B.C.E. ELECTRONICS

Simula

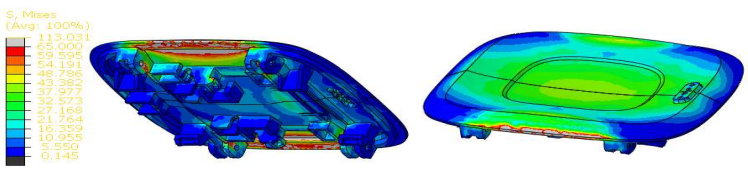
The Superior Technology
Solution Partner

Magnetic Pogo Solution

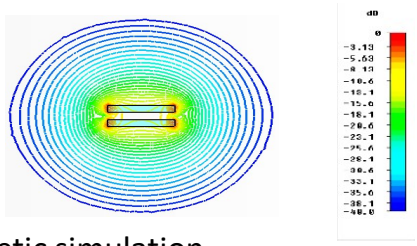
Aug 2018

Our Strength

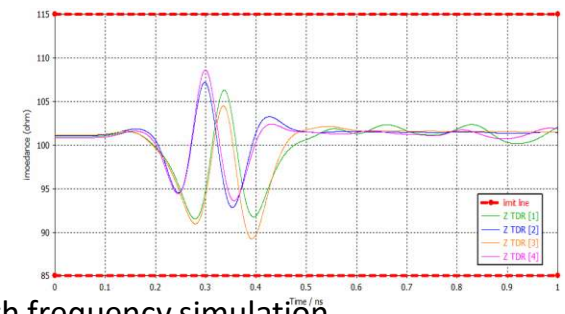
- Precise and Comprehensive simulation before fabrication
- Wide range from component to system level
- Total solution study and comparison on the market
- Rigorous measurement for each sample build



Strength simulation



Magnetic simulation

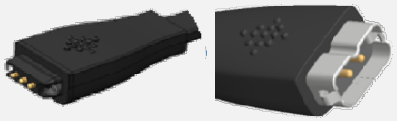
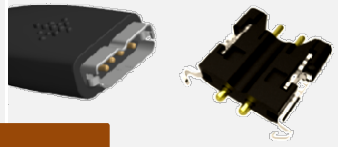


High frequency simulation

Product roadmap_Charger Cable/Conn./Module

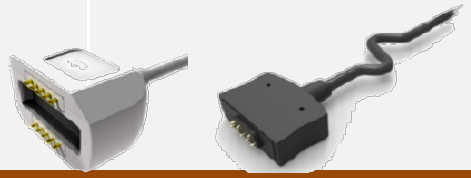
Under Development | Engineering Sampling | MP

