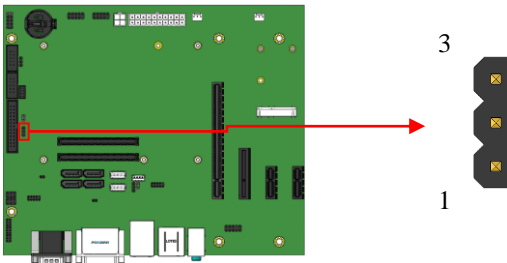
J4	Power Type
Open	ATX (Default)
Close	AT



J9: LVDS Panel Power



J9	LVDS Panel Power
	+3.3V (default)
	+5V

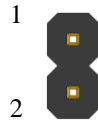
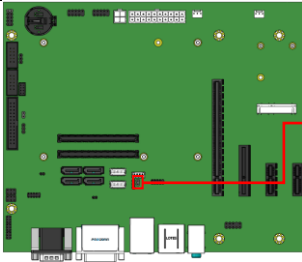
J15: BIOS Boot Select



J15	Setting	Function
	Pin 1-2 Short/Closed	M/B
	Pin 2-3 Short/Closed	Baseboard

J21: LVDS Backlight Power Setting

INSTALLATIONS



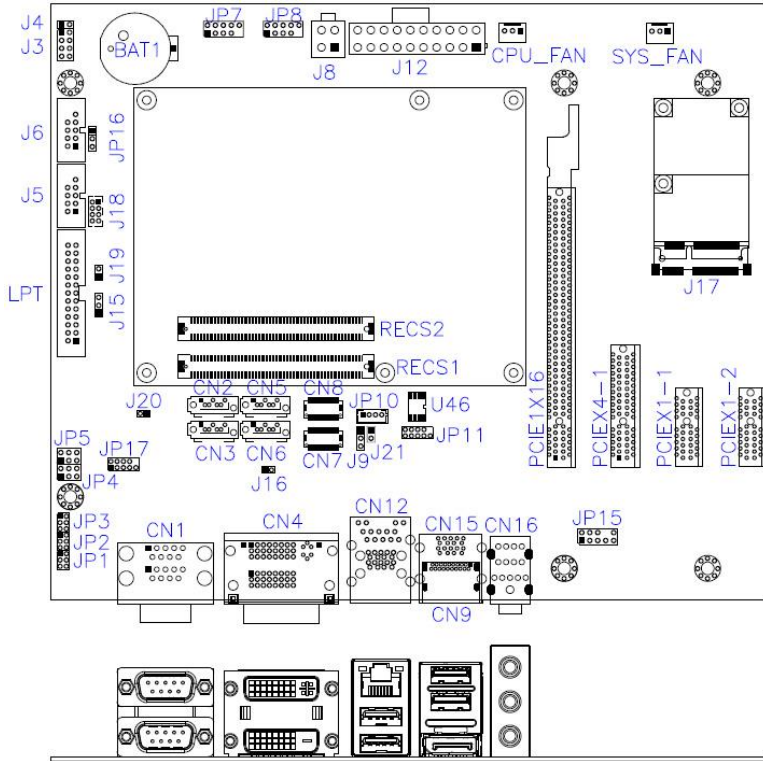
J10	Power
Open	+3.3V (default)
Close	+5V

Connectors on IP409

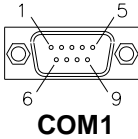
The connectors on IP409 allows you to connect external devices such as keyboard, floppy disk drives, hard disk drives, printers, etc. The following table lists the connectors on IP409 and their respective functions.

