

# WEEE Directive Compliance Report

Date: 2021/08/23

Name and address of the manufacturer:

Company: Hanwha Solutions Corporation

Street:

86, Cheonggyecheon-ro

Postcode:

04541

Place:

Jung-gu, Seoul,  
Republic of Korea

Test Item: Q.HOME CORE

Identification: Q.VOLT H4.6S, Q.VOLT A4.6S, Q.VOLT H5S, Q.VOLT A5S, Q.SAVE B6.8S


Test Result: All Disassembling parts satisfy WEEE directive requirements.

## 1. General Remarks

### 1.1. Complementary Materials

This report specifically applies to Q.HOME CORE (Includes Q.VOLT H4.6S, Q.VOLT A4.6S, Q.VOLT H5S, Q.VOLT A5S, Q.SAVE B6.8S) of Hanwha Solutions Corporation (Q CELLS). The testing sample is classified as Category 1 (Large Household Appliance) under Annex IA of Directive 2012/19/EU.

### 1.2. Product Detail

For the following named product:

- Product Name: Q.HOME CORE
- Model Name: Q.VOLT H4.6S / Q.VOLT A4.6S / Q.VOLT H5S / Q.VOLT A5S / Q.SAVE B6.8S

### 1.3. WEEE, 2012/19/EU, Reuse & Recovery Rate

| No. | Classification            | Recycling | Recovery |
|-----|---------------------------|-----------|----------|
| 1   | Large Household Appliance | 80%       | 85%      |

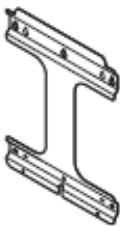
### 1.4 Material Classification

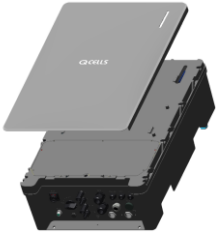
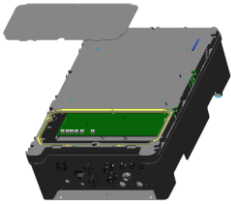
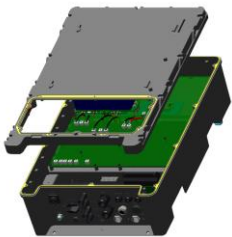
Reuse & recycling rate and recovery rate for each material class below are adopted from IEC 62635.

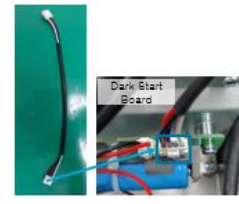
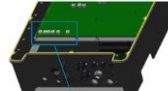
| Classification              | Reuse & Recycling Rate | Recovery Rate |
|-----------------------------|------------------------|---------------|
| PCB (Printed circuit board) | 10%                    | 90%           |
| Cable                       | 50%                    | 90%           |
| Capacitor(PCB)              | 50%                    | 90%           |
| Transformer                 | 90%                    | 90%           |
| Aluminum                    | 95%                    | 95%           |

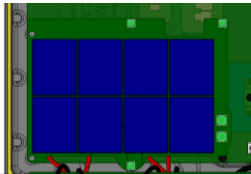
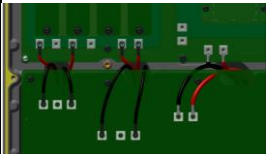
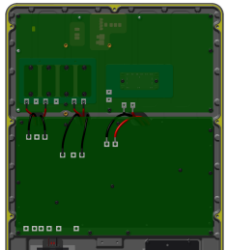
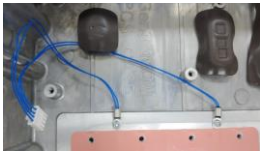
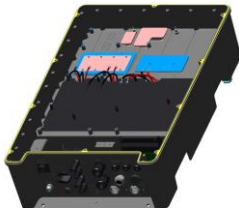
## 2. Product Component Disassembly Assessment

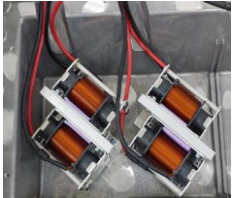
### 2.1 Q.VOLT Disassembly Sequence

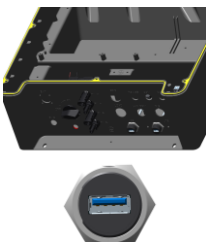
| No | Components    | Image                                                                               | Weight (kg) | Material | Connection Technique | Disassembly Tools |
|----|---------------|-------------------------------------------------------------------------------------|-------------|----------|----------------------|-------------------|
| 1  | Mount Bracket |  | 2.54        | Aluminum | Screw                | Screw Driver      |

