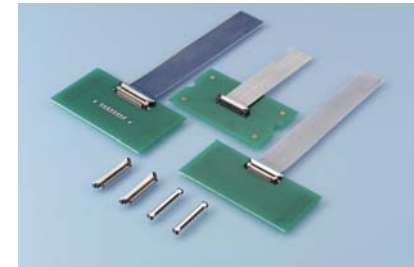
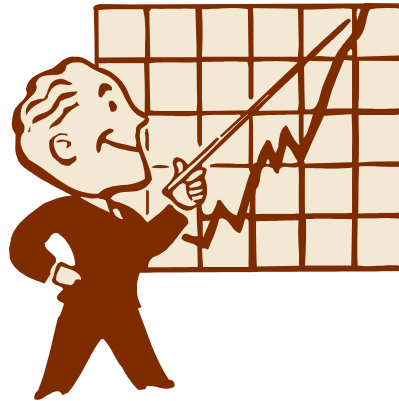




# *KEL APPLICATION NOTE*



***KEL CORPORATION***

# CONTENTS

- *Monitor Entertainment*
- *Image Processing*
- *DLP Projector*
- *NotePC Entertainment*
- *Car Navigation Entertainment*
- *Communications*
- *Wimax ODU/IDU*
- *Test Equipments*
- *Motion Controls*
- *Multifunction Peripherals*
- *Gaming Machine*
- *Medical Machine*

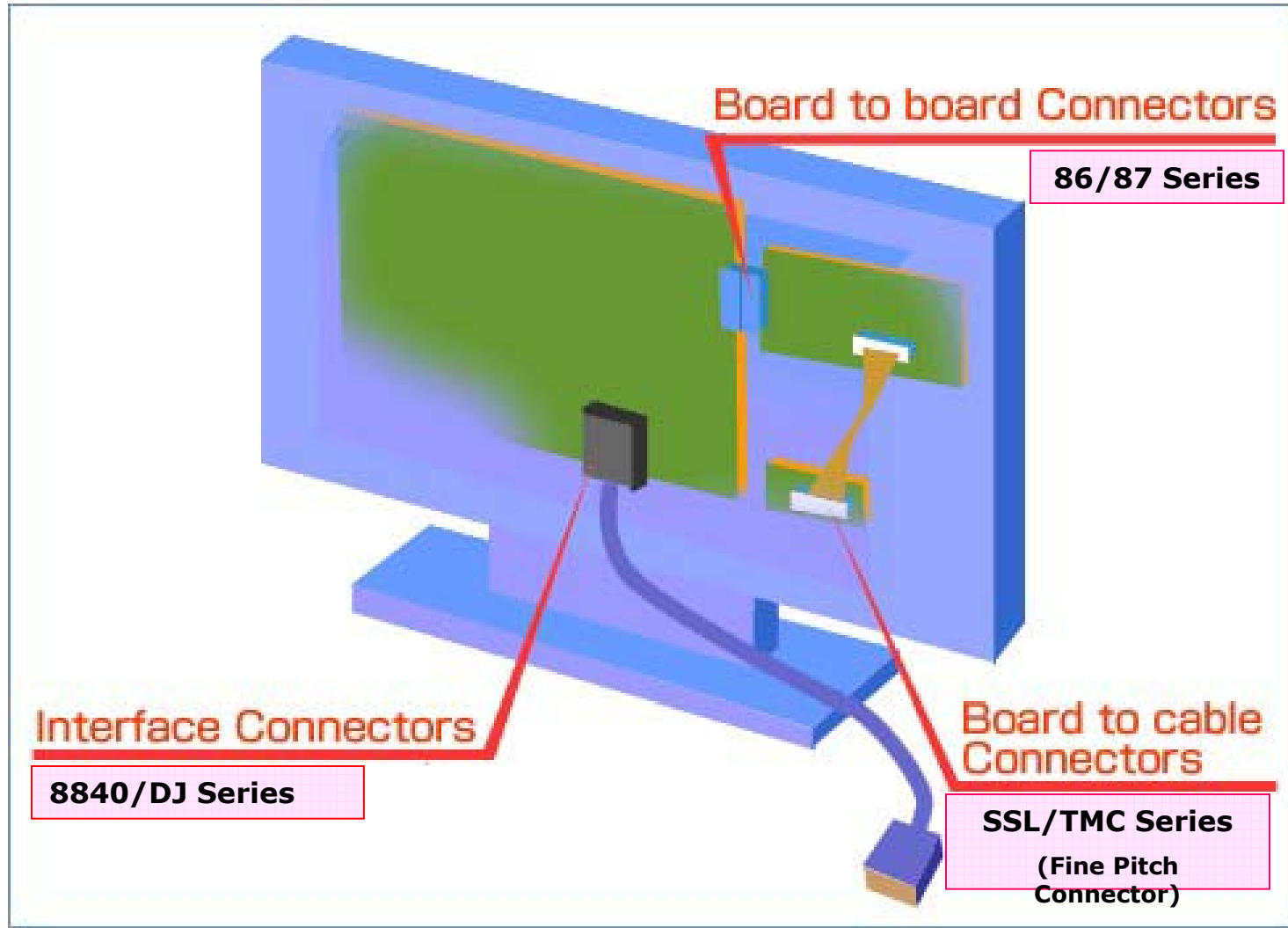


***KEL Products Applications  
for  
Monitor Entertainment***

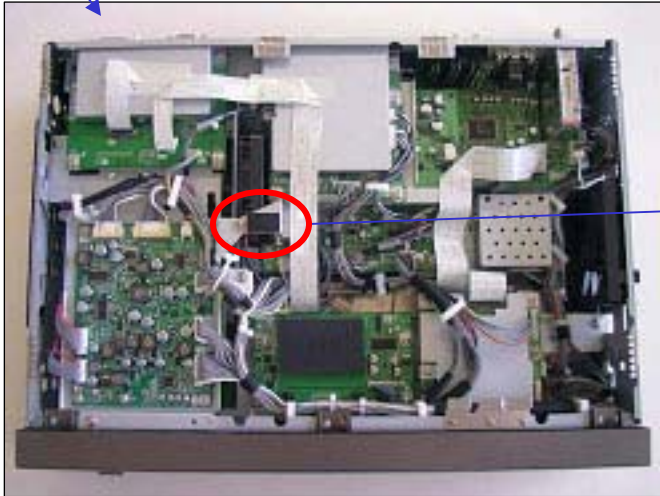
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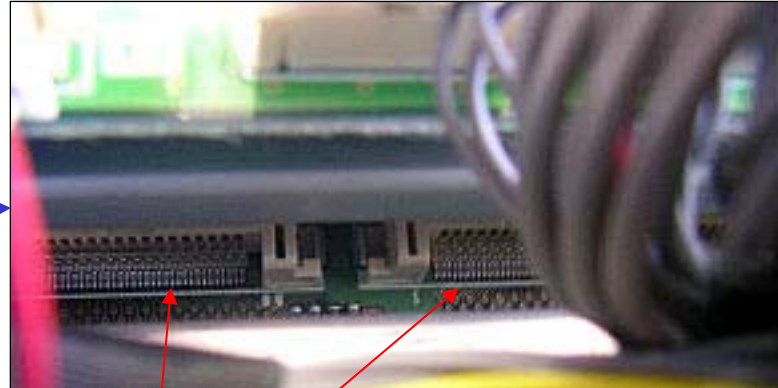
# LCD TV/Monitor



**LCD TV**



TV Receiver



87 series BTB

# ***KEL Products Applications for Image Processing***

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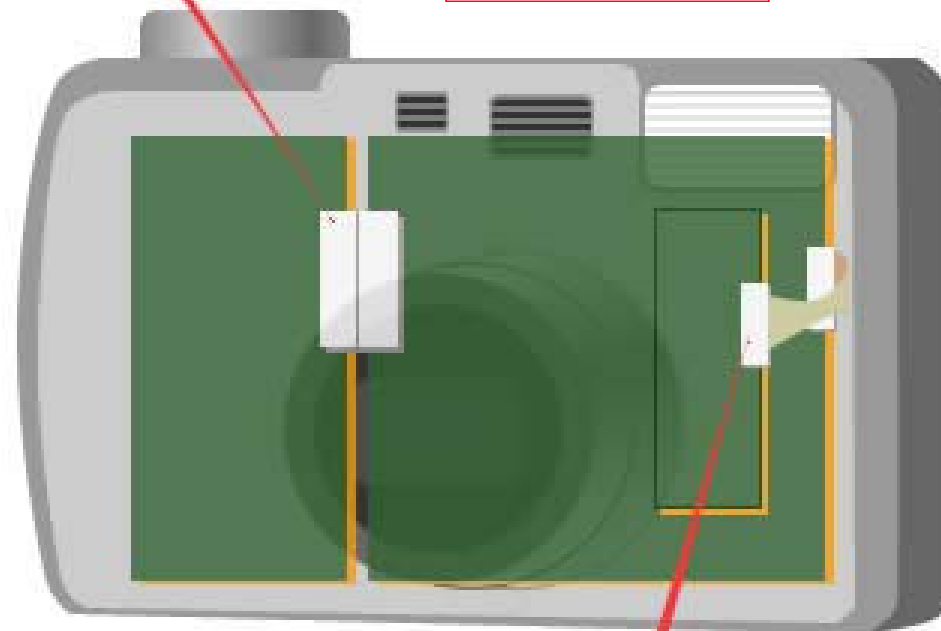


# Digital Still Camera



Board to board Connectors

DY/DG series

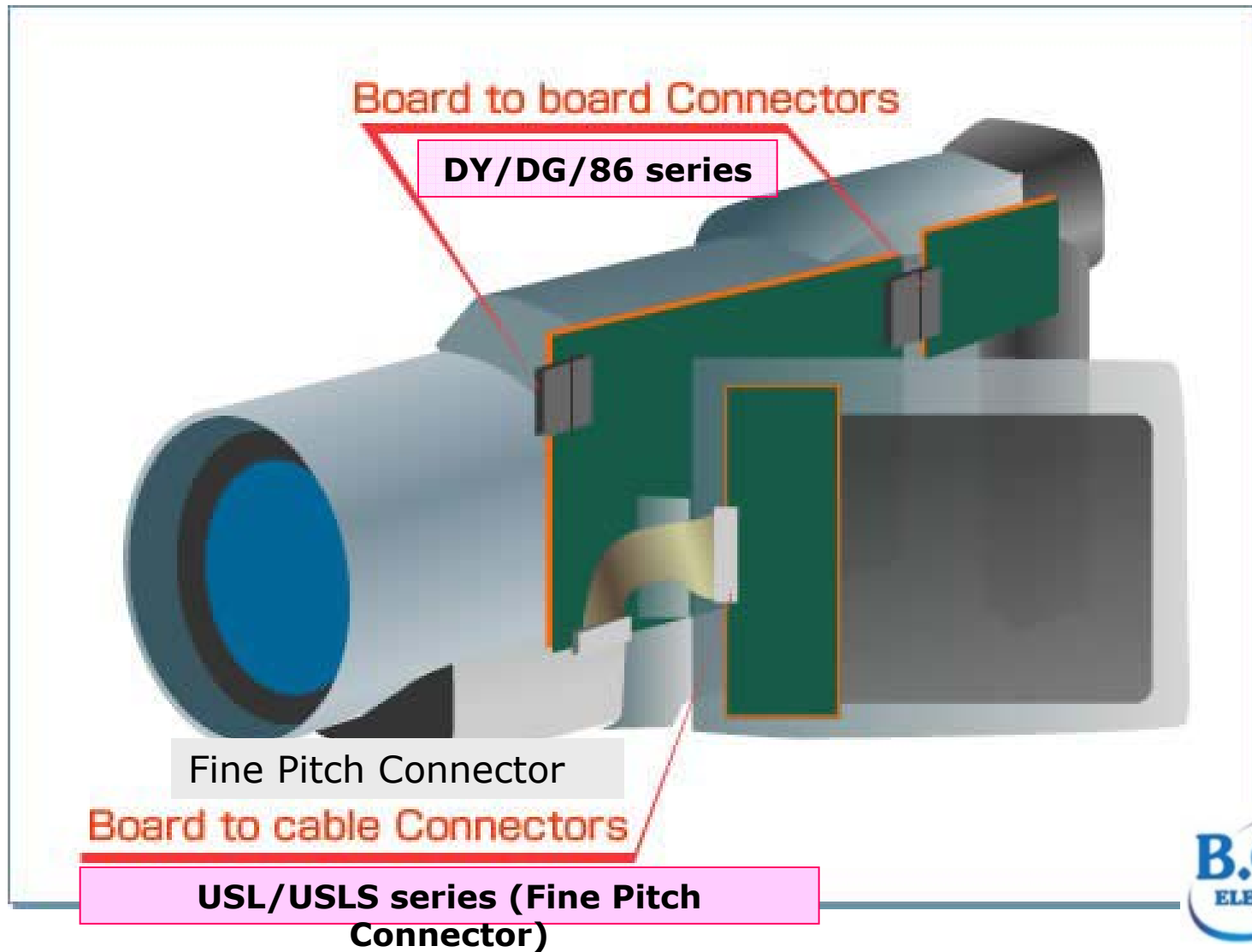


Board to cable Connectors

DCC/USL/XSL series (WTB Connector)

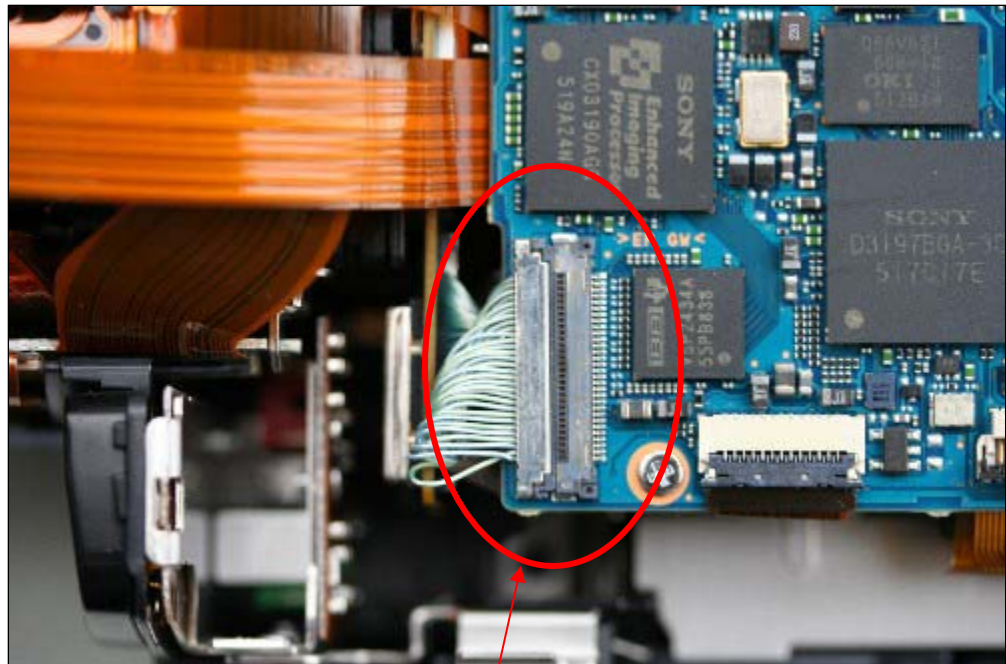
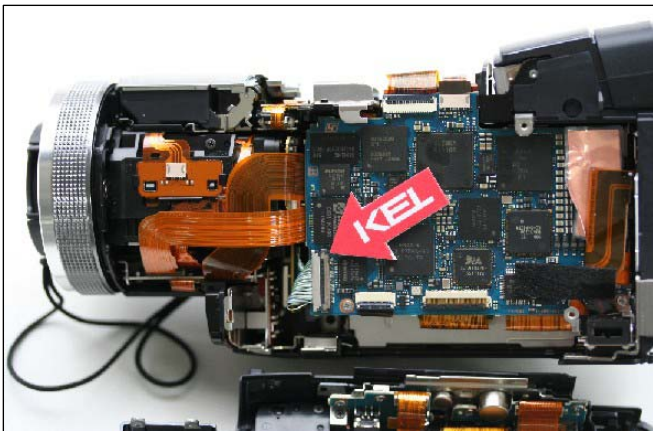
# Digital Video Camera

