

PDI HEADEND ELECTRONICS



PDI-60APD

HDTV Agile In, Agile Out Digital Processor

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OPERATING INSTRUCTIONS

BEFORE OPERATING PLEASE READ THIS MANUAL THOROUGHLY AND RETAIN IT FOR FUTURE REFERENCE.

TECHNICAL SUPPORT

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1-800-242-1606



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INTRODUCTION

PDI Communications' PDI-60APD is a professional quality, user friendly, High Definition TV signal processor designed primarily to feed 8VSB digital broadcast signals through a cable system to television receivers or interface converters able to decode the signal. Rock solid PLL controlled tuning by advanced microprocessor insures precise UHF, VHF or CATV channel access. Careful design of the input achieves a wide dynamic range and very low noise figure. Input tuning covers the range of 54 to 860 MHz. The agile output ranges from 54 to 860MHz and is controlled by another PLL circuit with 12.5 or 25 kHz offsets. Both the input and output channels have non-volatile memories that restore the channels automatically in the event of a power failure. SAW filtering guarantees broadcast quality pictures. An external IF loop is available on the rear of the unit enabling the processor to serve as a digital up converter in high speed internet CMTS and other digital systems.

FEATURES

- +60dBmV digital output with very low spurious response
- Microprocessor controlled PLL tuning for precise frequency control
- Non-volatile memories restore channels after a power failure
- Internally set FCC offsets
- User friendly channel selection by push-button
- Professional grade SAW filters allow true adjacent channel operation
- Loop-through for scrambling or external IF insertion
- 134 channel up converter for flexibility
- 2 year "no-hassle" warranty
- ISO 9002 certified
- Auxiliary AC convenience outlet

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SPECIFICATIONS

INPUT SECTION

| | |
|------------------------------|---|
| Input Frequency Range | 54 to 860MHz |
| Input Channels | UHF, VHF CATV/HRC input freq. available upon request -20 to 0 dBmV "Digital" recommended) |
| Input Level Range | |
| Noise Figure | 7.5dB @ VHF 10dB @ UHF |
| Impedance | 75ohms |

IF SECTION

| | |
|-------------------------------|--------------------------------|
| IF Frequency (Central) | 44.0MHz |
| IF Output Level | +20dBmV \pm 2dB |
| IF IN/OUT Impedance | 75ohms (14dB return loss min.) |

OUTPUT SECTION

| | |
|--------------------------------------|------------------------|
| Output Frequency | 54 to 860MHz |
| Frequency Stability | \pm 5kHz max. |
| Spurious Output | -60dBc |
| Frequency Response | Meets FCC requirements |
| Output Offsets Internally Set | 0, +12.5kHz and +25kHz |

GENERAL

| | |
|-------------------------------|---|
| Power Requirements | 85-265 VAC |
| Temperature Range | 0 to +50 degrees C |
| Dimensions | 19" x 1.75" x 7.5" |
| Rear Panel Connections | RF Input F Female RF Output F Female IF Loop F Female AC Convenience 3 Cond. Polarized w/Ground |

Front Panel Controls

RF Output Level Adjust
Input Channel Set
Output Channel Set
CATV/OFF AIR, Set
Test Point -30dBc

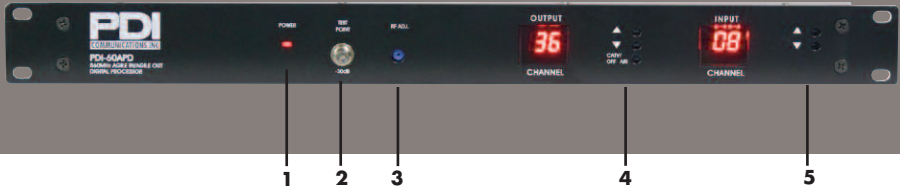
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PDI-60APD FRONT PANEL CONTROLS

1. Power Indicator

Red LED lights when power is applied to the modulator.

2. Test Point

Output levels read at this point will be down 30dB from actual output.

3. RF Output Level

Adjustment for the digital output level at RF OUTPUT. The control is adjustable over a 20dB range. Turn clockwise to increase output level.

4. Output Channel Selection

Any channel from 2 to 134 plus A-5 to A-1 can be selected by pushing channel up (^) or channel down (v) button. CATV/OFF AIR is selected by the bottom button.

A-1 = CATV 99 on display.

A-5 = CATV 95 on display.

5. Input Channel Selection

Any UHF, VHF can be selected by pushing channel up (^) or channel down (v) until the proper number is displayed. Use the accompanying conversion charts on pages 7 and 8 for frequency information. CATV or HRC input frequencies are available upon request.

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PDI-60APD REAR PANEL CONTROLS

1. RF Input

Connect to antenna or other RF source. Ideal operating level is approximately -20dBmV to 0dBmV.

2. IF Out

A composite IF signal connection is provided for a scrambling encoder or an emergency alert system. The output level is +20dBmV \pm 2dBmV. Install a jumper cable from this output to IF IN when no external equipment is used.

3. IF In

The IF signal from a scrambling encoder or emergency alert system IF OUTPUT connects to this point. The recommended input level is approximately +20dBmV. A jumper cable must be installed from IF OUT to this input when no external equipment is used.

