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MikroTik WIRELESS REGISTRATION-TABLE

CHALLENGES SOLUTIONS

Wireless Netware, VAD

Hani Rahrouh

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HOW DID GET STARTED

2002, Learned networking Cisco, UBNT, Motorola

2008,First MikroTik Certification

2011, MikroTik Certified Trainer

2013, Founded Wireless Netware

2014, MikroTik Master Distributor, VAD

2015, Founded NETWIRE

Bell Canada, Rogers, and Cogent Partner

Coming soon!

Wireless Netware, VAD

Wireless in MikroTik

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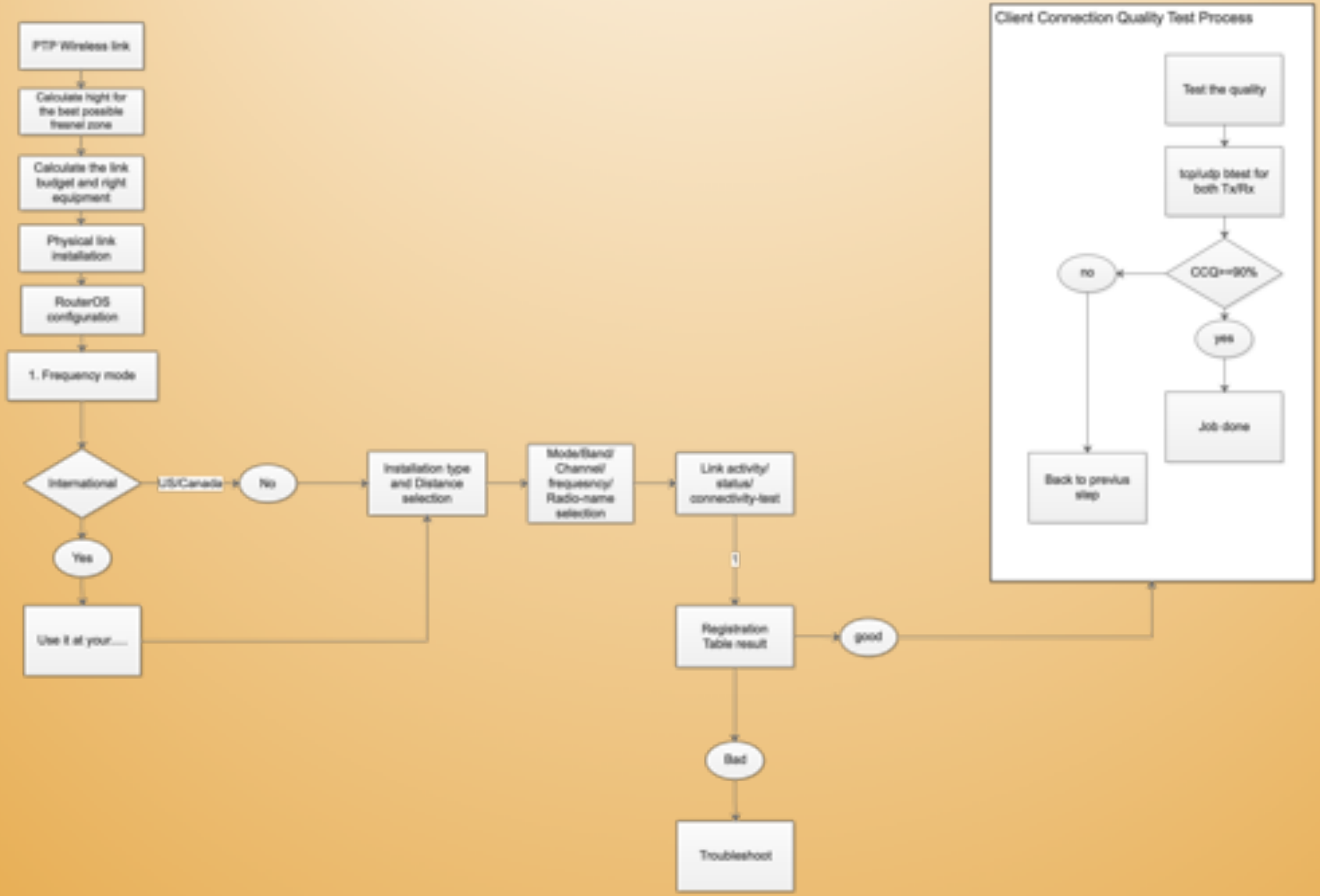
Highest Client Connection Quality

Wireless Netware, VAD



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Wireless Netware, VAD

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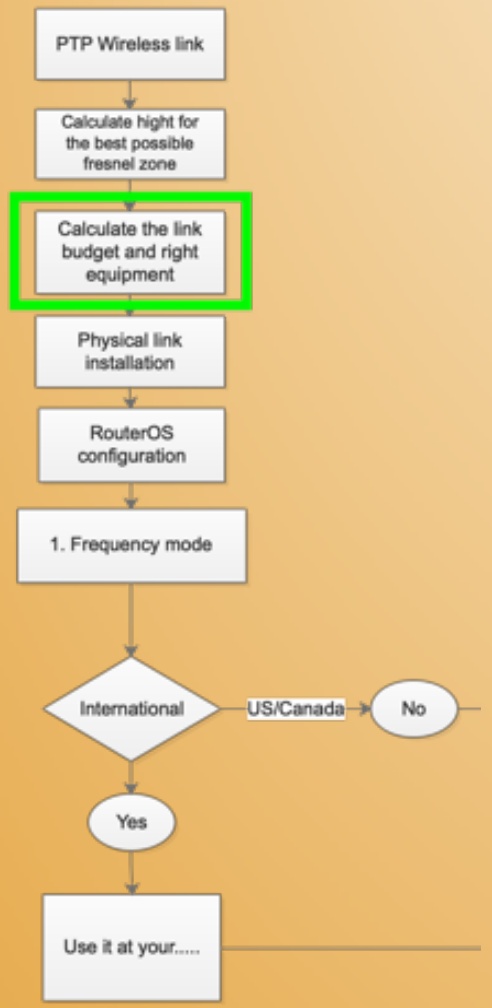
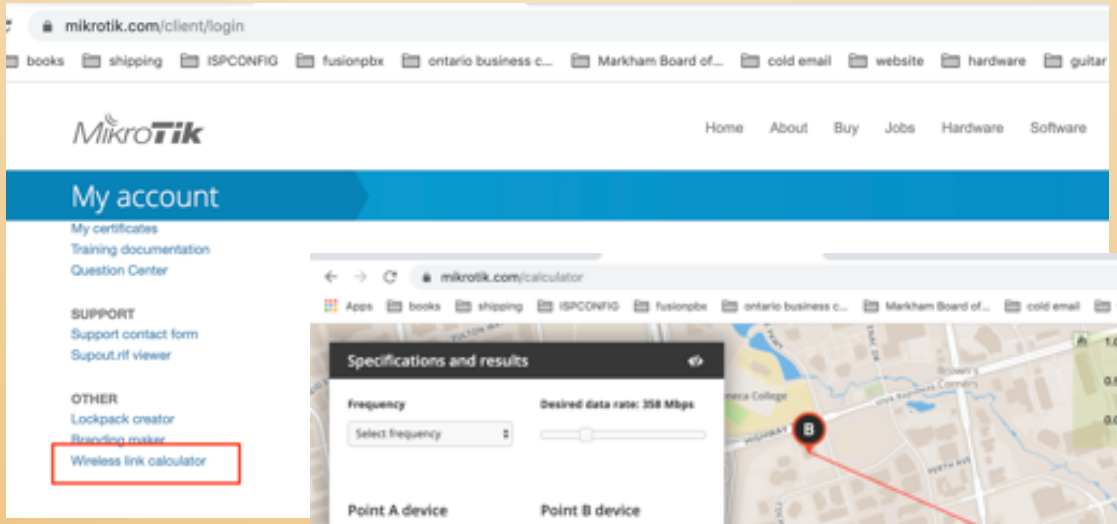
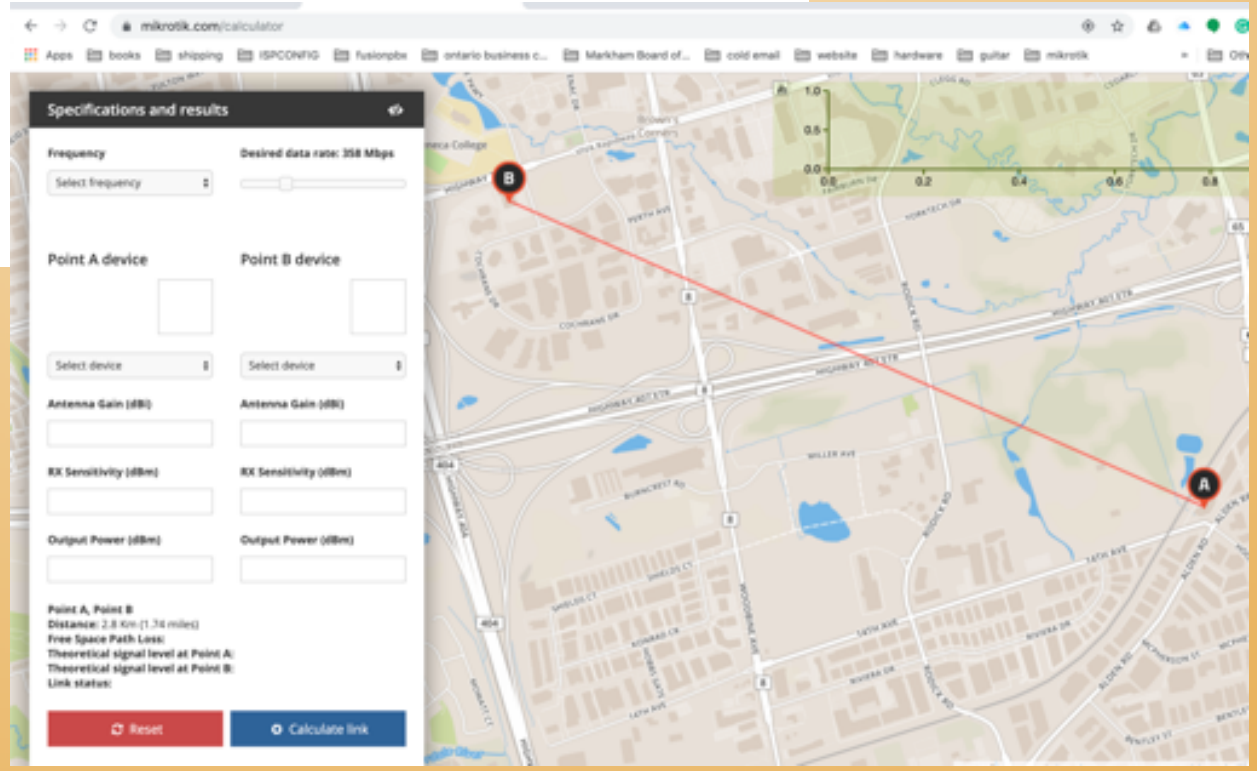
Wireless Link Calculator







Wireless Netware, VAD

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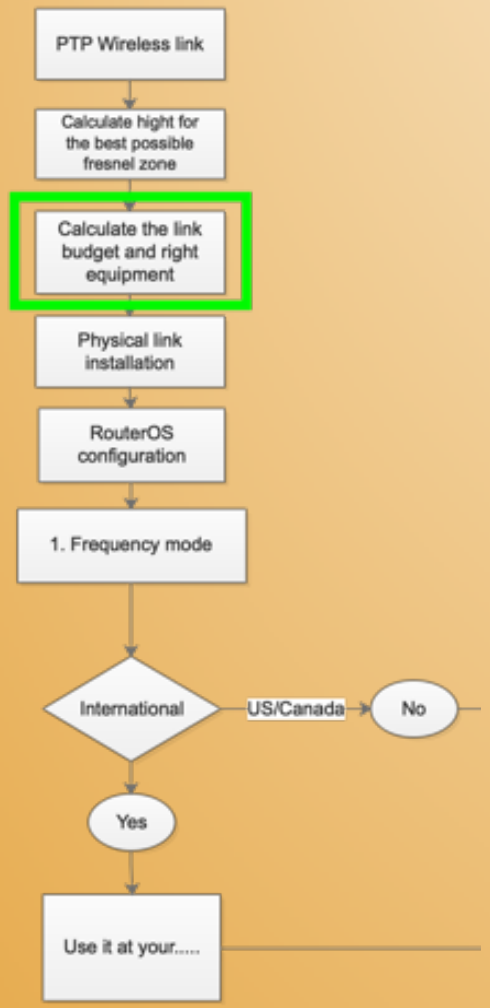
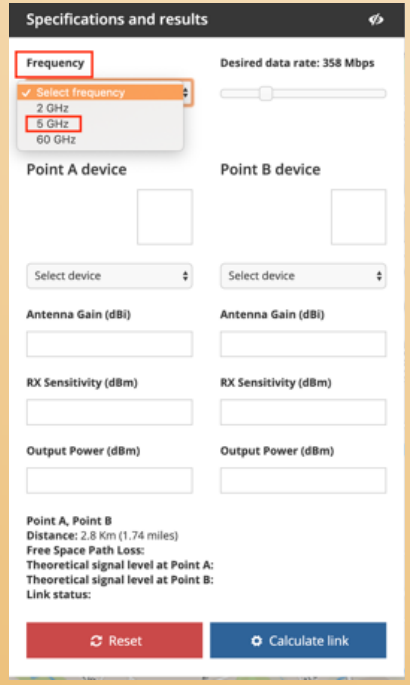
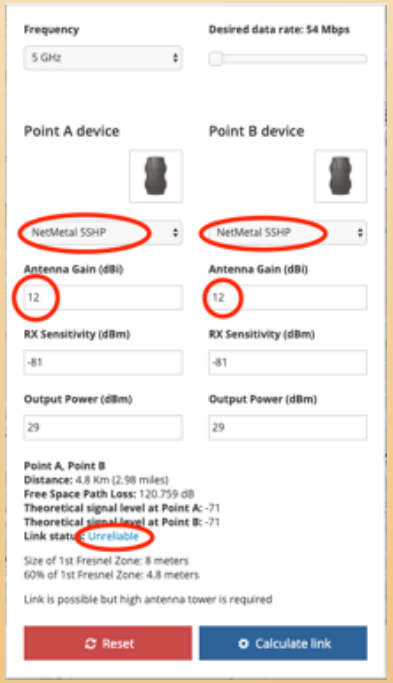
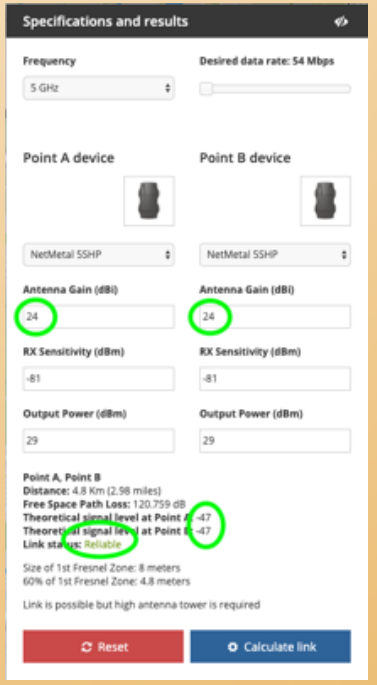
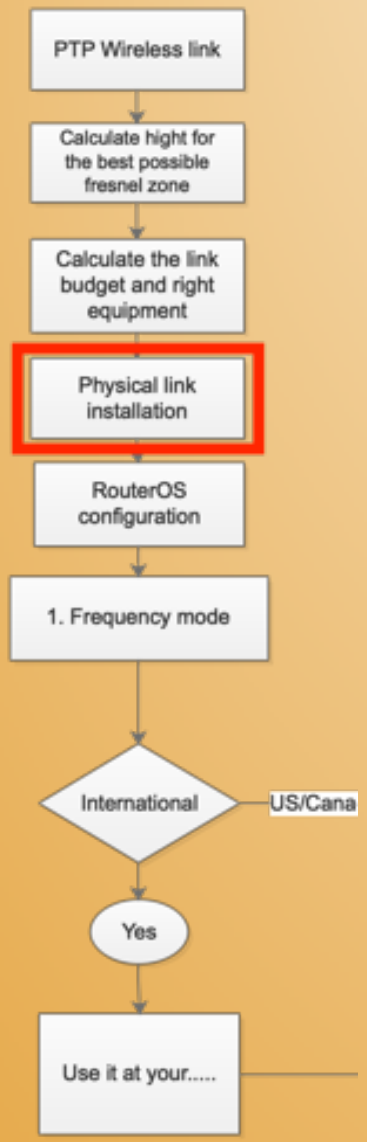








Wireless Netware, VAD



Physical Installation

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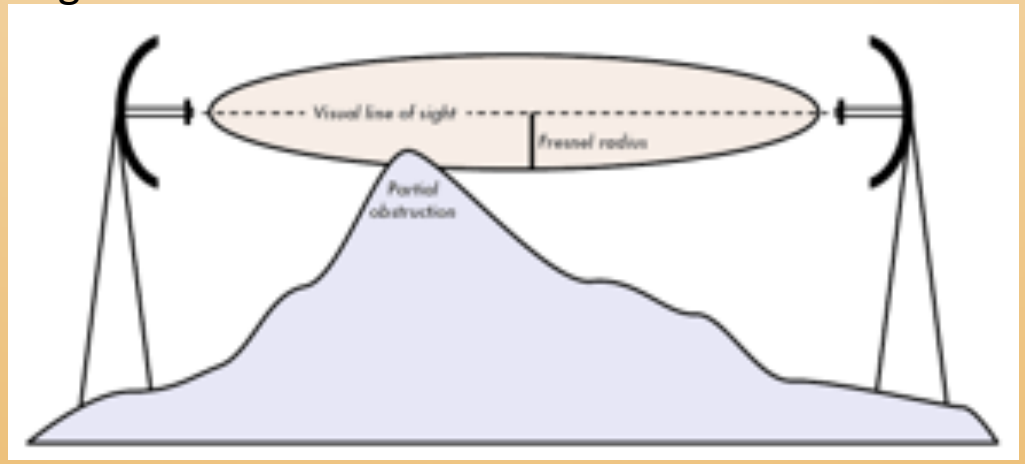
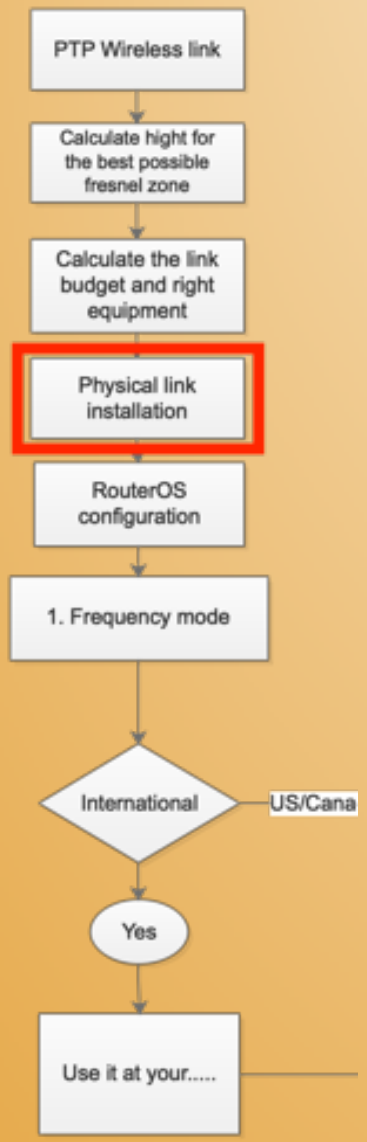
Installation tips

Hight





Physical Installation

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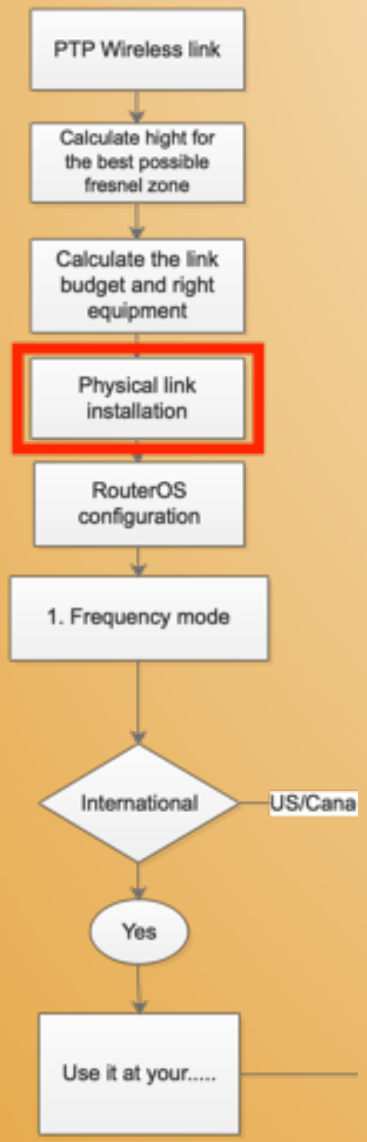
Installation tips

