VIP472
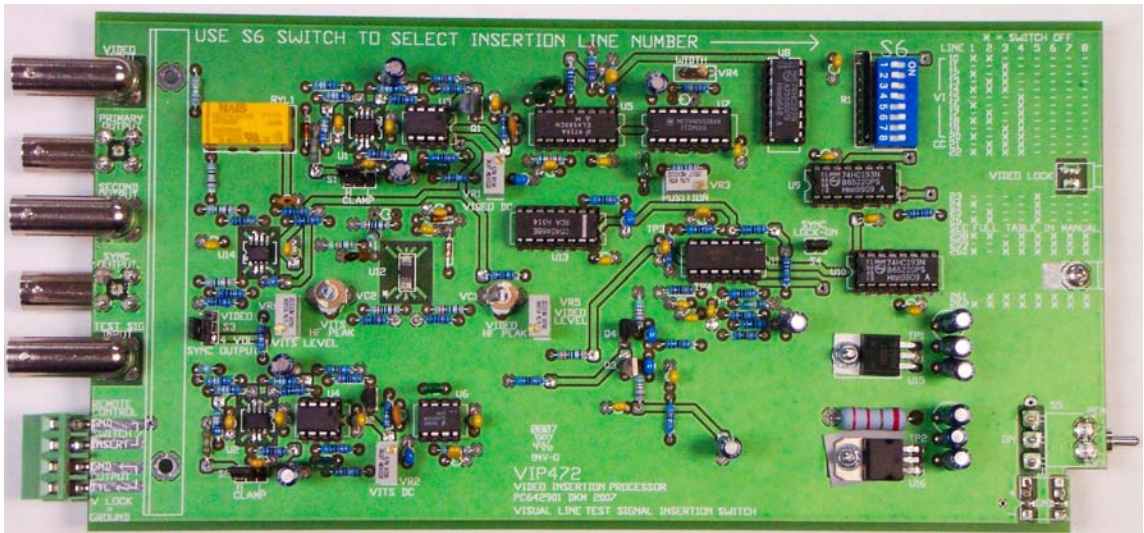

VIDEO LINE INSERTION PROCESSOR

INSTRUCTION BOOK
IB 6429-01

VIP472
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SHIPPING INSPECTION

Remove from shipping container and inspect for shipping damage. The VIP472 is a Slide in Card that fits into the RMS-400 Mainframe and Power Supply. The card is supplied with a retaining screw (attached to the PC Board), a Front Label Designator and this instruction book. If an RMS-400 Mainframe and Power Supply has been purchased with Card, the Card will be installed into the Mainframe with labels attached and the retaining screw engaged and locked.

HOW AND WHERE TO MOUNT THE VIDEO INSERTION PROCESSOR

Select a position for the RMS-400 that is near the equipment you need to interface. The placement is   not critical. Then install the VIP472 PC CARD in any unused CARD SLOT that is empty. Follow the instructions for card installation, be sure not to apply excessive force to the card during installation. Caution: position all switches in the center position before sliding the card into the mainframe to prevent the switch from hitting the front label and being damaged by excessive force. See the "LINE SELECTION" switch setting table and set the video line you want to insert your video test signals onto.

MODULE CARD INSTALLATION

1.   Select one of the un-used nine positions to be occupied by the new circuit board module.

2.   Remove the blank label in that position by peeling it off of the front panel. Peel the label slowly to remove all of the label and adhesive. Any remaining adhesive may be removed by rubbing the surface with your thumb. WARNING: DO NOT USE SOLVENTS TO REMOVE THE LABEL ADHESIVE. The solvent could damage the equipment cards or cause a fire.

3.   Peel the backing off of the new label and apply it to the front panel of the RMS-400 rack in the position of the new card. Align the new label with the screw head in the hole in the lower right hand corner of the label, then align the center thumbscrew with the clearance hole in the front panel. This should cause the label to be straight and vertical. When the label is in place press firmly the secure the label.

4.   Then remove the thumb-screw retainer from the product card, it is located at the front of the card and is removed by rotating the knob counter-clock-wise.

5.   Select any and all product options on the specific card.

6.   Next slide the card into the card guides at the rear of the RMS-400. Be sure that the notch in the circuit card is facing forward and down. Push the card all the way to the front of the rack until it stops. DO NOT APPLY EXCESSIVE FORCE TO THE CARD.

7.   Insert the thumb-screw that was removed in step 5 while rotating it in a clock-wise direction. When it begins to thread into the card, continue until it is finger tight. CAUTION TIGHT BY HAND ONLY, DO NOT USE TOOLS TO TIGHTEN THE THUMB-SCREW. OVER TIGHTENING WILL DAMAGE THE CIRCUIT CARD.

