

# Repair manual - iService

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# **i** Concerning this document

## 1.1 Important information

Read and observe chapter 2 "Safety" before performing any work!

### 1.1.1 Purpose

These repair instructions form the basis for a systematic and safety conscious procedure for the repair of domestic appliances.

These repair instructions include information about troubleshooting and repair.

### 1.1.2 Target group

These repair instructions are intended for persons who are familiar with equipment technology and were instructed by BSH or an authorised body:

- Service technicians for the repair of domestic appliances
- Pre-assemblers in the spare part stockroom when determining required spare parts
- Call centre employees during order acceptance

### 1.1.3 Other applicable documents

The following documents include additional relevant repair information:

- General repair instructions
- Error codes and service programs
- Circuit diagrams
- Exploded drawings
- Parts lists
- Repair videos

## 1.2 Explanation of symbols

### 1.2.1 Danger levels

The warning levels consist of a symbol and a signal word. The signal word indicates the severity of the danger.

Warning level	Meaning
 <b>Danger</b>	Non-observance of the warning message will result in death or serious injuries.
 <b>Warning</b>	Non-observance of the warning message could result in death or serious injuries.
 <b>Caution</b>	Non-observance of the warning message could result in minor injuries.
<b>Notice</b>	Non-observance of the warning message could result in damage to property.

Table 1: Danger levels

### 1.2.2 Hazard symbols

Hazard symbols are symbolic representations which give an indication of the kind of danger.

The following hazard symbols are used in this document:

Hazard symbol	Meaning
	General warning message
	Danger from electrical voltage
	Risk of explosion
	Danger of cuts
	Danger of crushing

## **i** Concerning this document

Hazard symbol	Meaning
	Danger from hot surfaces
	Danger from strong magnetic field
	Danger from non-ionizing radiation

Table 2: Hazard symbols

### 1.2.3 Structure of the warnings

Warnings in this document have a standardised appearance and a standardised structure.

	<div style="background-color: red; color: white; padding: 2px; display: inline-block;"> <b>Danger</b></div> <b>Type and source of danger!</b> Possible consequences of ignoring the danger / warning. ▶ Measures and prohibitions for preventing the danger.
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The following example shows a warning that warns against electric shock due to live parts. The measure for avoiding the danger is mentioned.

	<div style="background-color: red; color: white; padding: 2px; display: inline-block;"> <b>Danger</b></div> <b>Risk of electric shock due to live parts!</b> Death by electrocution ▶ Disconnect appliances from electrical supply at least 60 seconds before starting repairs.
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### 1.2.4 General symbols

The following general symbols are used in this document:

Gen. symbol	Meaning
	Identification of a special tip (text and/or graphic)
	Identification of a simple tip (only text)
	Identification of a link to a video tutorial

Gen. symbol	Meaning
	Identification of required tools
	Identification of required preconditions
	Identification of a condition (if ..., then ...)
	Identification of a result
[Start]	Identification of a key or button
[00123456]	Identification of a material number
Status	Identification of displayed text / window (in the appliance's display)

Table 3: General symbols

## 2.1 Qualification

In Germany, only qualified electricians trained by BSH or an authorised body may perform any repair work.

In other countries, only similarly trained qualified personnel is permitted to perform the repair work.

Appliances must only be repaired by persons that are qualified, **approved** and trained by BSH or an authorised body as instructed.

## 2.2 General safety instructions

### 2.2.1 All domestic appliances

#### **Risk of electric shock due to live parts!**

- Disconnect the appliance from the mains for at least 60 seconds before starting work.
- Do not touch the housing, components and cables.
- For tests on an energised system, use a residual current circuit breaker.
- Discharge high-voltage capacitors.

#### **Risk of injury from sharp edges!**

- Wear protective gloves.

#### **Risk of crushing during repair, maintenance, troubleshooting and service due to heavy and moving components**

- Wear protective shoes.
- Secure heavy components from falling down.
- Do not stick body parts into moving components.

#### **Risk of injury when dealing with harmful substances!**

- Observe the associated safety data sheet!

#### **Risk to the appliance's safety / function!**

- Only use original spare parts.

#### **Risk of damage to electrostatically sensitive components (ESDs)!**

- Before touching ESDs, use an electrostatic protection system (wristband with earth safe plug).
- Do not touch connections and conductor paths of the modules.
- Only transport ESDs in conductive materials or original packaging.
- Keep ESDs clear of electrostatically chargeable materials (i.e. plastic).

