

# Hand Held Control Display Unit

- ▶ Combat Proven
- ▶ Sunlight Readable
- ▶ Wide Temperature Range
- ▶ Mil Qualified
- ▶ Night Vision Lighting



IEE is a leading supplier of military qualified, field grade Hand Held Control Display Units (HH-CDU) that are Commercial Off-the-Shelf (COTS) items. Originally designed for a Special Forces Man Pack Global Positioning System, it has been successfully utilized in ground mobile, marine and airborne applications. The unit exceeds the widest range of rugged military requirements including MIL-STD-810.

IEE's HH-CDU comes equipped with a super twist wide view liquid crystal display with both unfiltered backlight and NVIS B compatible backlight. The keypad has MIL-P-7788 edge-lit type keys and NVIS B compatible backlight. The unit displays information to the operator and allows the operator to input commands to the host via an EIA-422 serial data interface. The HH-CDU is housed in a virtually indestructible composite enclosure that has been engineered to withstand immersion in one meter of water for two hours. Features of the COTS standard unit can be easily modified including display type and size annunciators, key top nomenclature and software.

## Environmental:

<b>Operating Temperature:</b>	-40°C to +71°C (MIL-STD-810D, Method 501.2)
<b>Storage Temperature:</b>	-52°C to +85°C (MIL-STD-810D, Method 501.2)
<b>Operating Altitude:</b>	36,000 ft. (MIL-STD-810D, Method 500.2)
<b>Non-operating Altitude:</b>	50,000 ft. (MIL-STD-810D, Method 500.2)
<b>Vibration:</b>	.04 G2/Hz, 20-2,000Hz, 1 hr./axis ground mobile (MIL-STD-810D, Method 514.3)
<b>Shock:</b>	Transit drop 24 inches, 26 drops (MIL-STD-810D, Method 516.3, Procedure IV)
<b>Rain:</b>	Blowing rain (MIL-STD-810D, Method 506.2)
<b>Salt Fog:</b>	5% NaCl, 48 hrs. aggravated screening (MIL-STD-810D, Method 509.2, Procedure I)
<b>Explosive Atmosphere:</b>	36,000 ft. 71°C (MIL-STD-810D, Method 511.2, Procedure I, 3.8% N-Hexene)
<b>Sand &amp; Dust:</b>	Blowing dust 1,750 ft./min., 14 hrs. (MIL-STD-810D, Method 510.2, Procedure I)
<b>Immersion:</b>	Basic, 1 meter of water for 2 hrs.. (MIL-STD-810D, Method 512.2)
<b>Electromagnetic Compatibility:</b>	RS03 limits are 200 volts/meter to 40GHz when installed and tested with the host system (MIL-STD-461B, Part 1: Method RE02, RS02, RS03)

## Physical Characteristics:

<b>Dimensions:</b>	5.75"H x 3.80"D x 1.47"W (2.02"W with 'zeroize' switch)
<b>Weight:</b>	1.5 lbs.

## Display Characteristics:

<b>Type:</b>	1/16 MUX, Transflective STN, dark character over a yellow/green background
<b>Screen Size:</b>	1.1" x 2.6"
<b>Filter:</b>	Low gloss polycarbonate with an EMI screen
<b>Standard Format:</b>	Four rows of 14 characters plus seven annunciators
<b>Character Font:</b>	.13W x .18H (5.7 dot matrix) plus underbar cursor
<b>Annunciators:</b>	.40W x .11H and .40W x .26H
<b>Contrast Ratio:</b>	3.1 min., from darkness to 10,000 ft-candles ambient illumination
<b>Backlight Modes:</b>	Dusk Mode NVIS B Mode

## Keyboard Characteristics:

<b>Key Size:</b>	.50W x .37H
<b>Key Layout:</b>	Four columns by five rows
<b>Format:</b>	White legend on black background with edgelit illumination
<b>Key Function:</b>	Defined by software interface
<b>Key Style:</b>	Snap action, tactile feedback
<b>Actuation Force:</b>	1,500 grams maximum
<b>Actuation Travel:</b>	.01 to .06 inch
<b>Actuation Life:</b>	One million operations per key minimum
<b>Illumination Modes:</b>	NVG: Filtered LED, bright or dim
<b>Power Requirements:</b>	
<b>Input Power:</b>	5 ± .25VDC at 200 Milliamp, max.
Backlight OFF:	12 ± 2VDC at 12 Milliamp, max.
Backlight ON:	12 ± 2VDC at 185 Milliamp, max
LCD Heater ON:	12 ± 2VDC at 170 Milliamp, max
LCD Heater & Backlight ON:	12 ± 2VDC at 355 Milliamp, max.

## Data I/O Interface:

Differential line driver and receiver per RS-422.