

Panasonic®

Operating & Installation Instructions

Fully Automatic Washing Machine
(Household Use)

Model No. **NA-FD180W3**



Contents

Safety Precautions	2
Part Names / Accessories	6
Before Washing	7
Operation Panel	8
Washing	9
Variety of Programs	10
Detergent / Softener / Bleach	12
Auto Dose	14
Washing Options	16
Convenient Functions	20
Maintenance	21
Installation	26
Error Display	30
Troubleshooting	32
Contents of Programs	35
Panasonic SmartApp+	36
Specifications	55

Thank you for purchasing this product.

- Read these instructions carefully for optimum performance and safety before use.
- Keep this manual for future reference.

AWW9901CFFC0-0C0

A0724-0(T)

Printed in Vietnam

07-2024



Safety Precautions

WARNING

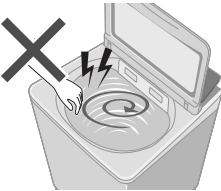
May cause serious injury or death.

Children must not use it alone.

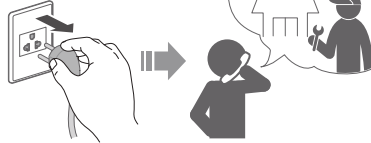


- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
- Children should be supervised to ensure that they do not play with the appliance.

Do not touch the tub until it stops.



- If the tub does not stop within 15 sec:

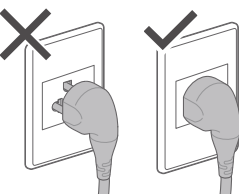


May cause fire or electric shock.

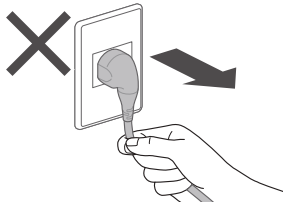
Do not touch it with wet hands.



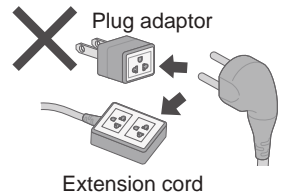
Fully insert it.



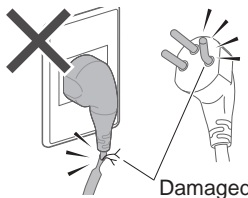
Do not hold or pull on the cord.



Do not use.

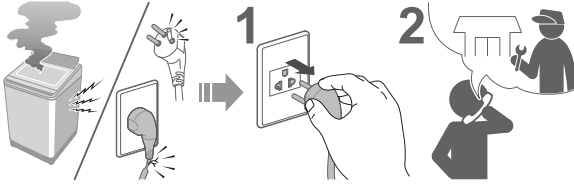


Do not use.

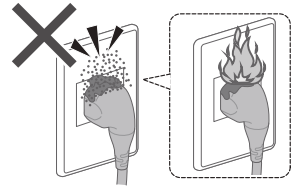


- If the power cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

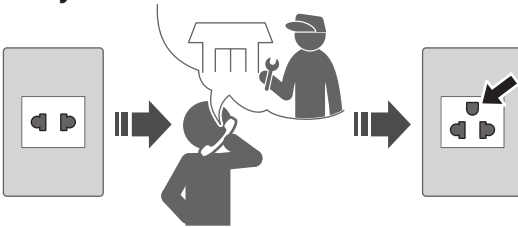
In case of failure or damaged power cord, stop use and ask the electrical technician.



Accumulated dust may cause fire.



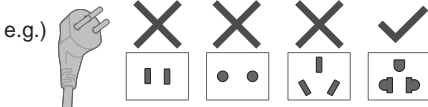
Securely insert the ground prong. Call your local dealer for a new socket.



Wipe the power plug periodically.

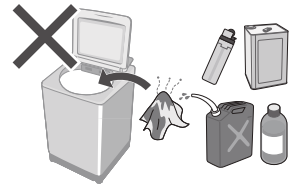


Use a socket appropriate for this appliance.



- The plug shape, socket shape and rating requirement varies with the region.

Keep away from flammable materials.



May cause failure.

Never disassemble, repair or modify it by yourself.



When using the “Panasonic SmartApp+” app

(Cause of malfunction due to radio waves from the appliance)

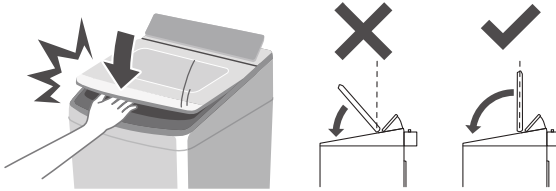
- Keep at least 15 cm away from the mounting part of the cardiac pacemaker.
- Keep away from medical equipment and automatic control equipment (automatic doors, fire alarms, etc.).

Safety Precautions (continued)

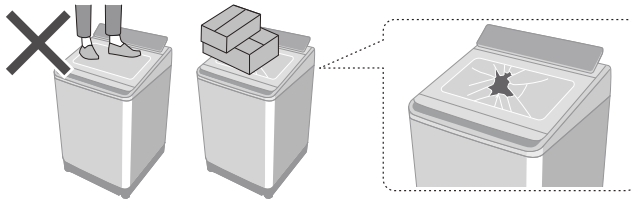
CAUTION

May cause injury.

Be careful not to get your fingers caught.



Do not climb or put objects on the appliance.

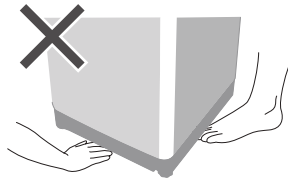


- If the lid is broken, immediately stop using.

Do not touch when it is hot.

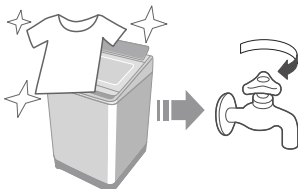


Be careful of your hands and feet.

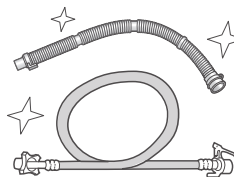


May cause water leakage.

Turn off the water faucet.



Use new hose-sets.

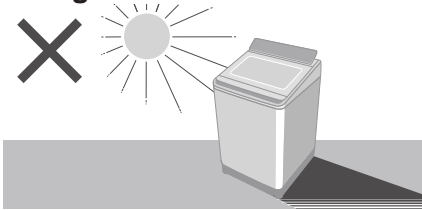


- New hose-sets supplied with the appliance are to be used and old hose-sets should not be reused.

■ For maximum mass of dry cloth and pressure of tap water, see Page 55.

May cause failure.

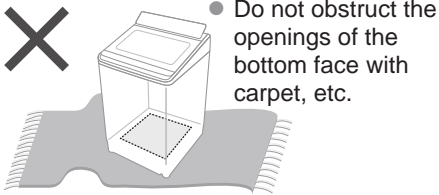
Keep away from heat and direct sunlight.



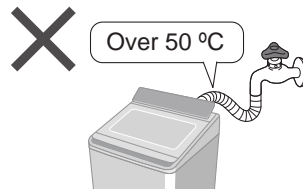
Do not wash waterproof items.



Do not obstruct.



Do not use hot water.



For machine-washable items only.

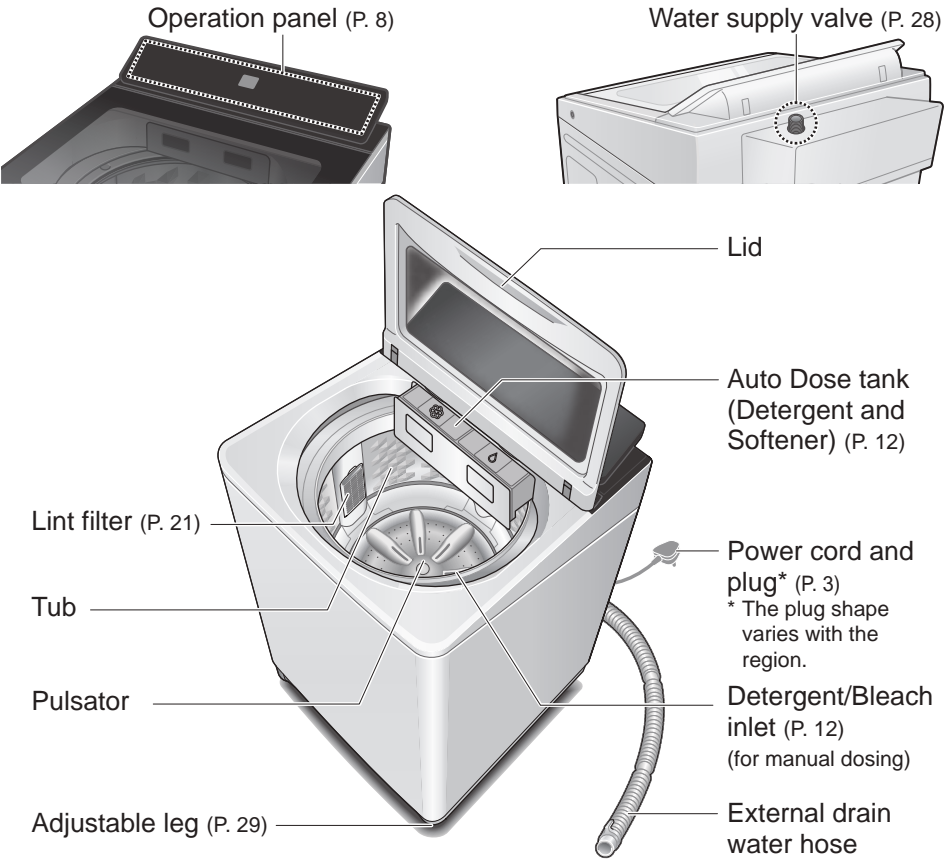


● This appliance is intended to be used in household. This appliance is not intended to be used in applications such as:

- Staff kitchen areas in shops, offices and other working environments;
- farm houses;
- by clients in hotels, motels and other residential type environments;
- bed and breakfast type environments;
- areas for communal use in blocks of flats or in laundrettes.

