BBQ GURU ProCom 4 WIRELESS USER GUIDE Version 2.4

1.BBQ GURU ProCom 4 Wireless Features

- Super compact wireless control pendant with up to 600 feet line of sight range from your pit
- Allows complete remote control and monitoring of your pit
- Digital alphanumeric 8 character x 2 line LCD display with backlight
- Audible alarm sounds on over/under temp, meat done, timeout and many other conditions
- Real time fan status and percent output indication helps you to measure fuel use
- Super User menu for advanced users
- User settable low and slow ramp down feature
- User settable cook timer gives alarm or shuts down your pit
- Battery power indicator
- Adjustable Proportional band, cycle time, offset and deviation alarms
- Display in degrees F or C
- Alarms settable to on or off (good neighbor feature)
- Adjustable display contrast
- 32 to 400 deg F range with +/- 2 deg F accuracy.

2. INSTALLATION

Your Procomm 4 Wireless comes with installation instructions and adaptor hardware specific to the kind of pit you ordered it for. Please refer to these instructions for installation. For best communication between the handheld and control it is suggested that the control be placed close to vertically using the supplied brackets. The handheld may be held in your hand, placed in belt clip/tilt stand.

3.KEYS

ON/OFF – Powers the unit up and down.
BACKLIGHT – Turns the backlight on for 10 seconds past the last key press.
SCROLL – Indexes through the menu system.
UP – Indexes the shown value up.
DOWN – Indexes the shown value down.
ALARM SILENCE – Silences the current alarm condition.

4.Adjusting LCD Contrast

Press and hold the backlight key and the up or down key to adjust the contrast.

5.Powering Up

Pressing the ON / OFF key will power the handheld up.
During power up the display shows:

B	B	Q	G	u	r	u	
1	.	1		9	9		

1.1 is the Software version and 99 is the units serial number.

6.STANDARD USER MENU

The screens are shown in the order they appear as the scroll key is pressed. When the battery power screen is reached and the scroll key is pressed again the menu system will loop around to the selected main screen.

If the unit is left showing any screen for more than 10 seconds it will revert to the selected Main Screen.

6.1.Main Screen Selection

When the ProCom 4 is turned on the standard main screen appears. Pressing the up or down key scrolls through a selection of three main screens.

6.1.1.Standard Main Screen

The * shows when the fan is running. The numbers to the right are the actual Pit and Meat thermocouple temperatures.

P	I	T	*		2	7	3
M	E	A	T		1	8	0

From the standard main screen, if the up key is hit the setpoint screen is shown.

6.1.2.Setpoint Main Screen

The actual values are to the left and the setpoints are to the right.

P	2	7	3		2	7	5
M	1	8	0		1	8	5

If the up key is hit again **Shot Gun Fred's Screen** is shown.

6.1.3.Shot Gun Fred's Main Screen

This screen was designed for the advanced user and shows you the Pit Temp, Meat Temp, Cook Timer, Fan Status, and Fan %.
"R" is shown when the control is actively ramping.
"r" is shown when ramp is enabled but not active.
% Fan shows 0-9 and F for fan running full time.

P	2	7	3	M	1	8	0
0	0	:	0	0	R	*	5

If the up key is hit again the standard main screen appears again.

6.1.4.Temperature Display Messages

When the controller is out of range or interference is present the display will show screen below and then flash "MEAT TEMP UNKNOWN !":

P	I	T	*		-	-	-

M	E	A	T	-	-	-

When the temperature is over 405 deg F the display will show:
OVL = Over Value Limit

P	I	T	*	O	V	L
M	E	A	T	O	V	L

When the temperature is below 32 deg F the display will show:

P	I	T	*	L	O	W
M	E	A	T	L	O	W

6.2.Aux Screen

Shows the Aux 1 and 2 thermocouple temperatures

A	U	X	1	1	0	5
A	U	X	2	1	2	5

6.3.Pit Setpoint Screen

Using the up and down keys the user can adjust the pit setpoint from 32 to 400 deg F. The default setting is 275 deg F

P	I	T		S	E	T
2	7	5				

6.4.Meat Setpoint Screen

Using the up and down keys the user can adjust the meat setpoint from 32 to 210 deg F. The default setting is 185 deg F

M	E	A	T	S	E	T
1	8	5				

6.5.Timer Screen

Using the up and down keys the user can adjust the cook timer duration, also displays the actual current time left in the cook. If the handheld unit is powered down, the setting will go to 00:00. **NOTE. From 00:00 press down key to go to 99:59**

T	I	M	E	R
0	0	:	0	0

6.6.Timeout Action Screen

Selects the timeout action no action, alarm, or shut down. The default setting is no action.

T	I	M	E	O	U	T
A	L	A	R	M		

6.7.Alarm Screen

Selects if alarms are on or off (AKA good neighbor feature). The default setting is on.

A	L	A	R	M	S
O	N				

6.8.Ramp On/Off Screen

Selects if ramp mode is set to on or off. The default setting is on.

R	A	M	P
O	N		

6.9.Battery power screen

Shows battery capacity in %.

