

July, 2007

1 Primex Wireless, Inc.
2 1310 Kerrisdale Blvd. Unit #4
3 Newmarket, ON L3Y 8V6
4
5 800-330-1459
6 www.primexwireless.com
7
8

9 **Product Guide Specification**

10 **Specifier Note: This product specification is written according to the Construction**
11 **Specifications Institute (CSI), *MasterFormat™*, *SectionFormat*, and *PageFormat*,**
12 **contained in the *CSI Manual of Practice*.**

13
14 **The section must be carefully reviewed and edited by the**
15 **Architect/Engineer/Consultant to meet the requirements of the project and local**
16 **building code. Coordinate this section with other specification sections and the**
17 **drawings.**

18
19 **Delete all “Specifier Notes” when editing this section.**
20
21

22 **DIVISION 16735**

23
24 **WIRELESS BELL AND TONE SYNCHRONIZATION SYSTEM**

25
26 **Specifier Note: This section covers the Primex Wireless GPS Synchronized**
27 **Clock System. Consult Primex Wireless for assistance in editing this section for**
28 **the specific application.**
29

30 **Part 1 General Requirements and Scope:** Furnish and install a complete new
31 Synchronized Wireless bell and tone system manufactured by Primex Wireless Inc.

32
33 Division 1 applies to this section.
34

35 **Specifier Note: Edit the following list as required for the project.**
36
37

- 38
39 **1.1 Section Includes**
40 Wireless Tone Generator
41 Scheduling software
42 Wireless transceivers
43

44 **Specifier Note: Edit the following list as required for the project. List other sections**
45 **with work directly related to this section.**
46

1 **1.2 Related Work Specified Elsewhere:**

2
3 Division 16010 – Electrical (120 volt grounded outlet required for transmitter.
4 Division 16730 – GPS Wireless Clock System or 1 watt external/
5 Command point
6 Division 16731 – Digital Indicating Clocks and Timers
7

8 **Specifier Note: List standards referenced in this section, complete**
9 **with designations and titles. This article does not require compliance**
10 **with standards.** but is merely a list of those used.
11

12 **1.3 References**

13
14 This Technical Specification and Associated Drawings
15 National Fire Protection Agency (NFPA) – 70, National Electric Code
16 (NEC) – 2002.
17 Primex Wireless Clock System User Manual
18 Primex Wireless Tone Generator User Manual.
19

20 **1.4 Definitions**

21
22 CD-ROM: Compact disk, read-only memory.
23

24 GPS: Global Positioning System, a worldwide system that employs 24 satellites in
25 an integrated network to determine geographic location anywhere in the world, and
26 which employs and transmits Universal Coordinated Time, the world's most
27 accurate and reliable time.
28

29 PC: Personal computer (Owner-furnished)
30 UTC Universal Coordinated Time
31

32 WTG: Wireless Tone Generator.
33

34 **1.5 System Description**

35
36 The system shall provide wireless time using GPS and is synchronized to UTC.
37 Each WTG and every other component in the system shall use both precise time
38 and synchronized time.
39

40 The WTG system shall provide a tone at pre-defined times to an Owner-furnished
41 public address system, or relay closure to Owner furnished bell system. The tone
42 and relay shall actuate all devices programmed to operate on receipt of the tone.
43

44 Timing and operation of the WTG system shall be controlled by software provided
45 by system manufacturer, housed in the transmitter and programmed by an
46 Owner-furnished PC.

1 The system shall not require wiring from the transmitter to the WTG. Initially and
2 at scheduled intervals, the WTG receives the time data and command packets from
3 the transmitter. Using that information, the WTG can send an audio tone to and an
4 existing PA-type announcement system and/or an existing bell system.

5
6 The transmitter shall continuously broadcast (transmit) a time data packet and
7 command packets to the WTG. The transmitter shall operate on Industry Canada
8 licensed frequencies that have optimal building penetration and that are regulated
9 by Industry Canada to minimize interference on the selected channel.

10
11 The GPS unit shall receive the precise time via satellite from its vantage point with
12 a 'view of the sky' and continuously provide this precise time to the transmitter.

13
14 The system shall incorporate fail-safe design so that failure of any component shall
15 not cause failure of the system. Upon restoration of power or repair of failed
16 component, the system shall resume normal operation without the need to reset the
17 system or any component thereof.