Connector Locations on IP409	12
CN1A, CN1B: COM1(UP) and COM2(DOWN) Connector	13
CN2,CN5: SATA2-IDE Connector	13
CN3,CN6: SATA3-IDE Connector	13
CN4A, CN4B: DVI-I(UP) and DVI-D(DOWN) Connector.....	13
CN7(CH1), CN8(CH2): LVDS Connector.....	13
CN12: GbE_1 RJ-45 and USB3.0 2/3 Ports.....	13
CN15: DP and USB3.0 0/1 Ports.....	13
CN16: Audio Connector.....	14
J3: System Function Connector	15
J6(COM4),J5(COM3): Serial Ports.....	15
J8: ATX 12V Power Connector.....	16
JP8, JP7: USB4/5, USB6/7 Port Pin Header	16
JP10: Panel Inverter Power Connector.....	17
J12: ATX Power Supply Connector	17
JP15: Audio Pin Header for Chassis Front Panel	17
J17: Mini PCIE Slot.....	18
J18: PS/2 Keyboard and PS/2 Mouse Connectors	18
LPT: Parallel Port Connector	19
CPU_FAN: CPU Fan Power Connector	19
SYS_FAN: System Fan Power Connector	20
PCIEX1-1,PCIEX1-2: PCI- E(x1) Connector	21
PCIEX4-1: PCI- E(x4) Connector	21
PCIEX16-1: PCI- E(x16) Connector	21
FAN2, FAN 3, FAN 4: For FAN.....	21
FAN5: Fan Connector.....	21
RECS1, RECS2: COM Express Connector	21

Connector Locations on IP409



CN1A, CN1B: COM1(UP) and COM2(DOWN) Connector



Signal Name	Pin #	Pin #	Signal Name
DCD	1	6	DSR
RXD	2	7	RTS
TXD	3	8	CTS
DTR	4	9	RI
GND	5	10	Not Used

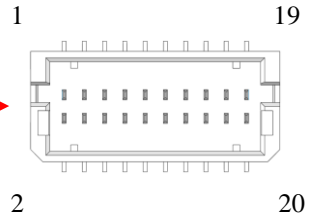
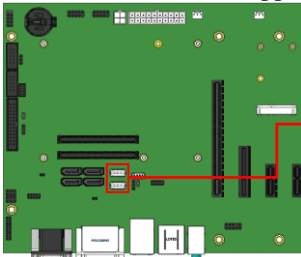
CN2,CN5: SATA2-IDE Connector

CN3,CN6: SATA3-IDE Connector

CN4A, CN4B: DVI-I(UP) and DVI-D(DOWN) Connector

CN7(CH1), CN8(CH2): LVDS Connector

The LVDS connector supports single-channel 18-bit or 24-bit displays.



Signal Name	Pin #	Pin #	Signal Name
TX0N	2	1	TX0P
Ground	4	3	Ground
TX1N	6	5	TX1P
Ground	8	7	Ground
TX2N	10	9	TX2P
Ground	12	11	Ground
CLKN	14	13	CLKP
Ground	16	15	Ground
TX3N	18	17	TX3P
Power	20	19	Power

CN12: GbE_1 RJ-45 and USB3.0 2/3 Ports

CN15: DP and USB3.0 0/1 Ports

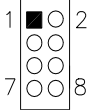
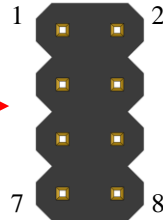
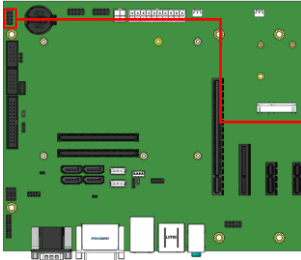
INSTALLATIONS

CN16: Audio Connector

The audio connector, from top to bottom, is composed of Line in, Line out and Microphone jacks.

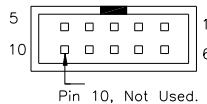
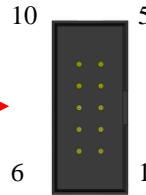
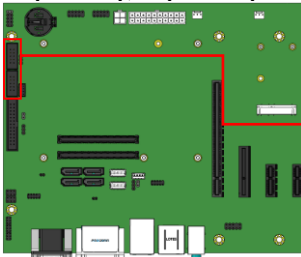
J3: System Function Connector

J3 provides connectors for system indicators that provide light indication of the computer activities and switches to change the computer status. J3 is a 8-pin header that provides interfaces for the following functions.



