800-295-0220
BRG PRECISION PRODUCTS The World's First GPS Controlled Wireless Clock System
600 N. River Street • Derby, Kansas 67037 • 316-788-2000 • Fax 316-788-7080 • sales@brgproducts.com • www.brgprecision.com

WORLDVIEW TIME ZONE CLOCK
USER GUIDE

BRG PRECISION PRODUCTS
600 N. RIVER
DERBY, KANSAS 67037

www.brgprecision.com
SALES@BRGPRODUCTS.COM
316-788-2000

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ALL BRG TIME ZONE DISPLAYS ARE MADE IN THE USA.

Worldview Time Zone Clock

Overview – There are two categories of BRG time zone displays, LED Worldview and Worldview. The LED Worldview Time Zone Clock is made up LED clocks coupled with a video monitors containing a symphony of software applications running on the Windows operating system. The video portion of the Time Zone Display is LED illuminated with an LCD filter. This combination provides the best flexibility, image quality and reliability. Worldview clocks are without the direct view LED clocks, consisting of only LED illuminated video displays. The video display software on both display types is the same.

Media Scheduler - The Media Scheduler is the core application that drives the display. This app determines what and when other time and image applications will display. This app maintains system time for the entire display as well as process remote control commands.

Time Zone Display Editor – Display controls can be selected and edited from the Time Zone Display Editor. The button to access the editor is located on the Media Play Schedule Editor. The editor places a grid on the screen during editing to ease the placement of display controls.

Display Controls – Display control applications are used to display time, text, videos, logos, and other images. Once a control is added to the display it can be dragged into the desired position and modified as needed. There are controls to display time, text, time and text, fixed images, animated images, long and short duration event timers and videos.

Available Display Controls

The Time zone Display Editor is used to add the following controls to the display. Once added, the controls can be dragged to the desired location and sized as needed. Further editing buttons and time rules are included on each respective control.

Time and Text Label – (control numbers 1-16, 51-66) - This control will display the time using a variety of formats. The text label can be used to display a simple location name, or it will display a variety of time and date details. Macros are available to display dates in any desired sequence. Resize and change color and type fonts as needed. The text label portion of this control also supports 12 and 24 hour Word Clock formats.

Time Only – (control numbers 17-24, 67-74) - This control will display the time using a variety of formats. Resize and change color and type font as needed.

Text Label Only – (control numbers 25-36, 75-86) - The text label can be used to display a simple location name, or display a variety of time and date details. It can be used to add a second zone label. Macros are available to display dates in any desired sequence. Resize and change color and type font as needed. The text control also supports 12 and 24 hour Word Clock formats.

Seconds - (control numbers 45-46, 95-96) - This control will display the seconds. Resize and change color and type fonts as needed.

Fixed or Animated Image – (control numbers 37-44, 49, 87-94, 99) – a wide variety of government logos are included. The image control is also used to display analog clocks, moon phases and active QR codes. The Time Display Rules screen for the Picture Control includes additional check boxes at the bottom of the window for displaying and configuring analog time displays.

Active World Map – (control numbers 47, 97) – The world map can be sized and positioned as needed. It also includes zoom and pan features to display areas of interest.

Video Display – (control numbers 48, 98) – Videos may be sized and positioned as needed, and configured to play once or loop continuously. Local and Streaming videos is supported.

Event Timer - (control number 50) - The timer control can be configured to display long or short duration time in either count up or count down direction. It can stop at a predetermined end time or continue to count past the end time. The control's color changes depending on the timer operating mode or the color can be customized as needed. The remote control is used to control timer operation. The timer can also be configured to hide behind a time zone clock until needed using the page flip feature.

While not a Display Control, **Google Earth** is also available to display aerial views anywhere in the world. This feature is only available when the display is connected to the Internet.

Special Time Control Formats - Time controls are capable of displaying special times such as the Julian date (day of the year), and Sunrise and Sunset times. These special times can be displayed on both time and text display controls.

Page Flipping - There can be up to six sets of display pages. Each page is a variation of the same display template. For example, if a display had four time display controls per page, a total of 24 time zones would display, changing every few seconds, or as configured. The pages can be directly selected using the remote control, or automatically change use the internal timer.

Template Flipping - There can be up to six sets of display templates. Each template is a completely different display. For example, one selection could be a four zone display with world map and another selection could be a 16 zone display with organization logo. The templates can be directly selected using the remote control. If the templates include the world map or videos, they should configured as display controls, not run from the play scheduler.

ChatGPT A.I. is used to obtain the time zone offsets for specific locations. This includes daylight saving rules and latitude/longitude coordinates needed to produce sunrise and sunset time. The precise language needed to feed ChatGPT is included later in this manual. The table of values produced is then entered into each respective display control.

Moving World Map - The moving world map control can be resized and positioned anywhere on the display. This map has many display parameters including zone times, nighttime shading, points of interest, zoom and pan, selectable maps, selectable overlays, and more. Once the map control is configured as desired, simply click on the "X" in the upper right corner of the map window to save all parameters.

Video - The video control can be used to display various videos to play once, or looped to play continuously. For example, one popular video is the American Flag configured to loop continuously. The video can be resized as needed from post stamp to full screen. Once the video control is configured as desired, simply click on the "X" in the upper right corner of the video window to save all parameters. Video Streaming is also supported. There are live video feeds available from the International Space Station and many other sources.

Message Ticker - The message ticker is capable of retrieving and displaying information from public News and Information feeds, or display a text file located on the Media Player or on a network drive.

News feeds are typically a web site that supports the RSS feed format. All you need to do is configure the message ticker to retrieve data from one or more of these web sites. The height and length of the message ticker is also configurable.

Remote Access - The display may be accessed and controlled remotely (only available when connected to a network). This is useful for technical support and for operating remotely. First, reduce the world map size by entering CTL-L on the keyboard. Then click on the Remote Access icon (if available) on Windows desktop. Run the program when prompted. A user ID and password will be displayed. On the remote computer, go to the web site dwservice.net and enter the user ID and password to access media display.

<u>While some features require a network connection, BRG recommends not connecting the display to any network. Connecting the display to a network will greatly reduce reliability.</u>

Radios or No Radios - The Multimedia Display is available without Wi-Fi and Bluetooth radios for use in secure locations. If the model has Wi-Fi, then a wireless keyboard with touchpad will be included. If the model does not have radios, then a USB keyboard with touchpad will be included. Plug this keyboard into the USB jack on the side of the display.

Power Saving and Life Extending Feature – The Schedule Editor also determines when the display will power-down and power-up. This feature saves power and extends the life of the display.

Precision Time - All BRG time zone displays includes a high precision oven controlled crystal oscillator (OCXO). The purpose of this precision device is to eliminate the need for manual or external time updates. The clock is factory set to the U.S. time standard and will display the correct time for the life of the clock. The com port selector on the Media Play Schedule Editor screen determines which port is used to communicate with the OCXO time module and the IR remote control receiver.

Once the display is configured as desired, the configuration will be restored after a power loss. The configuration can also be saved to a template so other configurations can be loaded.

Worldview Time Zone Templates

All available time zone templates are included with every model. They can be used as-is or modified for a new layout. Below is a sample of the available templates. Flags, Videos and the World Map are moving images.

01 Five Zone + Date

06 Nine Zones Grn+Yel

11 Page flipping Four+Four Zones

02 Five Zone+Date+Logo

07 Five Zone+Page Flipping Center Zone Between Zulu and Local

12 Page Flipping 4+4 Zones+Date+ Map+Logo

03 Five Zones+Date+Logo

08 Nine Zones Blu+Red

13 Page Flipping Four+Four Zones+ Live World Map

04 Date Line with Julian Day+Large Center 5 Zone

09 Four Zone+Live World Map+Date

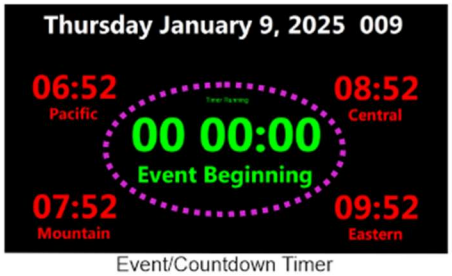
14 Five Zone+Date Line+Continuous Play American Flag Video

05 Four Zone, Large - Up to 24 zones using six Page Flipping pages.

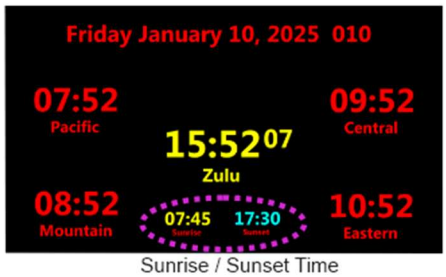
10 Four Zone+Date+Live World Map+ Two Logos

