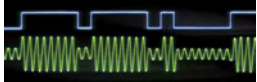


Symmetricom time displays are designed to provide widely visible time to local or remote areas. Ranging in character size from 0.5 inches to 4 inches high, these displays can be mounted in instrumentation racks, consoles, on ceilings/walls or desktop areas. Our Airborne Time Display is a small and rugged airborne display that can be mounted in a standard aircraft instrument panel.

All of Symmetricom's time code products are available with several optional configurations, and several are capable of displaying countdown time.



# Network Time Displays

## NTP Referenced Clocks

### KEY FEATURES

- Digital and Analog Clocks Automatically Synchronize with NTP Network Time Servers Over an Ethernet Network
- AC or Power-over-Ethernet configurations
- Remote Network Configuration Management
- All International Time Zones
- Daylight Savings Support
- High Quality, Professional Appearance
- 2 or 4 Inch Digit Sizes
- 12 Inch analog faces with 12 or 24 hour formats
- High Visibility with Adjustable Brightness
- Multiple Time and Date Formats

### KEY BENEFITS

- Correct Time is maintained via Automatic Synchronization to NTP Servers Over the Network
- Easy, Cost Saving Installation Using Existing Ethernet Network and Cabling to Connect to Time Servers Instead of Dedicated Cabling to Transfer Time Signals
- Can Use Wireless Ethernet Connections to Eliminate Difficult Cable Connections
- DHCP for Automatic Network Configuration Saves Time
- Automatic Network Discovery and Remote Management via the Network for Easy and Complete Configuration and Control
- Time Zone and Daylight Savings Support Eliminate Manual Time Adjustments
- Bright Digits Can Be Seen Near or Far Depending on Brightness Level

Symmetricom's Network Time Displays are maintenance free clocks that keep accurate time by synchronizing their time – over the network – to a network time server. These clocks use existing Ethernet network infrastructure and the standard network time protocol (NTP) to keep the time correct. Select between analog or digital displays including 12 or 24 hour formats. All international time zones are supported as well as daylight savings time transitions so the clock should never need manual adjustment.

Display installation and configuration is an easy, cost effective task made even easier by using existing network wiring instead of requiring dedicated cabling to distribute time signals. All displays are available with either standard AC power and Ethernet connections or a combined Power-over-Ethernet connection (PoE). Time over the network saves both time and money since it is not necessary to pull dedicated cabling (such as coaxial or RS-485) throughout a facility to transfer the time to the displays.

Once connected to the network, automatic network address configuration via DHCP coupled with our display discovery and remote management software makes for easy and complete configuration and control of the displays over the network from a single PC. You do not even need to physically see the display to change the settings and verify the correct time and time formats.

Display configuration is saved to non-volatile memory to survive any power fail situation.

Each display is configurable to synchronize with a network time server and will accommodate a second time server as an alternate. These time servers need only be accessible over the LAN/WAN and support NTP.

The digital displays lend themselves well to network equipment racks, control rooms, manufacturing facilities and large open spaces where the precise and accurate digital time needs to be very visible. The classic analog displays are well suited for formal or smaller spaces such as classrooms and meeting rooms. Multiple displays also work well as time zone clocks in control rooms.