Connector types “Use Same impedance”

Isolation



Physical Installation

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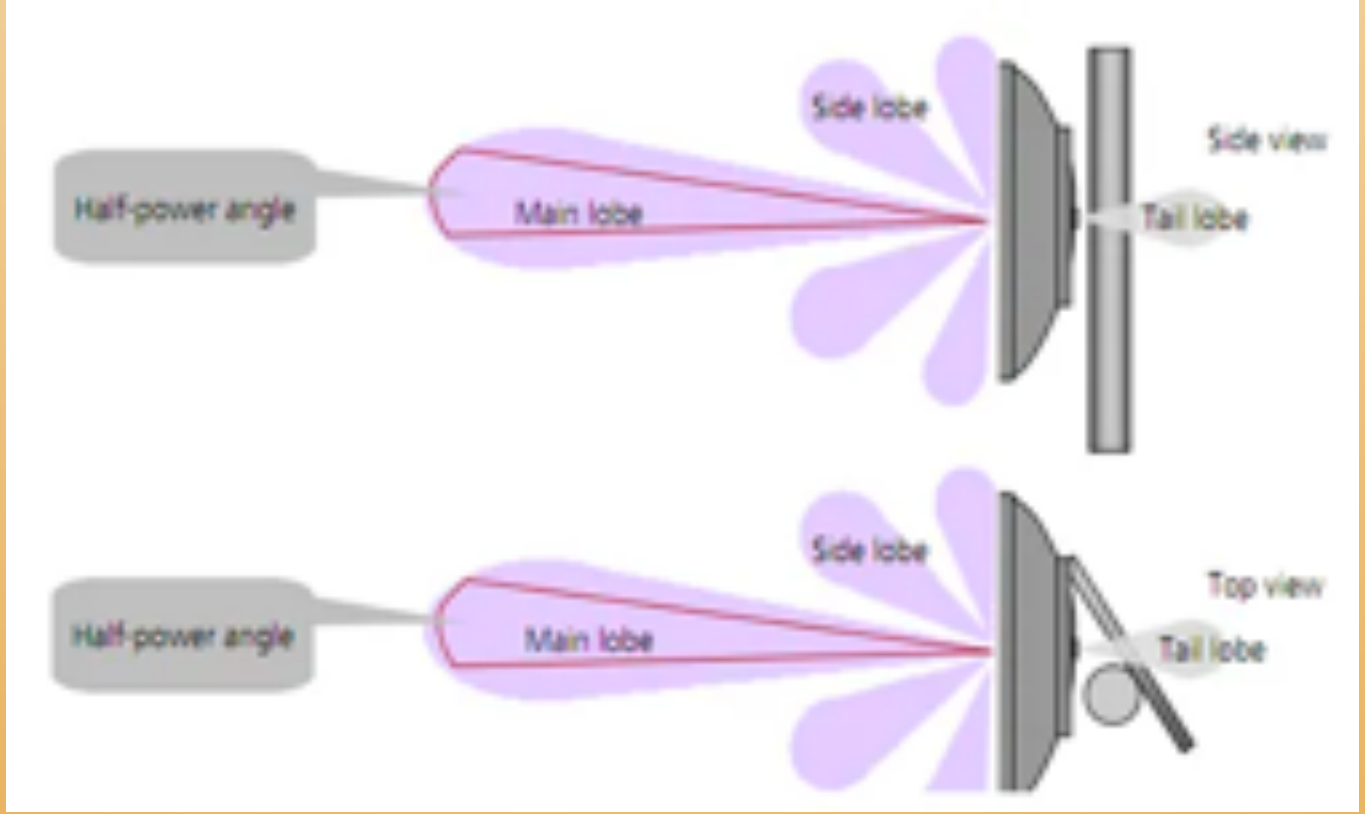
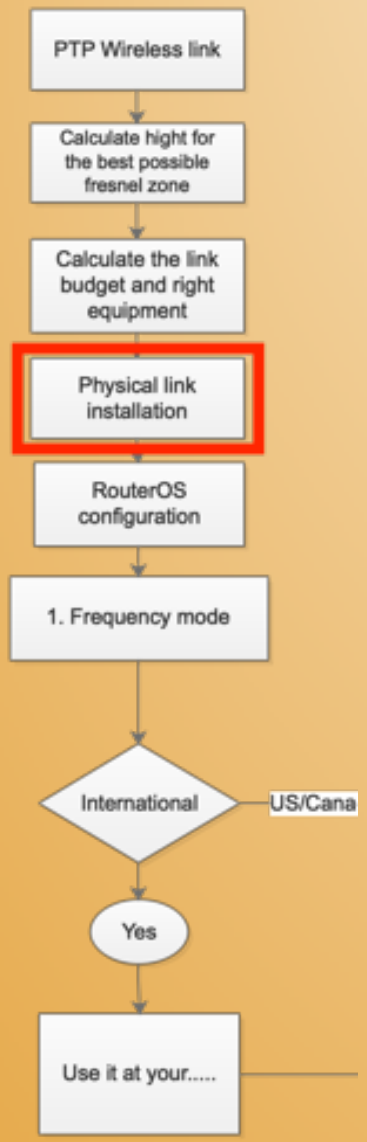
Installation tips

Alignment (Horizontal, Vertical), Chain 1,2,3





Physical Installation

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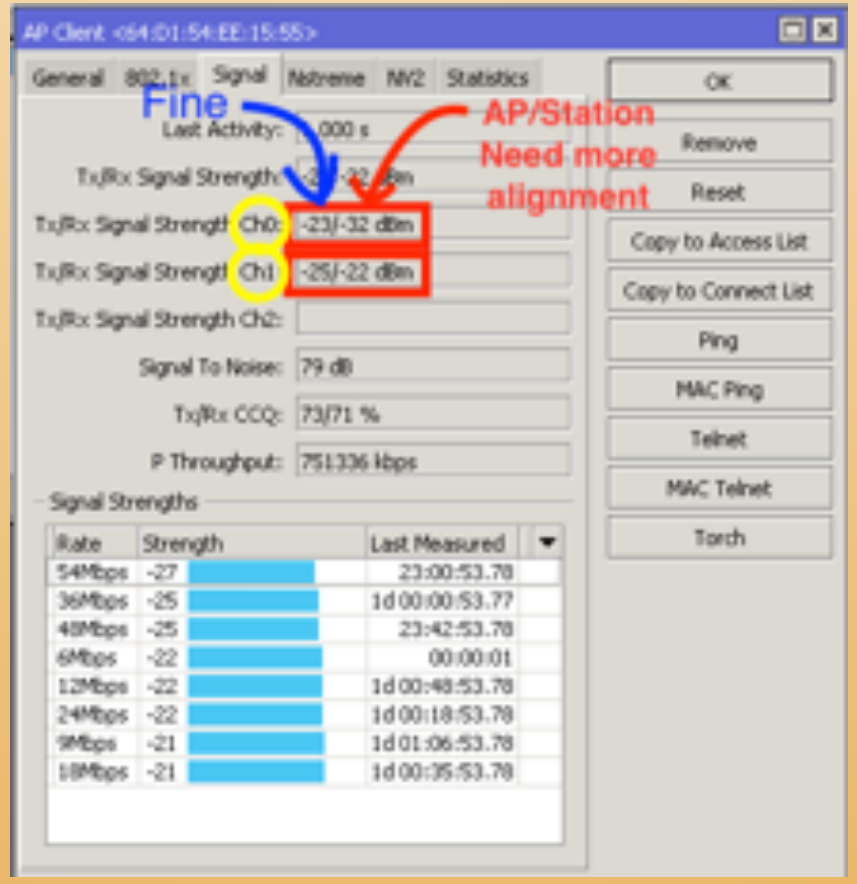
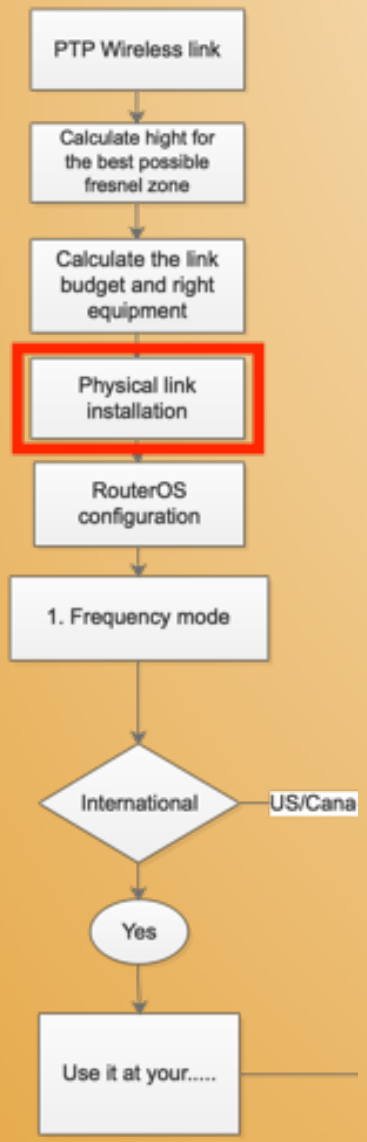
Installation tips

The best tools on how to align the antenna





Physical Installation

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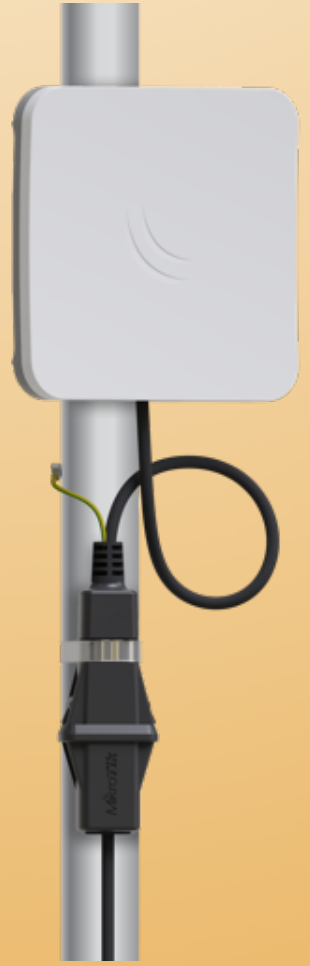
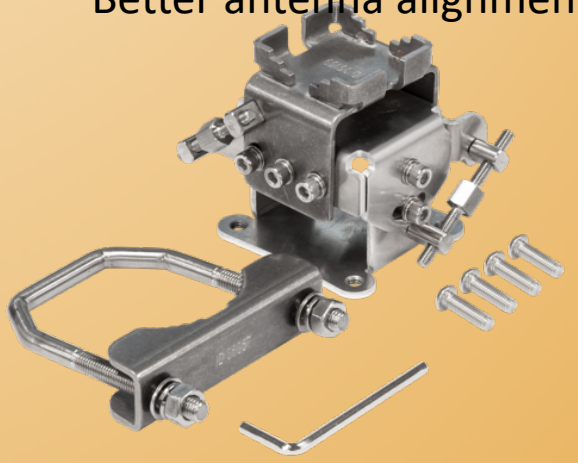
Installation tips

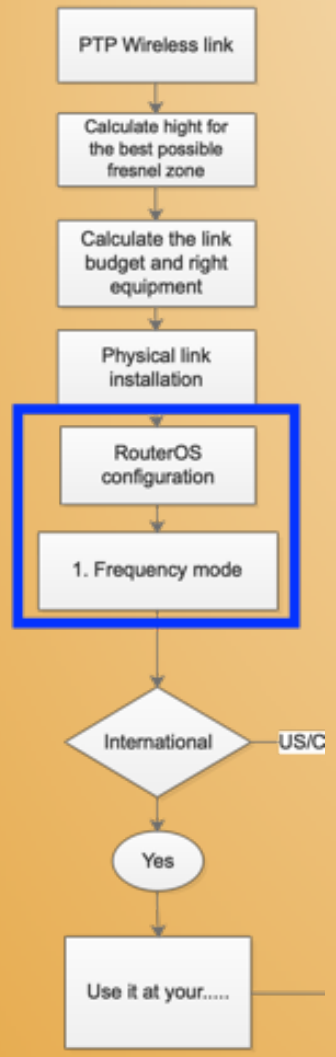
Cable length

Surge protection



Better antenna alignment





Wireless Configuration In RouterOS

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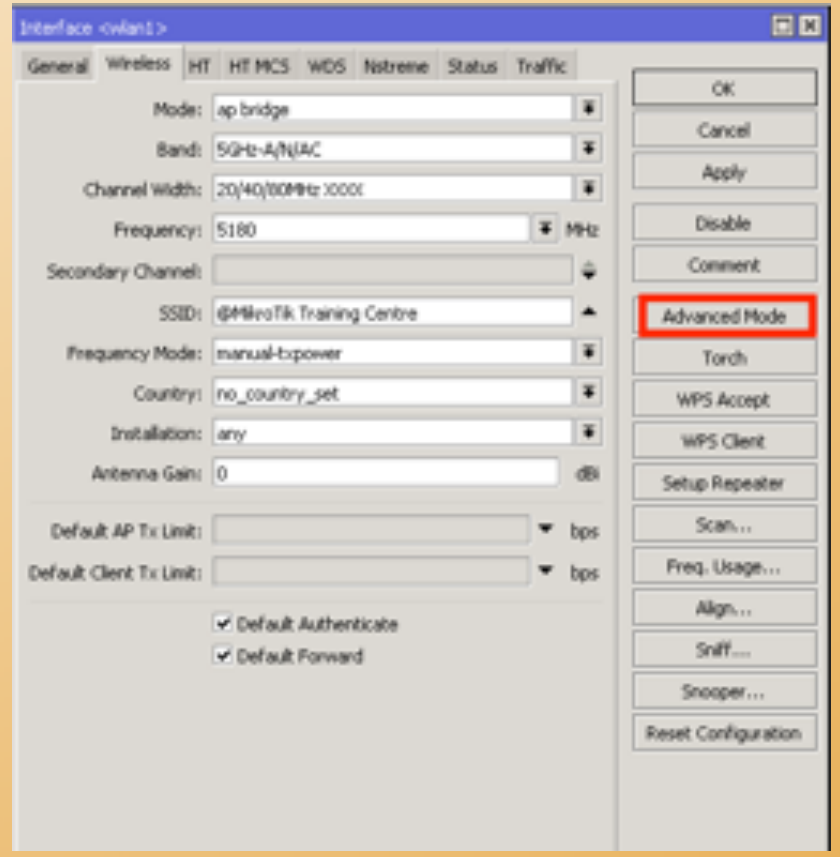

Point To Point Wireless

https://mum.mikrotik.com/presentations/US12/uldis.pdf

Wireless Configuration In RouterOS

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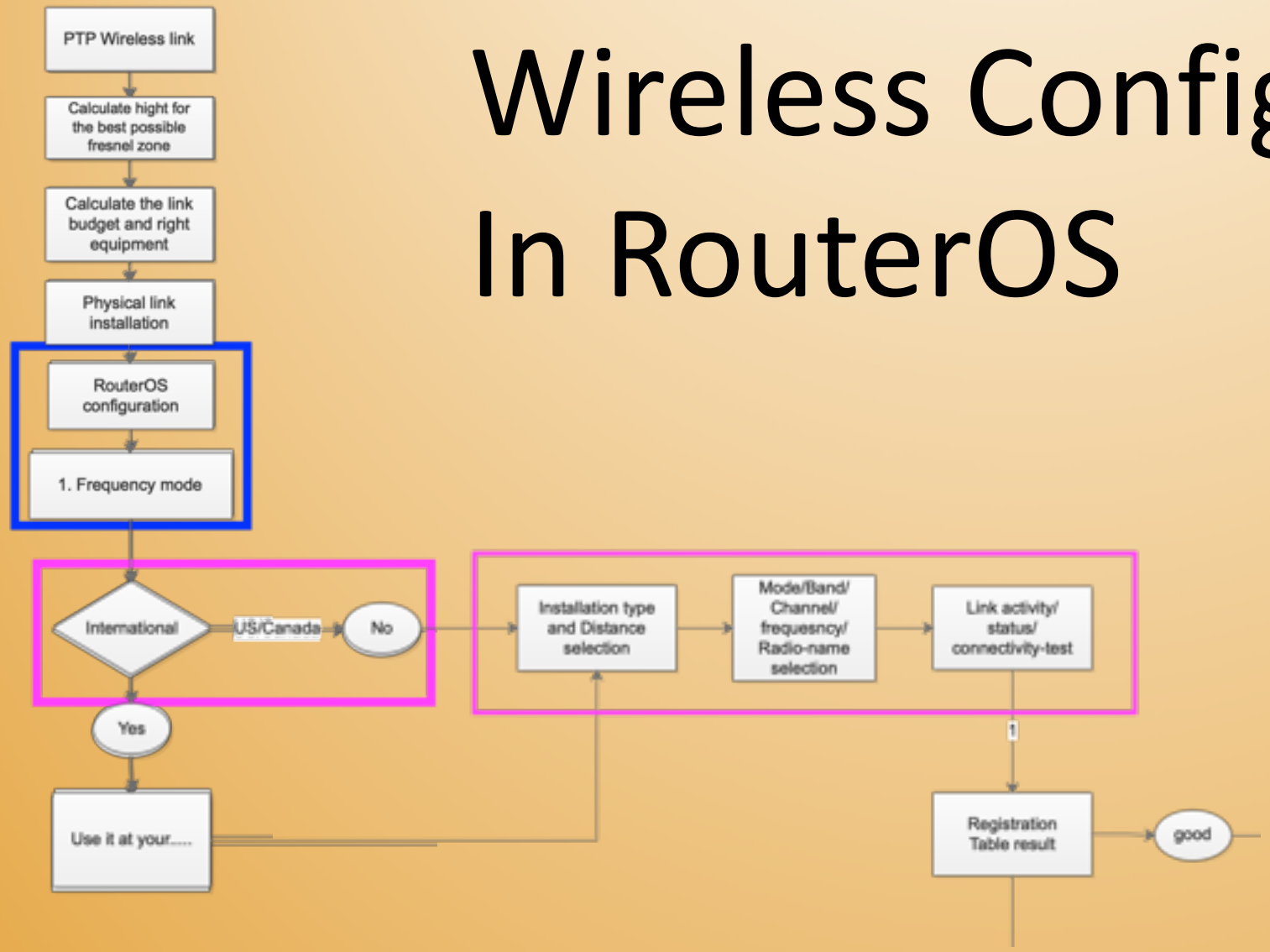

