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**[Announcement]Lab4**

↗ ...rrors/suggestions for textbook pre-print chapters.

↗ ...re to attend lectures on-line 10-am-1pm Fridays

↗ Course Outline for 2022 Term 2

&gt; Getting started - Course Outline (VERY IMPORTANT)

&gt; ...edu.au, Jiawei (Gary) Hu [jiawei.hu@unsw.edu.au]

&gt; Individual Term Project

&gt; Week 1 Lecture [03 JUN]: Wireless Fundamentals I

&gt; Week 2 Lecture [10 JUNE]: Wireless Fundamentals II

&gt; ... basics + Mainstream WiFi (802.11a/g/n/ac/ax/be)

&gt; ...ecture [24 June]: Niche WiFi (802.11af/ah/ad/ay)

&gt; Week 5 Lecture [01 July]: Bluetooth

&gt; Week 6 [05 July]: NO Lecture/Quiz/Lab

&gt; Digital Assessment (Inspira) Resources for Students

&gt; COMP3141-5226\_00165

&gt; SENG3011-5223\_00891

&gt; COMP2111-5223\_00559

&gt; COMP3411-COMP9814-5223\_00183

&gt; SENG2011-5219\_00788

&gt; COMP3311-5219\_00177

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**LAB Discussion Forum**  
**[Announcement]Lab4**

# 程序代写代做 CS编程辅导

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↗ Signal strength value

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## 2 Channel availability

In spectrum allocations around the globe and different requirements for the regulatory authorities, not all the WLAN channels are available in every country. The table below provides a broad indication of the availability of the different Wi-Fi channels in different parts of the world.

## WeChat: cstutorcs

### 2.4 GHz WiFi CHANNEL AVAILABILITY

CHANNEL NUMBER	EUROPE (ETSI)	NORTH AMERICA (FCC)	JAPAN
1	✓	✓	✓
2	✓	✓	✓
3	✓	✓	✓
4	✓	✓	✓
5	✓	✓	✓
6	✓	✓	✓
7	✓	✓	✓

## Assignment Project Exam Help

2. If you get your signal strength in type of percentage, you can convert into dBm.

// Quality to dBm:

```
if(quality <= 0)
```

```
    dBm = 100;
```

```
else if(quality >= 100)
```

```
    dBm = -50;
```

```
else
```

```
    dBm = (quality / 2) - 100;
```

Re: [Announcement]Lab4

by Jiawei Hu - Wednesday, 22 June 2022, 11:09 AM

Moreover, for the distance equation calculation, be careful with the unit. Here is one example:

K = 32.44

FSPL = Ptx - CLtx + AGtx + AGrx - CLRx - Prx - FM

d = 10 ^ (( FSPL - K - 20 log10( f ) ) / 20 )

Permalink Reply

Here:

- **K** - constant (32.44, when **f** in MHz and **d** in km, change to -27.55 when **f** in MHz and **d** in m)
- **FSPL** - Free Space Path Loss
- **Ptx** - transmitter power, dBm ( up to 20 dBm (100mW) )
- **CLtx**, **CLRx** - cable loss at transmitter and receiver. dB ( 0. if no cables )

- AGtx , AGrx - antenna gain at transmitter and receiver, dBi
- Prx - receiver sensitivity, dBm ( down to -100 dBm (0.1pW) )
- FM - fade margin, dB ( more than 14 dB (normal) or more than 22 dB (good))
- f - signal frequency, MHz
- d - distance, m or km (depends on value of K)

No formulas from TP-Link support site (missing  $\lambda$ ).

Surely we can use the formula to calculate signal strength to get a distance from WiFi AP.

Example: Lab4 exercise. AGtx = 2 dBi, AGrx = 0, Prx = -51 dBm (received signal strength), CLtx = 0, CLrx = 0, FM = 22. Result: FSPL = 47 dB, d = 2.1865 m

You can find the formula in the lab exercise (under Wenyao).



WeChat: cstutorcs

Assignment Project Exam Help

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Really sorry for the unclear instruction on Lab4 exercise

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◀ Signal strength value

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