

<b>SBIR 06.2 PHASE I - AWARD DETAILS</b>	
<b>ORGANIZATION</b>	CERDEC
<b>TOPIC NUMBER</b>	A06-092
<b>CONTRACT NUMBER</b>	
<b>YEAR OF AWARD</b>	
<b>AWARD START DATE</b>	
<b>AWARD COMPLETION DATE</b>	
<b>PROPOSAL NUMBER</b>	A062-092-2596
<b>TITLE</b>	High-performance Extremely Low Power GPS Receiver Card (HELPR)
<b>PROJECT MANAGER</b>	David Gibson (512) 382-8950 <a href="mailto:gibson@coherentlogix.com">gibson@coherentlogix.com</a>
<b>COMPANY</b>	Coherent Logix, Incorporated 1120 South Capital of Texas Highway Building 3, Suite 310 Austin TX 78746  Minority Owned: No Veteran Owned: No Number of Employees: 24
<b>KEYWORDS</b>	Handheld Global Positioning System (GPS); Very Low Power Receiver; Programmable Digital Signal Processing
<b>ABSTRACT</b>	Coherent Logix, Incorporated (CLX) proposes to develop a military High-performance Extremely Low Power GPS Receiver (HELPR) card suitable for use with soldier handheld PDAs, micro-UAVs, and unattended ground sensors. HELPR will be similar to existing PDA cards for civilian GPS receivers, but will achieve much greater position and time accuracy by receiving and processing military GPS signals on both the L1 and L2 frequencies. The goal is a small, lightweight, power-efficient, precision positioning card. Power management is a key factor for success. Receiver analog functions will be shifted to digital signal processing. This effort is supported by a much larger program at CLX to develop extremely high-performance per watt, reconfigurable (on-the-fly) digital signal processor (DSP) CMOS integrated circuits based on its patent-pending HyperX architecture. Utilizing a reconfigurable DSP for IF signal processing and code correlation, HELPR will have the flexibility to use any and all codes broadcast by satellites and terrestrial stations for radio navigation, and will support a wide variety of power conservation and noise/interference mitigation strategies. In Phase I, CLX will design hardware and signal processing software to achieve precise positioning and time transfer. In Phase II, CLX will design, build, and test a functional prototype HELPR card.
<b>BENEFITS</b>	The development of the HELPR receiver card will enable the DoD to equip virtually every soldier with a secure, extremely power-efficient and cost-effective high-precision GPS receiver. Exploiting CLX's high-performance low-power HyperXTM digital signal processor technology now in development, HELPR will provide the warfighter with a handheld GPS solution that will operate for longer periods on smaller, lighter battery packs. The reduced energy consumption will also benefit the logistics chain for batteries.