15 Eight Zone with Julian+Continuous Play American Flag Video

Worldview Time Zone Clocks - Special Display Controls



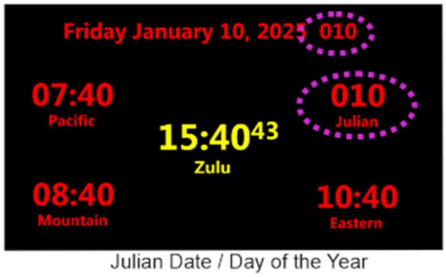
Event/Countdown Timer



Sunrise / Sunset Time

Videos and Animated Images

News and Information Tickers



Julian Date / Day of the Year

Analog Clocks with Standard or Custom Dial

Moving World Map

Logos and Images

Stream Video from YouTube and Others

Word Clocks

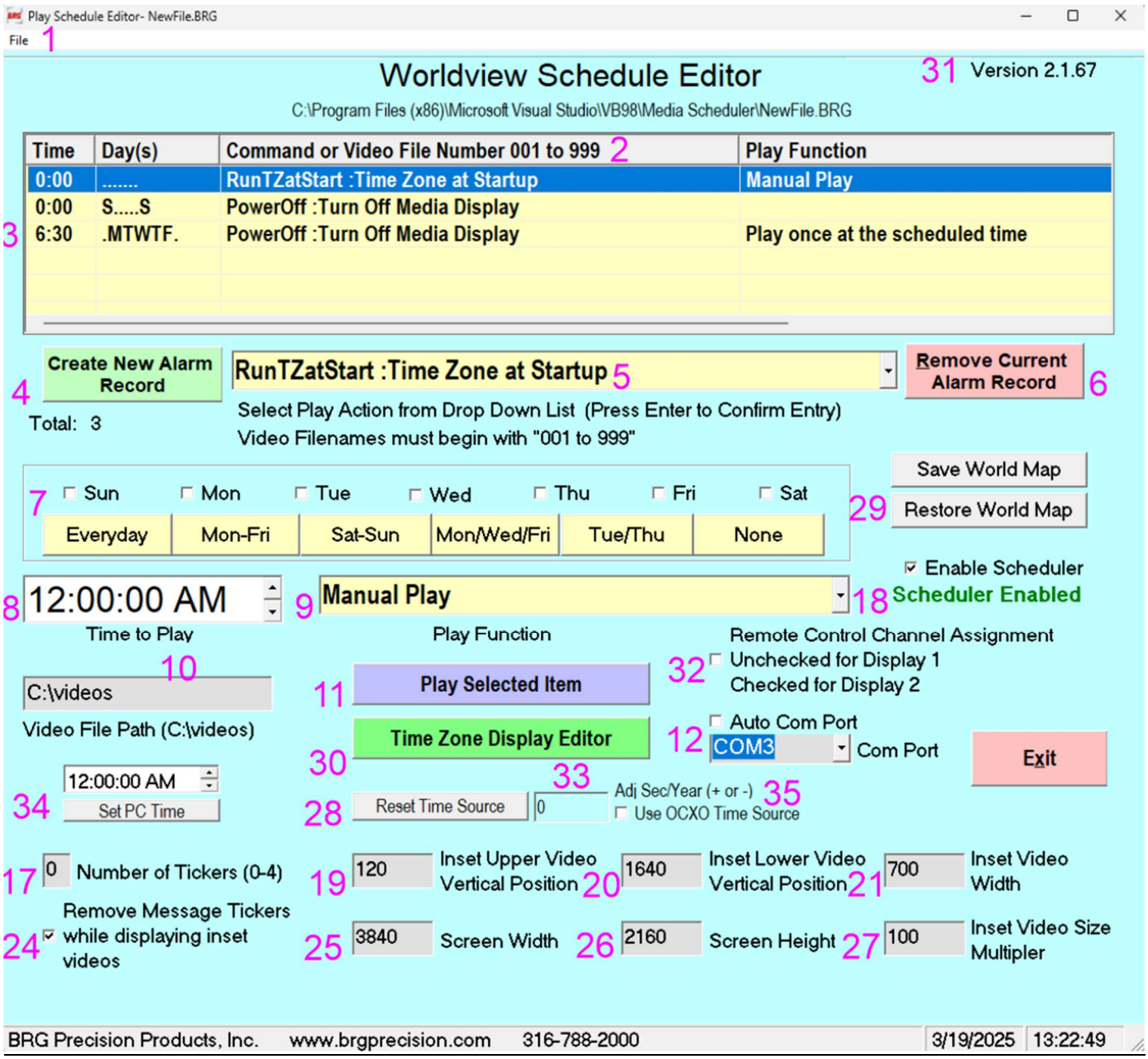
Live Moon Phases

Active and Fixed QR Codes

Monthly Calendar

Live Video from the International Space Station

Worldview Schedule Editor



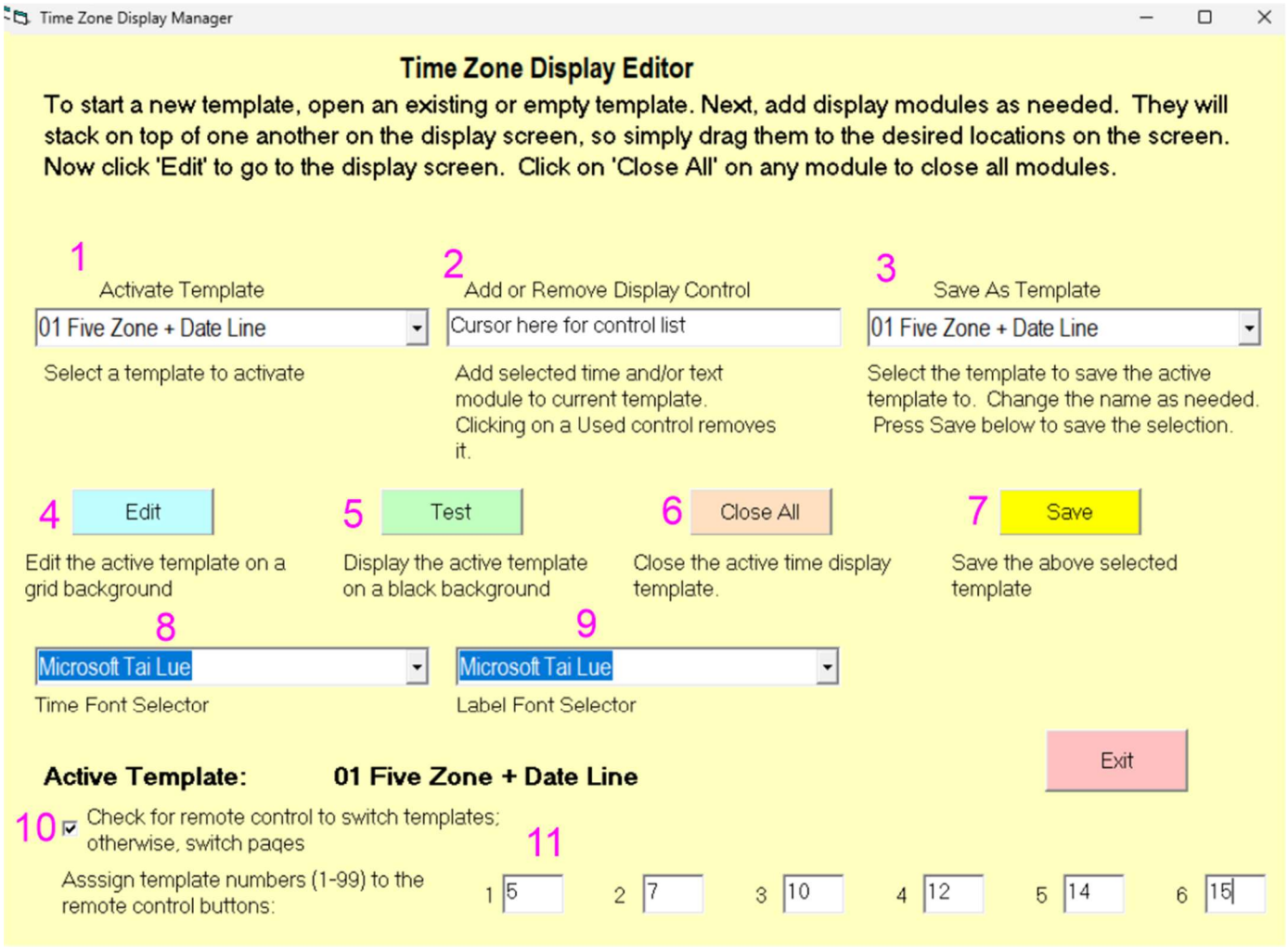
This program should always be running.

1. Play Schedules can be saved and reopened.
2. Command or video file name
3. Schedule entries and other commands
4. Create a new schedule record
5. Command, file name, file number or range of numbers (001TO999)
   a. RUN GOOGLE EARTH :Run Full Screen
   b. STOP GOOGLE EARTH :
   c. RUN WORLD MAP :run World Map Program
   d. STOP WORLD MAP :
   e. START TIME ZONE :TZ (# optional)
   f. START TIME ZONE 2 :TZ Template 2 (example)
   m. LR :Display Video - Low Right Screen
   n. CS :Display Video - Center Screen
   o. 011to023 :Play Video File Range (example)
   p. 020UL4 :Play Vid 20,Up Left,Ticker 4 (example)
   q. 020UL0 :Play Vid 20,Up Left,no Ticker
   r. PowerOff :Turn Off Media Display

g. STOP TIME ZONE :Stop the current TZ
h. UL :Display Video - Up Left Screen
i. UC :Display Video - Up Center Screen
j. UR :Display Video - Up RightScreen
k. LL :Display Video - Low Left Screen
l. LC :Display Video - Low Center Scrn
s. RunTZatStart :Run last Time Zone template at Startup
t. RunWMatStart :World Map at Start
u. RunTMatStart :TZ+World Map at Start
v. RunGEatStart :Google Earth at Start
w. StopVideo :Stop Current Video

6. Remove the current schedule record
7. Day(s) of the week to play
8. Time of day to play
9. Action or Play functions
   a. Play once at the scheduled time
   b. Manual Play
   c. Play hourly at the top of the hour
   d. Play hourly 5 min after the hour
   e. Play hourly 10 min after the hour
   f. Play hourly 15 min after the hour
   g. Play hourly 20 min after the hour
   h. Play hourly 25 min after the hour
   i. Play hourly 30 min after the hour
   j. Play hourly 35 min after the hour
   k. Play hourly 40 min after the hour
   l. Play hourly 45 min after the hour
   m. Play hourly 50 min after the hour
   n. Play hourly 55 min after the hour
10. Folder where image and video files are located. Change this path if a USB drive is used.
11. Play the selected file or take action immediately
12. Time Data Serial com port selection. Auto-com port selection is the default.
17. Enter the number of message tickers that will be used. Enter 0 if no tickers will be used.
18. Enable the video play scheduler by checking the box. Uncheck to disable the scheduler
19. If the height of the message tickers are changed from the default, then the inset video vertical position may need to be adjusted.
20. Inset Lower Video Vertical Position
21. Inset Video Width – The height is automatically adjusted when this value is changed
24 Remove message tickers as needed while displaying videos
25. Adjust screen width (factory preset)
26. Adjust screen height (factory preset)
27. Inset Video Size Multiplier – this is used with the video size digit in the video file name
28. Reset the Time Synchronizer - Sends time from the PC to the Real Time Clock module.
29. Save and Restore all map configuration parameters
30. Time Zone Display Editor
31. Schedule Program version number
32. This checkbox determines which Display button at the top of the remote will select this display.
33. OCXO time base adjustment. This field is auto-populated when the time is updated. A positive value speeds up, and a negative value slows down. See “Reset System Time” later in this document.
34. Set PC time. Enter local PC time slightly ahead of the current time. Then wait until the time entered exactly matches the time on the reference clock. Then click the “Set PC Time” button.
35. Enable the OCXO Time Source when network time is not used.

