Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>2.0</td>
<td>Description</td>
<td>1</td>
</tr>
<tr>
<td>3.0</td>
<td>System Operation</td>
<td>2</td>
</tr>
<tr>
<td>3.1</td>
<td>Instructions</td>
<td>2</td>
</tr>
</tbody>
</table>

Illustrations

<table>
<thead>
<tr>
<th>Figure</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Series VT40 Video/Audio Transmitter</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>VT40 Transmitter Frequency Select Window</td>
<td>2</td>
</tr>
</tbody>
</table>

Tables

<table>
<thead>
<tr>
<th>Table</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Video Transmitter Frequency Switch Settings</td>
<td>4</td>
</tr>
</tbody>
</table>

Appendices

<table>
<thead>
<tr>
<th>Appendix A</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Series VT40 Connector Detail Drawing</td>
<td>A</td>
</tr>
</tbody>
</table>
1.0 INTRODUCTION

Congratulations on the purchase of your new SEMCO Series VT40 Transmitter. The model and serial number are located on the label affixed to the front of the unit.

WARNING

TO PREVENT DAMAGE TO THE UNIT, MAINTAIN THE WARRANTY, AND REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE THE TRANSMITTER COVERS. REFER ALL SERVICING AND MODIFICATION REQUIREMENTS TO QUALIFIED SEMCO PERSONNEL VIA THE CUSTOMER SERVICE HOTLINE, 1-800-995-0636, EXTENSION 188.

2.0 DESCRIPTION

The Series VT40 Video/Audio Transmitter is a true FM, modular, all solid state unit available either as a fixed frequency or frequency agile microwave transmitter. The transmitter’s small size and weight make it ideal for covert applications. This transmitter operates between either 1710-1850 MHz or 2450-2483.5 MHz with a nominal dual power output of 0.25 watts or 2 watts. The video transmitter is designed to transmit wide-band NTSC video signals (color or black & white). Two audio sub-carriers between 5.5 MHz and 7.8 MHz are provided for transmission of audio. These transmitters are FCC Part 90 Type-Accepted, and are designed to be used in conjunction with a wide variety of antennas. Line of sight range is approximately 0.50 to 2.0 miles (depending on output power selected). Figure 1 depicts the VT40 Transmitter.

![Figure 1: Series VT40 Video/Audio Transmitter](image-url)
3.0 SYSTEM OPERATION

The VT40 transmitter has three (3) connectors; a 15-Pin Micro-D electrical connector, a SMA RF connector and a BNC video connector. Refer to Appendix A for a complete description of the pin-outs of the 15-Pin connector.

3.1 Instructions

Step 1 - Attach antenna to the RF OUTPUT SMA Connector (J1) of the transmitter. Be careful not to over-torque the connectors.

Step 2 - Attach video to the BNC video connector (J2).

Step 3 - Attach the mating connector (SEMCO P/N: 127-0064) to the 15in Micro-D connector (J3). Appendix A depicts the connector interface diagram.

NOTE:

Mating connectors are available directly from SEMCO. Two versions are available, one with fly-away leads and locks and one with solder cups and locks.

Step 4 - Frequency Agile Transmitters, Only. Locate and loosen the two small screws of the recessed cover plate on the transmitter housing (see Figure 2). This window provides access to the frequency select dip switches.

Figure 2
Video Transmitter Frequency Selection Window
NOTE:

Do not attempt to change frequencies on the transmitter with the power on. Damage to the transmitter is possible.

Step 5 - Remove the recessed cover plate to expose the frequency select dip switch. Ensure to secure the two small screws in order to replace the cover plate, later.

Step 6 - With the transmitter placed in the position shown in Figure 2, enter the proper code starting with position 1 on the extreme left of the 14 pin dip switch. **A logic 0 is entered when each switch position is moved up (away from the transmitter connectors). A logic 1 is entered when each switch position is moved down (towards the transmitter connectors).** Enter the frequency desired by selecting the corresponding switch position logic as shown in Table 1.

NOTE:

Always use a hard wooden, plastic or metal object when setting the dip switch positions. Never use a soft material (such as a felt tip or pencil lead) in order to avoid introducing foreign material into the transmitter circuitry.

Step 7 - Replace the transmitter cover plate back into position and tighten the screws.
### Table 1
Video Transmitter Frequency Switch Settings

