User Manual

⚠	WARNING

Machine installations must comply with minimum specifications and requirements stated in the applicable Installation Manual, any applicable municipal building codes, water supply requirements, electrical wiring regulations and any other relevant statutory regulations. Due to varied requirements and applicable local codes, this machine must be installed, adjusted, and serviced by qualified maintenance personnel familiar with applicable local codes and the construction and operation of this type of machinery. They must also be familiar with the potential hazards involved. Failure to observe this warning may result in personal injury, property damage, and/or equipment damage, and will void the warranty.
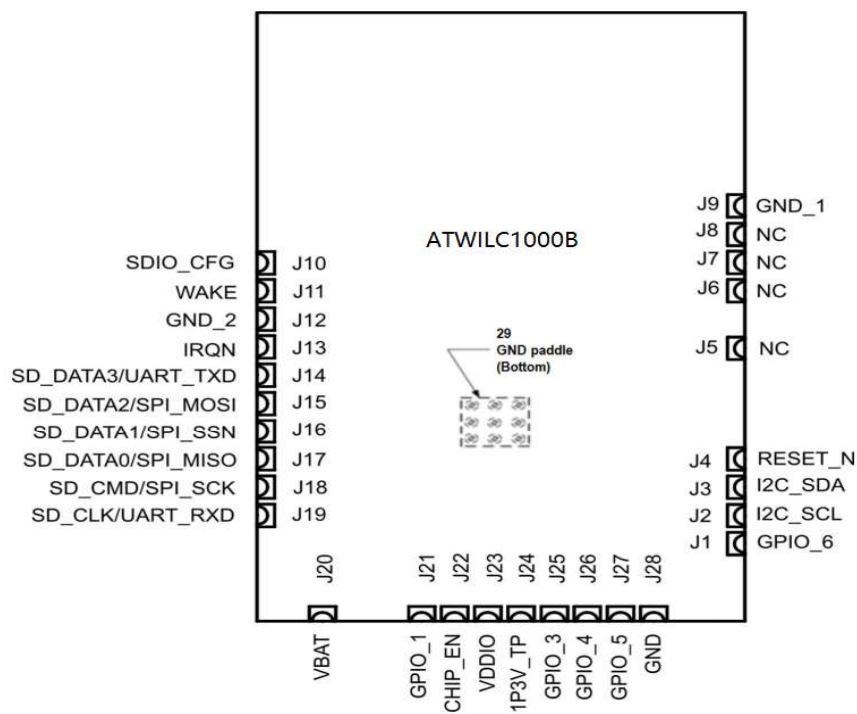
W820

NOTE: The WARNINGS and IMPORTANT SAFETY INSTRUCTIONS appearing in this manual are not meant to cover all possible conditions and situations that may occur. Common sense, caution, and care must be exercised when installing, maintaining, or operating the machine.

Any problems or conditions not understood should be reported to the dealer, distributor, service agent or the manufacturer.

The ATWILC1000-MR110xB package has an exposed paddle that must be connected to the system board ground. The module pin assignment is shown in the following figure.

Figure 3-1. Pin Assignment

The following table describes the pin description of this module.

Table 3-1. Pin Details

Pin No.	Name	Type	Description	Programmable Pull up Resistor
1	GPIO_6	I/O	General purpose I/O.	-
2	I^{2}C_SCL	I/O	I^{2}C slave clock. Used only for development debug purposes. It is recommended to add test point for this pin.	-
3	I^{2}C_SDA	I/O	I^{2}C slave data. Used only for development debug purposes. It is recommended to add test point for this pin.	Yes
4	RESET_N	I	Active-low hard reset. When this pin is asserted low, the module is placed in the	Yes