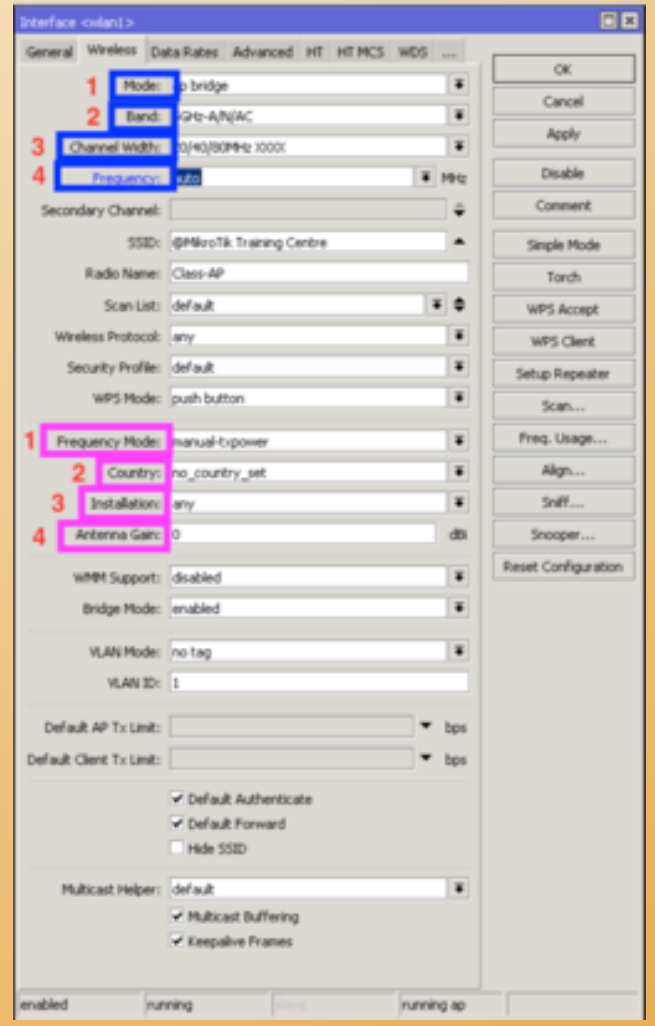

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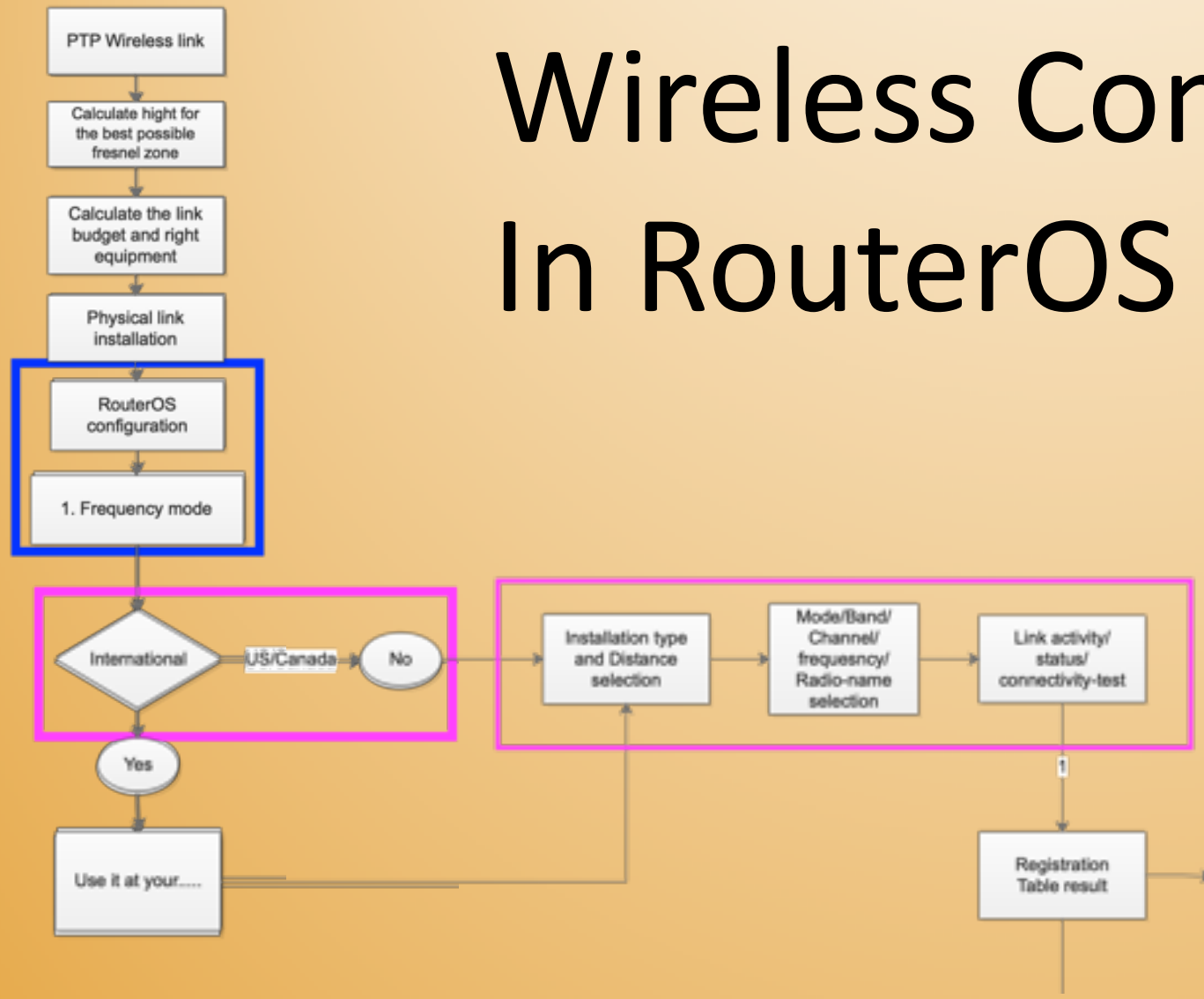

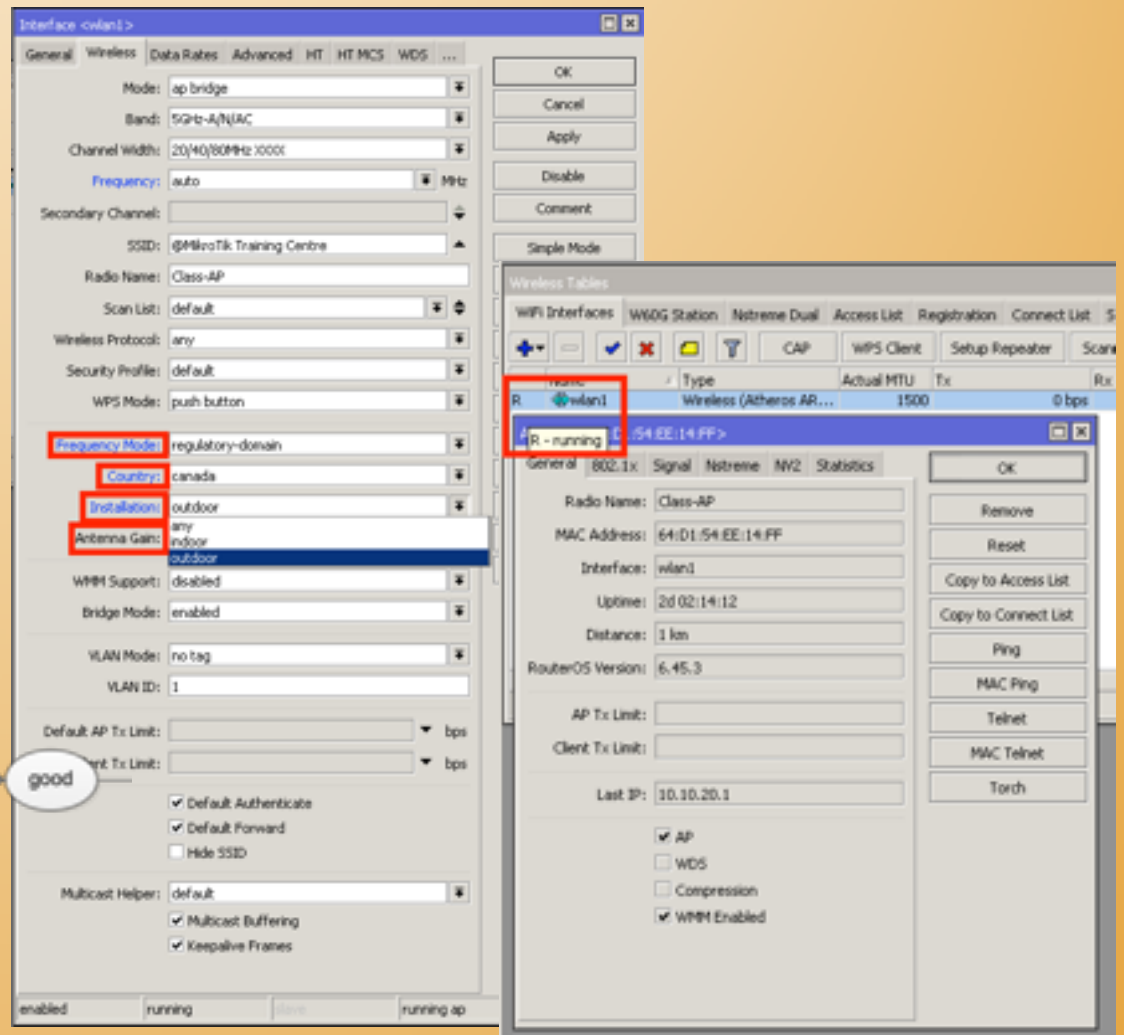

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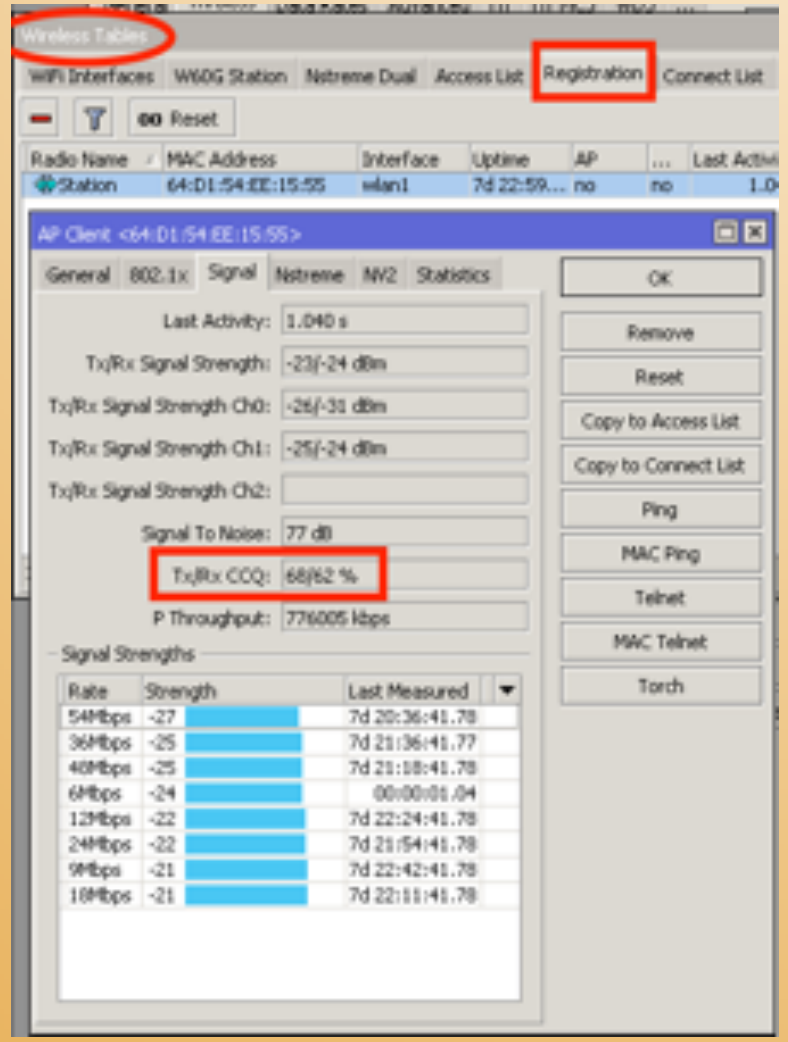

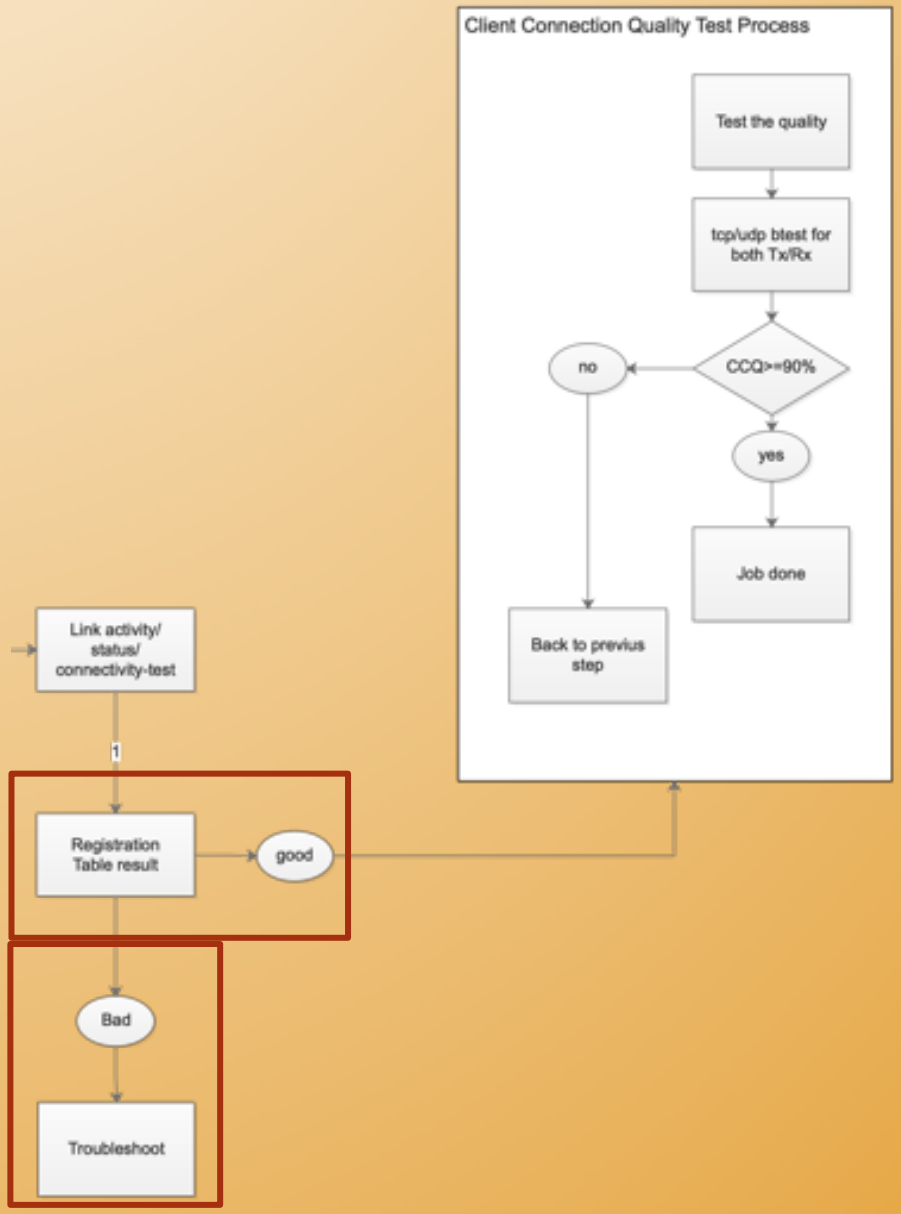

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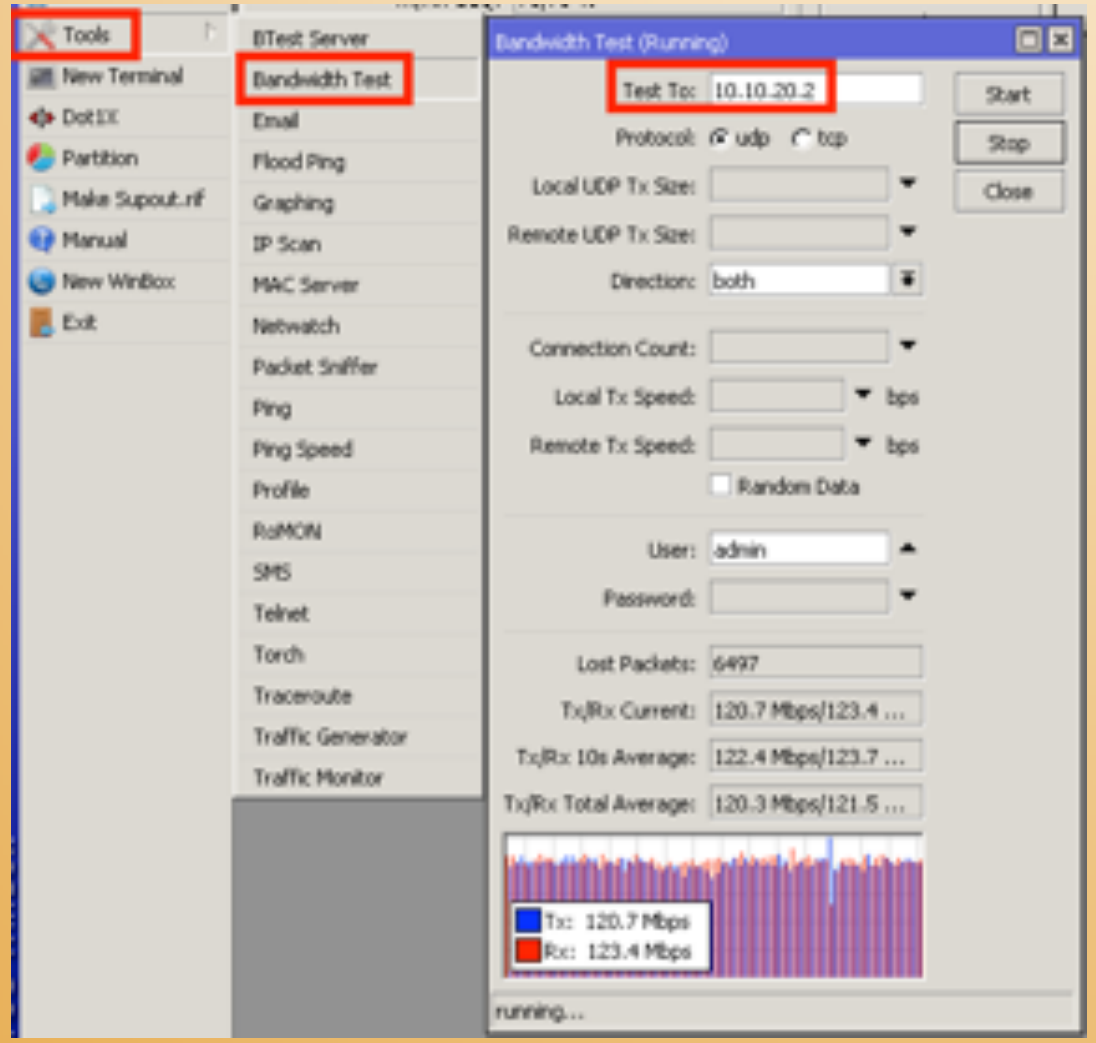