#### VT40ML Frequency Chart

<table>
<thead>
<tr>
<th>FREQUENCY</th>
<th>BINARY</th>
<th>FREQUENCY</th>
<th>BINARY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1710.0</td>
<td>00111010101100</td>
<td>1734.0</td>
<td>00110001101100</td>
</tr>
<tr>
<td>1710.5</td>
<td>10111101011100</td>
<td>1734.5</td>
<td>10110001101100</td>
</tr>
<tr>
<td>1711.0</td>
<td>01111010101100</td>
<td>1735.0</td>
<td>01110001101100</td>
</tr>
<tr>
<td>1711.5</td>
<td>11111010101100</td>
<td>1735.5</td>
<td>11110001101100</td>
</tr>
<tr>
<td>1712.0</td>
<td>00001110101100</td>
<td>1736.0</td>
<td>00001001101100</td>
</tr>
<tr>
<td>1712.5</td>
<td>10001110101100</td>
<td>1736.5</td>
<td>10001001101100</td>
</tr>
<tr>
<td>1713.0</td>
<td>01000110101100</td>
<td>1737.0</td>
<td>01001001101100</td>
</tr>
<tr>
<td>1713.5</td>
<td>11000110101100</td>
<td>1737.5</td>
<td>11001001101100</td>
</tr>
<tr>
<td>1714.0</td>
<td>00100110101100</td>
<td>1738.0</td>
<td>00101001101100</td>
</tr>
<tr>
<td>1714.5</td>
<td>10100110101100</td>
<td>1738.5</td>
<td>10101001101100</td>
</tr>
<tr>
<td>1715.0</td>
<td>01100110101100</td>
<td>1739.0</td>
<td>01101001101100</td>
</tr>
<tr>
<td>1715.5</td>
<td>11100110101100</td>
<td>1739.5</td>
<td>11101001101100</td>
</tr>
<tr>
<td>1716.0</td>
<td>00010110101100</td>
<td>1740.0</td>
<td>00011001101100</td>
</tr>
<tr>
<td>1716.5</td>
<td>10010110101100</td>
<td>1740.5</td>
<td>10011001101100</td>
</tr>
<tr>
<td>1717.0</td>
<td>01010110101100</td>
<td>1741.0</td>
<td>01011001101100</td>
</tr>
<tr>
<td>1717.5</td>
<td>11010110101100</td>
<td>1741.5</td>
<td>11011001101100</td>
</tr>
<tr>
<td>1718.0</td>
<td>00110110101100</td>
<td>1742.0</td>
<td>00111001101100</td>
</tr>
<tr>
<td>1718.5</td>
<td>10110110101100</td>
<td>1742.5</td>
<td>10111001101100</td>
</tr>
<tr>
<td>1719.0</td>
<td>01110110101100</td>
<td>1743.0</td>
<td>01111001101100</td>
</tr>
<tr>
<td>1719.5</td>
<td>11110110101100</td>
<td>1743.5</td>
<td>11111001101100</td>
</tr>
<tr>
<td>1720.0</td>
<td>00001110101100</td>
<td>1744.0</td>
<td>00000101101100</td>
</tr>
<tr>
<td>1720.5</td>
<td>10001110101100</td>
<td>1744.5</td>
<td>10000101101100</td>
</tr>
<tr>
<td>1721.0</td>
<td>01001110101100</td>
<td>1745.0</td>
<td>01000101101100</td>
</tr>
<tr>
<td>1721.5</td>
<td>11001110101100</td>
<td>1745.5</td>
<td>11000101101100</td>
</tr>
<tr>
<td>1722.0</td>
<td>00101110101100</td>
<td>1746.0</td>
<td>00100101101100</td>
</tr>
<tr>
<td>1722.5</td>
<td>10101110101100</td>
<td>1746.5</td>
<td>10100101101100</td>
</tr>
<tr>
<td>1723.0</td>
<td>01101110101100</td>
<td>1747.0</td>
<td>01100101101100</td>
</tr>
<tr>
<td>1723.5</td>
<td>11101110101100</td>
<td>1747.5</td>
<td>11100101101100</td>
</tr>
<tr>
<td>1724.0</td>
<td>00111110101100</td>
<td>1748.0</td>
<td>0010101101100</td>
</tr>
<tr>
<td>1724.5</td>
<td>10111110101100</td>
<td>1748.5</td>
<td>1010101101100</td>
</tr>
<tr>
<td>1725.0</td>
<td>01111110101100</td>
<td>1749.0</td>
<td>0110101101100</td>
</tr>
<tr>
<td>1725.5</td>
<td>11111110101100</td>
<td>1749.5</td>
<td>1110101101100</td>
</tr>
<tr>
<td>1726.0</td>
<td>00111110101100</td>
<td>1750.0</td>
<td>00110101101100</td>
</tr>
<tr>
<td>1726.5</td>
<td>10111110101100</td>
<td>1750.5</td>
<td>10110101101100</td>
</tr>
<tr>
<td>1727.0</td>
<td>01111110101100</td>
<td>1751.0</td>
<td>01110101101100</td>
</tr>
<tr>
<td>1727.5</td>
<td>11111110101100</td>
<td>1751.5</td>
<td>11110101101100</td>
</tr>
<tr>
<td>1728.0</td>
<td>00000011101100</td>
<td>1752.0</td>
<td>00001101101100</td>
</tr>
<tr>
<td>1728.5</td>
<td>10000011101100</td>
<td>1752.5</td>
<td>10001101101100</td>
</tr>
<tr>
<td>1729.0</td>
<td>01000011101100</td>
<td>1753.0</td>
<td>01001101101100</td>
</tr>
<tr>
<td>1729.5</td>
<td>11000011101100</td>
<td>1753.5</td>
<td>11001101101100</td>
</tr>
<tr>
<td>1730.0</td>
<td>00100011101100</td>
<td>1754.0</td>
<td>00110101101100</td>
</tr>
<tr>
<td>1730.5</td>
<td>10100011101100</td>
<td>1754.5</td>
<td>10110101101100</td>
</tr>
<tr>
<td>1731.0</td>
<td>01100011101100</td>
<td>1755.0</td>
<td>01110101101100</td>
</tr>
<tr>
<td>1731.5</td>
<td>11100011101100</td>
<td>1755.5</td>
<td>11110101101100</td>
</tr>
<tr>
<td>1732.0</td>
<td>00100011101100</td>
<td>1756.0</td>
<td>0011101101100</td>
</tr>
<tr>
<td>1732.5</td>
<td>10100011101100</td>
<td>1756.5</td>
<td>1011101101100</td>
</tr>
<tr>
<td>1733.0</td>
<td>01010011101100</td>
<td>1757.0</td>
<td>0101101101100</td>
</tr>
<tr>
<td>1733.5</td>
<td>11010011101100</td>
<td>1757.5</td>
<td>1101101101100</td>
</tr>
</tbody>
</table>
### VT40 Frequency Chart