BTB Connector





**Hi-vision DVC**

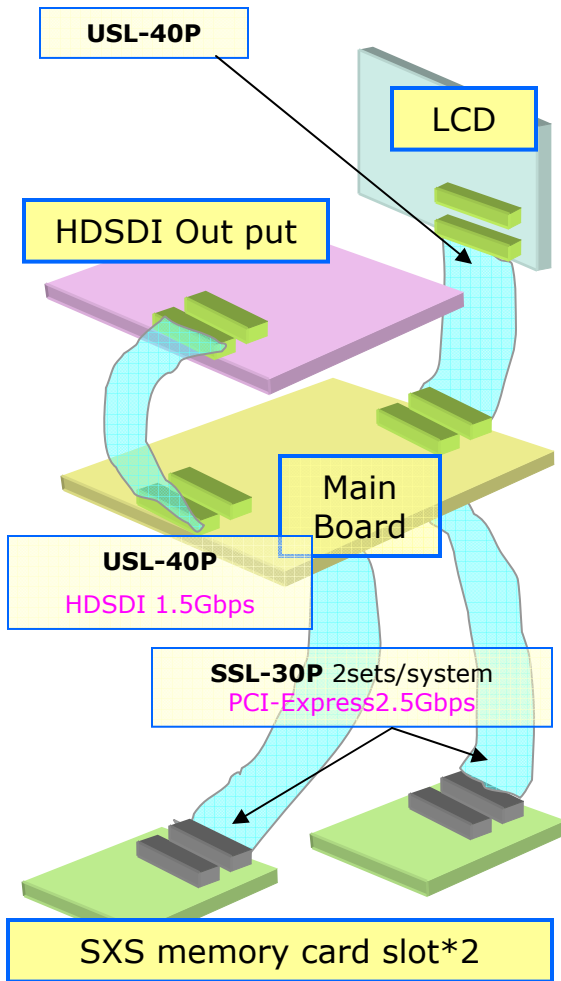


USL series

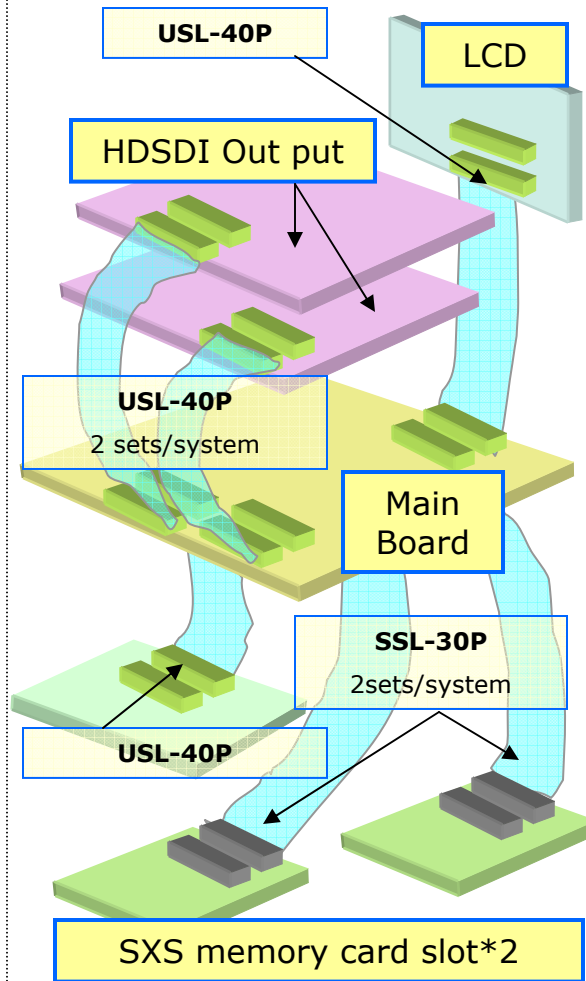
# Professional DVD



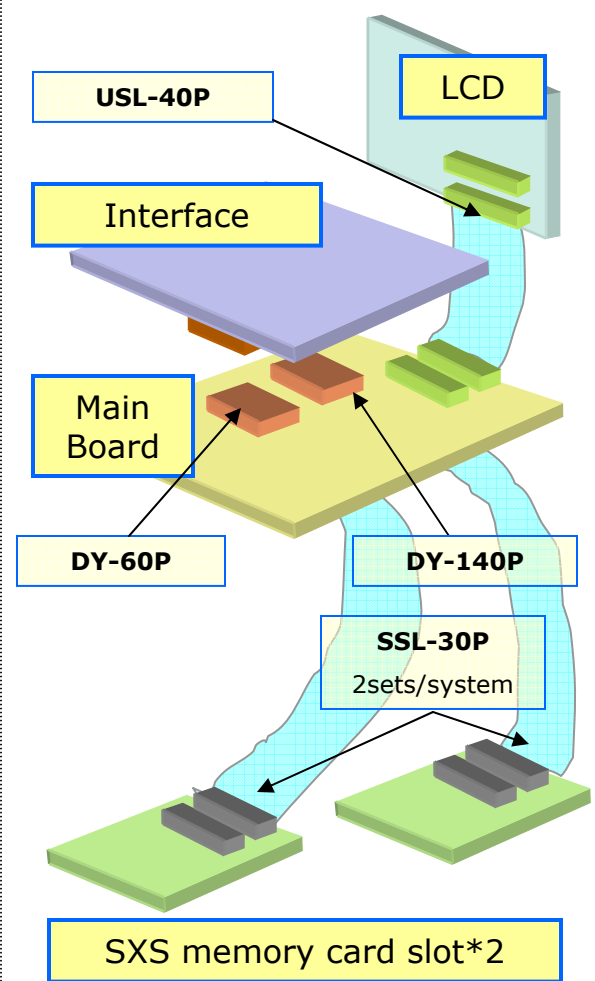
## Handy model



## Shoulder model



## Editor model

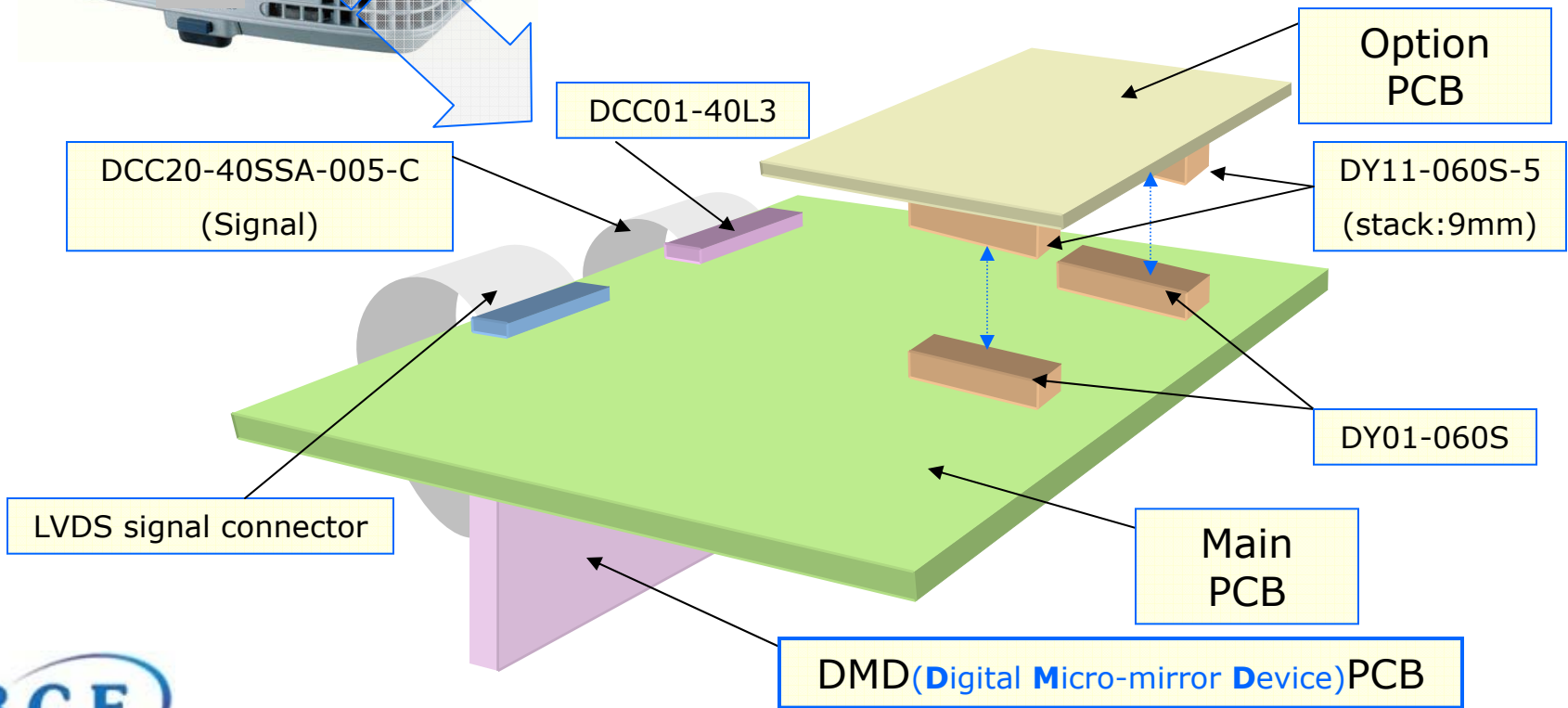
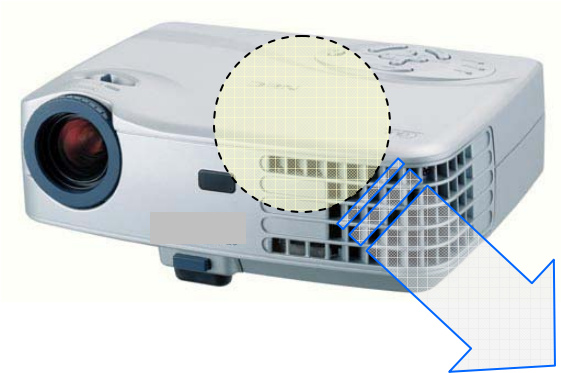


***KEL Products Applications  
for  
DLP Projector  
(digital light processing)***

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# DLP(DMD) Projector



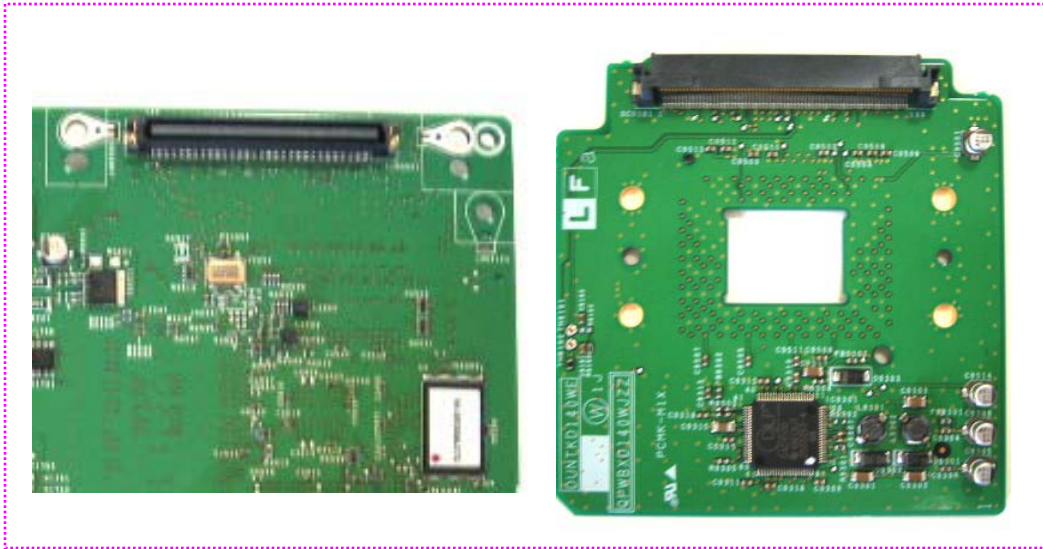
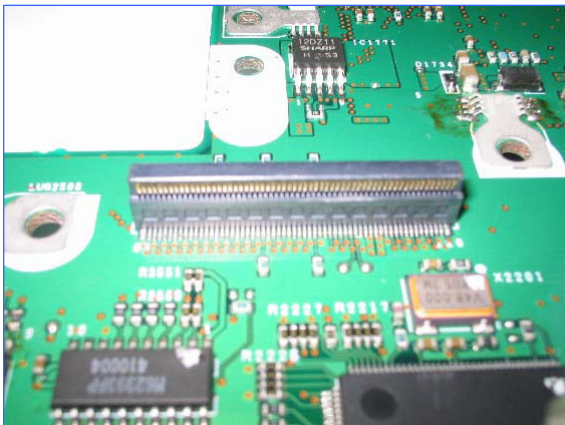
# DLP Projector



**New design : 8601-140L, 8611-140S-P**

Old Board (120P)

New Board 86 series (140P)



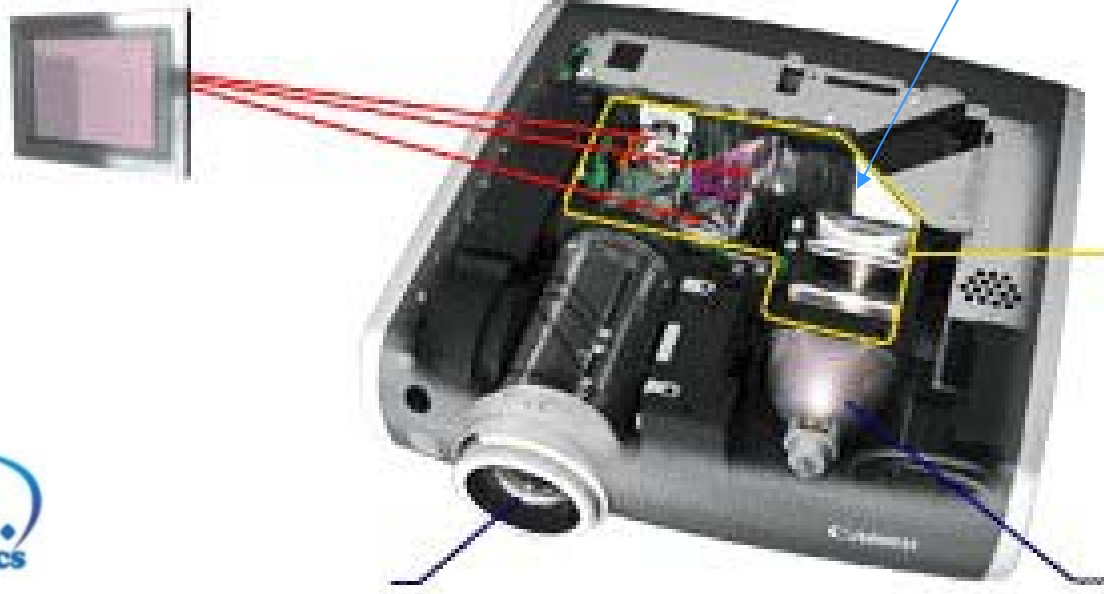
Main PCB

DLP PCB

**DLP Projector**



KEL Product: 8601-120L, 8611-120S



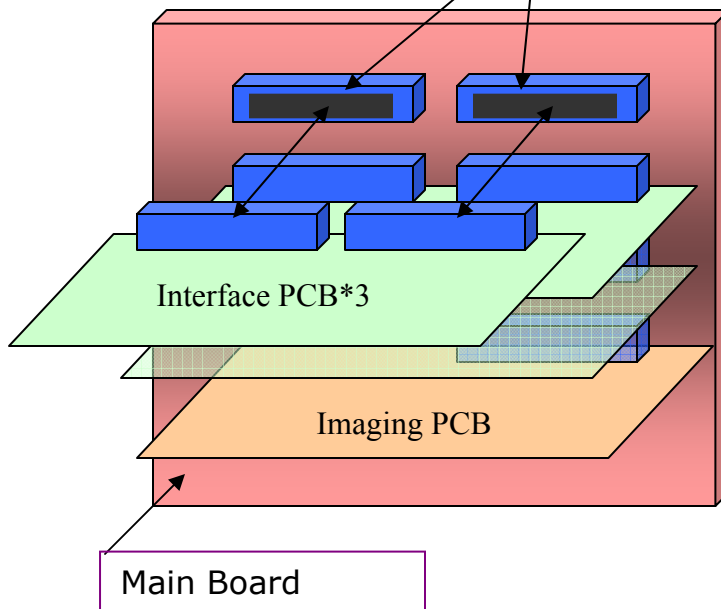
# Broadcasting Equipment 86BTB

- Broadcasting Equip
  - HDV
    - VTR →
    - Camcorder
  - HDCAM
  - XDCAM
  - DVCAM



**KEL 86BB-160Pin**

Back Board Slot in





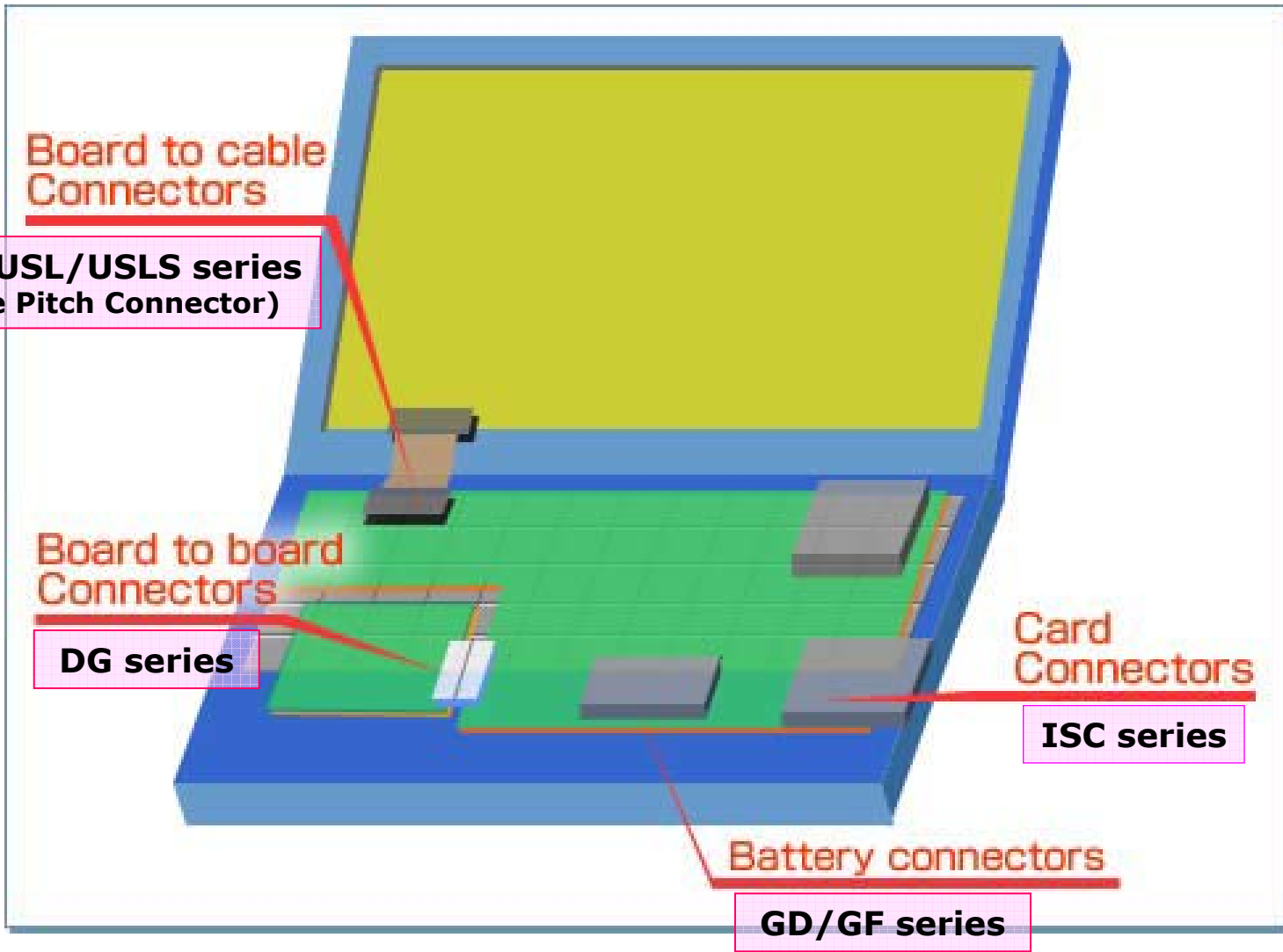
# ***KEL Products Applications for NotePC Entertainment***

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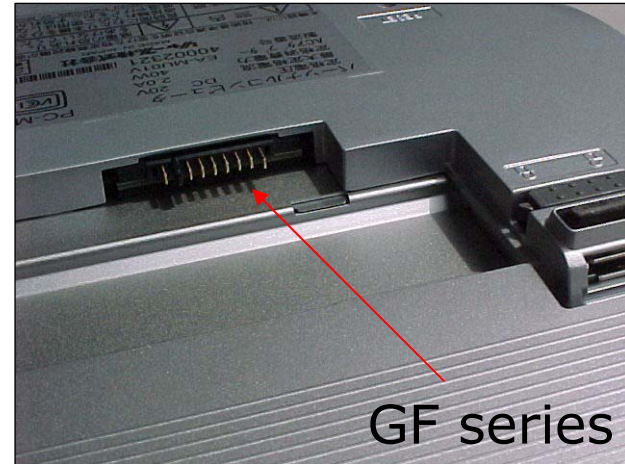
# Notebook PC



# Mobile PC Battery Connector

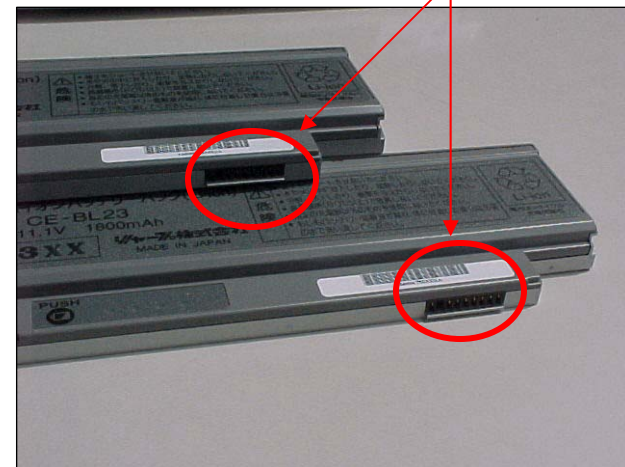


スライド式装着仕様



GF series

(2 PIECE BATTERY CONNECTOR)



