Mcurich Inc. Company Briefing

A dedicated High-Speed Cable supplier located in Taiwan

October 2021

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Company Overview

Mcurich Inc. is a subsidiary of Qisda Corp. (TWSE 2352) group in Taiwan, group annual revenue is US$ 6 billion.

We are a High-Speed Cable provider for Cloud Computing, Datacom, 5G, Enterprise, IOT, Security etc. Industries.

We are designing and manufacturing High-Speed Cable in Taiwan and Stock in US, by following the updated Industrial standard and trend, up to now we have had the capability to provide the High-Speed DAC, AOC, Transceiver Module, Internal Cable, AEC, ACC from 10G to 800G. We are also providing Customized ODM and Under Liquid Cable for Global Customers.

We are ISO 9001 certified and all over products are compliant with RoHS, REACH, CP65 etc. safety regulations. We are a member of SNIA TA TWG and are the AVL for several global companies. All this documents are available on hand which will eliminate the long lead time for product qualification by the Immediate Urgent Users.

Mcurich Inc. ISO 9001 & a Member of SNIA TA TWG

MS CERT

Certificate Of Registration

QUALITY MANAGEMENT SYSTEM

This is to Certify that the Quality Management System of MCURICH INC.

Address: 19F-11, No. 97, Sec. 1, Xintai 5th Rd., Xizhi Dist., New Taipei City, Taiwan (R.O.C.)

has been assessed and found to comply with the requirements of:

ISO 9001:2015

(Quality Management System)

Scope of Certification:

R&D, Manufacturing, Sales For Interconnection Products Incl. Cable ASS'Y & Connector

Sector Code: (ANZSIC CODE: 2439)

Certificate Number: TWN/QMS/00384/7577

Issue no.: 01

Date of approval : 14.06.2019 Valid until : 13.06.2022

Revision no: nil Revision date : nil

Original Certification Date: 14.06.2019

April 2020 Surveillance Audit 1st Year

Head of Certification

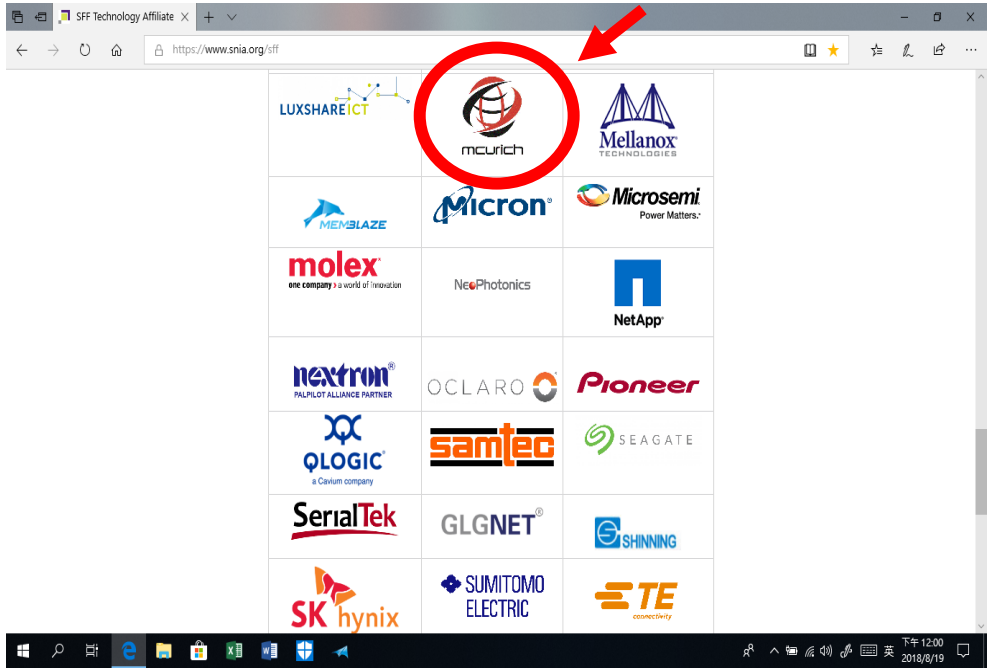
April 2021 Surveillance Audit 2nd Year

JAS-ANZ IAF

MS CERT ACC.No.M4151008IK

MSCS Critical Location: MS CERTIFICATION SERVICES PVT. LTD. 3/23 R.K.CHATTERJEE ROAD KOLKATA-700042, INDIA.
Local Office (Other Location): RYH-TIAN INTERNATIONAL CERTIFICATION, 4F, No. 20, Chang Chun Road, Taipei City, Taiwan
www.mscertification.net

The validity of this certificate can be verified at www.jas-anz.org/register and www.mscertification.net
The Certificate is Valid Only if the Annual Surveillance Mark is Signed by Auditor on Original.