B	A	T	T		P	W	R
9	5	%					

7.SUPER USER MENU

Press the scroll key and the up key to enter the Super User Menu.
Press the scroll key and the down key to exit the Super User Menu.

The screens are shown in the order they appear as the scroll key is pressed. When the **Reset All** screen is reached and the scroll key is pressed again the menu system will jump to the selected main screen.

If the unit is left showing any screen for more than 10 seconds it will revert to the Selected Main Screen.

7.1.Fan % Screen

Shows the current fan duty cycle in %.

F	A	N		P	C	T	
5	1		%				

7.2.Proportional Band Screen

Using the up and down keys the advanced user can adjust the Proportional band from 1-99 deg F. The default value is 25 deg F. For clarification of this feature see the definition of terms section at the end of this manual.

P	R	O	P	B	A	N	D
2	5		D	E	G		

7.3.Offset Screen

Using the up and down keys the advanced user can adjust the Offset from 0-50 deg F. The default value is 10 deg F. This offset represents a value that is added to the setpoint

to compensate for droop error. For clarification of this feature see the definition of terms section at the end of this manual.

O	F	F	S	E	T		
1	0		D	E	G		

7.4.Ramp Offset Screen

Using the up and down keys the advanced user can adjust the Ramp Offset from 10-60 deg F. The default value is 30 deg F. This offset is used as follows: When the controller is in ramp mode the internal pit setpoint will be ramped down from the pit setpoint to the meat setpoint + Ramp Offset. For clarification of this feature see the definition of terms section at the end of this manual.

R	M	P	F	F	S	E	T
3	0		D	E	G		

7.5.Deviation Alarm Screen

Using the up and down keys the advanced user can adjust the deviation alarm from 20 to 80 deg F. The default value is 50 deg F (50° above or below set temperature). The low deviation alarm is suppressed on startup, and will sound when the pit temperature is above or below the pit setpoint by this amount.

A	L	A	R	M	D	E	V
5	0		D	E	G		

7.6.Cycle Time Screen

Using the up and down keys the advanced user can adjust the cycle time from 4 to 10 seconds. The default value is 6 seconds. For clarification of this feature see the definition of terms section at the end of this manual.

C	Y	C		T	I	M	E
6			S	E	C		

7.7.Temperature Units Screen

Using the up and down keys the advanced user can set the temperature units to F or C. Default setting is F. This affects all temperature displays and settings.

T	E	M	P	U	N	I	T
	F		D	E	G		

7.8.Reset All Screen

Using the up keys the advanced user or technician can restore the factory defaults to all values programmed in the unit, including calibration.

R	E	S	E	T	A	L	L

When the up key is pressed the display will show:

R	E	S	E	T	A	L	L

D O N E !

8.ALARMS

8.1.Meat Done Alarm

The meat done alarm screen flashes when meat temperature is greater than or equal to the meat setpoint. Also sounds beeper if alarms are set to on.

M E A T
D O N E !

8.2.Pit Temp High

The pit temp high alarm screen flashes when pit temperature is greater than or equal to the pit setpoint + the deviation alarm value ***50 deg F default*** (25° above set temperature) Also sounds beeper if alarms are set to on.

P I T T E M P
H I G H !

8.3.Pit Temp Low

The pit temp low alarm screen flashes when pit temperature is less than or equal to the pit setpoint - the deviation alarm value ***50 deg F default*** (25° below set temperature). Also sounds beeper if alarms are set to on.

P I T T E M P
L O W !

8.4.Timeout No Action

Time out flashes when timer is expired and timeout action is set to no action. Beeper is not sounded.

T I M E O U T !
N O A C T ‘ N

8.5.Timeout Alarm

Time out alarm flashes when timer is expired and timeout action is set to alarm. Beeper is sounded if alarms are set to on.

T I M E O U T !
A L A R M

8.6.Timeout Shutdown

Time out shutdown flashes when timer is expired and timeout action is set to shutdown. Beeper is sounded if alarms are set to on.

T I M E O U T !
S H U T D O W N

8.7.Meat Temp Error

Meat temp error shows when the temperature exceeds 400 deg F on the meat channel. This typically indicates a damaged (open) meat thermocouple.

M	E	A	T	T	E	M	P
	E	R	R	O	R	!	

8.8.Pit Temp Error

Pit temp error shows when the temperature exceeds 400 deg F on the pit channel. This typically indicates a damaged (open) pit thermocouple.

P	I	T		T	E	M	P
	E	R	R	O	R	!	

8.9.Meat Temp Unknown

Meat temp unknown shows when the units are **out of range** or **significant interference** is present preventing the reading of the meat temperature for at least 5 seconds.

M	E	A	T	T	E	M	P
U	N	K	N	O	W	N	!

