CLAIMS

1. A differential transmission line cable including a notch filter configured to manage common-mode energy, the differential transmission line cable comprising:

a narrow portion including:

a first electrical conductor having a first cross-sectional area; and

a second electrical conductor located adjacent, at a first spacing, to the first electrical conductor, the second electrical conductor having a cross-sectional area consistent with the first cross-sectional area; and

a wide portion longitudinally adjacent to the narrow portion, the wide portion including:

the first electrical conductor having a second cross-sectional area greater than the first cross-sectional area; and

the second electrical conductor located adjacent, at a second spacing greater than the first spacing, to the first electrical conductor, the second electrical conductor having a cross-sectional area consistent with the second cross-sectional area;

wherein the first cross-sectional area, first spacing, second cross-sectional area and second spacing are specified so that:

the differential-mode impedance of the differential transmission line cable is uniform throughout both the narrow portion and the wide portion; and

differences in the common-mode impedances of the narrow portion and of the wide portion are used to create a notch filter to manage common-mode energy in the differential transmission line cable.

2. The differential transmission line cable of claim 1, further comprising:

an additional narrow portion, consistent with the narrow portion, that is longitudinally adjacent to the wide portion; and

an additional wide portion, consistent with the wide portion, that is longitudinally adjacent to the additional narrow portion.

3. The differential transmission line cable of claim 1, wherein a length of the wide portion is consistent with a length of the narrow portion.

4. The differential transmission line cable of claim 1, wherein the first electrical conductor is separated from the second electrical conductor by an electrically insulative coating.

5. The differential transmission line cable of claim 1, wherein a length of the wide portion and a length of the narrow portion are each consistent with one quarter of a wavelength corresponding to a center frequency of a common-mode electromagnetic wave to be suppressed during transmission of a differential signal over the differential transmission line cable.

6. The differential transmission line cable of claim 1, wherein the differential transmission line cable is located adjacent to an additional differential transmission line cable consistent with the differential transmission line cable.

7. The differential transmission line cable of claim 6, wherein the narrow portion of the differential transmission line cable is located adjacent to a wide portion of the additional differential transmission line cable.

8. A method of manufacturing a differential transmission line cable including a notch filter configured to manage common-mode energy, the method comprising:

forming a wide portion of a first electrical conductor of the differential transmission line cable, the wide portion having a first cross-sectional area;

forming a narrow portion, longitudinally adjacent to the wide portion, of the first electrical conductor, the narrow portion having a second cross-sectional area less than the first cross-sectional area;

forming a wide portion of a second electrical conductor of the differential transmission line cable, the wide portion having a cross-sectional area consistent with the first cross-sectional area;

forming a narrow portion of the second electrical conductor, the narrow portion having a cross-sectional area consistent with the second cross-sectional area.

9. The method of claim 8, further comprising

forming an additional narrow portion longitudinally adjacent to the wide portion; and

forming an additional wide portion longitudinally adjacent to the additional narrow portion.

10. The method of claim 8, further comprising applying an electrically insulative coating to each of the first electrical conductor and the second electrical conductor.

11. The method of claim 8, further comprising locating the narrow portion of the first electrical conductor adjacent to the narrow portion of the second electrical conductor.

12. The method of claim 8, further comprising locating the differential transmission line cable adjacent to an additional differential transmission line cable consistent with the differential transmission line cable.

13. The method of claim 12, further comprising locating the narrow portion of the differential transmission line cable adjacent to a wide portion of the additional differential transmission line cable.

14. The method of claim 8, wherein forming a narrow portion of the first and second electrical conductors includes removing, with a milling operation, material from the wide portion of the first and second electrical conductors.

15. The method of claim 8, wherein forming a wide portion of the first and second electrical conductors

includes passing the first and second electrical conductors through a die machine having a die opening consistent with the first cross-sectional area.

16. The method of claim 8, wherein forming a narrow portion of the first and second electrical conductors includes passing the first and second electrical conductors through a die machine having a die opening consistent with the second cross-sectional area.

17. The method of claim 8, wherein forming a narrow portion of the first and second electrical conductors includes a stamping operation configured to cause the cross-sectional area of the narrow portion of the first and of the second electrical conductors to be consistent with the second cross-sectional area.

18. The method of claim 8, further comprising applying, to each of the first electrical conductor and the second electrical conductor, a marking indicating locations of the respective narrow and wide portions of the first and second electrical conductors.

19. An electronic system comprising:

a differential transmission line cable including first and second electrical conductors each having a narrow portion and a wide portion, the narrow portions having a first cross-sectional area and the wide portions having a second cross-sectional area greater than the first cross-sectional area, the narrow portions adjacently located at a first spacing, and the wide portions adjacently located at a second spacing greater than the first spacing;

a differential driver circuit having output terminals electrically coupled, at a first end of the differential transmission line cable, to the first electrical conductor and to the second electrical conductor; and

a differential receiver circuit having output terminals electrically coupled, at a second end of the differential transmission line cable, to the first electrical conductor and the second electrical conductor.

20. The electronic system of claim 19 further comprising:

a first integrated circuit (IC) that includes the differential driver circuit;

a second IC that includes the differential receiver circuit;

a first printed circuit board (PCB) upon which the first IC is mounted; and

a second PCB upon which the second IC is mounted;

wherein the differential transmission line cable, the first PCB and the second PCB are configured to electrically couple the differential driver circuit to the differential receiver circuit.