#### 1758.0 - 1805.0

<table>
<thead>
<tr>
<th>FREQUENCY</th>
<th>BINARY</th>
<th>FREQUENCY</th>
<th>BINARY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1758.0</td>
<td>00111011011100</td>
<td>1782.0</td>
<td>00110111011100</td>
</tr>
<tr>
<td>1758.5</td>
<td>10111011011100</td>
<td>1782.5</td>
<td>10110111011100</td>
</tr>
<tr>
<td>1759.0</td>
<td>01111011011100</td>
<td>1783.0</td>
<td>01110111011100</td>
</tr>
<tr>
<td>1759.5</td>
<td>11111011011100</td>
<td>1783.5</td>
<td>11110111011100</td>
</tr>
<tr>
<td>1760.0</td>
<td>00000111011100</td>
<td>1784.0</td>
<td>00011111011100</td>
</tr>
<tr>
<td>1760.5</td>
<td>10000111011100</td>
<td>1784.5</td>
<td>10011111011100</td>
</tr>
<tr>
<td>1761.0</td>
<td>01000111011100</td>
<td>1785.0</td>
<td>01001111011100</td>
</tr>
<tr>
<td>1761.5</td>
<td>11000111011100</td>
<td>1785.5</td>
<td>11011111011100</td>
</tr>
<tr>
<td>1762.0</td>
<td>00100111011100</td>
<td>1786.0</td>
<td>00111111011100</td>
</tr>
<tr>
<td>1762.5</td>
<td>10100111011100</td>
<td>1786.5</td>
<td>10101111011100</td>
</tr>
<tr>
<td>1763.0</td>
<td>01100111011100</td>
<td>1787.0</td>
<td>01111111011100</td>
</tr>
<tr>
<td>1763.5</td>
<td>11100111011100</td>
<td>1787.5</td>
<td>11110111011100</td>
</tr>
<tr>
<td>1764.0</td>
<td>00010111011100</td>
<td>1788.0</td>
<td>00111111011100</td>
</tr>
<tr>
<td>1764.5</td>
<td>10010111011100</td>
<td>1788.5</td>
<td>10111111011100</td>
</tr>
<tr>
<td>1765.0</td>
<td>01010111011100</td>
<td>1789.0</td>
<td>01111111011100</td>
</tr>
<tr>
<td>1765.5</td>
<td>11010111011100</td>
<td>1789.5</td>
<td>11110111011100</td>
</tr>
<tr>
<td>1766.0</td>
<td>00100111011100</td>
<td>1790.0</td>
<td>00011111011100</td>
</tr>
<tr>
<td>1766.5</td>
<td>10100111011100</td>
<td>1790.5</td>
<td>10111111011100</td>
</tr>
<tr>
<td>1767.0</td>
<td>01100111011100</td>
<td>1791.0</td>
<td>01111111011100</td>
</tr>
<tr>
<td>1767.5</td>
<td>11100111011100</td>
<td>1791.5</td>
<td>11110111011100</td>
</tr>
<tr>
<td>1768.0</td>
<td>00010111011100</td>
<td>1792.0</td>
<td>00000000011100</td>
</tr>
<tr>
<td>1768.5</td>
<td>10010111011100</td>
<td>1792.5</td>
<td>10000000011100</td>
</tr>
<tr>
<td>1769.0</td>
<td>01010111011100</td>
<td>1793.0</td>
<td>01000000011100</td>
</tr>
<tr>
<td>1769.5</td>
<td>11010111011100</td>
<td>1793.5</td>
<td>11000000011100</td>
</tr>
<tr>
<td>1770.0</td>
<td>00100111011100</td>
<td>1794.0</td>
<td>00011111011100</td>
</tr>
<tr>
<td>1770.5</td>
<td>10100111011100</td>
<td>1794.5</td>
<td>10100000011100</td>
</tr>
<tr>
<td>1771.0</td>
<td>01100111011100</td>
<td>1795.0</td>
<td>01100000011100</td>
</tr>
<tr>
<td>1771.5</td>
<td>11100111011100</td>
<td>1795.5</td>
<td>11100000011100</td>
</tr>
<tr>
<td>1772.0</td>
<td>00010111011100</td>
<td>1796.0</td>
<td>00010000011100</td>
</tr>
<tr>
<td>1772.5</td>
<td>10010111011100</td>
<td>1796.5</td>
<td>10010000011100</td>
</tr>
<tr>
<td>1773.0</td>
<td>01010111011100</td>
<td>1797.0</td>
<td>01010000011100</td>
</tr>
<tr>
<td>1773.5</td>
<td>11010111011100</td>
<td>1797.5</td>
<td>11010000011100</td>
</tr>
<tr>
<td>1774.0</td>
<td>00110111011100</td>
<td>1798.0</td>
<td>00110000011100</td>
</tr>
<tr>
<td>1774.5</td>
<td>10110111011100</td>
<td>1798.5</td>
<td>10110000011100</td>
</tr>
<tr>
<td>1775.0</td>
<td>01110111011100</td>
<td>1799.0</td>
<td>01110000011100</td>
</tr>
<tr>
<td>1775.5</td>
<td>11110111011100</td>
<td>1799.5</td>
<td>11110000011100</td>
</tr>
<tr>
<td>1776.0</td>
<td>00001111011100</td>
<td>1800.0</td>
<td>00010000111000</td>
</tr>
<tr>
<td>1776.5</td>
<td>10001111011100</td>
<td>1800.5</td>
<td>10000100111000</td>
</tr>
<tr>
<td>1777.0</td>
<td>01000111011100</td>
<td>1801.0</td>
<td>01000010111000</td>
</tr>
<tr>
<td>1777.5</td>
<td>11000111011100</td>
<td>1801.5</td>
<td>11000001111000</td>
</tr>
<tr>
<td>1778.0</td>
<td>00100111011100</td>
<td>1802.0</td>
<td>00100010111000</td>
</tr>
<tr>
<td>1778.5</td>
<td>10100111011100</td>
<td>1802.5</td>
<td>10100001111000</td>
</tr>
<tr>
<td>1779.0</td>
<td>01100111011100</td>
<td>1803.0</td>
<td>01100001111000</td>
</tr>
<tr>
<td>1779.5</td>
<td>11100111011100</td>
<td>1803.5</td>
<td>11100001111000</td>
</tr>
<tr>
<td>1780.0</td>
<td>11001111011100</td>
<td>1804.0</td>
<td>00110000111000</td>
</tr>
<tr>
<td>1780.5</td>
<td>10010111011100</td>
<td>1804.5</td>
<td>10010000111000</td>
</tr>
<tr>
<td>1781.0</td>
<td>01010111011100</td>
<td>1805.0</td>
<td>01010000111000</td>
</tr>
<tr>
<td>1781.5</td>
<td>11010111011100</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### VT40 Frequency Chart

