



Skypower Enterprise Co., Ltd.

Oct. 25/2022

Company Introduction

Meeting mobility with reliable electric power for devices – from consumer, communication, storage, data management, power tools, even vehicles etc., where power in mobility is required.

High capacity multi-cell battery pack from Li-ion/Li-polymer with premium quality assurance is developed through certifications from ISO9001, IATF16949(Automotive), safety labels from UL, CE, PSE, TUV, CSA, IEC etc.

Skypower focus on battery pack researching, developing, marketing and has automation battery assembly facility which could provide high reliable battery pack solutions.

Serve the customers worldwide and provide ONE-STOP solution.



Company Information

Product
Ni-MH /Li-ION/Polymer
Battery Pack

Digital Factory
Production area
6,950 S.Q.M.

Capital
US\$21
Millions

IATF 16949 System
Certification

Skypower
Established
Since 1997

Target Revenue
US\$35 Millions -Y2022

ISO 9001 System
Certification

FB1
5 Automation
Production Lines
Oct 2019

Employee
180+ Persons

ISO 14000 System
Certification

FB2
2 Automation
Production Lines
Sep 2022

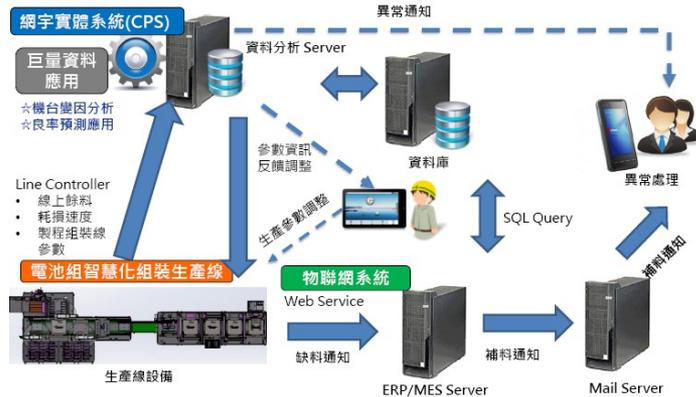
2 Sub-contractors

Company History

- 1997 **Skypower** founded
- 2005 Start a **water-proof** battery pack business with **Motorola**
- 2008 Supply **Water-proof** battery pack plus Li-ion charger to **Taiwan Military**.
- 2009 **Skypower** Launch patented High Temperature Protection solution **IC** to improve PND battery / automotive _back-up battery_ safety issues while stored in high temperature condition.
- 2012 **Skypower** Introduces **CAE simulation** to its design procedure. It can save the time to the market ,product design trial and developing cost .
- 2012 **Skypower** signed a **Strategic Partner** Agreement with **Panasonic/Sanyo**.
Panasonic recognizes our technical capability in Lithium-Related Battery Design.

Company History

- 2013 Having Motor efficiency improvement and protection invention patent.
 - 2014 Keep on working as Murata(SONY) partner
 - 2015 Skypower Europe GmbH established in Germany
 - 2016 The 1st (30-400 cells pack module) automation production line in operation
- Digital Factory Set up (Big data /Cloud/ERP)**



- 2017 Japan Office Set Up
- 2019 IATF16949/ISO 9001 Certificate
- 2020 VDA 6.3 Audit Pass
- 2022 2nd Factory -4-5 lines **only** for automotive application production

Company Policy

- **Provide safest battery to the world**
 - ❖ Customer Safety is our first priority
- **Provide reliable battery to our customers**
 - ❖ No recall Issue since we can not afford to have it once
- **Good Quality and Safest Cells Only**
 - ❖ We only use the safest and best quality Li-ion cells from the world
 - ❖ Main Li-ion Cylindrical Cell Sources: Murata and Panasonic
 - ❖ Main :LiFePO₄ Cylindrical Cell Source: Murata
 - ❖ Main Li-ion Prismatic Cell Source: Murata and Panasonic
 - ❖ Main NiMH Cell Source: FDK & Panasonic