## 2.3 Measures after each repair

If the appliance is functional:

- Check according to VDE 0701 or country-specific regulations.
- Check external appearance, function and tightness.
- Document repair work, measured values and functional reliability.

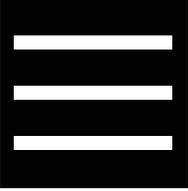
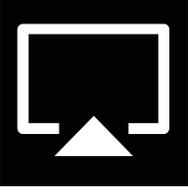
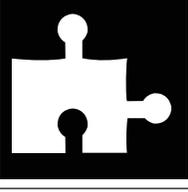
If the appliance is **not** functional:

- Identify the appliance as “not functionally reliable”.
- Warn customers of commissioning and notify them in writing .

## 3.1 iService tool and function

iService is a software tool designed for customer service to support the repair and diagnosis of home appliances.

The software can establish wired or wireless connection to the appliance and provide one or more of the following functionalities, depending on what was supplied for the individual appliance.

Symbol	Function	Description
	Flashing / Programming	Allows to write the complete firmware.
	Memory / Error Log	Allows to readout the content of the internal memory or log files.
	Monitoring	Shows how the internal components of an appliance are controlled (on / off / fast / slow / ...) and in parallel the read-out of internal sensors.
	Control	Allows to turn on / off selected components or programs.
	Coding	Allows to write configuration codes to one or more modules which already contain working firmware.

Symbol	Function	Description
	Measure / Measuring	Provides user interface for an optional safety tester device and / or digital multimeter.

Table 4: iService functions / included symbols from iService5

### 3.1.1 Version history

Version	Description
<b>iService5</b>	<p>Application is installed on a mobile device and can be used to repair and diagnose appliances with SystemMaster or appliances without SystemMaster. It is available for iOS (iPad or iPhone) and Android mobile phones.</p> <p><b>For appliances with SystemMaster</b>, it is possible to directly connect the mobile device to the SystemMaster appliance, once the Wi-Fi hotspot on the appliance is activated. Additional tool or cable is not needed.</p> <p><b>For appliances without SystemMaster</b>, it is needed to use the iService Wi-Fi Bridge and its corresponding D-Bus or HSI cables. The Wi-Fi bridge is connected via cables to the iService interface of the appliance and then provides a Wi-Fi interface to connect to the mobile device running iService5.</p> <div data-bbox="1406 962 2168 1045" style="border: 1px solid black; padding: 5px;">  iService5 is the leading tool for service technicians.                 </div>
<b>iService4</b>	<p>Runs on an external hardware (DCU or iService Wi-Fi Bridge via web interface) and can be used to repair and diagnose appliances with SystemMaster or without SystemMaster or program modules in the warehouse.</p> <div data-bbox="1406 1177 2168 1260" style="border: 1px solid black; padding: 5px;">  For service technicians iService4 is substituted by iService5.                 </div>
<b>iService3</b>	<p>Application is installed on a laptop and used to serve appliances / modules without SystemMaster.</p> <div data-bbox="1406 1337 2168 1420" style="border: 1px solid black; padding: 5px;">  iService3 is phased out and is not updated anymore. It does not serve SystemMaster appliances.                 </div>

Table 5: Overview of iService versions

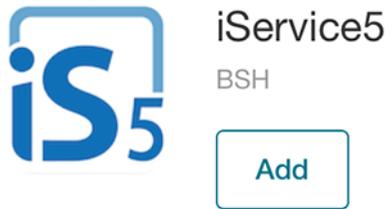
# 💡 Design and function

## 3.2 iService5

### 3.2.1 App download

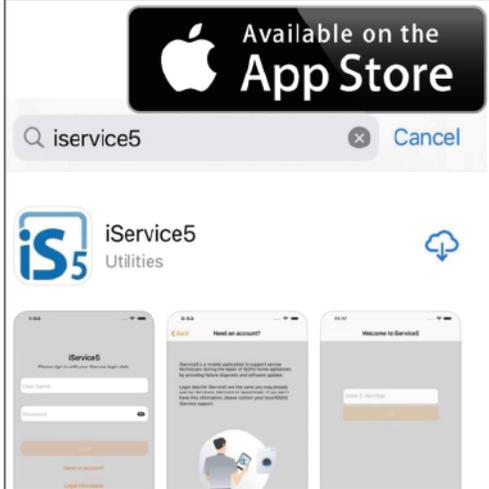
For BSH managed mobile devices:

- iService5 App shall be installed from Secure Hub.