Time Zone Display Editor



1. Select the TZ template to activate and/or edit
2. Add or Remove selected display controls on the current display template

Clock with Label	Seconds
Clock only	Timer
Label only	World Map
Picture	Video

3. Selected the template name that will be used for the saved template
4. Edit the active TZ template using a grid background
5. View the active template on a black background
6. Close the active template
7. Save the active template to the selected template name.
8. Select a Font to use for time displays
9. Select a Font to use for Labels
10. Check for Template selection using the remote control, Uncheck for manual or automatic Page flipping.
11. Assign the desired template to one of six buttons on the remote control.

TZ Display Control in Configuration Mode

1. Select color for the time: red, green, blue, cyan, yellow, amber, magenta, white.
2. Select the time display format:

"hh:mm (24 hour format) "
"hh:mm:ss (24 hour format) "
"h:mm (12 hour format)"
"h:mm:ss (12 hour format) "
"h:mm AM/PM (12 hour format) "
"Julian 00d (leading zeros) "
"Julian ddd"
"Sunrise hh:mm (24 hour format) "
"Sunrise hh:mm AMPM"
"Sunset hh:mm (24 hour format) "
"Sunset hh:mm AMPM"
"Word Time (12 hour)"
"Word Time (24 hour)"

3. Zone Label and Text Line

Label Text Macros:

~01 = month
~02 = day
~03 = two digit year
~04 = hour
~05 = minute
~06 = second
~07 = four digit year
~08 = three digit Julian Date (day of the year)
~09 = hh:mm – hours:minute
~10 = dow – three character day of the week
~11 = dowlong – full day of the week
~12 = monofyr – three character month of the year
~24 = longmon – full month of the year
~14 = Sunrise (hh:mm) – Sunrise Time, 24 hour format
~15 = Sunset (hh:mm) – Sunset Time, 24 hour format
~16 = Sunrise (hh:mm AMPM)) – Sunrise Time, 12 hour format
~17 = Sunset (hh:mm AMPM)) – Sunset Time, 12 hour format
~18 = two digit month with leading zero

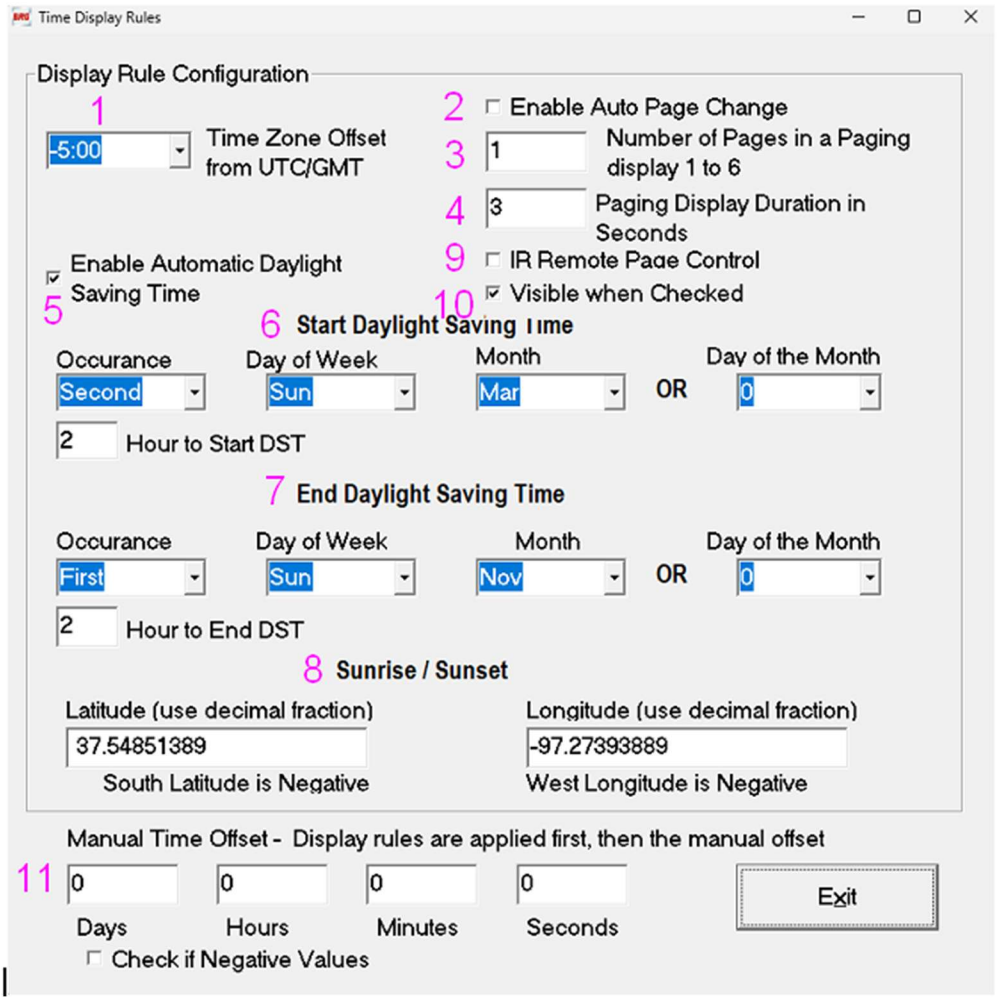
~19 = two digit day with leading zero
~20 = word time - 12 hour format (Example: 12:30 = Twelve Thirty PM)
~21 = word time - 24 hour format (Example: 23:00 = Twenty Three Hundred Hours)
~22 = hour – 12 hour format
~23 = AM or PM

4. Close all display control modules and return to the scheduler screen
5. Add a display control of the same type as the one selected
6. Delete the selected display control from the display
7. Hide the editing controls on the selected display
8. Display resizer control
9. Current display size
10. Open the time rule editing window
11. Display number
12. Select color for the label: red, green, blue, cyan, yellow, amber, magenta, white.
13. Select the time display format:

"Text Label"
"Date m-d-yy"
"TimeDate hh:mm m-d-yy"
"Date m-d-yyyy"
"Date d-m-yy"
"TimeDate hh:mm d-m-yy"
"Date d-m-yyyy"
"Date d-m"
"Date m-d"
"dd mon YY"
"dd longmon YY"
"dd longmon YYYY"
"mon dd, yyyy"
"dow mon dd, yyyy"
"dowlong mon dd, yyyy"
"dowlong mon dd"
"dow dd mon"
"dowlong dd mon"
"longmon dd, yyyy"
"Julian 00d (leading zeros) "
"Julian ddd"
"Sunrise hh:mm (24 hour format) "
"Sunrise hh:mm AMPM"
"Sunset hh:mm (24 hour format) "
"Sunset hh:mm AMPM"
"mon dd, yyyy Julian 00d"
"longmon dd, yyyy Julian 00d"
"dow mon dd, yyyy Julian 00d"
"dowlong mon dd, yyyy Julian 00d"
"dowlong longmon dd, yyyy Julian 00d"
"hh:mm dowlong longmon dd, yyyy Julian 00d"
"dowlong mon dd Julian 00d"
"dowlong longmon dd Julian 00d"
"Word Time (12 hour)"
"Word Time (24 hour)"

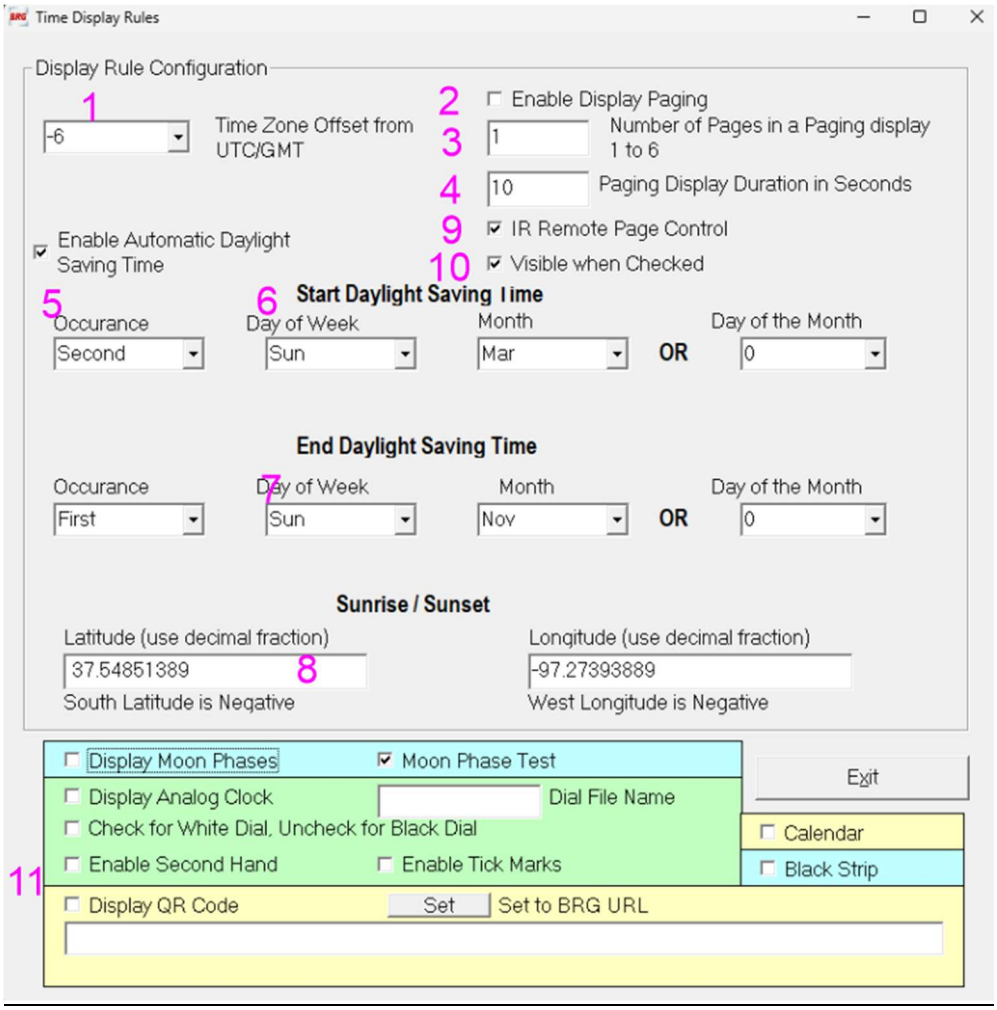
14. Scrolling Text – Double click to enable/disable scrolling text. The text moves from right to left. Enter the scroll speed from 1 to 100.
15. Time Justification – left, center, right
16. Label Justifiction – left, center, right
17. Relative height 1-180 – a lower value reduces the height and increases the width, a higher value insreases the height and reduces the width. Use in conjunction with the zoom value.