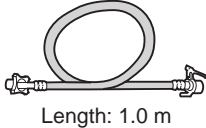
Part Names / Accessories

Part names



Accessories

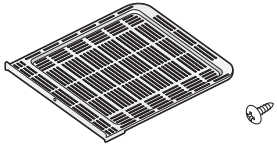
Water supply hose (1) (P. 28)



External drain water hose (1) (P. 27)



Bottom cover (1) /Screw (1) (P. 27)



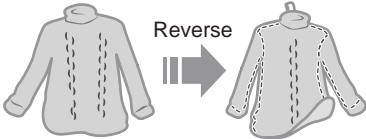
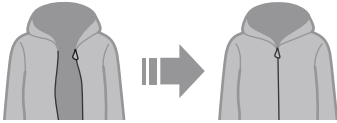
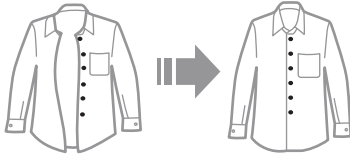
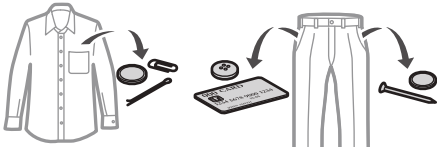
Water tap adaptor (1) (P. 28)



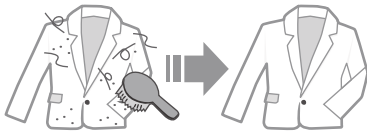
Before Washing

Laundry preparation and check

Pre-laundry check

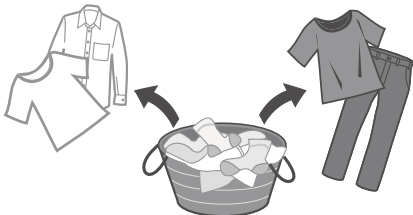


Clothes likely to pill

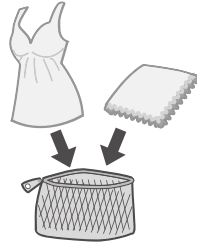


Paper diapers

To prevent colour staining

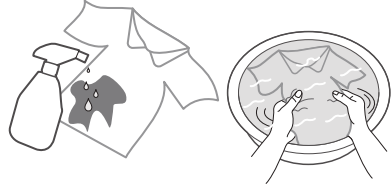


Use laundry nets for delicates

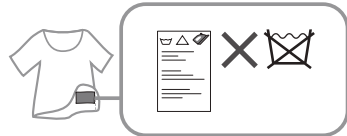


For "Stain Master +" (P. 18)

- Pretreatments for heavily stains



- Observe the clothes' care labels



- For



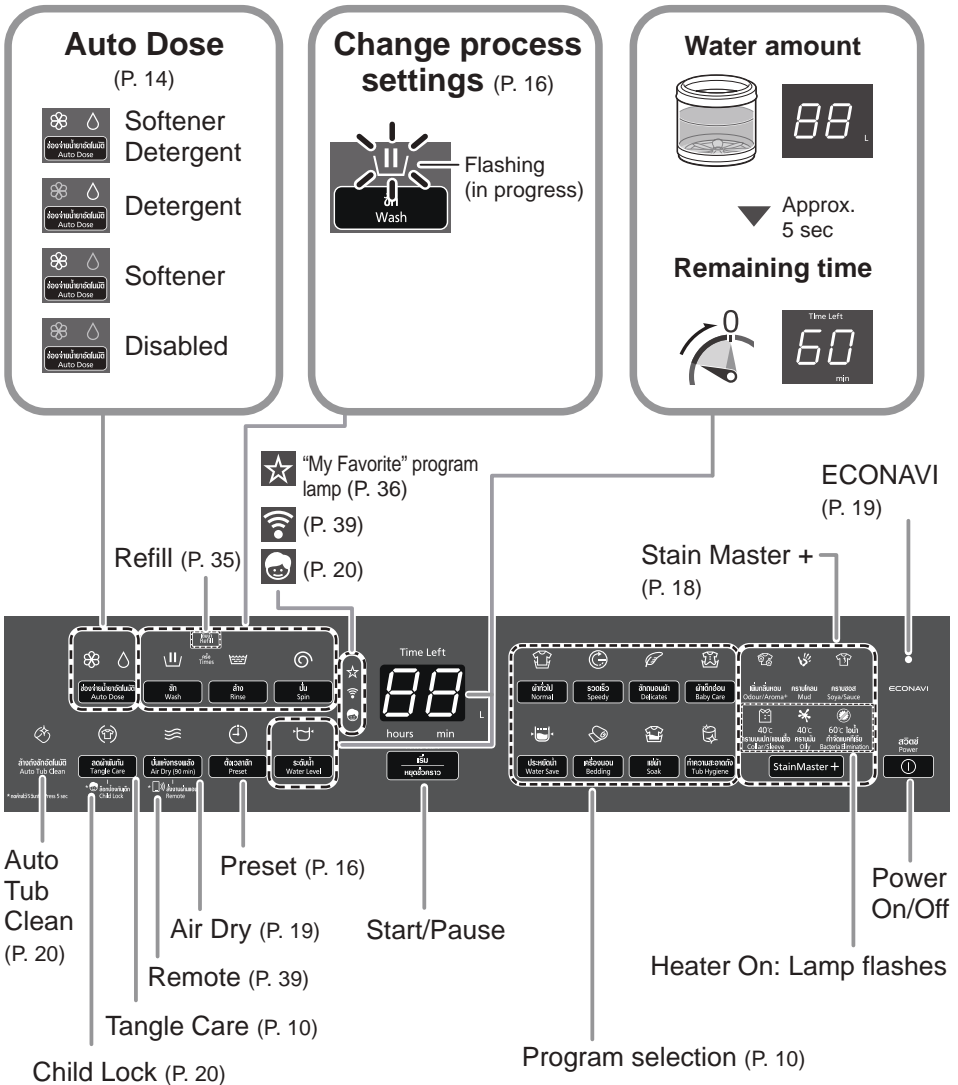
- Coloured clothes
- Shirts with stiff fabric



- Rubber clothes
- Graphic shirts



Operation Panel

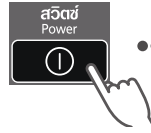
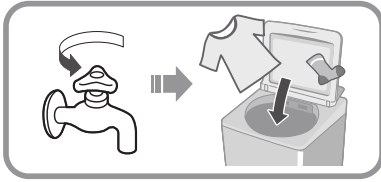


NOTE

- For water amount: 105L, display will show **85**
- In case of a power failure.
 - ⇒ Operation will resume from where it stopped when the power recovers.
- If you do not press **Start/Pause** within 10 minutes after power-on.
 - ⇒ Auto power off.
- The wash process setting of the "Stain Master +" and "Soak" programs cannot be changed.

Washing

1



2



Checking "Auto Dose" setting (P. 8, 14)

■ Preset timer (P. 16)

3

Measures the amount of laundry.



10 sec



5 sec

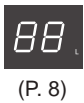


20 sec

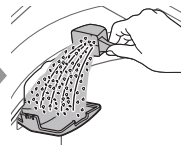


4

(for manual dosing)

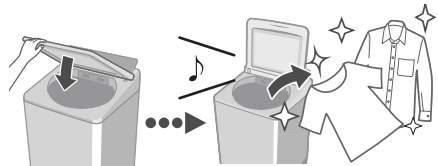


(P. 8)



(P. 13)

5



■ After pressing "Start"

- To change each operation (while washing).













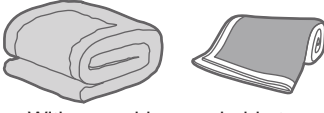






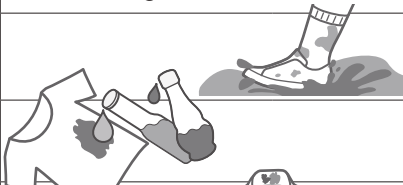











- To check or change the water level (while washing).



- You cannot change the program.

Variety of Programs

	Program	Purpose	Max. capacity (kg)
Wash	 Normal (P. 9)	<ul style="list-style-type: none"> • Everyday clothes 	18.0
	 Tangle Care (P. 9)	<ul style="list-style-type: none"> • Anti-tangling • Washing more gently than “Normal” to reduce tangle. • Disentangling clothes after spin: 8 kg or less. 	
	 Speedy (P. 9)	<ul style="list-style-type: none"> • For light soil 	18.0
	 Delicates (P. 17)	<ul style="list-style-type: none"> • Washing gently 	5.0
	 Baby Care (P. 9)	<ul style="list-style-type: none"> • Clothes for babies & sensitive skin Rinsing thoroughly 	18.0
	 Water Save (P. 9)	<ul style="list-style-type: none"> • Saving water 	18.0
	 Bedding (P. 17)	<ul style="list-style-type: none"> • Comforters and blankets  With a machine-washable tag	4.2

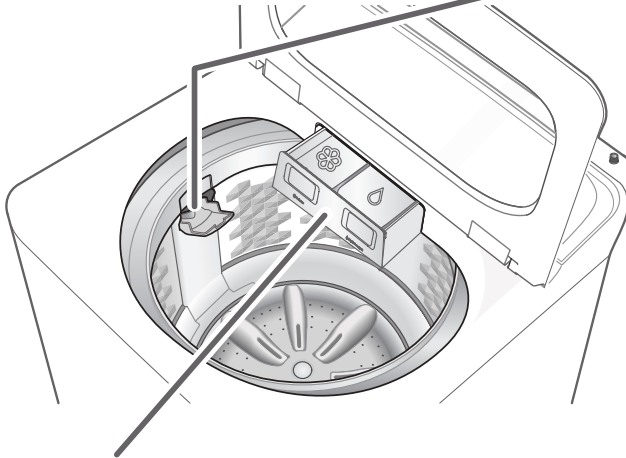
	Program	Purpose	Max. capacity (kg)
Wash	 Soak (P. 9)	<ul style="list-style-type: none"> ● For heavy soil Presoaking to wash 	18.0
	StainMaster + (P. 18)	<ul style="list-style-type: none"> ● For the following stains 	6.0
	Light Odour/ Aroma+ 	<ul style="list-style-type: none"> ● Use more softener to keep the scent longer 	
	 Mud		5.0
	 Soya/Sauce		
	 Collar/Sleeve (40 °C)		
	Heavy Oily (40 °C) 		
	Bacteria/Allergy (60 °C Steam)	 → 	
Dry	 Air Dry (90 min) (P. 19, 25)	<ul style="list-style-type: none"> ● Drying synthetic fibre clothes 	3.0
Maintenance		<ul style="list-style-type: none"> ● Tub drying 	—
	 Tub Hygiene (P. 25)	<ul style="list-style-type: none"> ● Tub cleaning Removing black mould and smell 	—

NOTE

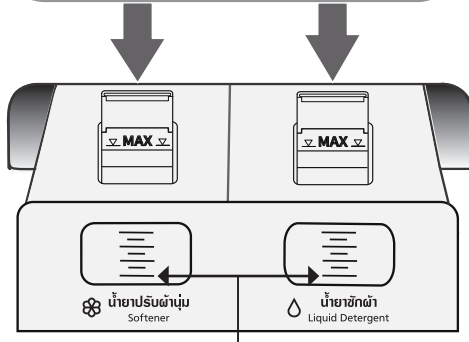
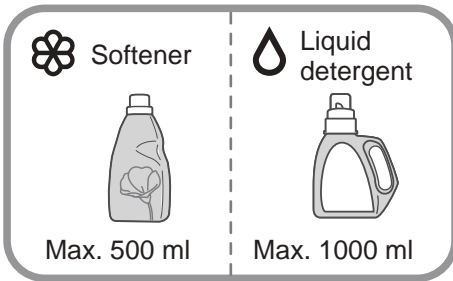
- “Normal” program and “Water Save” program are recommended for a normally soiled load at the rated capacity of this washing machine.

Detergent / Softener / Bleach

- Follow the instructions on each package.
- For cleaning (P. 22)
- Close Auto Dose tank completely before use.
Push the tank until there is a “click” sound.



Auto Dose tank



Add detergent/softener before it drops below the line.