R&D / NPI production in Taiwan and high-volume MP in China

Taiwan 330 SQM,

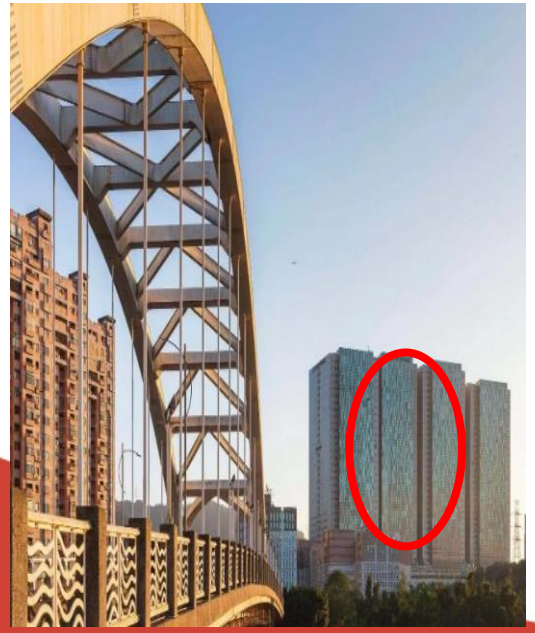
Employee 55, ISO 9001

19-11, 97, Sec1, Xintai 5th Rd, Xizhi Dist, New Taipei City

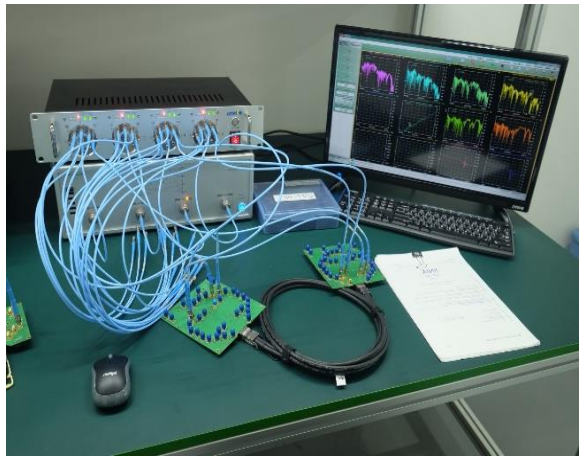
China 23,436 SQM, Employee 600

IS9001/14000/13485/TS16949/OHSAS180001

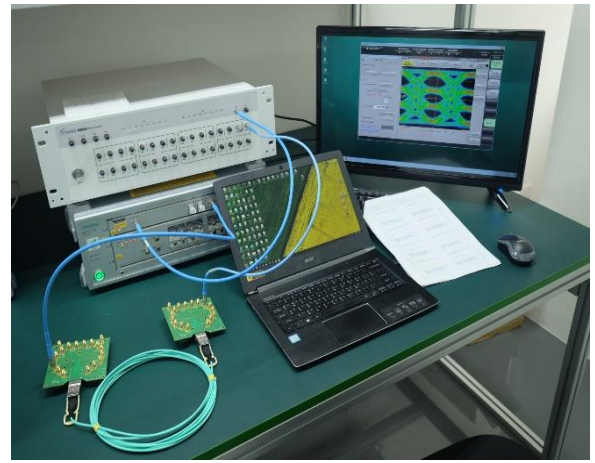
Baolong 6th Rd, Baolong Ind Park, Longgang Town, Longgang Dist, Shenzhen, Guangdong, China

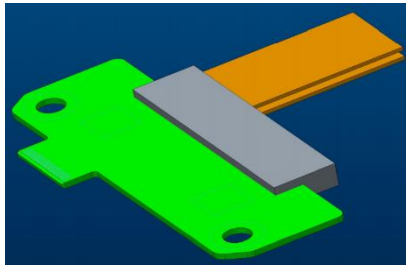


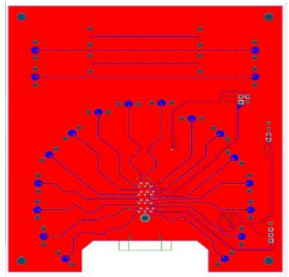
SI Test Equipment & Design Capability

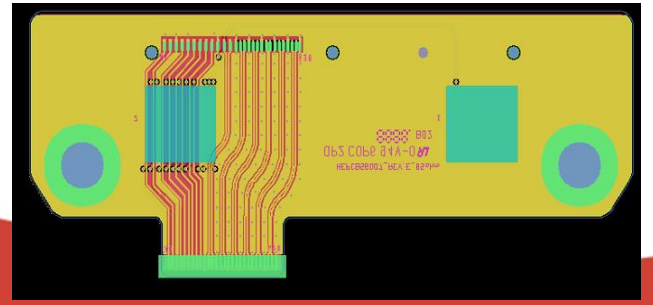


1. Anritsu MS46524B VNA to 43.5GHz, 32 port RF Switch, test fixture, calibration tool
2. Anritsu 4ch 28.2Gbit/s BERT and 2ch Optical Sampling Oscilloscope, Agilent power supplier
3. CAD 2000, Pro-E 2.0, Altium Design, Allegro PCB Designer, Gerber Viewer, EzCoding 8740