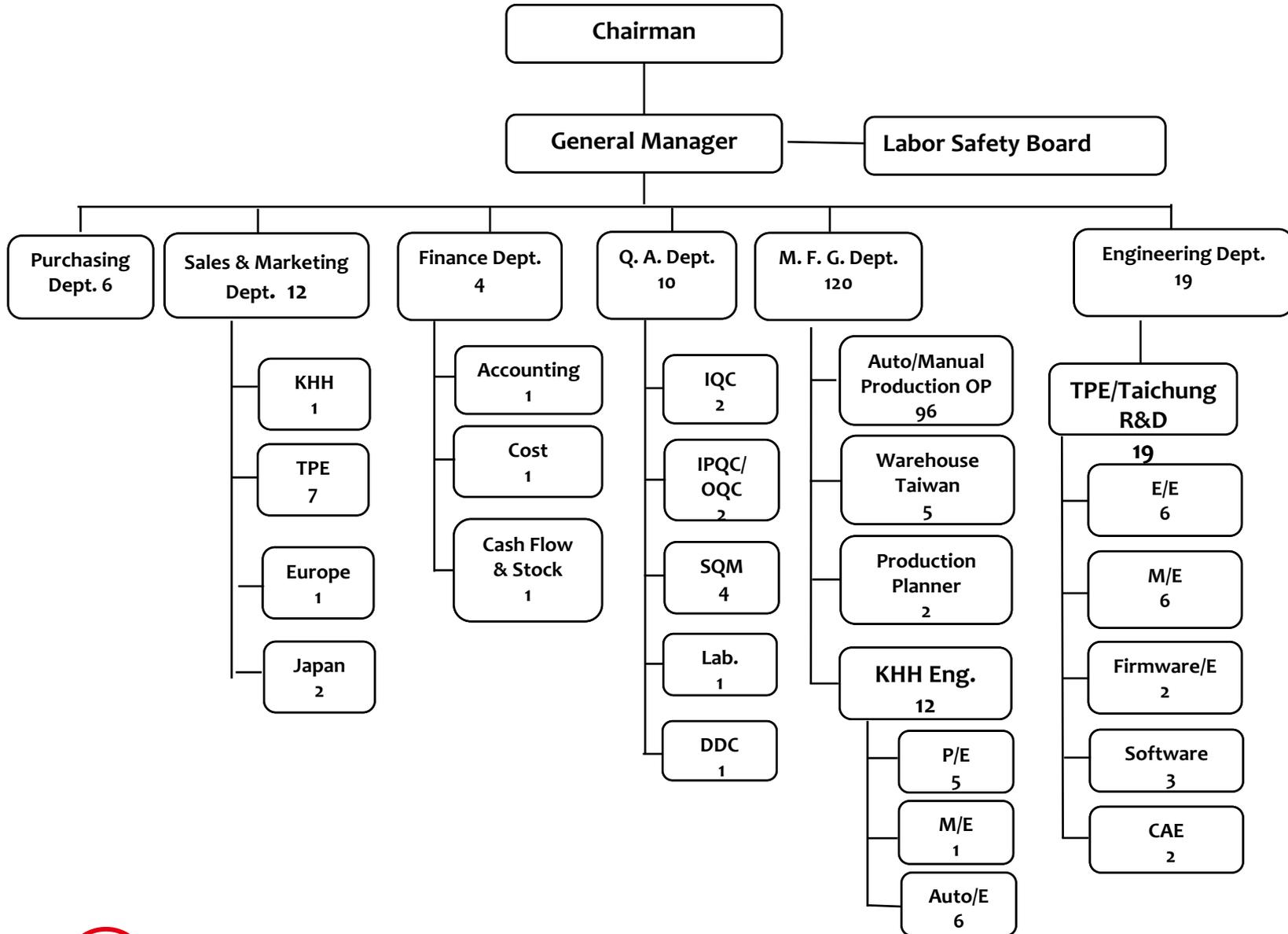
Panasonic
ideas for life

muRata
INNOVATOR IN ELECTRONICS



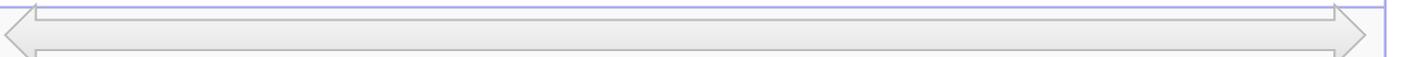
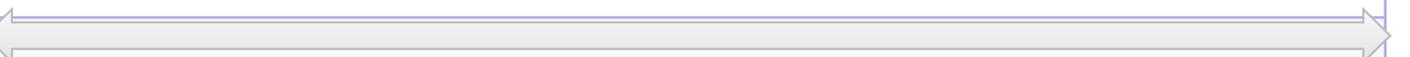
Quality First / Safety First / Customer First

