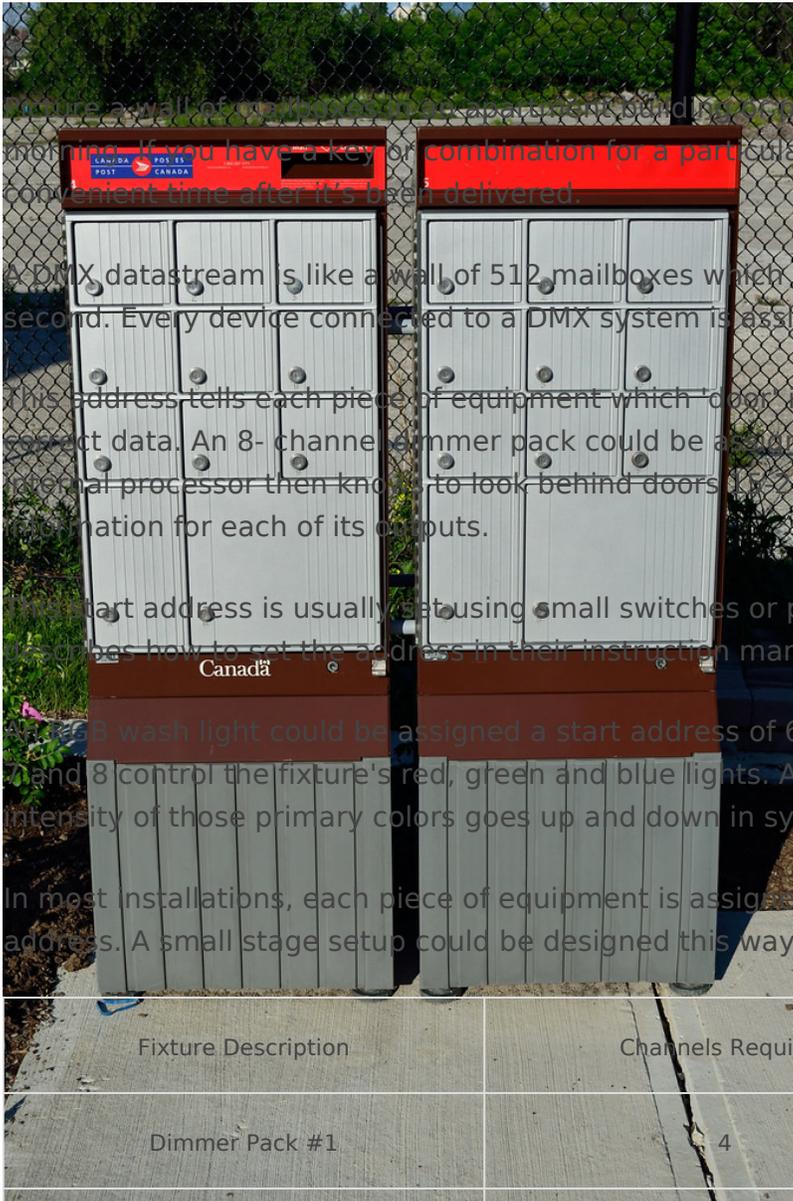# DMX-512 for Musicians: a Quick Analogy

Picture a wall of mailboxes in a apartment building or post office. The mail is delivered each morning. If you have a key or combination for a particular box, you can remove your mail at any convenient time after it's been delivered.

A DMX datastream is like a wall of 512 mailboxes which are refilled between 20 and 40 times each second. Every device connected to a DMX system is assigned a start address.

This address tells each piece of equipment which 'door' in the PO Box wall to look behind to find the correct data. An 8- channel dimmer pack could be assigned a start address of 15. The dimmer's internal processor then knows to look behind doors 15-22 (8 channels total) to find lighting information for each of its outputs.

The start address is usually set using small switches or pushbuttons, and each manufacturer describes how to set the address in their instruction manual.

An RGB wash light could be assigned a start address of 6. This means that doors (or DMX channels) 6, 7 and 8 control the fixture's red, green and blue lights. As the value of each DMX channel varies, the intensity of those primary colors goes up and down in sync.

In most installations, each piece of equipment is assigned a unique and non-overlapping start address. A small stage setup could be designed this way:

Fixture Description	Channels Required	DMX Start Address
Dimmer Pack #1	4	60
Dimmer Pack #2	4	64
RGB Flood Light	3	68

RGB Flood Light	3	71
RGB Flood Light	3	74

Note: The definition of 'channel' in the DMX world is totally different than 'channel' in the MIDI world. There are 512 DMX channels in a *universe*. This means that 512 separate light bulbs could be connected to 512 one-channel dimmer packs, and their brightness can be controlled by a single lighting desk. There are 16 MIDI channels. A single MIDI channel can be compared to a pipeline through which data can pass. 128 notes are available in each MIDI channel.