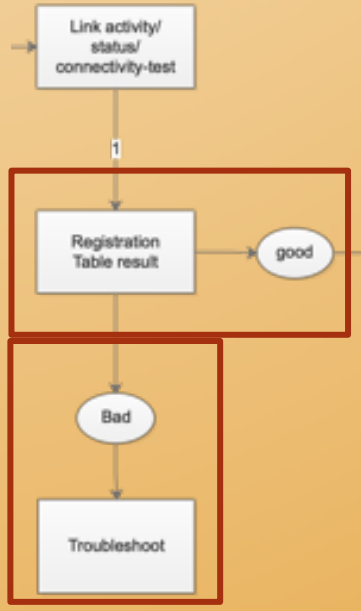

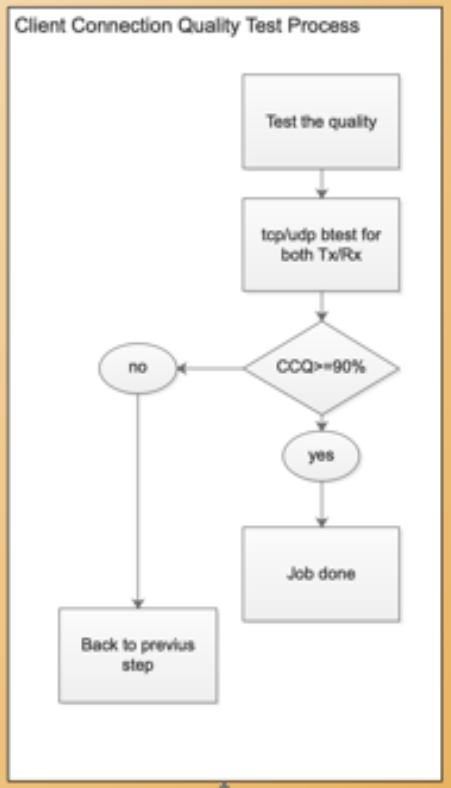

Wireless Netware, VAD

Wireless Configuration In RouterOS

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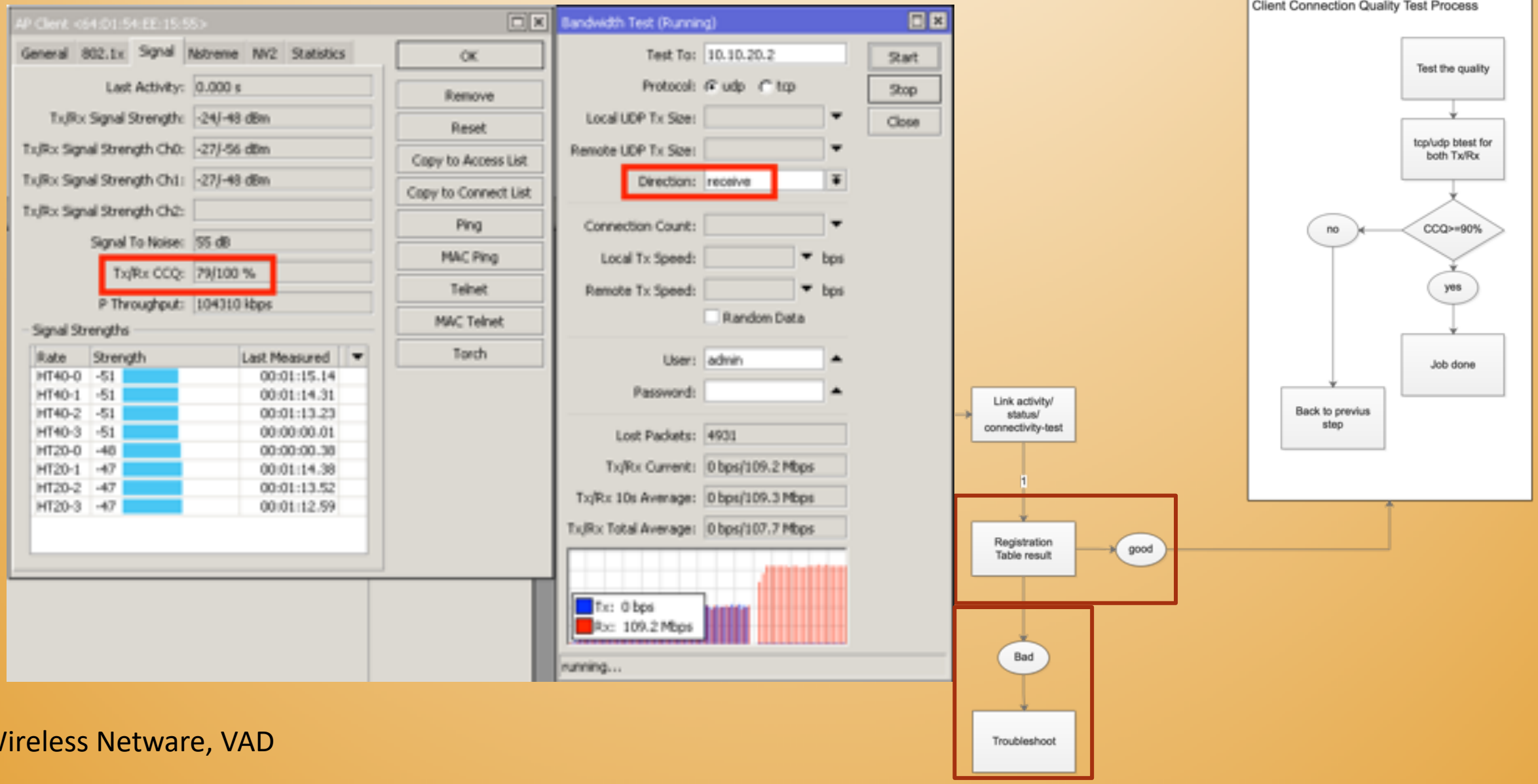

Wireless Netware, VAD

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Registration Table, General

Wireless Netware, VAD

Registration Table, General

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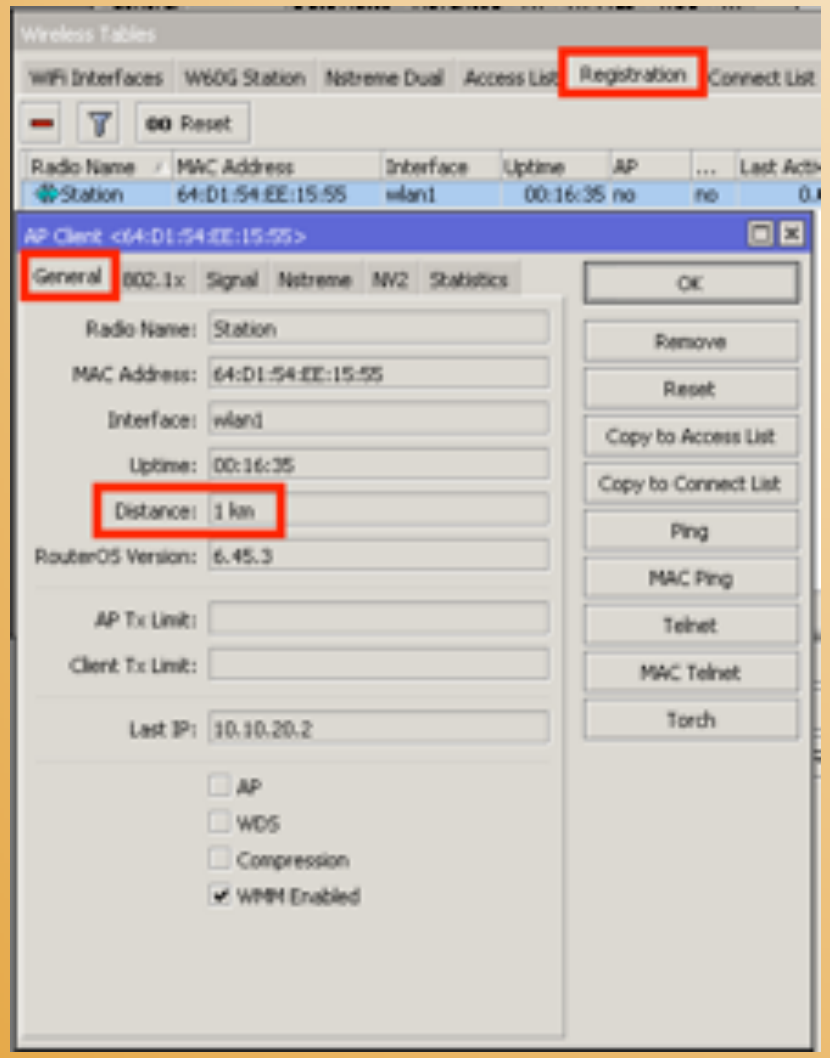

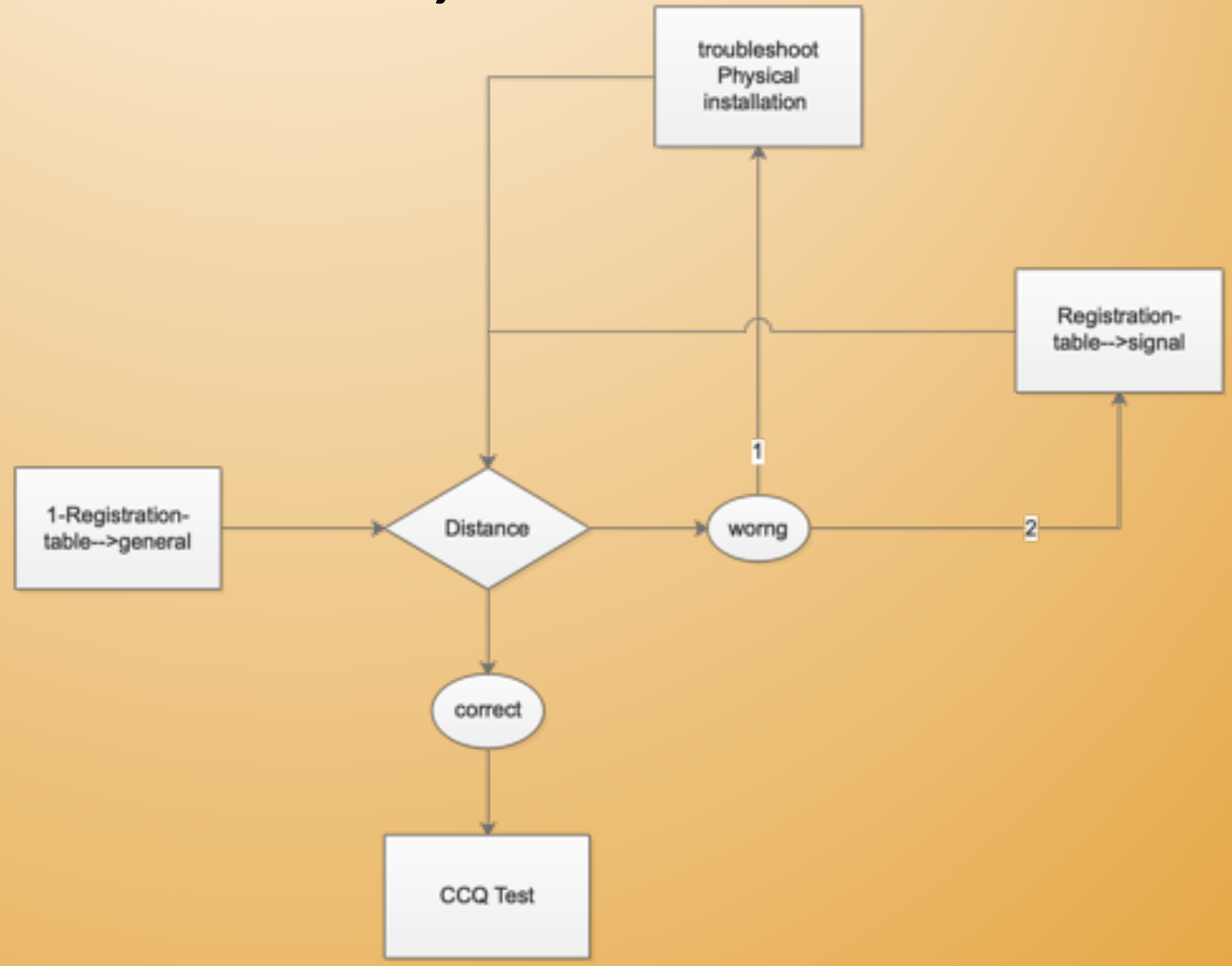

Wireless Netware, VAD

Registration Table, General

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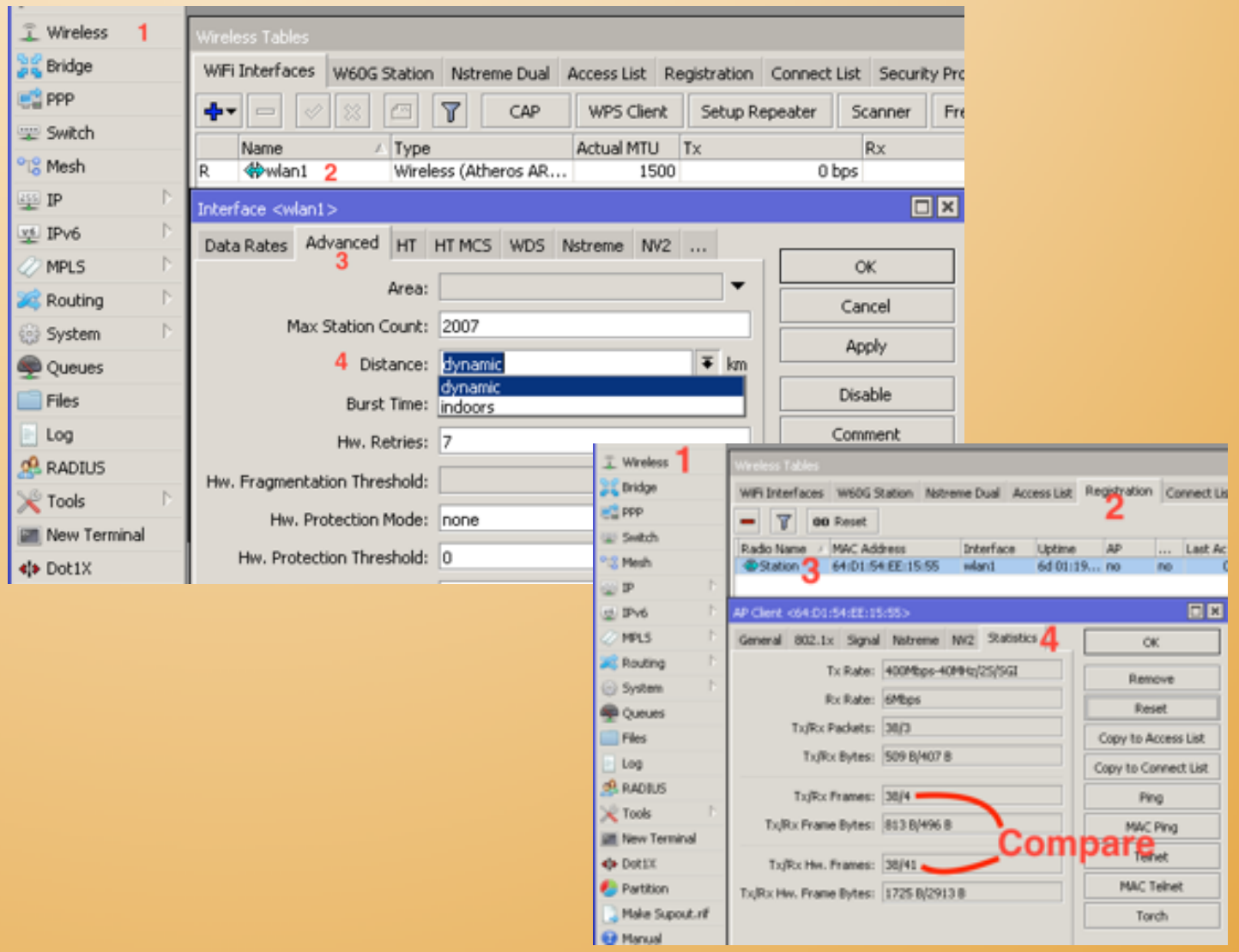
Is this indoor/outdoor

1. Indoor:
2. Outdoor:
    1. Longer → Latency
    2. Shorter → Retransmission



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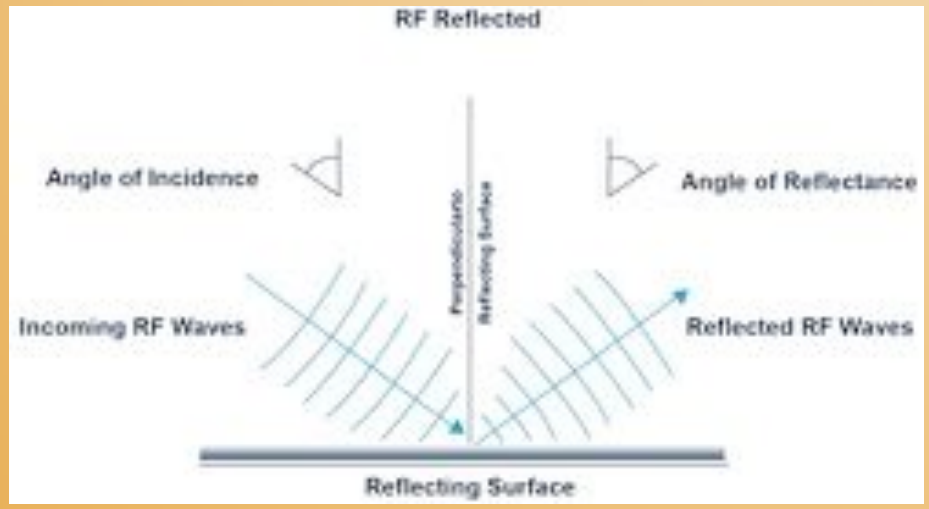
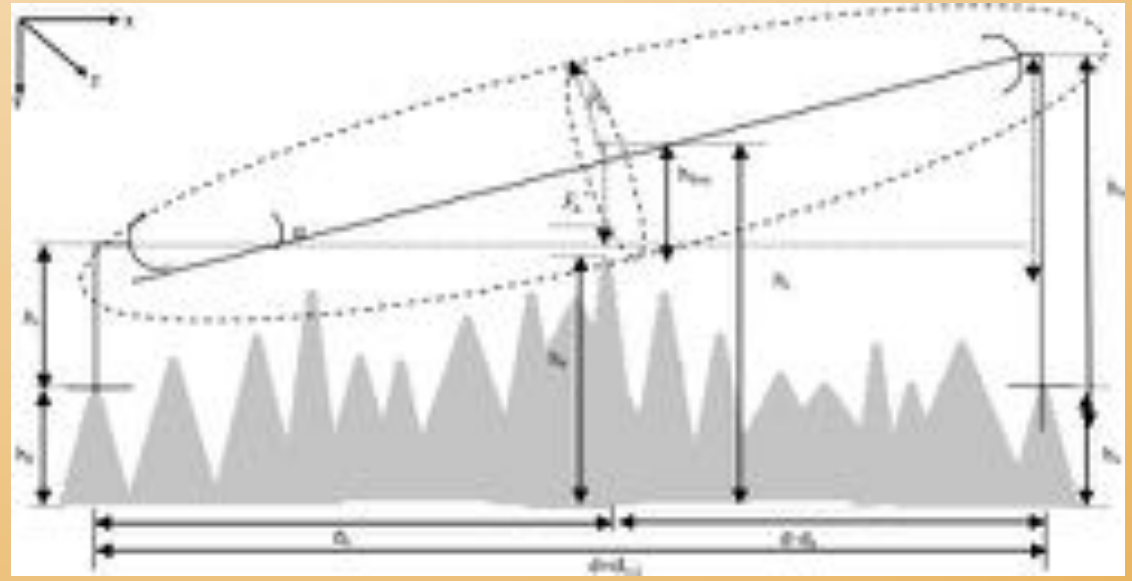
Installation process

1. Fresnel zone and Hight
2. Antenna gain
3. Antenna alignment





RouterOS Best configuration

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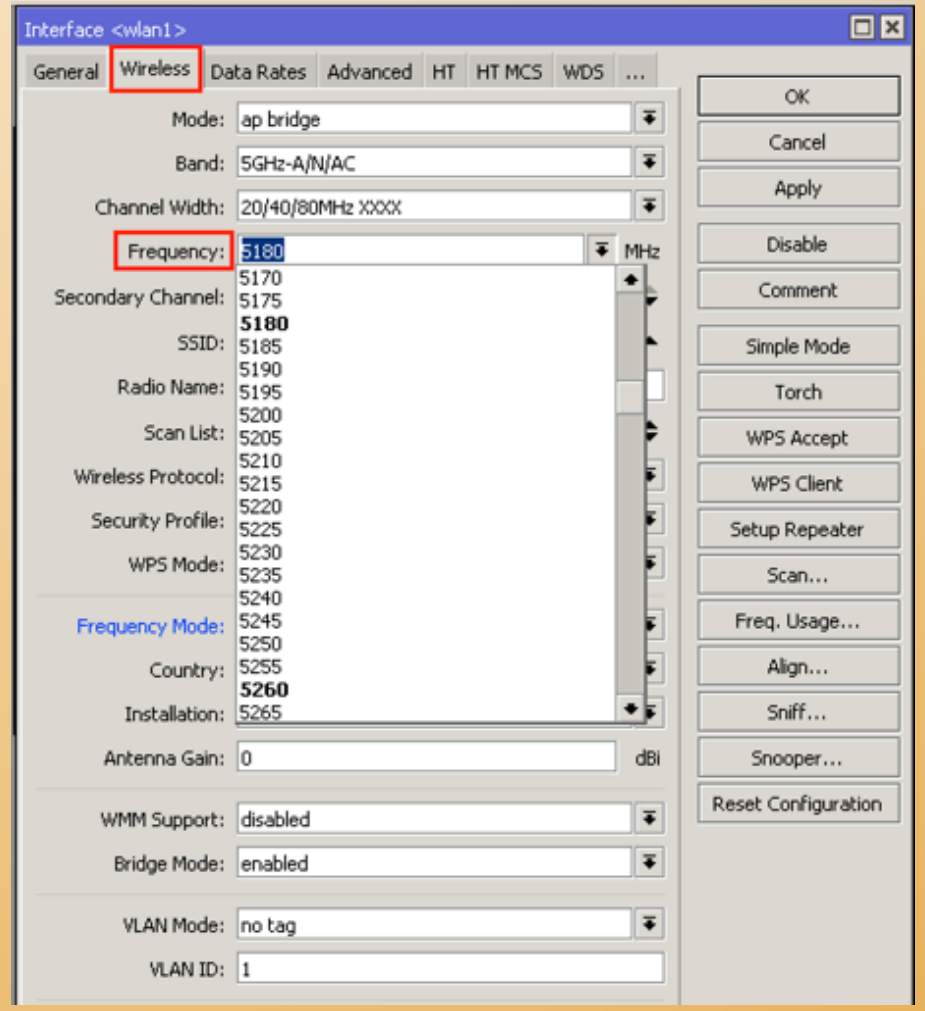
Solution

