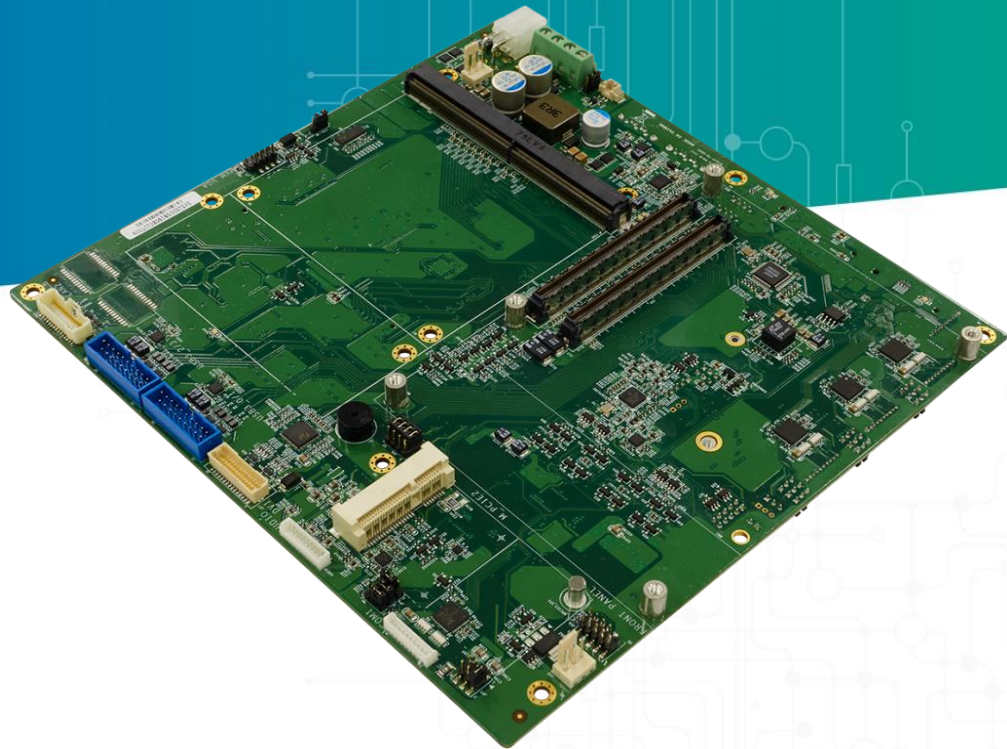


# COM Express®

# Type 6 Carrier Board

+ MXM Graphics System +PCIe/104



## MEZZANINE STRUCTURE COMPUTER

- High-End CPUs with latest generation x86 processors in a ruggedized small form factor
- Standard MXM Version 3.1 Support
- PCI/104 Express Expansion Slot for Modular Open Structure
- Extreme Temperature Support -40~+85 degree

## Instructions

COM Express, a computer-on-module (COM) form factor, is a highly integrated and compact PC that can be used in a design application much like an integrated circuit component. The COM Express Module integrates core CPU and memory functionality, the common I/O of a PC/AT, USB, audio, graphics (PEG), and Ethernet.

SK515 feature a range of Intel processors, up to the latest Intel Core series. SK515 are built to operate in harsh environmental conditions, the operating temperatures as low as -40°C to as hot as 85°C. From low power consumption to high performance processing power, SK515 are built to suit a wide range of computing applications from signal processing to unmanned vehicles and more.