TZ Time Display Rules for all Controls except the Picture Control



1. Time zone offset from UTC time
2. Enable/Display page flipping
3. Number of pages to display
4. Page display duration in seconds
5. Enable/Disable Daylight Saving Time Rules
6. Configure Daylight Saving Starting time
7. Configure Daylight Saving Ending time
8. Lat/Long coordinates used for Sunrise/Sunset Displays
9. IR Remote Page Control
10. Time control is visible when checked
11. Manual Time Offset for Special Displays

TZ Time Display Rules for the Picture Control



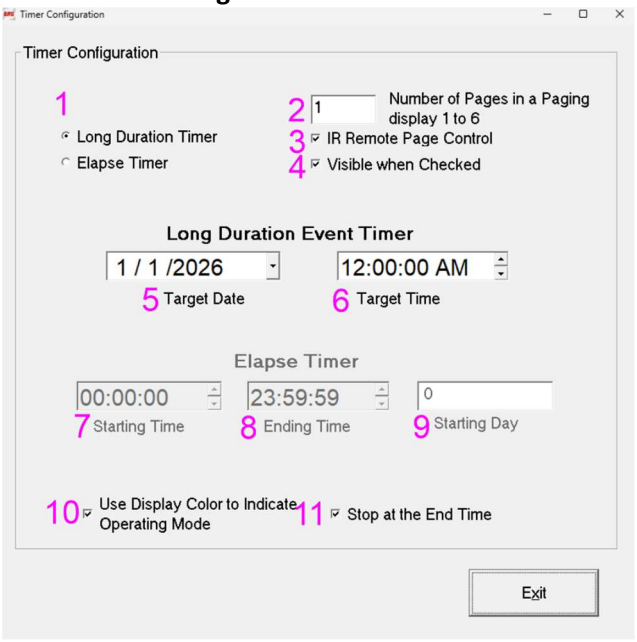
1. Time zone offset from UTC time
2. Enable/Display page flipping
3. Number of pages to display
4. Page display duration in seconds
5. Enable/Disable Daylight Saving Time Rules
6. Configure Daylight Saving Starting time
7. Configure Daylight Saving Ending time
8. Lat/Long coordinates used for Sunrise/Sunset Displays
9. IR Remote Page Control
10. Time control is visible when checked
11. **Select to display Moon Phases, Analog Clocks, QR Code, Monthly Calendar or black image. Uncheck all to display a graphic image file.**

Long Duration Event Timer

Count Up / Count Down Elapse Timer Display Control

A timer control can be used in place of, or in addition to any time zone. Only one Long Duration or Elapse Timer is available. The IR Remote Control is used to Start, Stop, Pause, Reset, select an Up or Down direction of an Elapse Timer.

Timer Rules Configuration

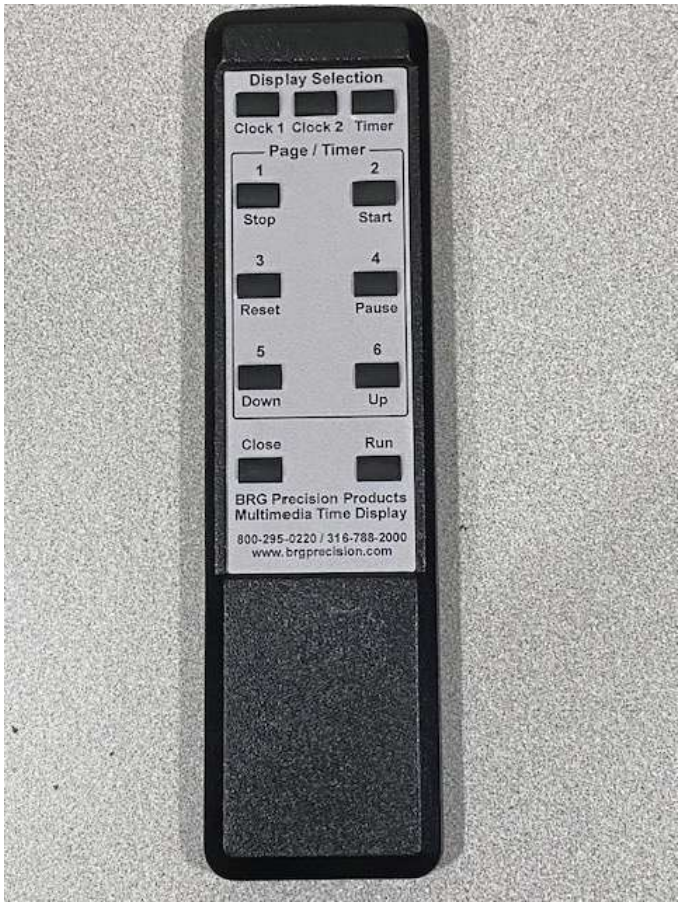


1. Long Duration or Elapse Timer
2. Page Number of the Control and/or the Number of pages to display
3. Use IR to change display pages
4. The selected page is visible when checked
5. Long Duration Target Date
6. Long Duration Target Time
7. Elapse Timer End time
8. Elapse Timer End time
9. Starting Day
10. Use display color when checked; otherwise, use default timer colors
11. Stop at the End time when checked

Available Timer Display Formats: d=days, h=hours, m=minutes, s=seconds

"hh:mm"	"hh:mm:ss"	"h:mm"	"h:mm:ss"	"dd hh:mm"
"dd hh:mm:ss"	"ddd hh:mm"	“ddddd hh : mm"	"ddd hh:mm:ss"	"ddd hh:mm:ss"
“ddddd hh : mm : ss"		"dddd hh:mm"	"dddd hh"	"dddd"

An Infrared Remote Control is included with every model. The remote allows running and stopping the clock program, controlling the page to display, and to control timer operations.



Worldview Remote (LCD Display)

LED Worldview Remote (LED+LCD Display)

An Infrared Remote Control is included with every model. The remote allows running and stopping the clock program, controlling the page to display, and to control timer operations.

Press the appropriate Display Selection button at the top before using the remote.

To control page changes, first press the Display button one time under Display Selection. Then press buttons 1 through 6. To control timer operations, first press the Timer button one time under Display Selection, then press the desired timer operation buttons. The Clock, Display and Timer buttons, located at the top, only need to be pressed when changing between Clock, Page and Timer operations.

To reboot the video display, press the Display button then the Run button, wait one second, then press the Close button.

To install a software update provided by the factory, insert the USB drive. Next press the Display button then the Run button, wait one second, then press the Close button.

Moving World Map Operating Instructions

Special Map Commands

1. **CTL-L – Toggles between Full Screen and Window Modes**
2. CTL-T – Save a Screenshot
3. (+) - Zoom In
4. (-) – Zoom Out
5. After zooming in, hold down the left mouse button to pan the map
6. Mouse Thumbwheel – Zoom IN and Out
7. Moving mouse cursor to the top of the screen while in full screen mode will display the configuration bar.
8. Moving the mouse cursor while in full screen mode will display an "X" at the top of the screen. Clicking on this indicator will change from Full Screen to Window Mode.
9. When using the mouse wheel to zoom, press and hold the Shift key cause a faster zoom change.

Hovering the mouse cursor over a button will popup help text

Basic Operations . . .

Closing all Display Controls

1. Double click on any time display. This will enable the editing controls for the selected display control. Left click on the "Close All" button to close all displays and return to the Schedule Editor.
2. Using the Remote Control, point the remote at the display and press the "Close" button to close all displays and return to the Schedule Editor.
3. If only a Video control or Moving Map is displayed, move the mouse pointer to the upper right of the display and left click on the "X" to close the display and return to the Schedule Editor.

Starting the Display

1. On the Schedule Editor, if the desired event is not already highlighted in the command/video list, then left click on it. Next, left click on the "Play Selected Item" button to start the selected event.
2. Pressing the "Run" button on the remote control will start the last event displayed.

How to …

LCD/LED Time Zone Displays

You can create a new time zone display from scratch or modify an existing time zone template. In either case, click on the Time Zone Display Editor button on the main screen to begin.

Create a new time zone template from scratch – Select an empty template from the Activate Template dropdown box. Next, Select one or more display controls to add to the template.

Modify an Existing Template – Select an existing template from the Active Template dropdown box.

Then, click on the Edit button to display the controls on a grid background.

Drag the controls into the desired position by left clicking in the center of the control and dragging.

Resize as needed using the slider tool at the top of the control.

Click on Time Rules to configure the zone offsets and daylight saving rules (if any).

Text may be entered for the label. If the text is longer than the length defined on the scroll limit field, located to the right of the text field, then the text will scroll to the left.

Clicking on Exit hides the editing buttons for the respective control

Clicking on Add will add a new control of the same type.

Clicking on Close All closes all controls and exits the editing screen.

If a video control is selected, it is advisable to double click on any playing video and pause it before any further editing. Double clicking on it again will resume play.

Exiting an Active Time Zone Display

The easiest way to close the time zone display is to press the Close button on the remote control. To restart the last displayed time zone configuration, press the Run button.

If a continuous play video is playing, first double click on it to pause video play. To close down the entire display, double click on one of the display zones. This will display the editing buttons. Click on the Close All button. This will close all display controls and return to the main schedule screen. If the display is in test mode, it will return to the time zone editor screen.