8.   Attach any cables or wires necessary for operation.

Most circuit board modules have several adjustments which are carefully factory set with precision instruments for optimum performance. Change only those which must be adjusted, some controls when mis-adjusted produce little change under normal operating conditions, but can seriously reduce the ability of the unit to function correctly under other conditions which may be encountered. Therefore, if you must adjust a control, place a mark on it before moving it, so that it may be returned to its original setting with reasonable accuracy.

HOW TO CABLE THE VIP472

Connect a BNC cable from your source video to the "PRIMARY VIDEO INPUT" at the rear of the unit. The "PRIMARY VIDEO INPUT" is internally terminated by a precision 75 Ohm termination to match standard video cable.

Next connect a BNC cable from the "TEST SIG INPUT" connector to your video test signal source. The "TEST SIG INPUT" is internally terminated by a precision 75 Ohm termination to match standard video cable.

Then connect the output BNC connector to your video load or the device you wish input the video with the test signal inserted. There is a secondary video output "DA output" at the rear of the unit if you need a second feed or wish to have a monitor connected for observation.

Two prevent the inserted line from revolving, your test signal generator must be locked to your video input. If your video sources are already synchronized in-house then you are ready to operate the equipment. If your video test generator is not synchronized with the video source, then you must use the "SYNC OUT" connector to sync up your video test generator. The "SYNC OUT" connector outputs a signal that is locked to the input "PRIMARY VIDEO". Select either the 1Vpp video output or the 4 Vpp sync signal output by moving the internal jumper at S3 to the sync type needed by your generator. Then connect a BNC cable from the "SYNC OUT" connector to the "SYNC INPUT connector on your video test generator.

If you wish to control line insertion at a location other than the equipment rack, then connect a twisted pair wire from the "REMOTE CONTROL" connector on the rear panel to an external switch. This control is a self-powered TTL input. All that is needed is an external switch connection.

An external TTL video lock output is provided if monitoring of the video lock is required. Connect twisted pair wires to the screw terminal at the rear that is marked "V LOCK OUTPUT TTL". This signal is grounded when video is locked and +5 VDC when video in not locked.

POWER SUPPLY INSTALLATION

Power for the VIP472 is supplied by the RMS-400 Mainframe. It supplies the card with +/- 12 VDC to power the card.

SET-UP OF THE VIP472

Select the mode of operation by moving the switch on the front panel to one of three positions. See "Operation" in the next section.

OPERATION

The VIP472 is a line switcher that will insert any one video test signal line onto your NTSC video path so that you can monitor the transmission signal quality. This process allows the video test signal to pass through all digital compression systems to verify that your video is being delivered accurately without distortion.

Most digital transmission systems will not pass the vertical interval. This system replaces the Vertical Interval Test Signals "VITS" and Vertical Interval Reference Signals "VIRS" that were used to monitor video quality, but are now lost due to digital compression.

This process momentarily inserts a video test signal onto a visual picture line at the top or bottom of the screen where it is least noticeable. The test signal is only on during the test and then turned off for normal video operation. You may select any line of video for test signal insertion by using a "dip" switch on the PC Card. SEE THE LINE SELECTOR TABLE FOR SWITCH SETTING.

The unit has two BNC connector video inputs, one for the video and the other for the video test signal generator. A BNC connector "SYNC" output signal is provided to lock-up your test signal generator if needed. A secondary video output BNC connector is also provided on the main channel.

Line insertion is controlled by a front panel switch. This switch allows you to turn the insertion "ON/OFF" and select "REMOTE". The "REMOTE" feature allows you to connect an external switch to the screw terminal connector, to control the insertion. There is an LED on the front panel to indicate video lock between main channel and the test signal generator. The unit also has a TTL output to indicate the video lock status remotely. In the event of a power failure the main video is by-passed to the primary output.

FRONT PANEL CONTROLS AND INDICATORS

A green front panel LED "VIDEO LOCK" indicator tells you when your video is locked to prevent line rolling. A PLL lock circuit on the board controls the insertion and prevents insertion from occurring if the two video sources are not locked together. I you wish to see the effects of line rolling you can remove the S4 jumper on the pc card. This will remove the PLL lock-out control and allow the inserted line to roll across the screen. Remember to replace the jumper for normal operation.

The front panel three position switch is used to select the mode of test signal insertion. The "OFF" position will not allow insertion of the test signal under any circumstances. The "ON" position of the switch will insert your selected line of test signals all of the time regardless of the condition of the external "REMOTE CONTROL".
The "REM" position of the switch will allow the control of insertion to be operated by opening and closing the external switch connected to the screw terminals marked "GND and INSERT".