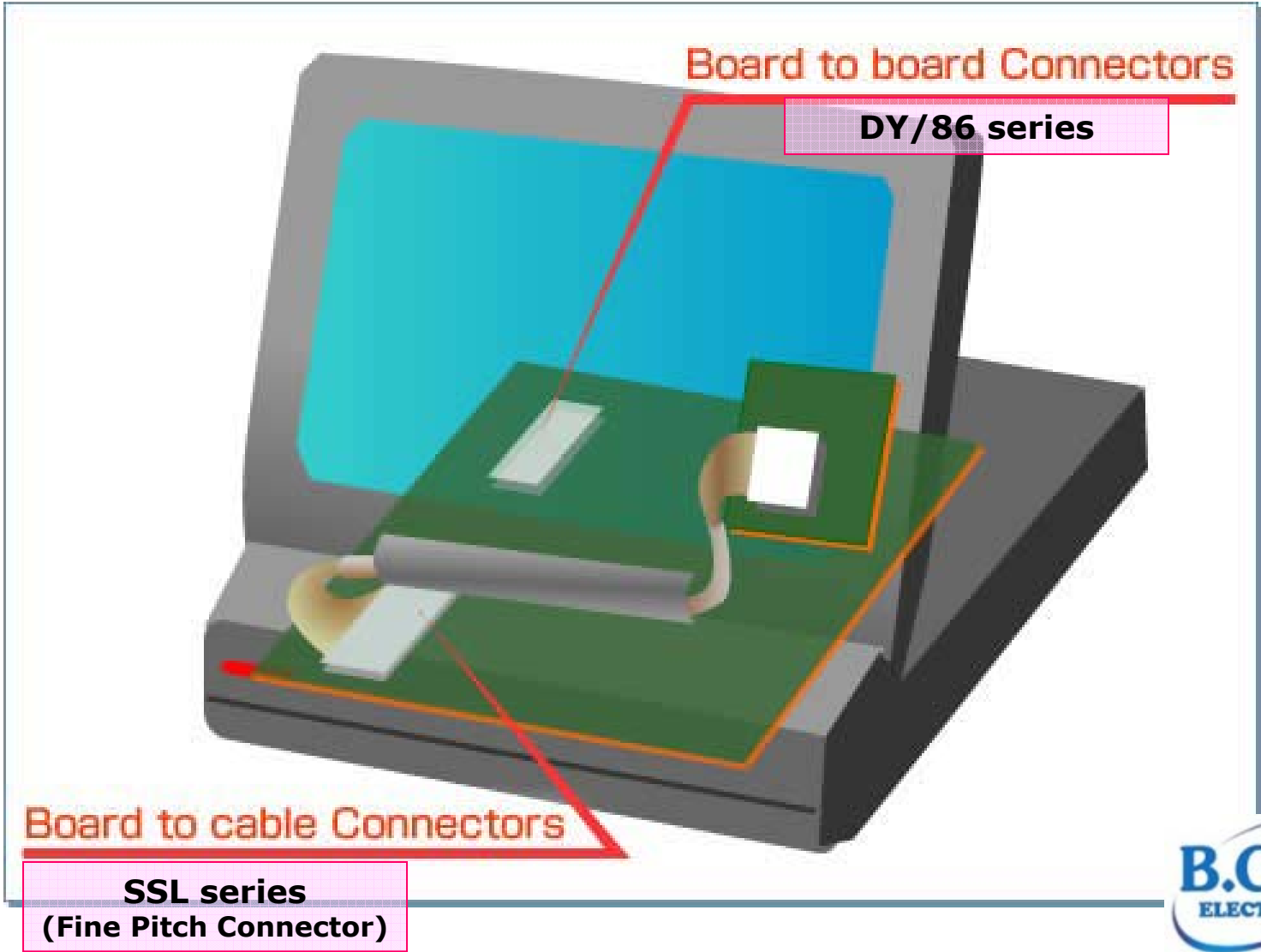


# ***KEL Products Applications for Car Navigation Entertainment***

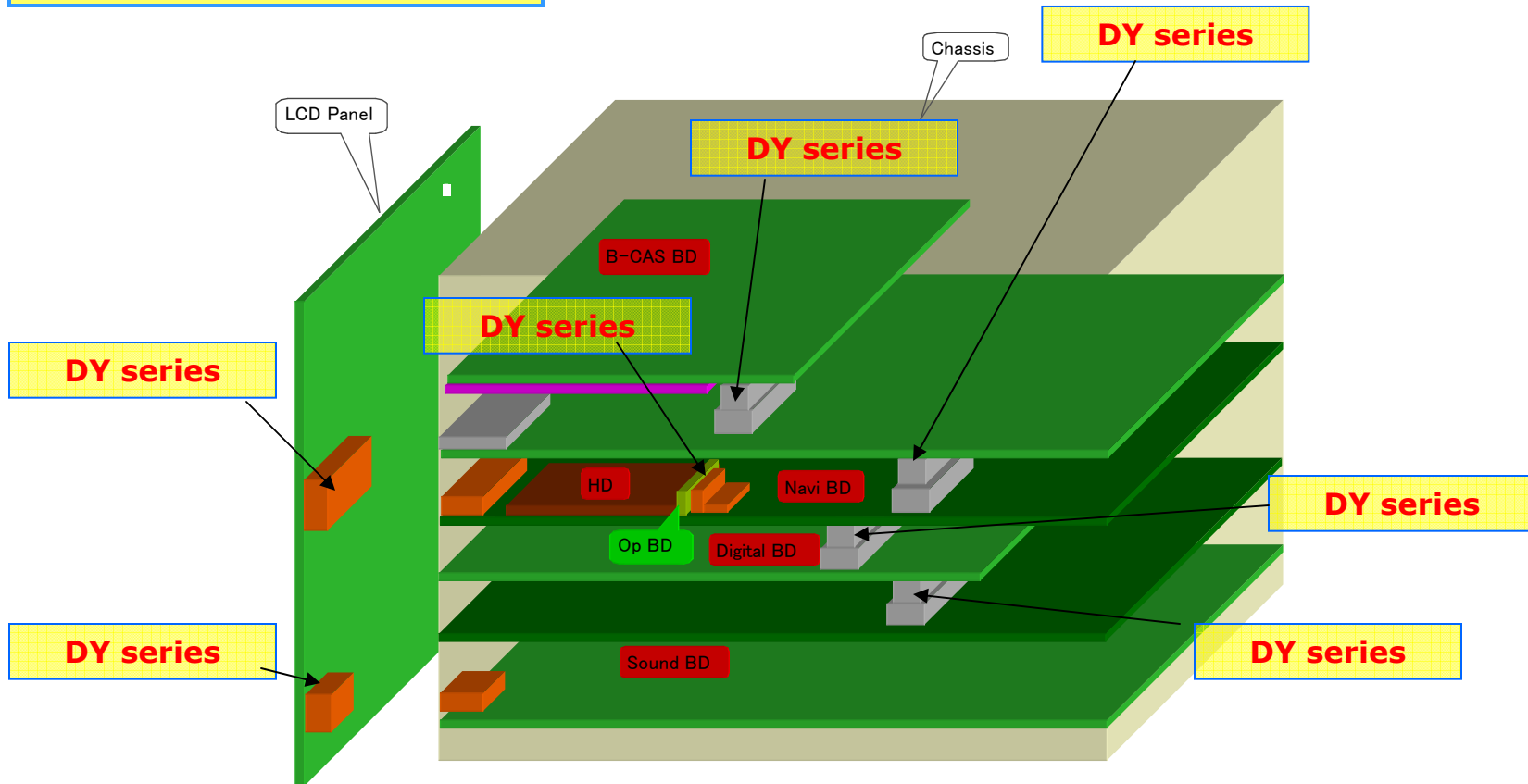
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**Car Navigation**