Page Flipping

Click on the Time Rules button on any control to configure page flipping. This feature allows more time zones to be displayed than the actual number of physical zones available. Up to six pages of zones per control are available. Pages can be configured to automatically flip or use the remote control to manually change pages. One control, all controls, or any combination may be configured to flip pages. The number of pages for each control can be different. The page flipping of all controls is synchronized and will begin at the top of the minute.

At the top of the Display Rules control window, first uncheck the Enable Display Paging checkbox. Enter the number of the first zone page, usually 1. Now configure the time zone offset and daylight saving rules for this zone. Exit the time rules window to configure color, size, display format and other parameters as needed. Return to the time rules window. Next, enter the number of the next page. Again, configure all parameters as needed. Enter the highest number of pages that are to display in the number of pages field. For example, if there will be three pages, then enter 3. Next, check the Enable Display Paging checkbox and exit the time rules window. Start the time zone display, either by using the test button in the time zone

editor or by activating the time zone display from the schedule. Paging will begin on or after the top of the next minute.

Template Selection

There can be up to six sets of display templates. Each template is a completely different display. For example, one selection could be a four zone display with world map and another selection could be a 16 zone display with organization logo. The templates can be directly selected using the remote control. If the templates include the world map or videos, they should configured as display controls, not run from the play scheduler. To configure template flipping, click on the Time Zone Display Editor button. Next, click the check box for remote control template switching at the bottom. There are six boxes at the bottom used to assign template number to each of six remote control buttons. Enter the desired template number in one or more of the six boxes.

Julian Date

There are format selections available on both time and label controls to display the Julian date (day of the year). The control must have the time rules configured for the control that is displaying the Julian date.

Customizing Text Lines and Zone Labels using Macros

The Time, Date, Sunrise, Sunset, Julian Date and date details may be combined with other text on zone labels and text lines in any order. The command structure is a tilde (~) followed by a two digit command.

~01 = month
~02 = day
~03 = two digit year
~04 = hour
~05 = minute
~06 = second
~07 = four digit year
~08 = three digit Julian Date (day of the year)
~09 = hh:mm – hours:minute
~10 = dow – three character day of the week
~11 = dowlong – full day of the week
~12 = monofyr – three character month of the year
~13 = longmon – full month of the year
~14 = Sunrise (hh:mm) – Sunrise Time, 24 hour format
~15 = Sunset (hh:mm) – Sunset Time, 24 hour format
~16 = Sunrise (hh:mm AMPM)) – Sunrise Time, 12 hour format
~17 = Sunset (hh:mm AMPM)) – Sunset Time, 12 hour format

Examples:

Julian Date: ~08 will display **Julian Date: 365**

~11, ~13 ~02, ~07 will display **Friday, November 15, 2024**

Today is ~11 will display **Today is Monday**

Changing Display Color

Once a display control has been placed in edit mode, there are color change buttons available for both time and label displays. Each click of the button will cycle through the available colors.

Display and Hide Editing Buttons

To place a display control into edit mode, double click on the center of the control. This will display various buttons used to configure the control. Double click on the control again or click on the Exit button to hide the edit buttons.

Long Duration Event Timer – An event timer is included to measure the duration of an event or to countdown to an event. Display Control number 50 is the timer. The timer control can be assigned to page one to always display or it can be placed on another page to replace a time zone on demand. The timer will continue to run in the background when hidden from view. Various display formats are available in the control.

The remote control is used to Start, Stop, Reset, and Pause the timer. First, press the Timer button at the top of the remote. The timer buttons will remain active until a Display button is pressed. The remote is also used to select the timer direction.

There are several parameters in the Time Display Rules button for the timer control. To access these parameters, double click on the time or label are of the timer display. Once the editing buttons appear, left click on the Time Rules button to display the available timer parameters.

Configuring Time Rules

You will need the time zone offset from UTC for each zone. In addition, for locations that observe daylight saving time you will need the DST rules.

Generative AI provides time zone offsets, DST rules and geographic coordinates for nearly all locations and points of interest worldwide. For example, go to ChatGPT.com and cut and paste the following:

Create a table listing the location, the specific time zone offset with colon without "UTC" and without DST applied, the beginning daylight saving time rule with hour to change, the ending daylight saving time rule with hour to change, latitude and longitude using positive or negative decimal notation with 8 digit precision for the following locations: Sydney, AU ; Kadena Air Base ; Travis AFB ; Denver, CO ; Derby, KS ; New York, NY ; Newfoundland ; London, England ; Paris, France ; Ramstein AFB

ChatGPT will create the following table:

Location	Time Zone Offset	DST Start Rule	DST End Rule	Latitude	Longitude
Sydney, AU	+10:00	First Sun in Oct, 02:00	First Sun in Apr, 03:00	-33.86882000	151.20929000
Kadena Air Base	+09:00	No DST	No DST	26.33520100	127.76859400
Travis AFB	-08:00	Second Sun in Mar, 02:00	First Sun in Nov, 02:00	38.25968400	-121.92733500
Denver, CO	-07:00	Second Sun in Mar, 02:00	First Sun in Nov, 02:00	39.73923600	-104.99025100

Location	Time Zone Offset	DST Start Rule	DST End Rule	Latitude	Longitude
Derby, KS	-06:00	Second Sun in Mar, 02:00	First Sun in Nov, 02:00	37.54557700	-97.26870500
New York, NY	-05:00	Second Sun in Mar, 02:00	First Sun in Nov, 02:00	40.71277600	-74.00597400
Newfoundland	-03:30	Second Sun in Mar, 02:00	First Sun in Nov, 02:00	47.56151000	-52.71257600
London, England	+00:00	Last Sun in Mar, 01:00	Last Sun in Oct, 02:00	51.50735100	-0.12775800
Paris, France	+01:00	Last Sun in Mar, 02:00	Last Sun in Oct, 03:00	48.85661300	2.35222200
Ramstein AFB	+01:00	Last Sun in Mar, 02:00	Last Sun in Oct, 03:00	49.43688900	7.60029900

NOTES:

1. **Time Zone Offset**: Reflects standard time without daylight saving time (DST).
2. **DST Rules**: Adjustments are specified for the local time at which the change occurs.
3. **Latitude/Longitude**: Provided in decimal degrees with eight decimal places of precision.

Replace the list of locations and points of interest with your list and submit to ChatGPT.

Entering the time zone offset and daylight saving rules

Click on the Time Rules button on any control to configure the time display rules for each respective zone. Next, select the hour offset from UTC using the dropdown box. If the zone uses Daylight Saving time, then check the Enable Automatic Daylight Saving time checkbox. Then, enter the starting and ending Daylight Saving time rule for the zone.

Configuring and Displaying Sunrise / Sunset Times

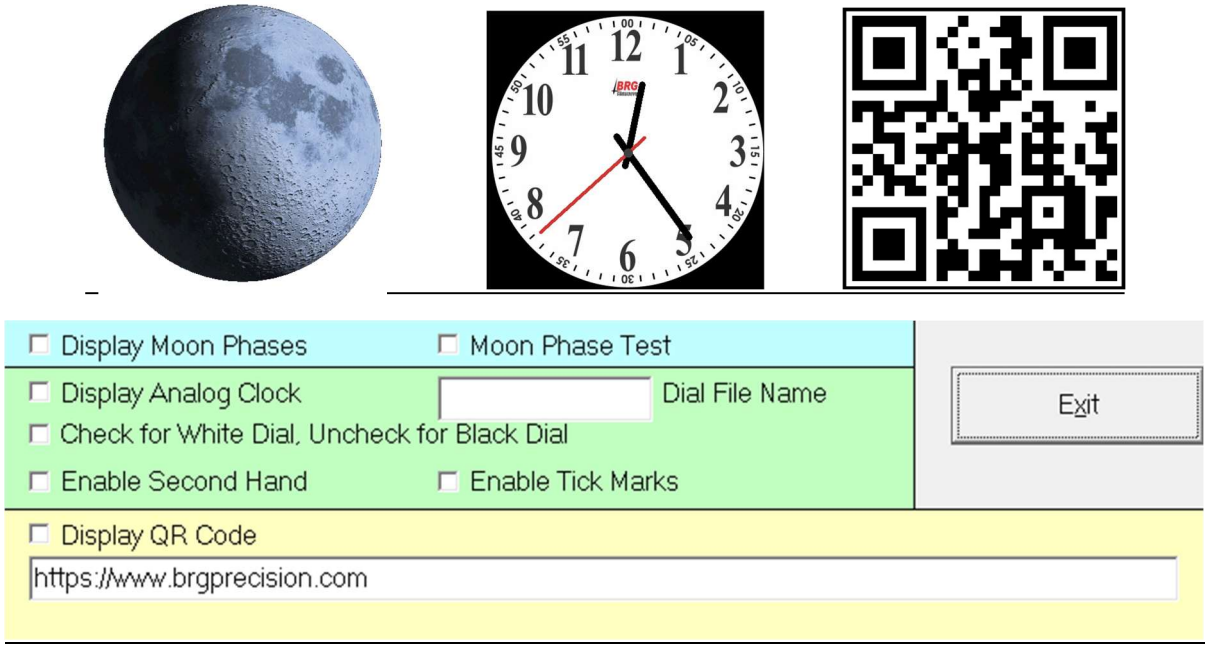
Sunrise/Sunset times may be displayed on both time and label controls. The time rules must be configured for any zone that is displaying sunrise/sunset time. This includes the offset from UTC, daylight saving rules, and the Latitude/Longitude coordinates of the zone location. This information can be easily obtained from ChatGPT.com or other AI sources. Use the example above to obtain the needed information from ChatGPT.

Display Types

The above screenshot illustrates four types of time displays available. The top line is displaying one of the text date formats. The second line is displaying a Word Clock format. Word Clocks are available in 12 or 24 hour format. The third line is a conventional digital time display. The bottom object is an analog clock display using a picture control format.

Moon Phase, Analog Clocks and QR Codes

The Time Display Rules screen for the Picture Control includes check boxes at the bottom of the window for displaying Moon phase, analog clocks and QR Codes. When displaying Moon phases, set the time zone to UTC by setting the offset to zero and disabling daylight saving time. If the QR code text field is blank, the time will be displayed using QR code.



