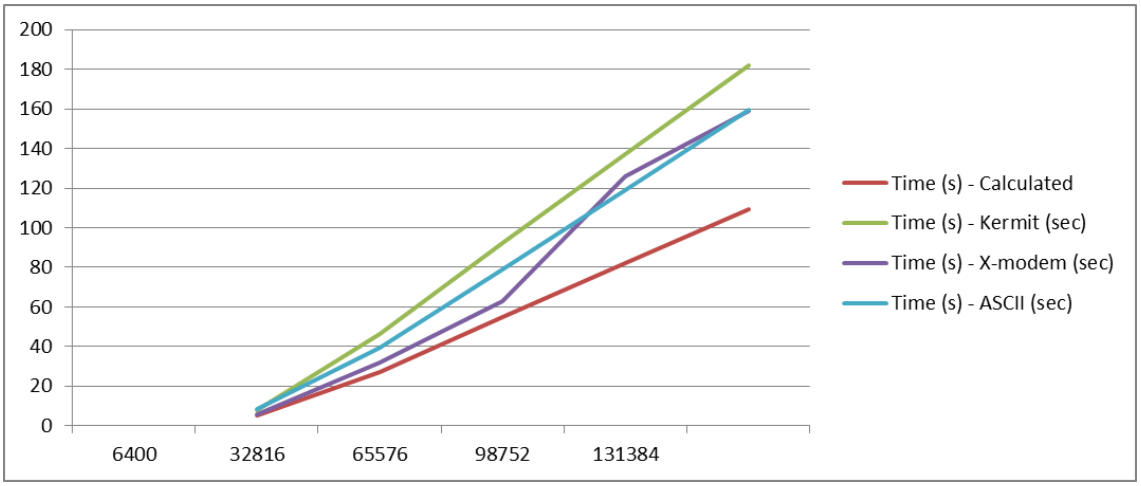
File Transfer Protocols

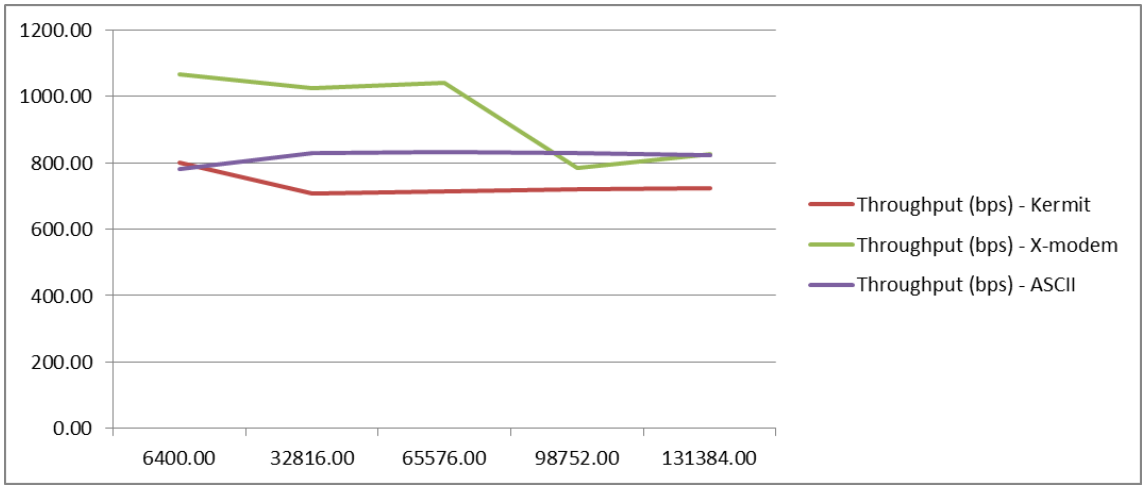
Acronym	Function	Status Before Wiring		Status After Wiring		Final Status with Procom Plus Running	
		Left	Right	Left	Right	Left	Right
CD	Carrier Detect	0	0	-	-	+	+
RD	Receive Data	0	0	-	-	-	-
TD	Transmit Data	-	-	-	-	-	-
DTR	Data Terminal Ready	-	-	-	-	+	+
SG	System Ground	0	0	0	0	0	0
DSR	Data Set Ready	0	0	-	-	+	+
RTS	Request to Send	-	-	-	-	+	+
CTS	Clear to Send	0	0	-	-	+	+
RI	Ring Indicator	0	0	-	-	+	+