Organization





Product Roadmap

Battery Pack (Application/ Feature)		2022				2023				2024			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Single Cell Pack (IT Application) 5%		 <ul style="list-style-type: none"> • Cell phone, Digital Camera, Power bank, PND etc. • Sanyo, Panasonic and/or equivalent Japan Cell in cylindrical or prismatic type. 											
Multi-Cell Pack	Hi-Power with high Capacity Battery Pack 35%	 <ul style="list-style-type: none"> • Hybrid Battery pack : Power Tool, Garden-tool etc. • Home Appliance Application: Robotic vacuum cleaner • Equivalent high quality cell from Korea or Japan brand 											
	Ultra Huge high capacity battery pack 10%	 <ul style="list-style-type: none"> • E-mobility, UPS etc. (7S1P-20S20P) • Anti Thermal Runaway Design • Developing 400V Lithium-ion battery pack-Modular Design 											
Single Cell Pack	Automotive Battery Pack 50%	 <ul style="list-style-type: none"> • Automotive applied battery (eCall, OBU) • Automatic High Temp. discharge to avoid cell swelling and capacity deterioration • Cell Selection: Tier 1 Decision 											

Certificate

• ISO 9001:2015 Certificate

• Quality Objective (2022/2023):

❖ Defective rate reduces to 0.1%/0.05%

• ISO 14001 Certificate

• IATF 16949 Certificate



CERTIFICATE

Management system as per
ISO 9001: 2015

In accordance with TÜV NORD CERT and TÜV AP Taiwan procedures, it is hereby certified that
SKYPOWER ENTERPRISE CO., LTD.
3F., No. 248-30, Xinsheng Rd., Qianzhen Dist.,
Kaohsiung City 806, Taiwan

with the plant at New Taipei City according to the annex

applies a management system in line with the above standard for the following scope

Design and Assembly of Rechargeable Lithium-ion Battery Pack

Certificate Registration No. 44 100 182384
Audit Report No. TW-2853/2020

Valid from 2020-04-16
Valid until 2023-04-06
Issue Date 2020-04-16
Initial Certification 2020-04-16



TUV ASIA PACIFIC LIMITED
Taiwan Branch
Room A1, 9F, No.333, Sec.2,
Tun Hua S. Rd.,
Taipei 10669 Taiwan, R.O.C.

This certification was conducted in accordance with the TÜV ASIA PACIFIC LIMITED Taiwan Branch auditing and certification procedures based on TÜV NORD CERT auditing and certification procedures and is subject to regular surveillance audits.

www.tuvnord.com.tw



ROC, TW893, CA



CERTIFICATE

Management system as per
ISO 14001: 2015

In accordance with TÜV NORD CERT and TÜV AP Taiwan procedures, it is hereby certified that
SKYPOWER ENTERPRISE CO., LTD.
3F., No. 248-30, Xinsheng Rd., Qianzhen Dist.,
Kaohsiung City 806, Taiwan

applies a management system in line with the above standard for the following scope

Design and Assembly of Rechargeable Lithium-ion Battery Pack

Certificate Registration No. 66 104 192929
Audit Report No. TW-2929/2019

Valid from 2019-08-12
Valid until 2022-08-11
Issue Date 2019-08-12
Initial Certification 2019-08-12



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Room A1, 9F, No.333, Sec.2,
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www.tuvnord.com.tw



ROC, TW893, CA



CERTIFICATE

Management system as per
IATF 16949:2016
(1st edition, 2016-10-01)

Evidence of conformity with the above standard has been furnished and is certified for

Skypower Enterprise Co., Ltd.
3F., No. 248-30, Xinsheng Rd., Qianzhen Dist.
Kaohsiung City 806
Taiwan

Scope

Assembly of rechargeable lithium-ion battery pack
without product design responsibility (according to section 8.3)

with the remote functions according to appendix

IATF Registration No. 0367074
Certificate Registration No. 44 111 182384

Issue date: 2020-04-07
Expiry date: 2023-04-06



at TÜV NORD CERT GmbH
Esseen, 2020-04-07

This certification was conducted in accordance with the IATF „Rules for achieving and maintaining IATF recognition“. Validity can be verified at <https://www.tuev-nord.de/de/unternehmen/zertifizierung/zertifizierungsdatenbank>.