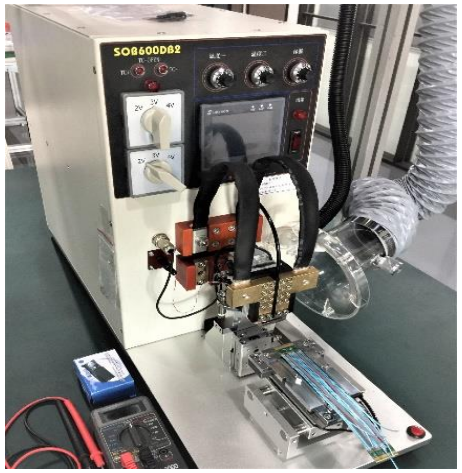








Manufacturing Equipment



Hot-Bar

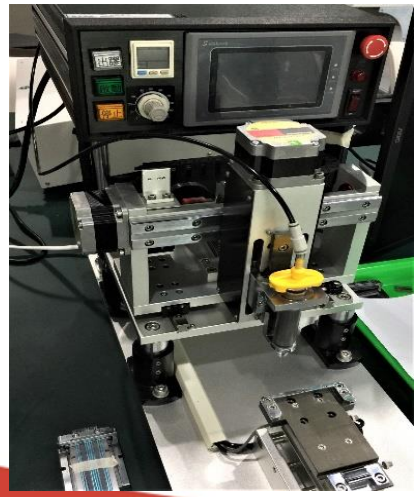
Low pressure molder

Micro-test 8740

CO2 laser cutter

Auto striper

i2c EEPRROM coder



Auto solder paster

Die/mold/fixture

Reliability & Safety Test Equipment

- Reliability verification, DVT report, RoHS, REACH, CP65, CE, FCC, MTBF, ISO 9001

Thermal shock Tester

Hot Air Reflower

Temperature & Humidity Chamber

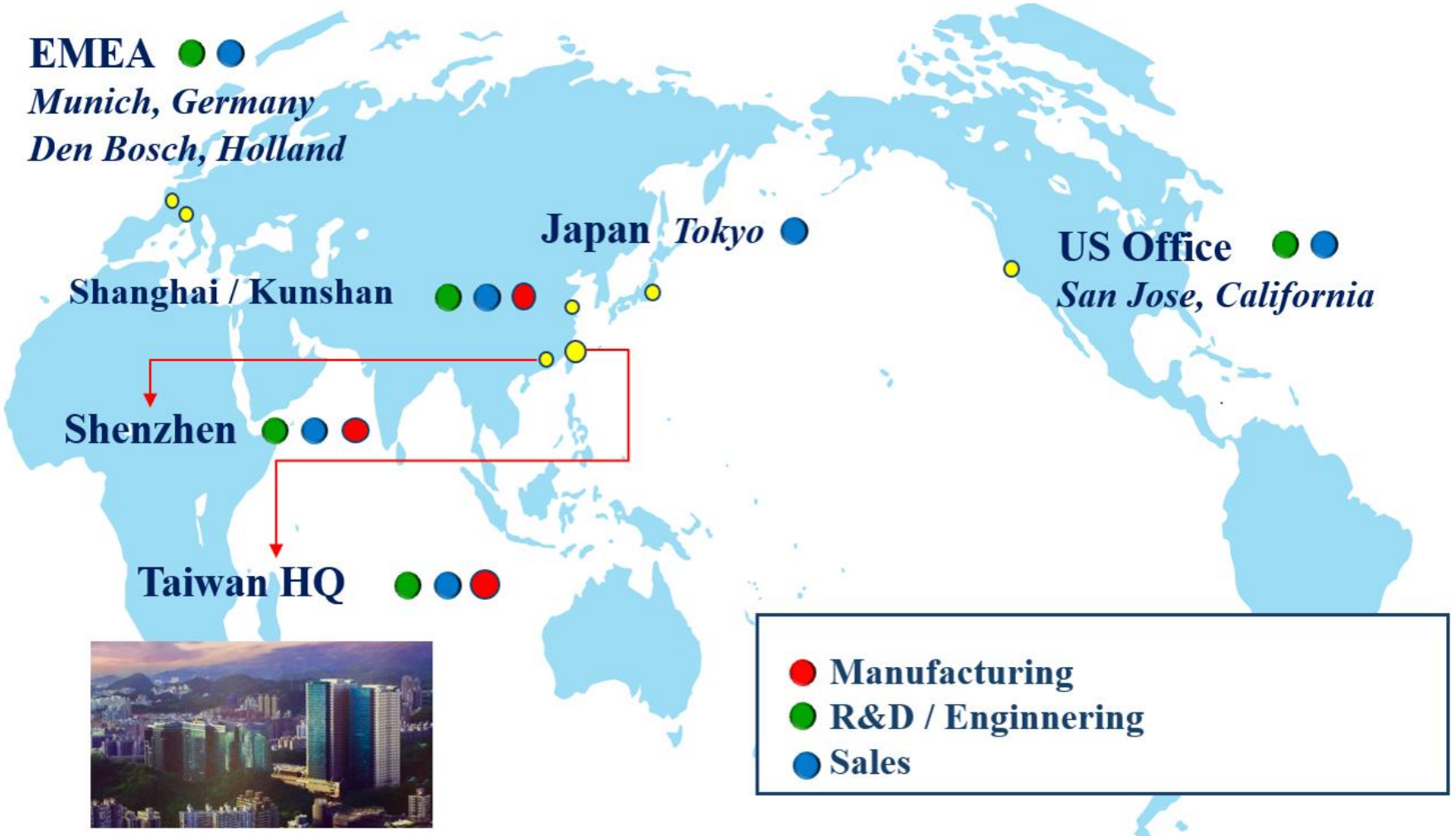
X-ray Fluorescent Spectrometer (RoHS)

