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Manufacturer's declaration in accordance with the requirements of

G98-Amd. 6 (2021-09) standard Sec.s 9.7.1, 9.7.2, and G99-Amd. 8 (2021-09) standard Sec.s 9.1.7, 9.1.8

regarding "Cyber Security"

The undersigned Zhijiang Deng,

born on 3 August 1983 in hangzhou,zhejiang – China,

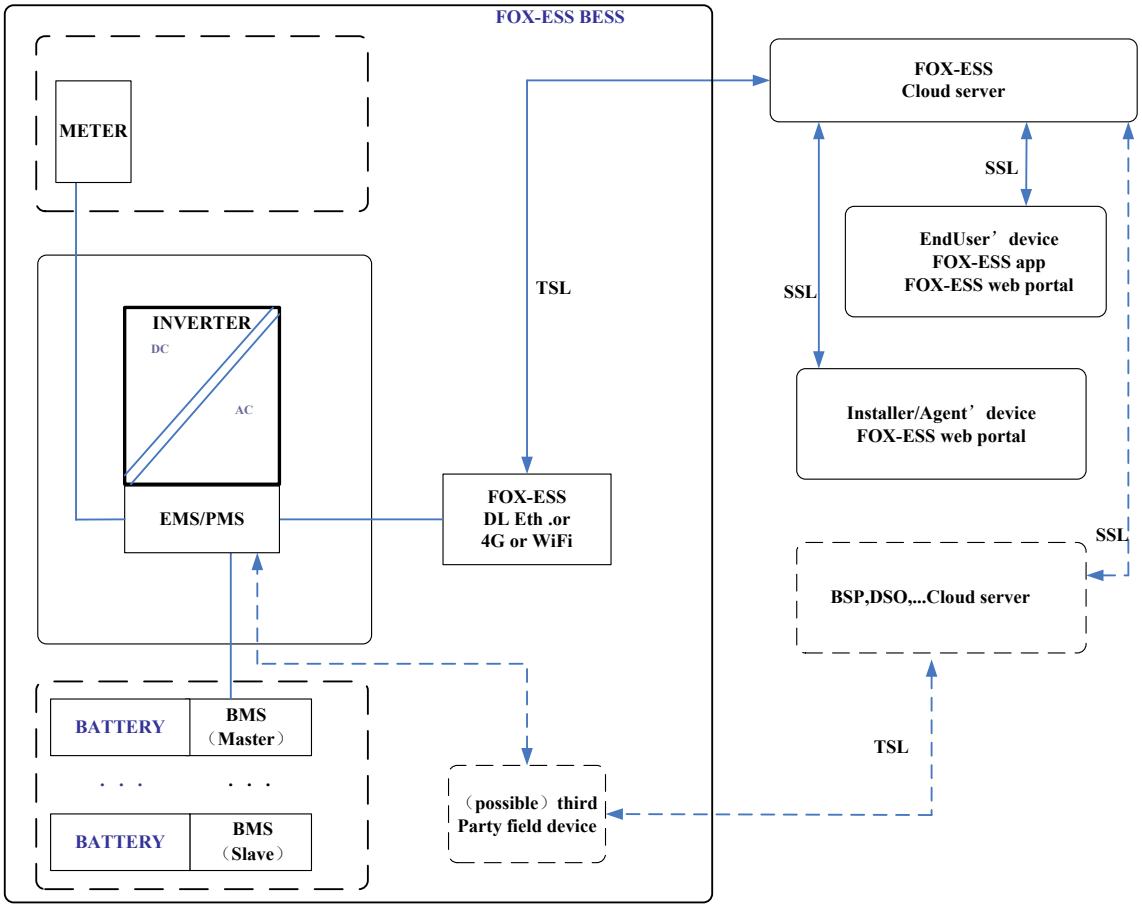
resident in hangzhou,zhejiang – China,

as Chief Technical Officer (CTO) of the Company **FOXESS CO.,LTD**

, based in wenzhou,zhejiang– China,

on behalf of the same Company declares the following:

1) The FOX-ESS Storage Battery Electrical Energy Storage Systems (BESS) include a system of internal and external logic communications as summarized in the following scheme:



where the main components involved and their main functions are explained in the following table:

acronym/ name	*meaning*	*function*	*location*
PMS	Power Management System	monitoring and management of power fluxes through the inverter, execution of EMS's commands or local logic functions depending on grid parameters values *Note: The PMS performs operational safety functions aimed at prevent physical damage/harm, typically by interrupting currents and/or opening contacts on some inverter ports when voltage, current or temperature limits are violated; no safety operation performed by PMS can be compromised/skipped by commands/signals originating outside the inverter.*	inverter
BMS	Battery Management System	monitoring of cells's status, execution of PMS's commands within safety conditions *Note: The BMS performs operational safety functions aimed at prevent physical damag/harm, typically by interrupting currents and/or opening contacts on some battery or BMS ports when voltage, current or temperature limits are violated; no safety operation performed by BMS can be compromised/skypped by commands/signals originating outside the BMS and batteries.*	battery
EMS	Energy Management System	monitoring of all field's measures, calculus of power and currents for every component of the system, reception of external commands, transmission of commands to PMS. *Note: No operational safety function aimed at preventing physical damage/harm is performed by the EMS; no operation performed by EMS can force the operational safety functions performed by BMS, PMS and electrical protections.*	inverter
DL	Datalogger	transmission of data to cloud server, reception of commands/settings from external stakeholder	FOX-ESS
METER	External Power Meter(s) (one or two)	*included in the supply*: meter at the POD, and possible meter at AC port of third party generator/inverter, for power measures	third-party

and the subjects/parties involved in communications with the FOX-ESS BESS are listed in the following table, together with the purposes of the respective communications:

subject/party	*means and devices*	*operations*
EndUser	mobile device (via App), PC (via web portal)	monitoring of instantaneous and historical data, settings for special functions
Installer/Agent	PC (via web portal)	remote diagnostycs, system behaviour monitoring, ticket management, remote sw updates, remote settings
FOX Comm-Service	PC(via web portal)	View and detect device connection status
BSP, DSO, Energy Community Management	proprietary ITC infrastructure, possible proprietary field device	monitoring of instantaneous and historical data via API, sending set-points for grid services or collective self-consumption management

2） All communications between internal components of the BESS, and between EMS and supplied METER and DL, take place via appropriate serial lines (RS485, CANBus) and are not directly connected to any device or system outside the BESS.

3) The only communication port between the BESS and the outside is constituted by the DL ; the communication between BESS and the outside world can take place via WiFi, 4G or GPRS router according to the customer's request. An Fox BESS is a *not-constrained customer IoT device* according to the definitions in ETSI EN 303 645 sec. 3.1.

4) The direct recipients/senders of communications with the BESS are:

a. in all cases the in-cloud server of Fox Green Storage –the communication is made secure by the use of TSL (Transport Layer Security) techology on DL, and by the use of SSL (Secure Sockets Layer) technology on EndUser/Installer/Agent's device side and all service web-tools side and app side;

b. possible third party (such as BSP, DNO, ESCo, etc.) field device like external GW, external EMS, etc. – the cyber-security of the communication between BESS and third-party device will be ensured by the use of an appropriate technology (SSL or TSL typically) agreed between Fox Green Storage and the third party on case-by-case basis; the cyber-security between third-party device and third-party server/cloud will be the responsibility of the third party itself.

5) All communications between the Foxesscloud server and the subjects/parties are cyber-protected by SSL technology.

6) The cyber-security assessment of the Fox Green Storage BESSs was performed according to the ETSI EN 303 645 standard, and it is reported according to the Table B.1 form of the same standard:

EN 303 645 v2.1.1 (2020-06) Table B.1: Implementation of provisions for consumer IoT security			
Clause number and title			
Reference	Status	Support	Detail
5.1 No universal default passwords			
Provision 5.1-1	M C (1)	Y	device do not permit end user's login: no end user's credential there exixst DL's AP password generated by max and will force prompt changes on first use
Provision 5.1-2	M C (1)	Y	
Provision 5.1-3	M	N/A	
Provision 5.1-4	M C (8)	N/A	
Provision 5.1-5	M C (5)	N/A	
5.2 Implement a means to manage reports of vulnerabilities			
Provision 5.2-1	M	Y	
Provision 5.2-2	R	Y	
Provision 5.2-3	R	Y	
5.3 Keep software updated			
Provision 5.3-1	R	Y	
Provision 5.3-2	M C (5)	Y	
Provision 5.3-3	M C (12)	N/A	the end user can not update any BESS SW component: only manufacturer assistance service personnel can do it remotely
Provision 5.3-4	R C (12)	Y	The manufacturer manages the updates of the systems by means of remote automatisms, selectively by type of machine or by activating special functions at the request of the user
Provision 5.3-5	R C (12)	N	see note at 5.3-4
Provision 5.3-6	R C (9, 12)	N	see note at 5.3-4
Provision 5.3-7	M C (12)	Y	
Provision 5.3-8	M C (12)	N	see note at 5.3-4
Provision 5.3-9	R C (12)	N	
Provision 5.3-10	M (11, 12)	Y	
Provision 5.3-11	R C (12)	N	
Provision 5.3-12	R C (12)	N	
Provision 5.3-13	M	Y	
Provision 5.3-14	R C (3, 4)	N/A	not constrained device
Provision 5.3-15	R C (3, 4)	N/A	not constrained device
Provision 5.3-16	M	Y	
5.4 Securely store sensitive security parameters			
Provision 5.4-1	M	Y	
Provision 5.4-2	M C (10)	Y	
Provision 5.4-3	M	N/A	hard-coded identity not used in source code
Provision 5.4-4	M	Y	
5.5 Communicate securely			
Provision 5.5-1	M	Y	
Provision 5.5-2	R	Y	
Provision 5.5-3	R	Y	
Provision 5.5-4	R	N	
Provision 5.5-5	M	Y	
Provision 5.5-6	R	Y	
Provision 5.5-7	M	Y	