1. Interference
    1. Change frequency
    2. Lower down the Band/Channel width
    3. Lower down the basic data-rate
2. Advanced--> adaptive noise immunity



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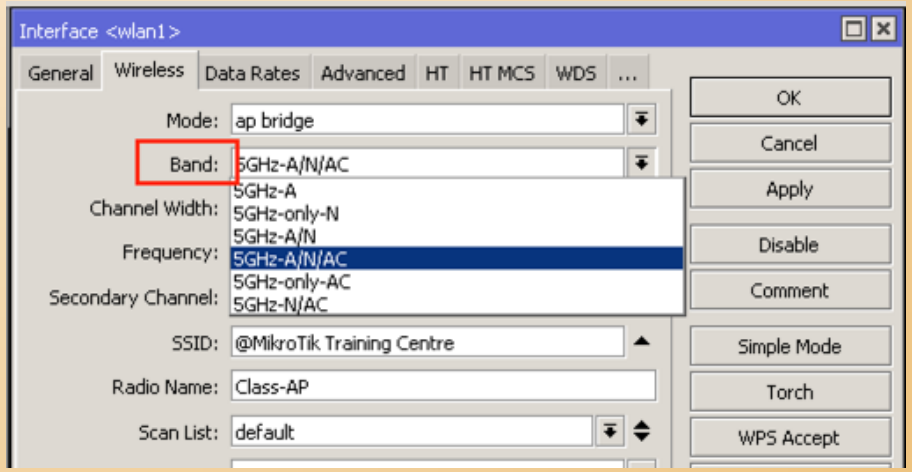

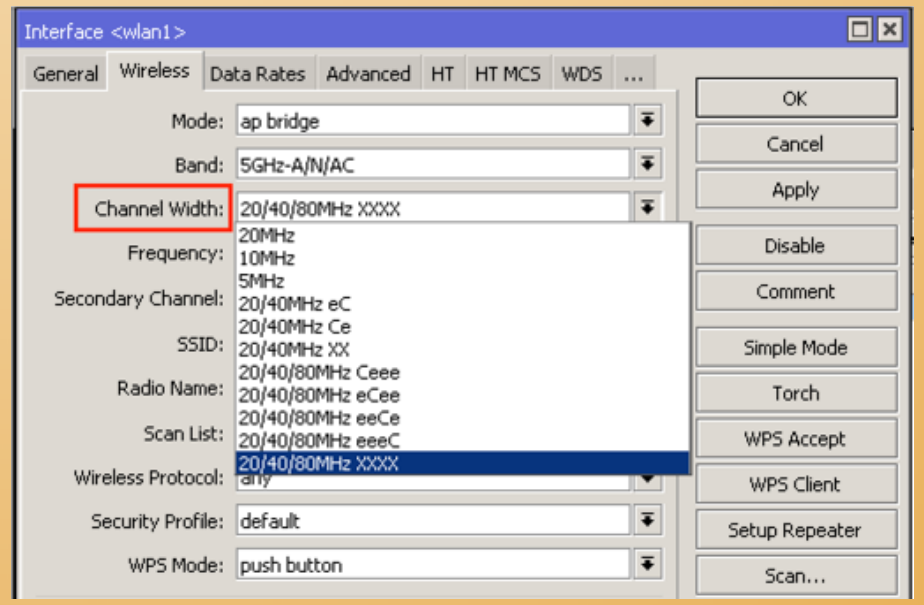

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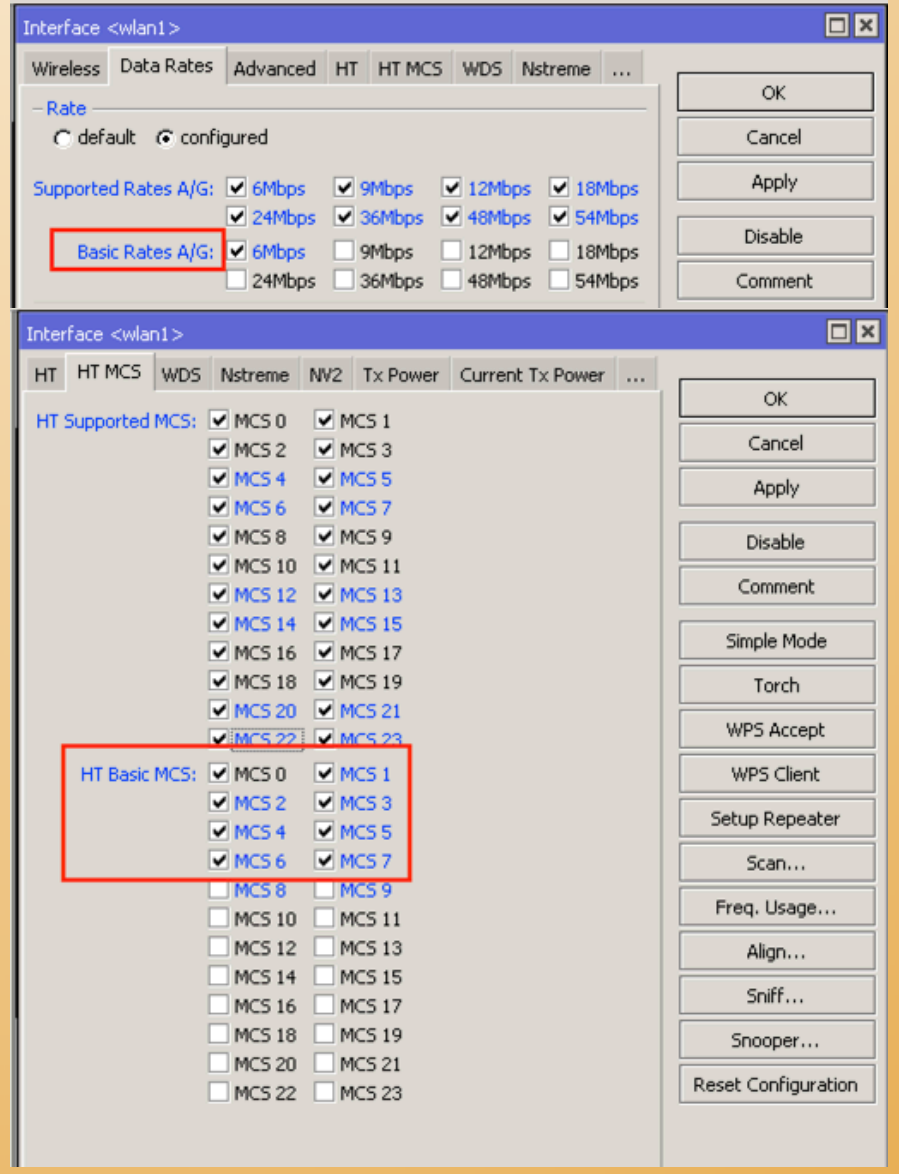

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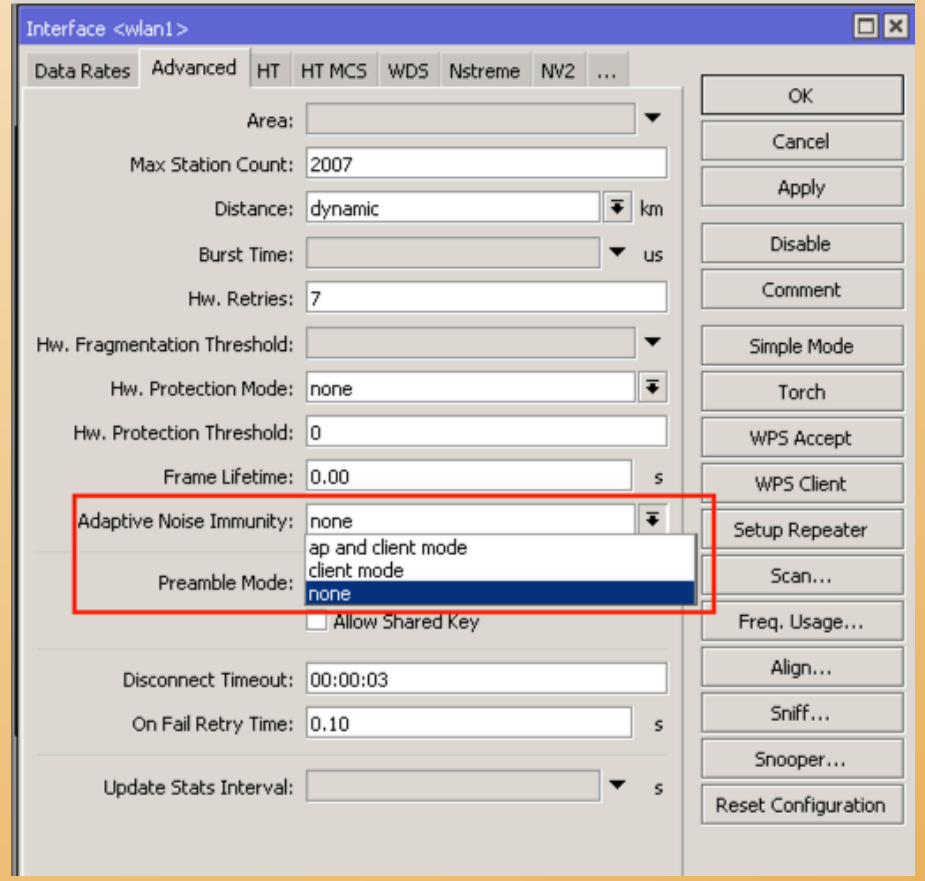

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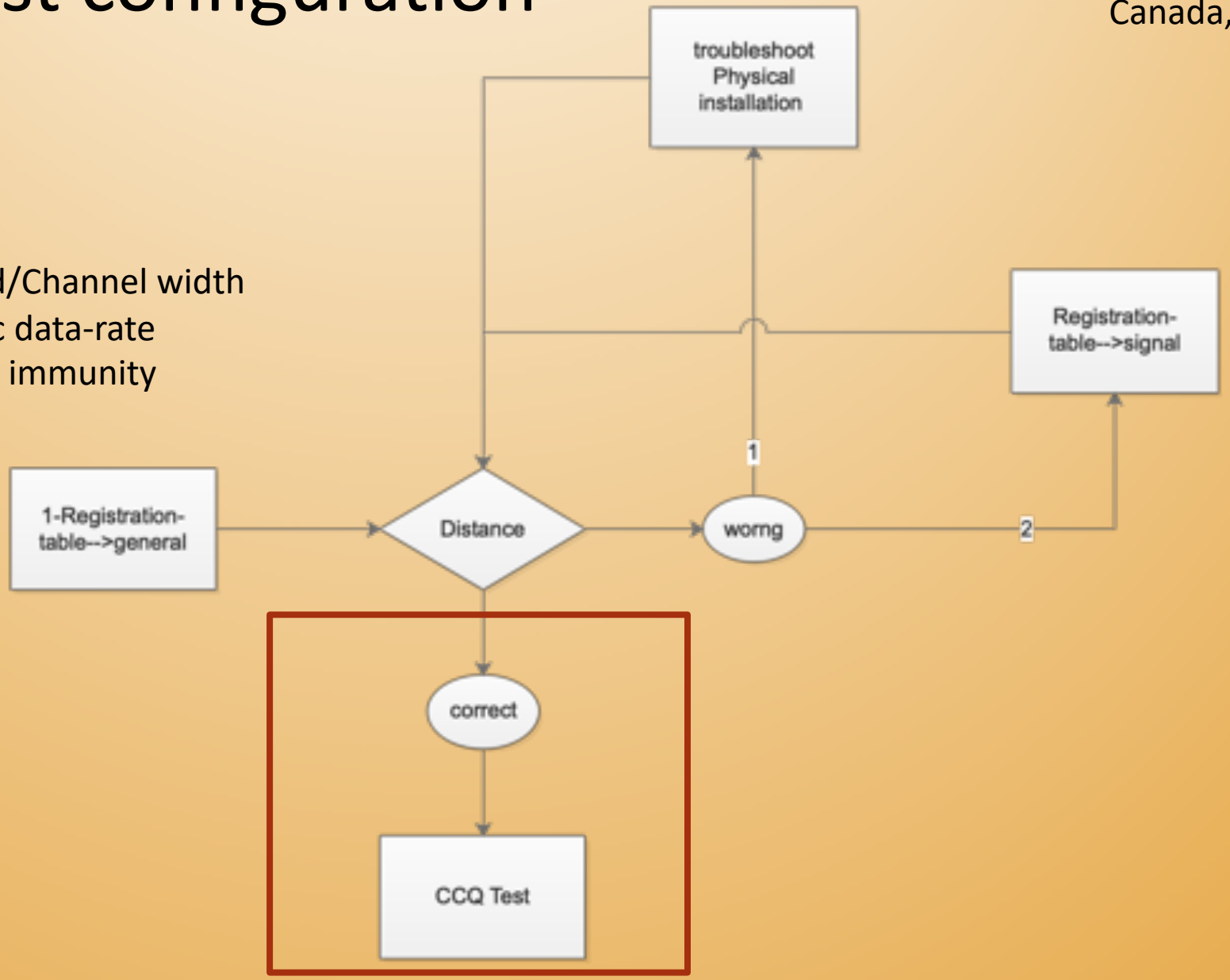

Registration Table, Signal

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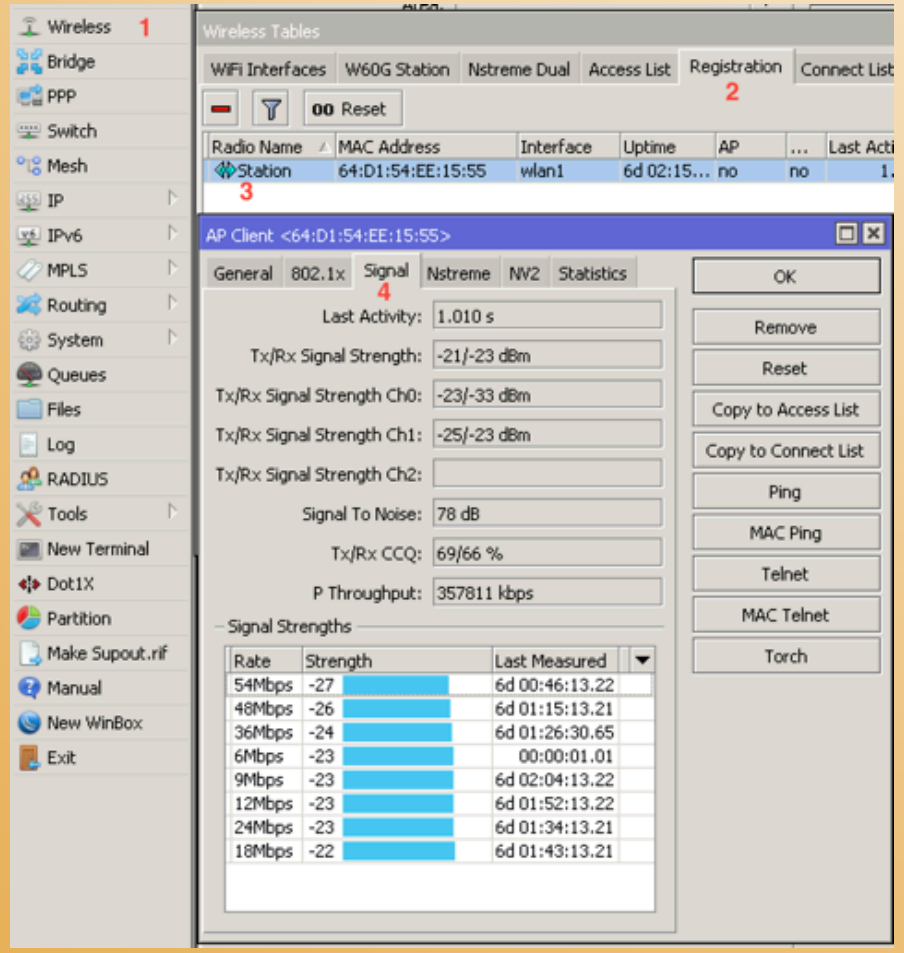

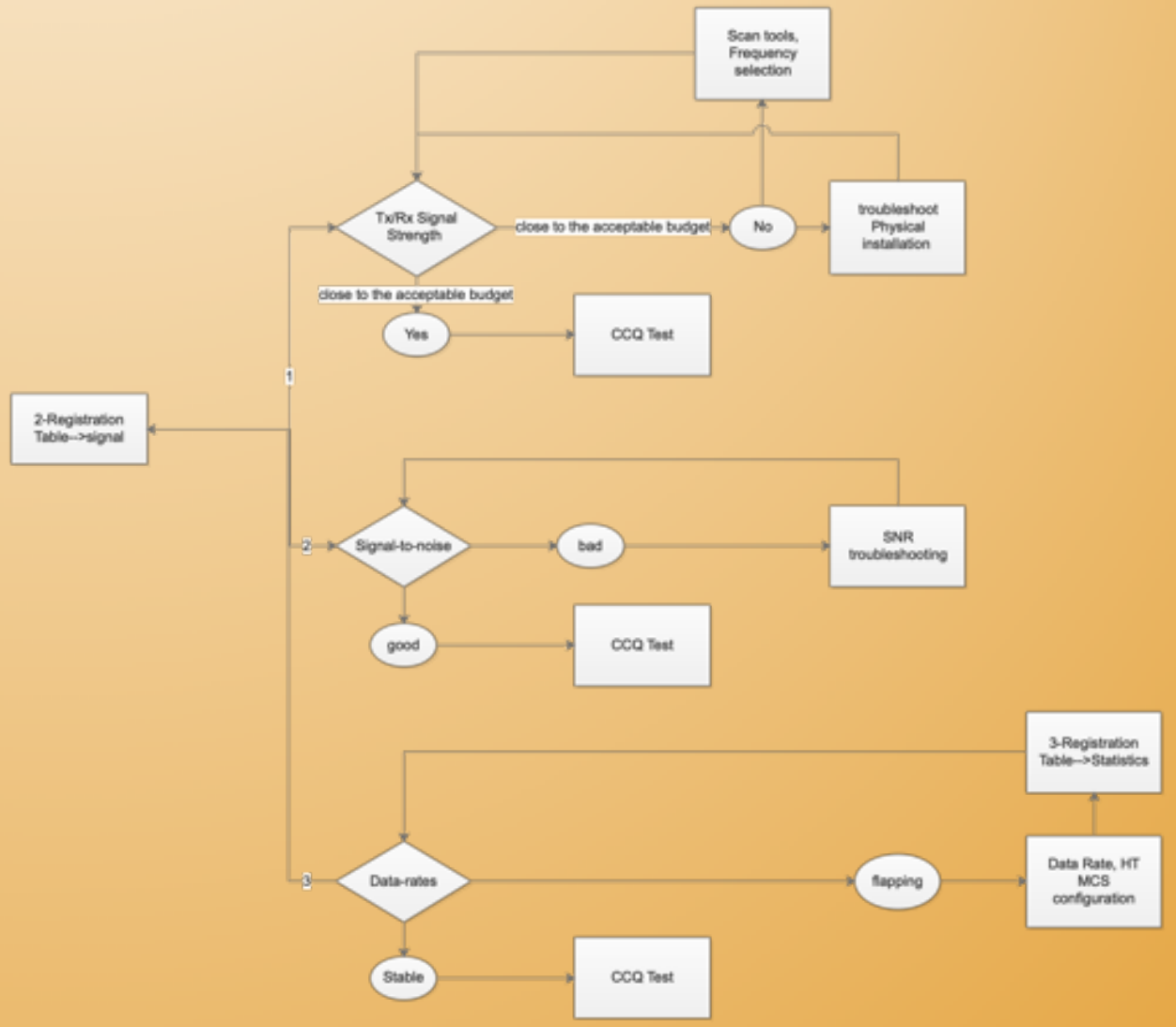

Wireless Netware, VAD

Registration Table, Signal

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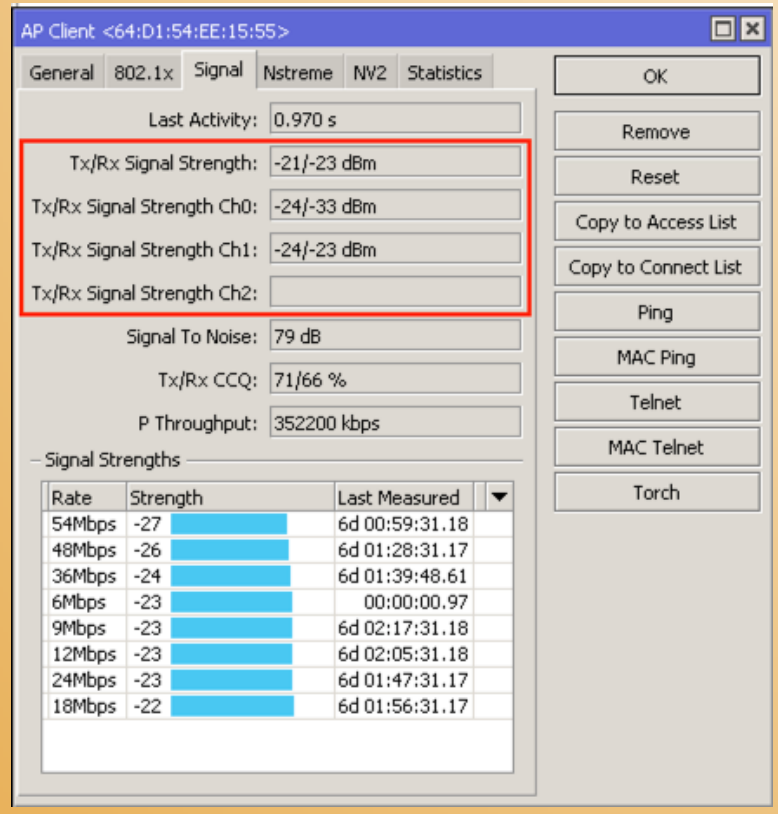