Mounting the Display Vertically

If the display is be mounted vertically (long side of the display in the vertical position) then the screen must be changed from Landscape to Portrait mode. To change the screen orientation, right click on the

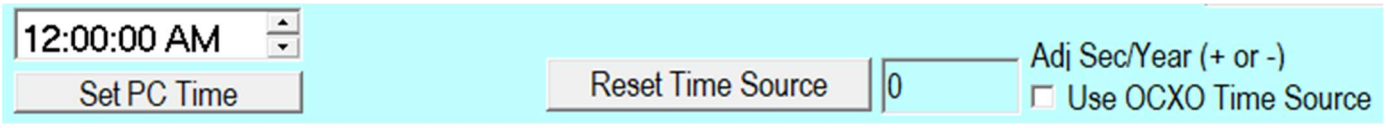
Windows desktop. Select Display Settings from the popup window. Scroll down to Display Orientation and select Portrait. Click on "Keep Changes" to keep the portrait orientation. The clock design controls will work normally with the new orientation.

Scrolling Text.

Text may be displayed that is longer than the available space on the label field by double clicking the speed field to the right of the text entry field. Double click this field again to stop the text from scrolling, The speed field determines the relative scrolling speed with 1 being the slowest speed and 100 the fastest speed.

Reset System Time

The Worldview Time Zone display uses a "Learning" Oven Controlled Crystal Oscillator (OCXO) time base to maintain the display's time when connected to mains power. During shipping and while in storage, the time is maintained using a capacitor backup and runs at a lower accuracy. If the display is in transit or storage for an extended period, the time could drift to an unacceptable level.



To set the PC time, enter the time into the "Set Local PC Time" field so that it's slightly ahead of the reference clock time. Then, when the time entered exactly matches the time on the reference clock, click the "Set PC Time" button. For Example, if the current time is 10:51:35 AM, enter 10:52:00 AM. When the reference clock time exactly matches the time entered, click the "Set PC Time" button.

The OCXO will maintain accurate time while connected to external power. Check to enable the OCXO when network time is not used. A momentary loss of power will have little effect on time accuracy. The Windows PC default local time is configured to U.S. Central time with Daylight Saving rules enabled. When manually resetting the PC time, enter the current CST or CDT time and date, or however Windows time zone rules are configured.

Learning OCXO Time Base – Next to the "Reset Time Source" button on the Scheduler screen is a field for adjusting the OCXO time base. This is the number of seconds per year to add or subtract from the time base. The Scheduler program will automatically calculate this value whenever the Time Reset button is pressed. Example: It's been two years since the last time update and the clock is now running one minute fast. First, correct the PC time as described above. It's recommended to use a time source that's split second accurate. Next, click on the time reset button. The Scheduler will send Windows time to the OCXO time base. In addition, the Scheduler will automatically calculate the deviation over time and update the adjustment field as needed. In this example, -30 will appear in the field to slow the clock down 30 seconds per year. The OCXO time base "learns" to be more accurate with each time update. This effectively cancels deviation associated with natural crystal aging and other factors.

World Map Display

Saving Changes – To exit and save any changes to the map configuration, left click on the "X" at the upper right corner of the display window.

Zoom and Pan to Areas of Interest on the Map – If the wireless keyboard is available, first turn on the power switch on the side of the keyboard. Then press and hold the button that represents the left button on

a mouse. Next slide a finger over the slider located on the touchpad. Alternatively, use the plus (+) and minus (-) keys to zoom in and out.

Once zoomed into an area press and hold the left button again. Next, use another finger on the open area of the touchpad to reposition the map to the desired location. When through using the wireless keyboard, turn it off using the switch on the side of the keyboard.

The map will remain at the selected zoom and pan location through power cycles.

Turn Nighttime Shading On and Off – There may be times when it's advantageous to disable the nighttime shading feature, such as when zooming in and panning to other areas of the globe. Move the mouse cursor to the top of the screen until the configuration bar displays. Click the "Greyline" tab. Click on the "Show" button to toggle shading on and off.

Display a Digital Clock on the Map – Move the mouse cursor to the top of the screen until the configuration bar displays. Click on the Clock tab to make changes to the clock display. Changes include type font and style, size, screen location, local or UTC time, offset from UTC time, date, displays seconds or not, and more. Click the Show button to display or remove the clock(s).

Display Sunrise and Sunset Times for the Home location - Move the mouse cursor to the top of the screen until the configuration bar displays. Click on the Sunrise tab. Click the Show button to display or remove the Sunrise/Sunset times.

Define Home Location - Move the mouse cursor to the top of the screen until the configuration bar displays. Click on the Stations tab. The home location is used to center the map. In the Home section, click on Configure. Click on Lat/Long. Enter the Lat/Long values for your home location. There is a link next to these value fields that will take you to Google Maps. Once there, move to your home location on the map and click on it. Google Maps will display the Lat/Long values for this location. Enter the proper directions and values. Don't use negative values. Don't change the Locator value. Enter the home location name and set the desired time zone for this location. Click the OK button.

Display Custom Points of Interest Labels - Move the mouse cursor to the top of the screen until the configuration bar displays. Click on the Stations tab. In the Manage section, click on Definitions. The table is already configured with points of interest examples. To delete an existing point of interest from the table, first click on the desired item, then click on the delete button. To add a point of interest label, click on the Add button. Enter the Lat/Long values for point of interest location. There is a link next to these value fields that will take you to Google Maps. Once there, move to the point of interest location on the map and click on it. Google Maps will display the Lat/Long values for this location. Enter the proper directions and values. Don't use negative values and don't change the Locator value. Enter the point of interest name location name and set the desired time zone for his location. Click the OK button. In the Show section of the configuration bar, click on the Stations button to toggle the display of the points of interest. In the Show section, you can also configure various details to be included with the points of interest labels. The size of the labels is controlled by the font size in the Manage section. Clicking the green pin heads on the configuration bar centers the map on the selected point of interest.

Connect the Time Zone Display to a Computer Network – If the bottom message ticker is displayed then, using a keyboard with touchpad, close down or minimize the message ticker. Left click on the down arrow or "X" close buttons located at the right end of the ticker. Next, left click anywhere on the world map, then press CTL-L to reduce the map size. Move the mouse arrow to the bottom of the screen to popup the Windows task bar. At this point, use normal Windows tasks to configure the Wi-Fi or hardware

network connections. You can enter "Network Connections" in the search box to locate the network configuration screen.

Google Earth

Display Google Earth – A network connection is required to use this feature. Google Earth may be displayed in several ways. It can be displayed directly by pressing CTL-L to minimize the World Map. Then double click on the Google Earth icon to start the program. Google Earth will start up in the last saved zoom and pan location. There are various ways to control and configure Google Earth. For more help, go to the tool bar at the top of the screen and click on the Help > Help Resources. To save the current Pan and Zoom location, click on View > Make this my start location. To end the Google Earth session and return to the World Map, close Google Earth. Next, click on the World Map program and enter CTL-L to maximize the map.

Another way to start Google Earth is to use the Media Scheduler. First press CTL-L to minimize the World Map. Drag the map program over if it's covering the Media Schedule program. Entries may be added to the run schedule to start and stop Google Earth. For example to start Google Earth at a specified time, click on the "Create New Alarm Record" button. In the alarm name field, enter "RunGoogleEarth" or "Run Google Earth", without quotes. Then press the Enter key. Next, select the desired Play Function. The program may be started at a specified time, or started periodically, such as once per hour. It can also be configured for manual start only. To stop Google Earth and start the World Map, click on the "Create New Alarm Record" button. In the alarm name field, enter "RunWorldMap" or "Run World Map", without quotes. Then press the Enter key. It can be scheduled to start some time following the start of Google Earth.

Message Tickers

Change the message ticker default content – Change the message ticker – by default, the message ticker displays the contents of a text file. To change the message, left click on the ticker message. Notepad will popup displaying the contents of the current message file. Change as needed and save the file by typing CTL-S. Close the text editor by left clicking on the "X" in the upper right corner. Refresh the message ticker by hovering the mouse pointer over the message ticker, then press function key F5

Display News or other information on the message ticker – The message ticker is capable of retrieving and displaying information from public News and Information feeds. These feeds are typically a web site that supports the RSS feed format. All you need to do is point the message ticker to one or more of these web sites. Feeds can be found by searching the web for categories of feeds such as "news RSS feeds" or "weather RSS feeds" or "science RSS feeds" Once an RSS feed is selected, copy the URL from the browser and enter it into the message ticker by left clicking on the three lines at the left end of the message ticker. Next, click on File, then Manage Feeds. Paste the URL copied to the URL line in the Desktop Ticker configuration screen. Click the "Add" button. The URL will be added to the list. Click on one or more check boxes next to the URL's for the feed you want to display. Click the OK button to save and exit the configuration window.

Remove the message ticker – First left mouse click on the "x" on the right end of the ticker. Then left click on the map. Next, type CTL-L to reduce the map window size of the map . On the bottom of the Schedule Editor window, change the Number of Tickers to 0 and press enter. Left click on the map window, then press CTL-L to change the map to full screen.

Videos

There are three video players available. The appropriate video player will be used depending on the required function. One video player is used to play inset videos at up to seven locations on the screen. Another video player is used when full screen play is required. A third video player is used when a continuous play, re-sizeable and relocatable video control is needed for time zone displays. This video player can be dragged into position and then resized. Files to play are selected by moving the mouse to the right side of the video window. It's advisable to pause this video window by double clicking on it before performing any operations on it. Double click on the video to resume play.

Stop Scheduled Video Play and return to the World Map – Type CTL-L to reduce the map window size of the map. Find the Schedule Editor. You may need to move the map to the side of the screen to find the Media Play Schedule Editor. To stop schedule video play, uncheck the "Enable Scheduler" check box. Leave the schedule window open as this program is also used to synchronize time between the LED time zone clock and the Media Player. Click on the map and type CTL-L to return to full screen mode.

Naming Videos – The file name structure for video files is NNN.HHMMSSDDD…DDD.MP4 where NNN is the fixed length file number from 001 to 999, a period (.) separates the file number and the play length, HHMMSS is the optional video play length in hours, minutes and seconds, DDD…DDD is the optional variable length description. MP4 is the video type. Various other video types are acceptable. The minimum required file length is NNN.MP4 where NNN is the file number.

