CLAIMS:

1. Interconnect structure for coupling an electronic unit (120) for outputting and/or receiving electric signals, and an optical unit (100) for converting said electric signals into optical signals and/or vice versa,

said interconnect structure comprising an electrically insulating substrate and at least one pair of transmission leads (104, 106) to be coupled between said electronic unit (120) and said optical unit (100), a first lead (104) operates as a signal line, a second lead (106) operates as a ground line,

wherein said second lead (106) is formed to have a lower impedance than said first lead (104), and

wherein said second lead (106) has a width that is larger than a width of said first lead (104).

22. Interconnect structure according to claim 2, wherein said second lead (106) has a width that is at least five times larger than the width of said first lead (104).

3. Interconnect structure according to one of the claims 1to 3, wherein said electrical interconnect comprises a ground plane layer (108) underlying said at least one second lead (106), wherein said second lead (106) is connected to said ground plane layer (108) by means of at least one connection point (118).

4. Interconnect structure according to claim 4, wherein at least one connection point

(118) comprises a via.

5. Interconnect structure according to one of the preceding claims, wherein the impedance of said first lead (104) is defined by its width and a distance to a ground plane layer (108).

6. Interconnect structure according to one of the preceding claims, further comprising a connector contact region that is formed to mount an electrical connector thereon.

7. Interconnect structure according to one of the preceding claims, being formed to mount an optical receiver unit and a second electronic circuit for processing electric

signals generated by said optical receiver, said interconnect structure further comprising at least one pair of receiver leads (110) for connecting the optical receiver unit and the second electronic circuit to each other.

8. Optoelectronic module comprising an electronic unit (120) for outputting and/or receiving electric signals, and an optical unit (100) for converting said electric signals into optical signals and/or vice versa,

an electrical interconnect structure according to one of the preceding claims for connecting the electronic unit (120) and the optical unit (100) to each other,

said optical unit (100) comprising an electrically conducting substrate (102).

9. Optoelectronic module according to claim 9, said electronic unit (120) comprising a driver circuit, and said optical unit comprising at least one optical sender.

10. Optoelectronic module according to claim 10, further comprising at least one optical receiver and an amplifying circuit for amplifying output signals of the at least one optical receiver.

11. Optoelectronic module according to claim 11, said optical receiver comprising an array of PIN (positive intrinsic negative) photo diodes.

12. Optoelectronic module according to claim 12, said amplifying circuit comprising a transimpedance amplifier (TIA) array.

13. Optoelectronic module according to one of the claims 9 to 13, wherein said optical unit comprises an array of vertical cavity surface emitting lasers (VCSEL).

14. Optoelectronic module according to claim 14, comprising a 12-channel VCSEL array and a 12-channel low power driver.

CLAIMS:

1. Interconnect structure for coupling an electronic unit (120) for outputting and/or receiving electric signals, and an optical unit (100) for converting said electric signals into optical signals and/or vice versa,

said interconnect structure comprising an electrically insulating substrate and at least one pair of transmission leads (104, 106) to be coupled between said electronic unit (120) and said optical unit (100), a first lead (104) operates as a signal line, a second lead (106) operates as a ground line,

wherein said second lead (106) is formed to have a lower impedance than said first lead (104), and

wherein said second lead (106) has a width that is larger than a width of said first lead (104), and

wherein said second lead (106) has a width that is at least five times larger than the width of said first lead (104).

2. Interconnect structure according to one of the claims 1, wherein said electrical interconnect comprises a ground plane layer (108) underlying said at least one second lead (106), wherein said second lead (106) is connected to said ground plane layer (108) by means of at least one connection point (118).

3. Interconnect structure according to claim 2, wherein at least one connection point

(118) comprises a via.

4. Interconnect structure according to one of the preceding claims, wherein the impedance of said first lead (104) is defined by its width and a distance to a ground plane layer (108).

5. Interconnect structure according to one of the preceding claims, further comprising a connector contact region that is formed to mount an electrical connector thereon.

6. Interconnect structure according to one of the preceding claims, being formed to mount an optical receiver unit and a second electronic circuit for processing electric

signals generated by said optical receiver, said interconnect structure further comprising at least one pair of receiver leads (110) for connecting the optical receiver unit and the second electronic circuit to each other.

7. Optoelectronic module comprising an electronic unit (120) for outputting and/or receiving electric signals, and an optical unit (100) for converting said electric signals into optical signals and/or vice versa,

an electrical interconnect structure according to one of the preceding claims for connecting the electronic unit (120) and the optical unit (100) to each other,

said optical unit (100) comprising an electrically conducting substrate (102).

8. Optoelectronic module according to claim 7, said electronic unit (120) comprising a driver circuit, and said optical unit comprising at least one optical sender.

9. Optoelectronic module according to claim 8, further comprising at least one optical receiver and an amplifying circuit for amplifying output signals of the at least one optical receiver.

10. Optoelectronic module according to claim 9, said optical receiver comprising an array of PIN (positive intrinsic negative) photo diodes.

11. Optoelectronic module according to claim 10, said amplifying circuit comprising a transimpedance amplifier (TIA) array.

12. Optoelectronic module according to one of the claims 7 to 11, wherein said optical unit comprises an array of vertical cavity surface emitting lasers (VCSEL).

13. Optoelectronic module according to claim 12, comprising a 12-channel VCSEL array and a 12-channel low power driver.