## Specifications

### SYSTEM

COM Express	9th CPU Intel® Xeon® E-2276ME ( 45W Coffee Lake 9th Gen, 6 x 2.8 / 4.5 GHz, 12MB cache)
CPU	9th CPU Intel® Xeon® E-2276ML (25W Coffee Lake 9th Gen, 6 x 2.0 / 4.2 GHz, 12MB cache)
Options(Type6)	9th CPU Intel® Core™ i7-9850HE (45W Coffee Lake 9th Gen, 6 x 2.7 / 4.4 GHz, 9MB cache) 9th CPU Intel® Core™ i7-9850HL (25W Coffee Lake 9th Gen, 6 x 1.9 / 4.1 GHz, 9MB cache) Intel® Core™ i7-7820EQ (KabyLake 7th Gen, 4 x 3.0/3.7 GHz,8MB cache,45W) Intel® Core™ i7-6820EQ (SkyLake 6th Gen, 4 x 2.0/2.8 GHz,8MB cache,25W) Intel® Xeon® E3-1505L v6 (KabyLake 6th Gen, 4 x 2.2/3.0 GHz, 8MB cache,25W) Intel® Xeon® E3-1505M v6 (KabyLake 6th Gen, 4 x 3.0/4.0 GHz,8MB cache,45W)

COM Express	Express-BD7-D1559 Basic COM Express Type7 module with Intel Broadwell-DE
CPU	D1559, 12C (eTEMP)
Options(Type7)	Express-BD7-D1539 Basic COM Express Type7 module with Intel Broadwell-DE D1539, 8C (eTEMP) Express-BD7-D1519 Basic COM Express Type7 module with Intel Broadwell-DE D1519, 4C (eTEMP) Express-BD7-D1577 Basic COM Express Type7 module with Intel Broadwell-DE D1577, 16C Express-BD7-D1548 Basic COM Express Type7 module with Intel Broadwell-DE D1548, 8C Express-BD7-D1527 Basic COM Express Type7 module with Intel Broadwell-DE D1527, 4C Express-BD7-D1508 Basic COM Express Type7 module with Intel Broadwell-DE D1508, 2C

Compatibility	COM Express® TYPE 6/7
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### DISPLAY

Display Port	2 x Display port form COM Express, 4 x outputs from GPU, 6 x total
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VGA	1 x output from COM Express
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LVDS	1x18-24-bit LVDS
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## EXPANSION

M.2	1 x 2280 M key (SATA only)
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mini PCIe	2 x Full-size mini PCIe
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PCIe/104	4 x PCIe x 1
	1 x PCIe x 4
	5 x USB 2.0
	1 x LPC
	1 x SPI

## ETHERNET

Ethernet	Dual Gigabit (10/100/1000) Ports
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## INTERFACE

USB	4 x USB 3.0
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Serial Port	4 x RS232/422/485
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Audio	2 x 3.5mm Audio Jacks (1 x MIC, 1 x Line-Out)
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Input Power: SYS	9~36V (4P Terminal Block)
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Input Power: MXM	12V (ATX AP)
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## MECHANICAL AND ENVIRONMENTAL