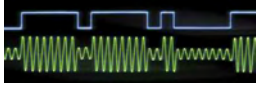
Network Time Displays

## NETWORK TIME DISPLAY SPECIFICATIONS



Model	ND-2	ND-4	ND-CLK
Display	Six 2.3" (5.8 cm) red LED digits hh:mm:ss	Six 4.0" (10.1 cm) red LED digits hh:mm:ss	12 Hr: black text 24 Hr: 1-12 black/13-00 red
Unlock Indicator	■	■	■
12/24 Hour Mode	■	■	Choose clock face type
Daylight Savings	■	■	■
International Time Zones	■	■	■
AM/PM Indicator	■	■	
US Date (mm/dd/yy)	■	■	
European Date (dd/mm/yy)	■	■	
Adjustable Brightness	■	■	
<b>User Interface/Remote Access</b>			
MS Windows GUI	■	■	■
Telnet CLI	■	■	■
Password Protected	■	■	■
<b>Protocols</b>			
NTP Client	■	■	■
SNTP Client	■	■	■
Telnet	■	■	■
DHCP	■	■	■
UDP	■	■	■
<b>Connectors</b>			
Ethernet, 10BaseT, RJ-45	■	■	■
RS-232 DB9	■	■	■
Power: AC Model	IEC 320	IEC 320	IEC 320
Power: POE Model	Via the Ethernet RJ-45	Via the Ethernet RJ-45	Via the Ethernet RJ-45
<b>Mechanical</b>			
Size Inches cm	Width x Height x Depth (1) 19" x 3.5" x 6.5" 48.3 x 8.9 x 16.5	Width x Height x Depth 25.5" x 7.63" x 4.25" 64.1 x 19.4 x 10.8	Diameter x Depth 12.5" x 4.25" 31.8 x 10.8 face
Weight	8.2 Lbs. (3.7 Kg)	9.2 Lbs. (4.0 Kg)	7.6 Lbs. (3.45 Kg)
Material	Welded steel with black powder coat paint inside & out	Welded steel with black powder coat paint inside & out	Round black metal case with polycarbonate lens
Mounting	Rack mount	Wall via keyholes 16" (40.6 cm) apart	Wall via keyhole
<b>Electrical</b>			
Power: AC Models	90 - 264 VAC, 47-63 Hz, <15 W	90 - 264 VAC, 47-63 Hz, <15 W	90 - 265 VAC, 47-63 Hz, < 10 W
Power: POE Models	+48 Vdc, <12.95 W Class 0 per IEEE802.3af	+48 Vdc, <12.95 W Class 0 per IEEE802.3af	+48 Vdc, <12.95 W Class 0 per IEEE802.3af
Certification	CE, FCC	CE, FCC	CE, FCC
<b>Product Includes</b>			
AC powered models	Display, power cord, manual and MS Windows based configuration software on CD. Rack mount removable brackets.	Display, power cord, manual and MS Windows based configuration software on CD.	Display, power cord, manual and MS Windows based configuration software on CD.
POE powered models	Display, manual and MS Windows based configuration software on CD. Rack mount removable brackets.	Display, manual and MS Windows based configuration software on CD.	Clock, manual and MS Windows based configuration software on CD.

1. Size includes rack mount ears. Size without the rack mount ears: 17" W x 3.5" H x 6.2" D (43.2 x 8.9 x 15.7 cm)



# Time Code Displays

## TCD-2, TCD-4 DISPLAYS

### KEY FEATURES

- Displays for Time of Day (TOD) or Date
- 2 and 4 inch models available
- Synchronizes to IRIG B, IEEE 1344, SMPTE time codes
- Automatic time code detection and synchronization
- High visibility and brightness control
- 12 and 24 hour HH:MM:SS formats
- Multiple Time and Date formats
- Supports all time zones
- AC and/or DC power inputs

Symmetricom's series of time code displays is designed to synchronize to time code signals and display the time or date. The displays are available with two or four inch LEDs which provide great visibility from long distances.

The time code displays are easily configured and automatically detect the time code signal type. Time codes supported are IRIG B, IEEE 1344 and SMPTE.

The displays are designed for international use and are configurable for any time zone. Automatic daylight saving time adjustments are supported in the U.S, Canada and European Union.

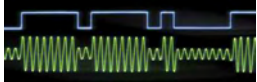
**TCD-2** Rack or shelf mount time code display. 6 digit numeric display with two inch high LED numbers. Adjustable intensity allows for easy visibility at distances to 85 feet.

**TCD-4** Wall or shelf mount time code display. 6 digit numeric display with four inch high LED numbers. Adjustable intensity allows for easy visibility at distances to 125 feet.