Pin No.	Name	Type	Description	Programmable Pull up Resistor
			reset state. When this pin is asserted high, the module is out of reset and functions normally. Connect to a host output that defaults low at power-up. If the host output is tri-stated, add a 1 MΩ pull down resistor to ensure a low level at power-up.	
5	NC	–	No connection	-
6	NC	–	No connection	-
7	NC	–	No connection	-
8	NC	–	No connection	-
9	GND_1	Ground	-	-
10	SDIO_SPI_CFG	I	Connect to VDDIO through a 1MΩ resistor to enable the SPI interface. Connect to ground to enable SDIO interface.	No
11	WAKE	I	Host wake control.	No
12	GND_2	Ground	-	-
13	IRQN	O	The ATWILC1000-MR110xB device interrupt output. Connect to a host interrupt pin.	No
14	SD_DAT3	SDIO=I/O UART=O	SDIO Data Line 3 from the ATWILC1000-MR110xB when module is configured for SDIO.	Yes
15	SD_DAT2/ SPI_RXD	SDIO=I/O SPI=I	SDIO Data Line 2 signal from ATWILC1000-MR110xB when module is configured for SDIO. SPI MOSI (Master Out Slave In) pin when module is configured for SPI.	Yes
16	SD_DAT1/ SPI_SSN	SDIO=I/O SPI=I	SDIO Data Line 1 from ATWILC1000-MR110xB when module is configured for SDIO. Active low SPI slave select from the ATWILC1000 when module is configured for SPI.	Yes
17	SD_DAT0/ SPI_TXD	SDIO=I/O SPI=O	SDIO Data Line 0 from the ATWILC1000-MR110xB when module is configured for SDIO. SPI MISO (Master In Slave Out) pin from ATWILC1000 when module is configured for SPI.	Yes
18	SD_CMD/ SPI_CLK	SDIO=I/O	SDIO CMD line from ATWILC1000-MR110xB when module is configured for	Yes

Pin No.	Name	Type	Description	Programmable Pull up Resistor
		SPI=I	SDIO. SPI Clock from ATWILC1000 when module is configured for SPI.	
19	SD_CLK	SDIO=I UART=I	SDIO clock line for the ATWILC1000-MR110xB when module is configured for SDIO.	Yes
20	VBATT	Power supply	Power supply pin for the DC/DC convertor	Yes
21	GPIO_1	I/O	General purpose I/O	Yes
22	CHIP_EN	I	Module enable. High level enables module, low level places module in power-down mode. Connect to a host Output that defaults low at power-up. If the host output is tri-stated, add a 1MΩ pull down resistor if necessary to ensure a low level at power-up.	No
23	VDDIO	Power supply	I/O power supply. Must match host I/O voltage.	-
24	1P3V_TP	-	1.3V VDD Core Test Point. Decouple with 10uF and 0.01uF to GND	
25	GPIO_3	I/O	General purpose I/O. By default, UART receive input to ATWILC1000-MR110xB. Used only for development debug purposes. It is recommended to add test point for this pin.	Yes
26	GPIO_4	I/O	General purpose I/O.	Yes
27	GPIO_5	I/O	General purpose I/O. By default, UART transmit output from ATWILC1000-MR110xB. Used only for development debug purposes. It is recommended to add test point for this pin.	Yes
28	GND_3	Ground	-	-
29	Paddle	Ground	Exposed paddle GND. This pad must be soldered to system ground	-

The following table provides the ATWILC1000B module package dimensions

Table 3-2. ATWILC1000-MR110xB Module Package Information

Parameter	Value	Units
Package Size	21.72 x 14.73	mm
Pad Count	28	-

Parameter	Value	Units
Total Thickness	2.11	mm
Pad Pitch	1.016	
Pad Width	0.82	
Exposed Pad size	3.7 x 3.7	

Interfacing with the Host Microcontroller

This section describes how to interface ATWILC1000-MR110xB module with the host microcontroller. The interface comprises of a slave SPI/SDIO and additional control signals, as shown in the figure. Additional control signals are connected to the GPIO/IRQ interface of the microcontroller.