Power Type	DC-IN 9~36V
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Dimension	160 x 185 mm
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Operating Temp	-40 to 85°C
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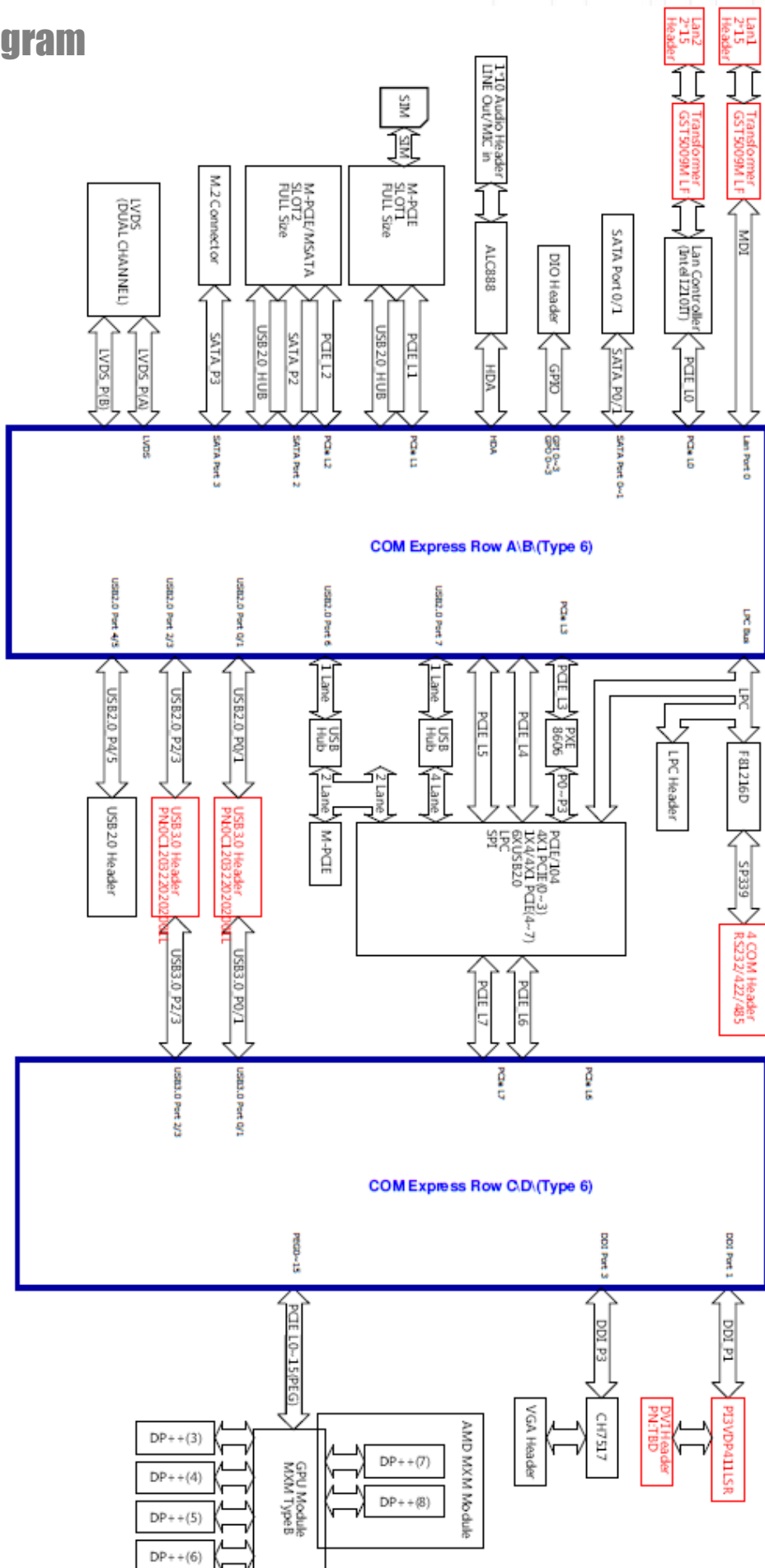