Spring force & Contact resistance Tester

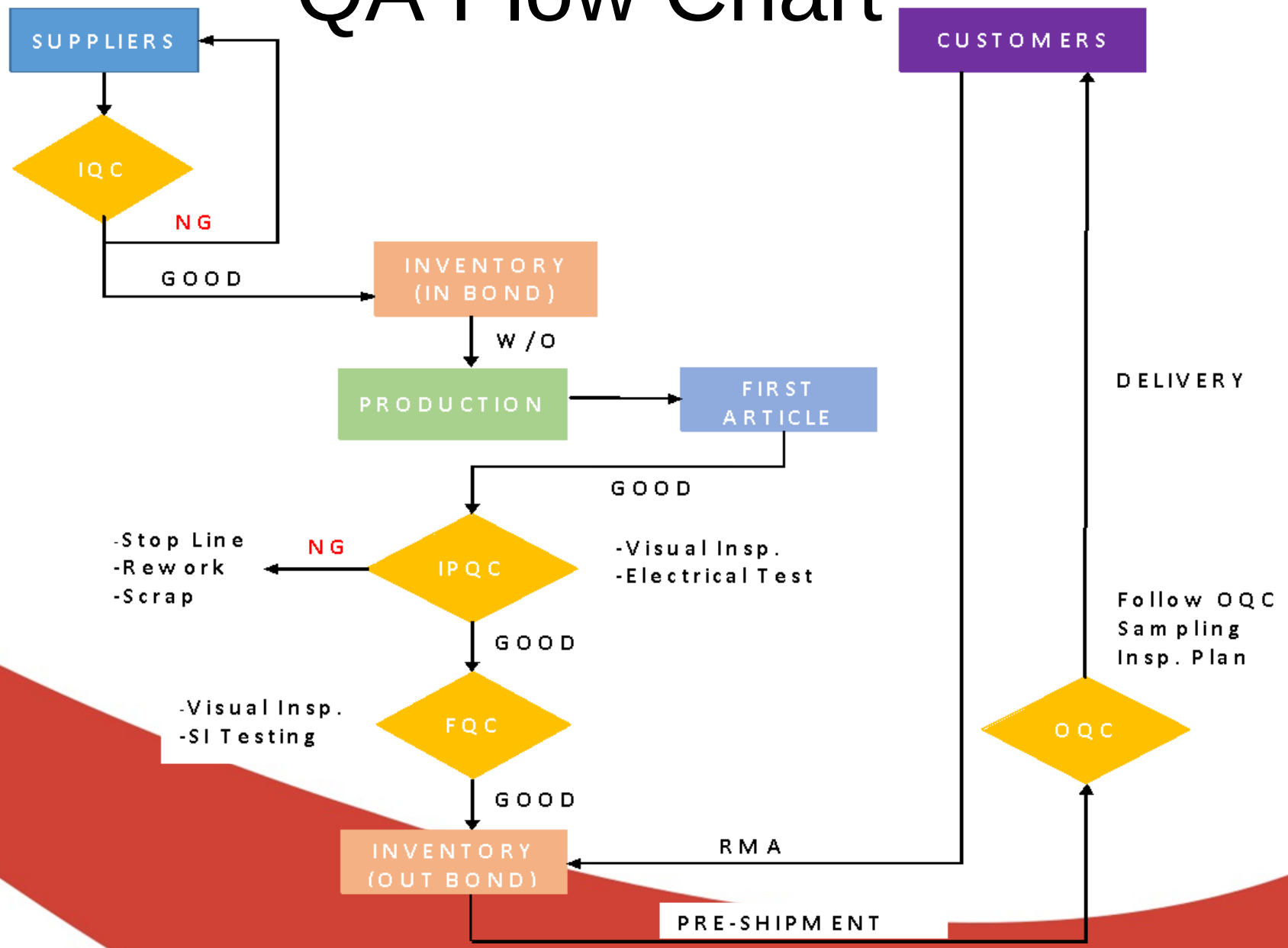
350X Measuring Microscope

Salt Spray Tester

Global Sales, Engineering, Manufacturing Support



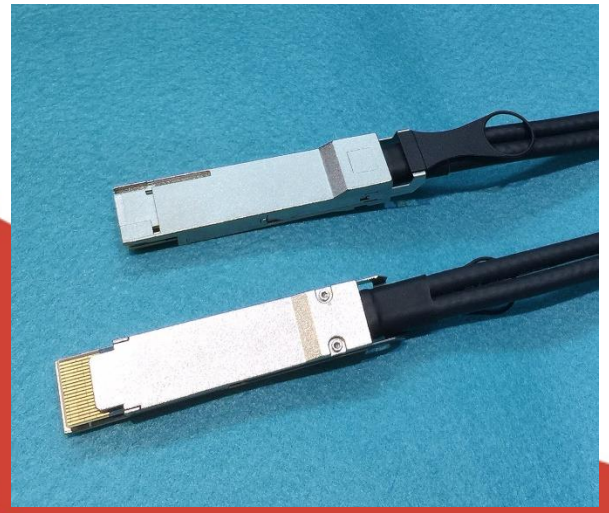
QA Flow Chart



External Cable (DAC)