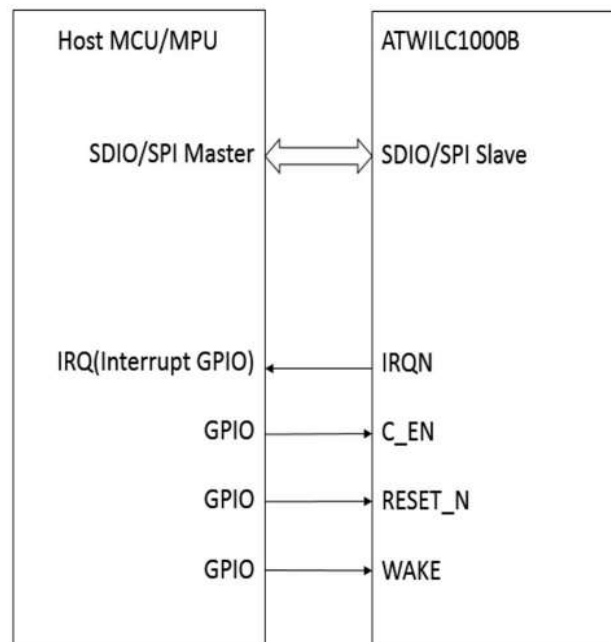**Figure 8-1. Interfacing with the Host Microcontroller**

Table 8-1. Host Microcontroller Interface Pins

Module Pin	Function[1]
4	RESET_N
11	WAKE
13	IRQ_N
22	CHIP_EN
16	SPI_SSN/SD_DATA1
15	SPI_MOSI/SD_DATA2
17	SPI_MISO/SD_DATA0
18	SPI_SCK/SD_CMD

Module Pin	Function[1]
14	SD_DATA3
19	SD_CLK

Note:
1. Logic input for module pin SDIO_SPI_CFG(10) determines whether SDIO or SPI slave interface is enabled. Connect SDIO_SPI_CFG to VDDIO through a 1MΩ resistor to enable the SPI interface. Connect SDIO_SPI_CFG to ground to enable SDIO interface.
2. It is recommended to place test points for pins I2C_SDA(3), I2C_SCL(2), GPIO_3(25) and GPIO_5(27) in the design.

SPI Slave Interface

The SPI slave interface can be enabled by connecting the SDIO_SPI_CFG pin to VDDIO. This SPI interface is used to exchange the control and 802.11 data. The SPI is a full duplex slave-synchronous serial interface that is available following reset when pin 10 (SDIO_SPI_CFG) is connected to VDDIO.

The SPI interface pin mapping configuration is provided in the following table.

Table 8-2. SPI Interface Pin Mapping

Pin #	SPI Function
10	SDIO_SPI_CFG: Must be connected to VDDIO
16	SSN: Active-Low Slave Select
15	MOSI: Serial Data Receive
18	SCK: Serial Clock
17	MISO: Serial Data Transmit

When the SPI is not selected, i.e., when SSN is high, the SPI interface will not interfere with data transfers between the serial master and other serial slave devices. When the serial slave is not selected, its transmitted data output is buffered, resulting in a high impedance drive onto the MISO line.

The SPI interface responds to a protocol that allows an external host to read or write any register in the chip and also initiate DMA transfers.

The SPI SSN, MOSI, MISO and SCK pins of this module have internal programmable pull up resistors. These resistors are programmed to be disabled. Otherwise, if any of the SPI pins are driven to a low level while this module is in the low power sleep state, current will flow from the VDDIO supply through the pull up resistors, increasing the current consumption of the module.

SDIO Slave Interface

The SDIO interface is enabled by connecting the SDIO_SPI_CFG pin to ground. This SDIO interface is used to exchange the control and 802.11 data.. The SDIO interface is available after reset when pin 10 (SDIO_SPI_CFG) is connected to ground.

This SDIO is a full speed interface. The interface supports the 1-bit/4-bit SD transfer mode at the clock range of 0-50 MHz. The host uses this interface to read and write from any register within the chip and also configures this module for DMA data transfer.

The SDIO interface pin mapping configuration is provided in the following table.