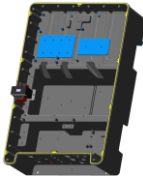
|   |                                                                                           |                                                                                     |      |             |       |              |
|---|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------|-------------|-------|--------------|
| 2 | Front Case                                                                                |    | 1.40 | Plastic     | -     | Hand         |
| 3 | BAT Power<br>Connector Cover<br>BMS Connector<br>Cover<br>PV1,2 MC4<br>Cover<br>USB Cover |    | 0.18 | Cable Ass'y | Screw | Screw Driver |
| 4 | Wiring Cover                                                                              |  | 0.64 | Aluminum    | Screw | Screw Driver |
| 5 | Inner Case Ass'y                                                                          |  | 4.41 | Aluminum    | Screw | Screw Driver |
| 6 | LED-Filter Cable                                                                          |  | 0.02 | Cable Ass'y | -     | Hand         |

|    |                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |      |             |       |              |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-------------|-------|--------------|
| 7  | LED Board                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.01 | PCB Ass'y   | Screw | Screw Driver |
| 8  | DRM Board                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.01 | PCB Ass'y   | Screw | Screw Driver |
| 9  | 80Pin IDC Cable<br>40Pin IDC Cable<br>Black Cable on AC Trans<br>SMPS Jumper<br>Harness<br>BMS Cable<br>EMS Power<br>Communication Cable<br>Dark Start to Filter Cable<br>8Pin Connector<br>PV Switch Cable | <br><br><br><br><br><br><br><br><br><br> | 0.04 | Cable Ass'y | -     | Hand         |
| 10 | PV1, PV2, BDC Cable<br>BAT Power Cable (PE Cable)                                                                                                                                                           | <br><br>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.00 | Cable       | Screw | Screw Driver |

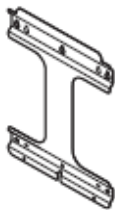
|    |                               |                                                                                     |      |             |       |              |
|----|-------------------------------|-------------------------------------------------------------------------------------|------|-------------|-------|--------------|
| 11 | DC Link PCB Ass'y             |    | 1.60 | PCB Ass'y   | Screw | Screw Driver |
| 12 | PV GND Cable<br>BDC GND Cable |    | 0.01 | Cable Ass'y | Screw | Screw Driver |
| 13 | Filter PCB Ass'y              |   | 2.75 | PCB Ass'y   | Screw | Screw Driver |
| 14 | Main PCB Ass'y                |  | 0.90 | PCB Ass'y   | Screw | Screw Driver |
| 15 | NTC 2CH Cable                 |  | 0.01 | Cable Ass'y | Screw | Screw Driver |
| 16 | Inductor Plate                |  | 0.78 | Aluminum    | Screw | Screw Driver |

|    |                                                           |                                                                                     |      |                  |       |              |
|----|-----------------------------------------------------------|-------------------------------------------------------------------------------------|------|------------------|-------|--------------|
| 17 | Thermal Pad                                               |    | 0.02 | Silicon Compound | -     | Hand         |
| 18 | EMS Board Ass'y<br>EMS Power Cable<br>Communication Cable |    | 0.20 | Cable            | Screw | Screw Driver |
| 19 | EMS Front Plate<br>EMS Back Plate                         |   | 0.32 | Aluminum         | Screw | Screw Driver |
| 20 | PV Inductor Ass'y<br>BDC Inductor Ass'y                   |  | 3.95 | Transformer      | Screw | Screw Driver |
| 21 | PV Inductor                                               |  | 2.35 | Transformer      | Screw | Screw Driver |
| 22 | Battery Power Cable                                       |  | 0.08 | Cable Ass'y      | Screw | Screw Driver |

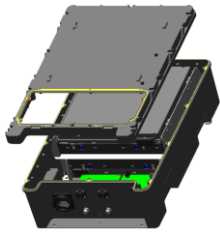
|    |                               |                                                                                     |      |             |       |              |
|----|-------------------------------|-------------------------------------------------------------------------------------|------|-------------|-------|--------------|
| 23 | BMS<br>Communication<br>Cable |    | 0.07 | Cable Ass'y | Nut   | Nut Driver   |
| 24 | PV Terminal                   |    | 0.00 | Cable Ass'y | Nut   | Nut Driver   |
| 25 | Communication<br>Gland        |   | 0.01 | Cable Ass'y | Nut   | Nut Driver   |
| 26 | Dark Start<br>Switch          |  | 0.03 | Cable Ass'y | Screw | Screw Driver |
| 27 | Cable Gland                   |  | 0.02 | Plastic     | Nut   | Nut Driver   |
| 28 | USB Cable<br>Harness          |  | 0.03 | Cable Ass'y | Nut   | Nut Driver   |