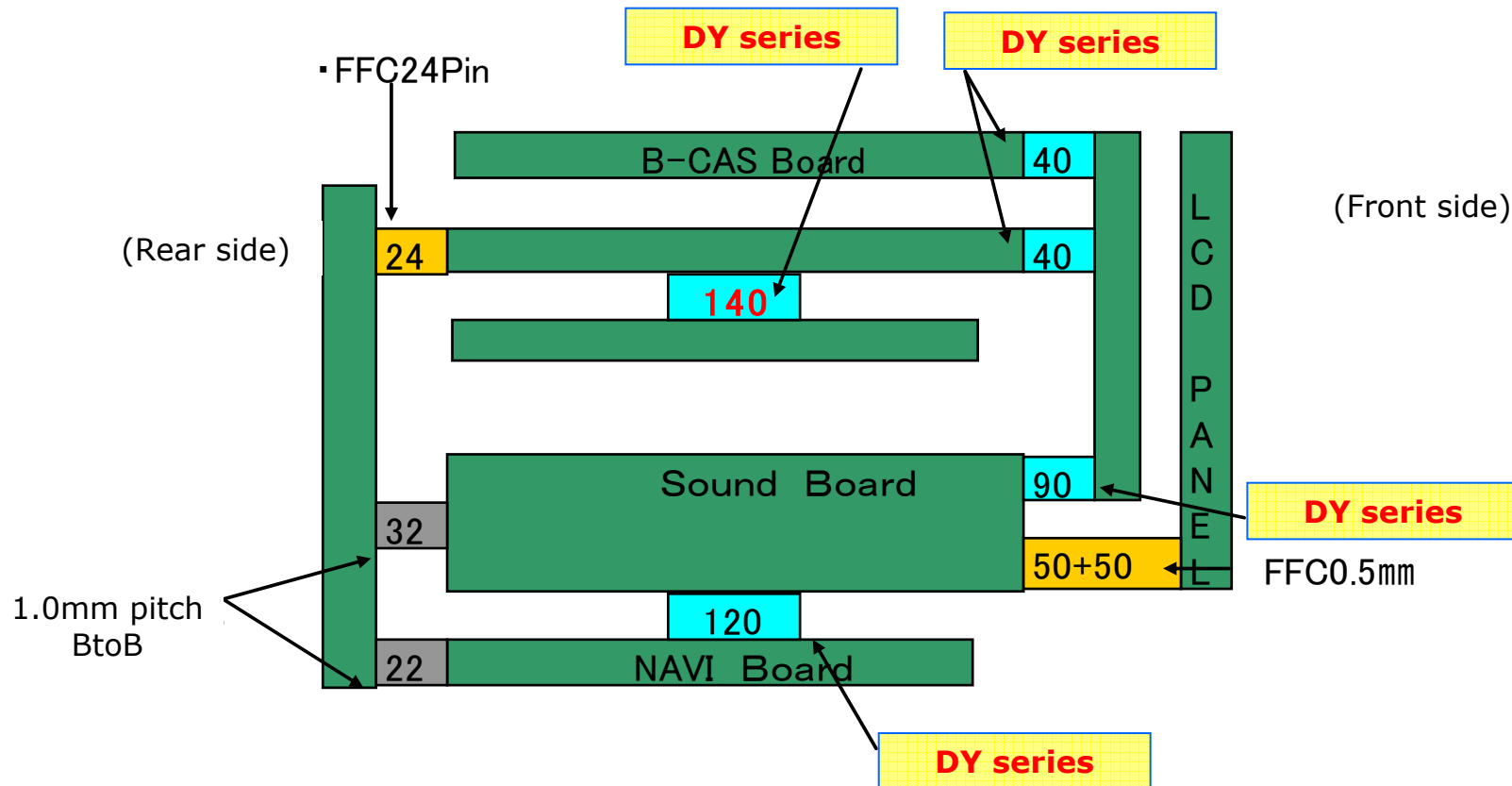


# Car Navigation



Keywords: High evaluations for floating, coplanarity, and thermal shock testing

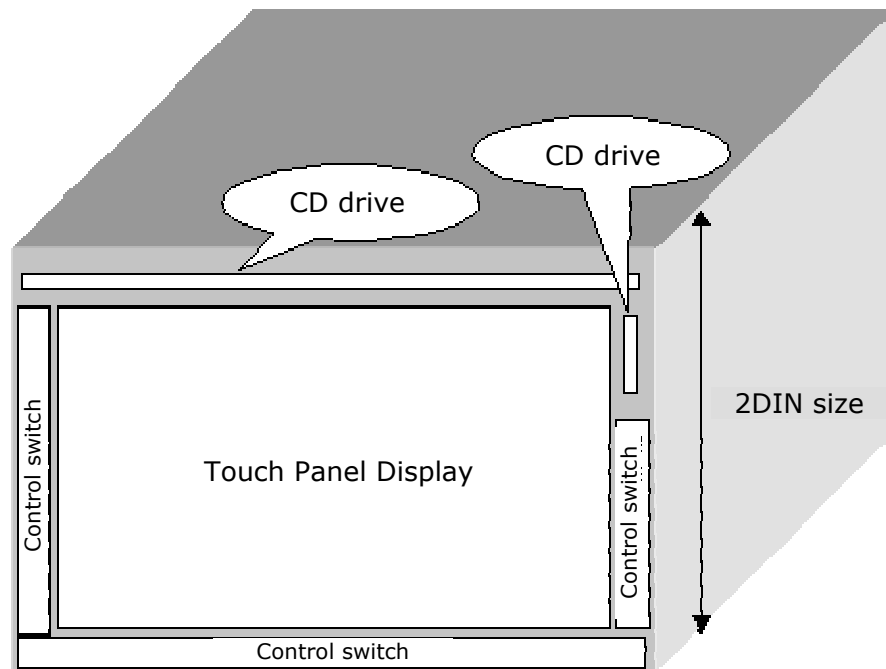
# Car Navigation



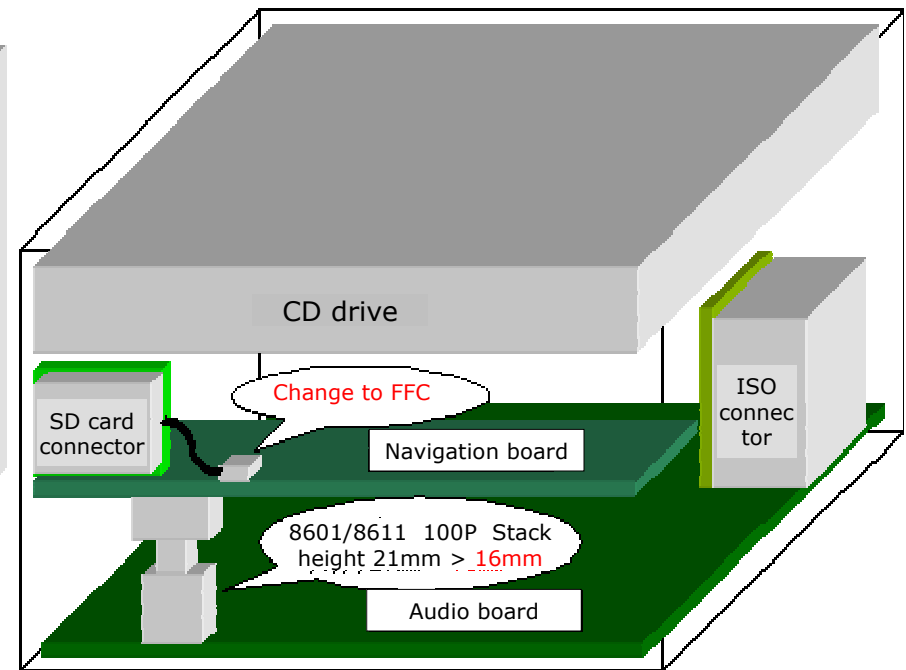
## Reasons for usage

**Keywords: Excellent reliabilities, workability and high stability**

# Car Navigation



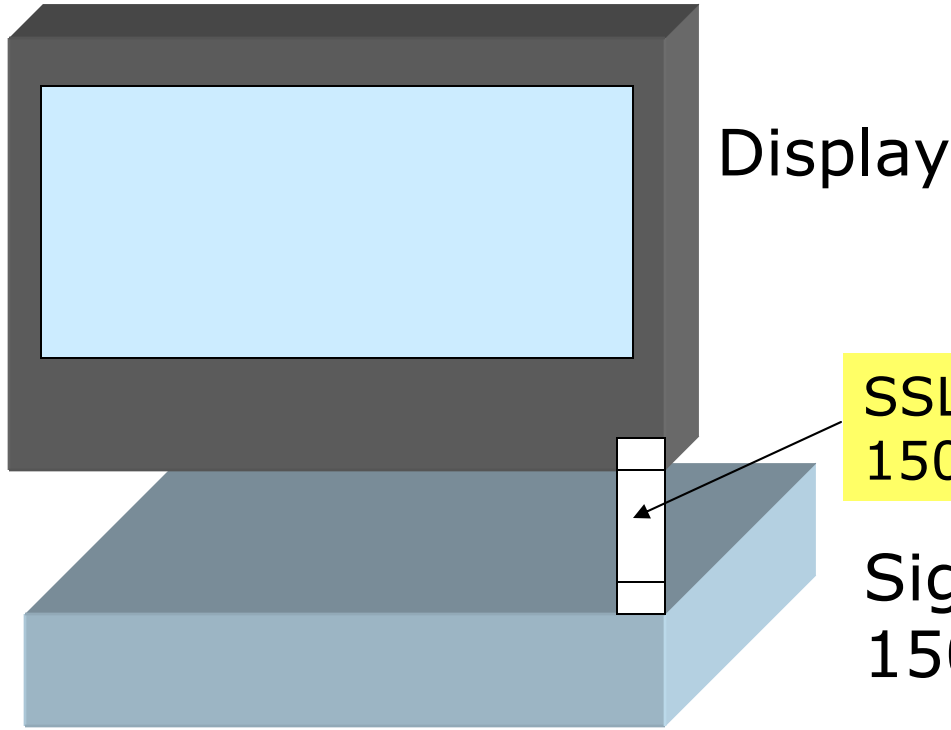
Front view



Side view

**Keywords: High density design on board needs 0.635mm pitch connector instead of 0.8mm pitch one**

Car Navigation



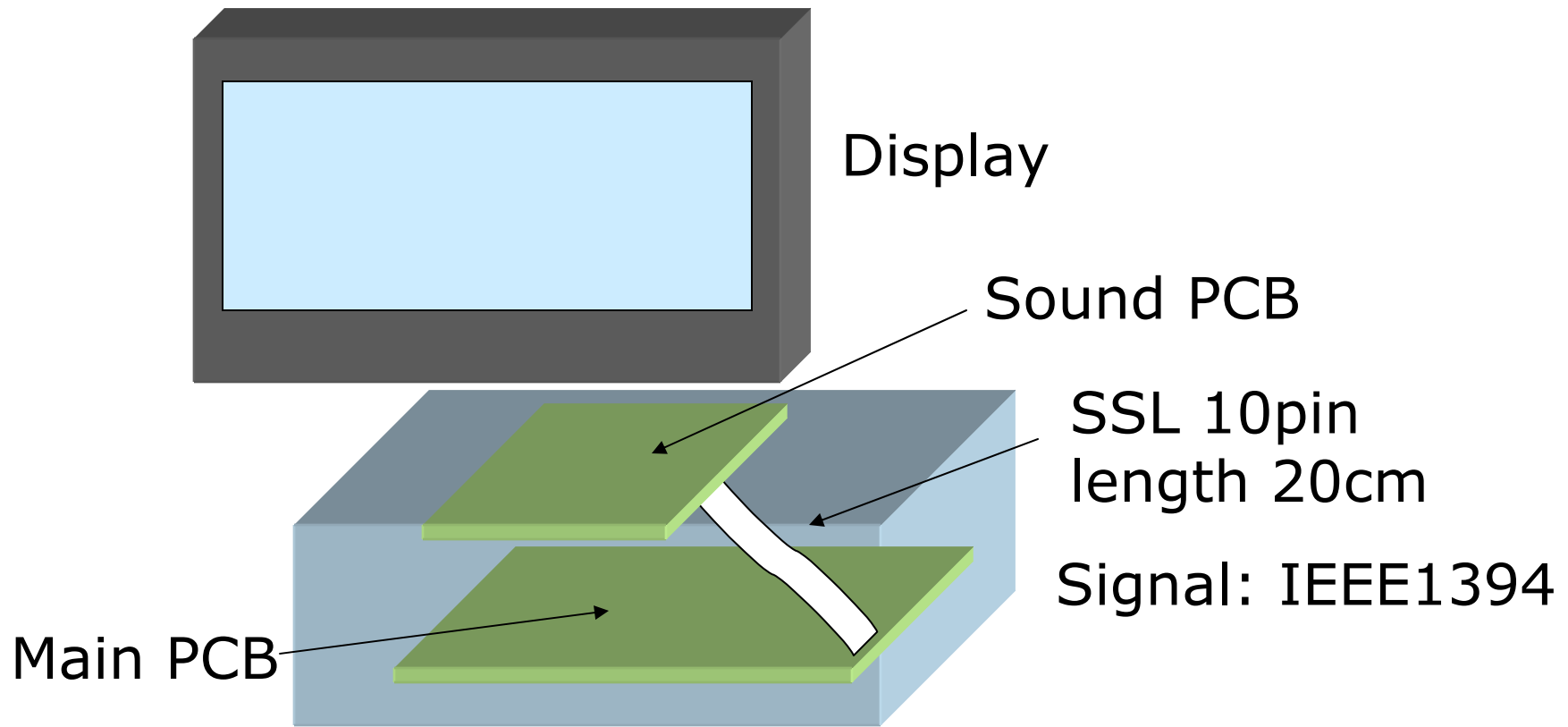
SSL 10pin Harness  
150mm

Signal:  
150Mbps, LVDS

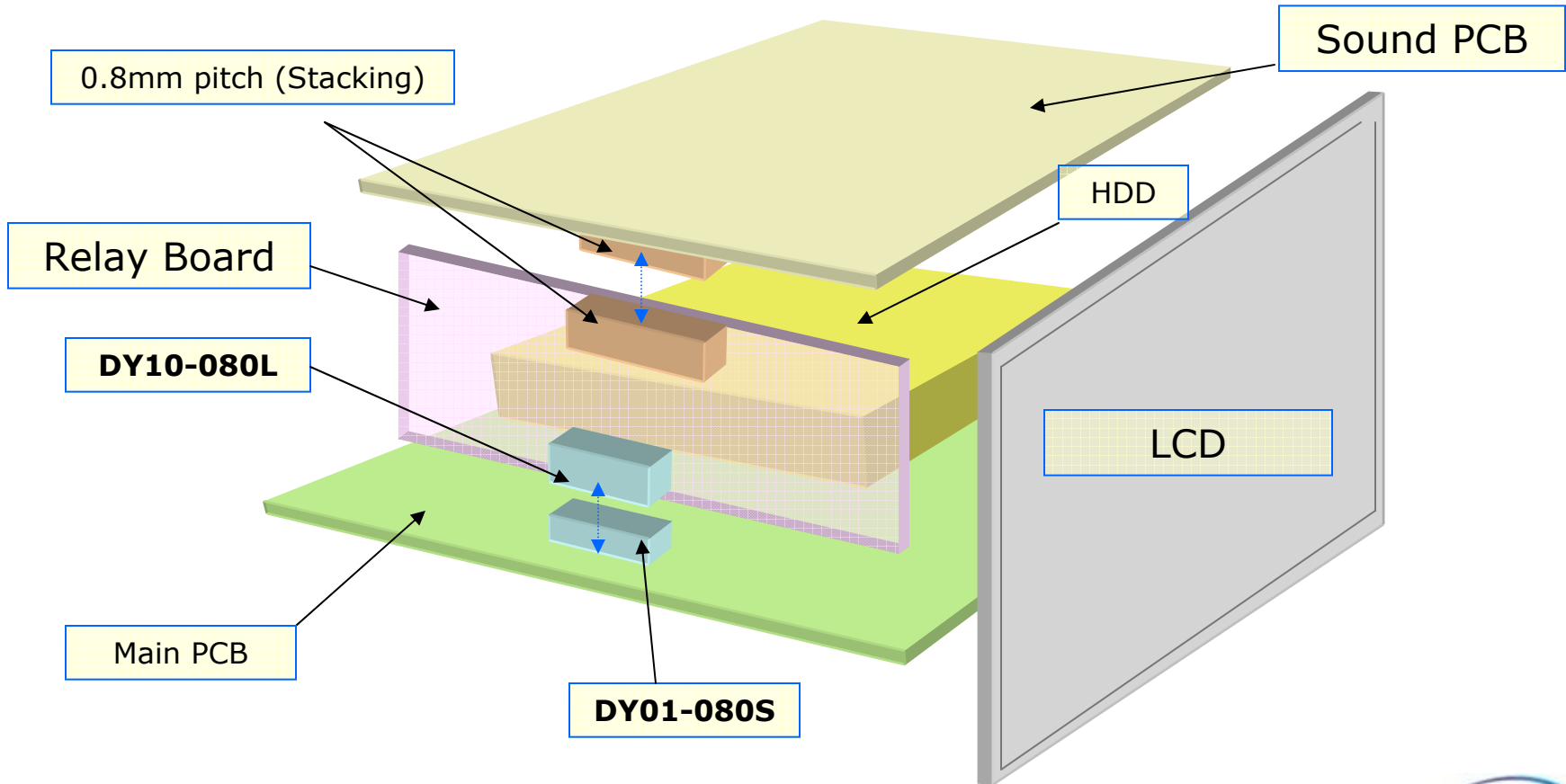
Main Board



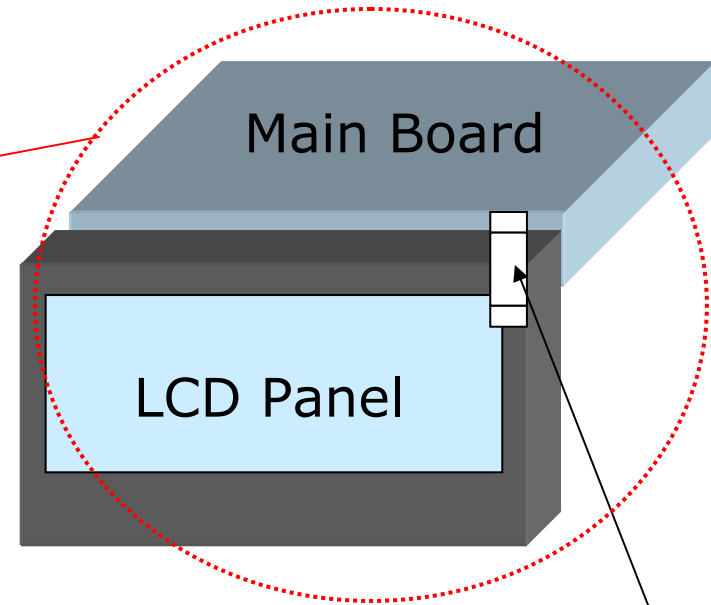
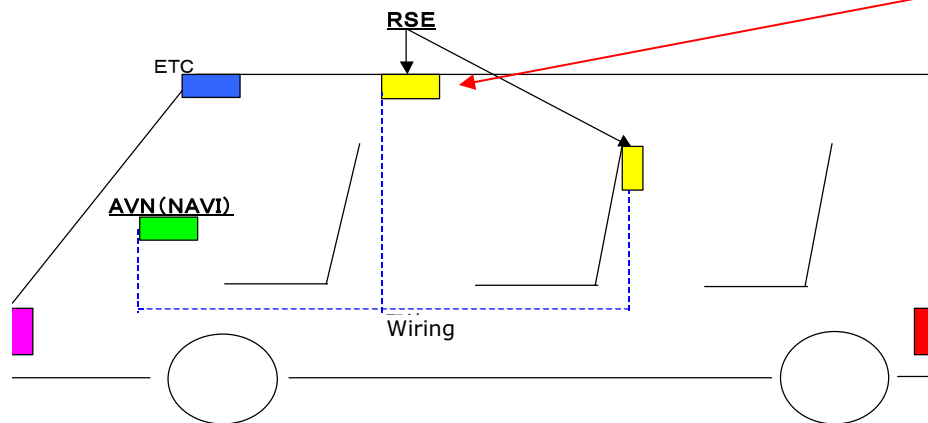
Car Navigation



# Car Navigation



# Car Entertainment LCD



SSL 10pin,  
L: 115mm, 450mm

Signal: LVDS

**ETC**



ISC series Landing type

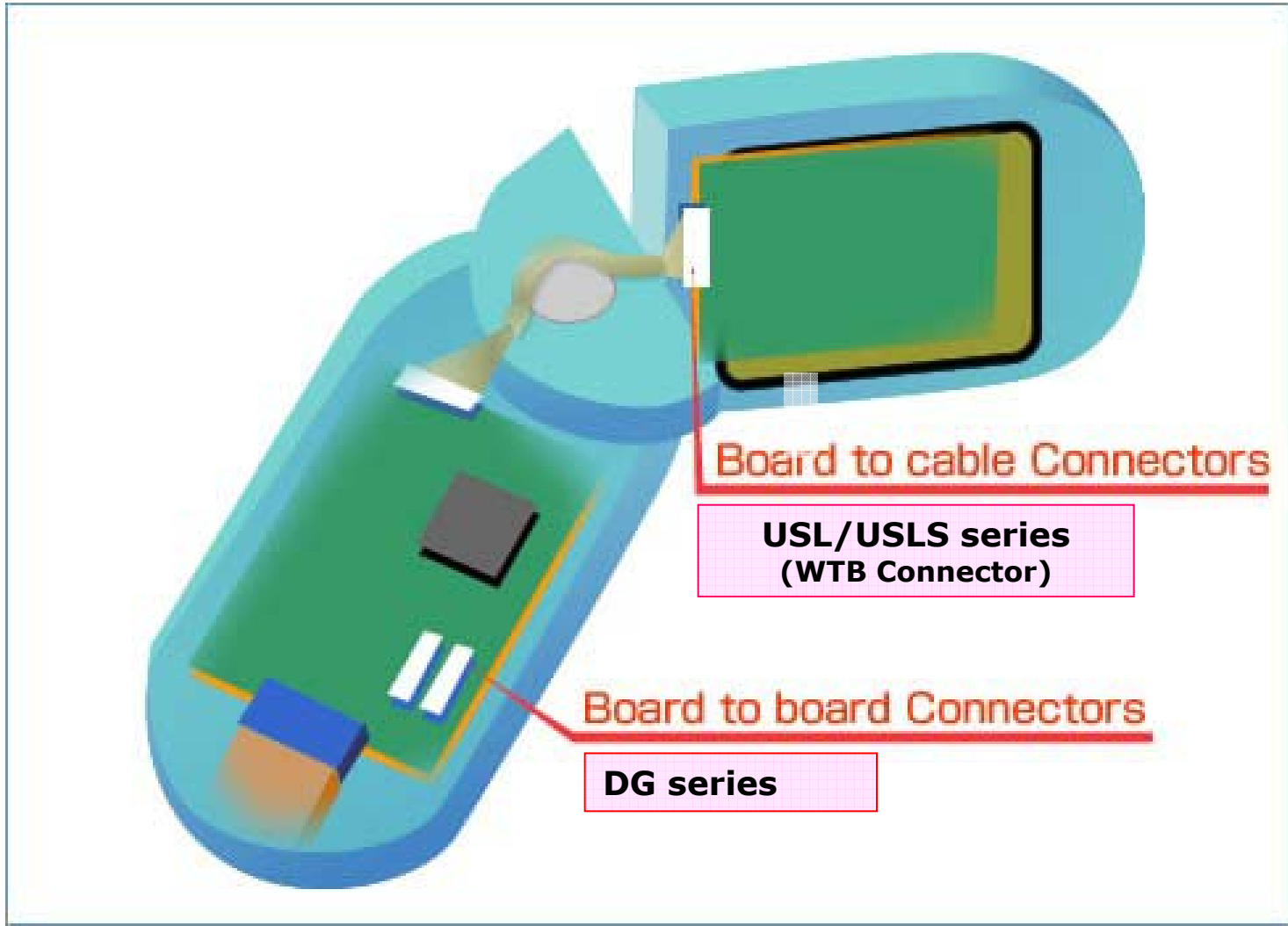


# ***KEL Products Applications for Communications***

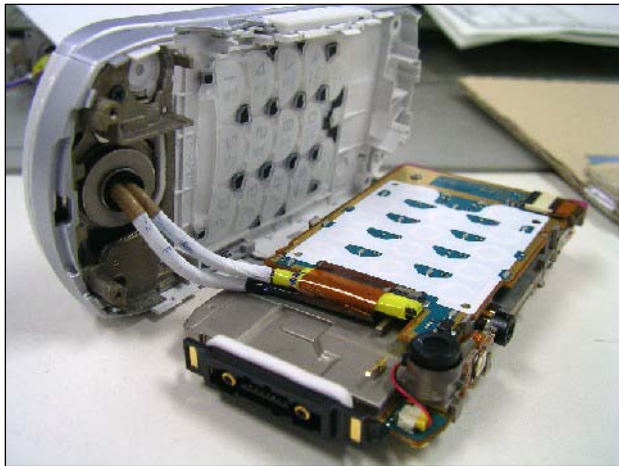
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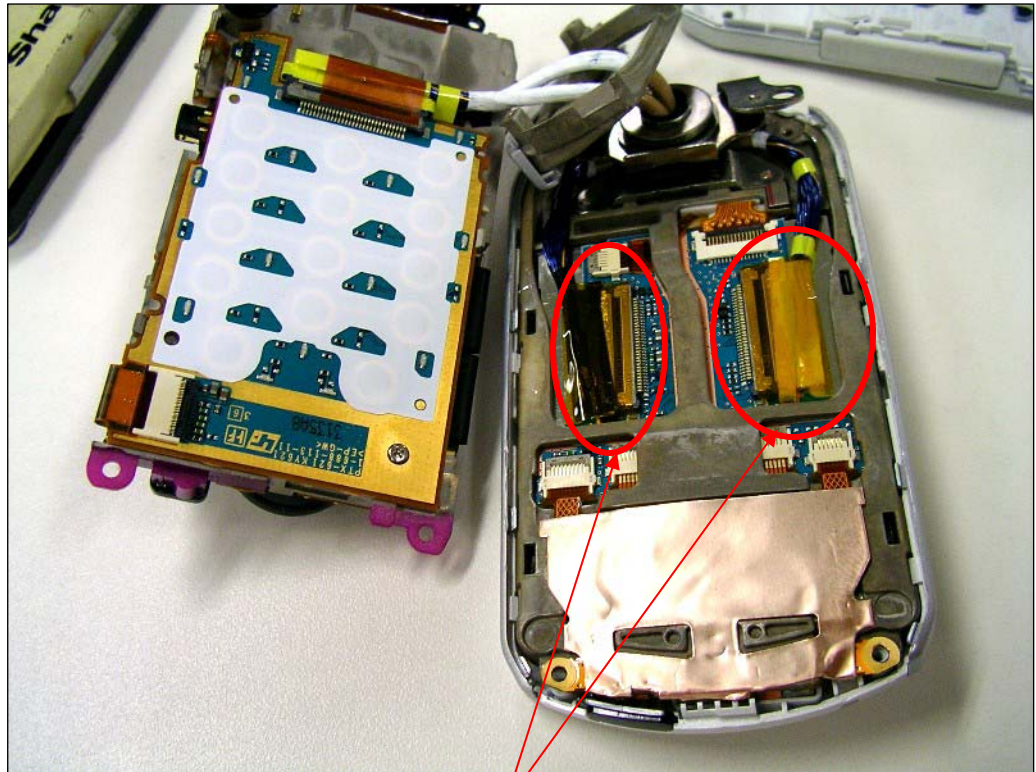
# Mobile Phone



Mobile Phone

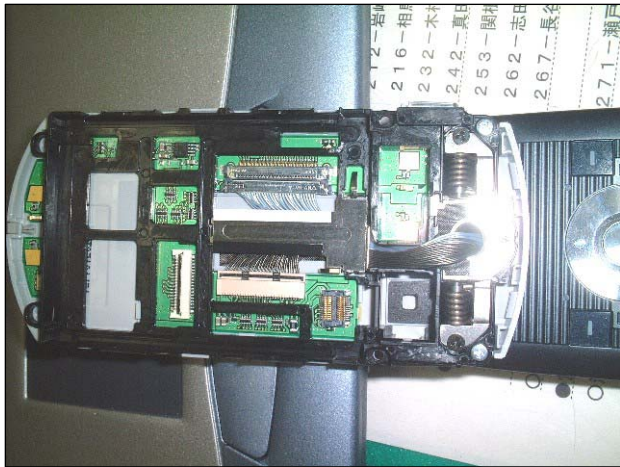


Hinge assembly

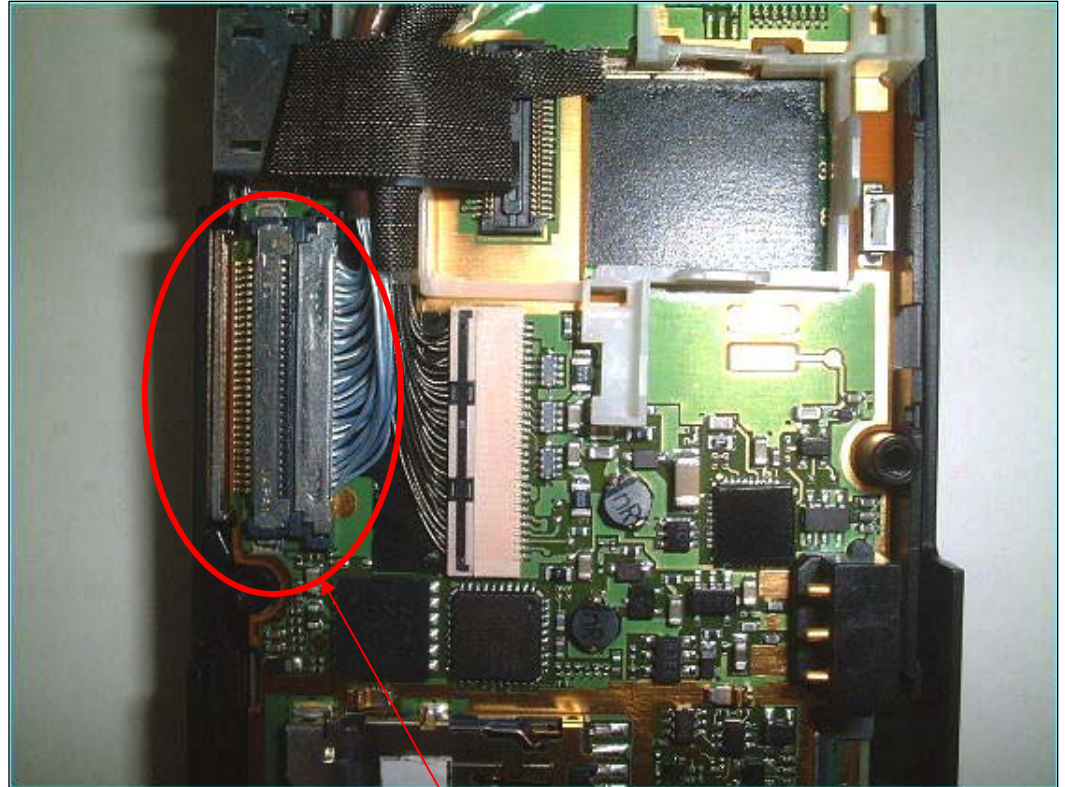


SSL series

Mobile Phone



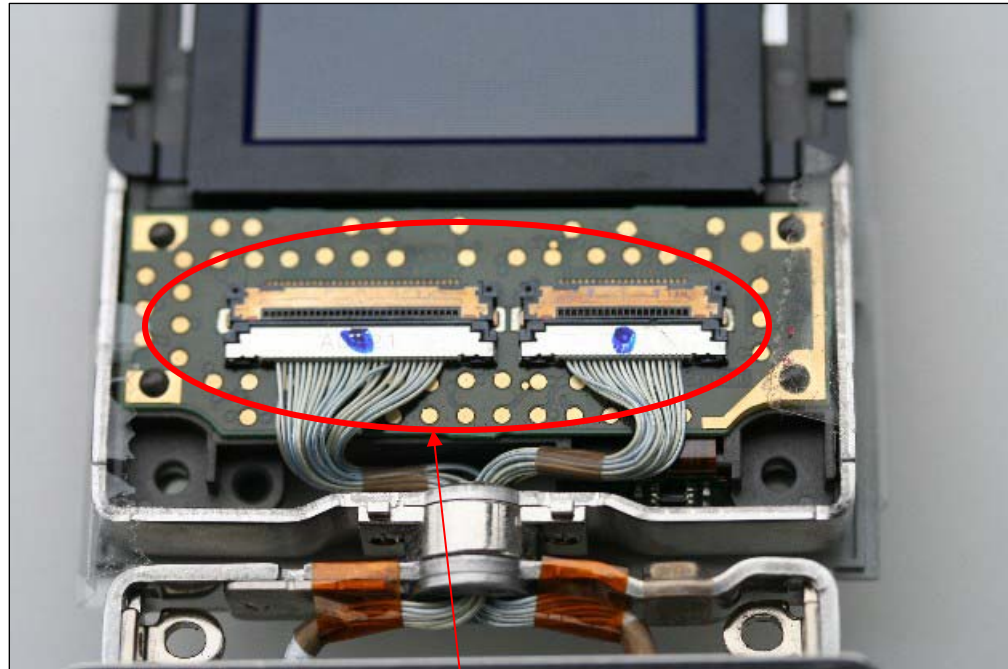
LCD panel



SSL series



Mobile Phone



USL series

**Mobile Phone**



USL series

# ***KEL Products Applications for Wimax ODU/IDU***

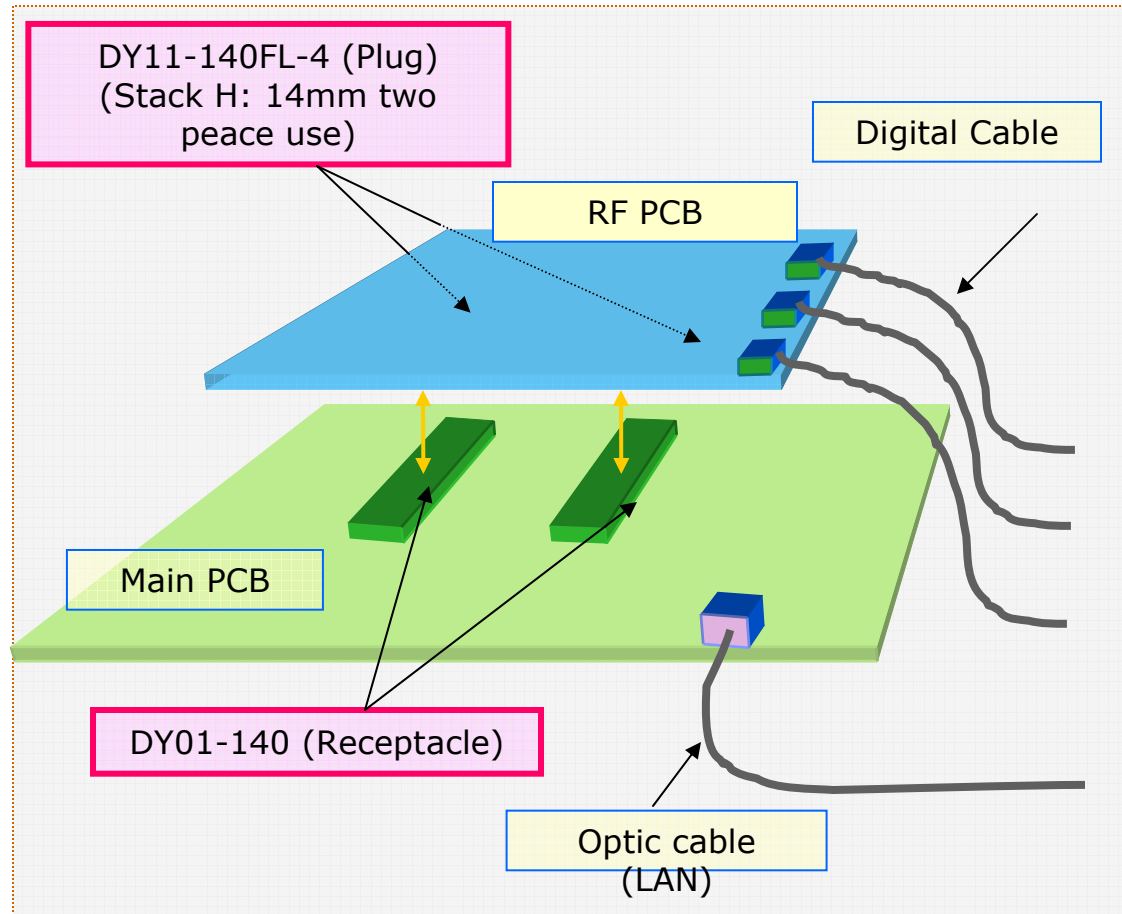
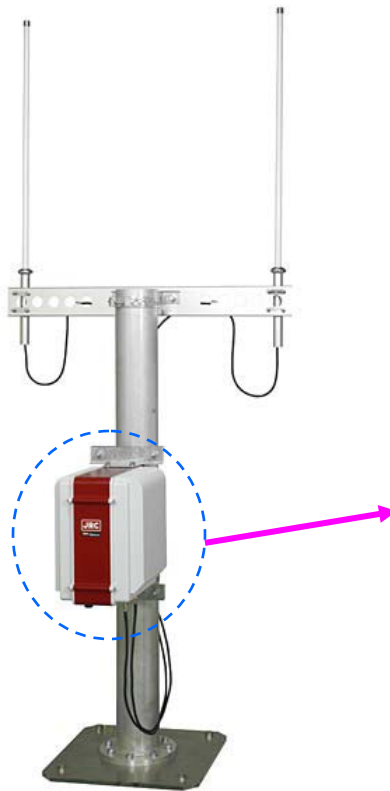
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# WiMAX ODU