TÜV NORD CERT GmbH
Langemarkstraße 20
45141 Essen
www.tuev-nord-cert.de



02-IAO-QMC-01021

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A13F201e rev. 01/03.19

Pack Manufacturing & Quality System

Cell Auto Matching/Pick & Place Machine



- 18650,21700 and 26650 cells only
- Insulation Tape Auto-attachment
- Voltage & Impedance Matching
- Cell Leakage/Dust Visual Inspection
- Cell model automatic Identification
- Cell Intact/Length Detection by laser
- Electronic Control Pressure System
- Cell Placement Automation
- Laser Marking
- Max. 70-80PCs in one core pack
- 24 hours output :22KPCs
- Record Cell Cp/ Cpk report



Pack Manufacturing System

Line 1 Production Pattern

Max.400 PCs of cell per pack
Auto-transportation

Line 2 Production Pattern

Max. 50 PCs of cell per pack
Semi-Auto transportation

Line 3/4 Production Pattern

Max. 5 PCs of cell per pack
Semi-Auto transportation

Line 5 Production Pattern

Max. 5 PCs of cell per pack
Auto-transportation

Line 6 Production Pattern

Max. 5 PCs of cell per pack
Auto-transportation



Key Customers

• USA Customers

- ❖ Motorola: Water-Proof Battery
- ❖ Schneider : UPS battery
- ❖ Ford : Automotive Battery
- ❖ Trimble : Automotive Battery

• Taiwan Customers

- ❖ Taiwan Army: Two-Way Radio Water-Proof Battery
- ❖ MSI : Automotive Application

• European Customers

- ❖ Siemens: Automotive Battery
- ❖ Electrolux : Robotic Vacuum Cleaner
- ❖ 6 Automotive Tier 1 Customers
- ❖ TOMTOM: PND Battery
- ❖ Husqvarna :Garden Tool Battery
- ❖ Gardena: Garden Tool Battery

• Japanese Customers

- ❖ CASIO : Industrial Battery
- ❖ Balmuda : Up-Right Vacuum Cleaner
- ❖ Yamada : Vacuum Cleaner

Continental 

SIEMENS

Valeo

CASIO



KILEWS



 **Electrolux**



BALMUDA



 **Husqvarna**



FELCO
SWISS MADE



 **GARDENA**



 **ZUCCHETTI**
Centro Sistemi 

 **SkyPower**
Bring Heart To Power

Quality First / Safety First / Customer First

Cell Strategy – NiMH cell

10500(AAA) / 14500(AA) Footprint

❖ FDK

❖ Panasonic

Cell Strategy – Lithium Ion Cell

--18650 Footprint

❖ High Rate Cell

- ❖ Murata VTC6 ($\geq 3.0\text{Ah}$)
 - 20A discharge current
- ❖ Murata VTC5D(2.8Ah)
 - 35A discharge current
- ❖ Murata VTC5C (2.5Ah)
 - 20-25A discharge current
- ❖ Panasonic NCR18650K(3.0Ah) (Planned)

❖ Middle Rate Cell

- ❖ Panasonic NCR18650GA
- ❖ Panasonic NCR18650BD

Cell Strategy – LFP cell

18650 Footprint

- ❖ Murata US18650FTC1 /
- ❖ China LFP

Cell Strategy – 21700 Li-ion cell

21700 Footprint

- ❖ High Rate Cell

 - ❖ Murata US21700VTC6A

 - ❖ 40A discharge current

- ❖ Middle Rate Cell

 - ❖ LG M50L

 - ❖ Samsung 50E

Competence Edge

- IATF-16949 certificate
 - ❖ Strict quality control system at automotive product criteria
 - ❖ Fully Product Traceability
- All Production machines –own-design
- Knowledge Service
 - ❖ Providing in-time technical support and sharing test data
 - ❖ Direct technical and pricing support from the cell suppliers
- Only Good Quality cell adopted
 - ❖ To assure best quality, we only choose prestigious cell suppliers and cells which are thoroughly tested by Skypower.
- 100% Made in Taiwan, worldwide logistical service
 - ❖ Design, manufacturing in Taiwan, with offices in Germany and Japan now.
- Flexibility – diverse options for cell selection

Thanks !