Current Product	2017	2018

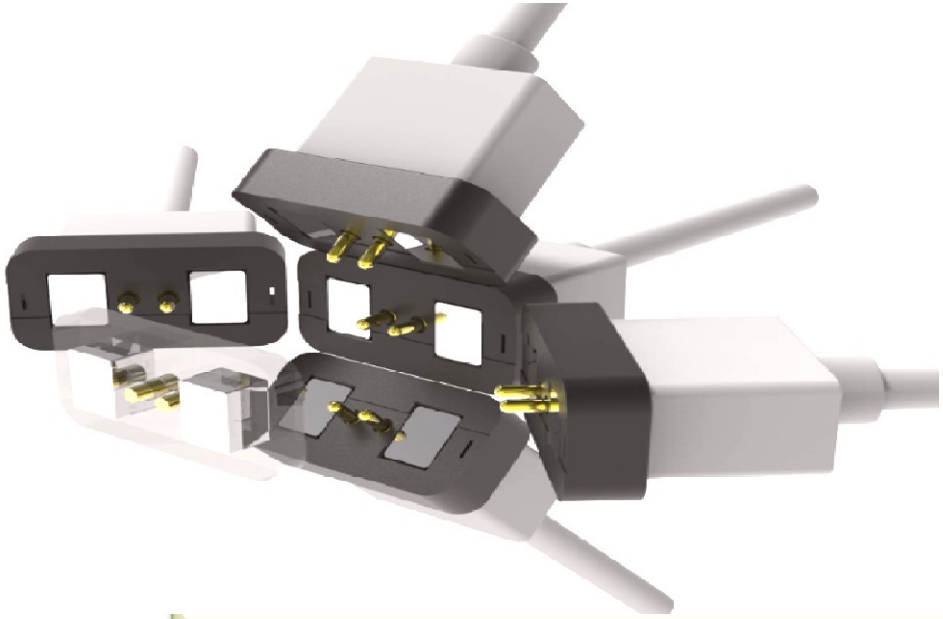
Metal-Fixed Type

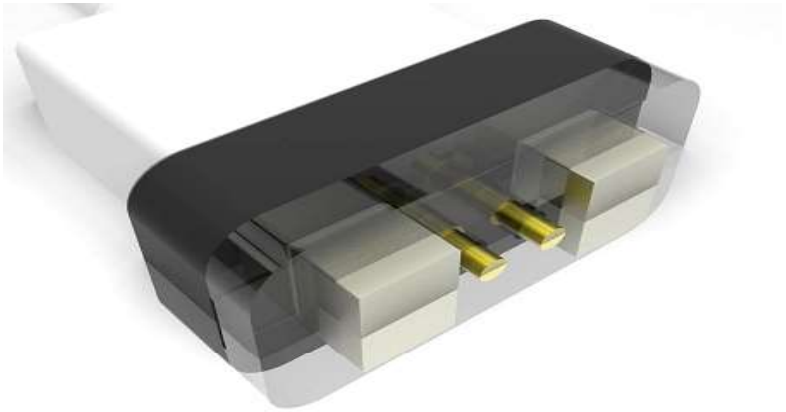

Plastic-Fixed Type[Clip/Box/Double Injection Type]]



Magnetic Type[Custom magnetic force/High Frequency]

Magnetic Solution



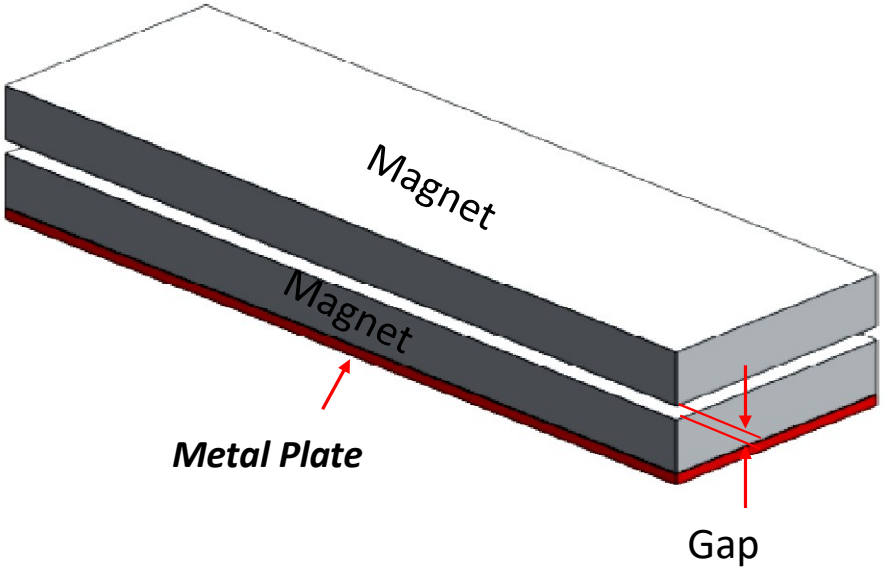


Friendly to “blind-mate” conditions

The attraction characteristics of magnet is that uncertain directionality occurs when plug connect to the receptacle. With this feature, we recommend to use POGO design to correspond with customer’s need. POGO could deliver data (up to 5Gbps) or power, therefore, it could be applied widely.

Analysis capability of magnets

Example 1



Simulation Condition :

Magnet Material : NdFeB (N52)
Magnet size : 24.1(L)*7.2(W)*1(H) mm

Metal Plate Material : Stainless steel
Metal Plate Size : 24.1(L)*7.2(W)*0.20(H) mm