#### 1805.5 - 1854.0

<table>
<thead>
<tr>
<th>FREQUENCY</th>
<th>BINARY</th>
<th>FREQUENCY</th>
<th>BINARY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1805.5</td>
<td>11011010011100</td>
<td>1830.0</td>
<td>00110010011100</td>
</tr>
</tbody>
</table>

---

VT40 Operating Instructions  January 2002
<table>
<thead>
<tr>
<th>Time</th>
<th>Temperature 1</th>
<th>Time</th>
<th>Temperature 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1806.0</td>
<td>00111000011100</td>
<td>1830.5</td>
<td>10110010011100</td>
</tr>
<tr>
<td>1806.5</td>
<td>10111000011100</td>
<td>1831.0</td>
<td>01110010011100</td>
</tr>
<tr>
<td>1807.0</td>
<td>01111000011100</td>
<td>1831.5</td>
<td>11110010011100</td>
</tr>
<tr>
<td>1807.5</td>
<td>11111000011100</td>
<td>1832.0</td>
<td>00001010011100</td>
</tr>
<tr>
<td>1808.0</td>
<td>00000100011100</td>
<td>1832.5</td>
<td>10001010011100</td>
</tr>
<tr>
<td>1808.5</td>
<td>10000100011100</td>
<td>1833.0</td>
<td>01001010011100</td>
</tr>
<tr>
<td>1809.0</td>
<td>01000100011100</td>
<td>1833.5</td>
<td>11001010011100</td>
</tr>
<tr>
<td>1809.5</td>
<td>11000100011100</td>
<td>1834.0</td>
<td>00101010011100</td>
</tr>
<tr>
<td>1810.0</td>
<td>00100100011100</td>
<td>1834.5</td>
<td>10101010011100</td>
</tr>
<tr>
<td>1810.5</td>
<td>10100100011100</td>
<td>1835.0</td>
<td>01101010011100</td>
</tr>
<tr>
<td>1811.0</td>
<td>01100100011100</td>
<td>1835.5</td>
<td>11101010011100</td>
</tr>
<tr>
<td>1811.5</td>
<td>11100100011100</td>
<td>1836.0</td>
<td>00001010011100</td>
</tr>
<tr>
<td>1812.0</td>
<td>00010100011100</td>
<td>1836.5</td>
<td>10001010011100</td>
</tr>
<tr>
<td>1812.5</td>
<td>10010100011100</td>
<td>1837.0</td>
<td>01001010011100</td>
</tr>
<tr>
<td>1813.0</td>
<td>01001010011100</td>
<td>1837.5</td>
<td>11001010011100</td>
</tr>
<tr>
<td>1813.5</td>
<td>11001010011100</td>
<td>1838.0</td>
<td>00110100111000</td>
</tr>
<tr>
<td>1814.0</td>
<td>00110100011100</td>
<td>1838.5</td>
<td>11110100111000</td>
</tr>
<tr>
<td>1814.5</td>
<td>11011010001100</td>
<td>1839.0</td>
<td>00001100111000</td>
</tr>
<tr>
<td>1815.0</td>
<td>01011010001100</td>
<td>1839.5</td>
<td>11111010011100</td>
</tr>
<tr>
<td>1815.5</td>
<td>11111010001100</td>
<td>1840.0</td>
<td>00001100111000</td>
</tr>
<tr>
<td>1816.0</td>
<td>00011100001100</td>
<td>1840.5</td>
<td>11111010011100</td>
</tr>
<tr>
<td>1816.5</td>
<td>11101100001100</td>
<td>1841.0</td>
<td>00001100111000</td>
</tr>
<tr>
<td>1817.0</td>
<td>00111000001100</td>
<td>1841.5</td>
<td>11110010011100</td>
</tr>
<tr>
<td>1817.5</td>
<td>11011000001100</td>
<td>1842.0</td>
<td>00101100011100</td>
</tr>
<tr>
<td>1818.0</td>
<td>00101100001100</td>
<td>1842.5</td>
<td>10101100011100</td>
</tr>
<tr>
<td>1818.5</td>
<td>10101100001100</td>
<td>1843.0</td>
<td>01101100011100</td>
</tr>
<tr>
<td>1819.0</td>
<td>01101100001100</td>
<td>1843.5</td>
<td>11101100011100</td>
</tr>
<tr>
<td>1819.5</td>
<td>11101100001100</td>
<td>1844.0</td>
<td>00011100011100</td>
</tr>
<tr>
<td>1820.0</td>
<td>00011100001100</td>
<td>1844.5</td>
<td>10011100011100</td>
</tr>
<tr>
<td>1820.5</td>
<td>10011100001100</td>
<td>1845.0</td>
<td>10011100011100</td>
</tr>
<tr>
<td>1821.0</td>
<td>01011100001100</td>
<td>1845.5</td>
<td>11011100011100</td>
</tr>
<tr>
<td>1821.5</td>
<td>11011100001100</td>
<td>1846.0</td>
<td>00101100011100</td>
</tr>
<tr>
<td>1822.0</td>
<td>00111000001100</td>
<td>1846.5</td>
<td>10101100011100</td>
</tr>
<tr>
<td>1822.5</td>
<td>10111000001100</td>
<td>1847.0</td>
<td>01101100011100</td>
</tr>
<tr>
<td>1823.0</td>
<td>01111000001100</td>
<td>1847.5</td>
<td>11101100011100</td>
</tr>
<tr>
<td>1823.5</td>
