# ZMI 2400 Measurement Board

| P/N | Description |
|---|---|
| 8020-0104-01 | 1 axis, VME 6U board |
| 8020-0104-05 | 1 axis, VME 6U board with Ethernet |
| 8020-0104-02 | 2 axes, VME 6U board |
| 8020-0104-06 | 2 axes, VME 6U board with Ethernet |
| 8020-0104-03 | 4 axes, VME 9U board |

| General | |
|---|---|
| Maximum Number of Boards in a System | 7; there may also be limits due to VME or P2 population |
| Reference Inputs | ST fiber optic or HSSDC electrical, 20.0 MHz |
| Reference Outputs (1 per board) | HSSDC electrical, 20.0 MHz |
| Measure Inputs (1 per axis) | ST fiber optic, 20.0 ± 13.3 MHz |
| Signal Strength Test Points (1 per axis) | RJ-11 connector |
| Status Indicators (LEDs) | Green – meas present (1 per axis), ref present, User LED<br>Amber – meas error (1 per axis), ref error, Config. |
| Minimum Optical Power at measurement board receiver | > 1.9 µW AC |
| Minimum Reference Optical Power receiver | > 8 µW AC |

| Power Requirements | |
|---|---|
| 2401 | 5 VDC +0.25V/-0.125V @ 3.5A (max) |
| 2402 | 5 VDC +0.25V/-0.125V @ 5A (max) |
| 2404 | 5 VDC +0.25V/-0.125V @ 3A (max),<br>+12 VDC-10% to +15 VDC+10% @ 2.5A (max) |

| Cooling Requirements | |
|---|---|
| 10 to 40° C | 60 linear fpm (2401, 2402)<br>120 linear fpm (2404) |
| 40 to 55° C | 120 linear fpm (2401, 2402)<br>250 linear fpm (2404) |

| Compliance | |
|---|---|
| VME | VMEbus specification ANSI/VITA 1-1994<br>Addressing: A16 or A24<br>Data Transfer: D16 or D32<br>D08 (O) Interrupt Acknowledge Cycle |
| Other | UL94V0, CE Mark (Emissions EN 55011A, Immunity EN 50082-1, Low Voltage Directive EN 61010-1, tested inside CE Mark compliant chassis) |

| Performance | |
|---|---|
| Position Resolution(1) | λ/2048 (0.31 nm) |
| Position Range(1) | ± 10.6 m |
| Position Format | 36 bit - 2's complement |
| Time Resolution | 25 nanoseconds |
| Time Range | 107.4 seconds |
| Time Format | 32 bit - positive integer |
| Velocity Resolution | 18 to 22 bits (function of the digital filter gains Kp and Kv) |
| Velocity Range(1) | ± 2.1 m/sec |
| Velocity Format | 32 bit - 2's complement |
| Maximum Acceleration | 100 g<br>(10 g max. during reset) |
| Data Age (P2 output) | 1 µs typical |
| Data Age Uncertainty, Compensated | ± 1.2 ns (3 boards) |
| Electronic Accuracy(1) | ≤1.2 LSB at ± 0.1 m/sec<br>≤1.4 LSB at ± 1.0 m/sec<br>≤1.6 LSB at ± 2.1 m/sec |

| Environmental | |
|---|---|
| Operating Temperature | 10 to 55°C |
| Operating Humidity | 0 to 90%, noncondensing |
| Operating Pressure | Standard 1 atmosphere (700-800 mmHg), non-vacuum applications |

(1) Based on double pass interferometer.

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