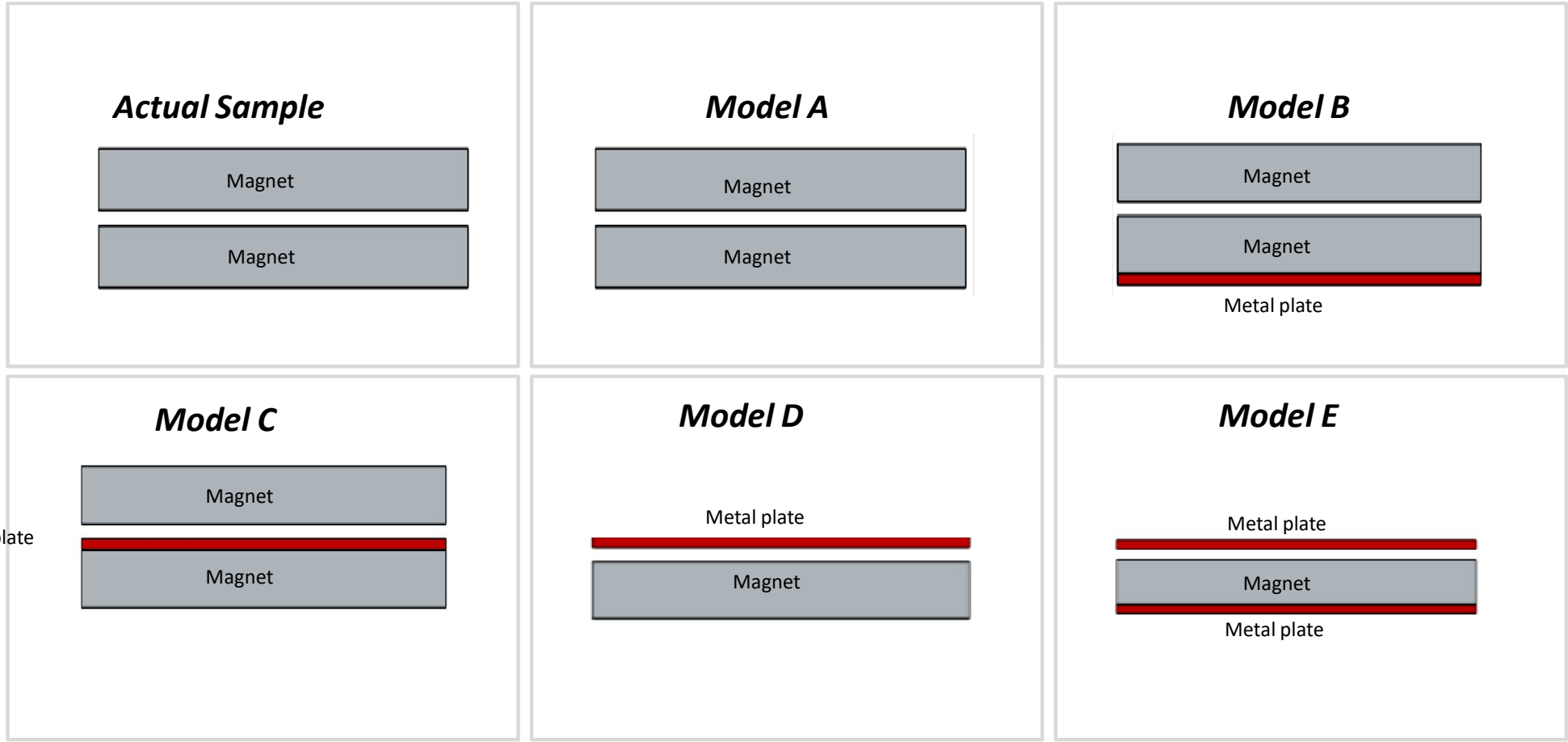
Analysis Gap : 0 To 5mm

Target : Effect of Metal plate on the magnetic force

Real Sample Test Results : 17N

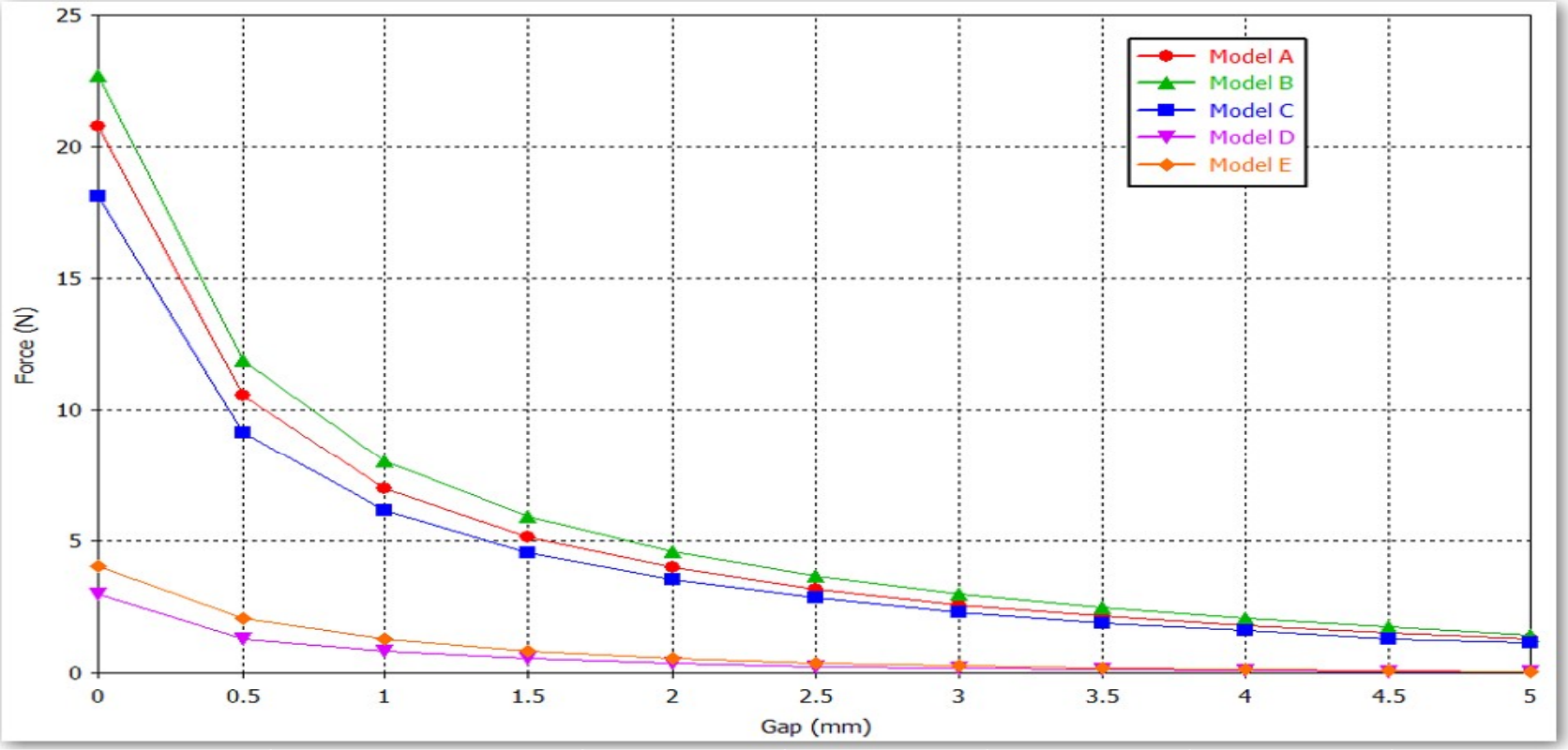
Analysis capability of magnets

Example 1