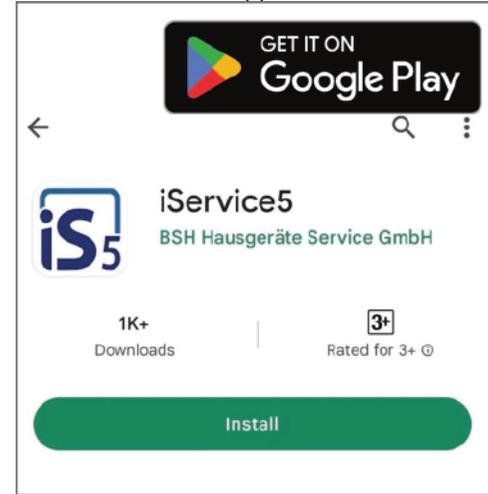


For non-BSH managed mobile devices:

- iOS: iService5 App shall be installed from App Store.

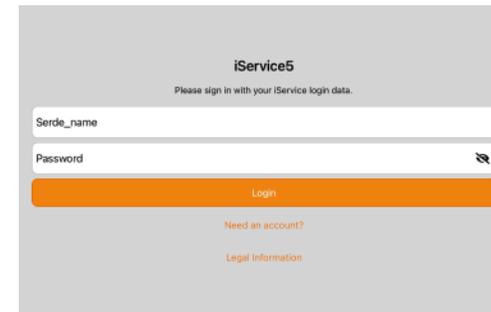


- Android: iService5 App shall be installed from Google Play.



### 3.2.2 Login

OPEC credentials are used to login into iService5 App. These credentials are also used for QuickFinder or iService3/4.



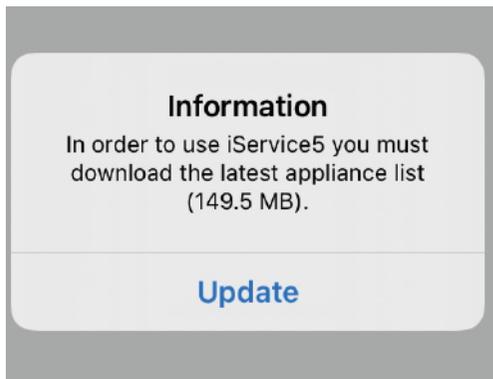
**i** The password is case sensitive.

After first login credentials can be stored in the mobile device for quick access.

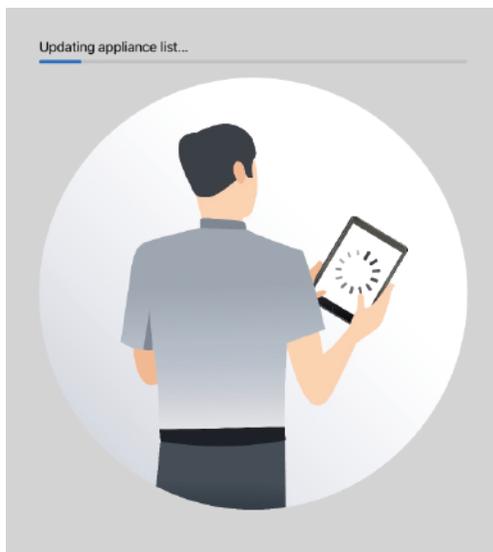
**i** If you do not have an OPEC account yet, please contact your local customer service responsible.

### 3.2.3 Download appliance list

After logging into the App, advice appears to download the appliance list.



Appliance list is a catalogue that contains the information about available appliances (E-numbers) and their corresponding files. The appliance list does not contain any appliance files (such as firmware).



	<p>It is strongly suggested to download the latest appliance list every day in order to find the latest E-numbers and their corresponding latest appliances files.</p> <p>Also if a failure occurs, which could be related to the data supply (e.g. certain iService functions not available), it is advised to update the appliance list.</p>
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### 3.2.4 Download appliance files

Appliance files describe all files (such as firmware, monitoring graphics, connection diagrams, ...) linked to an appliance and are necessary for running the iService functions. In order to perform a download, the app has to stay active (similar to other well-known Apps such as Spotify or Google Maps) and you should not use other apps in the meantime. For larger downloads, it is recommended to connect mobile device to power supply.