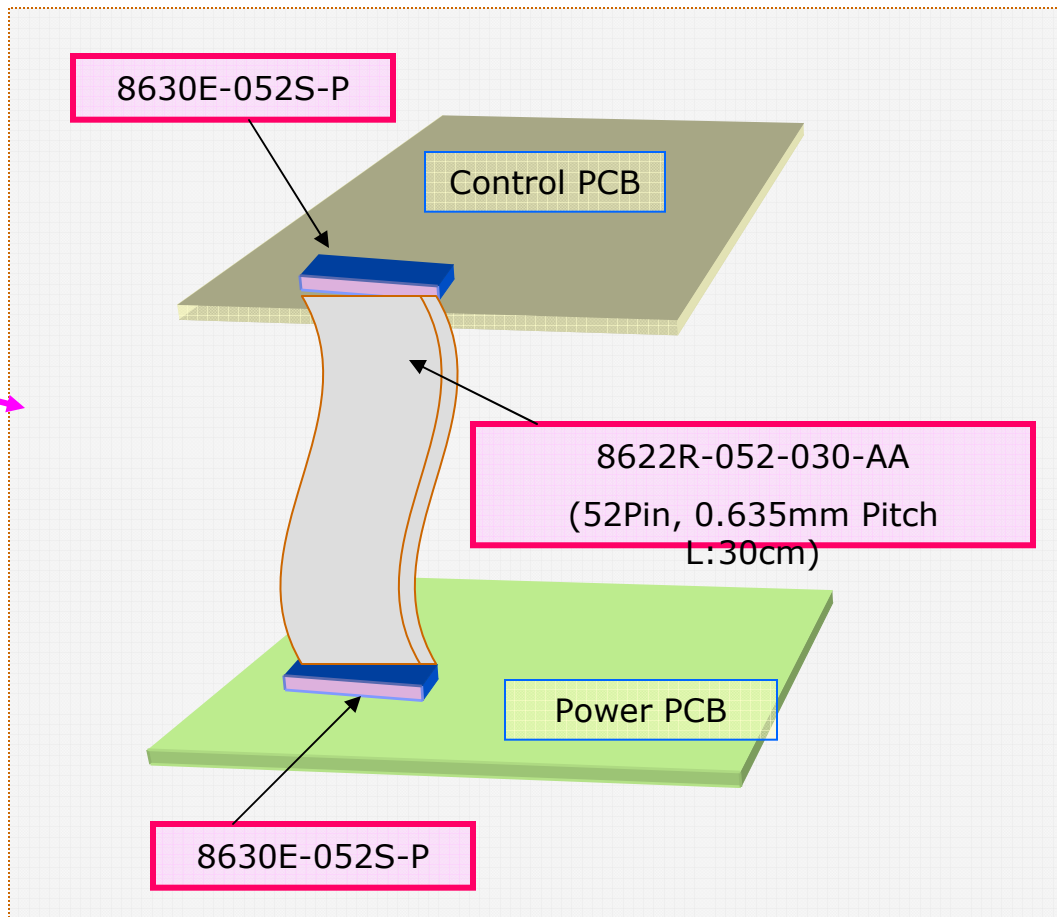
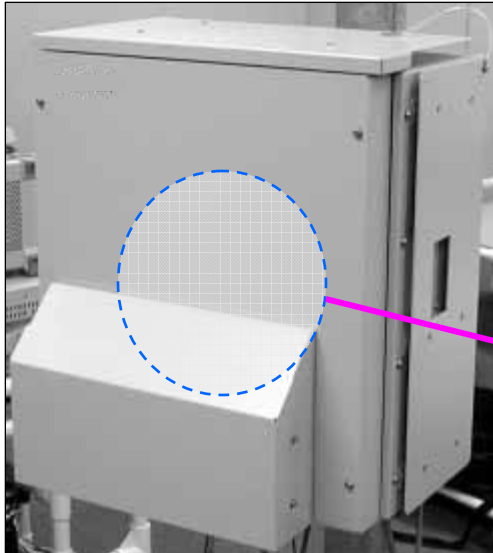
ODU (Out door unit)



**Key words: Two peace floating connector on board, Multi contacts, Stack height variation**

# WiMAX ODU

ODU (out door unit)



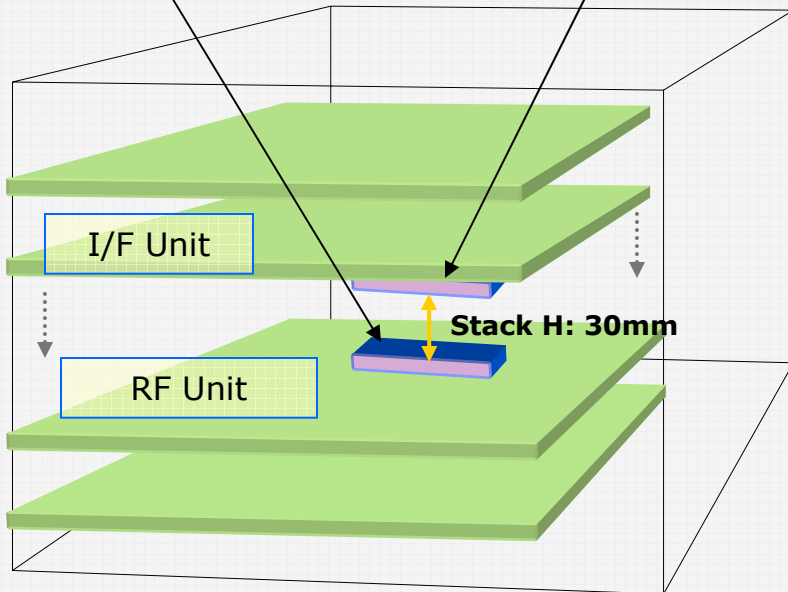
**Key words: High density design on board**

# WiMAX ODU

## New design

8832E-050FS-Z-F

8801-050-170S-F

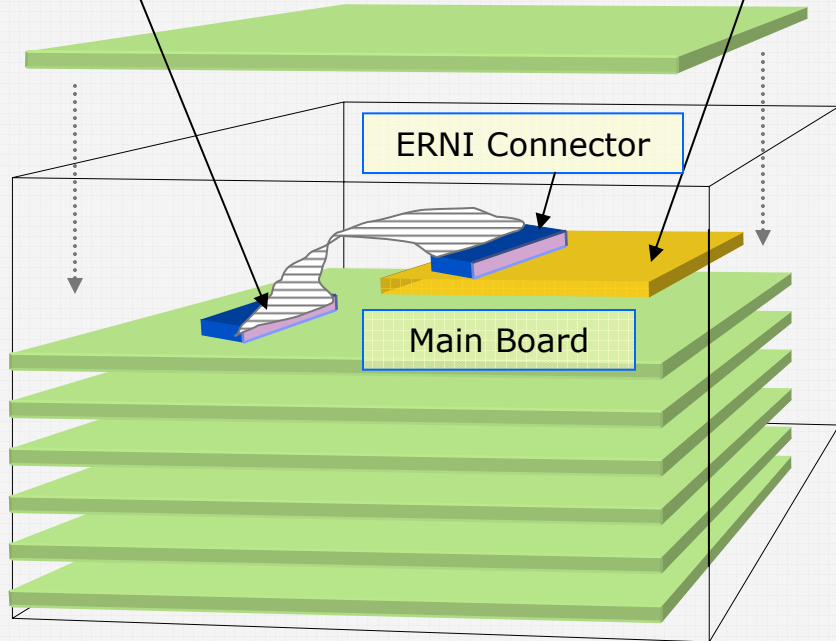


Level insertion: 4 slots rack

## Old design

8925E-050/8930E-050

GPS Module  
(Mezzanine Board)



Level insertion: 7 slots 5U (430mm Rack)

**Key words: Stack Height 30mm**



# ***KEL Products Applications for Test Equipments***

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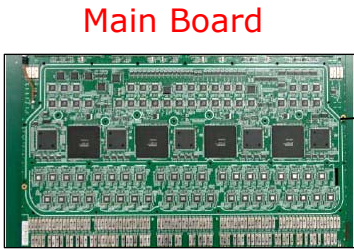


# IC Tester



PCB Max 150 sets/system

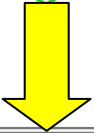
DY 8 to 16board/system  
16pair/board



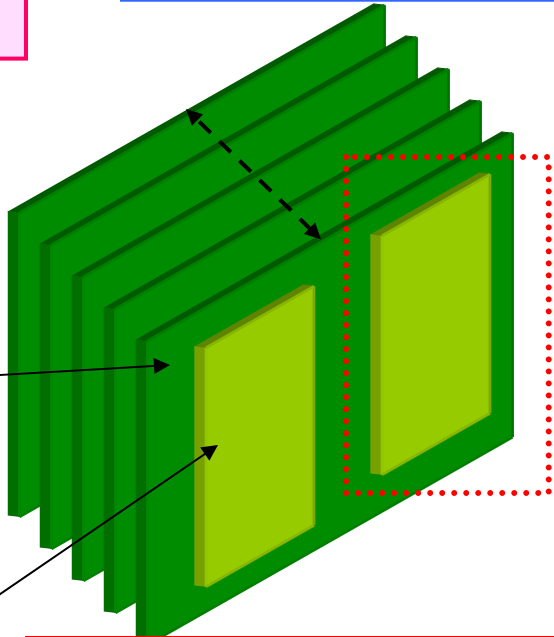
Connection between Main Board & Option Board

DY for Main Board  
8 to 16pcs/board

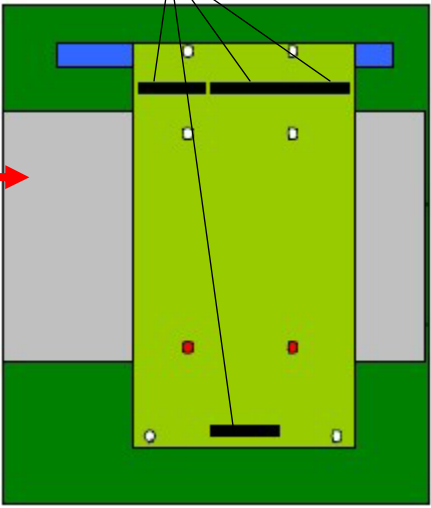
2pcs on the board



OK



DY series



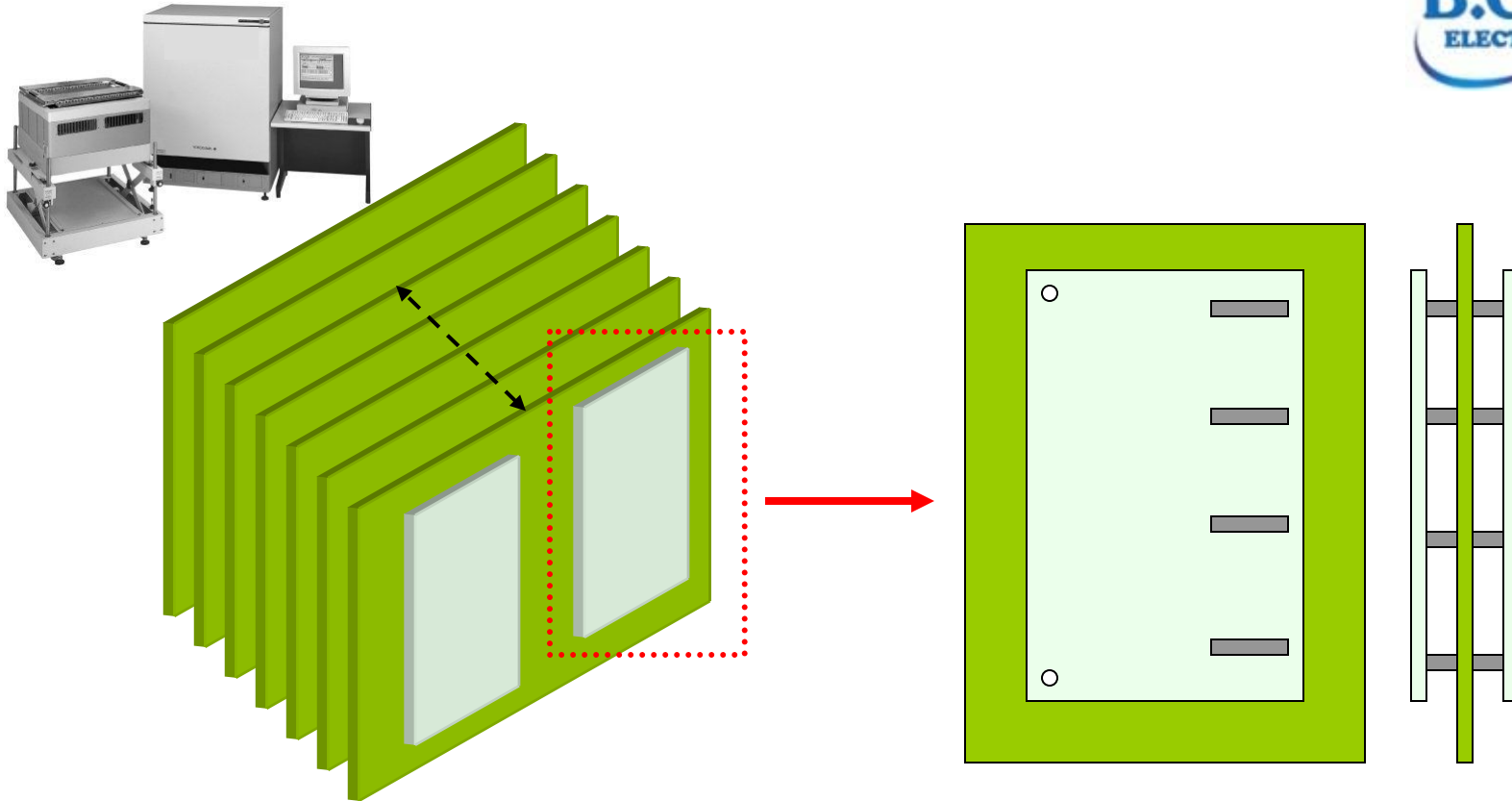
2 small board/side, 4 small board for both side, 4pair of DY for/board,  $4 \times 4 \times 16 = 256$   
**DY=(Max256pair/System)**



# SOC Tester

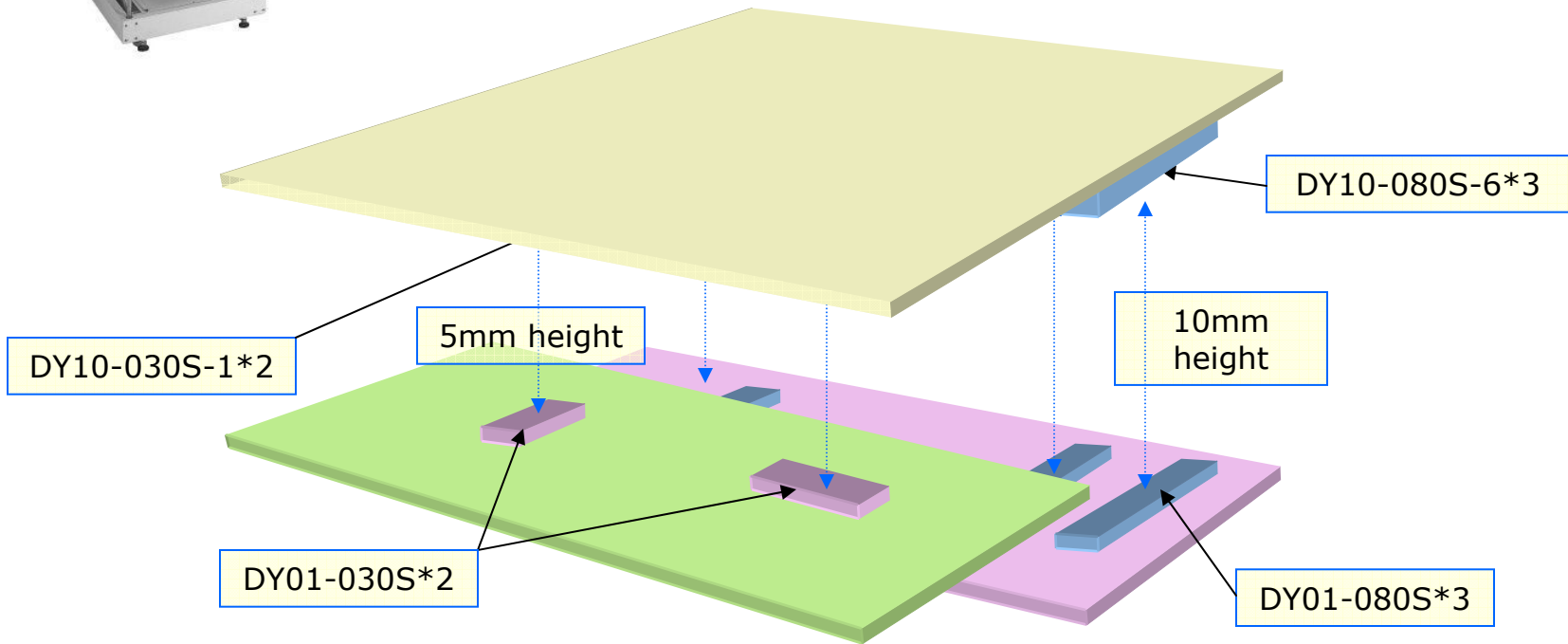
KEL

B.C.E.  
ELECTRONICS

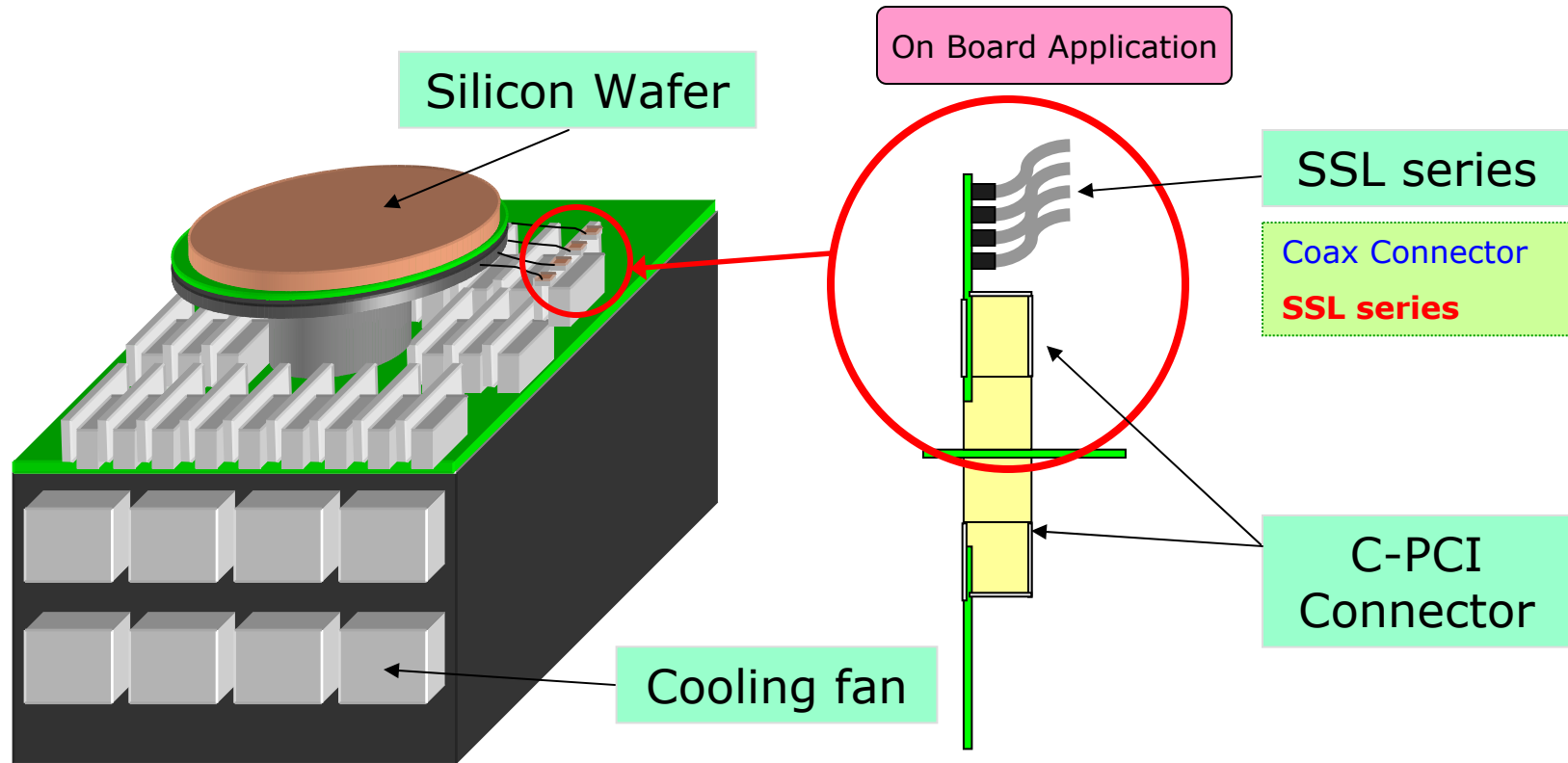


Transmission Speed: 1200Mbps Signal:  
LVDS (140pcs\*4) \* 4 boards=1 Mother Board uses 2,240 pcs