Analysis capability of magnets- Force Result

Example 1

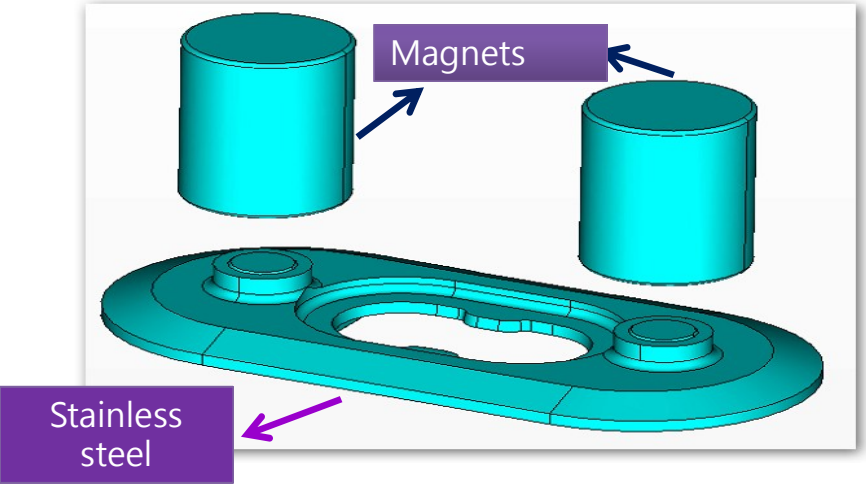


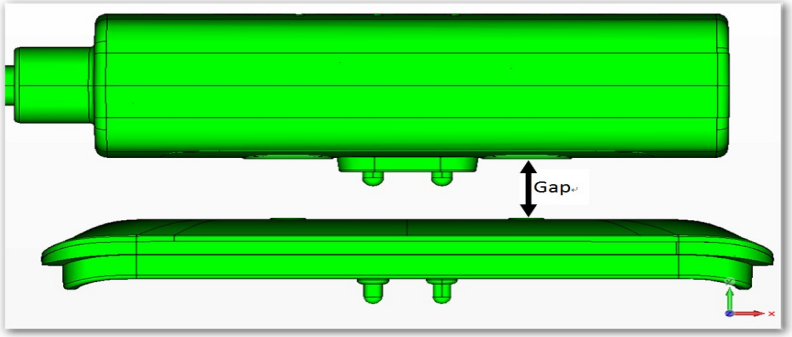
	Real Sample	Model A	Model B	Model C	Model D	Model E
Magnetic Force	25N	21N	23N	18N	3.5N	4N

