Communication parameters:
DATA RATE: 9600 BPS
START BITS: 1
DATA BITS: 8
PARITY: NONE
STOP BITS: 1
MODE: Half Duplex - TTL

CI-V Address:
Unit will internally set for an interface address of 98 hex.

Command Set Summary:

Primary Commands:
03h - Read Manual Center Frequency
05h - Program Manual Center Frequency

Secondary Commands:
7Fh 00h - Initiate Sweep
7Fh 80h - Abort Sweep
7Fh 01h - Pause Sweep
7Fh 81h - Resume Sweep
7Fh 02h - Program Sweep Start Frequency
7Fh 82h - Read Sweep Start Frequency
7Fh 03h - Program Sweep Stop Frequency
7Fh 83h - Read Sweep Stop Frequency
7Fh 04h - Program Sweep Rate
7Fh 84h - Read Sweep Rate
7Fh 05h - Enable Battery Charger
7Fh 85h - Disable Battery Charger

MISC Commands:
7Fh 06h - FUTURE
7Fh 07h - Read Analog to Digital Converter Voltages
7Fh 08h - FUTURE
7Fh 09h - Request Identification Information
**Command Set Details:**

**SET MANUAL FREQUENCY - Program the Center Frequency**

**Structure:** \[ \text{FE FE Radr Tadr 05 bcd3 bcd2 bcd1 bcd0 FD} \]

**BCD3 - BCD0 REPRESENT THE FREQUENCY IN MHz**

**EX:**

- **PROGRAM - 550 MHz**
  \[ \text{FE FE Radr Tadr 05 00 05 00 00 FD} \]

- **PROGRAM - 1000 MHz**
  \[ \text{FE FE Radr Tadr 05 01 00 00 00 FD} \]

**Response:**

- **OK:** \[ \text{FE FE Radr Tadr FB FD} \]
- **ERR:** \[ \text{FE FE Radr Tadr FA FD} \]

**READ MANUAL FREQUENCY - Read the Center Frequency**

**Structure:** \[ \text{FE FE Radr Tadr 03 FD} \]

**Response:**

- **OK:** \[ \text{FE FE Radr Tadr bcd3 bcd2 bcd1 bcd0 FB FD} \]

**BCD3 - BCD0 REPRESENT THE FREQUENCY IN MHz**

**Example:**

- **550 MHz**
  \[ \text{FE FE Radr Tadr 00 05 05 00 00 FD} \]

- **1000 MHz**
  \[ \text{FE FE Radr Tadr 01 00 00 00 00 FD} \]

**ERR:** \[ \text{FE FE Radr Tadr FA FD} \]
**Model APS-105 OptoLinx Command Set**

**Command Set Details:**

**INITIATE SWEEP - Enables Sweep Process starting from the start frequency**

Structure: \[\text{FE FE Radr Tadr 7F 00 FD}\]

Response:
- OK: \[\text{FE FE Radr Tadr FB FD}\]
- ERR: \[\text{FE FE Radr Tadr FA FD}\]

**ABORT SWEEP - Aborts Sweep Process and returns unit to the Manual Entry Mode**

Structure: \[\text{FE FE Radr Tadr 7F 80 FD}\]

Response:
- OK: \[\text{FE FE Radr Tadr FB FD}\]
- ERR: \[\text{FE FE Radr Tadr FA FD}\]

**PAUSE SWEEP - Temporarily PAUSES Sweep Process**

Structure: \[\text{FE FE Radr Tadr 7F 01 FD}\]

Response:
- OK: \[\text{FE FE Radr Tadr FB FD}\]
- ERR: \[\text{FE FE Radr Tadr FA FD}\]

**RESUME SWEEP - Resumes Sweep Process from last Frequency**

Structure: \[\text{FE FE Radr Tadr 7F 81 FD}\]

Response:
- OK: \[\text{FE FE Radr Tadr FB FD}\]
- ERR: \[\text{FE FE Radr Tadr FA FD}\]
Model APS-105 OptoLinx Command Set

Command Set Details:

SET START FREQUENCY - Program the Sweep Start Frequency

Structure: FE FE Radr Tadr 7F 02 bcd3 bcd2 bcd1 bcd0 FD

BCD3 - BCD0 REPRESENT THE STARTFREQUENCY IN MHZ
EX:

PROGRAM - 10 Mhz
FE FE Radr Tadr 7F 02 00 00 01 00 FD

PROGRAM - 100 Mhz
FE FE Radr Tadr 7F 02 00 01 00 00 FD

Response:
OK: FE FE Radr Tadr FB FD
ERR: FE FE Radr Tadr FA FD

READ START FREQUENCY - Read the Sweep Start Frequency

Structure: FE FE Radr Tadr 7F 82 FD

BCD3 - BCD0 REPRESENT THE START FREQUENCY IN MHZ

Response:
OK: FE FE Radr Tadr bcd3 bcd2 bcd1 bcd0 FB FD
Example:
FE FE Radr Tadr 00 00 01 00 FB FD
10 Mhz
FE FE Radr Tadr 00 01 00 00 FB FD
100 MHz
ERR: FE FE Radr Tadr FA FD
Command Set Details:

SET STOP FREQUENCY - Program the Sweep Stop Frequency

Structure: FE FE Radr Tadr 7F 03 bcd3 bcd2 bcd1 bcd0 FD

BCD3 - BCD0 REPRESENT THE STOP FREQUENCY IN MHZ
EX:
  PROGRAM - 900 Mhz
  FE FE Radr Tadr 7F 03 00 09 00 00 FD

Response:
  OK: FE FE Radr Tadr FB FD
  ERR: FE FE Radr Tadr FA FD

READ STOP FREQUENCY - Read the Sweep Stop Frequency

Structure: FE FE Radr Tadr 7F 83 FD

BCD3 - BCD0 REPRESENT THE STOP FREQUENCY IN MHZ

Response:
  OK: FE FE Radr Tadr bcd3 bcd2 bcd1 bcd0 FB FD

Example:
  FE FE Radr Tadr 00 09 00 00 FB FD
  900 MHz

  ERR: FE FE Radr Tadr FA FD
**Command Set Details:**

**SET SWEEP SPEED - Program the Sweep Speed**

Structure: FE FE Radr Tadr 7F 04 bcd0 FD

Where bcd0 represents:

<table>
<thead>
<tr>
<th>Value</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td>1 Mhz/Sec</td>
</tr>
<tr>
<td>01</td>
<td>10 Mhz/Sec</td>
</tr>
<tr>
<td>02</td>
<td>100 Mhz/Sec</td>
</tr>
</tbody>
</table>

Example:

PROGRAM - 10 Mhz/Sec
FE FE Radr Tadr 7F 04 01 FD

Response:

OK: FE FE Radr Tadr FB FD  
ERR: FE FE Radr Tadr FA FD

**READ SWEEP SPEED - Read the Sweep Speed**

Structure: FE FE Radr Tadr 7F 84 FD

Response:

OK: FE FE Radr Tadr bcd0 FB FD

Where bcd0 represents:

<table>
<thead>
<tr>
<th>Value</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td>1 Mhz/Sec</td>
</tr>
<tr>
<td>01</td>
<td>10 Mhz/Sec</td>
</tr>
<tr>
<td>02</td>
<td>100 Mhz/Sec</td>
</tr>
</tbody>
</table>

Example:

FE FE Radr Tadr 02 FB FD  
100 MHz/Sec

ERR: FE FE Radr Tadr FA FD
Command Set Details:

ENABLE BATTERY CHARGER – Turn ‘ON’ the Battery Charger

Structure: FE FE Radr Tadr 7F 05 FD

Response:
  OK: FE FE Radr Tadr FB FD
  ERR: FE FE Radr Tadr FA FD

DISABLE BATTERY CHARGER – Turn ‘OFF’ the Battery Charger

Structure: FE FE Radr Tadr 7F 85 FD

Response:
  OK: FE FE Radr Tadr FB FD
  ERR: FE FE Radr Tadr FA FD
Command Set Details:

REQUEST IDENTIFICATION INFORMATION

Structure: FE FE Radr Tadr 7F 09 FD

Response:
OK: FE FE Radr Tadr Id Sv Rv Iv FB FD

Where:
Id = Unique Product Identification ID (75 hex for the APS105)
Sv = Current Software Revision (ex. 20 = Software Revision 2.0)
Rv = Current Board Revision (ex. 10 = RF Board Revision 1.0)
Iv = Current Interface Revision (N/A in the APS105 – always 0)

ERR: FE FE Radr Tadr FA FD