BY-PASS MODES OF OPERATION

The VIP472 has a power by-pass feature. If the power fails on the PC card the "PRIMARY VIDEO INPUT" will be connected directly to the "VIDEO OUTPUT" and the "SECONDARY VIDEO OUTPUT" will be shut off.

CARE AND MAINTENANCE OF THE VIDEO MASTER

Care should be taken not to subject the VIP472 to extreme moisture or temperatures outside normal operating range. There are no periodic maintenance adjustments to be made on the VIP472. If the unit does not function properly it should be returned to the factory for repair.

```
                            LINE SELECTOR TABLE
LINE       SWITCH #         LINE        SWITCH #         LINE        SWITCH #
    1 2 3 4 5 6 7 8             1 2 3 4 5 6 7 8              1 2 3 4 5 6 7 8
10  X X - - - - - -       67  - - X X X X - -       124 X - X - X X X -
11  - - X - - - - -       68  X - X X X X - -       125 - X X - X X X -
12  X - X - - - - -       69  - X X X X X - -       126 X X X - X X X -
13  - X X - - - - -       70  X X X X X X - -       127 - - - X X X X -
14  X X X - - - - -       71  - - - - - - X -       128 X - - X X X X -
15  - - - X - - - -       72  X - - - - - X -       129 - X - X X X X -
16  X - - X - - - -       73  - X - - - - X -       130 X X - X X X X -
17  - X - X - - - -       74  X X - - - - X -       131 - - X X X X X -
18  X X - X - - - -       75  - - X - - - X -       132 X - X X X X X -
19  - - X X - - - -       76  X - X - - - X -       133 - X X X X X X -
20  X - X X - - - -       77  - X X - - - X -       134 X X X X X X X -
21  - X X X - - - - [CC]  78  X X X - - - X -       135 - - - - - - - X
22  X X X X - - - -       79  - - - X - - X -       136 X - - - - - - X
23  - - - - X - - -       80  X - - X - - X -       137 - X - - - - - X
24  X - - - X - - -       81  - X - X - - X -       138 X X - - - - - X
25  - X - - X - - -       82  X X - X - - X -       139 - - X - - - - X
26  X X - - X - - -       83  - - X X - - X -       140 X - X - - - - X
27  - - X - X - - -       84  X - X X - - X -       141 - X X - - - - X
28  X - X - X - - -       85  - X X X - - X -       142 X X X - - - - X
29  - X X - X - - -       86  X X X X - - X -       143 - - - X - - - X
30  X X X - X - - -       87  - - - - X - X -       144 X - - X - - - X
31  - - - X X - - -       88  X - - - X - X -       145 - X - X - - - X
32  X - - X X - - -       89  - X - - X - X -       146 X X - X - - - X
33  - X - X X - - -       90  X X - - X - X -       147 - - X X - - - X
34  X X - X X - - -       91  - - X - X - X -       148 X - X X - - - X
35  - - X X X - - -       92  X - X - X - X -       149 - X X X - - - X
36  X - X X X - - -       93  - X X - X - X -       150 X X X X - - - X
37  - X X X X - - -       94  X X X - X - X -       151 - - - - X - - X
38  X X X X X - - -       95  - - - X X - X -       152 X - - - X - - X
39  - - - - - X - -       96  X - - X X - X -       153 - X - - X - - X
40  X - - - - X - -       97  - X - X X - X -       154 X X - - X - - X
41  - X - - - X - -       98  X X - X X - X -       155 - - X - X - - X
42  X X - - - X - -       99  - - X X X - X -       156 X - X - X - - X
43  - - X - - X - -       100 X - X X X - X -       157 - X X - X - - X
44  X - X - - X - -       101 - X X X X - X -       158 X X X - X - - X
45  - X X - - X - -       102 X X X X X - X -       159 - - - X X - - X
46  X X X - - X - -       103 - - - - - X X -       160 X - - X X - - X
47  - - - X - X - -       104 X - - - - X X -       161 - X - X X - - X
48  X - - X - X - -       105 - X - - - X X -       162 X X - X X - - X
49  - X - X - X - -       106 X X - - - X X -       163 - - X X X - - X
50  X X - X - X - -       107 - - X - - X X -       164 X - X X X - - X
51  - - X X - X - -       108 X - X - - X X -       165 - X X X X - - X
52  X - X X - X - -       109 - X X - - X X -       166 X X X X X - - X
53  - X X X - X - -       110 X X X - - X X -       167 - - - - - X - X
54  X X X X - X - -       111 - - - X - X X -       168 X - - - - X - X
55  - - - - X X - -       112 X - - X - X X -       169 - X - - - X - X
56  X - - - X X - -       113 - X - X - X X -       170 X X - - - X - X
57  - X - - X X - -       114 X X - X - X X -       171 - - X - - X - X
58  X X - - X X - -       115 - - X X - X X -       172 X - X - - X - X
59  - - X - X X - -       116 X - X X - X X -       173 - X X - - X - X
60  X - X - X X - -       117 - X X X - X X -       174 X X X - - X - X
61  - X X - X X - -       118 X X X X - X X -       175 - - - X - X - X
62  X X X - X X - -       119 - - - - X X X -       176 X - - X - X - X
63  - - - X X X - -       120 X - - - X X X -       177 - X - X - X - X
64  X - - X X X - -       121 - X - - X X X -       178 X X - X - X - X
65  - X - X X X - -       122 X X - - X X X -       179 - - X X - X - X
66  X X - X X X - -       123 - - X - X X X -       180 X - X X - X - X
```