Compare the real sample & model A simulation result SIMULA have over 85% accuracy on magnetic force analysis …

Analysis capability of magnets

Example : Pxxxle





Simulation Condition :

Magnet Material : NdFeB (N52)
Magnet size : 3.5(D)*4.5(H) mm

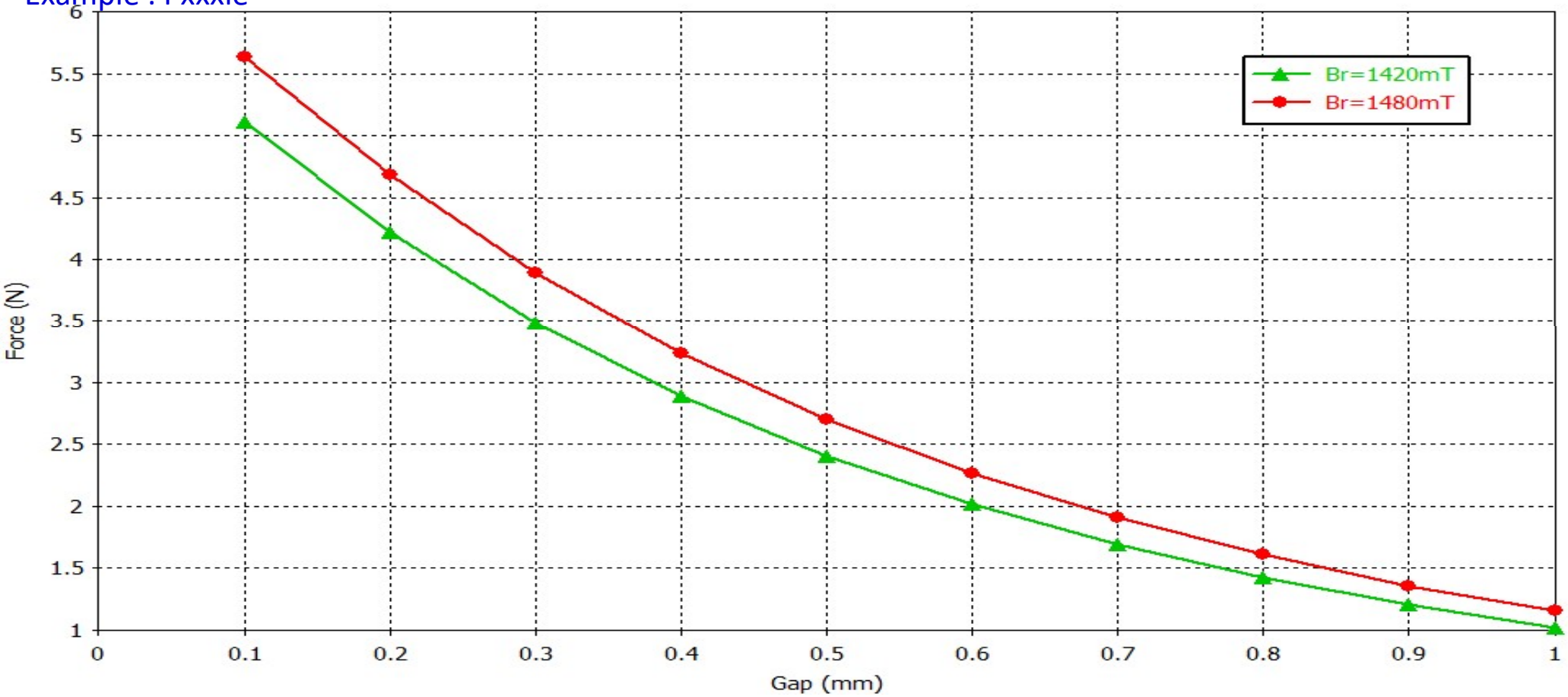
Metal Plate Material : Stainless steel
Metal Plate Size : as illustrated