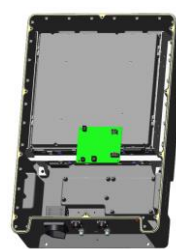
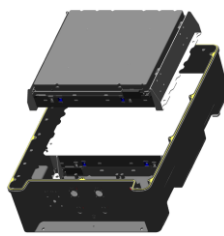
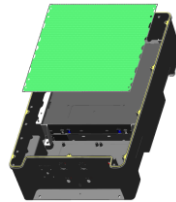
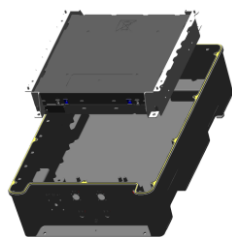
|    |                                 |                                                                                     |       |             |       |              |
|----|---------------------------------|-------------------------------------------------------------------------------------|-------|-------------|-------|--------------|
| 29 | PV Stick<br>PV Switch<br>Handle |    | 0.03  | Plastic     | Screw | Screw Driver |
| 30 | PV Circuit<br>Breaker Ass'y     |    | 0.42  | Cable Ass'y | Screw | Screw Driver |
| 31 | 220V Trans                      |   | 1.11  | Transformer | Screw | Screw Driver |
| 32 | PCS Case                        |  | 16.04 | Aluminum    | -     | -            |

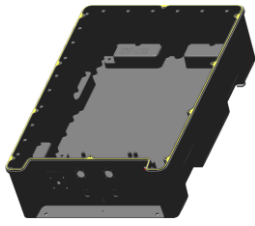
## 2.2 Q.SAVE Disassembly Sequence

| No | Components    | Image                                                                               | Weight (kg) | Material | Connection Technique | Disassembly Tools |
|----|---------------|-------------------------------------------------------------------------------------|-------------|----------|----------------------|-------------------|
| 1  | Mount Bracket |  | 2.54        | Aluminum | Screw                | Screw Driver      |



|   |                                    |                                                                                     |      |             |       |                    |
|---|------------------------------------|-------------------------------------------------------------------------------------|------|-------------|-------|--------------------|
| 2 | Front Cover                        |    | 1.40 | Plastic     | -     | Hand               |
| 3 | Wiring Cover                       |    | 0.64 | Aluminum    | Screw | Screw Driver       |
| 4 | Inner Case                         |   | 4.40 | Aluminum    | Screw | Screw Driver       |
| 5 | Power Connector<br>BMS Connector   |  | 0.10 | Cable Ass'y | Nut   | Nut Driver<br>Hand |
| 6 | BAT DC Switch                      |  | 0.35 | Cable Ass'y | Screw | Screw Driver       |
| 7 | Module to<br>Module<br>Comm. Cable |  | 1.01 | Cable Ass'y | -     | Hand               |

|    |                      |                                                                                     |       |                      |       |              |
|----|----------------------|-------------------------------------------------------------------------------------|-------|----------------------|-------|--------------|
| 8  | Relay Board          |    | 0.20  | PCB Ass'y            | Screw | Screw Driver |
| 9  | BMS Board            |    | 0.10  | PCB Ass'y            | Screw | Screw Driver |
| 10 | Battery Module Ass'y |   | 20.40 | Battery Module Ass'y | Screw | Screw Driver |
| 11 | Wall Plate           |  | 1.03  | Aluminum             | Screw | Screw Driver |
| 12 | Battery Module Ass'y |  | 20.40 | Battery Module Ass'y | Screw | Screw Driver |
| 13 | FIX Bracket Base     |  | 3.00  | Aluminum             | Screw | Screw Driver |

|    |              |                                                                                   |      |          |   |   |
|----|--------------|-----------------------------------------------------------------------------------|------|----------|---|---|
| 14 | Battery Case |  | 9.70 | Aluminum | - | - |
|----|--------------|-----------------------------------------------------------------------------------|------|----------|---|---|

### 3. Compliance of WEEE Directive

#### 3.1 Calculation Formula

The criteria calculation of WEEE Reuse, Recycling and Recovery is based on IEC 62635, and please refer to the table below for detailed calculation mechanism.

| Calculation                                      | Description                                               | Formula                    |
|--------------------------------------------------|-----------------------------------------------------------|----------------------------|
| Weight of WEEE Collected                         | Total weight of the product including wall mount bracket. | A                          |
| Weight of components that can be reused/recycled | This excludes secondary batteries in the product.         | B                          |
| Weight of components that can be recovered       | This excludes secondary batteries in the product.         | C                          |
| Reuse/Recycling Rate                             | Total reuse/recycling rate of the product                 | $\frac{A}{C} \times 100\%$ |
| Recovery Rate                                    | Total recovery rate of the product                        | $\frac{B}{C} \times 100\%$ |

#### 3.2 Recyclable and Recoverable Rate

All products of Q.HOME CORE had **passed** the required Reuse, Recycling and Recovery rates for WEEE Directive.

| Product Name | Required Reuse/Recycling Rate | Reuse/Recycling Rate | Required Recovery Rate | Recovery Rate |
|--------------|-------------------------------|----------------------|------------------------|---------------|
| Q.VOLT H4.6S | 80%                           | 81%                  | 85%                    | 93%           |
| Q.VOLT A4.6S |                               | 81%                  |                        | 93%           |
| Q.VOLT H5S   |                               | 81%                  |                        | 93%           |
| Q.VOLT A5S   |                               | 81%                  |                        | 93%           |
| Q.SAVE B6.8S |                               | 88%                  |                        | 94%           |