<td>11111000001100</td>
<td>1848.0</td>
<td>00011100011100</td>
</tr>
<tr>
<td>1824.0</td>
<td>00000100011100</td>
<td>1848.5</td>
<td>10011100011100</td>
</tr>
<tr>
<td>1824.5</td>
<td>10000100011100</td>
<td>1849.0</td>
<td>01001100011100</td>
</tr>
<tr>
<td>1825.0</td>
<td>01000100011100</td>
<td>1849.5</td>
<td>11001100011100</td>
</tr>
<tr>
<td>1825.5</td>
<td>11000100011100</td>
<td>1850.0</td>
<td>00101100011100</td>
</tr>
<tr>
<td>1826.0</td>
<td>01000100011100</td>
<td>1850.5</td>
<td>10101100011100</td>
</tr>
<tr>
<td>1826.5</td>
<td>10100100011100</td>
<td>1851.0</td>
<td>01101100011100</td>
</tr>
<tr>
<td>1827.0</td>
<td>01100100011100</td>
<td>1851.5</td>
<td>11101100011100</td>
</tr>
<tr>
<td>1827.5</td>
<td>11100100011100</td>
<td>1852.0</td>
<td>00011100011100</td>
</tr>
<tr>
<td>1828.0</td>
<td>00010100011100</td>
<td>1852.5</td>
<td>10011100011100</td>
</tr>
<tr>
<td>1828.5</td>
<td>10010100011100</td>
<td>1853.0</td>
<td>01011100011100</td>
</tr>
<tr>
<td>1829.0</td>
<td>01010100011100</td>
<td>1853.5</td>
<td>11011100011100</td>
</tr>
<tr>
<td>1829.5</td>
<td>11010100011100</td>
<td>1854.0</td>
<td>00111100011100</td>
</tr>
<tr>
<td>FREQUENCY</td>
<td>BINARY</td>
<td>FREQUENCY</td>
<td>BINARY</td>
</tr>
<tr>
<td>-----------</td>
<td>-------------</td>
<td>-----------</td>
<td>-------------</td>
</tr>
<tr>
<td>2400.0</td>
<td>0000011010010</td>
<td>2424.0</td>
<td>0001111010010</td>
</tr>
<tr>
<td>2400.5</td>
<td>1000011010010</td>
<td>2424.5</td>
<td>1001111010010</td>
</tr>
<tr>
<td>2401.0</td>
<td>0100011010010</td>
<td>2425.0</td>
<td>0101111010010</td>
</tr>
<tr>
<td>2401.5</td>
<td>1100011010010</td>
<td>2425.5</td>
<td>1101111010010</td>
</tr>
<tr>
<td>2402.0</td>
<td>0010011010010</td>
<td>2426.0</td>
<td>0011111010010</td>
</tr>
<tr>
<td>2402.5</td>
<td>1010011010010</td>
<td>2426.5</td>
<td>1011111010010</td>
</tr>
<tr>
<td>2403.0</td>
<td>0110011010010</td>
<td>2427.0</td>
<td>0111111010010</td>
</tr>
<tr>
<td>2403.5</td>
<td>1110011010010</td>
<td>2427.5</td>
<td>1110111010010</td>
</tr>
<tr>
<td>2404.0</td>
<td>0010011010010</td>
<td>2428.0</td>
<td>0011111010010</td>
</tr>
<tr>
<td>2404.5</td>
<td>1010011010010</td>
<td>2428.5</td>
<td>1011111010010</td>
</tr>
<tr>
<td>2405.0</td>
<td>0100111010010</td>
<td>2429.0</td>
<td>0101111010010</td>
</tr>
<tr>
<td>2405.5</td>
<td>1100111010010</td>
<td>2429.5</td>
<td>1101111010010</td>
</tr>
<tr>
<td>2406.0</td>
<td>0110111010010</td>
<td>2430.0</td>
<td>0111111010010</td>
</tr>
<tr>
<td>2406.5</td>
<td>1110111010010</td>
<td>2430.5</td>
<td>1110111010010</td>
</tr>
<tr>
<td>2407.0</td>
<td>0111011010010</td>
<td>2431.0</td>
<td>0111111010010</td>
</tr>
<tr>
<td>2407.5</td>
<td>1111011010010</td>
<td>2431.5</td>
<td>1111111010010</td>
</tr>
<tr>
<td>2408.0</td>
<td>011110110010</td>
<td>2432.0</td>
<td>0100011110100</td>
</tr>
<tr>
<td>2408.5</td>
<td>101110110010</td>
<td>2432.5</td>
<td>1010011110100</td>
</tr>
<tr>
<td>2409.0</td>
<td>111110110010</td>
<td>2433.0</td>
<td>1110111110100</td>
</tr>
<tr>
<td>2409.5</td>
<td>2433.5</td>
<td>1110011110100</td>
<td></td>
</tr>
<tr>
<td>2410.0</td>
<td>0110011010010</td>
<td>2434.0</td>
<td>0011011110100</td>
</tr>
<tr>
<td>2410.5</td>
<td>1110011010010</td>
<td>2434.5</td>
<td>1010011110100</td>
</tr>
<tr>
<td>2411.0</td>
<td>0110101010010</td>
<td>2435.0</td>
<td>0110011110100</td>
</tr>
<tr>
<td>2411.5</td>
<td>1110101010010</td>
<td>2435.5</td>
<td>1110011110100</td>
</tr>
<tr>
<td>2412.0</td>
<td>0011101010010</td>
<td>2436.0</td>
<td>0010011110100</td>
</tr>
<tr>
<td>2412.5</td>
<td>1011101010010</td>
<td>2436.5</td>
<td>1001011110100</td>
</tr>
