[0085] If the lamp current is found at block **40** to be less than or equal to the upper value of the allowable current range and the duty cycle of the high frequency PWM signal is not at its maximum preset value, then the duty cycle of the high frequency power signal is incrementally increased and control then returns to block **28** of **FIG. 4***a*.

[0086] Finally, if the lamp current is found at block **40** to be less than or equal to the upper value of the allowable current range and the duty cycle of the high frequency PWM signal is at its maximum preset value, then control returns to block **28** of **FIG. 4***a* to wait for a further interrupt.

[0087] The present invention, at least in its preferred form provides a number of advantages over the prior art. The reduction of the number and length of wiring reduces th amount of power loss through EMI and capacitive coupling and therefore allows the power rating of the power supply to be reduced or additional lamps to be added to the backlighting system. The positioning of the circuit board substrate in the present invention also beneficially minimises the footprint of the backlight system. The control algorithm of the controller in accordance with the present invention ensures that the power supplied to the various lamps within the backlighting system are balanced so that a consistent brightness of the display screen may be obtained across its entire surface area. The control algorithm also extends the operating life of the lamps by maintaining their operating temperature and current within allowable parameters.

[0088] **FIGS. 5***a* and **5***b* demonstrate the types and waveforms of electrical signals at various positions throughout the electrical circuit in the preferred embodiment of the present invention. In **FIG. 5***a* an additional circuit element of a DC input filter **2***a* has been illustrated (although this could form part of the inverter **2,3**) which effectively smoothes or filters the superposed low **52** and high **53** frequency PWM power signals.

[0089] **FIG. 5***b* illustrates the way in which the low **52** and high **53** frequency PWM signals are combined and filtered. The duty cycle of the example signals **52** and **53** shown in **FIG. 5***b* is approximately 50% (that is, $t_{ON} \approx t_{OFF}$). Preferably, the low and high frequency signals are effectively logically ANDed together so that signal **50** is high only if both signals **52** and **53** are high at the same time. The output of switch **15** is therefore a pulsed 12V DC signal consisting of high frequency pulses in a low frequency envelope having substantially the same shaped waveform as signal **50**.

[0090] Ripples **54** appear in waveform **51** as a result of the filtering or smoothing of the high frequency component of the combined signal **50**. Royer **2** converts waveform **51** to an AC signal **55**, preferably without altering its magnitude significantly. Transformer **3** then steps up the AC signal to a higher voltage AC signal **56** for supply to th light source **5** or sources of the display apparatus.

[0091] It should be noted that the present invention could incorporate light sources other than CCFT lamps which require Energisation via an AC current. For example, light sources in which the output brightness is dependent upon the magnitude of an AC or DC voltage could be utilised in which case it may not be necessary to provide inverters **2,3**,

[0092] Aspects of the present invention have been described by way of example only and it should be appreciated that modifications and additions may be made thereto without departing from the scope thereof.

1. A backlighting system for a display apparatus comprising:

at least one light source,

electronic componentry adapted to receive electrical power and to control the distribution of electrical power to the at least one light source,

at least one circuit board substrate on which the electronic componentry is mounted and including an arrangement of conductive tracks, and

electrical connection means provided In the circuit board substrate and connected to said conductive tracks,

wherein said electrical connection means is directly electrically and physically connected to the at least one light source to conduct said electrical power distributed by the electronic componentry to said at least one light source.

2. A backlighting system as claimed in claim 1, wherein said at least one circuit board substrate comprises a first circuit board substrate on which said

electronic componentry is mounted and a second circuit board substrate including said

electrical connection means which are directly electrically and physically connected to said at least one light source,

wherein further electrical connection means are provided between said first and second circuit board substrates.

3. A backlighting system as claimed in claim 2, wherein the light source is provided substantially in a display plane and the first circuit board substrate is substantially planar and positioned over the at least one light source substantially parallel with the display plane.

4. A backlighting system as claimed in claim 3, wherein the second circuit board substrate is arranged substantially perpendicularly to the plane of the first circuit board substrate and the display plane.

5. A backlighting system as darned in claim 2, wherein said at least one light source comprises a plurality of tubular light sources having proximal and distal ends, the tubular light sources aligned in a row and substantially in the same plane as the first circuit board substrate, the distal ends of the plurality of tubular light sources connected together and to a ground connection of the electronic componentry and the proximal ends connected to receive electrical power from the electronic componentry through the electrical connection means.

6. A backlighting system as claimed in claim 2, wherein said first circuit board substrate includes at least one substantially straight edge adjacent to which said further electrical connection means is provided, the further electrical connection means including mechanical connection means provided on the first circuit board substrate along the substantially straight edge and including conductive pin means providing at least part of said further electrical connection means.

7. A backlighting system as claimed in claim 6, wherein said mechanical connection means comprise standard board to board connectors.