Analysis Gap : 0.10 To 1mm

Target : Effect of Metal plate on the magnetic force

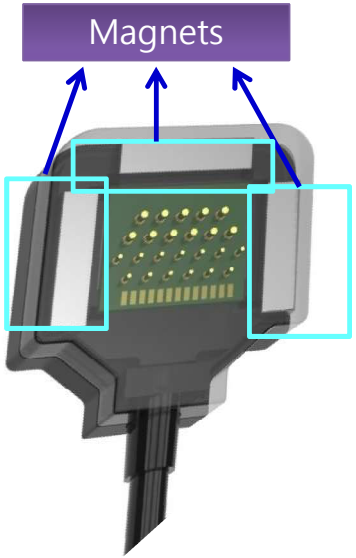
Analysis capability of magnets- Force Result

Example : Pxxxle

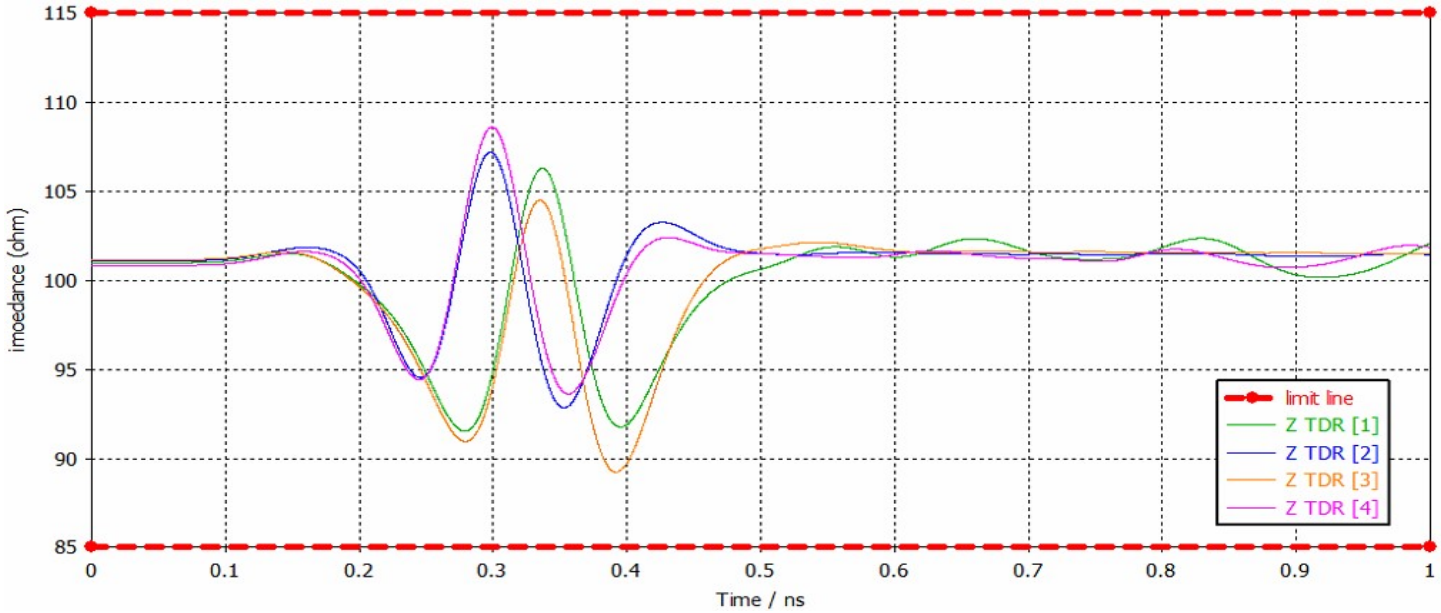


Pogo to HDMI 2.0 with Magnets

Pogo to HDMI 2.0

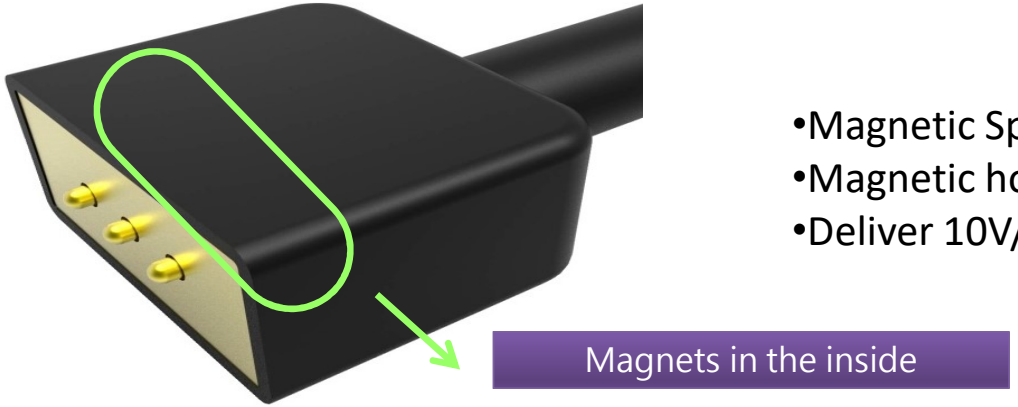


- Material of Magnet : NdFeB N52.
- Magnetic Force : 1.5kg (Reference).