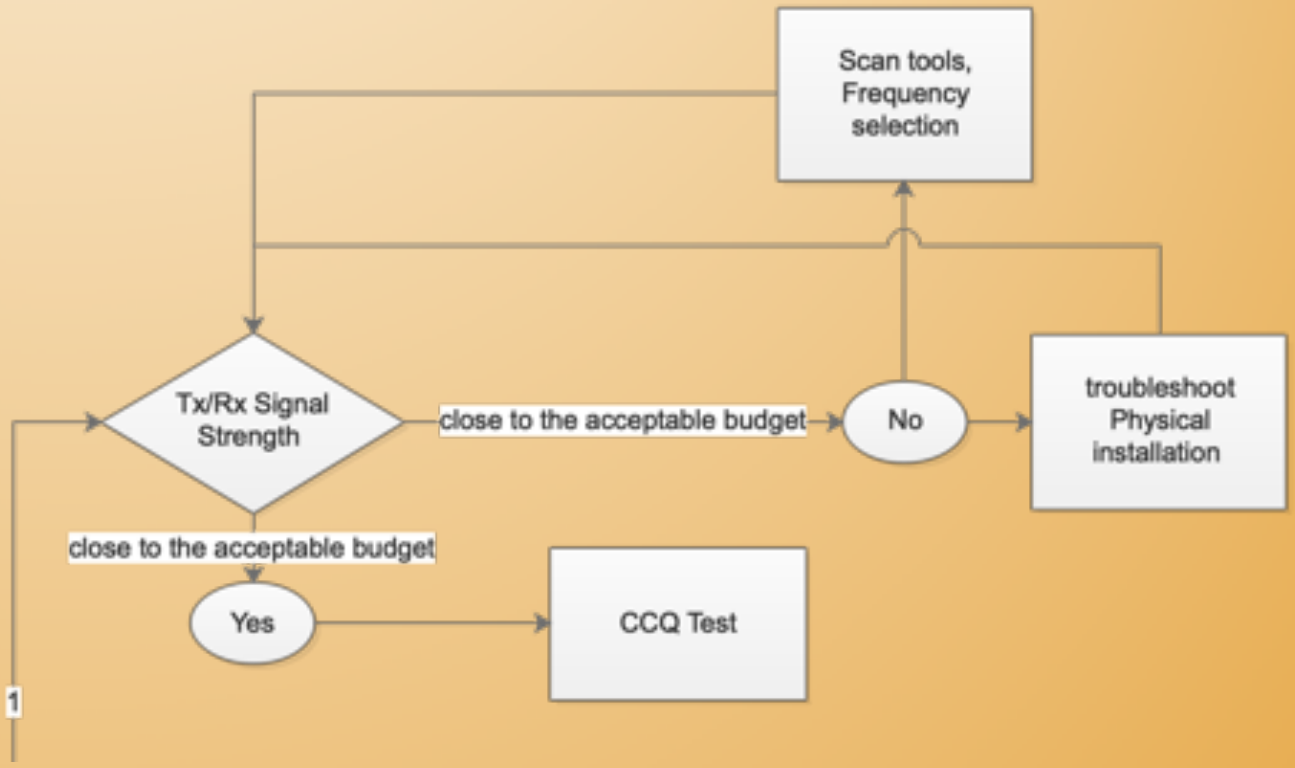

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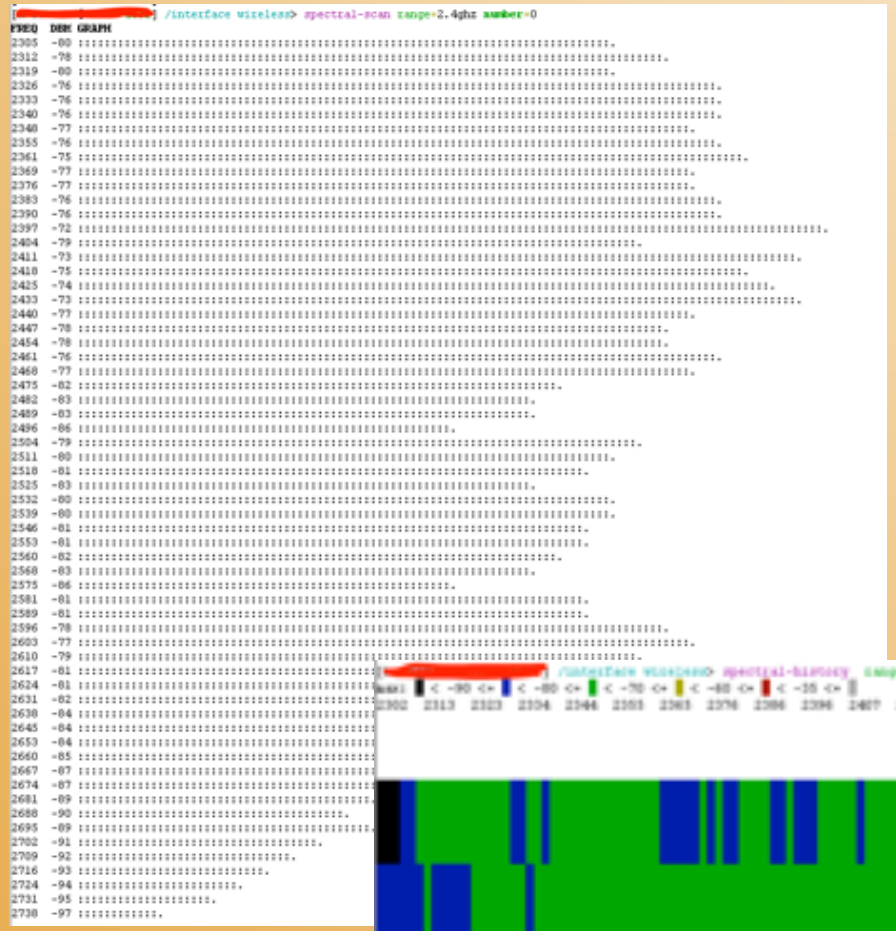

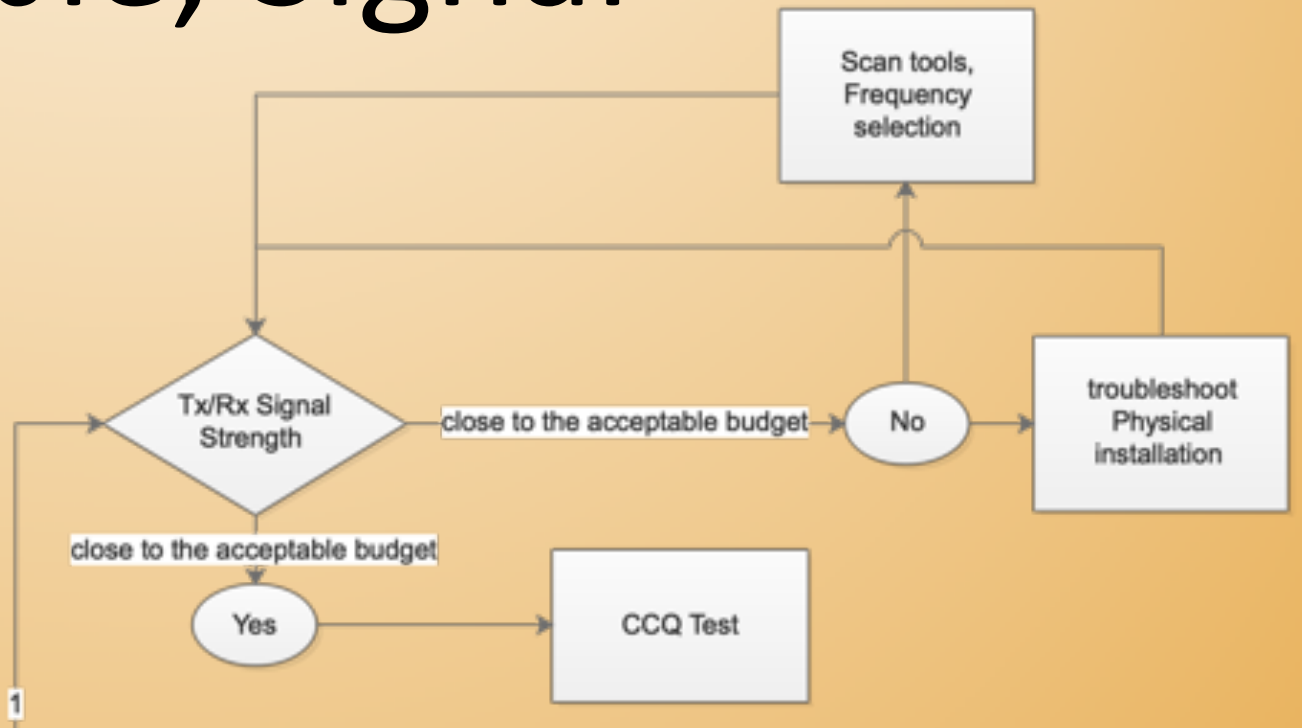

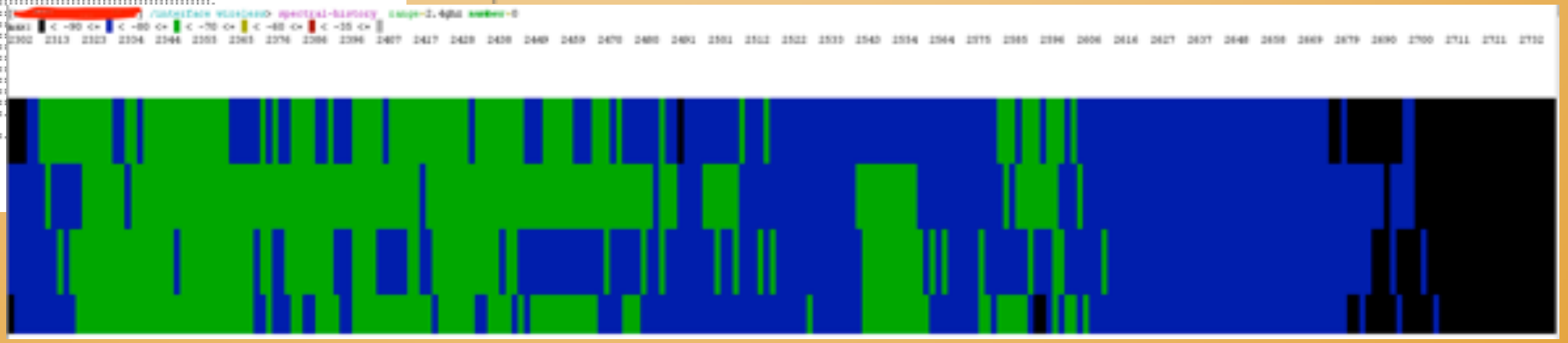

Wireless Netware, VAD

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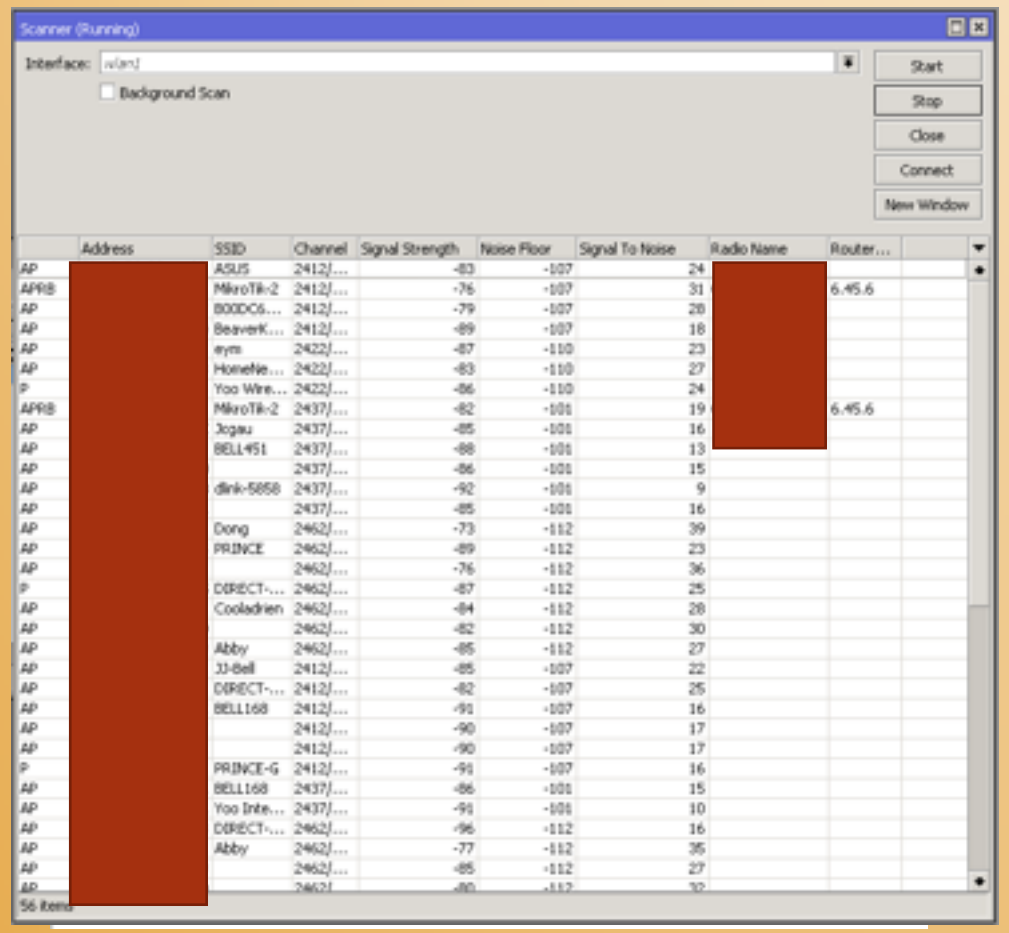

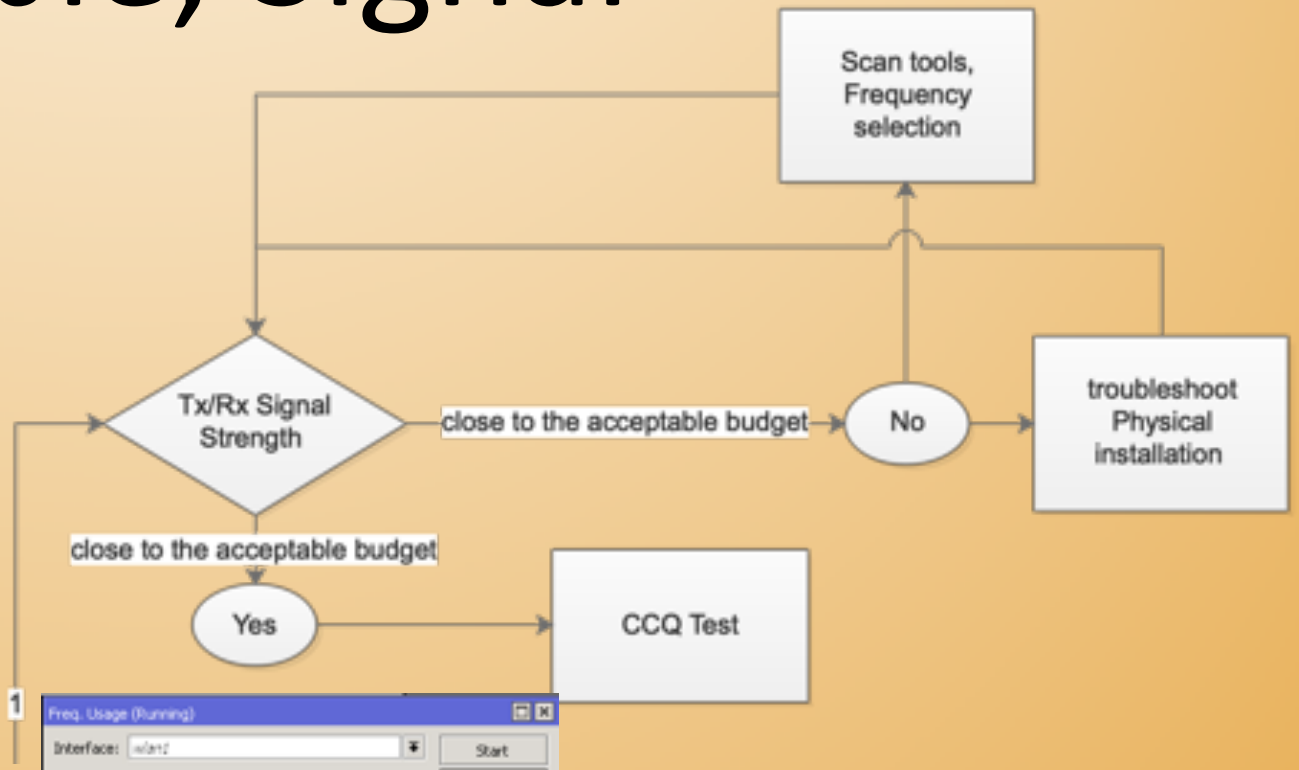

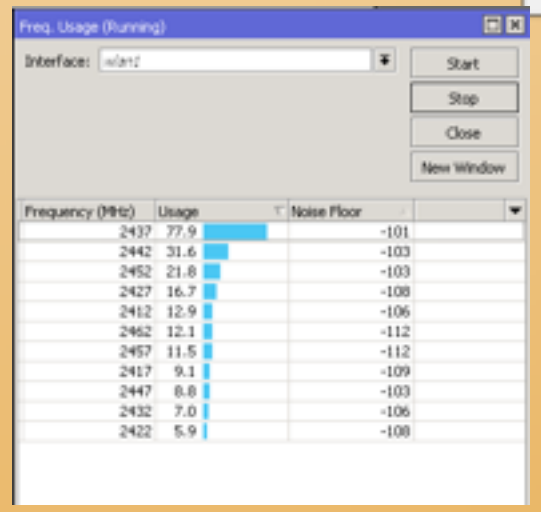

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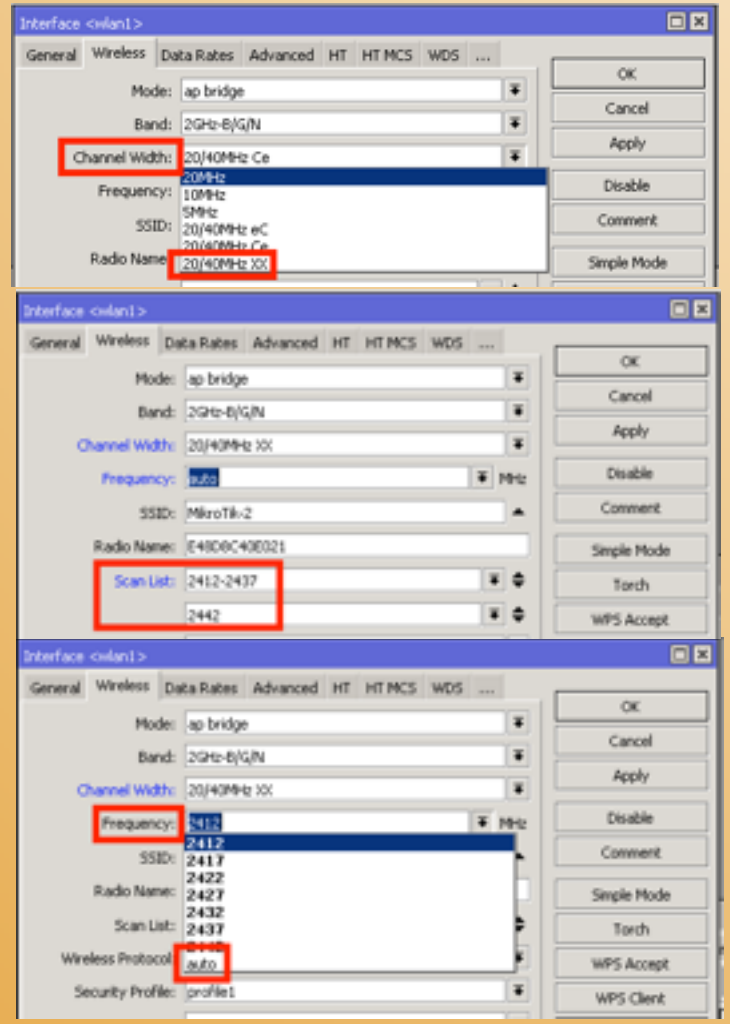