<tr>
<td>2413.0</td>
<td>0111101010010</td>
<td>2437.0</td>
<td>0101011110100</td>
</tr>
<tr>
<td>2413.5</td>
<td>1111101010010</td>
<td>2437.5</td>
<td>1101011110100</td>
</tr>
<tr>
<td>2414.0</td>
<td>0111111010010</td>
<td>2438.0</td>
<td>0111011110100</td>
</tr>
<tr>
<td>2414.5</td>
<td>1111111010010</td>
<td>2438.5</td>
<td>1111011110100</td>
</tr>
<tr>
<td>2415.0</td>
<td>0111111010010</td>
<td>2439.0</td>
<td>0111011110100</td>
</tr>
<tr>
<td>2415.5</td>
<td>1111111010010</td>
<td>2439.5</td>
<td>1111011110100</td>
</tr>
<tr>
<td>2416.0</td>
<td>0010011010010</td>
<td>2440.0</td>
<td>0010011110100</td>
</tr>
<tr>
<td>2416.5</td>
<td>1001011010010</td>
<td>2440.5</td>
<td>1001011110100</td>
</tr>
<tr>
<td>2417.0</td>
<td>0100011010010</td>
<td>2441.0</td>
<td>0100111110100</td>
</tr>
<tr>
<td>2417.5</td>
<td>1100011010010</td>
<td>2441.5</td>
<td>1100111110100</td>
</tr>
<tr>
<td>2418.0</td>
<td>0010011010010</td>
<td>2442.0</td>
<td>0010111110100</td>
</tr>
<tr>
<td>2418.5</td>
<td>1010011010010</td>
<td>2442.5</td>
<td>1010111110100</td>
</tr>
<tr>
<td>2419.0</td>
<td>0110011010010</td>
<td>2443.0</td>
<td>0110011110100</td>
</tr>
<tr>
<td>2419.5</td>
<td>1110011010010</td>
<td>2443.5</td>
<td>1110011110100</td>
</tr>
<tr>
<td>2420.0</td>
<td>0010111010010</td>
<td>2444.0</td>
<td>0011011110100</td>
</tr>
<tr>
<td>2420.5</td>
<td>1010111010010</td>
<td>2444.5</td>
<td>1011011110100</td>
</tr>
<tr>
<td>2421.0</td>
<td>0110111010010</td>
<td>2445.0</td>
<td>0111011110100</td>
</tr>
<tr>
<td>2421.5</td>
<td>1110111010010</td>
<td>2445.5</td>
<td>1110111110100</td>
</tr>
<tr>
<td>2422.0</td>
<td>0110111010010</td>
<td>2446.0</td>
<td>0111111110100</td>
</tr>
<tr>
<td>2422.5</td>
<td>1110111010010</td>
<td>2446.5</td>
<td>1111011110100</td>
</tr>
<tr>
<td>2423.0</td>
<td>0111111010010</td>
<td>2447.0</td>
<td>0111101110100</td>
</tr>
<tr>
<td>2423.5</td>
<td>1111111010010</td>
<td>2447.5</td>
<td>1111101110100</td>
</tr>
<tr>
<td>FREQUENCY</td>
<td>BINARY</td>
<td>FREQUENCY</td>
<td>BINARY</td>
</tr>
<tr>
<td>-----------</td>
<td>------------</td>
<td>-----------</td>
<td>------------</td>
</tr>
<tr>
<td>2448.0</td>
<td>00000100110010</td>
<td>2472.0</td>
<td>00001010110010</td>
</tr>
<tr>
<td>2448.5</td>
<td>10000100110010</td>
<td>2472.5</td>
<td>10001010110010</td>
</tr>
<tr>
<td>2449.0</td>
<td>01000100110010</td>
<td>2473.0</td>
<td>01001010110010</td>
</tr>
<tr>
<td>2449.5</td>
<td>11000100110010</td>
<td>2473.5</td>
<td>11001010110010</td>
</tr>
<tr>
<td>2450.0</td>
<td>00100100110010</td>
<td>2474.0</td>
<td>00101010110010</td>
</tr>
<tr>
<td>2450.5</td>
<td>10100100110010</td>
<td>2474.5</td>
<td>10101010110010</td>
</tr>
<tr>
<td>2451.0</td>
<td>01100100110010</td>
<td>2475.0</td>
<td>01101010110010</td>
</tr>
<tr>
<td>2451.5</td>
<td>11100100110010</td>
<td>2475.5</td>
<td>11101010110010</td>
</tr>
<tr>
<td>2452.0</td>
<td>00010100110010</td>
<td>2476.0</td>
<td>00011010110010</td>
</tr>
<tr>
<td>2452.5</td>
<td>10010100110010</td>
<td>2476.5</td>
<td>10011010110010</td>
</tr>
<tr>
<td>2453.0</td>
<td>01010100110010</td>
<td>2477.0</td>
<td>01011010110010</td>
</tr>
<tr>
<td>2453.5</td>
<td>11010100110010</td>
<td>2477.5</td>
<td>11011010110010</td>
</tr>
<tr>
<td>2454.0</td>
<td>00110100110010</td>
<td>2478.0</td>
<td>00111010110010</td>
</tr>
<tr>
<td>2454.5</td>
<td>10110100110010</td>
<td>2478.5</td>
<td>10111010110010</td>
</tr>
<tr>
<td>2455.0</td>
<td>01110100110010</td>
<td>2479.0</td>
<td>01111010110010</td>
</tr>
<tr>
<td>2455.5</td>
<td>11110100110010</td>
<td>2479.5</td>
<td>11111010110010</td>
</tr>
<tr>
<td>2456.0</td>
<td>0001100110010</td>