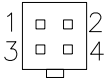
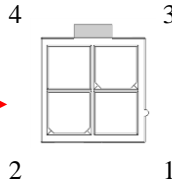
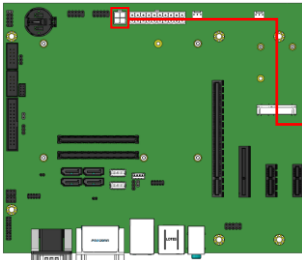
Signal Name	Pin #	Pin #	Signal Name
Power BTN	1	2	Power BTN
HDD LED+	3	4	HDD LED-
Reset BTN	5	6	Reset BTN
Power LED+	7	8	Power LED-

J6(COM4),J5(COM3): Serial Ports (0151-2011009 K10 E-CALL)



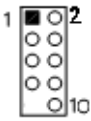
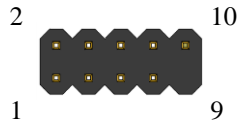
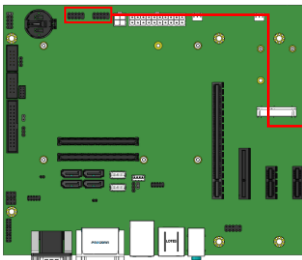
Signal Name	Pin #	Pin #	Signal Name
NC	1	6	NC
RXD, Receive data	2	7	NC
TXD, Transmit data	3	8	NC
NC	4	9	NC
NC	5	10	NC

J8: ATX 12V Power Connector



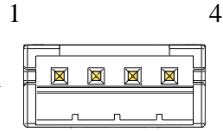
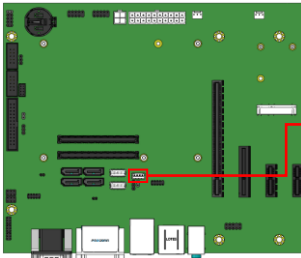
Signal Name	Pin #	Pin #	Signal Name
+12V	3	1	Ground
+12V	4	2	Ground

JP8, JP7: USB4/5, USB6/7 Port Pin Header 2.54mm



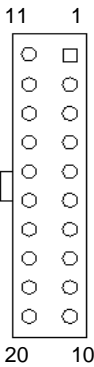
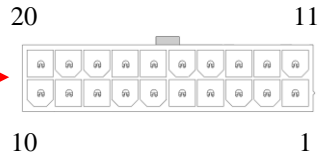
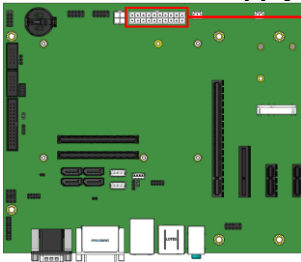
Signal Name	Pin #	Pin #	Signal Name
Vcc	1	2	Vcc
D0-	3	4	D1-
D0+	5	6	D1+
Ground	7	8	Ground
Key Pin	9	10	NC

JP10: Panel Inverter Power Connector JST B4B-PH-K-S



Pin #	Signal Name
1	+12V(2A)
2	Backlight Enable
3	ADJ
4	Ground

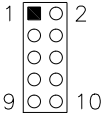
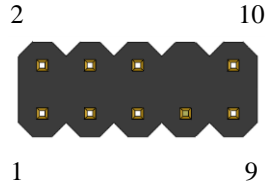
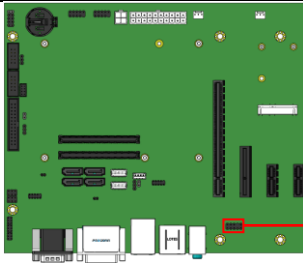
J12: ATX Power Supply Connector



Signal Name	Pin #	Pin #	Signal Name
3.3V	11	1	3.3V
-12V	12	2	3.3V
Ground	13	3	Ground
PS-ON	14	4	+5V
Ground	15	5	Ground
Ground	16	6	+5V
Ground	17	7	Ground
-5V	18	8	Power good
+5V	19	9	5VSB
+5V	20	10	+12V