# SOC Tester Power Module



# Semiconductor Tester

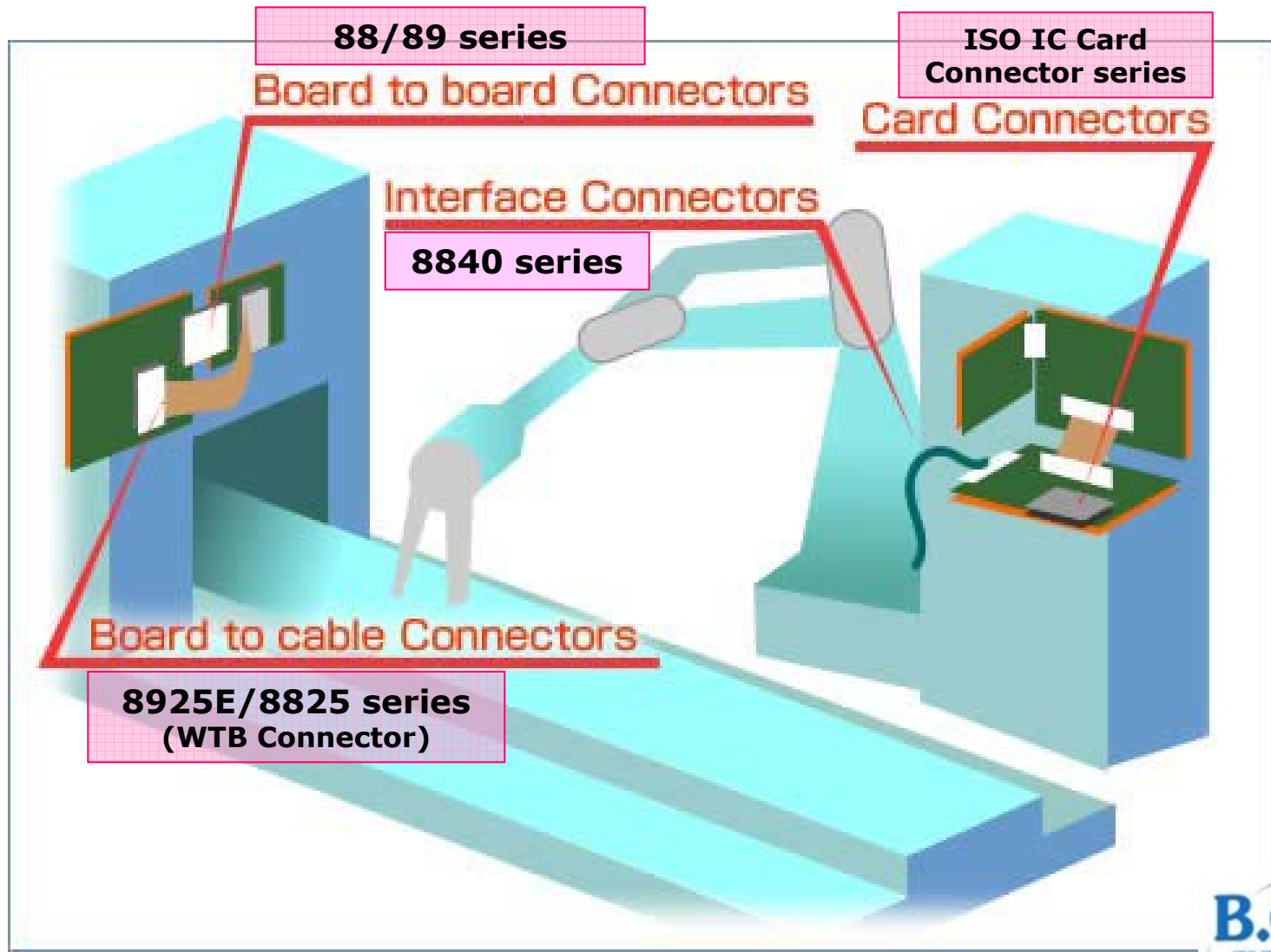


# ***KEL Products Applications for Motion Controls***

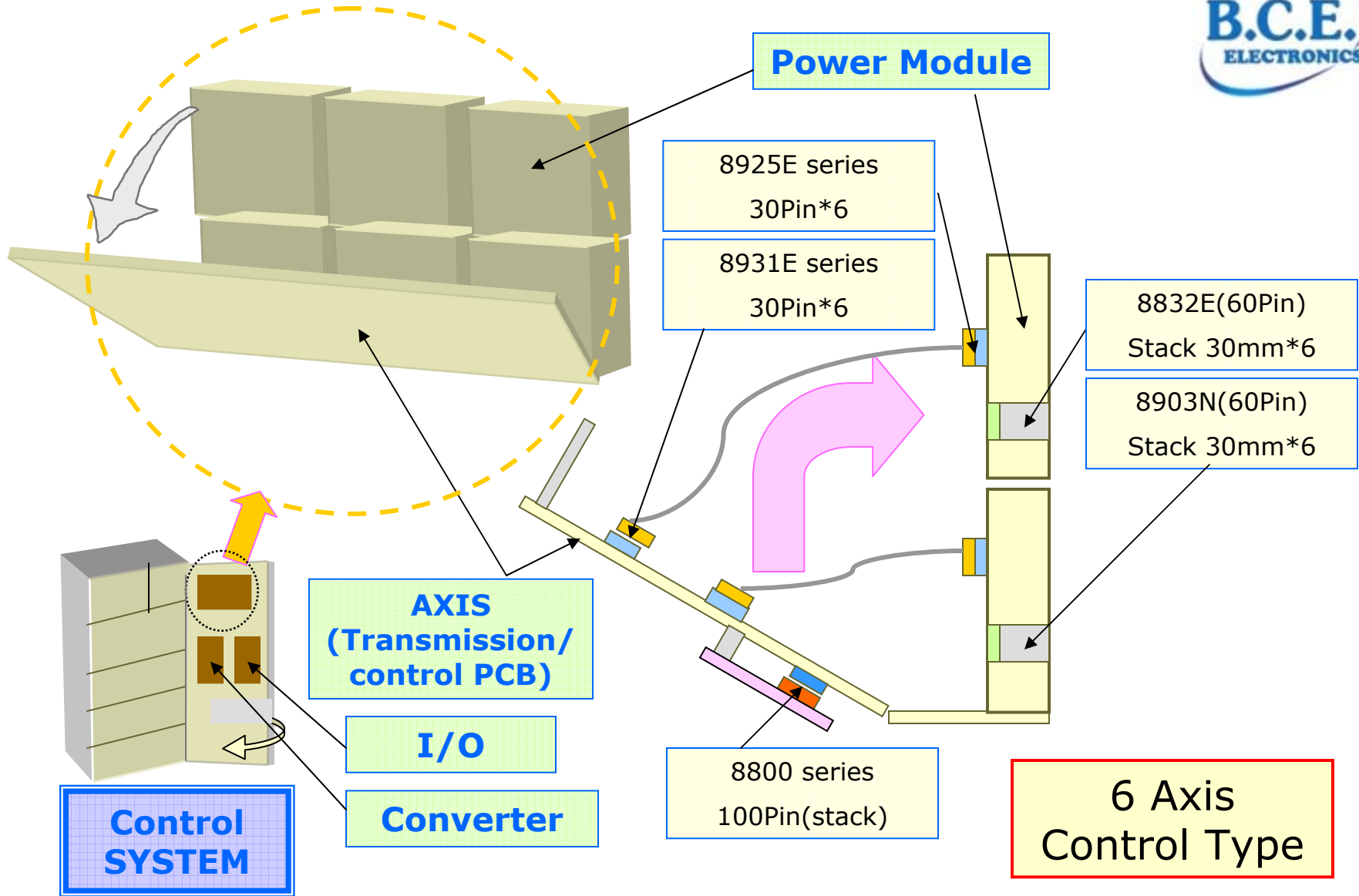
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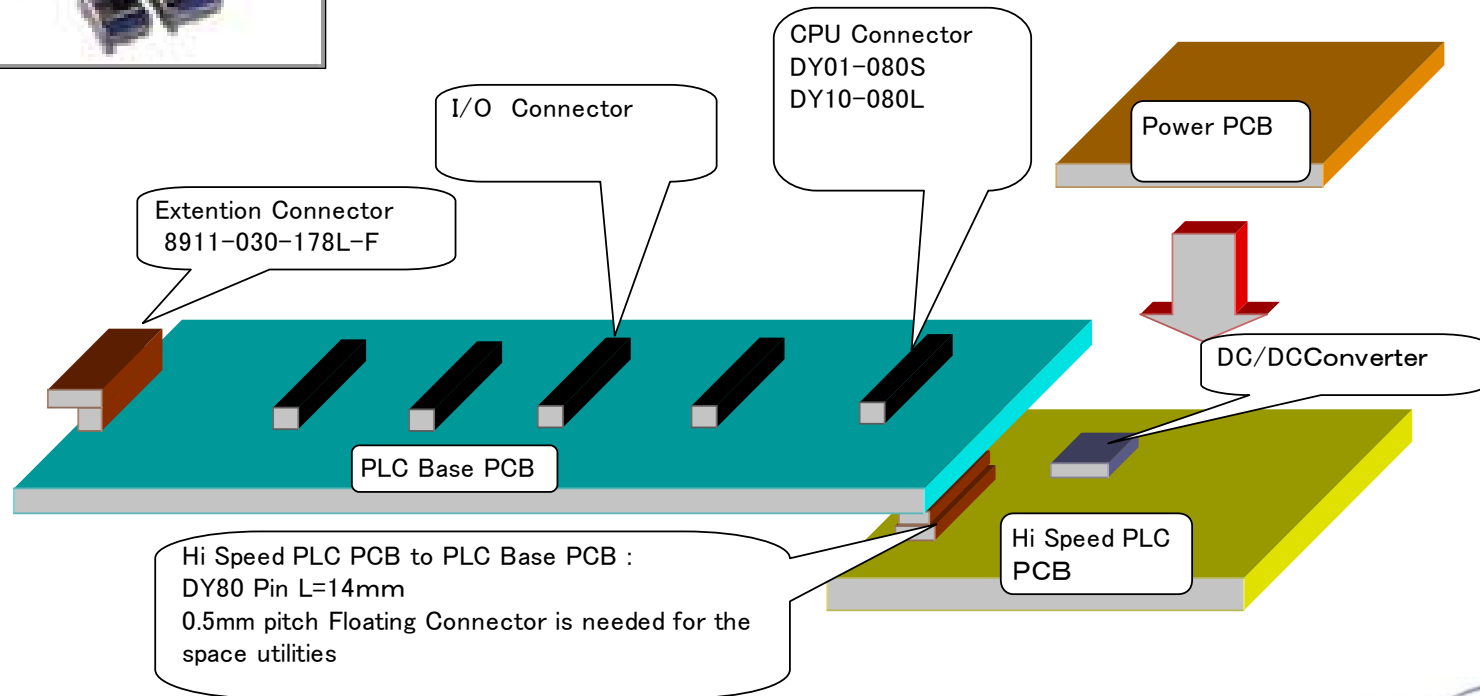
**Industrial Robot**



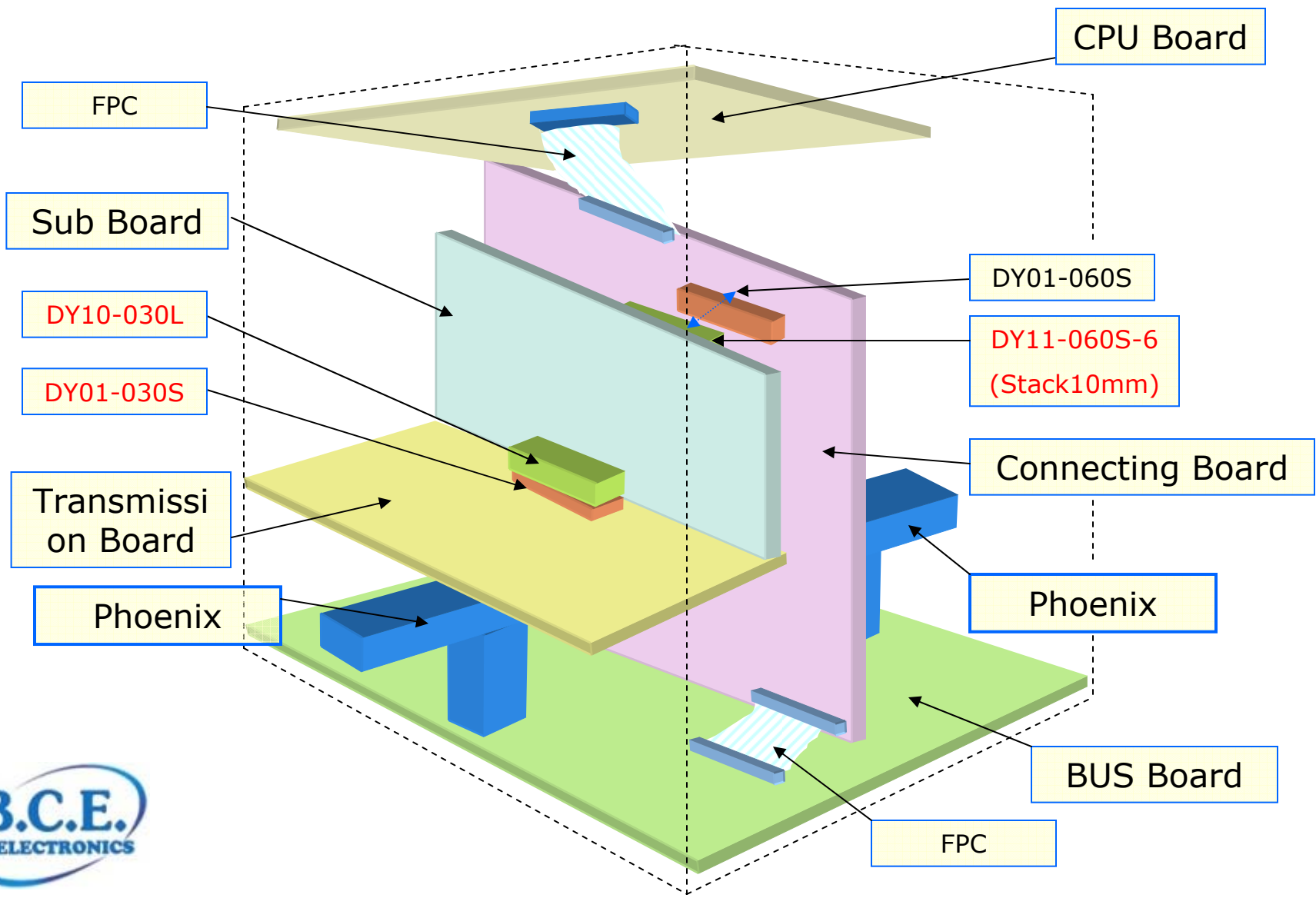
# Auto Motion control



# PLC for high speed telecom

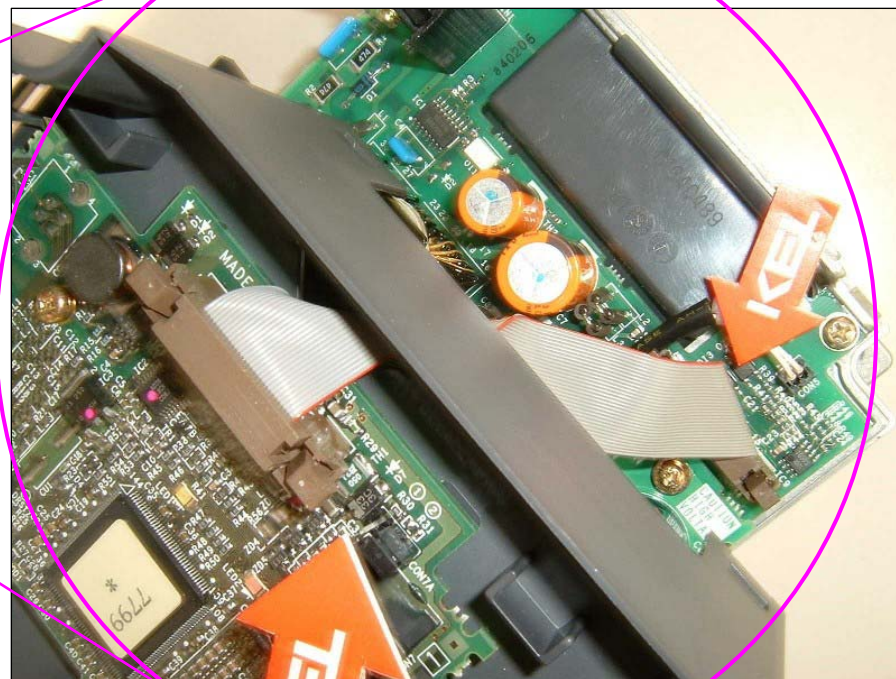
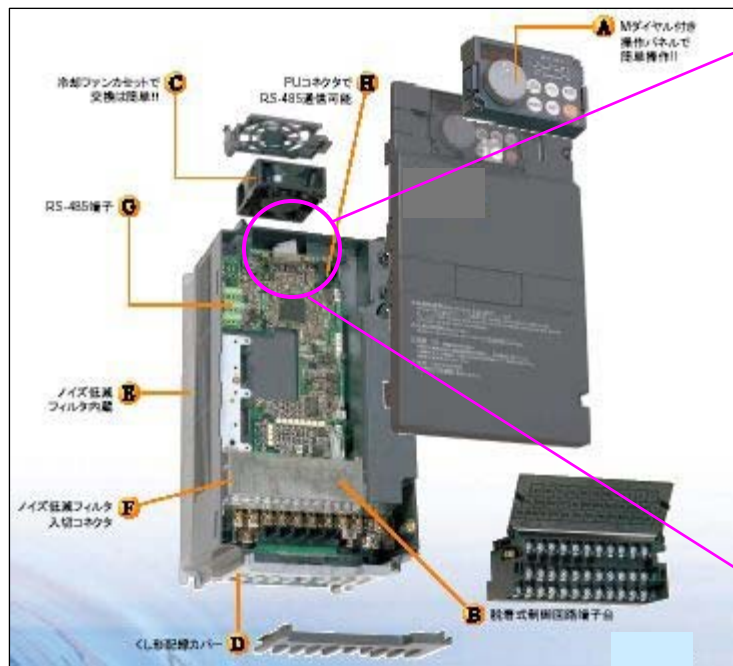


