

ADJUSTMENT OF A LASER DIODE OUTPUT POWER COMPENSATOR**ABSTRACT**

A first embodiment of an adjustment circuit (30) for a laser diode output power compensator includes a feedback circuit for adjusting the laser diode output power compensator so that the output power of the laser diode is substantially constant. The feedback circuit includes a photodiode (35) for measuring the output power of a VCSEL diode (20). The signal from the photodiode (35) is coupled to a first amplifier (39). The difference between the signal from the photodiode (35) and a first reference value is amplified and coupled through electronic switches (40, 42, 44) to selectively charge one of multiple capacitors (41, 43, 45). The multiple capacitors (41, 43, 45) are each coupled to one of a drive current source (32), a compensation current source (31), and a voltage controlled resistor (34), each of which are voltage controlled. A second amplifier (38) is used for amplifying the difference between the signal from the photodiode (35) and a second reference value to charge a capacitor (47) coupled to a voltage controlled bias current source (33). The first embodiment of the adjustment circuit (30) controls the bias current source (33), drive current source (32), compensation current source (31), and the voltage controlled resistor (34) so that the output power of the VCSEL diode is held substantially constant. A second embodiment of the adjustment circuit (30) uses an analog to digital converter (203), a digital comparator (204), a counter (205), and registers (206, 207, 208, 209) to form the feedback circuit for adjusting the laser diode output power compensator. A third embodiment of the adjustment circuit (30) uses an analog comparator (404), counters (410, 411, 412, 413), and registers (414, 415, 416, 417) to form the feedback circuit for adjusting the laser diode output power compensator.

Figure 6