Play videos located on a USB drive plugged into the jack on the side of the clock – When a USB drive is plugged into the side of the clock, it will usually be assigned to drive D. The path will need to be changed in the Schedule Editor. Reduce the map size by typing CTL-L and locating the Schedule Editor. Change the video file path on the lower left area of the editor screen.

Video file names use the following format: NNN.HHMMSSDDD…DDDD.MP4
Where:
NNN = file number 001 to 999
HH = play length hours
MM = play length minutes
SS = play length seconds
DDD = Description
MP4 = video file type

While videos are playing, pressing the right arrow key will step forward in the video. Multiple press can be used to end the video.

To play a video either at a scheduled item or immediately, it must first be entered into the schedule. Click on the "Create New Alarm Record" button. Then enter the three digit file number (001-999) into file name area at the center of the screen, then press Enter. At this point, you can play the video immediately by clicking on the "Play Selected Item" button. Pressing "q" while the video is playing will stop video play and return to the schedule screen.

There are a few ways the video can be scheduled to play. To play at a specific time, select "Play once at the scheduled time" from the Play Function drop down list. Then enter a time to play. The video will play every day at the specified time, unless some days are omitted using the day selection buttons and check boxes. To play the same video multiple times, simply add more play schedules with different play times.

If you have 10 videos you want to play at one specified time, you can name them as a sequence of file number such as 050 to 059. In the file name area of the schedule entry, use 050TO059 for the file name, then press Enter. Text after the eight digit file number range is ignored. When it's time to play, the videos will play one at a time, in sequence. When the sequence concludes it will start over.

There are also periodic play functions that will play videos throughout the day without the need to enter a play time. Using the functions with one or more schedule entries allows periodic play every 5, 10, 15 20, 30 or 60 minutes. Combine this with the play range feature to have a different file play each time a video plays.

By default, videos play full screen. However if a two digit screen location identifier is included after the schedule file number, then the video will be placed on top of the world map in a small window at the location specified by the two digit identifier. Valid play window locations are Upper Left (UL), Upper Center (UC), Upper Right (UR), Lower Left (LL), Lower Center (LC) and Lower Right (LR).

Display Video in a Small Screen on top of the World Map – the media player supports picture-in-picture mode. Videos may be scheduled to play on a small screen in up to six different locations on the screen, Upper Left (UL), Upper Center (UC), Upper Right (UR), Lower Left (LL), Lower Center (LC) and Lower Right (LR). By default, videos play full screen. However if a two digit screen location identifier is included after the schedule file number, then the video will be placed on top of the world map in a small window at the location specified by the two digit identifier. For example, a schedule file name entry of 035LL will place video 35 on top of the world map in a small window in the lower left area of the screen. A schedule file name of 011to200UC will play one file from a sequence of file names 11 through 200 at the specified time and placed on top of the word map in a small window located at the top center of the screen. When the scheduled play time is activated, a different video will play from the specified sequence.

The two digit screen location designator may optionally be followed by a single digit magnification designator 0 through 9. For each step of magnification the widow size will be increased 100 pixels, with 0 being no magnification and 9 being 900 pixels magnification. Example, a schedule entry of 011to100LL5 will cycle through a range of videos, playing one video per schedule instance, with file names 11 to 100. The video will display in the lower left (LL) corner of the screen.

If a full screen video and a windowed video are scheduled to play at the same time, the windowed video will be placed on top of the full screen video (picture-in-picture).

Add New Videos - New videos may be added using the USB port located on the left side of the display. First, plug the USB drive containing the video(s). Minimize the world map by pressing CTL-L to access Windows functions and features. Pressing CTL-L again restores the map to full screen. The videos may be played directly from the USB drive by changing the file path on the Schedule Editor screen. Or, the videos may be copied to the display from the USB drive to C:\videos. Before copying the videos to the display, they must be named starting with 201 and above so as not to conflict with already installed videos. The file name must begin with three numbers, optionally followed by any text to further identify the video. Existing videos on the display may be deleted to make room for more videos. In this case, the file number may be reused. Once the videos are copied to the display the USB drive may be removed.

Other Information

Display a LOGO or other image on the screen. (See Also Time Zone Displays) – There are several ways to display a logo on the map. The most common way to display a logo is to use an image control. (control numbers 37-44, 49, 87-94, 99).

The World Map logo feature may also be used by going to View > Logo. Select a file and display it in various sizes and locations on the screen. Another way to display a logo or other image is to use the Media Scheduler. Most popular image formats are supported. Press CTL-L to minimize the map and access the media scheduler. Then create a new schedule entry by clicking on "Create New Alarm Record". If the image file name is "201 NASA Logo.JPG" (must begin with three numbers) then enter 201, followed by the screen location identifier such as UL for upper left. Next enter the image designator JPG followed by a three digit play time in sections. The complete entry would be "201UL JPG900", where the 900 indicates the logo will display for 900 seconds, or fifteen minutes. If you want the logo to display continuously, then make for schedule entries to play the logo every fifteen minutes. To increase the logo size, a single multiplier digit may be included after the screen location identifier. For example, an entry of "201UL5 JPG900" (note the "5" after the "UL") will enlarge the image. The "Insert Video Size Multiplier" at the bottom of the scheduler screen can also be used to adjust the image size. This value is multiplied times the single digit value to obtain the total image size.

Enable/Disable Display Power Down – To extend the life of the display, the Scheduler is configured to power off Monday through Friday at 8:00 pm and 6:30 am on weekends. It will power on every day at 6:00 am. To edit the power down times or days, access the Schedule Editor. Search the schedule list for "POWEROFF" or "POWERDOWN". By default, there is one entry for week days and one for weekends. You can edit the power down times or days. To stop the power down and display the map continuously, delete the "POWEROFF" schedule entries. The power on time is controlled by a setting in the system bios which is set to 6:00 am by default. This can be changed by editing the appropriate entry in the system bios. To return to selected display, click on the desired action in the schedule lost. Then click on the Play Selected Item button.

Access and Control the Display from a Remote Computer - The display may be remotely accessed and controlled for technical support purposes for simply controlling the display remotely. To enable remote access, first left click on the map, then press CTL-L to reduce the map size. Double click the Remote Access icon on the desktop. This program will produce a user ID and password. On the remote PC, using a browser, go to the web site dwservice.net . Enter the user ID and password provided. The Scheduler screen will then display on the remote computer.

Format the Display to Hang Vertically - With the display in the horizontal (landscape) position, exit out of the current display by pressing the Close button on the remote control. Right click on the Windows desktop. On the window that pops up, click on Display Settings. Scroll down to Display orientation and select Portrait from the dropdown box. Click on Keep Changes to save the orientation. Rotate the display to the vertical position (portrait) and click on the Time Zone Display Editor button in the Media Play Schedule Editor program. Select an empty template from the Active Template dropdown box. From the Add or Remove Display Controls dropdown box, check the desired display controls. You can add more later. Click the Edit button to drag controls into position and resize as needed. Change the time rules, colors and other parameters as needed.

Reboot The Display - To reboot the display, press the Run button on the remote control, immediately followed by the Close button.

Remote Operation – Some operations may be performed remotely over a network, such as displaying images, animations, commands to start and stop videos, and more. Remote operation is performed by writing text commands to a file with the name "MediaCommand.INI". This file can be located on the display or a shared network folder. The Video File Path on the Schedule Screen determines the location of the command file.

All commands in the MediaCommand.INI file use the following format:

[MediaCommand]
Command=CommandHere

Where "CommandHere" is the command to send to the display. For example, to display a JPG image file called CLASSIFIED.JPG , write the following command to the INI file:

[MediaCommand]
Command=classified.jpg

MediaCommand must be in brackets. The display will immediately show the image and will remain on screen until it is removed with the following command:
[MediaCommand]
Command=stopimage

Once the image is displayed, it can be resized and positioned as needed using the keyboard provided with the display. Subsequent plays will use the established image size and location.

You can display the next image without first stopping the previous image.

Displaying an image:

The image file name must end with file types .JPG, .BMP, .PNG, .GIF, .MOV or .MP4
JPG, BMP and PNG are fixed image formats
GIF is a fixed image and animation format
MOV and MP4 are video formats. Video files will loop endlessly by default

This image file name must be less than 40 characters in length and not contain spaces

Other available commands:

RUNGOOGLEEARTH - Displays Google Earth
RUNWORLDMAP – Display an active World Map
STOPIMAGE – Stops a previously run image
STOPMAP – Stop displaying the active World Map

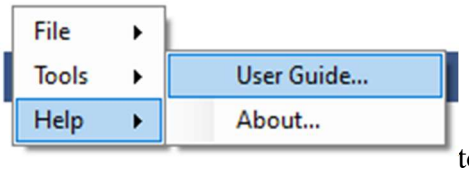
Desktop Ticker

Access the Desktop Ticker User Online Manual

An extensive online user manual is available for the Desktop Ticker program. To view the manual, enable the Desktop Ticker program by entering 1 for the number of tickers to display

located in the lower left corner of the Schedule Editor screen. The Desktop Ticker will display on the screen.

Next, click on the three horizontal lines on the left end of the ticker.

Then click ”User Guide”  to display the full user guide.

WARRANTY AGREEMENT

BRG PRECISION PRODUCTS ONE YEAR WARRANTY

1. Term of Coverage

Coverage will be for 1 year. Claims must be made during the Warranty Period. This Agreement is not renewable. The warranty becomes null and void if complete payment is not made within the terms specified under Terms of Payment.

2. Warranty

BRG Precision Products, Inc. warrants the Product against defects in workmanship and materials during the Coverage Period.

3. Coverage

BRG Precision Products, Inc. will, at its option, repair or replace the defective Product free of charge, provided that you notify BRG Precision Products, Inc. of the Product defect within the Coverage Period, and provided that BRG Precision Products, Inc. through inspection establishes the existence of such a defect and that it is covered by this Agreement. BRG Precision Products, Inc. will, at its option, use new and/or reconditioned parts in performing warranty repair and building replacement products. BRG Precision Products, Inc. reserves the right to use parts or products of original or improved design in the repair or replacement. If BRG Precision Products, Inc. repairs or replaces a Product, the warranty continues for the remaining portion of the Coverage Period without extension. All replaced Products and all parts removed from repaired Products become the property of BRG Precision Products, Inc. BRG Precision Products, Inc. covers both parts and labor necessary to repair the Product, and return shipment to the Customer via a BRG Precision Products, Inc.-selected non-expedited surface freight within the contiguous United States and Canada. Alaska and Hawaii return shipments to the Customer are via non-expedited air freight.