QSFP DD (IEEE 802.3cd / Infiniband EDR)

- Compliance with QSFP MSA / SFF-8665 & SFF-8636
- Data rate NRZ 200Gbps, PAM4 400Gbps
- EEPROM IC on paddle card
- Voltage 3.3 VDC max.
- Impedance 100+-10 ohm
- Wire size 7 cable length
  - 30 AWG 0.5m to 1.5m
  - 28 AWG 0.5m to 2.0m
  - 28 AWG 1.5m to 2.5m



QSFP DD Cable

QSFP28/56 series for 28Gbps & 56Gbps

- Data rate NRZ 100Gbps, PAM4 200Gbps
- for Infiniband EDR
- for Ethernet networking
- DAC passive cable:
  - 30AWG up to 3M
  - 26AWG up to 4.5M
- QSFP28/56 Loopback Adapter (from 0dB to 6dB, and 1.5W to 5.0W)

QSFP28/56 Loopback Adapter

QSFP28/56 Cable

SFP28/56 series for 28Gbps & 56Gbps

- SFP28 Copper Cable
- QSFP28 to SFP28*4 Breakout Cable
- 30AWG up to 3M, 26AWG up to 5MSFP28
- Loopback Adapter (from 0dB to 6dB)

SFP28/56 Loopback Adapter

QSFP28/56 – SFP28/56* 4

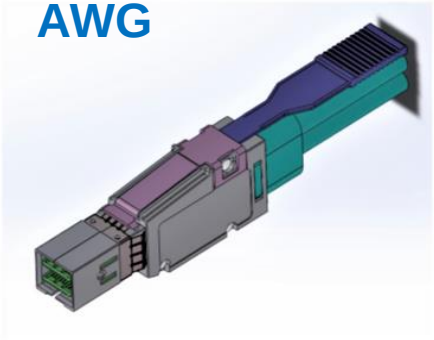
SFP28/56 Cable

External Mini SAS HD Cable SFF 8644

- Follows SAS 3.0, 4.0, PCIe 3.0, 4.0 for 6Gbps,12Gbps,16Gbps, 24Gbps application
- Both 85ohm and 100ohm available
- Mini SAS HD 4x with EMI spring shielding
- Mini SAS HD 8x for dual port application

Fan-Out

Length vs AWG



Wire Gauge	Length
30AWG	0.5~3.0m
28AWG	3.0~4.0m
26AWG	5.0m
24AWG	6.0m

Straight vs R/A

External Cable
(ACC / AEC)

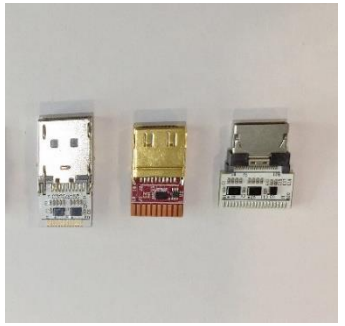
QSFP28/56 & SFP28/56 Active Cable Assembly

- Compliance with Ethernet Networking and Infiniband specification
- Phase one Equalizer ACC, phase two Retimer AEC
- Available of cable length up to 5m, 7m and 10m
- QSFP to SFPx4 fan out cable is subject to request
- Provide ODM and OEM support of ACC for USB, HDMI, Thunderbolt etc. incl. DFM, fixture & tooling fabrication and Automation

QSFP28/56 ACC

Fan-Out ACC

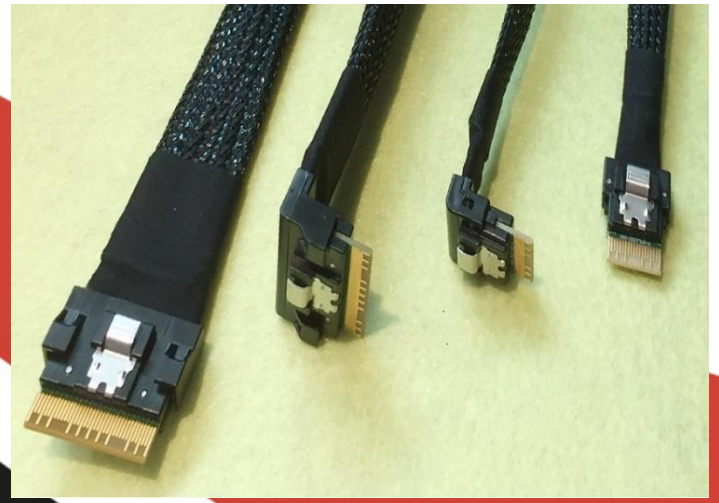
ACC Paddle Cards



Internal Cable

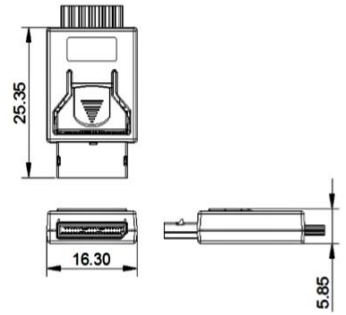
Lean SAS Cable Assembly: SFF 8654

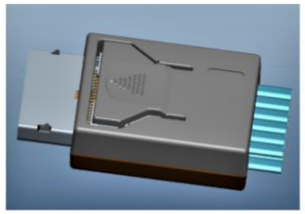
- Lean SAS Internal 4i 8i 16i C/A, high density, flexible and compact structure
- Robust lock transmission speed up to 24Gps with 8,16,32 pair signals plus clock
- Available for 85 and100 ohm, support SAS 3.0/4.0/5.0, PCIe 3.0/4.0/5.0, length up to 1m
- 4i & 8i straight, right angle, side exit in MP
- 4i 8i 16i low profile straight, R/A, side exit subject to request