NOTE

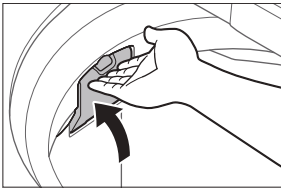
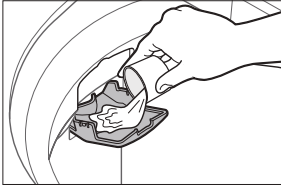
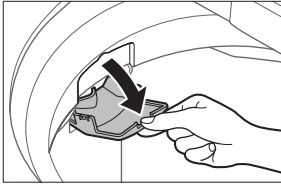
- Liquid detergent/softener left for a long time may clump or solidify. In that case, clean Auto Dose tank. (P. 22)



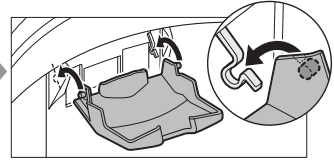
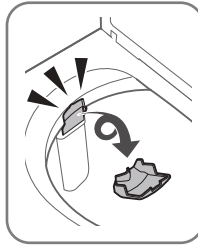
Do not use separated or solidified detergent/softener

For manual dosing

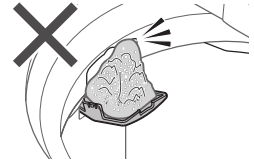
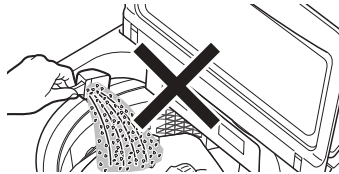
Detergent, Bleach



e.g.) Liquid bleach



Whiten bleach
(chlorine bleach)



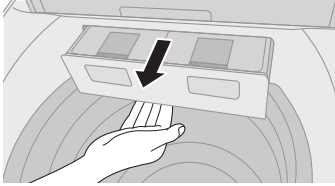
- **Do not pour detergent directly into the tub.**
- The level of foaming depends on the load size, soil, detergent, and water hardness.
- Dilute bleach with water before putting it in the detergent/bleach inlet.
- Pour detergent according to water level, follow the instructions on the package.

Auto Dose

Detergent and softener will be automatically added depending on the amount of laundry and dose amount setting, available with all programs except "Tub Hygiene", "Air Dry (90 min)" and "Water Save" (Softener only). (P. 35)

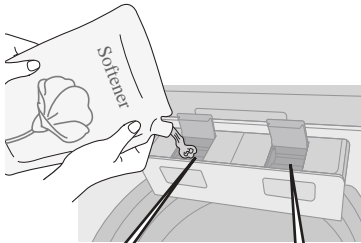
■ To supply detergent / softener

1



- Press the lock at the bottom of the tank and pull it out.

2



Softener
Max. 500 ml

Liquid detergent
Max. 1000 ml

3

Close Auto Dose tank completely.

■ To set "Auto Dose" function

1



2



(P. 8)



(Default setting)

3



(The setting is memorized.)

■ Standard amount

- Water: 50 L
- Liquid detergent: 25 ml
- Softener: 25 ml

■ To change the dose amount

1



2



(e.g.)
♪ x2



softener



detergent

3

● To increase

● To decrease



● Range value

● Detergent: 10 ml - 95 ml

● Softener: 10 ml - 95 ml

Step change: 5 ml

(The setting is memorized.)

4



NOTE

- If there is water in the tub before, detergent and softener will not be automatically supplied when washing.

■ Q&A

	Questions	Answers
Detergent/Softener	What cannot be used with “Auto Dose” function?	<p>The following cannot be used:</p> <ul style="list-style-type: none"> ● Powder detergent ● Liquid soap ● Items that do not have a “Estimated amount to use” label on the package ● Bleach ● Powder soap <p>Baking soda cannot be used for manual or auto dosing.</p>
	Changing brand?	<p>Follow the steps below:</p> <ol style="list-style-type: none"> ① Empty the Auto Dose tank and clean it. (P. 22) (Mixing different brands can cause clogging) ② Add new detergent/softener. (P. 14)
	Can I add more before it runs out?	The same brand can be added as it is.
	What is the standard amount for detergent/softener?	<ul style="list-style-type: none"> ● The standard amount is the amount of detergent/softener used per 50 L of water. Check information on the package. ● If there is no information on the package or if you are unsure, contact the manufacturer.
How to use “Auto Dose” function	How many times can the laundry be washed with Auto Dose tank full?	<ul style="list-style-type: none"> ● Detergent and softener: about 30 times <p>The number of times varies depending on the amount of laundry and dose amount setting.</p>
	If you do not set the dose amount?	<ul style="list-style-type: none"> ● The standard amount is <ul style="list-style-type: none"> • 25 ml detergent per 50 L water • 25 ml softener per 50 L water ● If the settings are not appropriate for detergent/softener you are using, stains may not come off or the laundry may darken.
	What happens if put detergent in detergent/bleach inlet while setting “Auto Dose” function?	Because it is put in twice, it will be too much.

Washing Options

Preset

Set how many hours later to finish operation.

1



2



All other indications turn off.

ทั่วไป Normal	2 - 24
รวดเร็ว Speedy	1 - 24
ซักขนอ่อน Delicates	-
ผ้าเด็กอ่อน Baby Care	2 - 24
ประหยัดน้ำ Water Save	2 - 24
เครื่องนอน Bedding	-
แช่ผ้า Soak	3 - 24
StainMaster +	(P. 18)
ปั่นแห้งทรงพลัง Air Dry (90 min)	-
ทำความสะอาดถัง Tub Hygiene	-

■ To confirm

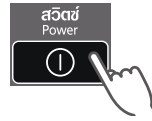


■ To cancel or change



Wash / Rinse / Spin

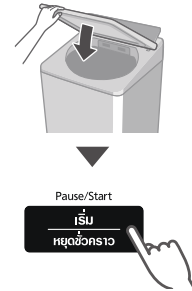
1



2



3



NOTE

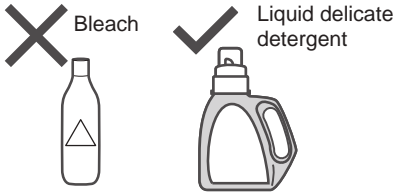
- Not available for "Tangle Care".



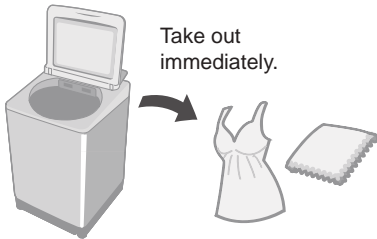
Delicates

74 L	5.0 kg
66 L	3.0 kg
59 L	1.0 kg

NOTE

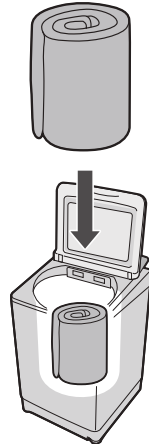


■ After operation ends

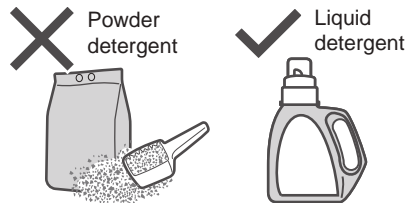


Bedding

Max. water amount	4.2 kg <ul style="list-style-type: none"> • 100 % synthetic fibre • 100 % cotton
-------------------	--



NOTE



NOTE

- The water amount indication shows the maximum and cannot be changed.

Washing Options (continued)

Stain Master +

Preparation: (P. 7)



1



2



- Timer preset (hours) (P. 16)
- Collar/Sleeve: 3 - 24
- Oily: 3 - 24
- Bacteria/Allergy: 4 - 24
- Others: 2 - 24

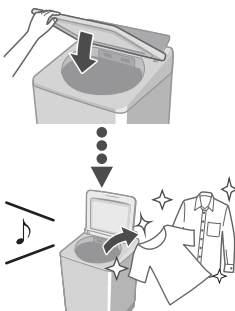
3



4

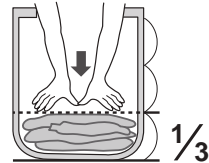


5



NOTE

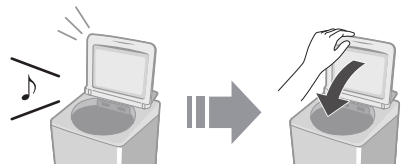
- Max. capacity (P. 11)



- Max. water amount
 - Bacteria/Allergy: 66L
 - Others: 81L
- You cannot change the wash process setting of this program.
- When using

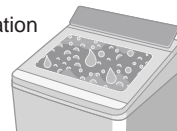


- Make sure to close the lid.



- Dew condensation may occur on the lid, etc.

Condensation



Air Dry (90 min)

The air blown from the tub rotation removes water from clothes.

- Dryable clothes: Synthetic fibre (Max. 3.0 kg)



NOTE

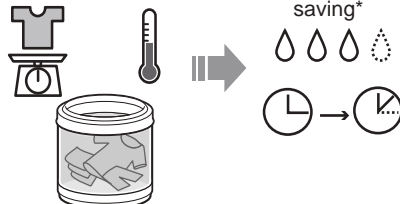
- Clothes may not be sufficiently dried (depends on amount and type of clothes, and the temperature).
- This function does not use a heater. Clothes may be cold and half dry.

ECONAVI

- “Normal” program only

Weight / Temperature

Water and time saving*



Lamp indications



Detecting

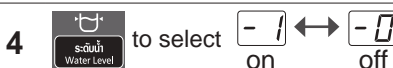


ECONAVI enabled



ECONAVI disabled

To turn on/off



* Test conditions:

- “Normal” program
- Comparison between ECONAVI-enabled operation (amount of laundry: 2.0 kg, water temperature: above 35 °C) and ECONAVI-disabled operation (amount of laundry: 18.0 kg (rated capacity), water temperature: below 15 °C)
- Test was conducted based on IEC60456 except for water temperature.

Convenient Functions

Setting Auto Tub Clean

Preventing black mould, available with all programs except “Water Save” and “Air Dry (90 min)”.

■ Lamp indications



Operating



Function enabled



Function disabled

■ To turn on/off

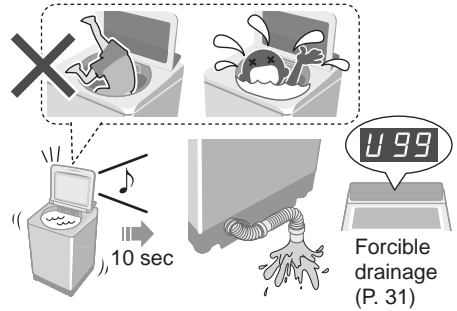
- 1
- 2
- 3 Hold 3 sec
- 4 to select off on
- 5

Cancelling end buzzer

- 1 & Hold 3 sec

- To reset:
same procedure

Setting Child Lock



* This function does not lock the lid and button operations.

