

TOSHIBA

TOSHIBA INTERNATIONAL CORPORATION

ENERGY STORAGE SYSTEMS

SCiB™ Energy Storage Systems Human Machine Interface

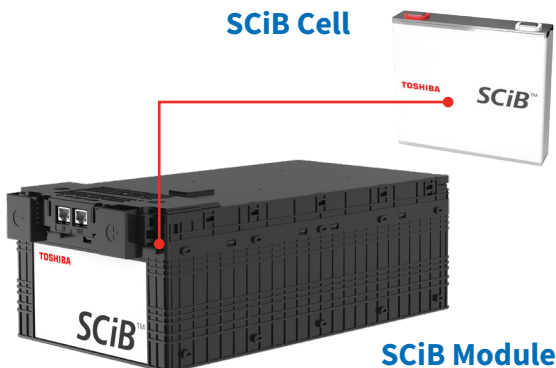


INTUITIVE, COMPREHENSIVE ENERGY STORAGE INTERFACE

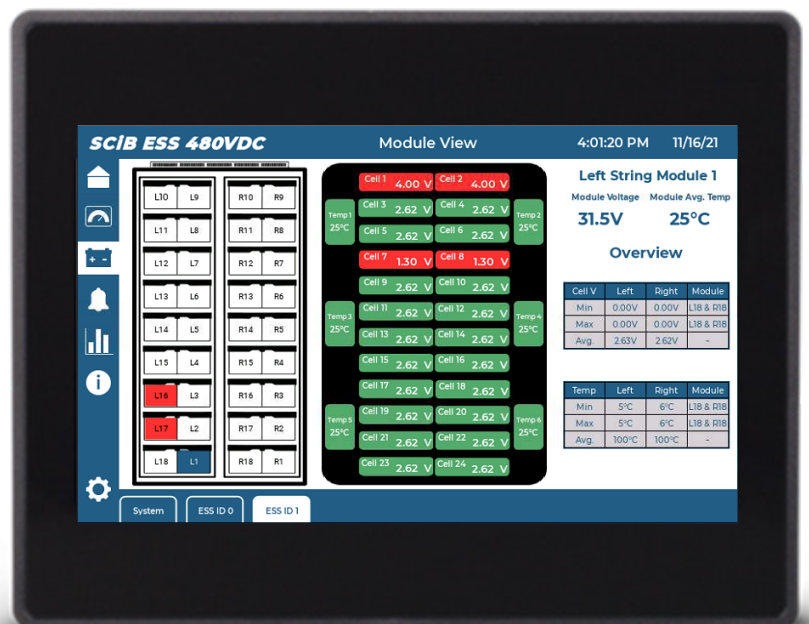
The Human Machine Interface (HMI) is a powerful edge computing device for the Toshiba SCiB Lithium Ion based Energy Storage System (ESS). It allows local engineered interaction, via one interface, with the connected SCiB ESS that can comprise of multiple cabinets/trays. In addition, it allows exploration of multiple layers of data all the way from the overall system to the individual cell. This provides visibility to many data points such as battery state of charge, operation, alarms, and overall status to improve business uptime.

HMI Monitoring Features:

- System status overview
- Monitor multiple cabinets/trays
- Battery state of charge
- String contactor status
- Visibility to UPS data
- Visibility to string level data (Fig. 1)
- Visibility to module level data (Fig. 2)
- Visibility to cell level data (Fig. 2)
- Real time charts
- Key performance analytics
- System info, warning & critical alarms
- Buzzer on alarms
- User-friendly interface