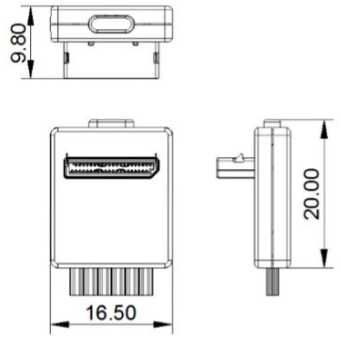
OCulink (NPIO) Cable Assembly: SFF 8611

- OCulink high density interconnect system complies PCIe and SAS
- Support PCIe Express OCulink spec. (8GT/S), SAS 4.0 (24Gpbs)
- All UL certified ad flammability rating
- 4i 8i straight and R/A all available





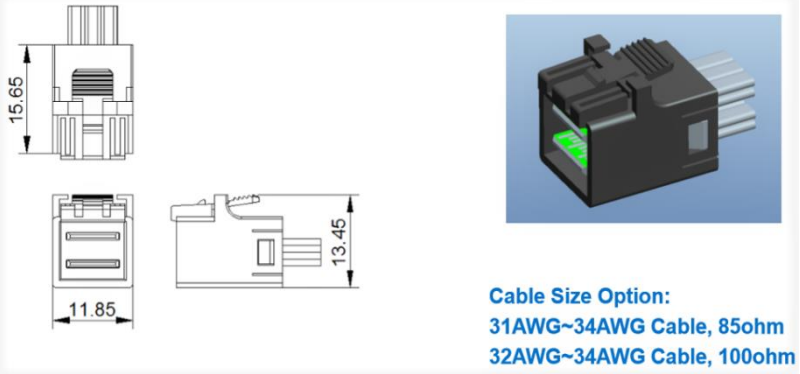
Cable Size Option:
31AWG~34AWG Cable, 85ohm
32AWG~34AWG Cable, 100ohm

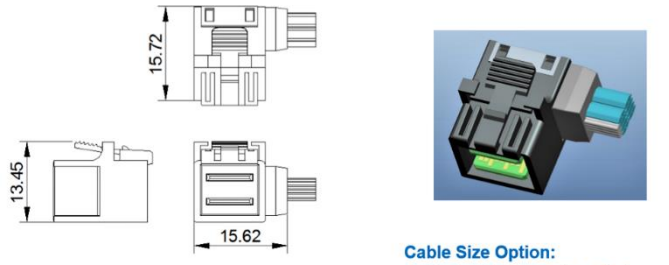


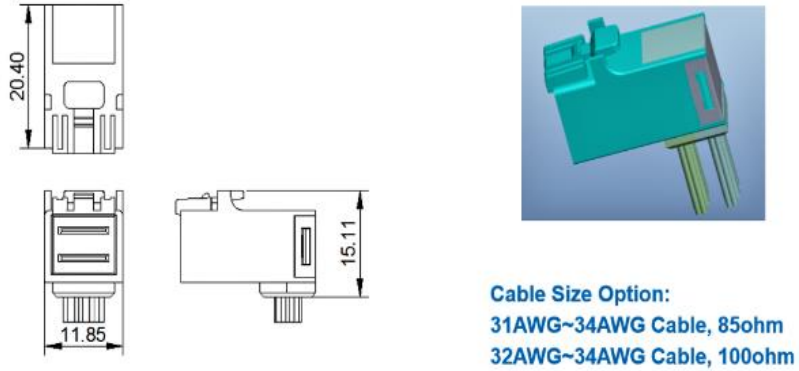
Cable Size Option:
31AWG~34AWG Cable, 85ohm
32AWG~34AWG Cable, 100ohm

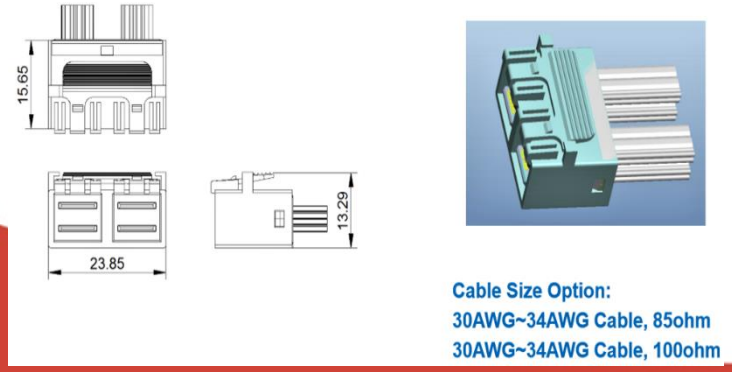
Mini SAS HD 4x 8x Internal Cable: SFF 8643

- 12Gbps and 24Gbps, available for 85and 100ohm
- Available for long body, short body, low profile
- With straight, right angle and side exit







