

# Refurbished CISCO PA-4E Datasheet

CISCO &gt; VIDEO

## Products

### Cisco uBR7100 Series Features and Benefits

|                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
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| <b>Complete package</b>                           | Includes integrated upconverters, network interfaces, and default configuration files to fully provision hosts and cable modems in simple high-speed data configurations<br>Allows customers to quickly build a service-enabled broadband cable network that delivers Internet-billable services                                                                                                                                                                                                                                                                                                                              |
| <b>Standards-based</b>                            | Supports DOCSIS and Euro-DOCSIS standards to protect investment and promote interoperability<br>Supports DSG, enabling cable operators to migrate from proprietary to open set-top technology and benefit from technical advantages and continued innovation of DOCSIS                                                                                                                                                                                                                                                                                                                                                        |
| <b>Reliable operation and spectrum management</b> | Enables cable operators to capture the full potential of their cable spectrum and DOCSIS hybrid fiber-coaxial (HFC) networks<br>Alerts operators to fluctuations before critical conditions occur<br>Supports proactive resolution while the system remains online<br>Offers spectrum management features that include the ability to specify configurable frequency hop parameters, assign frequency subbands and input power levels in a spectrum group, reassign frequency based on day/time patterns, and reassign frequency based on the number of lost station messages from subscriber devices that exceed a threshold |
| <b>Easy upgrades and management</b>               | Enables fast, reliable software and microcode upgrades<br>Supports single, centralized point of administration for remote device that includes the capability to download files to remote subscriber devices                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Choice of models</b>                           | Supports deployment of two-way cable and telephone return on same downstream channel based on model ordered<br>Meets diverse needs and simplifies hardware configuration                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Cisco IOS Software</b>                         | Offers best-of-breed networking software for increased interoperability among networking devices<br>Includes diverse routing protocols, quality of service (QoS), and policy-routing features to support differentiated services configuration features such as Dynamic Host Configuration Protocol (DHCP) and Trivial File Transfer Protocol (TFTP); DOCSIS Baseline Privacy Interface (BPI) security                                                                                                                                                                                                                        |

### Hardware Specifications

| Description                                                                        | Specification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Embedded processor</b>                                                          | MIPS RISC5271/RM7000, 75-MHz bus                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Throughput of services</b>                                                      | 50 Mbps                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>System memory</b>                                                               | 64-MB packet/64-MB system memory default<br>Memory expandable to 256 MB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Line cards with integrated upconverters/modulators (cable plant interfaces)</b> | Fixed based on product/option ordered<br>DOCSIS Annex B, 6-MHz operation:<br>Cisco uBR7111 with 1 downstream and 1 upstream<br>Cisco uBR7114 with 1 downstream and 4 upstreams<br>The downstream uses a 6-MHz channel width in the 85 to 860-MHz frequency range.<br>The upstream supports the 5 to 42-MHz frequency range.<br>DOCSIS Annex A, 8-MHz operation:<br>Cisco uBR7111E with 1 downstream and 1 upstream<br>Cisco uBR7114E with 1 downstream and 4 upstreams<br>The downstream uses an 8-MHz channel width in the 85 to 860-MHz frequency range. The upstream supports multiple channel widths in the 5 to 65-MHz frequency range.<br>Integrated upconverter specifications:<br>High-level output: +61 dBmV, 53 to 857 MHz<br>Optimized for 64 and 256 quadrature amplitude modulation (QAM)<br>Software configurable from 45 to 61 dBmV output power in units of dBmV<br>Calibration accuracy range: 50 to 60 dBmV<br>Software selectable output frequency in 12.5-kHz step size<br>Out-of-band noise performance: < -12 dBmV/-30 dBmV/6 MHz and 8 MHz<br>Digital slope compensation to achieve < ±0.3 dB slope over any channel |

|                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                      | <p>Excellent in-band noise performance</p> <p>RF output mutes when changing output configuration</p> <p>High-reliability, state-of-the-art design using monolithic microwave integrated circuit (MMIC) and surface mount technology</p> <p>Conservative component derating and 100% burn-in to help ensure reliable operation</p> <p>Low power consumption</p> <p>All local oscillators are frequency synthesized and locked to a common internal high-stability reference</p> <p>Note: Also see "Downstream Cable Physical Layer" and "Upstream Cable Physical Layer" specification sections</p> |
| <b>Port adapters (WAN or backbone interfaces)</b>                                    | <p>Embedded dual 10/100BASE-T Ethernet (TX FE) provided</p> <p>Supports one additional port adapter; options include:</p> <p>Ethernet-PA-FE-TX, PA-FE-TX, PA-FE-FX, PA-4E</p> <p>Serial-PA-4T, PA-4T+</p>                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Included AC power supply</b>                                                      | <p>Single; 100 to 240 VAC input voltage</p> <p>Output 20W</p> <p>50 to 60 Hz frequency</p> <p>0.80 to 0.95 power factor</p> <p>525W (maximum) input AC power</p> <p>AC-input cable: 18-QEG4 3-wire cable with a 3-lead IEC-320 receptacle on the power supply end and country-dependent plug on power source end</p>                                                                                                                                                                                                                                                                              |
| <b>Compact design: Suitable for rack-mount (2-rack unit) or desktop installation</b> | <p>Dimensions of 17.5 x 18.25 x 3.5 in. (44.45 x 46.36 x 8.89 cm) (H x W x D)</p> <p>32 lb (14.5 kg)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

## Physical and Environmental Specifications

| Description                  | Specification                                                                                                                                                                                                                                  |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Operating temperature</b> | 32 to 104°F (0 to 40°C) operating; -4 to 149°F (20 to 65°C) nonoperating                                                                                                                                                                       |
| <b>Airflow</b>               | 120 cfm5                                                                                                                                                                                                                                       |
| <b>Humidity</b>              | 10 to 90% noncondensing                                                                                                                                                                                                                        |
| <b>Heat dissipation</b>      | 370W (1262 Btu1)                                                                                                                                                                                                                               |
| <b>Safety approvals</b>      | <p>Compliance: CE Marking, FCC Part 68</p> <p>Safety: UL 1950, CSA 22.2 No.950, EN60950, AUSTEL TS001, AS/NZS 3260, IEC 950</p>                                                                                                                |
| <b>Emissions</b>             | <p>FCC Class A (47 CFR, Part 15), ICES-003 Class A, EN55022 Class B, CISPR22 Class B, AS/NRZ 3548 Class B, VCCI Class B</p> <p>Immunity: IEC-1000-4-2, IEC-1000-4-3, IEC-1000-4-4, IEC-1000-4-5, IEC-1000-4-6, IEC-1000-4-11, IEC 1000-3-2</p> |

## The next steps...

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