18
19 The system must operate in accordance with a License, granted by Industry Canada.
20 This license will be issued to and held by the end user.

21
22 **1.6 Regulatory Requirements**

23 Equipment and components furnished shall be of manufacturer's latest model.

24
25 The end user will hold a license, known as a "Non Complex Fixed Station" Radio
26 License granted by Industry Canada and the Ministry of Industry

27
28 This license grants the end user protected use for wireless transmission at the
29 designated frequency.

30 Station" Radio License granted by Industry Canada and the Ministry of

31
32 This license will designate a unique "call sign" for each end user.

33 IC-2365: Application for "License to Install and Operate a Radio Station in
34 Canada" must be completed and signed by end user prior to license issuance. The
35 end user will grant permission for Primex Wireless to apply for the license on their
36 behalf. Primex Wireless will provide all documents and technical information to
37 Industry Canada for approval.

38
39 Transmitter frequency shall be governed by IC: RSS119 Issue 6.

40
41 Transmitter output power shall be governed by IC: RSS119 Issue 6

42
43 This device may not cause harmful interference, and

44
45 This device must accept interference received, including interference that may
46 cause undesired operation.

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Transmitter and receiver shall comply with RSS 119 of Issue 6 of Industry Canada specifications as follows:

Transmitter frequency shall be governed by IC: RSS119 Issue 6.

Transmitter output power shall be governed by IC: RSS119 Issue 6

System shall be installed in compliance with local and state authorities having jurisdiction. Equipment and components furnished shall be of manufacturer's latest model.

The end user will hold a license, known as a "Non Complex Fixed Station" Radio License granted by Industry Canada and the Ministry of Industry

This license grants the end user protected use for wireless transmission at the designated frequency.

Station" Radio License granted by Industry Canada and the Ministry of

This license will designate a unique "call sign" for each end user. IC-2365: Application for "License to Install and Operate a Radio Station in Canada" must be completed and signed by end user prior to license issuance. The end user will grant permission for Primex Wireless to apply for the license on their behalf. Primex Wireless will provide all documents and technical information to Industry Canada for approval.

Transmitter frequency shall be governed by IC: RSS119 Issue 6.

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This device may not cause harmful interference, and
This device must accept interference received, including interference that may cause undesired operation.

Transmitter and receiver shall comply with RSS 119 of Issue 6 of Industry Canada specifications as follows:

Transmitter frequency shall be governed by IC: RSS119 Issue 6.

Transmitter output power shall be governed by IC: RSS119 Issue 6

System shall be installed in compliance with local and state authorities having jurisdiction.

1
2 **1.7 Submittals**
3

4 Product Data: Submit complete catalog data for each component, describing
5 physical characteristics and method of installation.
6

7 **Specifier Note: In accordance with Industry Canada regulations, an**
8 **application for “Technical Acceptance Certificate” must be filed prior to**
9 **use of the equipment. Normally, the manufacturer will have completed**
10 **the filing and obtaining the license. If not, the Owner will be required to**
11 **file the application with the Industry Canada prior to use. Furnishing the**
12 **license, or a copy of the application, will confirm that Industry Canada**
13

14 Submit IC Technical Acceptance Certificate prior to installing equipment. Furnish
15 the license or a copy of the application for the license, to the Owner/End User prior
16 to operating the equipment. The original license must be delivered to the
17 Owner/End User.
18

19
20 Samples: Submit one WTG for approval. Approved sample shall be tagged and
21 shall be installed in the work at location directed.
22

23 Manufacturer's Instructions: Submit complete installation, set-up and maintenance
24 instructions.
25

26 **1.7 Substitutions**
27

28 Proposed substitutions, to be considered, shall be manufactured of equivalent
29 materials that meet or exceed specified requirements of this Section.
30

31 Proposed substitutions shall be identified not less than 10 days prior to bid date.
32

33 Other systems requiring wiring and/or conduit between master and tone generator,
34 will not be accepted.

35 Other systems using wireless technology in an unlicensed frequency range will not
36 be accepted.
37

38 Other systems using wireless technology where the license is held by any party
39 other than the end user will not be accepted.
40