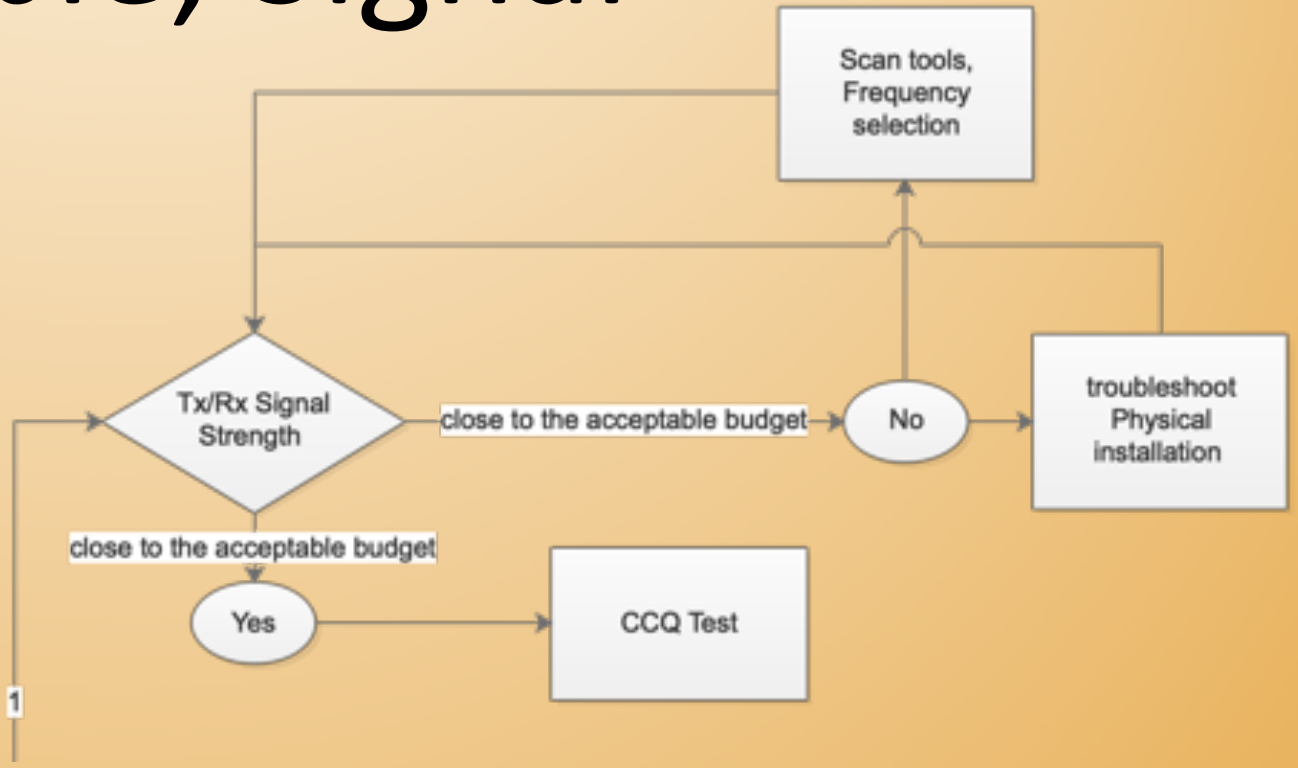

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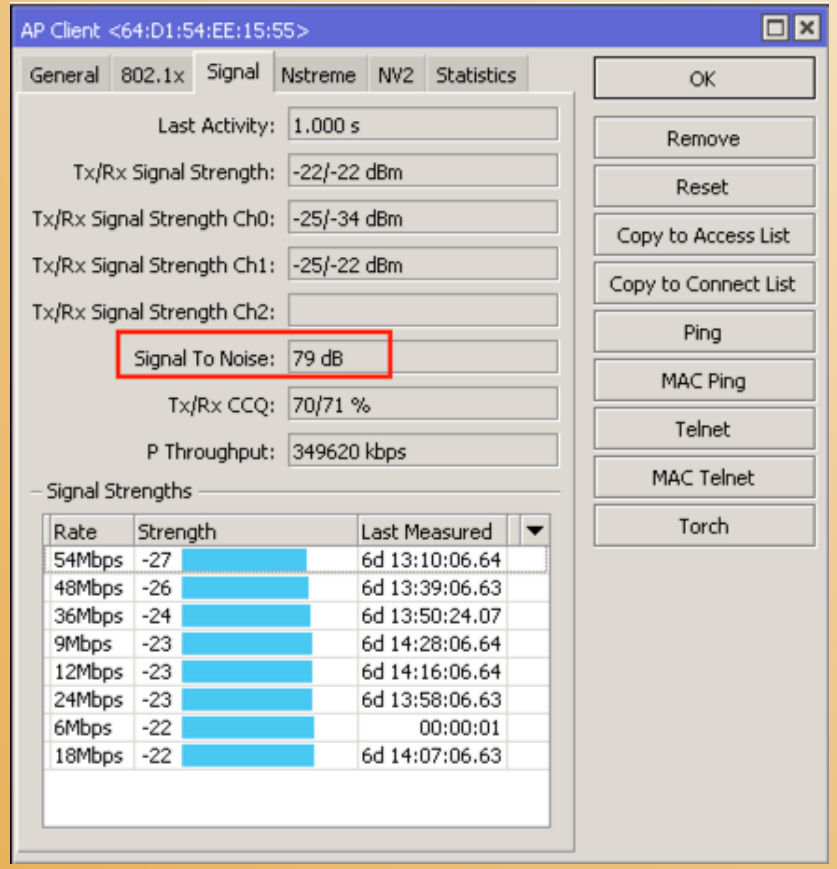

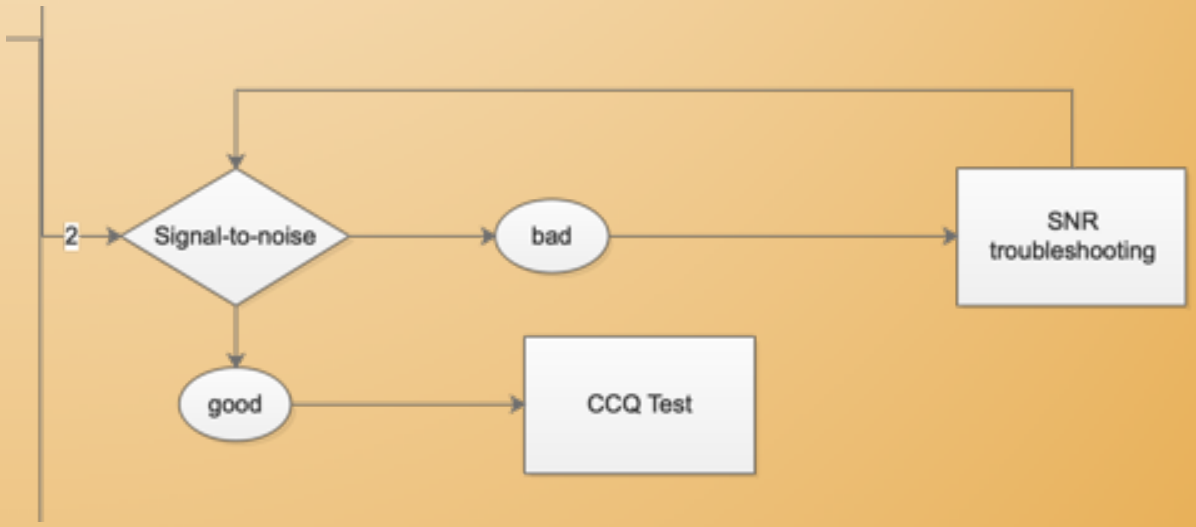

If the peak of an RF signal is somewhere near the noise floor,
the receiver may confuse the data signal with noise and result in Data-rate flapping.

Many experts agree that an SNR measurement of 22 dB or more is a viable RF link,
but there is no hard and fast rule for this measurement.

Registration Table, Signal

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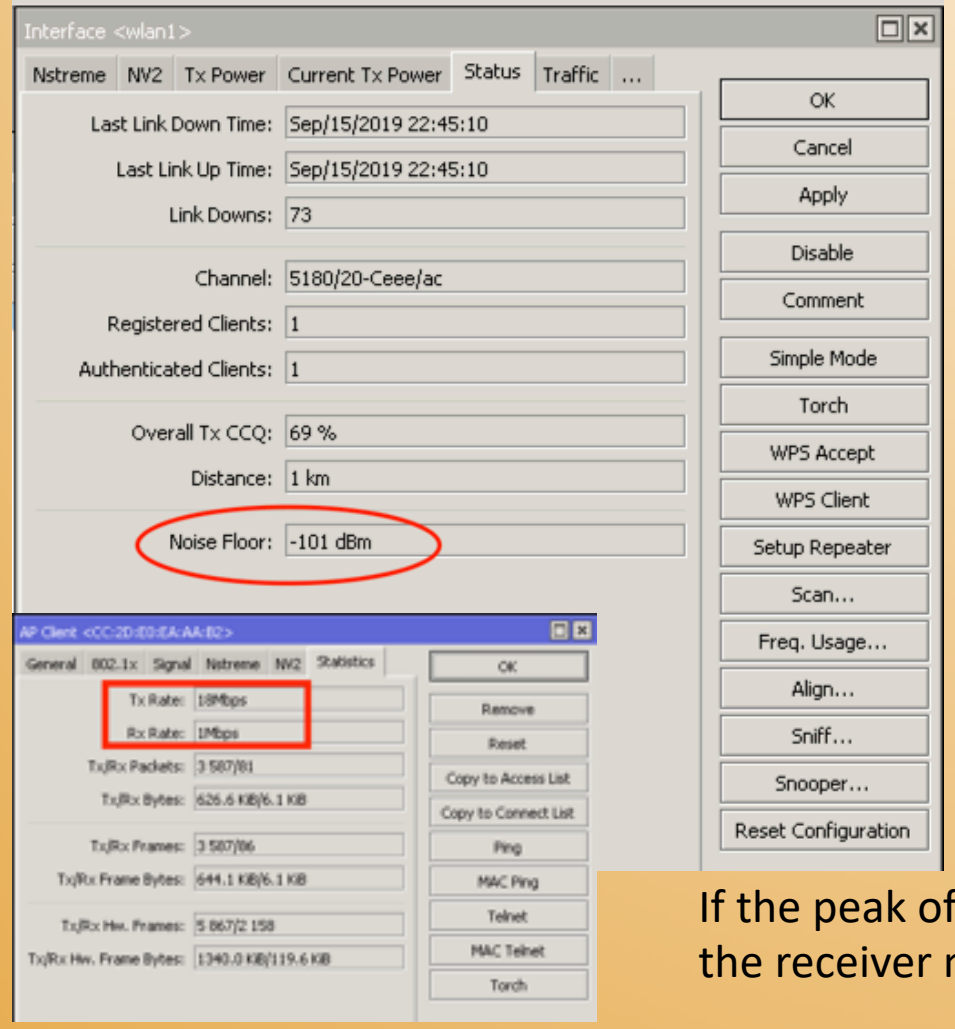
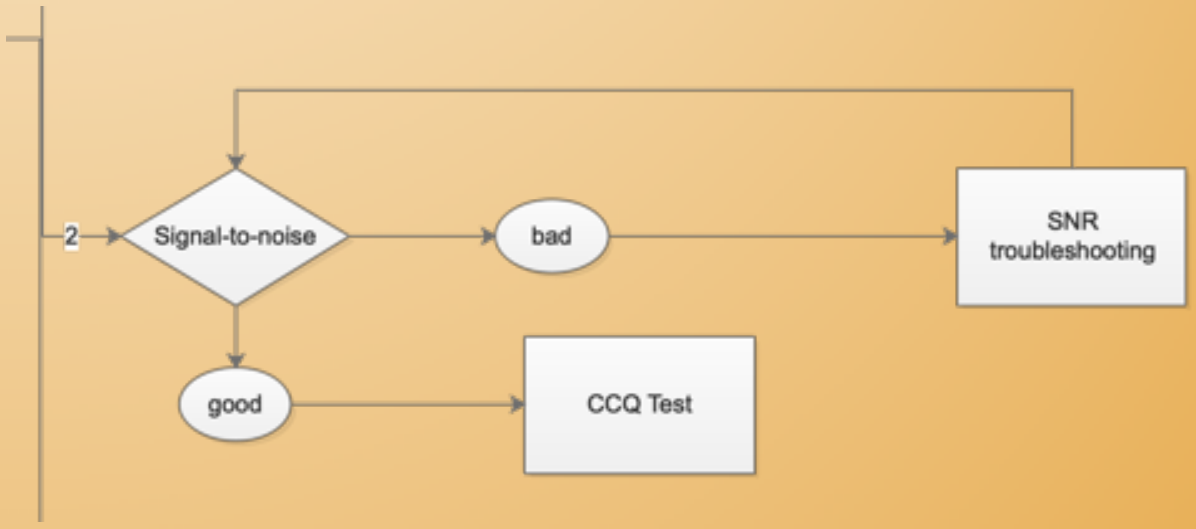
Canada, 2019





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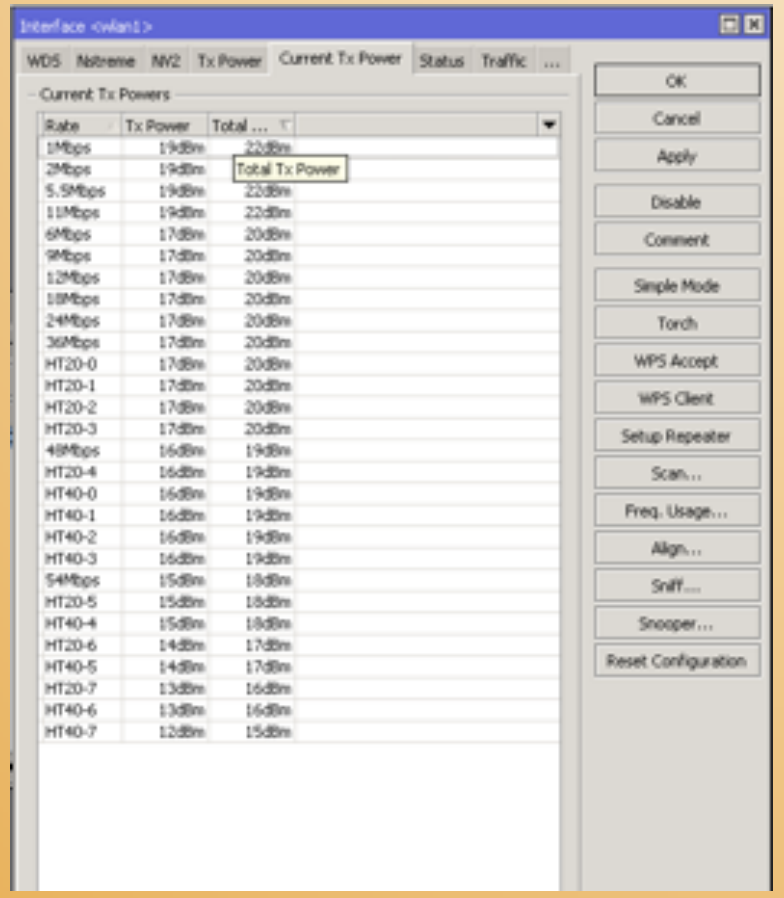

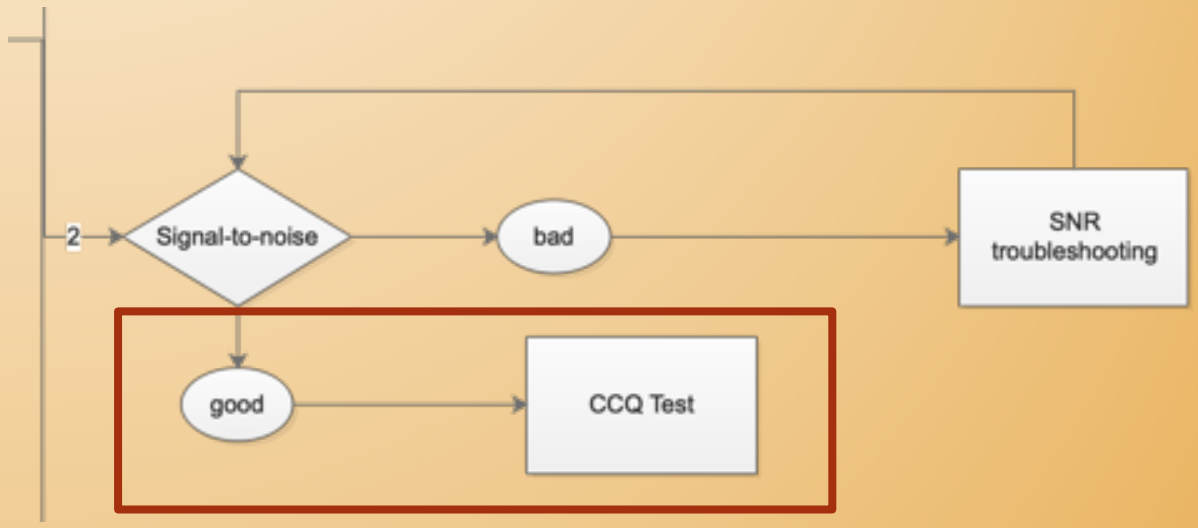

Solutions:

1. Passive gain “Use lower antenna gain”
2. Active gain
    1. Adjust Tx-Power
        1. Changing the Tx-power
        2. Frequency mode and country regulatory
    2. Use appropriated Antenna gain
3. Filter Rx-Sensitivity