- 1
 - 2 Hold 5 sec
- To cancel: same procedure

NOTE

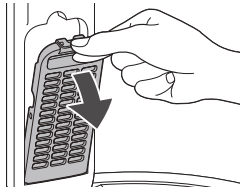


Maintenance

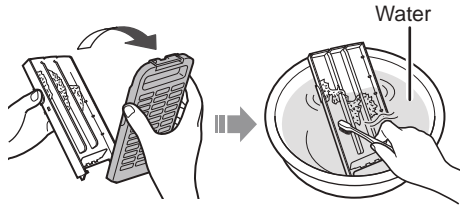
Lint filter

After each operation

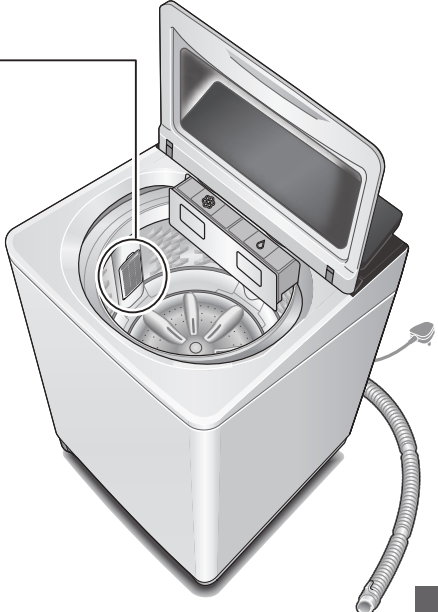
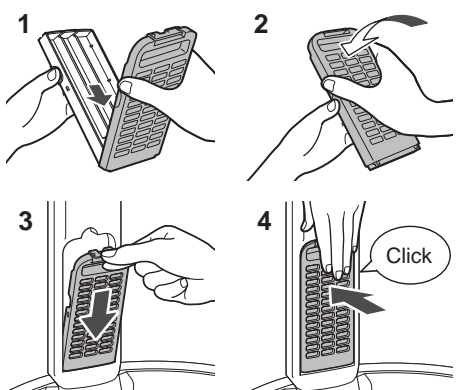
1



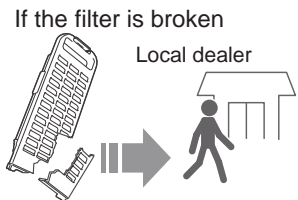
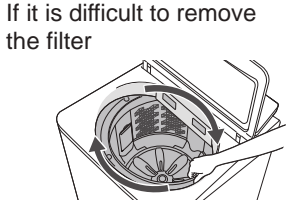
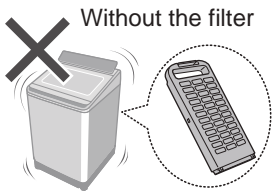
2



3



NOTE



Maintenance (continued)

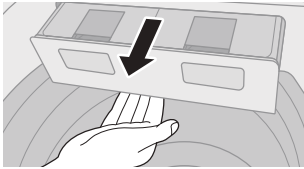
Auto Dose tank

Once every
3 months

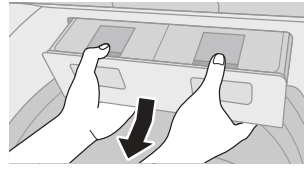
When changing detergent
or softener brand

When not used for
more than 1 month

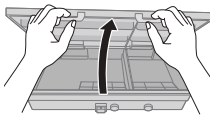
- 1** Take out the tank.
Press the lock at the bottom
of the tank and pull.



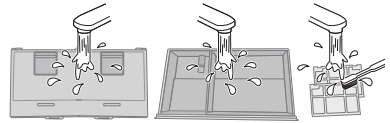
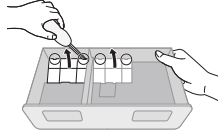
Pull it out diagonally
downward.



- 2** Open the tank lid, remove 2 filters, then wash with water.

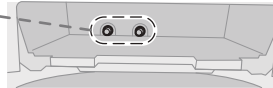


Backside

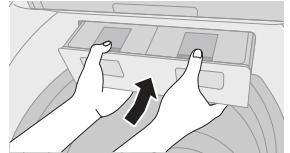
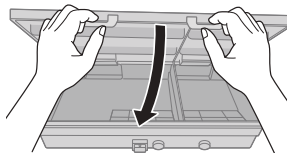
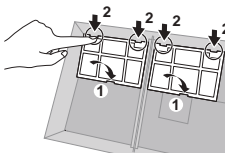


NOTE

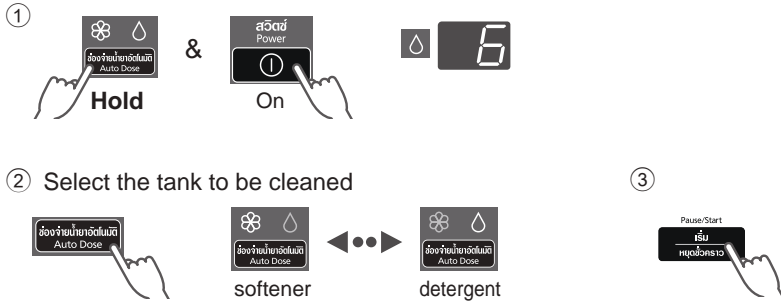
- Do not reuse leftover liquid detergent and softener.
- Do not wipe the joint.
(cause of clogging)



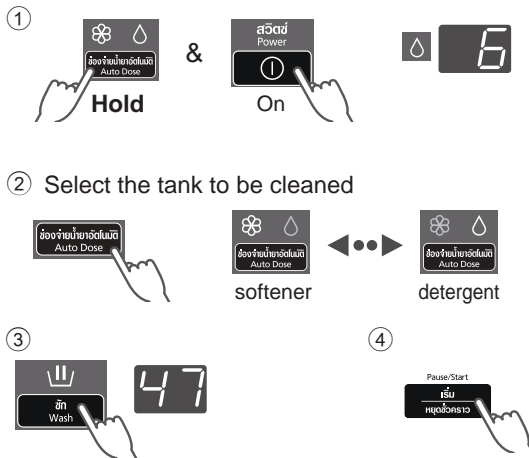
- 3** Attach filters, close the lid and attach the tank.



- 4**
- Fill the tank about halfway with water, then close completely.
 - Close the lid of washing machine and run “Auto Dose Tank Clean” function to clean (6-minute maintenance for detergent and softener each).



- If the joint is clogged, run “Auto Dose Tank Deep Clean” function to deep clean (47-minute maintenance for detergent and softener each).



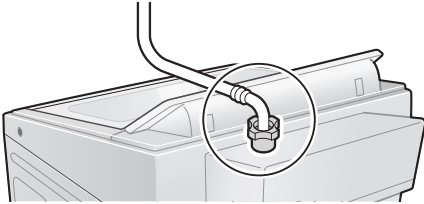
- 5** Take out the tank, discard the remaining water and wipe off the water, then attach the tank.



Maintenance (continued)

Water supply filter

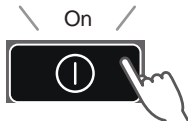
If water does not flow smoothly



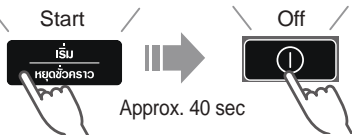
1



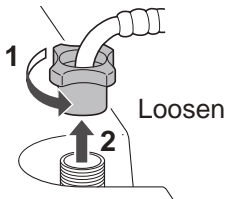
2



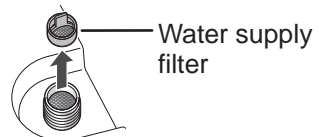
3



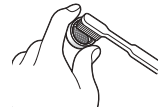
4



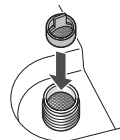
5



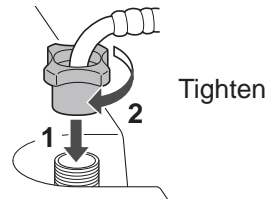
6



7



8

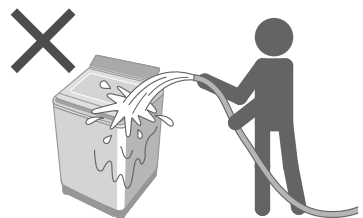


Main unit, lid



For heavy soil

Mild kitchen detergent



Tub

Once a week <Air Dry>

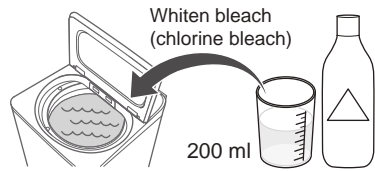


Once a month <Tub Hygiene>

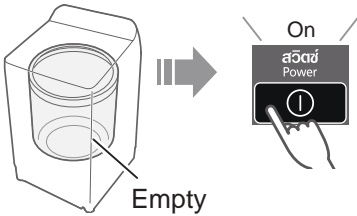
1



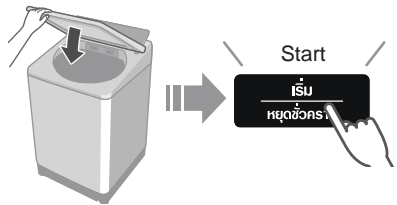
5



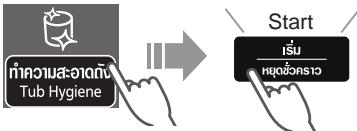
2



6

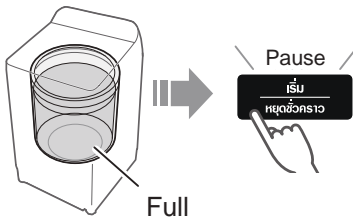


3



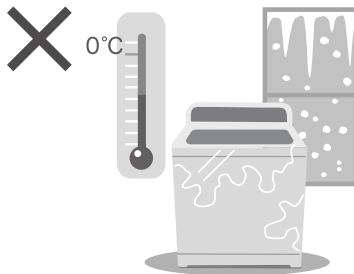
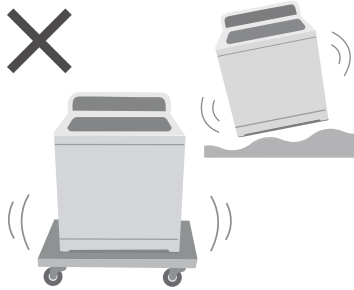
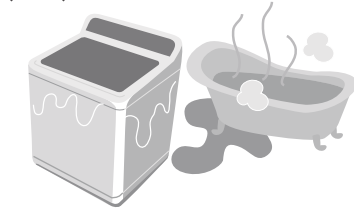
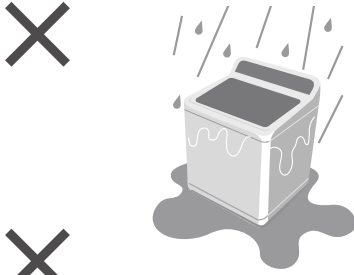
Approx. 2.5 hours

4



Installation

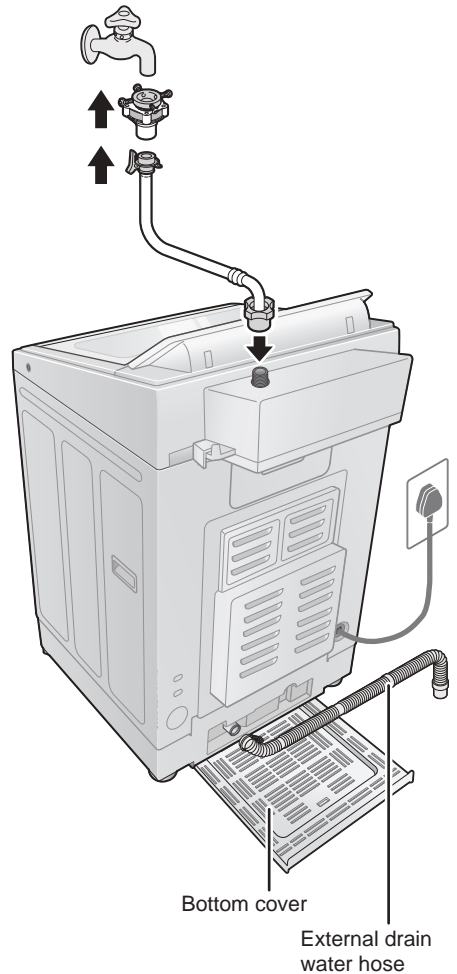
Check the location.