41 **1.8 Quality Assurance**
42

43 Permits: Obtain operating license for the transmitter from Industry Canada.
44

45 Qualifications:

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1 Manufacturer: Company specializing in manufacturing commercial time systems
2 product with a minimum of 30 continuous years of documented experience
3 including 4 years producing wireless time systems.
4

5 Installer: Company with documented experience in the installation of commercial
6 time systems.
7

8 **1.9 Delivery Storage and Handling**
9

10 Deliver all components to the site in the manufacturer's original packaging.
11 Packaging shall contain manufacturer's name and address, product identification
12 number and other related information.
13

14 Store equipment in finished building, unopened containers until ready for
15 installation.
16

17 **1.10 Project Site Conditions**
18

19 Verify that a PC having the specified minimum system requirements will be
20 available for use in programming the WTG. See 2.4 below for system requirements
21

22 **1.11 System Startup**
23

24 At completion of installation and prior to final acceptance, turn on the equipment;
25 ensure that all equipment is operating properly, and that all WTG's are functioning.
26
27

28 **Part 2 – Products**
29

30 **2.1 Manufacturer**
31

32 Wireless Bell and Tone generation system shall be manufactured by Primex
33 Wireless, Inc., 1310 Kerrisdale Blvd. Unit #4, Newmarket, ON L3Y 8V6
34 Phone (800) 330-1459 FAX (905) 952-0134 www.primexwireless.com
35

36 **2.2 Sequence of Operation**
37

38 WTG Operation: When the WTG receives a signal from the transmitter it shall
39 generate a tone and relay closure to actuate the devices that have been
40 predetermined to operate upon receipt of that tone and closure.
41

42 **Specifier Note: if local building codes require UL approved devices**
43 **specify a Wireless Industrial Controller. Contact Primex Wireless**
44 **for information.**
45

46 **2.3 Wireless Tone Generator:**

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- 1
- 2 Primex Wireless **Model 14480**, WTG, complete with scheduling software, cables,
- 3 transceivers, and antenna required for complete installation.
- 4
- 5 Size: Approximately 7-1/4 inches (184mm) wide by 5 inches (140mm) long by
- 6 1-1/2 inches (32mm) high, not including antenna.
- 7
- 8 WTG shall be housed in a black plastic case.
- 9
- 10 9 volt switching power supply (fed from 120 volt line)
- 11
- 12 Switching contacts "Form D", two sets: one normally open, one normally closed.
- 13
- 14 Switch ratings:
- 15
- 16 Contact ratings:
- 17 4.4 amp, 1/6 hp, 125v, 250v, AC
- 18 4.4 amps, 20 volts DC
- 19
- 20 DC Break ratings:
- 21 30 watt maximum
- 22 One amp, 30 volts, DC; 2.4 amps, 125 volts DC
- 23
- 24 Audio Output:
- 25 Isolation transformer with center tap, 600/150 ohms output impedance
- 26
- 27 Variable output and line level
- 28
- 29 Relay output
- 30 Test and reset buttons
- 31
- 32 Signal indicator
- 33
- 34 25 switch identification codes.
- 35
- 36 Selectable channels: 16
- 37
- 38 96 programmable events with 7 day selectable operations.
- 39
- 40 12 Selectable tone/closure length for each event
- 41
- 42 Selectable daylight saving time bypass.
- 43
- 44 Selectable automatic channel scanning.
- 45
- 46 Computer programmable through transmitter, with automatic backup, and schedule

1 changes which easy to make.

2

3 Switching information stored in non-volatile memory in the transmitter and
4 broadcast at regular intervals. Each switch retains its instructions in non-volatile
5 memory.

6

7 **2.4 Software**

8

9 Provide Primex Wireless Event Scheduler Pro software for installation and
10 programming by Owner, compatible with the following PC operating systems:

11

12 Windows 95 with Internet Explorer 5.01 Service Pack 2.

13

14 Windows 98

15

16 Windows ME

17

18 Windows NT with Service Pack 6a, Internet Explorer 5.01 Service Pack 2, and
19 valid administrator rights.

20

21 Windows 2000 with valid administrator rights.

22

23 Windows XP with valid administrator rights.

24 Software shall be in form of a CD, suitable for operation in standard CD-ROM
25 drives.

26

27 Provide connecting cables for a completely operational system.

28

Specifier Note: The Primex Wireless Event Scheduler Pro software may be downloaded using an optional wireless connection. This option would be used when a physical connection between the computer and transmitter is not practical or possible. If this option is used, the following specifications should be added.