EN 303 645 v2.1.1 (2020-06) Table B.1: Implementation of provisions for consumer IoT security			
Clause number and title			
Reference	Status	Support	Detail
Provision 5.5-8	M	Y	
5.6 Minimize exposed attack surfaces			
Provision 5.6-1	M	Y	
Provision 5.6-2	M	Y	
Provision 5.6-3	R	Y	
Provision 5.6-4	M C (13)	N/A	no debug interface accessible
Provision 5.6-5	R	Y	
Provision 5.6-6	R	Y	
Provision 5.6-7	R	Y	
Provision 5.6-8	R	N	
Provision 5.6-9	R	Y	
5.7 Ensure software integrity			
Provision 5.7-1	R	N	
Provision 5.7-2	R	N	
5.8 Ensure that personal data is secure			
Provision 5.8-1	R	N/A	no personal data transit through BESS HW/SW
Provision 5.8-2	M	Y	applicable to server/cloud services and to the customer App for mobile devices
Provision 5.8-3	M	Y	
5.9 Make systems resilient to outages			
Provision 5.9-1	R	Y	
Provision 5.9-2	R	Y	
Provision 5.9-3	R	Y	
5.10 Examine system telemetry data			
Provision 5.10-1	R C (6)	N	
5.11 Make it easy for users to delete user data			
Provision 5.11-1	M	N/A	no user/personal data are stored in the BESS
Provision 5.11-2	R	N/A	no user/personal data are stored in the BESS
Provision 5.11-3	R	N/A	no user/personal data are stored in the BESS
Provision 5.11-4	R	N/A	no user/personal data are stored in the BESS
5.12 Make installation and maintenance of devices easy			
Provision 5.12-1	R	N/A	no istallation/maintenance operations are available to the end user
Provision 5.12-2	R	N/A	no istallation/maintenance operations are available to the end user
Provision 5.12-3	R	N/A	see note at 5.3-4
5.13 Validate input data			
Provision 5.13-1	M	Y	
6 Data protection provisions for consumer IoT			
Provision 6.1	M	Y	it only applies to the server/cloud side of the service, not to the BESS
Provision 6.2	M C (7)	Y	it only applies to the server/cloud side of the service, not to the BESS
Provision 6.3	M	Y	it only applies to the server/cloud side of the service, not to the BESS
Provision 6.4	R C (6)	Y	no user/personal data are stored in the BESS
Provision 6.5	M C (6)	Y	no user/personal data are stored in the BESS
Conditions:			
1) passwords are used; 2) pre-installed passwords are used; 3) software components are not updateable; 4) the device is constrained; 5) the device is not constrained; 6) telemetry data being collected; 7) personal data is processed on the basis of consumers' consent;			

8) the device allowing user authentication; 9) the device supports automatic updates and/or update notifications; 10) a hard-coded unique per device identity is used for security purposes; 11) updates are delivered over a network interface; 12) an update mechanism is implemented; 13) a debug interface is physically accessible.	
Status' Column:	
M	Mandatory provision
R	Recommended provision
M C	Mandatory and conditional provision
R C	Recommended and conditional provision
Support' Column:	
Y	Implemented
N	Not implemented
N/A	Not applicable

Company stamp

Signature

CTO, Zhijiang Deng

Date：2022-10-01

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