JP15: Audio Pin Header for Chassis Front Panel 2.54mm

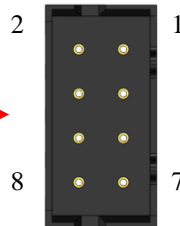
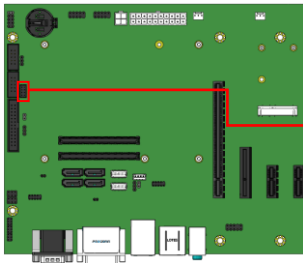
INSTALLATIONS



Signal Name	Pin #	Pin #	Signal Name
MIC IN_L	1	2	Ground
MIC IN_R	3	4	DET
LINE_R	5	6	Ground
Sense	7	8	Key Pin
LINE_L	9	10	Ground

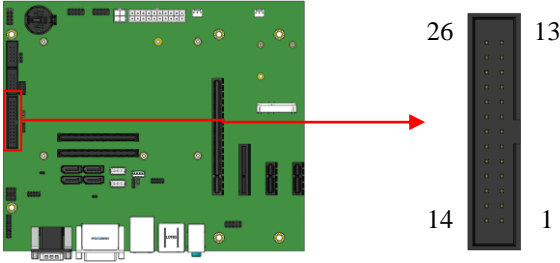
J17: Mini PCIE Slot

J18: PS/2 Keyboard and PS/2 Mouse Connectors (DF11-8S-PA66H HUGO)

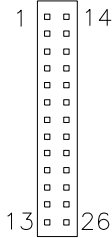


Signal Name	Pin #	Pin #	Signal Name
5V	1	2	5V
Mouse data	3	4	Keyboard data
Mouse clock	5	6	Keyboard clock
GND	7	8	GND

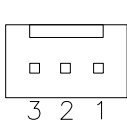
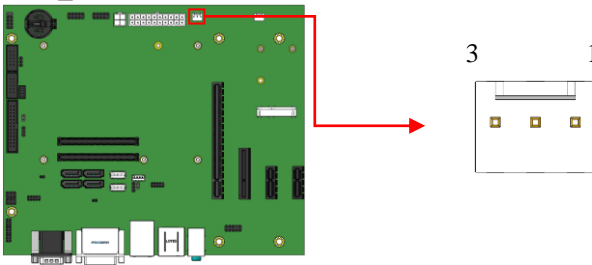
LPT: Parallel Port Connector (F-WBOX-26RN)



Signal Name	Pin #	Pin #	Signal Name
Line printer strobe	1	14	AutoFeed
PD0, parallel data 0	2	15	Error
PD1, parallel data 1	3	16	Initialize
PD2, parallel data 2	4	17	Select
PD3, parallel data 3	5	18	Ground
PD4, parallel data 4	6	19	Ground
PD5, parallel data 5	7	20	Ground
PD6, parallel data 6	8	21	Ground
PD7, parallel data 7	9	22	Ground
ACK, acknowledge	10	23	Ground
Busy	11	24	Ground
Paper empty	12	25	Ground
Select	13	26	N/A



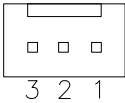
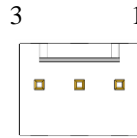
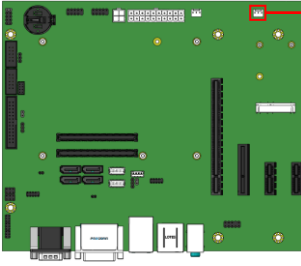
CPU_FAN: CPU Fan Power Connector



Pin #	Signal Name
1	Ground
2	+12V
3	Rotation detection

INSTALLATIONS

SYS_FAN: System Fan Power Connector



Pin #	Signal Name
1	Ground
2	+12V
3	NC

PCIEX1-1,PCIEX1-2: PCI- E(x1) Connector

PCIEX4-1: PCI- E(x4) Connector

PCIEX16-1: PCI- E(x16) Connector

FAN2, FAN 3, FAN 4: For FAN



Pin #	Signal Name
1	FAN+
2	FAN-

FAN5: Fan Connector



Pin #	Signal Name
1	FAN+
2	NC
3	FAN-

RECS1, RECS2: COM Express Connector