Table 8-3. ATWILC1000 SDIO Interface Pin Mapping

Pin #	SDIO Function
10	SDIO_SPI_CFG: Must be connected to ground
14	DAT3: Data 3
15	DAT2: Data 2
16	DAT1: Data 1
17	DAT0: Data 0
18	CMD: Command
19	CLK: Clock

The SDIO card is detected when the it is inserted into an SDIO host. During the normal initialization and interrogation of the card by the host, the card identifies itself as an SDIO device. The host software obtains the card information in a tuple (linked list) format and determines if that card's I/O function(s) are acceptable to activate. If the card is acceptable, it is allowed to power-up fully and start the I/O function(s) built into the card.

The SD memory card communication is based on an advanced 9-pin interface (clock, command, four data and three power lines) designed to operate at maximum operating frequency of 50 MHz.

Features
- Compliant with SDIO card specification version 2.0
- Host clock rate variable between 0 and 50 MHz
- Supports 1-bit/4-bit SD bus modes
- Allows card to interrupt host
- Responds to direct read/write (IO52) and extended read/write (IO53) transactions
- Supports suspend/resume operation

UART Debug Interface

This module has a Universal Asynchronous Receiver/Transmitter (UART) interface on J25(RxD) and J27(TxD) pins. This interface should be used only for debugging purposes. The UART is compatible with the RS-232 standard, where ATWILC1000-MR110xB operates as Data Terminal Equipment (DTE). It has a two-pin RXD/TXD interface.

The default configuration for accessing the UART interface of ATWILC1000-MR110xB is mentioned below:
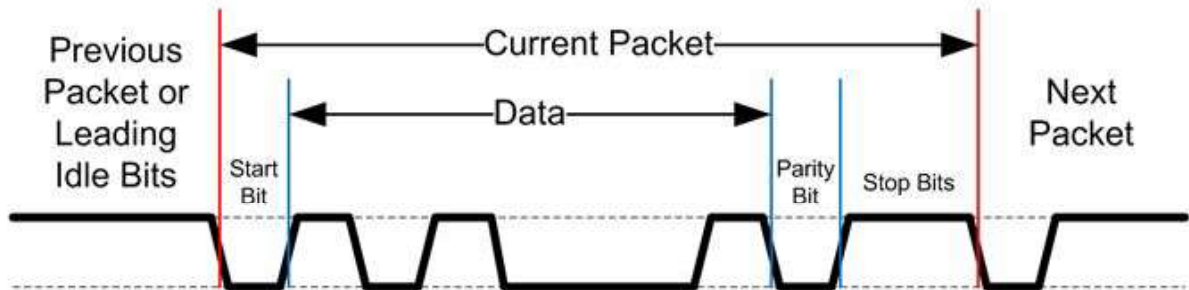- Baud rate: 115200
- Data: 8 bit
- Parity: None
- Stop bit: 1 bit
- Flow control: None

It also has Rx and Tx FIFOs, which ensures reliable high speed reception and low software overhead transmission. FIFO size is 4x8 for both Rx and Tx direction. The UART has status registers that show the

number of received characters available in the FIFO and various error conditions; in addition, it has the ability to generate interrupts based on these status bits.

An example of UART receiving or transmitting a single packet is shown in the following figure. This example shows 7-bit data (0x45), odd parity, and two stop bits.

Figure 8-2. Example of UART RX or TX Packet

I^2C Slave Interface

This module provides an I^2C bus slave that allows for easy debugging of the ATWILC1000-MR110xB devices. It supports I^2C bus Version 2.1 – 2000.

The I^2C interface is used only for debug. This interface is a two-wire serial interface consisting of a serial data line (SDA, Pin 17) and a serial clock (SCL, Pin 18). It responds to seven bit address value 0x60. This module I^2C interface operates in standard mode (with data rates up to 100Kb/s) and fast mode (with data rates up to 400Kb/s).

The I^2C is a synchronous serial interface. The SDA line is a bidirectional signal and changes only when the SCL line is low, except for STOP, START, and RESTART conditions. The output drivers are open-drain to perform wire AND functions on the bus. The devices on the bus are limited to the 400pF capacitance. Data is transmitted in byte packages.

For specific information, refer to the Philips Specification entitled "The I2C -Bus Specification, Version 2.1."