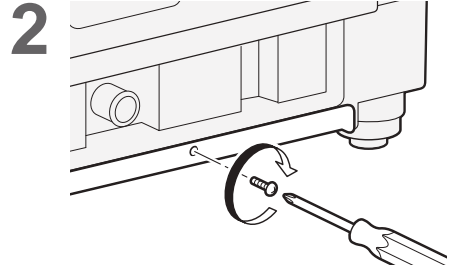
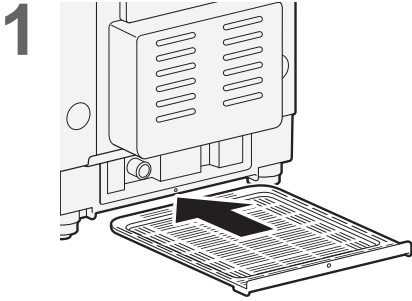
Make sure to ask a service person for installation.



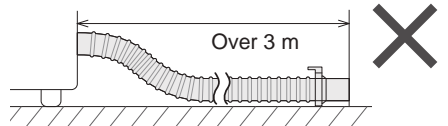
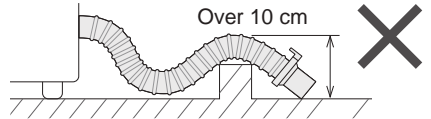
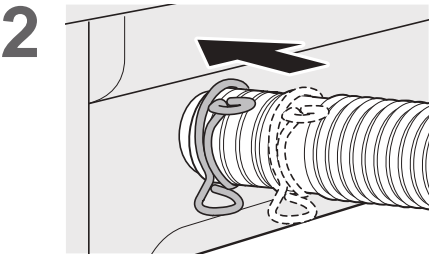
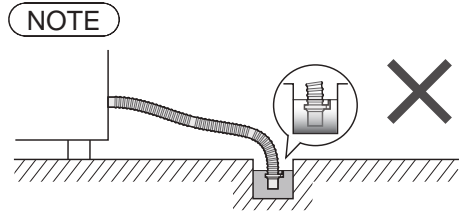
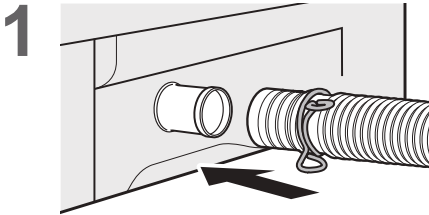
- Do not install by yourself.
- Follow this installation method.
If you do not, Panasonic will not be liable for any accident or damage.



Attach the bottom cover

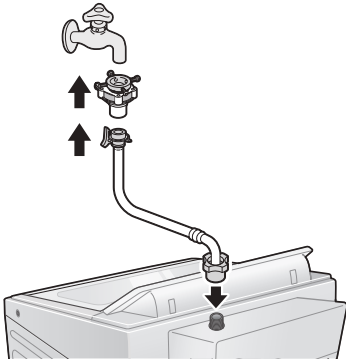


Attach the external drain water hose

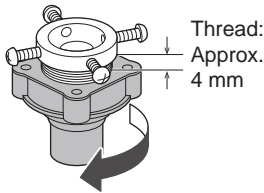


Installation (continued)

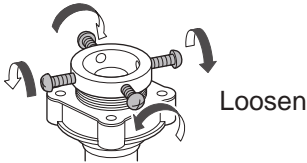
Connect the water supply hose



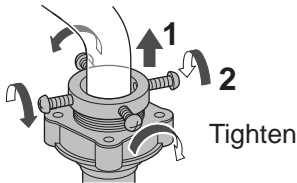
1



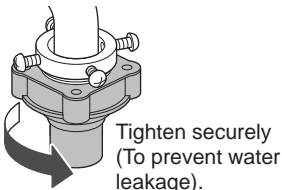
2



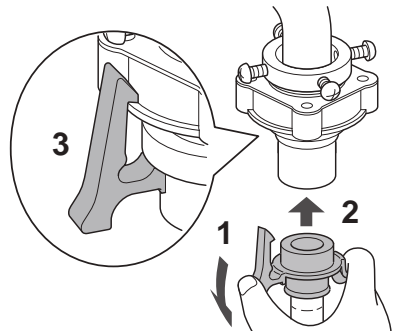
3



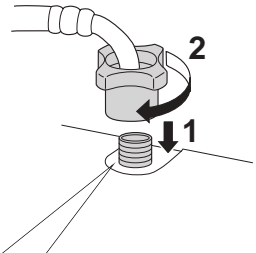
4



5



6



3

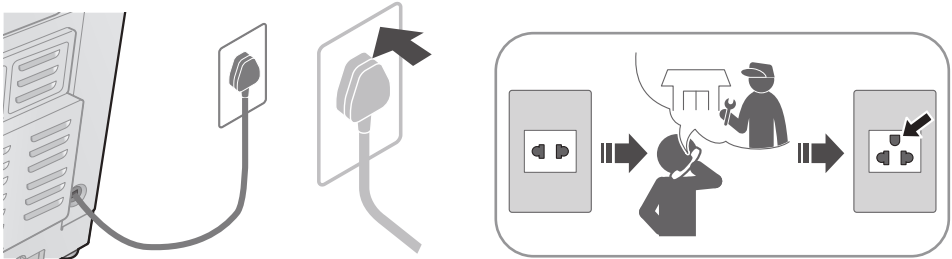
Check that the
elbow is not loose.



CAUTION

- Tighten the nut firmly.
- Do not twist, squash, modify or cut the hose.

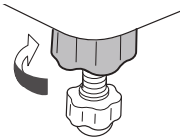
Connect the power and grounding



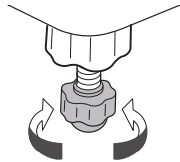
Check that the washing machine is level

■ If the washing machine wobbles

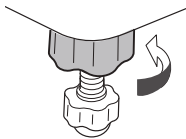
Loosen



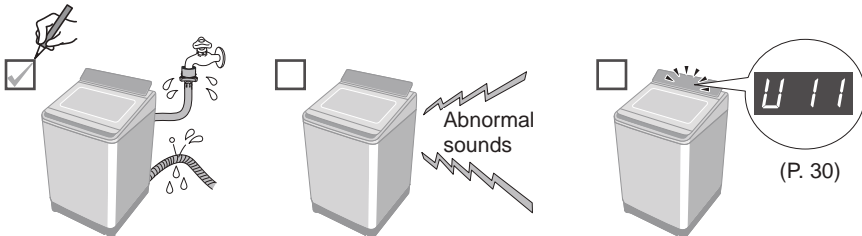
Adjust



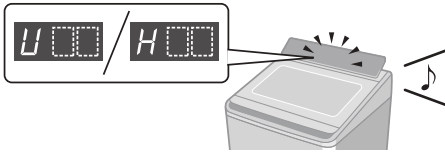
Tighten



Trial operation

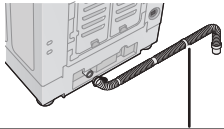

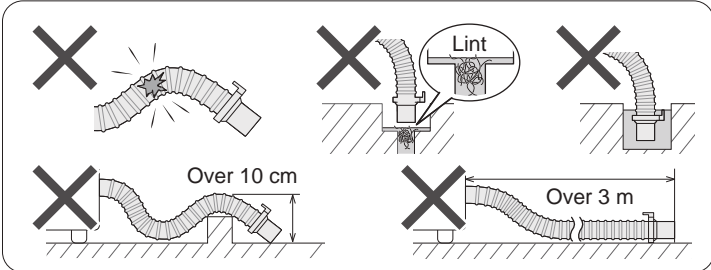
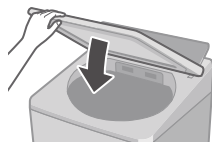



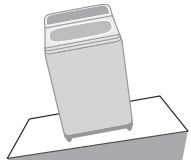
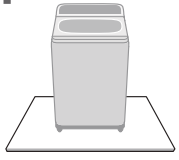



Error Display



■ Preparation



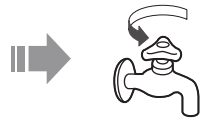

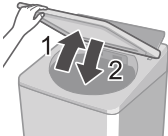
Cancel Child Lock (P. 20)
if it is set.

Error Display	Points to be checked
<p>U 11</p> <p>Water cannot drain.</p>	<p>1 Check</p>  <p>2</p>  <div style="border: 1px solid black; padding: 5px; margin-top: 10px;">  </div>
<p>U 12</p> <p>The lid is open.</p>	<p>1</p> 
<p>U 13</p> <p>Spin or "Air Dry" is not possible.</p>	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px; width: 45%;"> <p>Uneven</p>  </div> <div style="border: 1px solid black; padding: 5px; width: 45%;"> <p>1 Even</p>  </div> <div style="border: 1px solid black; padding: 5px; width: 45%;"> <p>2</p>  </div> </div> <hr/> <div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px; width: 45%;"> <p>Unstable or incline</p>  </div> <div style="border: 1px solid black; padding: 5px; width: 45%;"> <p>1 Stable</p>  </div> <div style="border: 1px solid black; padding: 5px; width: 45%;"> <p>2</p>  </div> </div>

Error Display	Points to be checked
---------------	----------------------


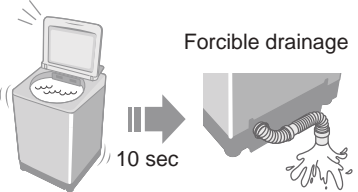
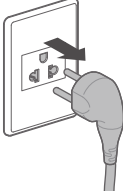

U 14

Water cannot be supplied.

<p>Water outage</p> 	<p>Turned off</p> 	
<p>1</p>  <p>Water supply filter (P. 24)</p>	<p>2</p> 	


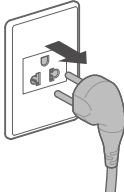

U 99

Water has been forcibly drained.








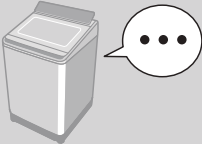













<p>With Child Lock set</p> 	 <p>Forcible drainage</p> <p>10 sec</p>
<p>1</p> 	 <p>5 sec</p>












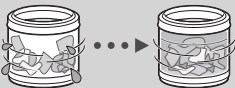

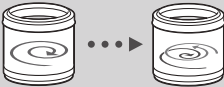

H

Inspection is required.