Time Code Displays

Model	TCD-2	TCD-4
Display	Six 2.3" (5.8 cm) red LED digits hh:mm:ss, mm:dd:yy, dd:mm:yy	Six 4.0" (10.1 cm) red LED digits hh:mm:ss, mm:dd:yy, dd:mm:yy
Unlock Indicator	■	■
12/24 Hour Mode	■	■
Daylight Saving	■	■
US Date (mm/dd/yy)	■	■
European Date (dd/mm/yy)	■	■
Adjustable Brightness	■	■
<b>Time Code Inputs</b>		
IRIG B	■	■
IEEE 1344	■	■
SMPTE	■	■
<b>Connectors</b>		
Time Code Input	BNC Female	BNC Female
Power		
AC	IEC 320	IEC 320
DC	2.1 mm male panel mt jack, center pin + (positive)	2.1 mm male panel mt jack, center pin + (positive)
<b>Control Interface</b>		
RS-232	DB-9 Connector	DB-9 Connector
Configuration Switches	Dip switch - Rear panel	Dip switch - Rear panel
<b>Mechanical</b>		
Size Inches cm	<b>Width x Height x Depth (1)</b> 19" x 3.5" x 6.5" 48.3 x 8.9 x 16.5	<b>Width x Height x Depth</b> 25.5" x 7.63" x 4.25" 64.1 x 19.4 x 10.8
Weight	5 Lbs.	8 Lbs.
Material	Welded steel with black powder coat paint inside & out	Welded steel with black powder coat paint inside & out
Mounting	Rack mount	Wall via keyholes 16" (40.6 cm) apart
<b>Electrical</b>		
Power		
AC	90 - 264 VAC, 47-63 Hz, <10 W	90 - 264 VAC, 47-63 Hz, <10 W
DC	15 - 28 VDC <10 W Primary or backup supply	15 - 28 VDC <10 W Primary or backup supply
Battery	Rechargeable Manganese Lithium Coin Cell, 3V, 17mAh Panasonic ML1220	Rechargeable Manganese Lithium Coin Cell, 3V, 17mAh Panasonic ML1220
Certification	CE,FCC, RoHS (Category 9 exempt)	CE,FCC, RoHS (Category 9 exempt)
<b>Product Includes</b>		
	Display, power cord, manual, rack mount removable brackets, CD manual	Display, power cord, manual, CD manual



# Remote Time Displays

## RD-1, RD-2, RD-4, RD-5 Remote Displays

### KEY FEATURES

- Displays for Time of Day (TOD) or Time of Year (TOY)
- Wide Selections of Heights – From 1/2 Inch to 4 Inch
- Accepts Wide Variety of Time Codes
- Perfect for Count Down or Control Room Applications

Symmetricom's series of remote time displays is designed to provide widely visible time to local or remote areas. Ranging in character size from 0.5 inches to 4 inches high, these displays can be mounted in instrumentation racks, consoles, on ceilings/walls, or desktop areas. Standard time code input on most displays is IRIG B. Several of these displays are capable of displaying countdown time.

**RD-05** Compact desktop/ceiling-mount time code display. Twelve adjustable-intensity, 0.5-inch LEDs display day of year through seconds.

**RD-1** Remote 19-inch rack-mount time code display. One-inch-high LED digits are easily visible up to 40 feet. Adjustable intensity.

**RD-2** Remote rack-, wall- or ceiling-mount time code display. Two-inch-high LED digits are visible from up to 85 feet. Alphanumeric display optionally available.

**RD-4** Remote wall- or ceiling-mount time code display. Six-digit numeric display with four-inch high LED characters. Adjustable intensity allows for easy visibility at distances of 125 feet.

**9520-647** is a small and rugged airborne display that can be mounted in a standard aircraft instrument panel. This unit decodes IRIG B serial time code and displays hours, minutes and seconds via red, yellow or green LED digits. Conventional aircraft DC power is used.



Remote Time Displays