Safety Information

Explanation of Safety Messages

Precautionary statements ("DANGER," "WARNING," and "CAUTION"), followed by specific instructions, are found in this manual and on machine decals. These precautions are intended for the personal safety of the operator, user, servicer, and those maintaining the machine.

⚠	**DANGER**
	Indicates an imminently hazardous situation that, if not avoided, will cause severe personal injury or death.

⚠	**WARNING**
	Indicates a hazardous situation that, if not avoided, could cause severe personal injury or death.

⚠	**CAUTION**
	Indicates a hazardous situation that, if not avoided, may cause minor or moderate personal injury or property damage.

Additional precautionary statements ("IMPORTANT" and "NOTE") are followed by specific instructions.

IMPORTANT: The word "IMPORTANT" is used to inform the reader of specific procedures where minor machine damage will occur if the procedure is not followed.

NOTE: The word "NOTE" is used to communicate installation, operation, maintenance or servicing information that is important but not hazard related.

Important Safety Instructions

⚠	**WARNING**
	To reduce the risk of fire, electric shock, serious injury or death to persons when using your washer, follow these basic precautions:
	W023

• Read all instructions before using the washer.

• Install the washer according the INSTALLATION instructions. Refer to the EARTH/GROUND instructions in the IN-

STALLATION manual for the proper earth/ground connection of the washer. All connections for water, drain, electrical power and earth/ground must comply with local codes and be made by licensed personnel when required. It is recommended that the machine be installed by qualified technicians.

• Do not install or store the washer where it will be exposed to water and/or weather.

• To prevent fire and explosion, keep the area around machine free from flammable and combustible products. Do not add the following substances or textiles containing traces of the following substances to the wash water: gasoline, kerosene, waxes, cooking oils, vegetable oils, machine oils, dry-cleaning solvents, flammable chemicals, thinners, or other flammable or explosive substances. These substances give off vapors that could ignite, explode or cause the fabric to catch fire by itself.

• Under certain conditions, hydrogen gas may be produced in a hot water system that has not been used for two weeks or more. HYDROGEN GAS IS EXPLOSIVE. If the hot water system has not been used for such a period, before using a washing machine or combination washer-dryer, turn on all hot water faucets and let the water flow from each for several minutes. This will release any accumulated hydrogen gas. The gas is flammable, do not smoke or use an open flame during this time.

• To reduce the risk of an electric shock or fire, DO NOT use an extension cord or an adapter to connect the washer to the electrical power source.

• Do not allow children to play on or in the washer. Close supervision of children is necessary when the washer is used near children. This appliance is not intended for use by young children or infirm persons without supervision. Young children should be supervised to ensure that they do not play with the appliance. This is a safety rule for all appliances.

• DO NOT reach and/or climb into the tub or onto the washer, ESPECIALLY if the wash drum is moving. This is an imminently hazardous situation that, if not avoided, will cause severe personal injury or death.

• Never operate the washer with any guards, panels and/or parts removed or broken. DO NOT bypass any safety devices or tamper with the controls.

• Use washer only for its intended purpose, washing textiles. Never wash machine parts or automotive parts in the machine. This could result in serious damage to the basket or tub.

• Use only low-sudsing, no-foaming types of commercial detergent. Be aware that hazardous chemicals may be present. Wear hand and eye protection when adding detergents and chemicals. Always read and follow manufacturer's instructions on packages of laundry and cleaning aids. Heed all warnings or precautions. To reduce the risk of poisoning or

chemical burns, keep them out of the reach of children at all times [preferably in a locked cabinet].