4. RF Output

A +60dBmV digital CATV or UHF signal in the frequency range of 54 to 860MHz (CH. 2-134) is provided at this connection.

5. Power Cord

85-265 VAC power source.

6. AC Power Socket

An unswitched, AC convenience power source is provided by this socket. Power drain should not exceed 600 watts.

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OPERATING INSTRUCTIONS

1. Jumper

Connect the enclosed jumper from IF OUT to IF IN on the rear of the unit.

2. AC Power

Plug the unit in and let it warm up for approximately 40 minutes before setting controls.

3. Processor Input

Set input level to be between -20 - 0dBmV. All processors are set at the factory to accept UHF OFF AIR signals at the input.

4. Processor Output

The processor output frequencies are set at the factory for OFF AIR (UHF) channels 14 to 69.

To change the output frequency to CATV.

- a) Press the CATV/OFF AIR button once on the output section of the front panel.
- b) **b1** appears on the display.
- c) Press either the (^) or (v) arrow until **b0** appears on the display.
- d) Press the CATV/OFF AIR button again. All output channels are now CATV frequencies.

b0 = STD mode (CATV) **channels 2-135**

b1 = UHF mode (OFF AIR) **channels 14-69**

5. Input Display Settings

Input settings are achieved by pressing either the (^) channel up or (v) channel down buttons located on the front panel next to the digital input display.

7. Output Display Settings

Output settings are achieved by pressing either the (^) channel up or (v) channel down button located on the front panel next to the digital output display.

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INSPECTION

When the unit is delivered, immediately inspect the unopened box for signs of obvious damage. Note any problem on the carrier's delivery tickets before signing. If later inspection reveals concealed damage, a claim must be filed with the carrier within 10 days. Save all packing materials for inspection by the carrier or in case the unit should ever need to be returned to the factory for service. In case of obvious physical damage do not attempt to operate the modulator as further damage could result. Contact your distributor or the factory if you need assistance. The unit should be allowed to warm up for at least an hour before testing to assure that it meets specifications. Any unused port should be terminated after the setup procedure is completed.

WARRANTY 2 years

PDI Communications, Inc. equipment has been thoroughly tested and found to be in proper operating condition when shipped from the factory and is warranted to be free from defects in materials or workmanship that may develop within two years of the date of purchase.

PDI agrees to remedy such or furnish a new part, or at its option an entire unit, or any part of a unit that discloses such defect, provided that the unit or part is returned to PDI or a PDI authorized service facility according to the terms listed below.

Prior authorization with a return authorization number issued by PDI or its representative is required for all returns. The purchaser shall be responsible for all freight charges on shipment to PDI unless otherwise authorized. Charges to return a unit or part to a purchaser will be paid by PDI. Claims for damage in shipment to the purchaser must be filed by the purchaser with the carrier in accordance with the carrier's regulations. All PDI shipping containers meet the requirements of the consolidated freight classification standard.

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HEADEND DISPLAY CONVERSION CHART INPUT OFF AIR

| Channel | Carrier Freq. (MHz) |
|---------|---------------------|
| 2 | 55.25 |
| 3 | 61.25 |
| 4 | 67.25 |
| 5 | 77.25 |
| 6 | 83.25 |
| 7 | 175.25 |
| 8 | 181.25 |
| 9 | 187.25 |
| 10 | 193.25 |
| 11 | 199.25 |
| 12 | 205.25 |
| 13 | 211.25 |
| 14 | 471.25 |
| 15 | 477.25 |
| 16 | 483.25 |
| 17 | 489.25 |
| 18 | 495.25 |
| 19 | 501.25 |
| 20 | 507.25 |
| 21 | 513.25 |
| 22 | 519.25 |
| 23 | 525.25 |
| 24 | 531.25 |
| 25 | 537.25 |
| 26 | 543.25 |
| 27 | 549.25 |
| 28 | 555.25 |
| 29 | 561.25 |
| 30 | 567.25 |
| 31 | 573.25 |
| 32 | 579.25 |
| 33 | 585.25 |
| 34 | 591.25 |
| 35 | 597.25 |
| 36 | 603.25 |
| 37 | 609.25 |
| 38 | 615.25 |
| 39 | 621.25 |
| 40 | 627.25 |
| 41 | 633.25 |
| 42 | 639.25 |
| 43 | 645.25 |
| 44 | 651.25 |

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HEADEND DISPLAY CONVERSION CHART INPUT OFF AIR

| Channel | Carrier Freq. (MHz) |
|---------|---------------------|
| 45 | 657.25 |
| 46 | 663.25 |
| 47 | 669.25 |
| 48 | 675.25 |
| 49 | 681.25 |
| 50 | 687.25 |
| 51 | 693.25 |
| 52 | 699.25 |
| 53 | 705.25 |
| 54 | 711.25 |
| 55 | 717.25 |
| 56 | 723.25 |
| 57 | 729.25 |
| 58 | 735.25 |
| 59 | 741.25 |
| 60 | 747.25 |
| 61 | 753.25 |
| 62 | 759.25 |
| 63 | 765.25 |
| 64 | 771.25 |
| 65 | 777.25 |
| 66 | 783.25 |
| 67 | 789.25 |
| 68 | 795.25 |
| 69 | 801.25 |

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