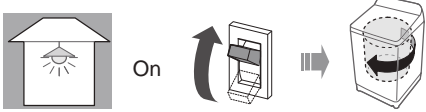




<p>1</p> 	<p>2</p> 	<p>3</p> 
--	--	---

Troubleshooting










	Symptoms	Points to be checked
	<p>Indication increases or does not decrease.</p> 	<p>Time indication is approximate. Remaining time is corrected during operation.</p> 
Time	<p>Longer than the indication.</p> 	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px; width: 30%;"> <p>When clothes are uneven.</p>  </div> <div style="border: 1px solid black; padding: 5px; width: 30%;"> <p>When the water drainage is not good.</p>  </div> <div style="border: 1px solid black; padding: 5px; width: 30%;"> <p>When the water supply is not good.</p>  </div> </div> <p style="text-align: center;">⇒ The operation time may be longer.</p>
	<p>Operation passes the preset time.</p> 	
Main unit	<p>No operation</p> 	<p>□ Check</p> <ul style="list-style-type: none"> ● Power failure  ● Timer preset  <p>□ Try</p> <ul style="list-style-type: none"> ● Close the lid.  ● Turn on.  ● Insert the power plug completely.  ● Press "Start".  ● Turn breaker on. 
	<p>Cannot change process settings (after start).</p> 	<p>□ Try</p> <ul style="list-style-type: none"> ● During wash process <ol style="list-style-type: none"> 1 Pause  2  3 Start  ● After wash process <ol style="list-style-type: none"> 1 Off  2 On 

	Symptoms	Points to be checked
Wash	Water is supplied while washing. 	When water level drops.  When amount of laundry is large.  ⇒ Water is added automatically.
	The water level too high 	When laundry is wet.  When there is water in the tub before operation.  ⇒ The water level may be higher.
	too low 	When clothes are light (synthetic fibre, etc.).  ⇒ The water level may be lower.
Rinse	Operation started with rinse, but water is not supplied. 	When there is no water in the tub.  ⇒ Water is supplied after spin. When there is water in the tub.  ⇒ Water is supplied after water discharge and spin.
	Spin changes to rinse. Rinse starts instead of spin. 	If clothes are uneven, this appliances automatically corrects unevenness by rinse process. 
Spin	Irregular rotation 	The tub rotation speed is adjusted to reduce vibration. 



Troubleshooting (continued)

	Symptoms	Points to be checked
	<p>Power failure/Breaker off.</p> 	<p>Operation will resume from where it stopped when the power is recovered.</p> 
Others	<p>StainMaster+ has no effect.</p> 	<p><input type="checkbox"/> Check <input type="checkbox"/> Try</p> <ul style="list-style-type: none"> ● Max. capacity (P. 11)  ● Pretreatment (P. 7)  ● Select according to the stain type. (P. 11) 

Contents of Programs

Program	Total time ^{*1} (min)	Wash (min)	Rinse (times)	Spin (min)	Auto Dose		
					Detergent	Softener	
 Normal	65	9	2	7	✓	✓	
 Tangle Care	75	13	2	7	✓	✓	
 Speedy	50	3	2	5	✓	✓	
 Delicates	50	9	2	1	✓	✓	
 Baby Care	80	9	2	7	✓	✓	
 Water Save	80	12	3	7	✓	–	
 Bedding	80	12	2	7	✓	✓	
 Soak	130 ^{*2}	71 (Soak 59)	2	7	✓	✓	
Stain Master +	Odour/Aroma+	85	13	2	7	✓	✓
	Mud	90	32	2	7	✓	✓
	Soya/Sauce	110 ^{*2}	54 (Soak 29)	2	7	✓	✓
	Collar/Sleeve	165 ^{*2}	33 ^{*3}	2	7	✓	✓
	Oily	170 ^{*2}	38 ^{*3}	2	7	✓	✓
	Bacteria/Allergy	190 ^{*2}	30 ^{*3}	2	7	✓	✓
 Tub Hygiene	150 ^{*2}	65 (Soak 62)	2	30	–	–	

*1 Total time is approximate (When the standard water supply rate is 15 L / min and the water temperature is 28 °C).

*2 Remaining time of 99 minutes or less will be displayed.  → 

*3 Excluding water heating time. Symbol  will be displayed during the water heating process.

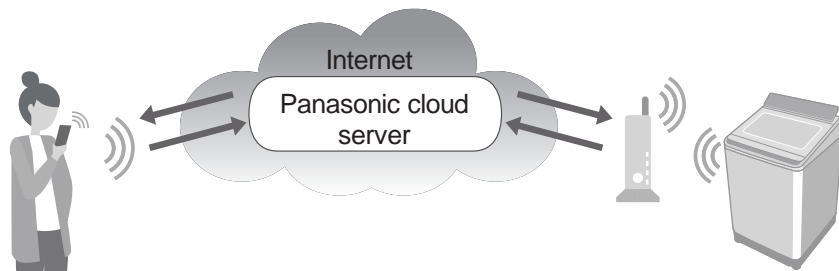
- “Refill”: to fill the tub with water and rinse while supplying water.



Panasonic SmartApp+

More convenient with your smartphone

You can use the service using the “Panasonic SmartApp+”.

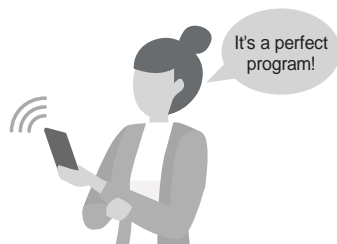


You can operate the washing machine or set the timer with application.

Support program selection from program history.

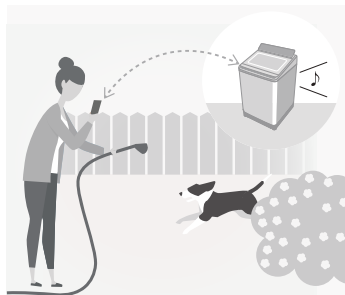
We have “My Favorite” program. You can create original programs with your favorite settings.

- Up to 10 programs.
-



Notification of washing status and end of operation.

Clothes can be taken out immediately after washing.



- The contents, functions and designs of this service are subject to change or termination without prior notice.

Required Equipment and Environment

Let's check the equipment required to use the app.

- Android or iOS (iPhone) smartphone
- About supported OS

<https://www.panasonic.com/fiot/wash/>



Panasonic Website



- Wireless LAN router
Use a wireless LAN router to connect to the internet.

- Internet environment

Please confirm that it is a broadband line.

Example) FTTH (optical fiber), ADSL, CATV (cable television), etc.

Internet communication charges will be borne by the customer.



NOTE

- Make sure that the wireless LAN router has a communication standard of 2.4 GHz band. (Communication standards: IEEE802.11b, IEEE802.11g, IEEE802.11n) Other than the above cannot be used.
- Models that only support WEP cannot be used.
- As a security measure, be sure to use a wireless LAN router that can set the encryption method WPA3, WPA2, or WPA.
- We recommend WPA3 and WPA2 (AES) as the encryption method.
- We do not guarantee the operation of all wireless LAN routers. (Mobile router is not guaranteed to work.)



Panasonic SmartApp+ (continued)

Initial Settings



Follow the settings on the screen of the app.

1 Install the “Panasonic SmartApp+” (free)

- You can find the link to download the application from “Panasonic Website”.

<https://www.panasonic.com/fiot/wash/>



Panasonic Website

- Alternatively, you can search for the “Panasonic SmartApp+” app on Google Play (Android) or App Store (iOS) and install the app.
- You can also scan the link to install the app from the QR code pasted on the washing machine.

2 Follow instructions displayed on the screen of the app and register the washing machine.

- Operate in a position where you can check the display on the washing machine.
- It cannot be operated while the washing machine is running.



Use the app (P. 39)

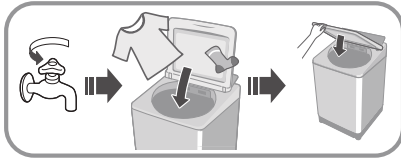
Using the “Panasonic SmartApp+”

After initial setting is completed, you can use the app.

Preparing to use the “Remote” function

You need to prepare the washing machine before going out.

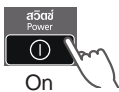
1



NOTE

- Close the lid completely.
- Make sure there is still detergent/softener in Auto Dose tank.

2



On



Lights
(On)

3



Hold
5 sec.



Approx. 2 sec.


After 10 min.



All other indications
turn off, except:






NOTE

- To cancel the remote control mode → turn the power off.
- When there is no remote control from the app, the remote control mode is released after 23 hours. During remote control mode, all buttons on the appliance (except ) are disabled. You can only control the washing machine from the app. After 23 hours, the normal screen is displayed and the remote control is disabled.

To check the communication status with the lamp on control panel.

■ Lamp position

-  Light up Communicatable (Connected)
-  Blinking Trying to communicate (Connecting to server)
-  Off Not connected

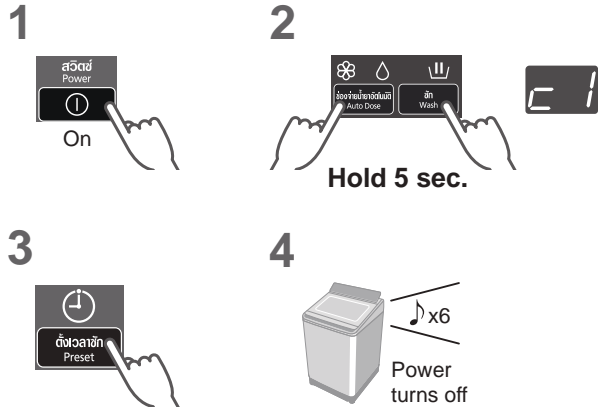


Panasonic SmartApp+ (continued)

Initializing

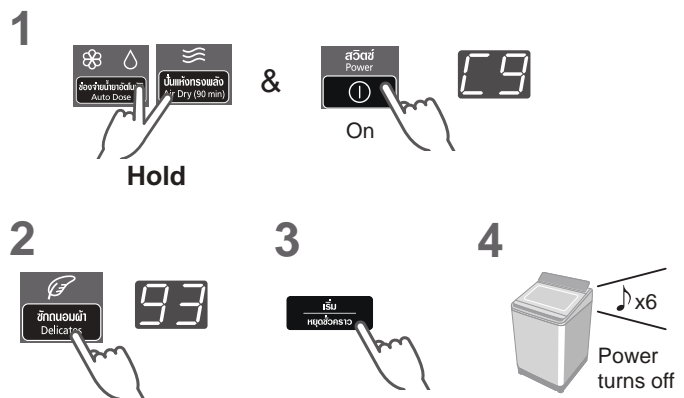
- When you stop using the “Panasonic SmartApp+”
- Suspected use due to unauthorized access
- If the appliance is a pre-owned machine

Reset the wireless LAN settings to the default settings.
(Operate on the washing machine)
You should also stop using the service of the app.