<td>2480.0</td>
<td>0000110110010</td>
</tr>
<tr>
<td>2456.5</td>
<td>1001100110010</td>
<td>2480.5</td>
<td>1000110110010</td>
</tr>
<tr>
<td>2457.0</td>
<td>0101100110010</td>
<td>2481.0</td>
<td>0100110110010</td>
</tr>
<tr>
<td>2457.5</td>
<td>1101100110010</td>
<td>2481.5</td>
<td>1100110110010</td>
</tr>
<tr>
<td>2458.0</td>
<td>0011000110010</td>
<td>2482.0</td>
<td>0010100110010</td>
</tr>
<tr>
<td>2458.5</td>
<td>1011000110010</td>
<td>2482.5</td>
<td>1010000110010</td>
</tr>
<tr>
<td>2459.0</td>
<td>0111000110010</td>
<td>2483.0</td>
<td>0110000110010</td>
</tr>
<tr>
<td>2459.5</td>
<td>1111000110010</td>
<td>2483.5</td>
<td>1110000110010</td>
</tr>
<tr>
<td>2460.0</td>
<td>0011000110010</td>
<td>2484.0</td>
<td>0010000110010</td>
</tr>
<tr>
<td>2460.5</td>
<td>1011000110010</td>
<td>2484.5</td>
<td>1010000110010</td>
</tr>
<tr>
<td>2461.0</td>
<td>0111000110010</td>
<td>2485.0</td>
<td>0101000110010</td>
</tr>
<tr>
<td>2461.5</td>
<td>1111000110010</td>
<td>2485.5</td>
<td>1101000110010</td>
</tr>
<tr>
<td>2462.0</td>
<td>0011100110010</td>
<td>2486.0</td>
<td>0011000110010</td>
</tr>
<tr>
<td>2462.5</td>
<td>1011100110010</td>
<td>2486.5</td>
<td>1010100110010</td>
</tr>
<tr>
<td>2463.0</td>
<td>0111100110010</td>
<td>2487.0</td>
<td>0110100110010</td>
</tr>
<tr>
<td>2463.5</td>
<td>1111100110010</td>
<td>2487.5</td>
<td>1110100110010</td>
</tr>
<tr>
<td>2464.0</td>
<td>0011100110010</td>
<td>2488.0</td>
<td>0011000110010</td>
</tr>
<tr>
<td>2464.5</td>
<td>1011100110010</td>
<td>2488.5</td>
<td>1001100110010</td>
</tr>
<tr>
<td>2465.0</td>
<td>0111000110010</td>
<td>2489.0</td>
<td>0110100110010</td>
</tr>
<tr>
<td>2465.5</td>
<td>1111000110010</td>
<td>2489.5</td>
<td>1101100110010</td>
</tr>
<tr>
<td>2466.0</td>
<td>00110010110010</td>
<td>2490.0</td>
<td>00101011010010</td>
</tr>
<tr>
<td>2466.5</td>
<td>10110010110010</td>
<td>2490.5</td>
<td>10101011010010</td>
</tr>
<tr>
<td>2467.0</td>
<td>01110010110010</td>
<td>2491.0</td>
<td>01101011010010</td>
</tr>
<tr>
<td>2467.5</td>
<td>11110010110010</td>
<td>2491.5</td>
<td>11101011010010</td>
</tr>
<tr>
<td>2468.0</td>
<td>0010010110010</td>
<td>2492.0</td>
<td>00011011010010</td>
</tr>
<tr>
<td>2468.5</td>
<td>1010010110010</td>
<td>2492.5</td>
<td>10011011010010</td>
</tr>
<tr>
<td>2469.0</td>
<td>0110010110010</td>
<td>2493.0</td>
<td>01011011010010</td>
</tr>
<tr>
<td>2469.5</td>
<td>1110010110010</td>
<td>2493.5</td>
<td>11011011010010</td>
</tr>
<tr>
<td>2470.0</td>
<td>00110010110010</td>
<td>2494.0</td>
<td>00111011010010</td>
</tr>
<tr>
<td>2470.5</td>
<td>10110010110010</td>
<td>2494.5</td>
<td>10111011010010</td>
</tr>
<tr>
<td>2471.0</td>
<td>01110010110010</td>
<td>2495.0</td>
<td>01111011010010</td>
</tr>
<tr>
<td>2471.5</td>
<td>11110010110010</td>
<td>2495.5</td>
<td>11111011010010</td>
</tr>
<tr>
<td>FREQUENCY</td>
<td>BINARY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>--------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2496.0</td>
<td>00000001110010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2496.5</td>
<td>10000001110010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2497.0</td>
<td>01000001110010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2497.5</td>
<td>11000001110010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2498.0</td>
<td>00100001110010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2498.5</td>
<td>10100001110010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2499.0</td>
<td>01100001110010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2499.5</td>
<td>11100001110010</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix A