8.10.Handheld Pendant Battery Low

If the battery becomes weak in the handheld Pendant the handheld will show:

H	A	N	D	H	E	L	D
B	A	T	T		L	O	W

8.11.Controller Base Station Battery Low

If the battery becomes weak in the controller Base Station the handheld will show:

C	O	N	T	R	O	L	R
B	A	T	T		L	O	W

9.Zero and Span CALIBRATION

Press and hold the up and down keys when the BBQ Guru Screen is shown on power up to enter the calibration menu. **CAUTION:** This is a factory calibration, not for the user to adjust. **Zero and Span CALIBRATION is not affected by Reset All.**

9.1.Zero Adjust Screen

Using the up and down keys a factory technician can adjust the zero calibration from -99 to +99. Zero calibration should be adjusted with an input of 32 degrees to the meat thermocouple input. The M: 32 is the value the control thinks it is seeing on the meat input. The +1 is the amount we are adding or subtracting from the reading to make it read correctly.

Z	E	R	O		A	D	J
+	1		M	:	3	2	

9.2.Span Adjust Screen

Using the up and down keys a factory technician can adjust the span calibration from -99 to +99. Span calibration should be adjusted with an input of approx 375 degrees to the meat thermocouple input. The M: 375 is the value the control thinks it is seeing on the meat input. The -4 is the amount we are adding or subtracting from the reading to make it read correctly.

S	P	A	N		A	D	J
-	4		M	:	3	7	5

10.CONTROLLER INDICATORS

(From top to bottom)

1. **Power** – energized when power is applied, is not energized in monitor mode (internal 9V battery power).
2. **Power Draft** – energized when the fan is on.
3. **Ramp** – Energized when the ramp is set to on.
4. **In Range** – Blinking when the control and handheld are within communicating range and no interference is present.
5. **Out of Range** – Blinking when the control and handheld are out of range or significant interference is present.
6. **Error** – Energized when an error is present such as the meat and pit temperature errors.

11.CONTROLLER BASE STATION IN MONITOR MODE

The ProCom 4 is a stand-alone temperature monitor and will run on it's own internal 9 volt battery.
In order to use the ProCom 4 as a controller, 12 VDC power must be plugged in to the Base Station. This supplies power to the Power Draft Fan.
When 12 VDC power is plugged in, it overrides the 9 volt battery.

Note: The 9volt battery is for monitor mode only and will NOT run the Power Draft Fan and all control parameters will become inactive.

12.CONTROLLER CONNECTIONS

From left to right:
Pit/Meat TC, Aux1,2 TC, 12V Pwr Input, Fan Output.

13.DEFINITION OF TERMS

Offset – This value is added internally to the pit setpoint. Say your pit setpoint is 225 and you find that the actual pit temperature never gets over 220, you should add 5 degrees to the offset value (if it was 10 make it 15). This will make the actual pit temperature climb another 5 degrees and agree with your setpoint. The default value of 10 degrees will work well with most pits.

Proportional Band – This value is the band of temperature over which the power draft fan will pulse. Say your internal pit setpoint is 225 (215 + 10 deg offset). Below 200 the

power draft blower will be full on, above 225 the power draft blower will be full off and at 212.5 the power draft blower will cycle 50% of the time. The default value of 25 degrees will work well with most pits. If you notice that the pit temperature is oscillating up and down more than 5 to 10 degrees and never settles out, the proportional band can be made larger. Making the proportional band smaller will make the pit reach setpoint faster, but will also increase the overshoot on startup. Each time you adjust the proportional band, expect that you will also need to adjust the offset to make the pit setpoint and actual temperature agree.

Cycle Time – This value is the time (in seconds) between power draft fan pulses. The default value of 6 seconds will work well with most pits. The cycle time should be lowered only if the pit temperature falls between power draft fan pulses.

Ramp Offset – When the ramp mode is turned on, the pit will be ramped down to the meat setpoint + the ramp offset when the meat temperature = the meat setpoint. The default value of 30 degrees will work well for most cuts of meat. Say your pit setpoint was 275 and your meat setpoint is 180. The pit will be ramped down to 210 (180+30) as you meat temperature climbs to 180. We determined the 30 degrees based on the amount of evaporative heat loss in an average piece of meat. If you make this lower the meat setpoint may never be achieved at the end of the ramp cycle due to the amount of evaporative heat loss. If you make this higher the meat setpoint may be slightly exceeded at the end of the ramp cycle.

14. FCC INSTRUCTIONS TO THE USER

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, 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 or more 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 a dealer or an experienced radio/TV technician for help.

Changes or modifications to this equipment not expressly approved by Therm-Omega_Tech, Inc. can void the user's authority to operate this equipment.

15.SPECIFICATIONS

Operating Specifications:

Temperature accuracy - +/-2 deg F

Measurement Range	-	32 to 400 deg F.
Ambient Temp Range	-	32 to 120 deg F.
Handheld Power	-	2 AA Size batteries.
Controller Power	-	120VAC (12V 1A Wall transformer) or 9V Battery.

RF Specifications:

Range	-	up to 600' line of site.
Radiated RF Power	-	1.0mW.
Frequency	-	916.48MHz, +/-55 ppm.
FSK Deviation	-	110KHz +/-20KHz

16.CONTACT INFORMATION

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