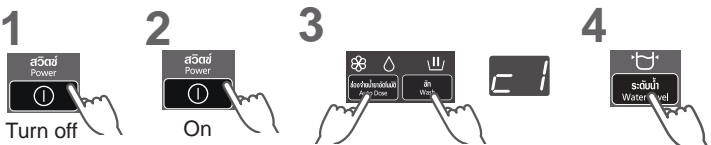


When you dispose of or transfer the washing machine

Reset all the contents such as the wireless LAN settings, washing machine settings, operation history, etc. to the state at the time of purchase.
(Full initialization)
(Operate on the washing machine)



Error Display

Error display	Causes & Measures
<p>U81</p>	<ul style="list-style-type: none"> ● Failed to connect the washing machine and the wireless LAN router. Check the following. <ul style="list-style-type: none"> • The router is not turned on. → Turn on the power. • The distance between the router and the washing machine is too long.→ Bring the router closer. • There is a device that uses radio waves, such as a microwave oven, nearby. <ul style="list-style-type: none"> →Keep a distance. →Stop using the device or wait a while and try again. • Multiple devices are connected to the router. <ul style="list-style-type: none"> →Turn off the power of the device you are not using.
<p>U82</p>	<ul style="list-style-type: none"> ● Communication error with the server. ● There may be a problem with your internet connection. <ul style="list-style-type: none"> →If you do not know the cause, contact your provider, carrier, or router manufacturer.
<p>U83</p>	<ul style="list-style-type: none"> ● In “Backup connection”, SSID or password of the router is incorrect. <ul style="list-style-type: none"> →Check the description of the router. ● Failed to connect the washing machine and the router. <ul style="list-style-type: none"> →Check the above “U81”.
<p>U84</p>	<ul style="list-style-type: none"> ● “Scan connection” failed. Check the following. <ul style="list-style-type: none"> • The Bluetooth® setting on your smartphone is turned off. • The QR code cannot be read correctly. <ul style="list-style-type: none"> →Make sure that the Bluetooth® setting is ON, and then connect again. If you still cannot connect, please try “Backup connection”.
<p>The app displayed the word like “Cannot communicate with the washing machine.”</p>	<ul style="list-style-type: none"> ● Communicate again after a while, or check the connection status by the following method. <div style="text-align: center;">  <p>Hold 5 sec.</p> </div> <ul style="list-style-type: none"> →If “U81”, “U82”, etc. are displayed, it is a connection error. Check the above.

Panasonic SmartApp+ (continued)

Usage for wireless LAN/Bluetooth®

■ Usage restrictions

Please note that there are the following restrictions on use. Panasonic is not liable for any incidental damages resulting from the failure to comply with the restrictions and the use or inability to use the machine.

- Do not connect to a wireless network that you do not have permission to use. A wireless network (SSID*) that you do not have permission to use during automatic search of the wireless network environment may be displayed, but if you connect, it may be considered as unauthorized access.
- Do not use in a place where magnetic field, static electricity, or radio interference is generated. If you use it near the following devices, communication may be interrupted or the speed may slow down.
 - Microwave oven
 - Other wireless LAN / Bluetooth® devices
 - Other devices that use radio waves in the 2.4 GHz band (digital cordless phones, wireless audio devices, game consoles, PC peripherals, etc.)
 - Metal objects that easily reflect radio waves

* A name used to identify a specific network on a wireless LAN. If this SSID matches on both devices, communication is possible.

■ Security measures

- Since the wireless LAN uses radio waves to send and receive data, there is a risk of unauthorized access. Take security measures to ensure the safety of your data. (P. 37) Please note that we are not responsible for any problems that occur without taking security measures.
- For the password (encryption key) of the wireless LAN router, refer to the instruction manual of the wireless LAN router and set it in consideration of security.

■ About firmware

- This machine has a function to connect to our firmware update server via the Internet and automatically update its own firmware to the latest version. Since wireless communication is temporarily interrupted during the update, communication may be interrupted or the speed may slow down.
- Do not analyze or modify the firmware.

Copyright, etc.

- Android and Google Play are trademarks or registered trademarks of Google LLC.
- iPhone is a trademark of Apple Inc., registered in the U.S. and other countries.
- IOS is a trademark or registered trademark of Cisco in the U.S. and other countries and is used under license.
- The App Store is a service mark of Apple Inc.
- QR Code is registered trademark of DENSO WAVE INCORPORATED.
- Bluetooth® word mark and logo are registered trademarks owned by Bluetooth SIG, Inc.
- Panasonic Corporation uses these marks under license. Other trademarks and trade names are property of their respective owners.
- Other names, company names, product names, etc. described in this manual are trademarks or registered trademarks of their respective companies. Some ™ and ® marks are not included in the text.

■ About software

This product consists of the following types of software.

- (1) Software developed by or for Panasonic Corporation (Panasonic)
- (2) Software owned by a third party and licensed to Panasonic
- (3) Conditionally licensed open source software

The software classified in (3) above is distributed with the expectation that it will be useful on its own, but we do not warrant any implied guarantee of “commerciality” or “fitness for a specific purpose”. No warranty is given, including.

cJSON

Copyright (c) 2009 Dave Gamble
Copyright (c) 2009-2017 Dave Gamble and cJSON contributors

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the “Software”), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED “AS IS”, WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

wpa_supplicant

Copyright (c) 2005-2009, Jouni Malinen <j@w1.fi>
Copyright (c) 2008, Jouni Malinen <j@w1.fi>

wpa_supplicant
=====

Copyright (c) 2003-2019, Jouni Malinen <j@w1.fi> and contributors All Rights Reserved.

This program is licensed under the BSD license (the one with advertisement clause removed).

If you are submitting changes to the project, please see CONTRIBUTIONS file for more instructions.

License

This software may be distributed, used, and modified under the terms of BSD license:

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

Panasonic SmartApp+ (continued)

Copyright, etc. (continued)

3. Neither the name(s) of the above-listed copyright holder(s) nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Mbed TLS

Copyright (C) 2006-2015, ARM Limited, All Rights Reserved
Copyright (C) 2006-2016, ARM Limited, All Rights Reserved
Copyright (C) 2006-2017, ARM Limited, All Rights Reserved
Copyright (C) 2006-2018, ARM Limited, All Rights Reserved
Copyright (C) 2006-2018, Arm Limited (or its affiliates), All Rights Reserved
Copyright (C) 2006-2018, Arm Limited (or its affiliates), All Rights Reserved.
Copyright (C) 2006-2019, ARM Limited, All Rights Reserved
Copyright (C) 2006-2019, Arm Limited (or its affiliates), All Rights Reserved
Copyright (C) 2016, ARM Limited, All Rights Reserved
Copyright (C) 2016-2018, ARM Limited, All Rights Reserved
Copyright (C) 2018, Arm Limited (or its affiliates), All Rights Reserved
Copyright (C) 2018, Arm Limited, All Rights Reserved

RealtekSDK

(C) COPYRIGHT 2011 STMicroelectronics
(C) COPYRIGHT 2017 Realtek Semiconductor Corporation
Copyright (C) 2019 Amazon.com, Inc. or its affiliates. All Rights Reserved.
Copyright (c) 2006-2013 ARM Limited
Copyright (c) 2009-2016 ARM Limited. All rights reserved.
Copyright (c) 2009-2017 ARM Limited. All rights reserved.
Copyright (c) 2009-2018 Arm Limited. All rights reserved.
Copyright (c) 2013 ARM LIMITED All rights reserved.
Copyright (c) 2013 Realtek Semiconductor Corp.
Copyright (c) 2013-2016 Realtek Semiconductor Corp.

Copyright (c) 2014, Realtek Semiconductor Corp. All rights reserved.

Copyright (c) 2015, Realsil Semiconductor Corporation. All rights reserved.

Copyright (c) 2015, Realtek Semiconductor Corp. All rights reserved.

Copyright (c) 2015, Realtek Semiconductor Corporation. All rights reserved.

Copyright (c) 2017, Realsil Semiconductor Corporation. All rights reserved.

Copyright (c) 2017, Realtek Semiconductor Corporation. All rights reserved.

Copyright (c) 2017-2018 Arm Limited. All rights reserved.

Copyright 2014 Tencent. All rights reserved.

Copyright(c) 2007 - 2012 Realtek Corporation. All rights reserved.

Copyright(c) 2007 - 2016 Realtek Corporation. All rights reserved.

Copyright(c) 2007 - 2017 Realtek Corporation. All rights reserved.

Copyright(c) 2007 - 2018 Realtek Corporation. All rights reserved.

Copyright(c) 2014, Realtek Semiconductor Corporation. All rights reserved.

Copyright(c) 2015, Realtek Semiconductor Corporation. All rights reserved.

Copyright(c) 2016, Realtek Semiconductor Corporation. All rights reserved.

Copyright(c) 2017, Realtek Semiconductor Corporation. All rights reserved.

Copyright(c) 2019, Realtek Semiconductor Corporation. All rights reserved.

copyright Kulesh Shanmugasundaram (kulesh [squiggly] isis.poly.edu)

Apache License

Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution".

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License.

Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License.

Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution.

You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions.

Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks.

This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty.

Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY,

Panasonic SmartApp+ (continued)

Copyright, etc. (continued)

or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability.

In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability.

While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets “[]” replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same “printed page” as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the “License”);
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an “AS IS” BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

lwIP

Copyright (c) 1997 Global Election Systems Inc.
Copyright (c) 2001-2003 Swedish Institute of Computer Science.
Copyright (c) 2001-2003 Swedish Institute of Computer Science. All rights reserved.
Copyright (c) 2001-2004 Axon Digital Design B.V., The Netherlands. All rights reserved.
Copyright (c) 2001-2004 Leon Woestenberg <leon.woestenberg@gmx.net>
Copyright (c) 2001-2004 Swedish Institute of Computer Science. All rights reserved.
Copyright (c) 2002 CITEL Technologies Ltd. All rights reserved.
Copyright (c) 2002-2003, Adam Dunkels.
Copyright (c) 2002-2003, Adam Dunkels. All rights reserved.
Copyright (c) 2003 by Marc Boucher, Services Informatiques (MBSI) inc.
Copyright (c) 2003-2004 Axon Digital Design B.V., The Netherlands. All rights reserved.
Copyright (c) 2003-2004 Leon Woestenberg <leon.woestenberg@axon.tv>
Copyright (c) 2007 Dominik Spies <kontakt@dspies.de> All rights reserved.
Copyright (c) 2010 Inico Technologies Ltd. All rights reserved.
Copyright (c) 2016 The MINIX 3 Project. All rights reserved.

/*

*Copyright (c) 2001, 2002 Swedish Institute of
*Computer Science. All rights reserved.

*

*Redistribution and use in source and binary forms,
*with or without modification, are permitted provided
*that the following conditions are met:

*

- *1. Redistributions of source code must retain the
* above copyright notice, this list of conditions and the
* following disclaimer.
- *2. Redistributions in binary form must reproduce the
* above copyright notice, this list of conditions and the
* following disclaimer in the documentation and/or
* other materials provided with the distribution.
- *3. The name of the author may not be used to endorse
* or promote products derived from this software
* without specific prior written permission.

*THIS SOFTWARE IS PROVIDED BY THE
*AUTHOR “AS IS” AND ANY EXPRESS OR IMPLIED
*WARRANTIES, INCLUDING, BUT NOT LIMITED TO,
*THE IMPLIED WARRANTIES OF MERCHANTABILITY
*AND FITNESS FOR A PARTICULAR PURPOSE ARE
*DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE
*LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
*SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
*DAMAGES (INCLUDING, BUT NOT LIMITED TO,
*PROCUREMENT OF SUBSTITUTE GOODS OR
*SERVICES; LOSS OF USE, DATA, OR PROFITS;
*OR BUSINESS INTERRUPTION) HOWEVER
*CAUSED AND ON ANY THEORY OF LIABILITY,
*WHETHER IN CONTRACT, STRICT LIABILITY, OR

*TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
*ARISING IN ANY WAY OUT OF THE USE OF
*THIS SOFTWARE, EVEN IF ADVISED OF THE
*POSSIBILITY OF SUCH DAMAGE.