- Do not use fabric softeners or products to eliminate static unless recommended by the manufacturer of the fabric softener or product.
- Always follow the fabric care instructions supplied by the textile manufacturer.
- Loading door MUST BE CLOSED any time the washer is to fill, tumble or spin. DO NOT bypass the loading door switch by permitting the washer to operate with the loading door open. Do not attempt to open the door until the washer has drained and all moving parts have stopped.
- Be aware that hot water is used to flush the supply dispenser. Avoid opening the dispenser lid while the machine is running.
- Do not attach anything to the supply dispenser's nozzles, if applicable. The air gap must be maintained.
- Do not operate the machine without the water reuse plug or water reuse system in place, if applicable.
- Be sure water connections have a shut-off valve and that fill hose connections are tight. CLOSE the shut-off valves at the end of each wash day.
- Keep washer in good condition. Bumping or dropping the washer can damage safety features. If this occurs, have washer checked by a qualified service person.
- DANGER: Before inspecting or servicing machine, power supply must be turned OFF. The servicer needs to wait for at least 5 minutes after turning the power OFF and needs to check for residual voltage with a voltage meter. The inverter capacitor or EMC filter remains charged with high voltage for some time after powering OFF. This is an imminently hazardous situation that, if not avoided, will cause severe personal injury or death.
- Do not repair or replace any part of the washer, or attempt any servicing unless specifically recommended in the user-maintenance instructions or in published user-repair instructions that the user understands and has the skills to carry out. ALWAYS disconnect the washer from electrical, power and water supplies before attempting any service.
- Disconnect the power by turning off the circuit breaker or by unplugging the machine. Replace worn power cords.
- Before the washer is removed from service or discarded, remove the door to the washing compartment.
- Failure to install, maintain, and/or operate this washer according to the manufacturer's instructions may result in conditions which can produce bodily injury and/or property damage.

NOTE: The WARNINGS and IMPORTANT SAFETY INSTRUCTIONS appearing in this manual are not meant to cover all possible conditions and situations that may occur. Common sense, caution and care must be exercised when installing, maintaining, or operating the washer.

Any problems or conditions not understood should be reported to the dealer, distributor, service agent or the manufacturer.

⚠	**WARNING**

Machine installations must comply with minimum specifications and requirements stated in the applicable Installation Manual, any applicable municipal building codes, water supply requirements, electrical wiring regulations and any other relevant statutory regulations. Due to varied requirements and applicable local codes, this machine must be installed, adjusted, and serviced by qualified maintenance personnel familiar with applicable local codes and the construction and operation of this type of machinery. They must also be familiar with the potential hazards involved. Failure to observe this warning may result in personal injury, property damage, and/or equipment damage, and will void the warranty.

W820

IMPORTANT: Ensure that the machine is installed on a level floor of sufficient strength. Ensure that the recommended clearances for inspection and maintenance are provided. Never allow the inspection and maintenance space to be blocked.

⚠	**WARNING**

Never touch internal or external steam pipes, connections, or components. These surfaces can be extremely hot and will cause severe burns. The steam must be turned off and the pipe, connections, and components allowed to cool before the pipe can be touched.

SW014

NOTE: All appliances are produced according the EMC-directive (Electro-Magnetic-Compatibility). They can be used in restricted surroundings only (comply minimally with class A requirements). For safety reasons there must be kept the necessary precaution distances with sensitive electrical or electronic device(s). These machines are not intended for domestic use by private consumers in the home environment.

Safety Decals

Safety decals appear at crucial locations on the machine. Failure to maintain legible safety decals could result in injury to the operator or service technician.

Use manufacturer-authorized spare parts to avoid safety hazards.

Operator Safety

WARNING

NEVER insert hands or objects into basket until it has completely stopped. Doing so could result in serious injury.

SW012

Machines referred to by model in this manual are intended to be used by the general public in applications such as:

- staff areas in shops, offices, kitchens and other working environments
- by clients in hotels, motels and other residential type environments
- areas for communal use in blocks of flats or in launderettes
- any other similar applications

Installation of these machines must fully conform to the instructions contained in this manual.

The following maintenance checks must be performed daily:

1. Verify that all warning labels are present and legible, replace as necessary.
2. Check door interlock before starting operation of the machine:
   a. Attempt to start the machine with the door open. The machine should not start.
   b. Close the door without locking it and start the machine. The machine should not start.
   c. Attempt to open the door while a cycle is in progress. The door should not open.

If the door lock and interlock are not functioning properly, disconnect power and call a service technician.