Series VT 40 Connector Detail

<table>
<thead>
<tr>
<th>J1 Description</th>
<th>1</th>
<th>#26 BUS</th>
<th>RF Out</th>
<th>A2-E1</th>
</tr>
</thead>
<tbody>
<tr>
<td>J2 Description</td>
<td>1</td>
<td>White</td>
<td>Video In</td>
<td>A1-E14</td>
</tr>
<tr>
<td>J3 Description</td>
<td>1</td>
<td>Black</td>
<td>+12V In</td>
<td>A1-E1</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Brown</td>
<td>GND In</td>
<td>A1-E2</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Red</td>
<td>N/C</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Orange</td>
<td>Hi/Low</td>
<td>A1-E3</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>Yellow</td>
<td>N/C</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>Green</td>
<td>N/C</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>Blue</td>
<td>N/C</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>Violet</td>
<td>N/C</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>Grey</td>
<td>+5V to SC1</td>
<td>A1-E4</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>White</td>
<td>SC1 Input</td>
<td>A1-E5</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>Wht/Blk</td>
<td>GND to SC1</td>
<td>A1-E6</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>Wht/Brn</td>
<td>N/C</td>
<td></td>
</tr>
<tr>
<td></td>
<td>13</td>
<td>Wht/Red</td>
<td>+5V to SC2</td>
<td>A1-E7</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>Wht/Org</td>
<td>SC2 Input</td>
<td>A1-E8</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>Wht/Yel</td>
<td>GND to SC2</td>
<td>A1-E9</td>
</tr>
</tbody>
</table>

SC = Subcarrier, (audio/data)

J3-4 .25/2W Select

Open (N/C) 2W
GND .25W