There are several ways to download appliance files in iService5.

### 3.2.5 Download set of files

Before starting to download appliance files, it is necessary to select the download options in the app [Settings](#).

There are different possibilities such as a full download of all files or a country-relevant download based on repair statistics in selected countries.

It is also possible to enable / disable the download of E-numbers with a total file size larger than 350 MB e.g. in case if mobile device does not have sufficient memory available.

### 3.2.6 Prepare your work

Downloading all appliance files requires some time and may not be feasible for some technicians. Prepare your work function can be found in [Settings](#).

With this function it is possible to select specific E-numbers (e.g. from repair visits tomorrow) and only download all data which is relevant to those E-numbers.

### 3.2.7 Single file download

After entering an E-number, iService5 checks if all available files have been downloaded. If not, there will be a notification advising to download the remaining files.

### 3.2.8 Enter an E-number and connect to the appliance

It is required to enter the E-Number. Afterwards, a check is performed to determine if all files have been downloaded. If any files are missing, please download them.

## Design and function

Afterwards, App will direct to the connection instruction, either via Wi-Fi for System-Master appliances or via D-Bus or HSI cable and iService Wi-Fi Bridge for appliances without SystemMaster. It is suggested to follow the instructions carefully in order to connect iService5 to the appliance.

### 3.2.9 Choose iService function

After connecting to the appliance, it is possible to choose the relevant iService functions and proceed with e.g. reading out the memory / error log or programming / flashing the appliance.

### 3.2.10 History

The History tab allows you to check the latest repair visits, readout data from the home appliance and performed actions. An entry is automatically created, once an E-number is entered and **[Go]** button is pressed.

### 3.2.11 Report a Problem

Report a Problem function can be found in the App settings. It shall be used to report problems or provide improvement suggestions.



In any case provide as many details as possible, otherwise it might be difficult to understand the problem and find a solution.

Provide your full name, the title of the request (what went wrong) and a detailed failure description. Describe expected situation, actual situation, detailed steps you have followed and any other information which might be helpful. There is no need to provide information about your iService5 version, operating system, mobile device etc. as this information is already automatically inside the log file.

If problem is related to a certain repair visit or E-number, select it from the drop-down menu as this will help us to find the necessary information in the attached log file. The report a problem form will be sent to your local support or directly to BSH customer service headquarter in case the local support is not defined.

## 3.3 iService Wi-Fi Bridge



Fig. 1: iService Wi-Fi Bridge

The iService Wi-Fi Bridge is a device for diagnostic and software updates for BSH home appliances and spare part modules. It can be operated in two different ways:

- **With iService5:** the iService Wi-Fi Bridge enables iService5 to also service appliances without SystemMaster and thus without a Wi-Fi interface. For SystemMaster appliances, the Wi-Fi bridge is not needed if iService5 is used. All data is stored and managed by the iService5 App. The Wi-Fi Bridge is ready to be used with iService5.
- **With web interface (iService4):** the iService Wi-Fi Bridge can be accessed via web interface using a mobile device or a NewOffice computer. It substitutes DCU and UDA2-CS.

For service technicians iService5 is the leading tool.

### 3.3.1 Warnings (Warnings and Hints)

To maintain this level of safety and guarantee the use of the equipment without any danger, the user has to obey the following warnings.

Warning	Description
	The device must be used by a technically trained person only, or by a person who is adequately instructed and supervised. The user has to be instructed by a technically trained person!
	The device must only be used as intended, in order to guarantee the safety of the user, the device and any appliance under test. Warnings at the unit, at power cables and adapter cables have to be obeyed!