Storage Temp	-40 to 85°C
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Relative Humidity	15% to 95%, non-condensing
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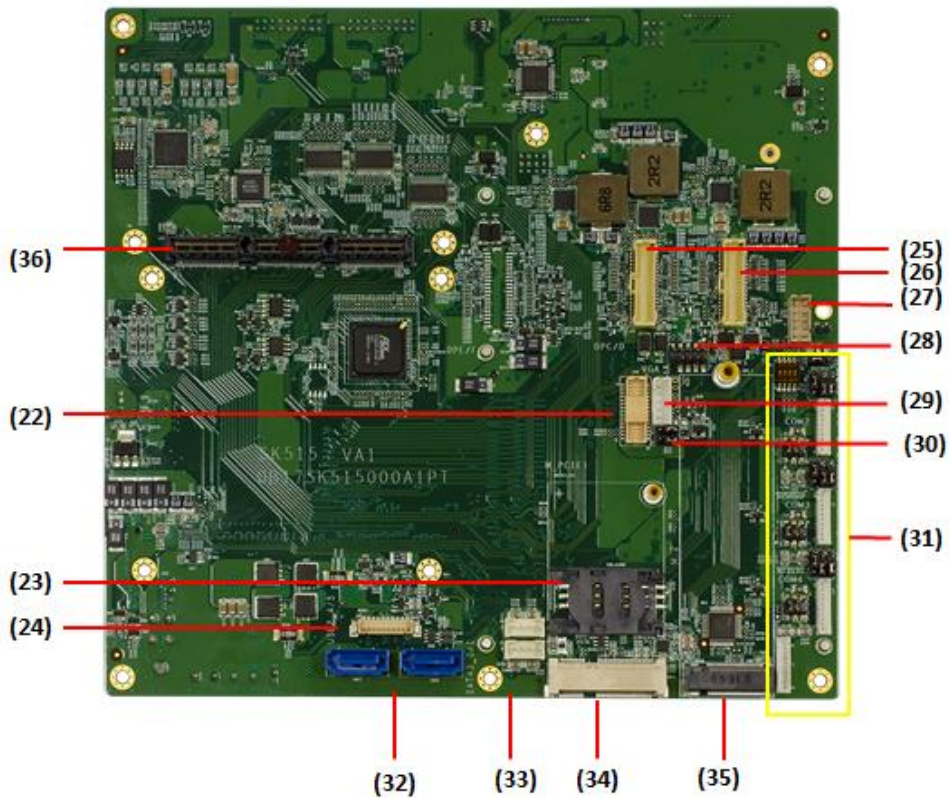
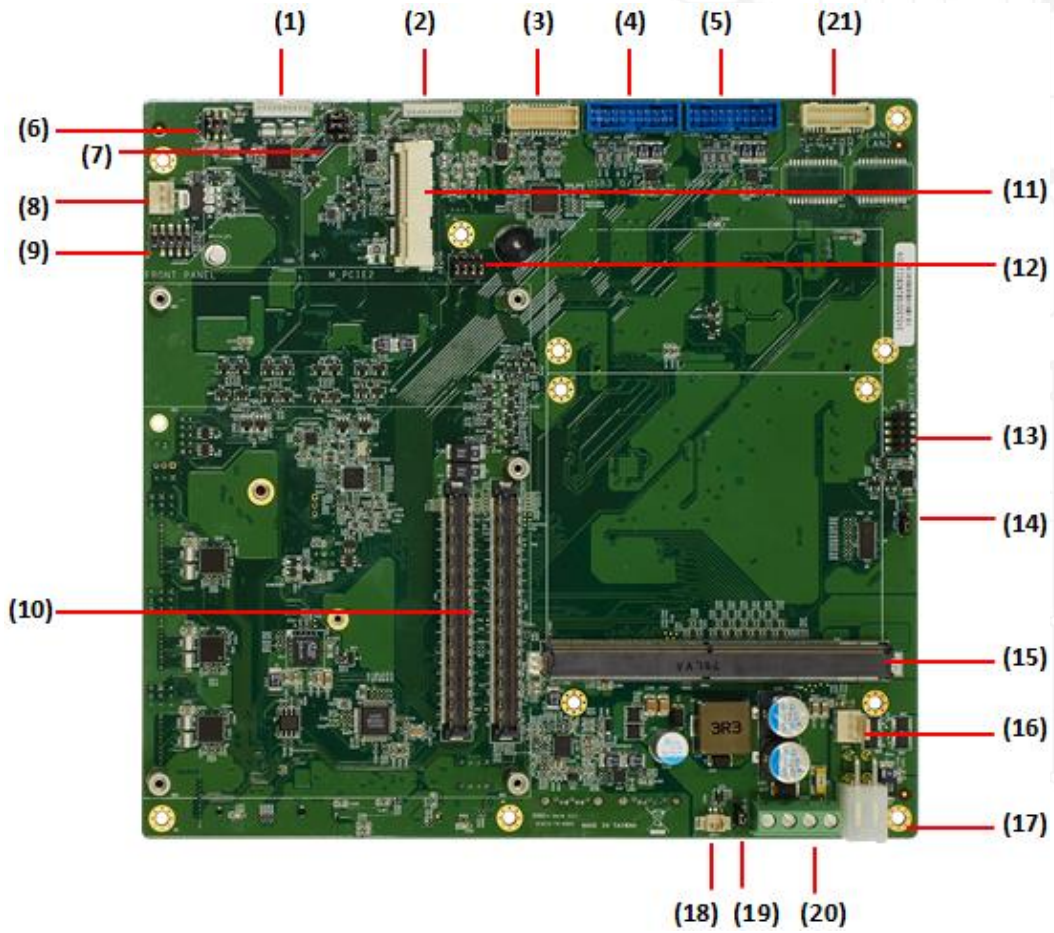
## Ordering Information