29

30 **2.6 Transceivers**

31

32 Transmission.

33

34 Frequency range: 902 MHz – 923 MHz.

35

36 Peak power consumption: 200mA typical.

37

38 Sensitivity: -113 dBm

39

40 Range: 200ft. + (indoor-environment dependent)

41

42

43

44

45

46

1 Operating Temperature Range: -40° – 176°F (-40o – 80oC)

2
3 Humidity: 10% - 90%.

4
5 **Part 3 - Execution**

6
7 **3.1 Examination**

8
9 Verify that construction is complete in spaces to receive equipment and that rooms
10 are clean, dry, and permanent air conditioning systems are operating.

11 Verify that 120 volt electrical outlet is located within 6 feet (1.8m) of location of
12 WTG and that outlet is operational and properly grounded.

13 Verify that a compatible PC, meeting requirements specified above, is available for
14 dedicated use during software installation and system testing

15
16 **3.2 Installation**

17
18 Furnish all equipment necessary for a complete and operational system

19
20 **Specifier Note: To assure optimum performance of the GPS Wireless Clock**
21 **System, transmitter(s) location (s) must be specified in the construction documents.**
22 **Primex Wireless Applications Engineering Dept. should be consulted to determine**
23 **the number and placement of transmitter(s) required for the project.**
24 **Contact Primex Wireless Technical Support at 1-800-404-8112.**

25
26
27 **Specifier Note: The WTG can be located anywhere within transmission range of the**
28 **transmitter that is convenient for hook up to the PA system or to bell system as**
29 **appropriate. Normally the WTG would be within close proximity (within 8 feet) to the**
30 **PA system. However, it can be located at greater distances (up to 50 feet) for the bell**
31 **systems and for PA amplifiers with a balanced input. Increasing the distance beyond 8**
32 **feet (2.3m) for amplifiers without a balanced input is not recommended.**

33
34
35
36 Install the WTG in location indicated, and secure to base using fasteners of type
37 recommended by manufacturer, and suitable for the surface to which it is attached.

38
39 Align the antenna vertically.

40
41 Verify that the channel selector on the outside of the WTG matches the selected
42 channel on the transmitter.

43
44 Verify the switch ID selector on the outside of the WTG matches the selected
45 switch ID number on the scheduling software.

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- 1 Remove the smaller cover, then the larger cover from the unit for access to the
- 2 selector switches. Set the dip switches as required for Daylight Saving Time
- 3 adjustment (if applicable).
- 4
- 5 Adjust WTG volume as required.
- 6
- 7 Confirm proper installation of the WTG and check volume by holding down the test
- 8 function button.
- 9
- 10 Press the "reset" button to effect any changes in settings.
- 11
- 12 Relay output: If required, connect the relay output to the devices to be controlled.
- 13 Confirm compatibility between relay output and devices.
- 14
- 15 Connect the WTG to a standard 120 volt outlet.
- 16
- 17 Confirm that the green LED is flashing, to indicate that the WTG is receiving a
- 18 signal from the transmitter.
- 19
- 20 Primex Wireless Scheduler download sequence:
- 21
- 22 Connect computer to transmitter in accordance with manufacturer's instructions.
- 23
- 24 Download schedule per software instructions.
- 25

Specifier Note: If using the Primex Wireless Scheduler Transceivers, include the following:

- 26
- 27
- 28
- 29
- 30 Connect transceivers to computer and transmitter in accordance with
- 31 manufacturer's instructions.
- 32 Download schedule per software instructions.
- 33
- 34 **3.3 Adjusting**
- 35
- 36 Prior to final acceptance, inspect each item, adjust as required, modify the software
- 37 as directed, and replace parts which are found defective
- 38
- 39 **3.4 Demonstration**
- 40
- 41 Provide training to Owner's representative on installing the software, adjusting and
- 42 programming the transmitter, setting and adjusting WTG and routine maintenance
- 43
- 44
- 45
- 46 **3.5 Protection**

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Protect finished installation until final acceptance of the project.

END OF SECTION