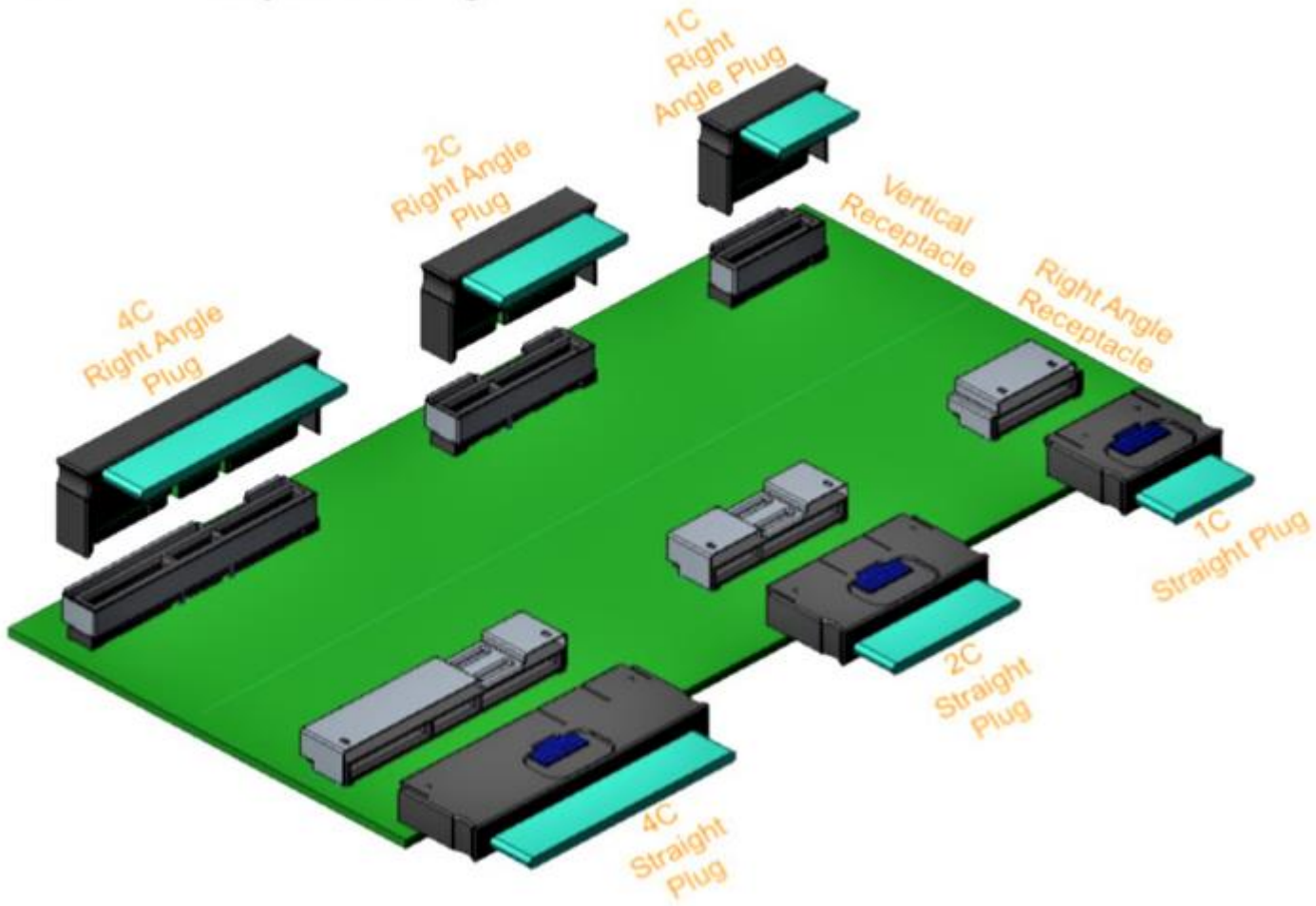


SFF-TA-1002 Application (Gen Z)

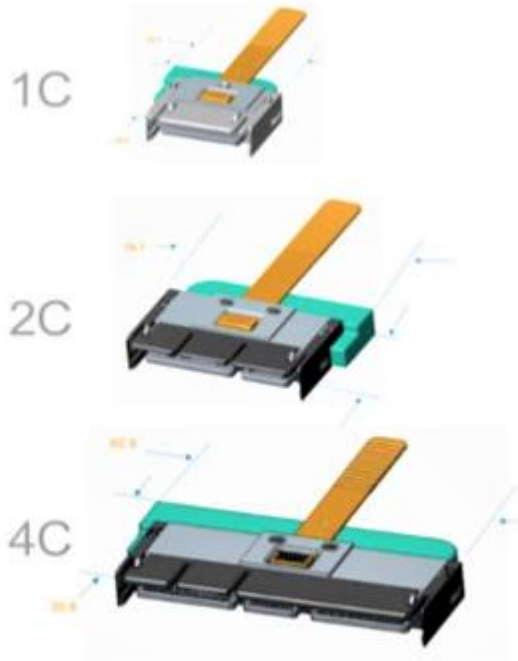
- cobo — Consortium of On Board Optics (optics inside switches)
  Founding members include: Arista, Cisco, Microsoft, Broadcom, Dell
- EDSFF — Enterprise & Datacenter Small Form Factor Storage Standard
  Founding Members include: Dell, HP, Lenovo, Microsoft, Intel, Samsung and Facebook
- GEN Z — High Speed Datacenter Standard: Alliance members include:
  The alliance members include AMD, ARM, Cavium, Cray, Dell EMC, HPE, Huawei, IBM, Lenovo, Micron, Microsemi, Samsung, Seagate, SK hynix, WDC, and Xilinx.
- OPEN — OCP NIC 3.0, JBOF (Just a Bunch of Flash), Other not yet public
- JEDEC — DDIMM (DDR5 Differential) Connector in early stage and direction

SFF-TA-1002 Internal Cable

Cable is being defined in the standard.
Some features are subject to change.