- Power delivery (12V/5A).
- Support to HDMI 2.0.
- EVT Sample phase.



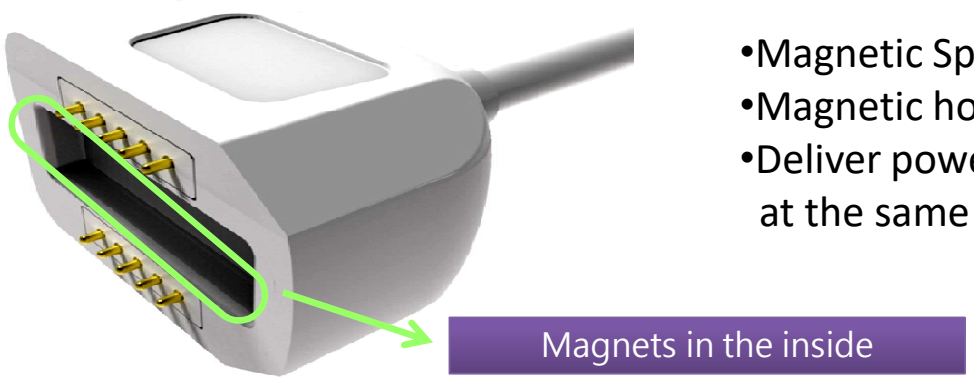
■ Simulated differential impedance (in spec.)

Pogo Magnetic Cable



For Smart home devices

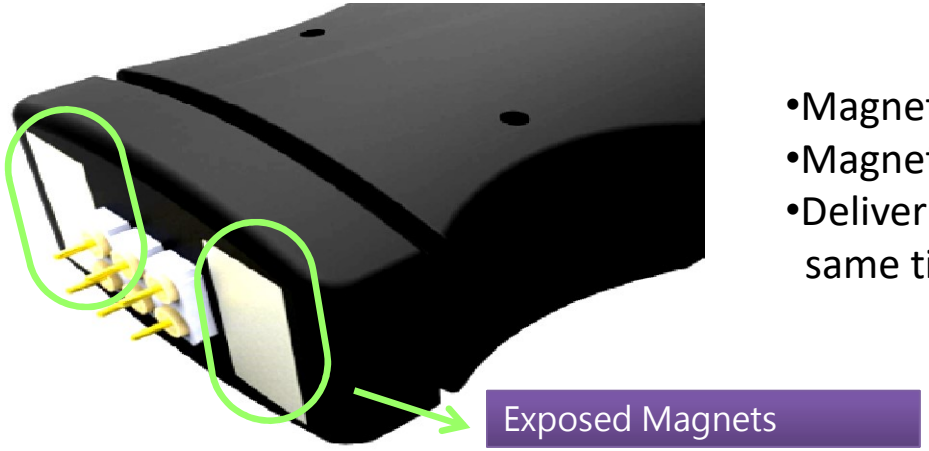
- Magnetic Spec : Material : NdFeB N52
- Magnetic holding force : 1.5 kg
- Deliver 10V/1A power for charging