Warning	Description
	The unit must only be used at an USB power supply 5 V / min 10 W, which fulfills all local safety requirements! An adequate USB-C charging cable has to be used. It can also be powered by mobile power banks, as used to charge smart devices!
	Appliances under test that are connected to unprotected power lines must not be connected to the iService Wi-Fi Bridge!
	Repairs and modifications at the iService Wi-Fi Bridge must only be done by the producer or by persons, who are authorized by the producer! Repairs at power supplies or at adaptor cables must only be executed by qualified electricians! Especially the display is very sensitive when the Wi-Fi Bridge is opened.
	Only original spare parts and accessories, as specified by the producer, must be used!
	If it is not possible anymore to use the iService Wi-Fi Bridge without any danger, e.g. because of: <ul style="list-style-type: none"> <li>▪ Visible damages</li> <li>▪ Not appropriate storage</li> <li>▪ Not appropriate transport</li> <li>▪ Defect of display or LEDs</li> <li>▪ Failing functionalities etc</li> </ul> the device must not be used anymore! It has to be disconnected from any appliance under test and from supply power and protected against not intended re-connection to any appliance under test! Repair must only be provided by the producer or by qualified electricians!
	Appliances to be connected for testing may carry high voltages, e.g. caused by charged capacities or by defective power supplies!
	Only connect appliance under test to the D-BUS / HSI socket, if the power connection of the appliance is safe.
	<b>ATTENTION!</b> When connecting an appliance under test to the <b>D-BUS / HSI</b> cable, dangerous voltages may be exposed to the user by touchable conductive parts, which are not connected to earth!

## Design and function

Warning	Description
	<b>ATTENTION!</b> The device must not be used to ensure mains separation/insulation of the connected appliance under test. Disconnect the appliance under test from power and protect it against unintended re-connection.
	If the Wi-Fi Bridge is not used, disconnect it from power in order to avoid overheating.
	Treat the Wi-Fi Bridge carefully (like a mobile device) in order to avoid mechanical damage.

# Fault Diagnosis

## Result problem

Fault	Possible cause	Troubleshooting
I cannot login.	User name or password incorrect.	<ol style="list-style-type: none"> <li>1. Double check your user name and password. The password is case sensitive.</li> <li>2.  If you don't know your user credentials: <ul style="list-style-type: none"> <li>- Contact your local iService responsible.</li> </ul> </li> </ol>
Download is not working.	App is closed / not active during download.	<p>App has to stay open and active during download (like you know it from other apps such as Spotify or Google Maps).</p> <ol style="list-style-type: none"> <li>▶ 1. Do not use another app during the download.</li> <li>2. It is suggested to connect your smart device to power if you are downloading a large number of files.</li> </ol>
	No internet connection available. You might still be connected to a System-Master or the Wi-Fi Bridge or your internet is not working.	<ol style="list-style-type: none"> <li>▶ Make sure that you are connected to internet (Wi-Fi or mobile network).</li> </ol>
Download is slow.	It is a normal behavior,	<p>iService5 chooses the download sequence based on the size of the files. Large files are downloaded first, smaller files are downloaded later.</p> <ol style="list-style-type: none"> <li>▶ Let the download to continue.</li> </ol>
Not enough storage available on my device.	Your device only has a small amount of internal memory / you have downloaded a lot of files already.	<ol style="list-style-type: none"> <li>▶ Choose appropriate download filters in the app <a href="#">Settings</a>.</li> <li> If needed you can delete all existing files in your <a href="#">Settings</a>.</li> </ol>
I cannot find a certain appliance E-number.	Your appliance list might not be up to date.	<ol style="list-style-type: none"> <li>▶ After login click <a href="#">Download the latest appliance list</a>.</li> <li> You can also trigger the download in your Settings by clicking the <a href="#">Download</a> button.</li> </ol>
	Wi-Fi Bridge toggle is not activated.	<ol style="list-style-type: none"> <li>▶  In case you are searching for an appliance without SystemMaster. <ul style="list-style-type: none"> <li>- Go to <a href="#">Settings</a> and make sure that the Wi-Fi Bridge toggle is activated.</li> </ul> </li> </ol>
	Appliance is not available in iService.	<p>There are certain pre-conditions in order to show an appliance in iService.</p> <ol style="list-style-type: none"> <li>▶ Create an eFSB.</li> </ol>
Popup informing that some files cannot be downloaded appears	iService5 cannot download some files from the backend.	<ol style="list-style-type: none"> <li>1. Do not worry and continue to use the App. The iService team is aware and tries to fix it as soon as possible. Normally it should not affect your daily work.</li> <li>2.  If you have problems with a specific E-number where files cannot be downloaded and repair of this appliance is not possible. <ul style="list-style-type: none"> <li>- Inform your local iService responsible.</li> </ul> </li> </ol>