Model	No.	Description
SK515	S51501	SK506 LAN port Module
SK515	S51502	SK401 PCIe Module
SK515	S51503	SK303 COM port Module
SK515	S51504	SK1050-NVIDIA GTX1050Ti MXM 3.1 Graphics Module
SK515	S51505	SK1660S-NVIDIA GTX1600SUPER MXM 3.1 Graphics Module

## Block Diagram



## Dimension



1	J26
2	AUDIO (MIC-In/LINE-Out)
3	J27
4	JUSB3_1
5	JUSB3_2
6	JP7
7	JP8,JP9,JP10
8	J22
9	J23
10	CN1, CN2 (COM Express connector)
11	CN15 (miniPCIe)
12	JP6
13	J20
14	JP30
15	MXM1
16	J25
17	CN21
18	JBAT1
19	JP28
20	DCIN
21	LAN1 (LAN1/LAN2)
22	J10
23	SIM_CARD1
24	J15
25	J18 (DPC/D)
26	J17 (DPA/B)
27	J9
28	J8
29	J11
30	JP23, JP24
31	See page 8~9
32	CN26, CN27
33	J2, J3
34	CN14
35	CN3
36	STACKPC1

## CPU/GPU Table

All Operating Temperature meet from 0°C to +55°C.  
 Could Customize the Operating Temperature from -40°C to +70°C.

### CPU Products List

	CPU		SPEC
9th CPU	Intel® Xeon® E-2276ME	45W	Coffee Lake 9th Gen, 6 x 2.8 / 4.5 GHz, 12MB cache
9th CPU	Intel® Xeon® E-2276ML	25W	Coffee Lake 9th Gen, 6 x 2.0 / 4.2 GHz, 12MB cache
9th CPU	Intel® Core™ i7-9850HE	45W	Coffee Lake 9th Gen, 6 x 2.7 / 4.4 GHz, 9MB cache
9th CPU	Intel® Core™ i7-9850HL	25W	Coffee Lake 9th Gen, 6 x 1.9 / 4.1 GHz, 9MB cache
7th CPU	Intel® Core™ i7-7820EQ	45W	Kaby Lake 7th Gen, 4 x 3.0 / 3.7 GHz, 8MB cache
6th CPU	Intel® Core™ i7-6822EQ	25W	Sky Lake 6th Gen, 4 x 2.0 / 2.8 GHz, 8MB cache
6th CPU	Intel® Core™ i7-6820EQ	25W	Sky Lake 6th Gen, 4 x 2.0 / 2.8 GHz, 8MB cache
6th CPU	Intel® Xeon® E3-1505M v6	45W	Kaby Lake 6th Gen, 4 x 3.0 / 4.0 GHz, 8MB cache
6th CPU	Intel® Xeon® E3-1505L v6	25W	Kaby Lake 6th Gen, 4 x 2.2 / 3.0 GHz, 8MB cache

### GPU Products List

GPU	CUDA Cores		Average Score
NVIDIA® GeForce™ RTX 2060	1920 CUDA Core	160W	14732
NVIDIA® Quadro® P5000	2560 CUDA core	180W	12040
NVIDIA® Quadro® P3000	1280 CUDA core	75W	6522
NVIDIA® GeForce™ GTX 1080	2560 CUDA Core	180W	14691
NVIDIA® GeForce™ GTX 1660SUPER	1408 CUDA Core	120W	12705
NVIDIA® GeForce™ GTX 1050Ti	768 CUDA Core	75W	6431
NVIDIA® GeForce™ GTX 1050	640 CUDA Core	75W	5701
SK210-GT730M-StackPC	384 CUDA Core	49W	807