# Serial Transmission Unit





# Inverter board



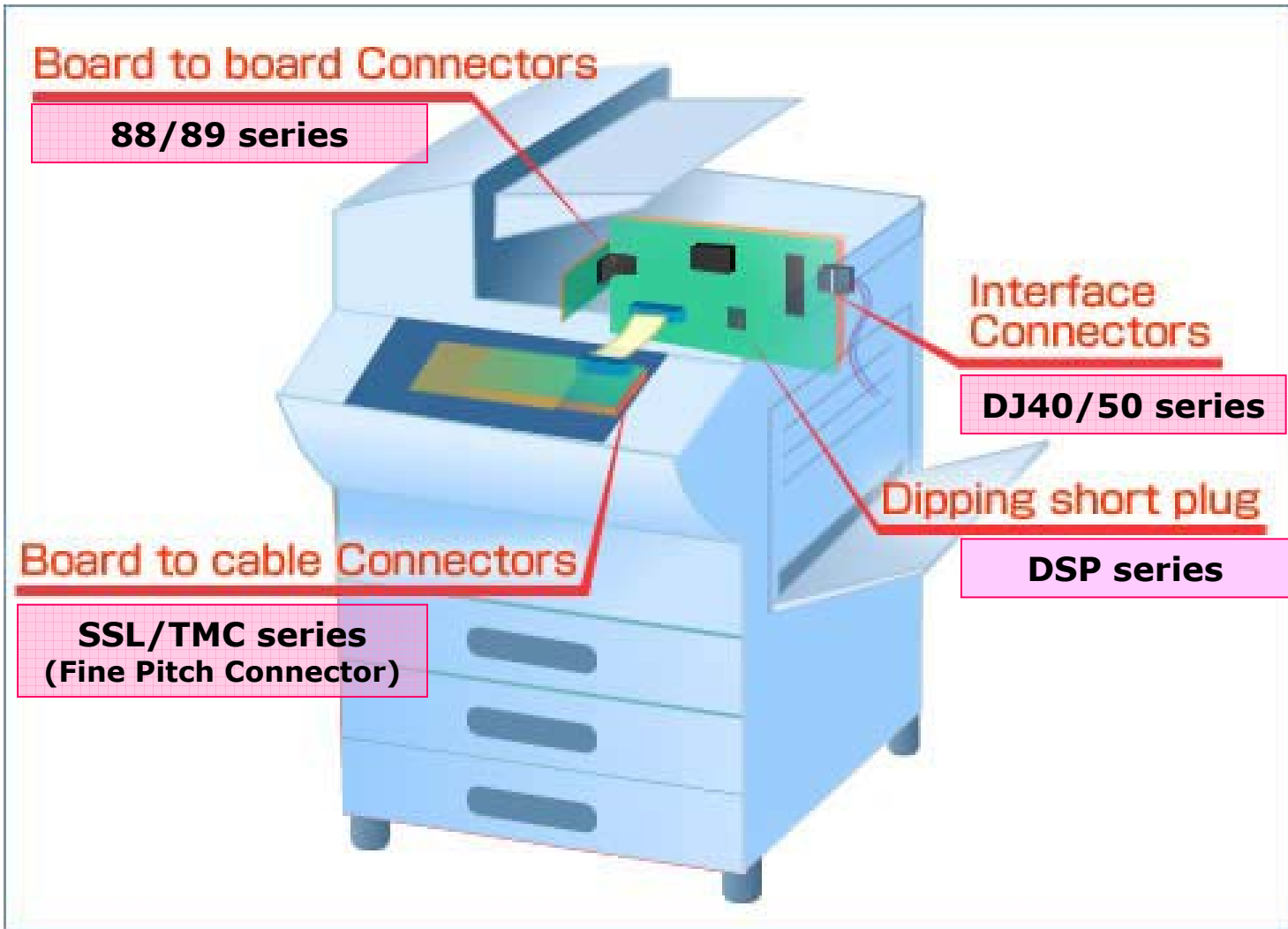
Key words: half pitch compact design needs 8925R

***KEL Products Applications***  
***for***  
***Multifunction Peripherals***  
***(Printer)***

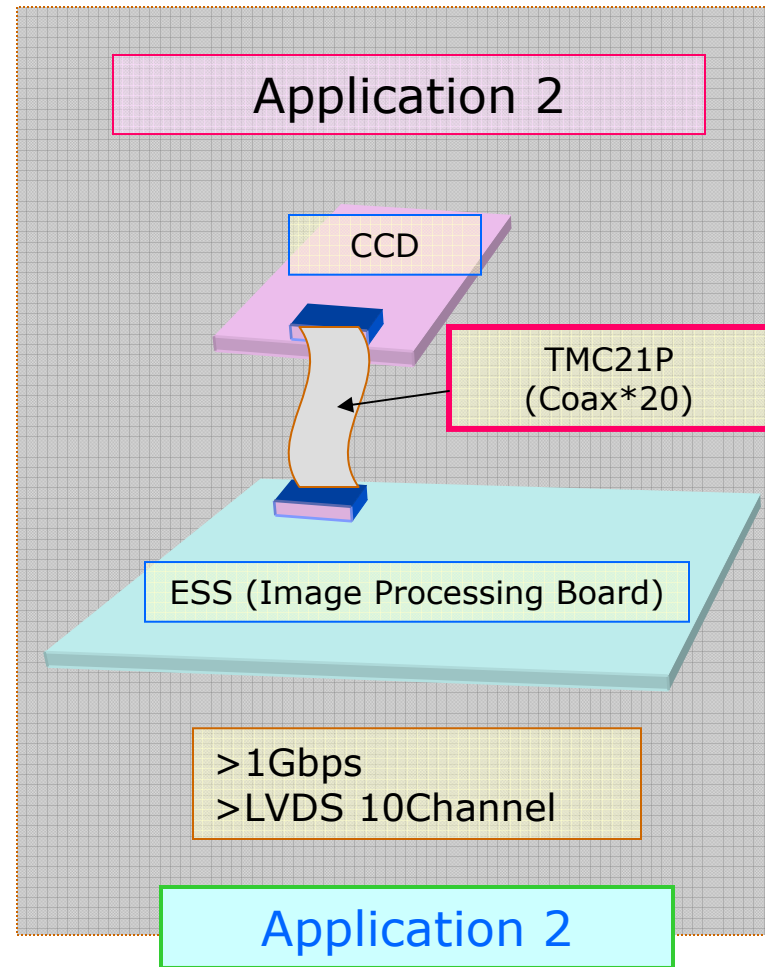
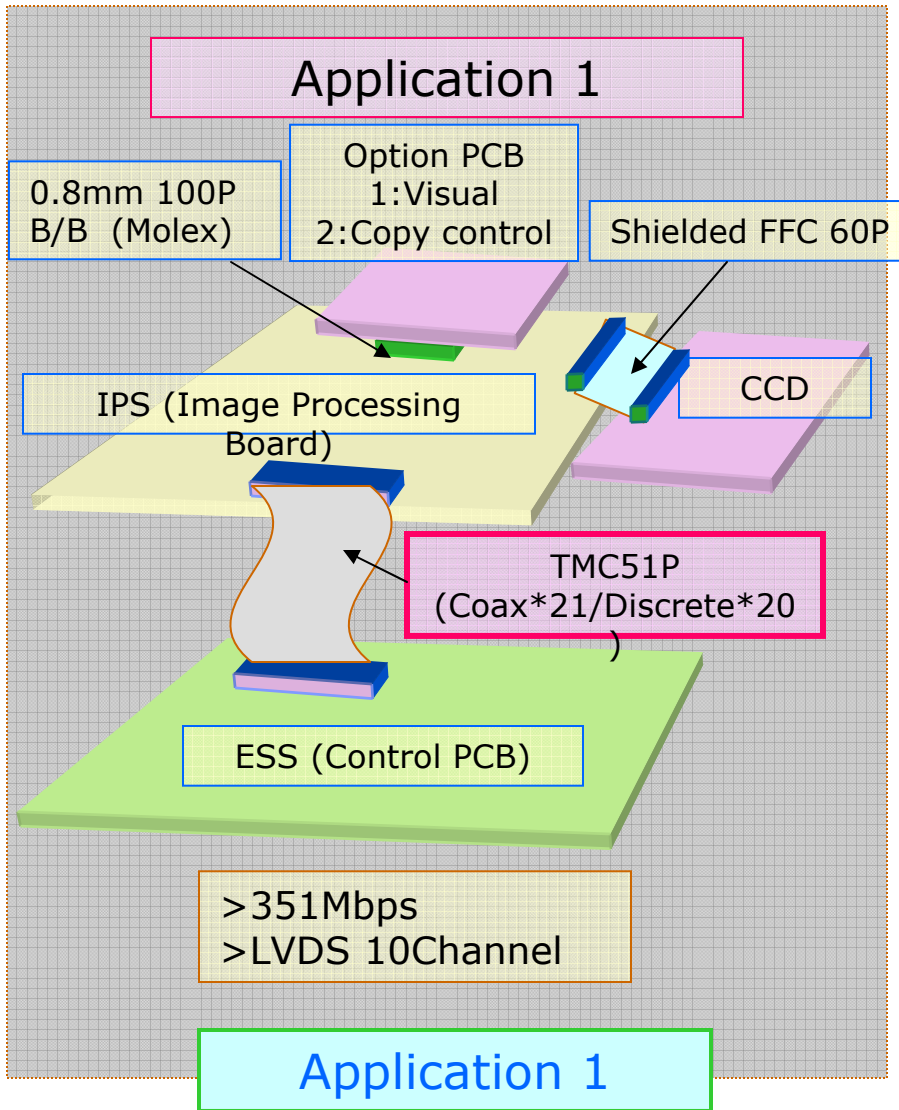
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# Digital MFP