3. Do not attempt to operate the machine if any of the following conditions are present:
   a. The door does not remain securely locked during the entire cycle.
   b. Excessively high water level is evident.
   c. Machine is not connected to a properly grounded circuit.

Do not bypass any safety devices in the machine.

WARNING

Operating the machine with severe out-of-balance loads could result in personal injury and serious equipment damage.

W728

Preliminary Information

About the Control

The control on the machine is an advanced, graphical, programmable computer that lets the owner control most machine features by interacting with the control.

This control allows the owner to program custom cycles, run diagnostic tests and retrieve audit and error information. Limited programmable options can be programmed manually via the *Settings Menu*. Full programmable options can be programmed via *IR Communications* and *Wi-Fi Communications*.

Machines shipped from the factory have default cycles and wash temperature settings built in. The owner can change the default cycles or any cycle.

IMPORTANT: It is extremely important that the machine has a positive ground and that all mechanical and electrical connections are made before applying power to or operating the machine.

Wi-Fi Communications

The control has the ability to connect with the ALS Wi-Fi Network via an internet connection using the network gateway interface device. Connection with the ALS Wi-Fi Network allows the user to program, collect data, and run diagnostics remotely.

USB Host

The owner can upload custom cycles and machine programming as well as extract audit data by connecting a USB drive to a port on the control.

Audit Information

The control collects and stores audit information which can be accessed through the touch display or Wi-Fi communication. Refer to the *Audit Data Menu* for a list of available audit information.

Using Wi-Fi communication, the user can receive audit and program data from the control and send programming data and diagnostic commands to the control.

Special Features

Cycle Time Display

The *Run Menu* shows the time remaining in the currently running cycle for user convenience.

Cycle Completed Timer

If enabled in programming, a timer begins counting up in the *Cycle Complete Menu* since the cycle ended.

Passcode Security

If enabled in programming, this option allows the owner to require a passcode to gain access to *Rapid Advance Activation, Diagnostics Menu, Drop Off Mode, Lockout Mode, Settings Menu, Audit Data Menu, Reset Menu* and various sub-menus.

To disable passcode protection to the *System Menu*, programming through PC communication is required.

Language Selection

The control contains 34 languages. Once a language is selected, all menus and displays will be shown in the chosen language.

Lucky Cycle

The Lucky Cycle option allows the owner to program the machine to provide a free or reduced vend cycle to users after a programmed number of machine cycles have occurred or on certain dates and times. Refer to *Lucky Cycle Mode* for more information.

Speed Cycle

Speed Cycle allows the owner to program special cycles with a shorter total wash time to save the user time. The owner can program the Speed Cycle with distinct vend prices and functions. Refer to *Speed Cycle* for more information.

Special Vend

The Special Vend option allows the owner to set a special vend price or free vend between specific times of day, days of week, dates, months and years. The owner can program the control for up to eight (8) Special Vends periods. The owner can manually program Special Vend 1 and can only enable or disable Special Vends 2-8. Full programming of all Special Vends requires the use of a PC. Refer to the *System Menu* for manual programming.

Increased Water Levels

Increased water levels is a modifier option that can be enabled/disabled for the Cycle Modifier 1 and 2 options. Refer to *Globals Menu*. If enabled, a cycle containing Prewash, Wash, or Rinse Fill or Reuse Fill steps would ignore that programmed water level and instead use the Increased Water Level for Prewash, Wash, or Rinse steps.

Increased Spin Speed

Increased Spin Speed is a modifier option that can be enabled/disabled for the Cycle Modifier 1 and 2 options. Refer to *System Menu*. If enabled, a cycle containing extract steps with the spin step label would ignore the cycle programmed spin speed and instead attempt the Increased Spin Speed parameter's globally programmed value.

Supply Injection

This option can be programmed for machines that are equipped with supply injection.

When the Supply Injection prompt parameter is enabled, refer to *Settings Menu*, the user will be prompted to accept and pay for external supplies with the start of a cycle. A cycle programmed with external supply signals that would normally trigger during cycle operation would be restricted from activating if the prompt is enabled, unless the feature was accepted and paid for during the prompt at the beginning of the cycle. Cycle execution should halt during this prompt since it is dependent upon water to flush the paid-for chemical into the basket.