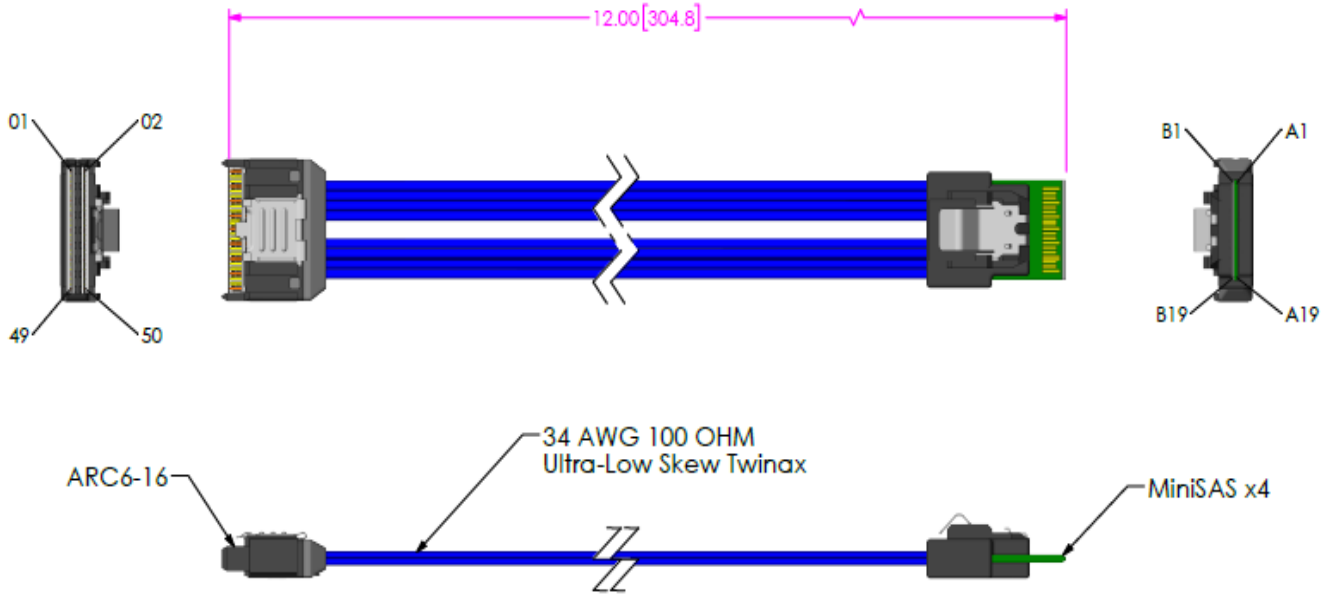


Addition of lateral exit cables in
1C, 2C and 4C configurations



Customized ODM Cable Assembly

- Internal highspeed cable with combination of various connector and raw cable to achieve flexibility and high performance
- Application model: Back Panel to Main Board, Back Panel to Sub-system, Sub-system to Main Board etc.
- Mcurich Inc. will provide ODM, OEM service by offering design concept, DFM, fixture/tooling fabrication and automation



External Cable (AOC)

AOC Products

HDMI 2.1 8K

10m ~ 50m

HDMI Active Optical Cables

USB 3.1 Gen 2

10 ~ 50m

USB Active Optical Cables

QSFP28

10 ~ 100m

Active Optical Cables for Data Centers

QSFP28 100G AOC

- Compliant to SFF-8436 and SFF-8431
- 850nm VCSEL laser and PIN photo detector
- Maximum link length: 70m on OM3 MMF, 100m on OM4 MMF
- Operation Temp: 0 ~70°C
- RoHS-6 compliant
- QSFP28 to SFP28*4 fan out cable available to ship
- Transceiver Module with QSFP 100G PSM4 2KM and QSFP 100G 4WDM10 10KM availability

10m AOC

10m fan-out

Transceiver Module

USB 3.1 Gen 2 AOC

- USB 3.1 Gen2
- Max. Data Bandwidth 10G
- 2 CH 850 nm VCSEL/PD
- Operation temp. -20°C to 70°C
- AOC power consumption less than 0.5 W
- ***10 m to 50 m*** in MP available to ship

10 m AOC

HDMI 2.1 Type A 8K AOC

- Uncompressed 8K Video Streaming
- Max. Data Bandwidth: 48G bps
- 4 CH 850 nm VCSEL / PIN
- Power consumption lower than 750 m W
- ***10 m to 50 m*** in MP available to ship

10m AOC

20m AOC

Thank you & Questions?