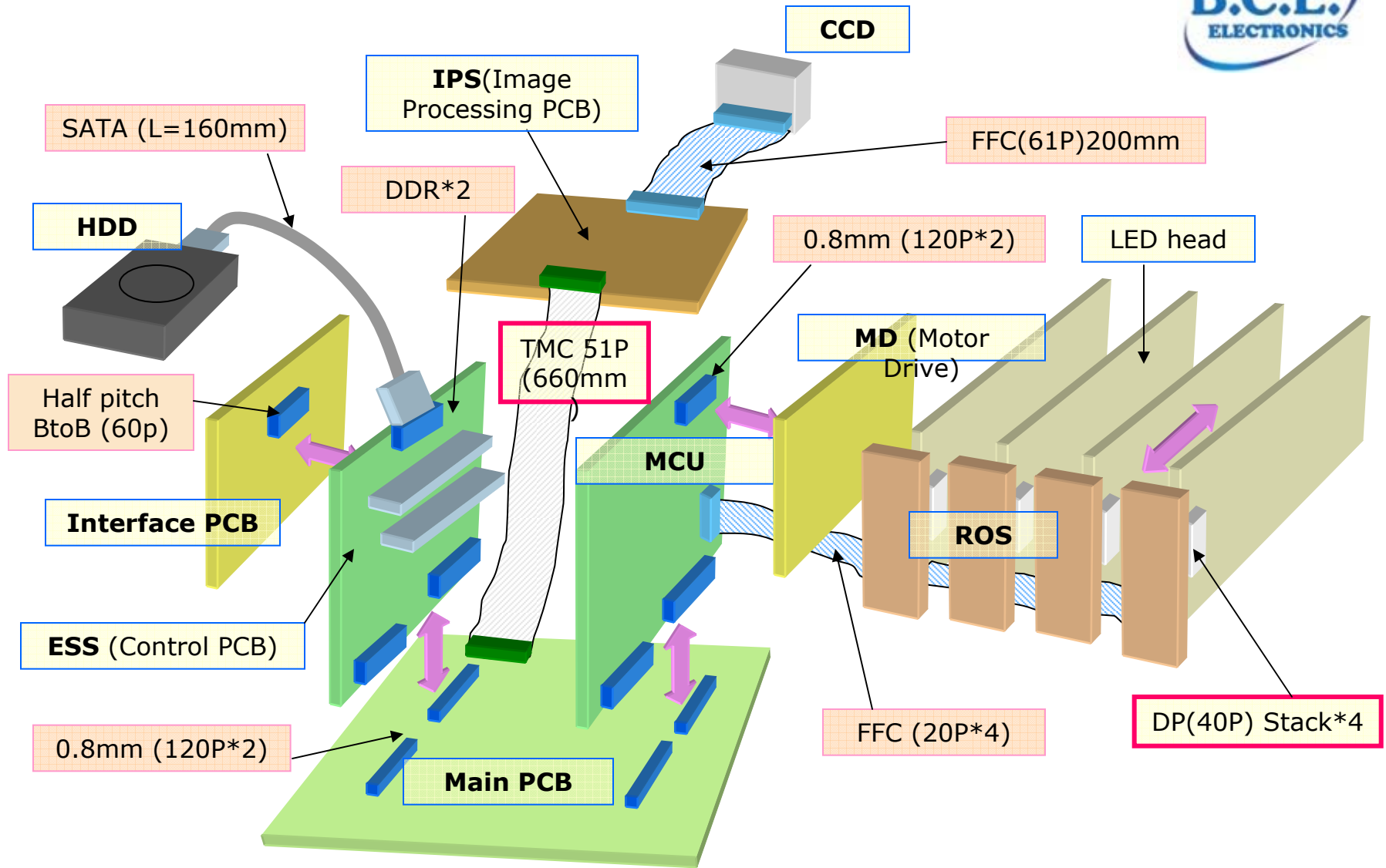
# MFP



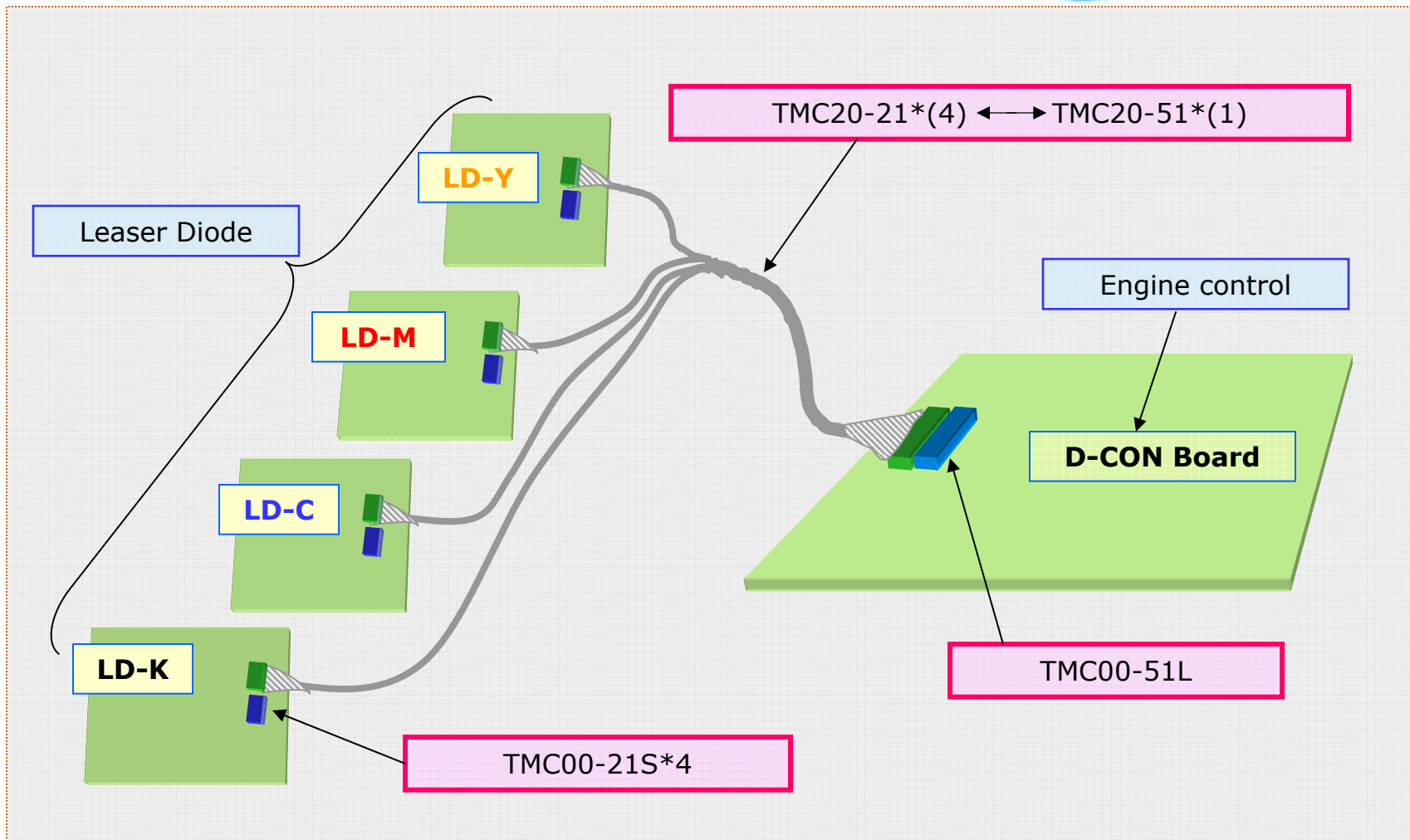
# MFP Application

KEL

B.C.E.  
ELECTRONICS



# Copy Machine



Key words: radiation noise

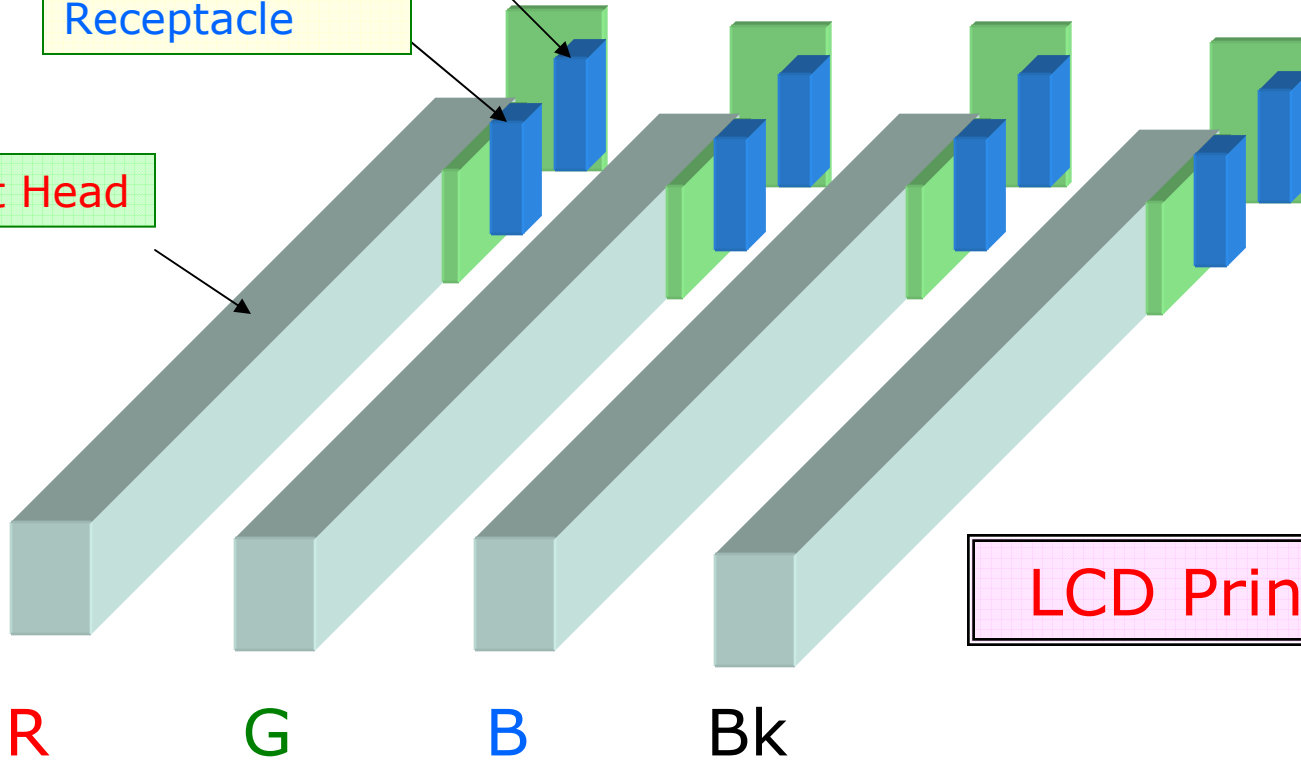
**MFP**



0.8mm  
Straight Plug

0.8mm R/A  
Receptacle

LED Print Head



**LCD Printer**

# ***KEL Products Applications for Gaming Machine***





# Gaming machine



Board to board  
Connectors

**86/87/DY  
series**

IC Sockets

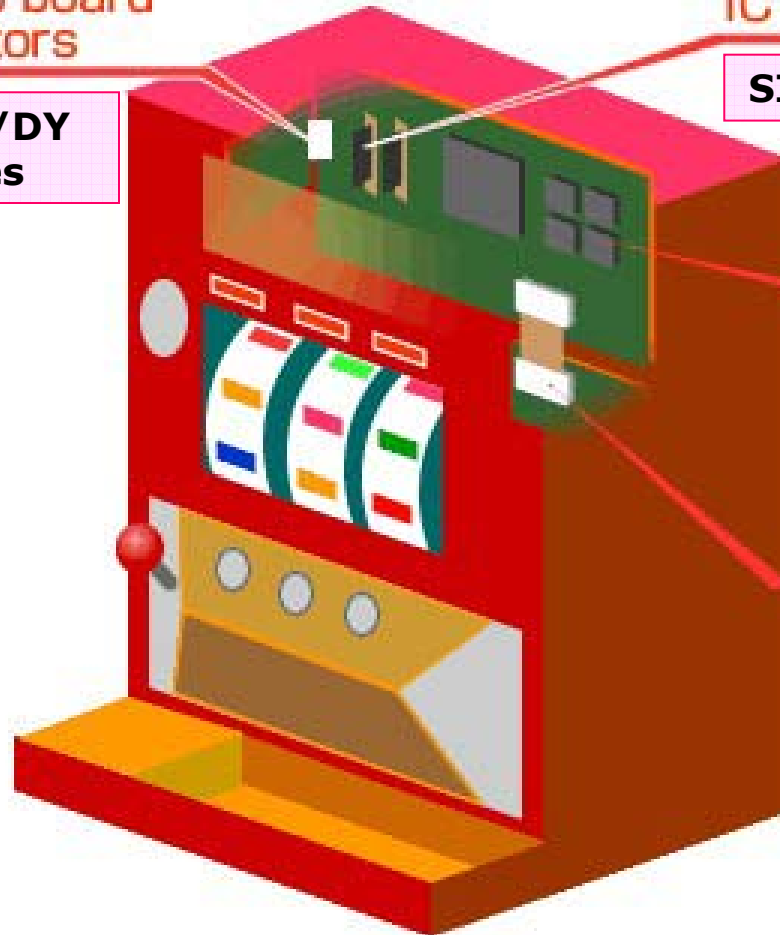
**SIC01/ICC05 series**

SOP · SSOP  
Sockets

**SOC/SSC series**

Board to cable  
Connectors

**8925E/8622E series  
(WTB Connector)**



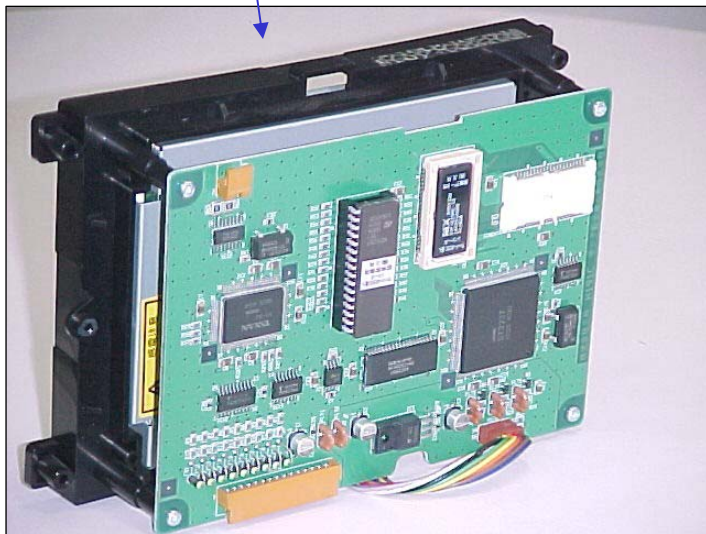
# Visual/Sound Device: Gaming machine

**KEL**

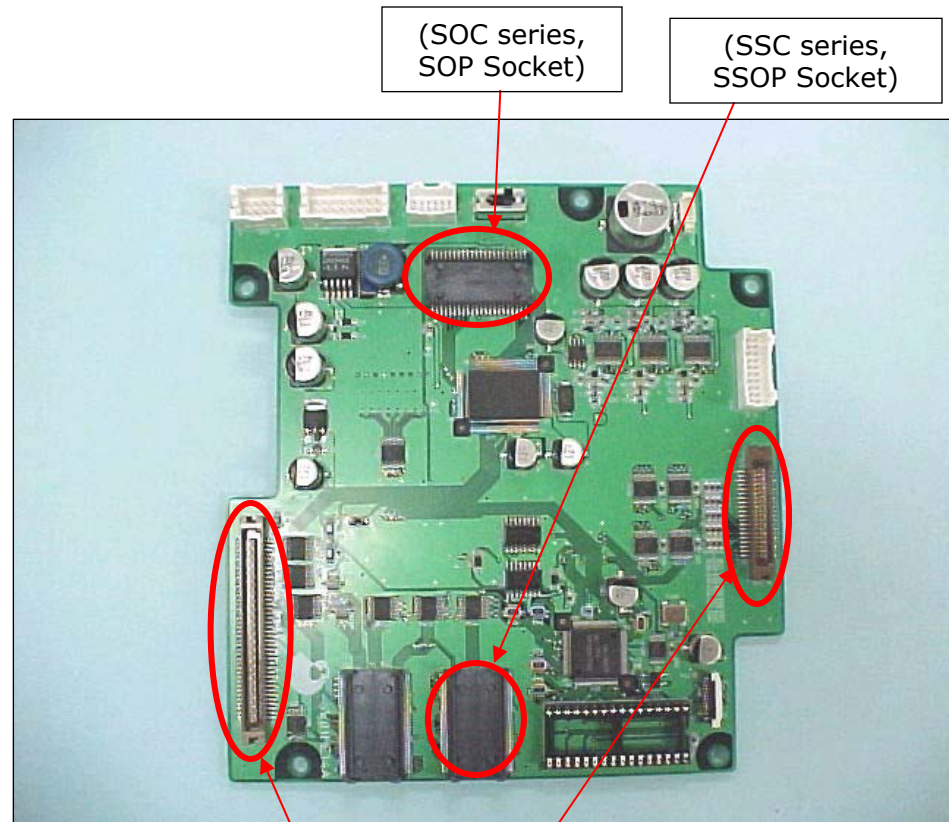
**B.C.E.**  
ELECTRONICS



Pachinko, Japanese gaming machine



LED Panel PCB



(SOC series,  
SOP Socket)

(SSC series,  
SSOP Socket)

8900 BTB series

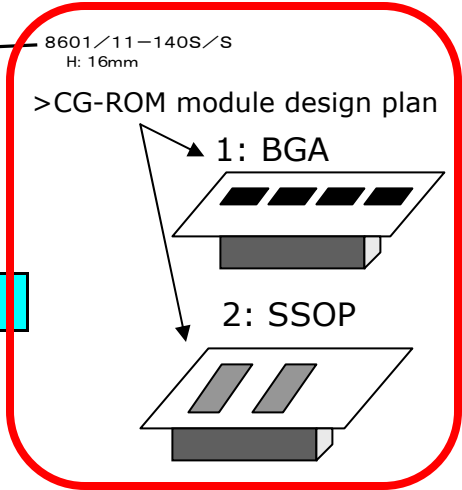
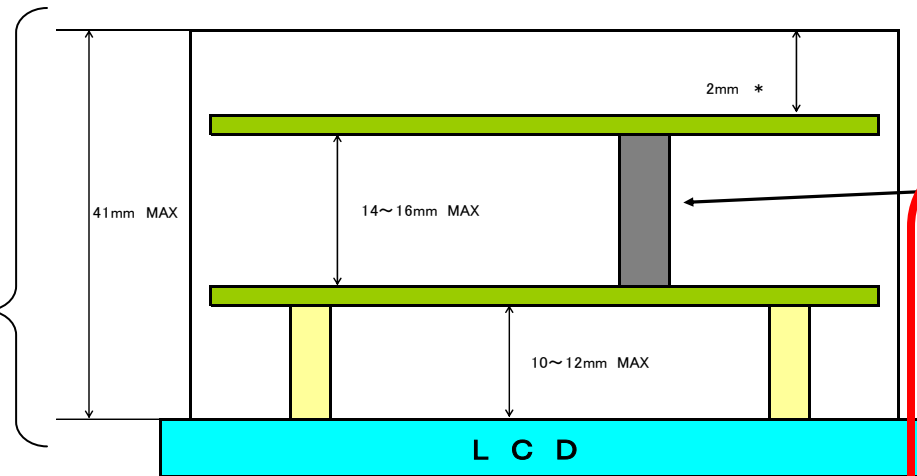
# Visual/Sound board: Gaming Machine

**KEL**

**B.C.E.**  
ELECTRONICS

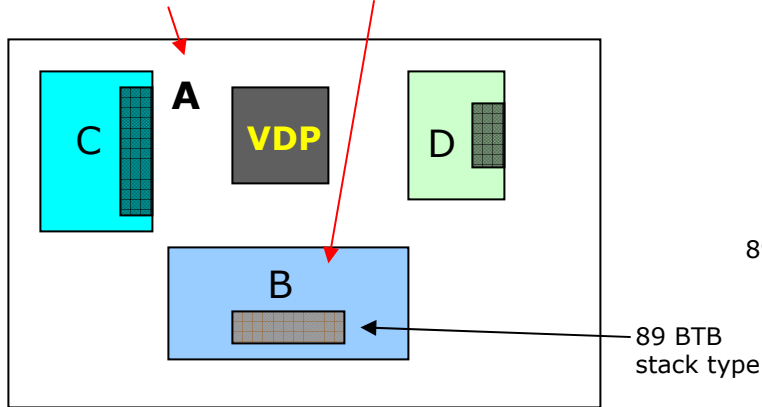


Limited depth:  
41mm Max

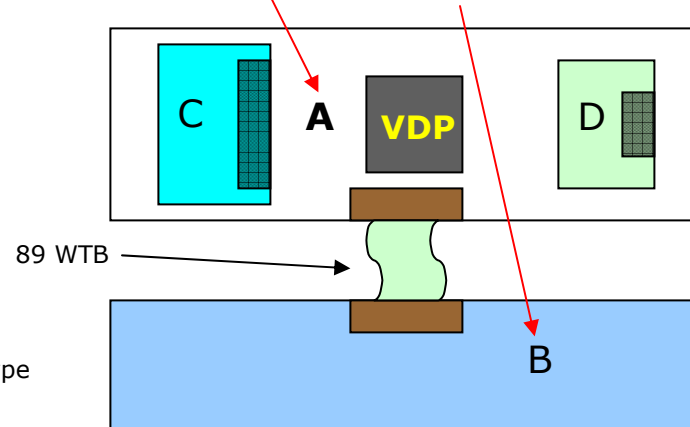


- >A: Visual Board
- >B: Sound Board: 8931E-040/89 or 8925E
- >C: CG-ROM: 86BB-140 H:16mm
- >D: LCD Driver: 86BB-60 H:16mm

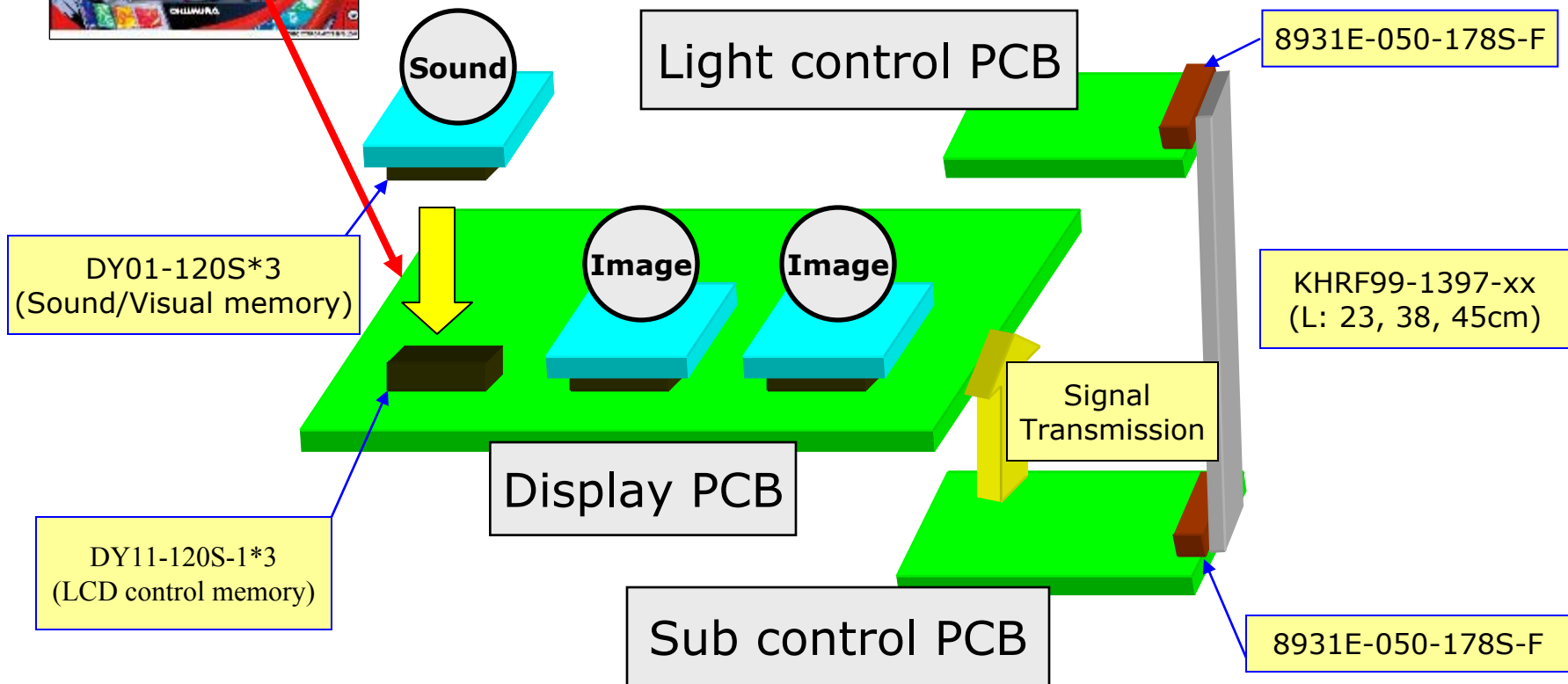
[One board design]



[Two board design (Plan B)]



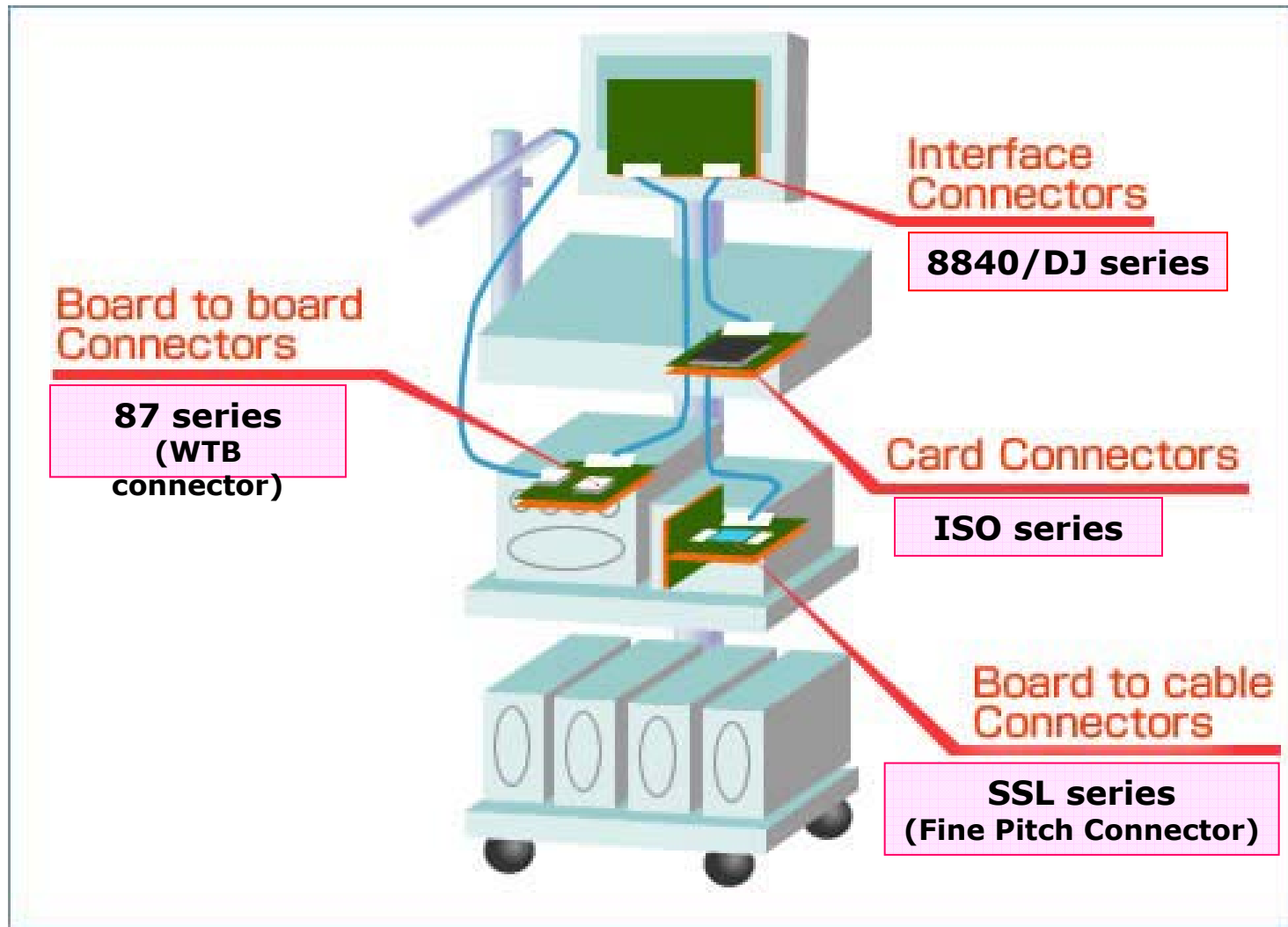
# Gaming machine



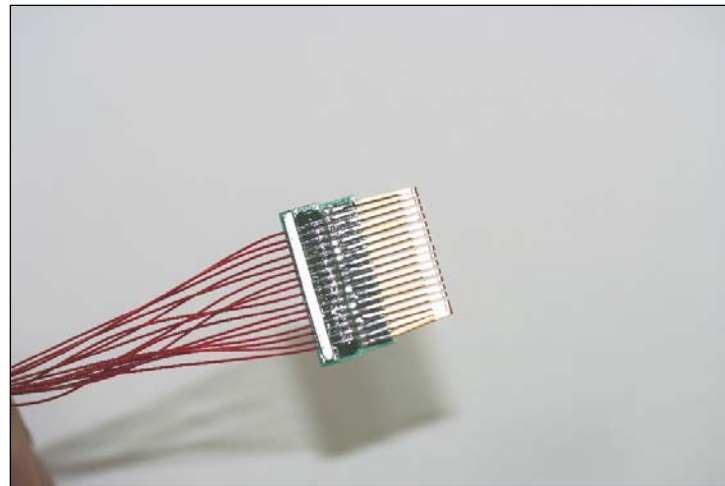
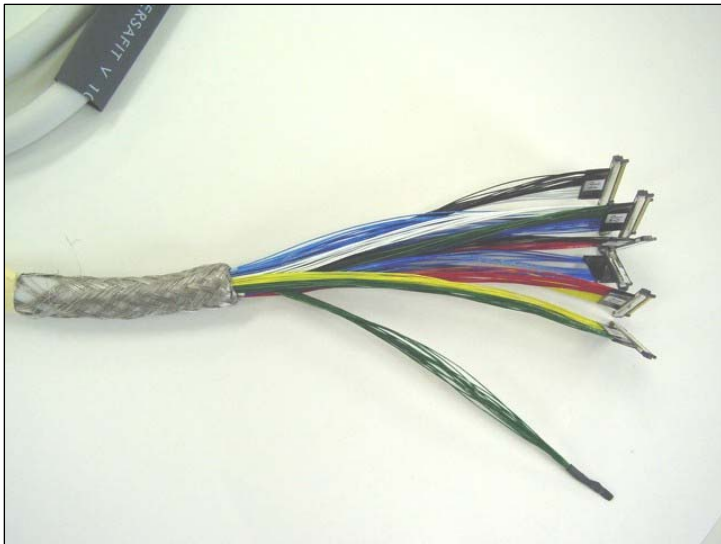
# ***KEL Products Applications for Medical Machine***



# Ultrasonic diagnostic Equipment



# Endoscope (Multiple micro coax wiring)



Product Image



Thank you !

**KEEL**

**B.C.E. S.r.l.** - Via Regina Pacis 54/c, - I 41049 Sassuolo (MO) - Italy

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Fax: (+39) 0536 811500

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