*
*This file is part of the lwIP TCP/IP stack.

*
*Author: Adam Dunkels <adam@sics.se>

*
*/

FreeRTOS

Copyright (C) 2017 Amazon.com, Inc. or its affiliates.
All Rights Reserved.
Copyright (C) 2019 Amazon.com, Inc. or its affiliates.
All Rights Reserved.

The FreeRTOS kernel is released under the MIT open source license, the text of which is provided below.

This license covers the FreeRTOS kernel source files, which are located in the /FreeRTOS/Source directory of the official FreeRTOS kernel download. It also covers most of the source files in the demo application projects, which are located in the /FreeRTOS/Demo directory of the official FreeRTOS download. The demo projects may also include third party software that is not part of FreeRTOS and is licensed separately to FreeRTOS. Examples of third party software includes header files provided by chip or tools vendors, linker scripts, peripheral drivers, etc. All the software in subdirectories of the /FreeRTOS directory is either open source or distributed with permission, and is free for use. For the avoidance of doubt, refer to the comments at the top of each source file.

License text:

Copyright (C) 2019 Amazon.com, Inc. or its affiliates.
All Rights Reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY,

WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

newlib

The newlib subdirectory is a collection of software from several sources.

Each file may have its own copyright/license that is embedded in the source file. Unless otherwise noted in the body of the source file(s), the following copyright notices will apply to the contents of the newlib subdirectory:

(1) Red Hat Incorporated

Copyright (c) 1994-2009 Red Hat, Inc.
All rights reserved.

This copyrighted material is made available to anyone wishing to use, modify, copy, or redistribute it subject to the terms and conditions of the BSD License. This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY expressed or implied, including the implied warranties of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. A copy of this license is available at <http://www.opensource.org/licenses>. Any Red Hat trademarks that are incorporated in the source code or documentation are not subject to the BSD License and may only be used or replicated with the express permission of Red Hat, Inc.

(2) University of California, Berkeley

Copyright (c) 1981-2000 The Regents of the University of California. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER

Panasonic SmartApp+ (continued)

Copyright, etc. (continued)

OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

(3) David M. Gay (AT&T 1991, Lucent 1998)

The author of this software is David M. Gay.

Copyright (c) 1991 by AT&T.

Permission to use, copy, modify, and distribute this software for any purpose without fee is hereby granted, provided that this entire notice is included in all copies of any software which is or includes a copy or modification of this software and in all copies of the supporting documentation for such software.

THIS SOFTWARE IS BEING PROVIDED "AS IS", WITHOUT ANY EXPRESS OR IMPLIED WARRANTY. IN PARTICULAR, NEITHER THE AUTHOR NOR AT&T MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND CONCERNING THE MERCHANTABILITY OF THIS SOFTWARE OR ITS FITNESS FOR ANY PARTICULAR PURPOSE.

The author of this software is David M. Gay.

Copyright (C) 1998-2001 by Lucent Technologies All Rights Reserved

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that the copyright notice and this permission notice and warranty disclaimer appear in supporting documentation, and that the name of Lucent or any of its entities not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

LUCENT DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL LUCENT OR ANY OF ITS ENTITIES BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN

CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

(4) Advanced Micro Devices

Copyright 1989, 1990 Advanced Micro Devices, Inc.

This software is the property of Advanced Micro Devices, Inc (AMD) which specifically grants the user the right to modify, use and distribute this software provided this notice is not removed or altered. All other rights are reserved by AMD.

AMD MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, WITH REGARD TO THIS SOFTWARE. IN NO EVENT SHALL AMD BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH OR ARISING FROM THE FURNISHING, PERFORMANCE, OR USE OF THIS SOFTWARE.

So that all may benefit from your experience, please report any problems or suggestions about this software to the 29K Technical Support Center at 800-29-29-AMD (800-292-9263) in the USA, or 0800-89-1131 in the UK, or 0031-11-1129 in Japan, toll free. The direct dial number is 512-462-4118.

Advanced Micro Devices, Inc.
29K Support Products
Mail Stop 573
5900 E. Ben White Blvd.
Austin, TX 78741
800-292-9263

(7) Sun Microsystems

Copyright (C) 1993 by Sun Microsystems, Inc.
All rights reserved.

Developed at SunPro, a Sun Microsystems, Inc. business.

Permission to use, copy, modify, and distribute this software is freely granted, provided that this notice is preserved.

(8) Hewlett Packard

(c) Copyright 1986 HEWLETT-PACKARD COMPANY

To anyone who acknowledges that this file is provided "AS IS" without any express or implied warranty: permission to use, copy, modify, and distribute this file for any purpose is hereby granted without fee, provided that the above copyright notice and this notice appears in all copies, and that the name of Hewlett-Packard Company not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. Hewlett-Packard Company makes no representations about the suitability of this software for any purpose.

(9) Hans-Peter Nilsson

Copyright (C) 2001 Hans-Peter Nilsson

Permission to use, copy, modify, and distribute this software is freely granted, provided that the above copyright notice, this notice and the following disclaimer are preserved with no changes.

THIS SOFTWARE IS PROVIDED "AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

(11) Christopher G. Demetriou

Copyright (c) 2001 Christopher G. Demetriou
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

(12) SuperH, Inc.

Copyright 2002 SuperH, Inc. All rights reserved

This software is the property of SuperH, Inc (SuperH) which specifically grants the user the right to modify, use and distribute this software provided this notice is not removed or altered. All other rights are reserved by SuperH.

SUPERH MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, WITH REGARD TO THIS SOFTWARE. IN NO EVENT SHALL SUPERH BE LIABLE FOR INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH OR ARISING FROM THE FURNISHING, PERFORMANCE, OR USE OF THIS SOFTWARE.

So that all may benefit from your experience, please report any problems or suggestions about this software to the SuperH Support Center via e-mail at softwaresupport@superh.com.

SuperH, Inc.
405 River Oaks Parkway
San Jose
CA 95134
USA

(13) Royal Institute of Technology

Copyright (c) 1999 Kungliga Tekniska Högskolan (Royal Institute of Technology, Stockholm, Sweden).
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of KTH nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY KTH AND ITS CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL KTH OR ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Panasonic SmartApp+ (continued)

Copyright, etc. (continued)

(14) Alexey Zelkin

Copyright (c) 2000, 2001 Alexey Zelkin <phantom@FreeBSD.org>
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

(15) Andrey A. Chernov

Copyright (C) 1997 by Andrey A. Chernov, Moscow, Russia.
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE

GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

(16) FreeBSD

Copyright (c) 1997-2002 FreeBSD Project.
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

(17) S. L. Moshier

Author: S. L. Moshier.

Copyright (c) 1984,2000 S.L. Moshier

Permission to use, copy, modify, and distribute this software for any purpose without fee is hereby granted, provided that this entire notice is included in all copies of any software which is or includes a copy or modification of this software and in all copies of the supporting documentation for such software.

THIS SOFTWARE IS BEING PROVIDED "AS IS", WITHOUT ANY EXPRESS OR IMPLIED WARRANTY. IN PARTICULAR, THE AUTHOR MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND CONCERNING THE MERCHANTABILITY

OF THIS SOFTWARE OR ITS FITNESS FOR ANY PARTICULAR PURPOSE.

(18) Citrus Project

Copyright (c)1999 Citrus Project,
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

(19) Todd C. Miller

Copyright (c) 1998 Todd C. Miller
<Todd.Miller@courtesan.com>
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED.

IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

(20) DJ Delorie (i386)

Copyright (C) 1991 DJ Delorie
All rights reserved.

Redistribution, modification, and use in source and binary forms is permitted provided that the above copyright notice and following paragraph are duplicated in all such forms.

This file is distributed WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.

(23) Intel (i960)

Copyright (c) 1993 Intel Corporation

Intel hereby grants you permission to copy, modify, and distribute this software and its documentation. Intel grants this permission provided that the above copyright notice appears in all copies and that both the copyright notice and this permission notice appear in supporting documentation. In addition, Intel grants this permission provided that you prominently mark as "not part of the original" any modifications made to this software or documentation, and that the name of Intel Corporation not be used in advertising or publicity pertaining to distribution of the software or the documentation without specific, written prior permission.

Intel Corporation provides this AS IS, WITHOUT ANY WARRANTY, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Intel makes no guarantee or representations regarding the use of, or the results of the use of, the software and documentation in terms of correctness, accuracy, reliability, currentness, or otherwise; and you rely on the software, documentation and results solely at your own risk.

IN NO EVENT SHALL INTEL BE LIABLE FOR ANY LOSS OF USE, LOSS OF BUSINESS, LOSS OF PROFITS, INDIRECT, INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES OF ANY KIND. IN NO EVENT SHALL INTEL'S TOTAL LIABILITY EXCEED THE SUM PAID TO INTEL FOR THE PRODUCT LICENSED HEREUNDER.

Panasonic SmartApp+ (continued)

Copyright, etc. (continued)

(26) Mike Barcroft

Copyright (c) 2001 Mike Barcroft <mike@FreeBSD.org>
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

(27) Konstantin Chuguev (--enable-newlib-iconv)

Copyright (c) 1999, 2000
Konstantin Chuguev. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR

PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

iconv (Charset Conversion Library) v2.0

(28) Artem Bityuckiy (--enable-newlib-iconv)

Copyright (c) 2003, Artem B. Bityuckiy, SoftMine Corporation.
Rights transferred to Franklin Electronic Publishers.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

(30) - Alex Tatmanjants (targets using libc/posix)

Copyright (c) 1995 Alex Tatmanjants
<alex@elvisti.kiev.ua>
at Electronni Visti IA, Kiev, Ukraine.
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

(31) - M. Warner Losh (targets using libc/posix)

Copyright (c) 1998, M. Warner Losh <imp@freebsd.org>
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

(32) - Andrey A. Chernov (targets using libc/posix)

Copyright (C) 1996 by Andrey A. Chernov, Moscow, Russia.
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

(33) - Daniel Eischen (targets using libc/posix)

Copyright (c) 2001 Daniel Eischen
<deischen@FreeBSD.org>
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Panasonic SmartApp+ (continued)

Copyright, etc. (continued)

(35) - ARM Ltd (arm and thumb variant targets only)

Copyright (c) 2009-2015 ARM Ltd
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the company may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY ARM LTD "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL ARM LTD BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

(41) Ed Schouten - Free BSD

Copyright (c) 2008 Ed Schouten <ed@FreeBSD.org>
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT

NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

easy-ecc

Copyright (c) 2013, Kenneth MacKay
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Specifications

Model No.	NA-FD180W3
Rated voltage	220 V
Rated frequency	50 Hz
Rated power consumption	1475 W
Standard water amount	105 L
Maximum mass of dry cloth	18.0 kg
Product dimensions	681 mm (W) x 733 mm (D) x 1153 mm (H)
Product weight	50 kg
Pressure of tap water	0.01 - 1 MPa

This telecommunication equipment conforms to NBTC technical requirement.

เครื่องโทรคมนาคมและอุปกรณ์นี้มีความสอดคล้องตามมาตรฐานหรือข้อกำหนดทางเทคนิคของ กสทช.

Panasonic Corporation

<https://www.panasonic.com>

© Panasonic Appliances (Vietnam) Co., Ltd. 2024