(Fig.1) Cabinet String Level View



(Fig.2) Module/Cell Level View

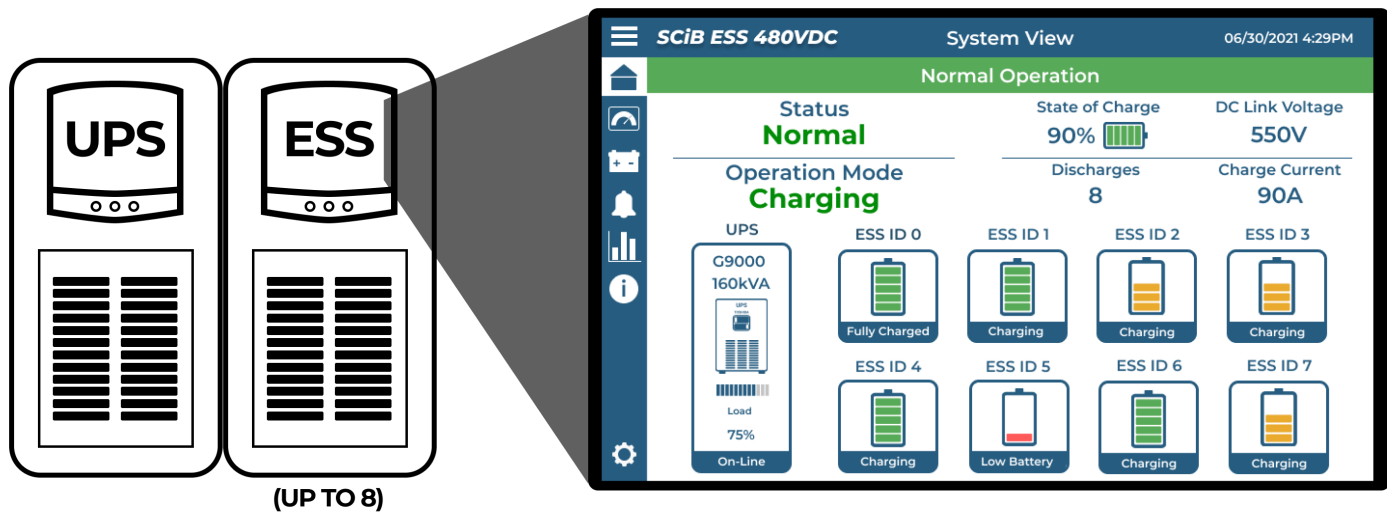
INNOVATIVE FEATURES

- Advanced network technology for seamless integration
- Virtualized SCiB ESS experience
- Ability to sync all SCiB ESS under the HMI
- Remote monitoring and control* (Fig. 3 – VNC Connection)
- Mobile access*

* VNC software application is required for connectivity



(Fig.3) VNC Connection



SYSTEM VIEW

- The system view screen eliminates the hassle of monitoring individual cabinets and allows to monitor the entire system through one intuitive user interface which includes status, operation, alarms, voltage, current, UPS data, and SOC%. (Fig. 4)
- Allows further interaction to dive deeper into the cabinet level data.
- Easy to understand graphical images
- Allows integration up to eight cabinets

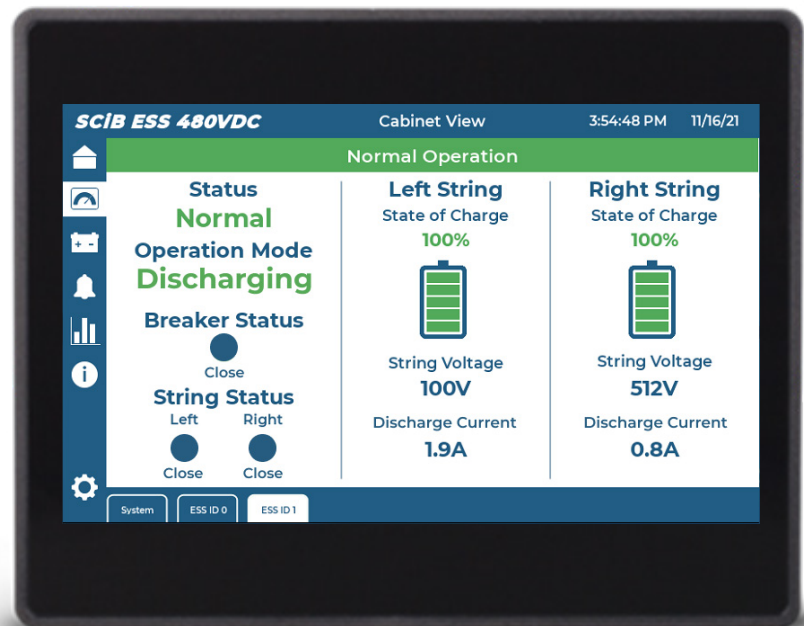
(Fig.4) System View



CABINET VIEW

- The HMI allows to dive into the cabinet level view screen for further exploration. The cabinet level data provides useful insights such as status, operation, string info, voltage, alarms and SOC% of the selected cabinet. (Fig. 5)

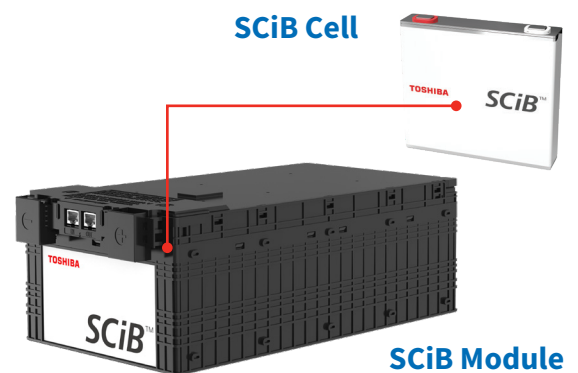
(Fig.5) Cabinet View



MODULE/CELL VIEW

- Provides the ability to explore the modules and cells. (Fig. 6)
- The module/cell view page provides an interactive virtualized SCiB ESS cabinet in which modules are mapped to the exact location of the cabinet represented.
- With one touch to any of the modules provides data for the individual cells within that module.

