Each model has separate features that make it different from the c two models.

The HP 54501A features:

- Repetitive Bandwidth dc to 100 MHz
- Single Shot Bandwidth dc to 1 MHz
- Maximum Vertical Sensitivity 5 mV/div
- Sample Rate 10 MSa/s
- Number of Channels 2+2
- Memory Depth 1K/channel

The HP 54502A features:

- Repetitive Bandwidth dc to 400 MHz
- Single Shot (Realtime) Bandwidth dc to 100 MHz.
- Maximum Vertical Sensitivity 2mV/div
- Maximum Sample Rate 400 MSa/s
- Number of Channels 2
- Memory Depth 2K/channel
- External Trigger I channel

The HP 54503A features:

- Repetitive Bandwidth 500 MHz
- Single Shot Bandwidth dc to 2 MHz
- Maximum Vertical Sensitivity 1 mV/div
- Maximum Sample Rate 20 MSa/s
- Number of Channels 4
- Memory Depth 1K/channel

Complete specifications and characteristics are listed in appendix Front-Panel Reference for each oscilloscope model.