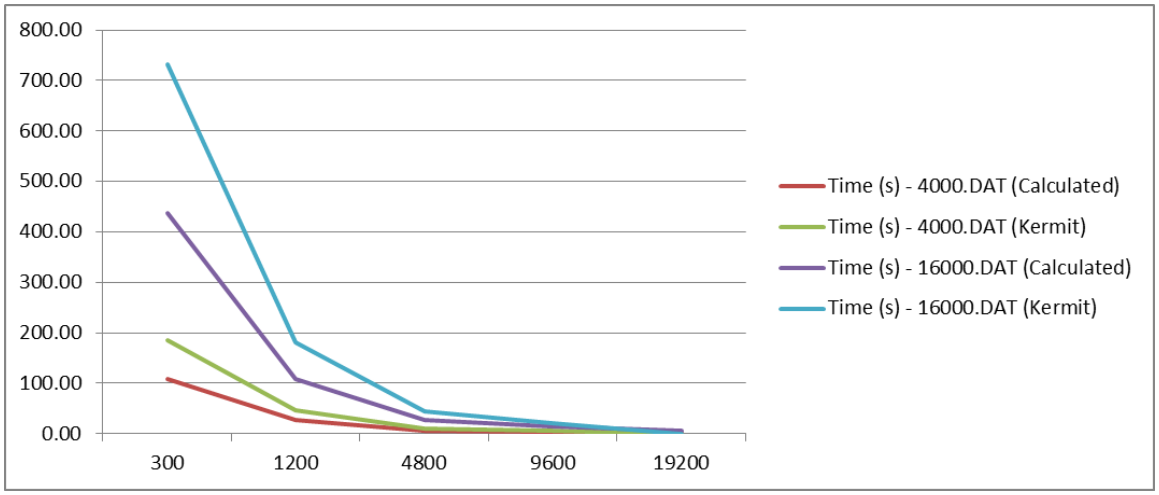
File	File Size bits (File Size *8)	Time (s) - Calculated	Time (s) - Kermit (sec)	Time (s) - X-modem (sec)	Time (s) - ASCII (sec)
800.DAT	6400	5.3	8.00	6.00	8.20
4000.DAT	32816	27.34	46.40	32.00	39.60
8000.DAT	65576	54.64	92.00	63.00	78.70
12000.DAT	98752	82.29	137.00	126.00	119.00
16000.DAT	131384	109.46	182.00	159.00	159.50

File	File Size (bits)	Line Speed (bps)	Throughput (bps) - Kermit	Throughput (bps) - X-modem	Throughput (bps) - ASCII
800.DAT	6400.00	1200	800.00	1066.67	780.49
4000.DAT	32816.00	1200	707.24	1025.50	828.69
8000.DAT	65576.00	1200	712.78	1040.89	833.24
12000.DAT	98752.00	1200	720.82	783.75	829.85
16000.DAT	131384.00	1200	721.89	826.31	823.72

Line Speed (bps)	Time (s) - 4000.DAT (Calculated)	Time (s) - 4000.DAT (Kermit)	Time (s) - 16000.DAT (Calculated)	Time (s) - 16000.DAT (Kermit)
300	109.39	186.00	437.95	733.00
1200	27.35	46.00	109.49	182.00
4800	6.84	10.00	27.37	45.00
9600	3.42	5.00	13.69	22.00
19200	1.71	0.00	6.84	0.00


200
180
160
140
120
100
80
60
40
20
0
6400
32816
65576
98752
131384
Time (s) - Calculated
Time (s) - Kermit (sec)
Time (s) - X-modem (sec)
Time (s) - ASCII (sec)


1200.00
1000.00
800.00
600.00
400.00
200.00
0.00
6400.00
32816.00
65576.00
98752.00
131384.00
Throughput (bps) - Kermit
Throughput (bps) - X-modem
Throughput (bps) - ASCII


800.00
700.00
600.00
500.00
400.00
300.00
200.00
100.00
0.00
300
1200
4800
9600
19200
Time (s) - 4000.DAT (Calculated)
Time (s) - 4000.DAT (Kermit)
Time (s) - 16000.DAT (Calculated)
Time (s) - 16000.DAT (Kermit)

Reflection

This lab proved more difficult than expected, we had problems ranging from errors with file sending to hardware misconfiguration; solving these errors wasn't straight forward.

As a group we persevered, motivated by the end product (the transmit of files) we discovered that the problem was in the breakout box. The hardware was faulty and although we had wasted a lot of time trying to work through this problem, we also learnt a great deal through the experience. The hardware was causing an inconsistency in some of the protocols as switching the breakout box with another one allowed the Kermit protocol to continue and finish transmitting the files.

Through 2 sessions we worked to gather the required information for the table, split into 2 teams we had 2 people monitoring the times of the file transfers and 2 people doing the operations both on hardware and Pro Comm Plus. This was in fact a very good choice of team management as it allowed the other part of the team to work on the graphs and questions for the project, although it could have been managed better we still found ourselves waiting for the transfers to finish which at times turned out to be around 4 – 5 minutes wait time.

We now have a deeper understand of file transfer rates as we were able to see the data first hand on the downloading console; I've never understood the uploading and downloading of data as thoroughly as through doing this exercise, We can see errors and watch both ends of the upload/download detect and correct them via their different protocols. With ASCII we are able to see the different bits sending separately although the method is slow.

Thanks to this exercise we will all look into newer more advanced protocols and determine the difference, hopefully by doing this we can determine where the newer protocols exceed in sending the data and will be able to understand why the protocols we used are less efficient.

Unfortunately we were given the wrong amount of wires by the lab staff and explaining to them that we needed 6 more cables caused us to lose time that would have been well spent on the exercise at hand. This was the only problem we faced in the lab and would be our only comment on the lab staff.

Our exercise in the lab could have been improved if we had prepared more for the task at hand. At the beginning of the lab we were tasked with wiring the breakout box, only to find that we had done it wrong. This simple mistake could have been avoided if we had read the lab notes that were given to us the week before hand. The lesson we have learned from this is that we feel we should prepare for any future lab sessions, to gather a great understanding of the task we are assigned. This way we will be to cut down on the time taken to complete lab tasks and will also be able to develop a greater understanding of the lab assignment prior to completion of the work.

Overall we feel this has benefitted us, we have learnt the different protocols and the setup of a very simple breakout box; this same technique could be applied when looking at a larger scale network such as an ISP for example.