LINE	1	2	3	4	5	6	7	8
181	-	X	X	X	-	X	-	X
182	X	X	X	X	-	X	-	X
183	-	-	-	-	X	X	-	X
184	X	-	-	-	X	X	-	X
185	-	X	-	-	X	X	-	X
186	X	X	-	-	X	X	-	X
187	-	-	X	-	X	X	-	X
188	X	-	X	-	X	X	-	X
189	-	X	X	-	X	X	-	X
190	X	X	X	-	X	X	-	X
191	-	-	-	X	X	X	-	X
192	X	-	-	X	X	X	-	X
193	-	X	-	X	X	X	-	X
194	X	X	-	X	X	X	-	X
195	-	-	X	X	X	X	-	X
196	X	-	X	X	X	X	-	X
197	-	X	X	X	X	X	-	X
198	X	X	X	X	X	X	-	X
199	-	-	-	-	-	-	X	X
200	X	-	-	-	-	-	X	X
201	-	X	-	-	-	-	X	X
202	X	X	-	-	-	-	X	X
203	-	-	X	-	-	-	X	X
204	X	-	X	-	-	-	X	X
205	-	X	X	-	-	-	X	X
206	X	X	X	-	-	-	X	X
207	-	-	-	X	-	-	X	X
208	X	-	-	X	-	-	X	X
209	-	X	-	X	-	-	X	X
210	X	X	-	X	-	-	X	X
211	-	-	X	X	-	-	X	X
212	X	-	X	X	-	-	X	X
213	-	X	X	X	-	-	X	X
214	X	X	X	X	-	-	X	X
215	-	-	-	-	X	-	X	X
216	X	-	-	-	X	-	X	X
217	-	X	-	-	X	-	X	X
218	X	X	-	-	X	-	X	X
219	-	-	X	-	X	-	X	X
220	X	-	X	-	X	-	X	X
221	-	X	X	-	X	-	X	X
222	X	X	X	-	X	-	X	X
223	-	-	-	X	X	-	X	X
224	X	-	-	X	X	-	X	X
225	-	X	-	X	X	-	X	X
226	X	X	-	X	X	-	X	X
227	-	-	X	X	X	-	X	X
228	X	-	X	X	X	-	X	X
229	-	X	X	X	X	-	X	X
230	X	X	X	X	X	-	X	X
231	-	-	-	-	-	X	X	X
232	X	-	-	-	-	X	X	X
233	-	X	-	-	-	X	X	X
234	X	X	-	-	-	X	X	X
235	-	-	X	-	-	X	X	X
236	X	-	X	-	-	X	X	X
237	-	X	X	-	-	X	X	X
238	X	X	X	-	-	X	X	X
239	-	-	-	X	-	X	X	X
240	X	-	-	X	-	X	X	X
241	-	X	-	X	-	X	X	X
242	X	X	-	X	-	X	X	X
243	-	-	X	X	-	X	X	X
244	X	-	X	X	-	X	X	X
245	-	X	X	X	-	X	X	X
246	X	X	X	X	-	X	X	X
247	-	-	-	-	X	X	X	X
248	X	-	-	-	X	X	X	X
249	-	X	-	-	X	X	X	X
250	X	X	-	-	X	X	X	X
251	-	-	X	-	X	X	X	X
252	X	-	X	-	X	X	X	X
253	-	X	X	-	X	X	X	X
254	X	X	X	-	X	X	X	X
255	-	-	-	X	X	X	X	X
256	X	-	-	X	X	X	X	X
257	-	X	-	X	X	X	X	X
258	X	X	-	X	X	X	X	X
259	-	-	X	X	X	X	X	X
260	X	-	X	X	X	X	X	X
261	-	X	X	X	X	X	X	X
262	X	X	X	X	X	X	X	X