## Fault Diagnosis

Fault	Possible cause	Troubleshooting
No connection possible.	Something went wrong.	<ul style="list-style-type: none"> <li>▶ Start the process from beginning.               <ol style="list-style-type: none"> <li>1. Disconnect everything again and try it again.</li> <li>2. Make sure that Wi-Fi is activated on your mobile device.</li> </ol> </li> </ul>
	Cable connection not OK	<ol style="list-style-type: none"> <li>1.  If you are using the Wi-Fi Bridge.               <ul style="list-style-type: none"> <li>- Make sure that all cables are connected properly and you follow the process exactly as described.</li> </ul> </li> <li>2. Try it again from scratch.</li> </ol>
	Location Services have to be turned on.	<p>You need to give permission to the location services. This is normally asked by the app itself.</p> <ul style="list-style-type: none"> <li>▶ Go to your app settings and allow the location service to iService5 app.</li> </ul> <p> <b>INFO</b> This request is a requirement from the operating system on your device. After connecting to a specific Wi-Fi name (SSID) theoretically your location could be determined. Thus, we have to ask for accepting. If you don't accept it, app cannot be properly used (e.g. connection to home appliance) and popup will occur again.</p>
Connection diagram is not available or does not look correct.	Connection diagram is not linked / is wrongly created.	<p>Connection diagram should show instructions how to connect to an appliance.</p> <ul style="list-style-type: none"> <li>▶  If connection diagram is not available or wrongly shown:               <ul style="list-style-type: none"> <li>- Create a TIM via eFSB tool.</li> </ul> </li> </ul>
Popup Authentication for Wi-Fi credentials is shown	<p>In order to show the password of System-Master or Wi-Fi Bridge, an authentication is requested.</p> <p>This popup is shown when Fingerprint or FaceID is not activated or supported by your mobile device.</p>	<ul style="list-style-type: none"> <li>▶ Enter your personal password, which is used to unlock your mobile device or activate Fingerprint or FaceID.</li> </ul>
Popup that Wi-Fi bridge is not in the correct mode.	The Wi-Fi Bridge might be in a wrong mode (web interface or iService5 mode).	<ol style="list-style-type: none"> <li>1. Close all tabs and iService5.</li> <li>2. Go to the Settings and check which mode is selected on the bridge.               <ul style="list-style-type: none"> <li>- Set correct mode (<b>bridge mode</b> for iService5 usage).</li> </ul> </li> </ol>
<u>Report a problem</u> function is not working.	No internet connection.	<ul style="list-style-type: none"> <li>▶ Make sure that you are connected to Wi-Fi or mobile network. Normally the form is sent automatically once you are connected back to internet.</li> </ul>
	Other problem.	<ul style="list-style-type: none"> <li>▶ Restart app and retry or try again later.</li> </ul>

## Fault Diagnosis

Fault	Possible cause	Troubleshooting
Programming / Flashing is not possible.	Not all files are downloaded / available.	<ol style="list-style-type: none"> <li>1. Make sure that your iService version and appliance files are up to date.</li> <li>2. Close the app and trigger the appliance list download after login.</li> <li>3. R-enter the E-number and make sure you download all required appliance files once you are asked by the app.</li> <li>4.  If problem remains.               <ul style="list-style-type: none"> <li>- Contact local iService support.</li> </ul> </li> </ol>
Programming / Flashing started but problems occurred / not finished successfully.	Problems with the appliance, connection or files.	<ol style="list-style-type: none"> <li>1. Please check correct connection.               <ul style="list-style-type: none"> <li>- Make sure your iService version and appliance files are up to date.</li> </ul> </li> <li>2. Restart the process from scratch and ensure correct connection procedure.</li> <li>3.  If problem remains.               <ul style="list-style-type: none"> <li>- Contact local iService support.</li> </ul> </li> </ol>

## 5.1 iService spare parts

### iService Wi-Fi Bridge

**Usage:**

Enables iService5 to also service appliances without SystemMaster. An additional power supply is needed.



### D-Bus cable with 6 pin plug

**Usage:**

Can be connected to the Wi-Fi Bridge in order to service appliances with a D-Bus interface.

[15000611]



### D-Bus splitter cable with 3+4 pins

**Usage:**

Is required as an adapter cable to service special appliances.

[00341248]



### HSI cable with 6 pin plug

**Usage:**

Can be connected to the Wi-Fi Bridge in order to service appliances with an HSI interface.

[15000605]

