

CAT5 USB Extender Test

Products tested

- 1) Lindy 42801 50m USB 1.1 Non-powered
- 2) Lindy 42805 50m USB 1.1 Power option
- 3) Icron Rover 1650 50m USB 1.1 Non-powered

The Lindy devices are essentially line buffers, while the Icron device attempts to compensate for timing latencies due to cable length.

Each unit was tested at the rated 50 m length of CAT5 cable using a TC-08 with four active thermocouple channels. Each unit was run on three PC systems with different specifications, each running PicoLog R5.18.0.

PC systems used

	PC A	PC B	PC C
CPU	Celeron	P4	XP1800+
CPU clock	2 GHz	3 GHz	1.53 GHz
RAM	763 MB	960 MB	992 MB
OS	XP SP2	XP SP2	XP SP2

Test process

The test durations for PCs A and C were initially set to 24 hours, while PC B was left running indefinitely as it was constantly in use. The initial results on PC A with the Lindy 42801 indicated that 24 hours might not be achievable, but PC B showed that longer runs could be obtained with the right combination of PC and extender. Thereafter, test duration was adjusted according to the preceding results.

With the Icron Rover 1650, the unit was left to record for a maximum of 100 hours or until failure.

Where it seemed to be worthwhile, the extenders were tested on a reduced length of 25m of CAT5 to see if sustained performance could be obtained. If the device performed acceptably with 50 m of cable then 25 m was not necessarily tested.

Test results

The results from the table below may be summarised as follows:

- 1) The Lindy 42801 showed sustained performance on PC B only.
- 2) Sustained performance was not achieved with the Lindy 42805 on any system.
- 3) The Icron Rover 1650 worked with all of the test PCs, but with varying degrees of success.

Supplier	Device	Extension	PC	Test	Comments
Lindy	42801	50m	PC A	1	Failed after 7:27 hrs
Lindy	42801	50m	PC A	2	Failed after 5:06 hrs
Lindy	42801	25m	PC A	3	Not tested
Lindy	42801	50m	PC B	1	Completed 16 hrs
Lindy	42801	50m	PC B	2	Completed 97 hrs
Lindy	42801	25m	PC B	3	Not tested
Lindy	42801	50m	PC C	1	Completed 24 hrs
Lindy	42801	50m	PC C	2	Failed after 3:15 hrs
Lindy	42801	25m	PC C	3	Failed after 52 s
Lindy	42805	50m	PC A	1	Failed after 8:26 hrs
Lindy	42805	50m	PC A	2	Failed after 8:00 hrs
Lindy	42805	25m	PC A	3	Failed after 3:13 hrs
Lindy	42805	50m	PC B	1	Enumeration failure
Lindy	42805	50m	PC B	2	Completed 24 hrs
Lindy	42805	50m	PC B	3	Failed after 0:41 hrs
Lindy	42805	50m	PC C	1	Enumeration failure
Lindy	42805	25m	PC C	2	Failed after 5:48 hrs
Icron	1650	50m	PC C	1	Failed after 70:42 hrs
Icron	1650	25m	PC C	2	Not tested
Icron	1650	50m	PC A	1	Failed after 13:37 hrs
Icron	1650	25m	PC A	2	Failed after 29:51 hrs
Icron	1650	50m	PC B	1	Failed after 11:30 hrs
Icron	1650	25m	PC B	2	Failed after 39:17 hrs

Summary

All of the USB extender devices tested here eventually failed to communicate after differing periods of time, and the time to failure is influenced by an unidentified interaction between the device and host PC system.

The Icron device was able to sustain communication for over 36 hours in a reasonably specified system such as PC C or PC B, but did not sustain quite the same problem-free duration in the lower-specification PC A. Nonetheless, PC specification is just one of the factors influencing performance, as the lower-specification PC C outperformed PC B with the Icron device. Thus, a more powerful PC system does not necessarily counteract the apparent tendency for eventual communication failure.

The Icron device sustained 24-hour continuous recording in all three test systems with a CAT5 extension of 25 m.

The Lindy 42801 device sustained long term performance with a CAT5 extension of 50 m, but only on PC B.