**ASTRO MODES OF OPERATION**

The KVL 3000 Plus supports two types of key management, defined by two different modes of operations:

- **Advanced Securenet (ASN) Mode** – ASN mode is the standard mode of operation on the KVL 3000 Plus. ASN mode provides Physical Identifier (PID) key management. PID key management identifies a physical memory slot where a key variable is stored in a unit. All products that support PID key management access the same encryption keys dependent on the physical storage capability of the product. PID key management provides support for all SECURENET, Secure ASTRO, and Secure ASTRO®25 systems.

- **ASTRO 25 Mode** – ASTRO 25 mode is an optional mode of operation in the KVL 3000 Plus. ASTRO 25 mode provides Common Key Reference (CKR) key management. CKR key management eliminates the need to place a key in a specific memory location. All secure products that support CKR’s will access the same encryption keys independent of physical storage capabilities of the product. CKR key management is used with ASTRO digital subscribers equipped with the Universal Crypto Module (UCM). This mode is required for ASTRO 25 Conventional OTAR, which is performed with the Key Management Facility.

**DIMETRA MODE OF OPERATION**

The Dimetra (Air Interface Encryption-AIE) KVL 3000 Plus Key Variable Loader is used to store and transfer encryption keys from the Authentication Centre to Dimetra System infrastructure devices (i.e. Zone Controller, Tetra Site Controller, and the Base Radio Controller) and Mobile Stations.

**ALGORITHM SUPPORT**

The KVL 3000 Plus supports the following encryption algorithms:

<table>
<thead>
<tr>
<th>ALGORITHM</th>
<th>ASTRO</th>
<th>Dimetra</th>
<th>ANALOG</th>
<th>DIGITAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>DES-CFB</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>DES-XL</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>DES-OFB</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>DVP-XL</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>DVI-XL</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>AES</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

*The KVL 3000 Plus DOES NOT support DVP encryption algorithm.*
**SUPPORTED SYSTEMS**
The KVL 3000 Plus is compatible with all SECURENET, Secure ASTRO, Secure ASTRO 25, P25, and Dimetra secure equipped subscriber and infrastructure equipment.

24 Kbps SECURENET (Analog Secure)
9.6 Kbps ASTRO (VSELP Vocoder)
9.6 Kbps ASTRO 25 (IMBE Vocoder)
ASTRO 25 Conventional
ASTRO 25 (9600) Trunking
Dimetra (AIE)

**ASTRO AND DIMETRA KEY FEATURES**
- The KVL 3000 Plus is capable of storing a total of 1,024 Encryption Keys.
- The KVL 3000 Plus manages critical information, freeing operators from tedious time consuming tasks.
- The KVL 3000 Plus offers two levels of password protection: Supervisor and Operator. Password protection improves system security by limiting access to sensitive key management functionality.
- The KVL 3000 Plus has the capability to upgrade the firmware using an external PCMCIA FLASHport™ upgrade card.

**ASTRO ONLY KEY FEATURES**
- The KVL 3000 Plus supports all key management functions previously supported by the original KVL (Key Variable Loader) and KVL 3000 with the exception of DVP encryption algorithm.

**DIMETRA ONLY KEY FEATURES**
- Supports transfer of keys to/from Dimetra 5.0 System infrastructure devices using Store and Forward feature.

For more information visit www.motorola.com
**ENCRYPTION SPECIFICATIONS**

**Supported Encryption Applications**
- DES-CFB, DES-XL and DES-OFB
- DVP-XL
- DVI-XL
- AES

**Supported Systems**
- 12 Kbps SECURENET™
- 9.6 Kbps Secure ASTRO™ (VSELP Vocoder)
- 9.6 Kbps Secure ASTRO 25 (IMBE Vocoder)
- Dimetra (AIE)

**Encryption Keys**
- 1,024 Encryption Keys

**Standards**
- FIPS 46-2
- FIPS 197*
- FIPS 81
- FIPS 140-1 Level 1*

*Currently undergoing certification by an approved ITSEC Laboratory

**USER INTERFACE**

**Four Line, 12 Character (4x12) Bitmapped Display**

**LCD Annunciator Line**

**4x4 Numeric Key Pad (0-9 and A-F Keys)**

**Two General Purpose Softkeys**

**Scroll Left / Increment Key**

**Scroll Right / Decrement Key**

**Power On/Off, Delete/Shift, Enter Keys**

**DB-9 Connector (RS232, 9,600 Baud)**

**Type II PCMCIA slot**

**Keyload Port**

**REGULATORY COMPLAINECE & APPROVALS**

**Electromagnetic Compatibility**
- CISPR 22 Class A
- European EMC Directive 89/336 EEC
- FCC Part 15 Subpart B Class A
- EN55024
- IEC 61000-4-2, IEC 61000-4-3

**Safety**
- EN 60950

**PHYSICAL CHARACTERISTICS**

**Dimensions**
- 26.4 mm Long (Includes Connector Boot)
- 89.2 mm Wide
- 48.2 mm Thick
  (High Capacity Battery Included)

**Weight**
- 725.74 g (High Capacity Battery Included)

**ENVIRONMENTAL TESTING**

<table>
<thead>
<tr>
<th>Standard</th>
<th>Method</th>
<th>Procedure</th>
<th>Test</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIL-STD 810E</td>
<td>510.3</td>
<td>I</td>
<td>Blowing Dust</td>
<td>Meets or exceeds published spec following blowing dust testing</td>
</tr>
<tr>
<td></td>
<td>516.4</td>
<td>I</td>
<td>Shock</td>
<td>Meets or exceeds published spec following shock testing</td>
</tr>
<tr>
<td></td>
<td>505.3</td>
<td>I</td>
<td>Solar Radiation</td>
<td>Meets or exceeds published spec following solar radiation testing</td>
</tr>
<tr>
<td></td>
<td>514.4</td>
<td>I</td>
<td>Vibration</td>
<td>Meets or exceeds published spec following vibration testing</td>
</tr>
</tbody>
</table>

**ANSI/UL-94**

**Flammability**

**Operating Temperature**
- –30° to +60° Celsius except PCMCIA Card, which is 0° to +60° Celsius

**Storage Temperature**
- –55° to +85° Celsius