11/8/02

Setting up w/ K band in Equipment Room. Have chart recorder running on AF Rack. TP monitors in parallel.

Rx IF → ORG → CM9 → 561 → HSS0
Rx IF → ORD → CM13 → 565 → HSS1

Ignore scans 142

Us’g T = 20s, T = 300s, Sw Period 5s.

Chs R4, L4 @ 226 Hz
Scan 3 st @ 12:54:23
12 st @ 13:45:10

Chs R3, L3
Scan 13 st @ 13:49:28
20 st @ 14:30:04

Chs R1, L1 @ 206 Hz
Scan 21 st @ 14:39:47
28 st @ 15:15:23

Chs R2, L2
Scan 29 st @ 15:20:11

Analysis of data follows. TP fluctuations need w/ spectrometer and with chart recorder agree as best as can be determined. However, appears noticeably worse than 11/07/02 tests just at Rx IF output ports. Points to stability problems in converter and/or AF Racks.
K-Band TP and 15K Temperature Monitoring

We're looking for a rapid 1% change in total power from the K-band receiver, and trying to correlate it with a change in 15K temperature.

![Diagram of K-Band TP and 15K Temperature Monitoring]

**Chart Recorder settings:**

<table>
<thead>
<tr>
<th>Channel</th>
<th>mV/cm</th>
<th>Chart speed cm/min</th>
</tr>
</thead>
<tbody>
<tr>
<td>15K monitor</td>
<td>1</td>
<td>0.1</td>
</tr>
<tr>
<td>TP monitor</td>
<td>2</td>
<td>0.5</td>
</tr>
</tbody>
</table>

A 1% change in TP would correspond to \(2.00 \times 0.01 = 20 \text{ mV}\).

A 1% change in 15K temperature is \(161 \times 0.01 = 1.61 \text{ mV}\).

We will easily be able to see changes of this magnitude on the chart recorder; 1% change in TP is 40 cm, and 1% in T15 is 16.1 cm.

**Data Log:**

<table>
<thead>
<tr>
<th>Receiver Channel</th>
<th>Start Time</th>
<th>Stop Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>L4</td>
<td>1:23 PM</td>
<td>2:40 PM</td>
</tr>
<tr>
<td>R4</td>
<td>2:40 PM</td>
<td>3:50</td>
</tr>
<tr>
<td>R2</td>
<td>3:50</td>
<td>4:20</td>
</tr>
</tbody>
</table>
Nominal $T_{TP} = 2.00 \text{ volts}$

Nominal $T_{15K} = 0.142 \text{ volt}$

$T_{TH} = 0.025\%$

$0.5 \text{ mV}$

$0.1 \text{ mV}$