(Fig.6) Module/Cell View Exploration



SCIB ESS HMI SPECIFICATIONS

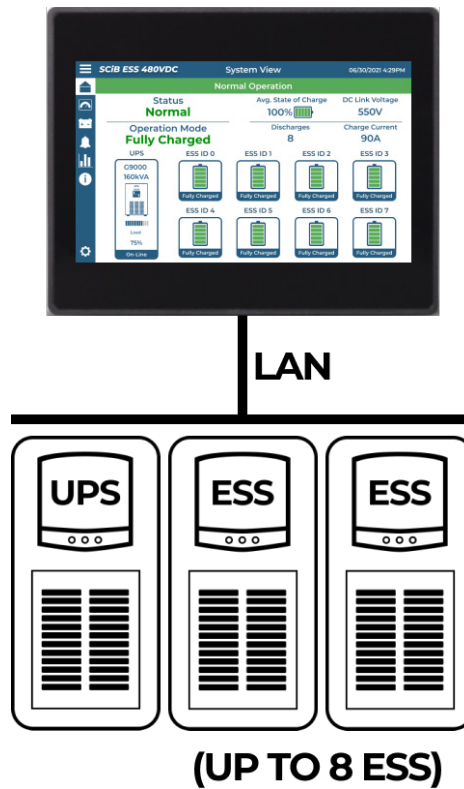


Tech Notes

- 1 Arm Cortex A8 - 1GHz
- 1 Flash Storage 4GB
- 1 RAM 512 MB
- 2 7" color display, LED backlight, 64k colors
- 2 Industrial resistive touchscreen
- 3 Ethernet port
- 4 USB port

SYSTEM		
Display - Colors		7" TFT 16:9 - 64K
Resolution		800 x 480, WVGA
Brightness		200 Cd/m2 typ.
Dimming		Yes
Touchscreen		Resistive
CPU		32-bit RISC single core - 1 GHz
Operating System		Linux 3.12
Flash		4 GB
RAM		512 MB
RTC, RTC Back-up, Buzzer		Yes
INTERFACE		
Ethernet port		1 (port 0 - 10/100Mbps)
USB port		1 (Host v. 2.0, max. 500 mA)
Serial port		1 (RS-232, RS-485, RS-422, software configurable)
NETWORK PROTOCOLS		
HTTP		Port 80
VNC		Port 5900
RATINGS		
Power supply		24 Vdc (10 to 32 Vdc)
Current Consumption		0.3 A at 24 Vdc (max.)
Input Protection		Automatic
Battery		Yes (Supercapacitor)
ENVIRONMENT CONDITIONS		
Operating Temp		0 to 50 °C (vertical installation)
Storage Temp		-20°C to +70°C
Operating / Storage Humidity		5-85% RH, non condensing
Protection Class		IP66 (front), IP20 (rear) Type: 2, 4X
DIMENSIONS AND WEIGHTS		
Faceplate LxH		187x147 mm (7.36x5.79")
Cutout AxH		176x136 mm (6.93x5.35")
Depth D+T		29+5 mm (1.14+0.19")
Weight		Approx 0.6 Kg
APPROVALS		
CE		Electromagnetic Compatibility Directive 2014/30/EU (EMC)
ATEX		Zone 2: II 3 G Ex ic ec IIC T6 Gc
UL		cULus: UL508, Class 1 Div 2
DNV-GL		Yes
EU RO MR		Yes
RCM		Yes
WARRANTY		
		Two Years

NETWORK VIEW



(Fig.7) Network View

SYSTEM REQUIREMENTS

PRODUCT		FIRMWARE VERSION	
RemotEye 4		V1.12 or newer	
RemotEye ESS		V2.8.34 or newer	
PROTOCOL	PORT NUMBER	CONFIGURABLE	
HTTP	80	No	
HTTPS	443	No	
NTP	123 & 1023	No	
VNC	5900	Yes	
DHCP	67 & 68	No	

INDUSTRIES SERVED

- Data Center
- Emergency/Healthcare

APPLICATIONS

- Computer Systems
- Server Rooms
- Voice/Data Network Closets
- Edge Data Centers
- Point-of-Sale Equipment
- Banking Systems
- Retail Back Office Systems
- School System Computer Rooms
- Medical Labs
- Light Industrial

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