Federal Communications Commission (FCC) Interference Statement

The modular transmitter is **only** FCC authorized for the specific rule part (FCC Part15.247) listed on the grant, and that the host product manufacturer is responsible for compliance to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generate, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

● Reorient or relocate the receiving antenna.
● Increase the separation between the equipment and receiver.
● Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
● Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

OEM/Host integrator is responsible for complying with the instructions and requirements for each transmitter they choose to integrate into a host product.

RF exposure warning

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

This product may not be collocated or operated in conjunction with any other antenna or transmitter. This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20cm from all persons and must not be collocated or operating in conjunction with any other antenna or transmitter. Additional text needed for the host product manufacturer to provide to end users in their end-product manuals.

Industry Canada (IC)

CAN ICES-3 (B)/NMB-3(B)

This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

Cetappareilestconforme à la norme RSS d'Industrie Canada. Son fonctionnementestsujet aux deux conditions suivantes:

(1) ledispositif ne doit pas produire de brouillagepréjudiciable, et

(2) cedispositifdoit accepter tout brouillagereçu, y compris un brouillage susceptible de provoquer un fonctionnementindésirable.

IMPORTANT NOTE:

Radiation Exposure Statement:

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

Déclarationd'exposition aux radiations:

Cetéquipementestconforme aux limitesd'exposition aux rayonnements IC établies pour unenvironnement non contrôlé. Cetéquipementdoitêtreinstalléetutilisé avec un minimum de 20cm de distance entre la source de rayonnement et votre corps.

OEM Integration Instructions：

This device is intended only for OEM integrators under the following conditions:
The module can be used to installation in other host. The antenna must be installed such that 20 cm is maintained between the antenna and users, and the transmitter module may not be co-located with any other transmit or antenna. The module shall be only used with the integral antenna(s) that has been originally tested and certified with this module. As long as 3 conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirement with this module installed (for example, digital device emission, PC peripheral requirements, etc.)

IMPORTANT NOTE：

In the event that these conditions cannot be met (for example certain laptop configuration or co-location with another transmitter), then the FCC authorization for this module in combination with the host equipment is no longer considered valid and the FCC ID of the module cannot be used on the final product. In these and circumstance, the OEM integrator will be responsible for re-evaluating. The end product (including the transmitter) and obtaining a separate FCC authorization. The final end product must be labeled in a visible area with the following:

 "**Contains Transmitter Module FCC ID: 2ANOT-MC10** or **Contains FCC ID: 2ANOT-MC10**".

Antenna Specification:

Antenna Type	Manufacturer	Frequency Range (MHz)	Maximum Peak Antenna Gain(dBi)
Dipole Antenna	Pulse	2400 - 2500	2.0

Note: The device didn't support beam-forming technology and Cyclic Delay Diversity (CDD) technology, and the transmit signals are uncorrected, so no add array gain to the band power and band PSD.

IMPORTANT NOTE :

This Wireless Module (IC: 23166-MC10) has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

The Host Marketing Name(HMN) must be displayed (according to e-labelling requirements) or indicated at any location on the exterior of the host product or product packaging or product literature, which shall be available with the host product or online.

The host product shall be properly labelled to identify the modules within the host product. The Innovation, Science and Economic Development Canada certification label of a module shall be clearly visible at all times when installed in the host product; otherwise, the host product must be labelled to display the Innovation, Science and Economic Development Canada certification number for the module, preceded by the word "Contains" or similar wording expressing the same meaning, as follows: **Contains IC: 23166-MC10.**

Antenna Specification:

Antenna Type	Manufacturer	Frequency Range (MHz)	Maximum Peak Antenna Gain(dBi)
Dipole Antenna	Pulse	2400 - 2500	2.0

Note: The device didn't support beam-forming technology and Cyclic Delay Diversity (CDD) technology, and the transmit signals are uncorrected, so no add array gain to the band power and band PSD.