For Handheld Medical devices

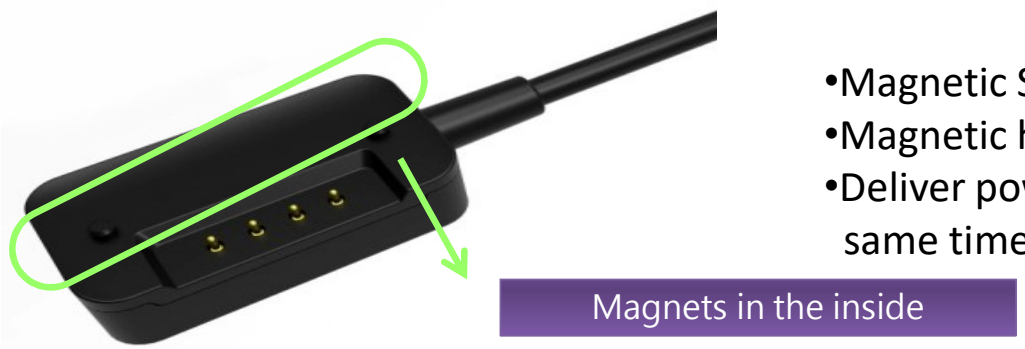
- Magnetic Spec : Material : NdFeB N48
- Magnetic holding force : 2.0kg.f Min
- Deliver power (4.3~5.5V / 0.5A) and data at the same time

Pogo Magnetic Cable



- Magnetic Spec : Material : NdFeB N52
- Magnetic holding force : 1.84 kg Min
- Deliver power (30V/1A) and data at the same time

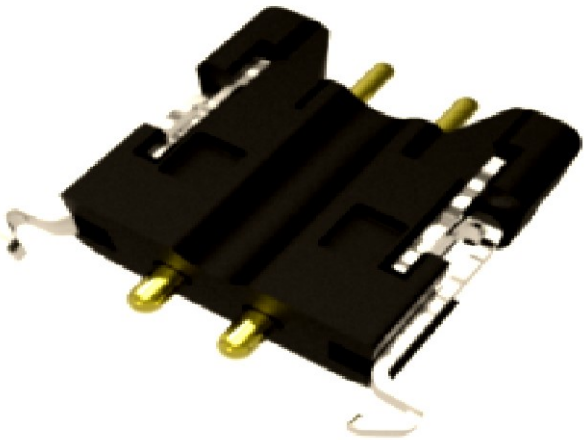
For Handheld devices



- Magnetic Spec : Material : NdFeB N52
- Magnetic holding force : 500g
- Deliver power (5V/1.5A) and data at the same time

For Wearable devices

Multi Pogo Pin Product connector

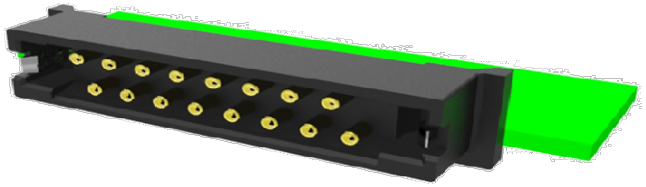


2 Pin pogo for wearable device
- Reversible / Latch design

Waterproof 2 Pin pogo receptacle

Waterproof 16pin pogo connector
- IP65
- Staggered pin design
- Smaller pitch
- Anti-ponding design

Plug



Receptacle

Pogo Power Charge Cable in healthcare

Power Charging Cable

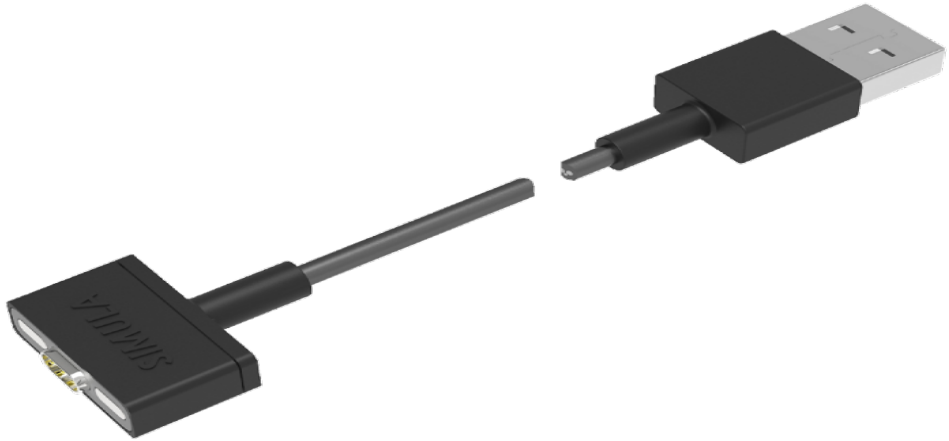
Different Dock Structure Design

Cable Application

Charger Cable for Smartwatch

Feature

- Custom ID/ Magnetic force
- System integration
- Custom magnetic force: Min. 350g
- Product life: 5,000 cycle
- Rating: 5V, 0.5A



Thank you

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SYSTEM CERTIFICATION ISO 9001 SGS