4. What Is Not Covered

This Agreement does not cover costs related to the removal, installation, or field troubleshooting of the Product under the terms of the Agreement if, and not limited to:

a) the Product has been misused, neglected, improperly installed, physically damaged or altered, either internally or externally, or damaged from improper use or use in an unsuitable environment;

b) the Product has been subjected to fire, splashed water (unless specifically ordered to be water resistant), submersion into any liquid, generalized corrosion, biological infestations, or high input voltage including lighting strikes and generators operating outside the limits of their Product specifications;

c) repairs have been done to it other than by BRG Precision Products, Inc. or its authorized service centers, or as assigned by BRG Precision Products;

d) the Product is used as a component part of a Product expressly warranted by another manufacturer;

e) the Product's original identification (trade-mark, serial number) markings have been defaced, altered, or removed;

f) the Product is located outside of the United States and Canada;

g) the customer has misrepresented the Product information provided to BRG Precision Products, Inc. in order to receive coverage under the terms of this Agreement. This Agreement does not warrant uninterrupted or error-free operation of the Product;

h) Product malfunction or damage resulting from electromagnetic or solar radiation;

i) Shipping charges to the factory more than 30 days after first receiving the product;

j) Undesirable operation resulting from changes to public law after the product was purchased, such as changing

the dates for daylight saving time.
k) Normal wear and tear relating to the non-operating functions of the equipment such as discoloration from direct sunlight, heat, etc.

5. Disclaimer and Limitation of Liability

TO THE EXTENT PERMITTED BY APPLICABLE LAW, OTHER THAN THE EXPRESS WARRANTY SET FORTH IN THIS AGREEMENT, BRG PRECISION PRODUCTS, INC. MAKES NO ADDITIONAL WARRANTIES, EXPRESS OR IMPLIED, AND DISCLAIMS ALL IMPLIED WARRANTIES, WHETHER IN FACT OR BY OPERATION OF LAW, STATUTORY OR OTHERWISE, INCLUDING WARRANTIES OR CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. ANY WARRANTIES THAT MAY NOT BE DISCLAIMED UNDER APPLICABLE LAW ARE LIMITED IN DURATION TO THE WARRANTY PERIOD. NO WARRANTIES, EXPRESS OR IMPLIED, WILL APPLY AFTER THIS PERIOD. IN NO EVENT WILL BRG PRECISION PRODUCTS, INC. BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, LOSSES, COSTS OR EXPENSES HOWEVER ARISING WHETHER IN CONTRACT OR TORT INCLUDING WITHOUT RESTRICTION ANY ECONOMIC LOSSES OF ANY KIND, ANY LOSS OR DAMAGE TO PROPERTY, ANY PERSONAL INJURY, ANY DAMAGE OR INJURY ARISING FROM OR AS A RESULT OF MISUSE OR ABUSE, OR THE INCORRECT INSTALLATION, INTEGRATION OR OPERATION OF THE PRODUCT. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU. BRG Precision Products, Inc. neither assumes nor authorizes any other person to assume for it any other liability in connection with the repair or replacement of the Product.

6. Claim Limits

Claims are limited to repair or replacement, or if in BRG Precision Products, Inc.'s discretion that is not possible to reimbursement up to the purchase price paid for the Product. In no event will BRG Precision Products, Inc.'s liability under this Agreement exceed the purchase price paid for the Product.

7. Cancellation

You may cancel this Agreement by providing to BRG Precision Products, Inc. written notice of your wish to cancel.

8. Insurance

This Agreement is not a contract of insurance.

9. Amendment and Waiver

No amendment, supplement, consent or waiver, express or implied, to or of any provision of this Agreement will be effective unless in writing signed by the parties hereto and then only in the specific instance and for the specific purpose given.

10. Assignment

The Customer may assign or transfer this Agreement provided BRG Precision Products, Inc. is advised by the Customer in writing of such assignment and the new system owner's information.

11. Governing Law

This Agreement will be governed by and interpreted exclusively in accordance with the laws of the State of Kansas, without reference to provisions concerning conflicts of laws. The provisions of the United Nations Convention on Contracts for the Sale of Goods are hereby excluded.

12. Arbitration

Any controversy or claim arising out of or relating to this Agreement, or the breach of it, shall be settled by arbitration in accordance with the relevant rules of the American Arbitration Association, and judgment on the award rendered by the arbitrator may be entered in any court having jurisdiction thereof. The place of arbitration

shall be Wichita, Kansas, United States of America. There shall be one arbitrator.

13. Severability

If any provision of this Agreement is found by any court or arbitrator to be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions will not be affected thereby.

14. Entire Agreement

This Agreement constitutes the entire contract between the parties concerning the subject matter of this Agreement and supersedes all marketing brochures and other expectations, understandings, communications, representations and agreements, whether verbal or written, between the parties. THIS AGREEMENT GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

Once a return authorization number is obtained, ship the products to:

BRG Precision Products
Attn: RA# xxxxxxx (where xxxxxxx is the authorization number provided)
600 N. River
Derby, KS 67037

Optional Extended Warranty:

A two-year extended warranty is available. The extended warranty must me purchased before the end of the standard warranty. The two-year extended warranty costs 20% of the product purchase price.

Optional Advanced Replacement Service ("Hot Swap"):

For critical applications, BRG Precision Products recommends purchasing a complete backup product. If a backup product is too expensive or the application is only semi-critical, BRG Precision Products recommends the optional

Replacement Service ("Hot Swap")

This service allows the customer to receive a replacement product right away to replace a defective product that is

covered under warranty. BRG Precision Products will pay for ground shipping to send the replacement product. The customer is responsible for expedited shipping charges over the cost of ground shipping. The customer is responsible for shipping charges to return the defective product. The Replacement Service is only available for shipments to the U.S. and Canada.

When the customer receives the replacement product, the defective product must be returned to the factory within 30 days. The invoice for the replacement product will then be voided; otherwise, the full invoice amount for the replacement product is due. This service is only available in conjunction with warranty repairs.

This replacement service may be purchased for 10% of the products purchase price at the time of the initial purchase. The replacement service may also be purchased after the initial product purchase and before the standard warranty expires for 15% of the product purchase price. The term of this service ends when the warranty expires. This service may be repurchased for 10% of the product purchase price when a two-year extended warranty is purchased. The product replacement service is only available on selected models.

30 Day Return Policy:

No returns will be accepted without prior written authorization of BRG. Incorrect merchandise received will receive prompt re-shipment of correct items. Incorrect merchandise, other than custom items, may be returned, shipped prepaid, and will be exchanged on an equivalent basis.

Merchandise, other than custom items, that cannot be used may be returned at a 25% restocking charge if items are shipped prepaid in the original boxes. Carrier is responsible for parts damaged in shipment. The customer should have driver sign for damaged carton on delivery receipt and make a claim with the freight company. Please insist that the carrier's representative conduct an inspection, and retain all packing materials for the inspector. Please report promptly for immediate follow-up on short shipments. No action arising from any sale by BRG may be brought by a customer more than one year after the date of shipment.

Terms of Payment:

New accounts require prepayment. International orders require prepayment by Telegraphic Transfer (bank wire). For established customers, payment is due in full within 30 days from invoice date. Other payment methods include Visa, Mastercard, American Express, Discover, Novus (Domestic Only). Add 4% for ground shipping in the U.S. and Canada. Domestic shipping is prepaid for U.S. Government orders. Other shipping methods are available. All past due accounts will be subject to a finance charge of 1.5% per month. BRG may cancel or delay future deliveries if customer fails to make prompt payment or if customer's financial condition warrant such action in BRG's opinion. BRG is not responsible for delays. The customer will be contacted and given the choice of receiving a partial shipment or waiting for the full shipment. The firmware license may be suspended, limiting functionality of the equipment, if payment is not received within 90 days.

Pricing:

BRG Precision Products reserves the right to change prices without prior notification. Prices do not include taxes and BRG reserves the right to arrange for insurance on all orders.

The courts of Sedgwick County, Kansas will have exclusive jurisdiction and venue over any disputes arising from any sale by BRG and customer and Buyer consent to personal jurisdiction of the federal and state courts located in Sedgwick County, Kansas. If legal action is brought by BRG for the collection of any amount owed or due to any other dispute, the prevailing party will be entitled to recover its reasonable attorneys' fees and costs incurred. These items constitute the entire agreement between BRG and customer, regardless of any additional or conflicting terms on customer's purchase order or other documentation, which are objected to, or any prior discussions or usages of trade. All sales by BRG are made only on the terms and conditions contained herein.

BRG Control Software License Agreement

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IMPORTANT!

CAREFULLY READ THE FOLLOWING TERMS AND CONDITIONS.

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This Agreement shall be governed by the laws of the State of Kansas.

Limited Warranty

BRG Precision Products, Inc. warrants that the original software disk(s) are free from physical defects in material and workmanship under normal use for a period of sixty days from the date of purchase. If during this warranty period you discover that the software disk(s) contains a physical defect, return the defective item along with proof of purchase to BRG Precision Products, Inc. and you will receive a replacement at no charge. This is your sole and exclusive remedy for breach of warranty.

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The above exclusions may not apply to you. This warranty provides you with specific legal rights. There may be other rights that you may have which vary from state to state.

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This Agreement constitutes the entire agreement and understanding between the parties and supersedes any prior agreements, representations, or understandings, whether oral or written, relating to the Software.

This Agreement shall be governed by the laws of the State of Kansas.

Limited Warranty

BRG Precision Products, Inc. warrants that the processors or memory use to store the software is free from physical defects in material and workmanship under normal use for a period of sixty days from the date of purchase.

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The above exclusions may not apply to you. This warranty provides you with specific legal rights. There may be other rights that you may have which vary from state to state.