

# MULTI-PORT I/O DONGLE – CABLE ASSEMBLY INTERFACE FOR MINI PC



## OVERVIEW

Large Tier 1 PC manufacturer needed a multi-input form factor (HDMI, UBS-A, USB-C, RJ-45, Power) cable assembly for their mini PC-based conference room management system.

## CHALLENGES

- ▶ Multi input form factor
- ▶ Curved design of the control module made it difficult for connector alignment
- ▶ Single piece over mold containing six different connector form factors
- ▶ Over mold transition to flat cable and back to individual connection points presented design challenge due to seven cables involved; needed a way to keep seven cables from becoming tangled and knotted
- ▶ Long development cycle – 12 months

## SERVICES PERFORMED

- ▶ Collaboration with end customer on ID, functionality, and general design considerations
- ▶ Mechanical and electrical design
- ▶ 3D model rendering
- ▶ Over mold tool design and build
- ▶ Product verification and validation testing: electrical, high speed signal integrity, and system level testing
- ▶ Worked with both ODM and OEM to manage project deliverables and timing to allow integration of cable assembly into system level packaging at ODM

## RESULTS

- ▶ ACES MEC is single sourced supplier for cable assembly
- ▶ ACES was only company willing to take on the challenging design for a custom cable assembly for a new product launch with unknown volumes, and challenging price targets
- ▶ Has allowed ACES to be considered for next generation assemblies
- ▶ Helped strengthen ACES's relationship with the OEM to gain additional connector content on additional products