Registration Table, Signal

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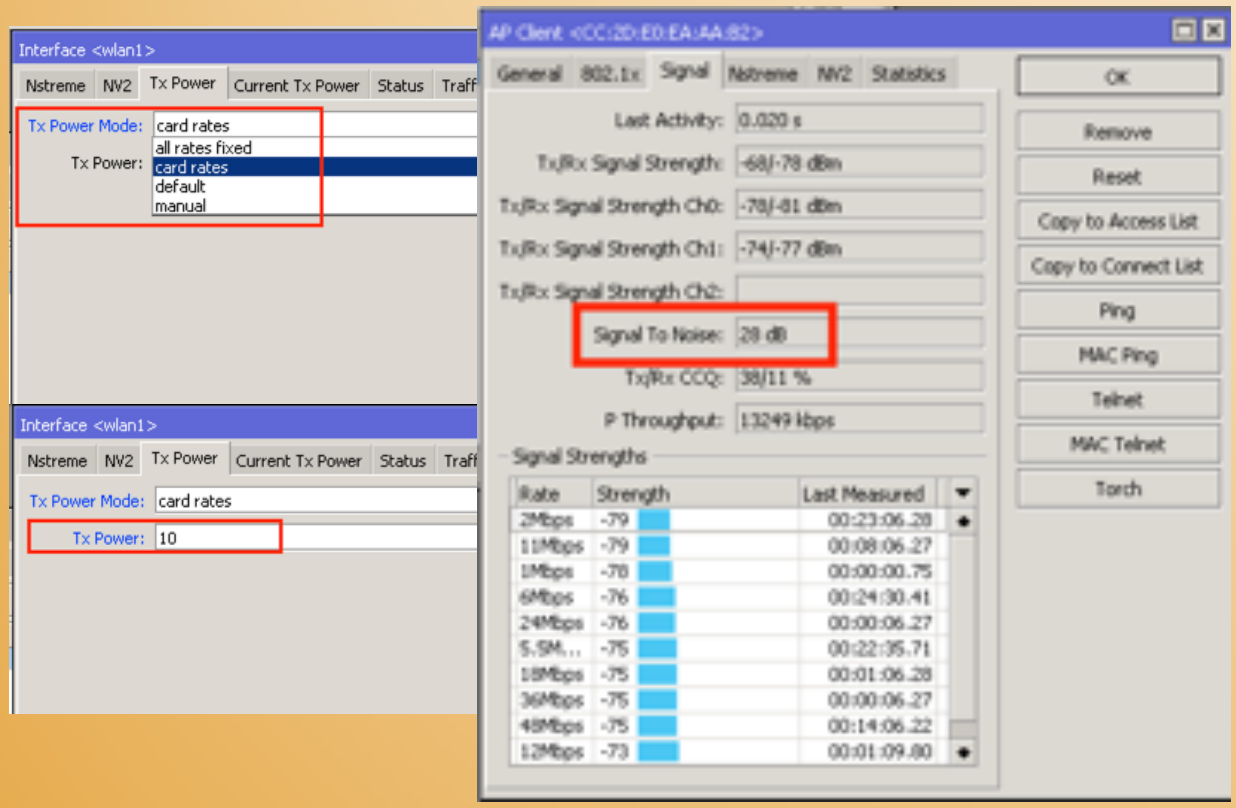
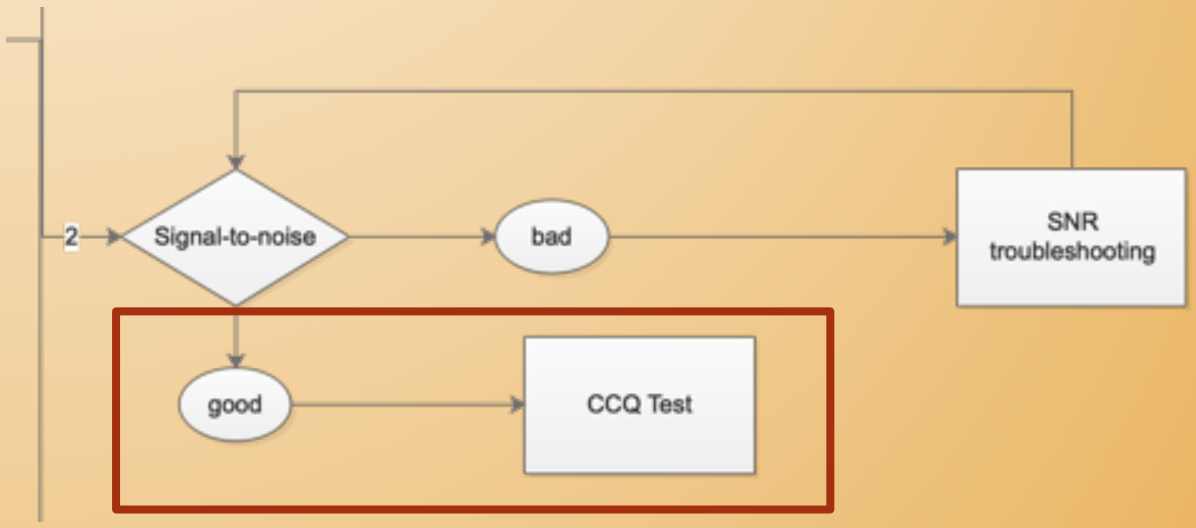
Canada, 2019





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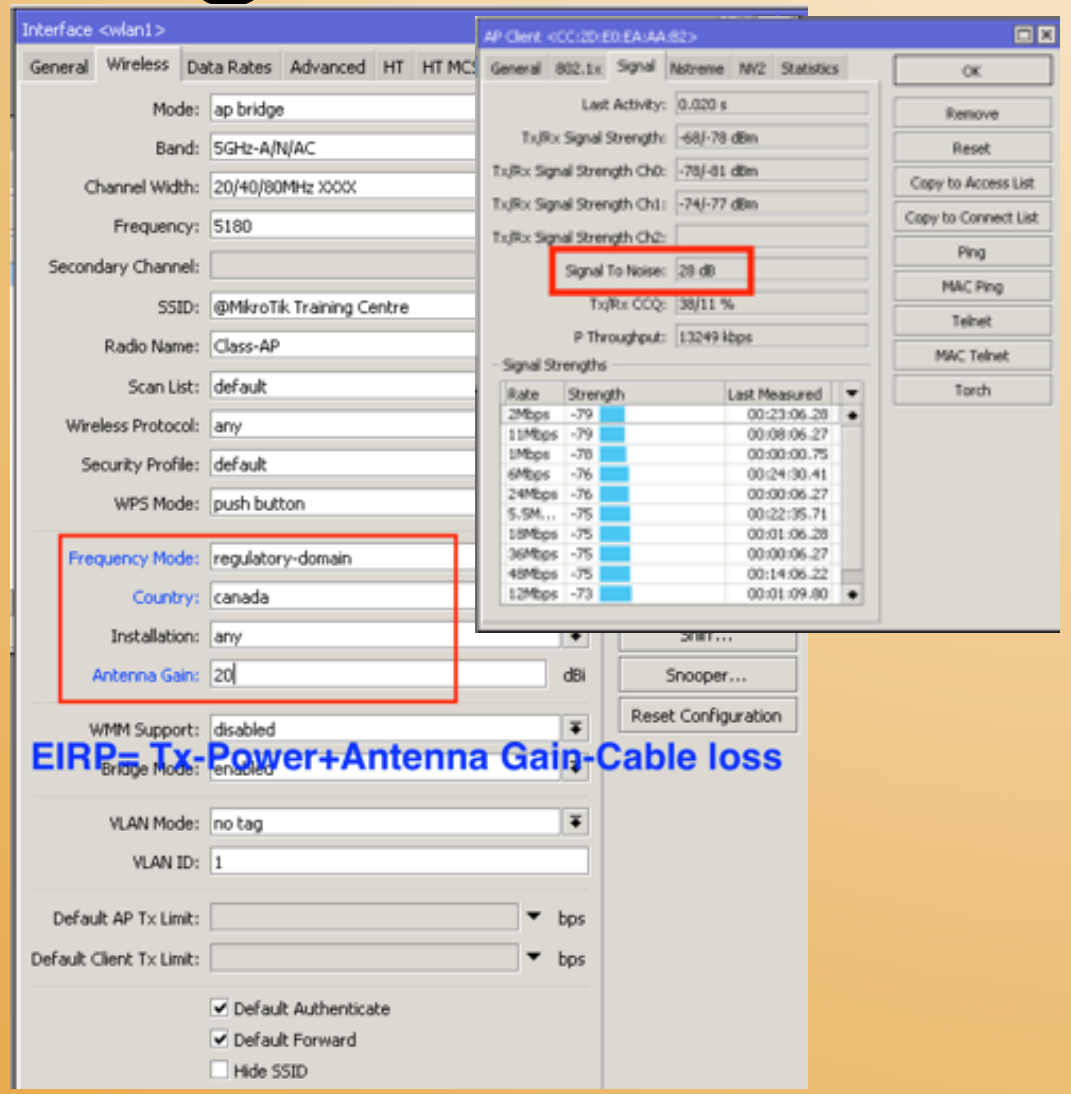
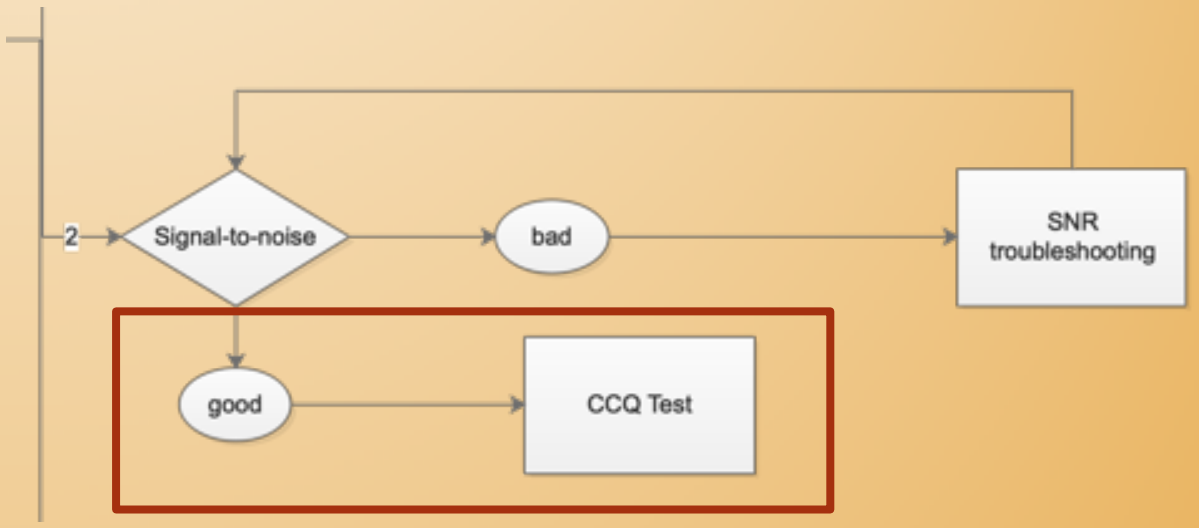
Canada, 2019



EIRP= Tx-Power+Antenna Gain-Cable loss



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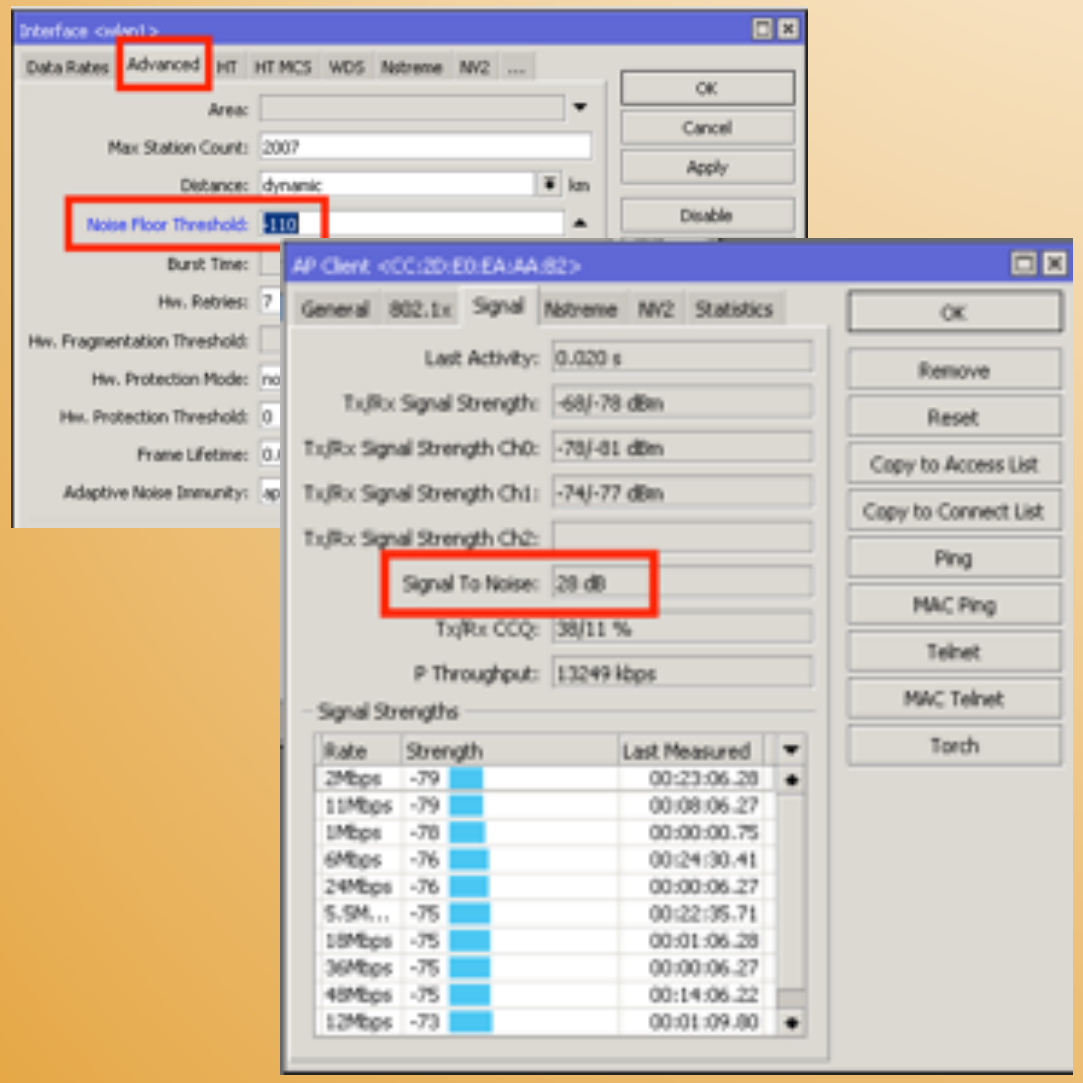

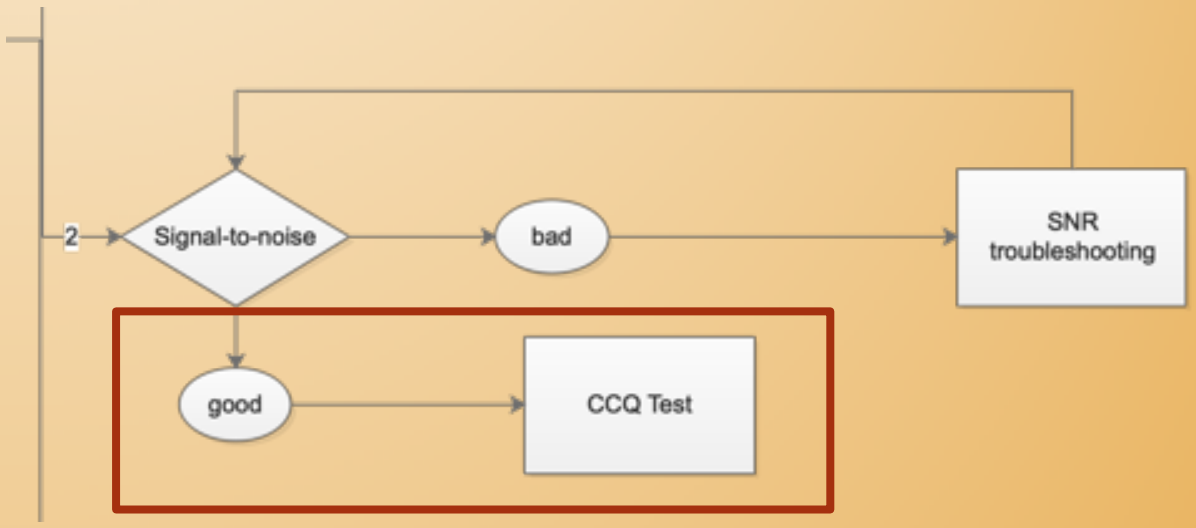

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Registration Table, Signal

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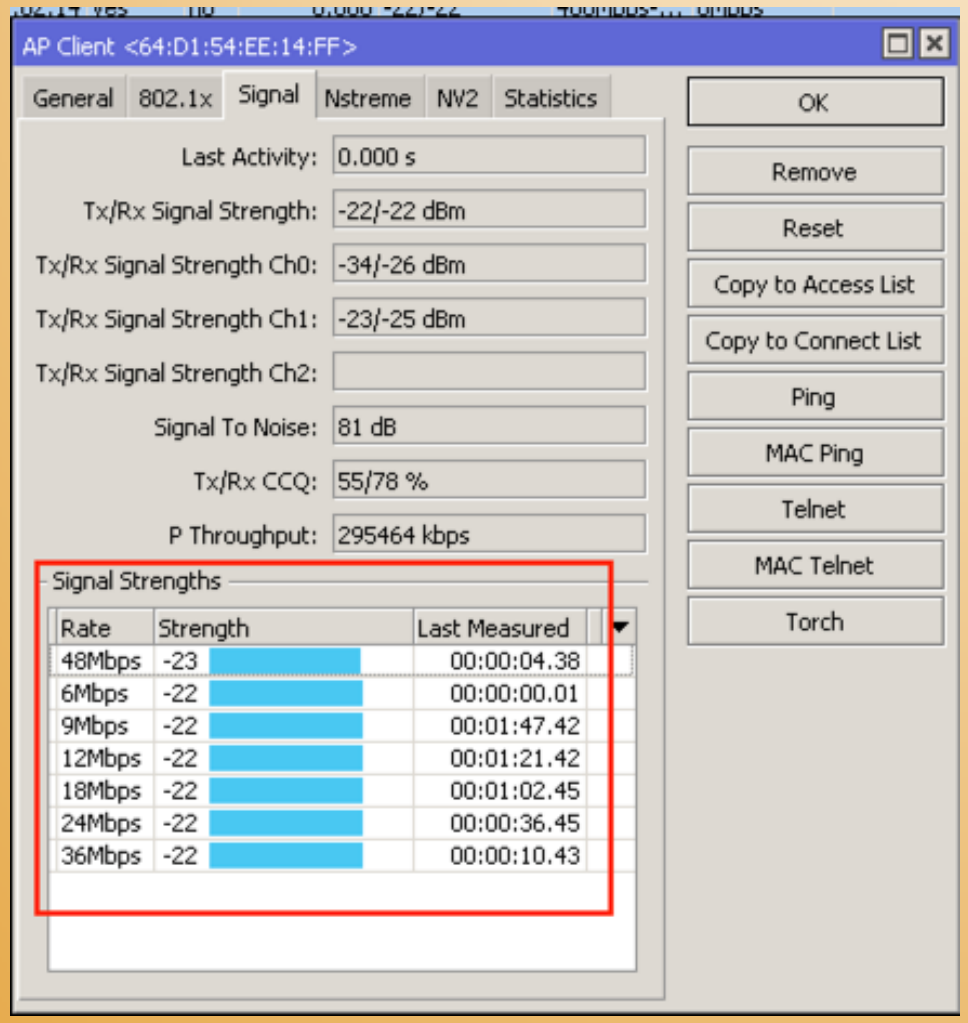

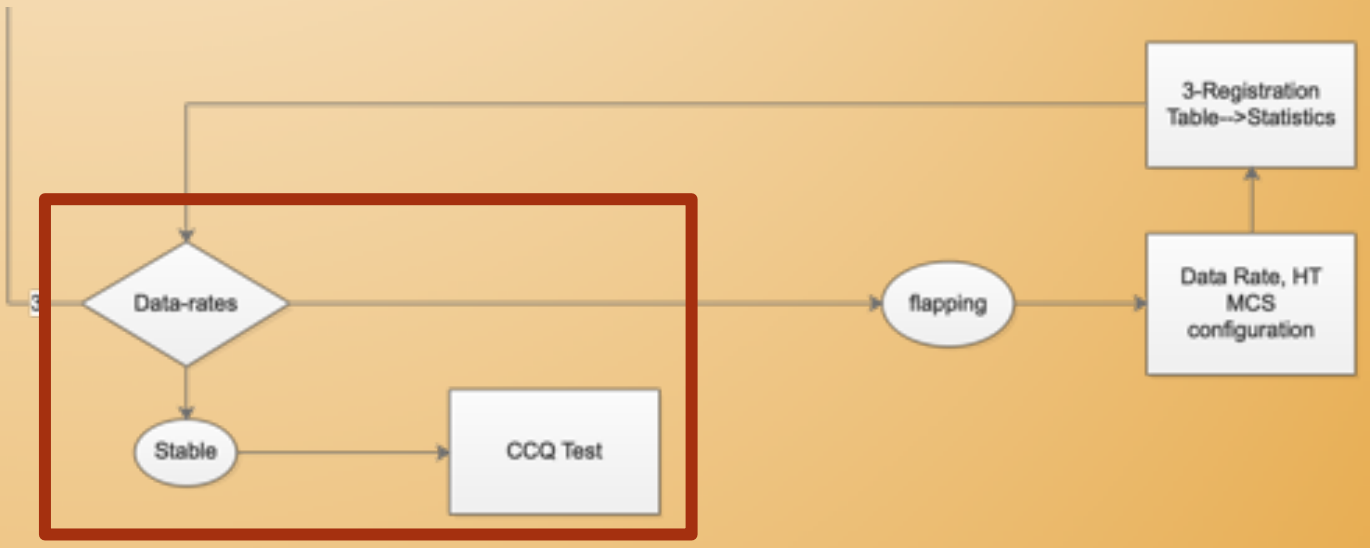

Registration Table, Signal

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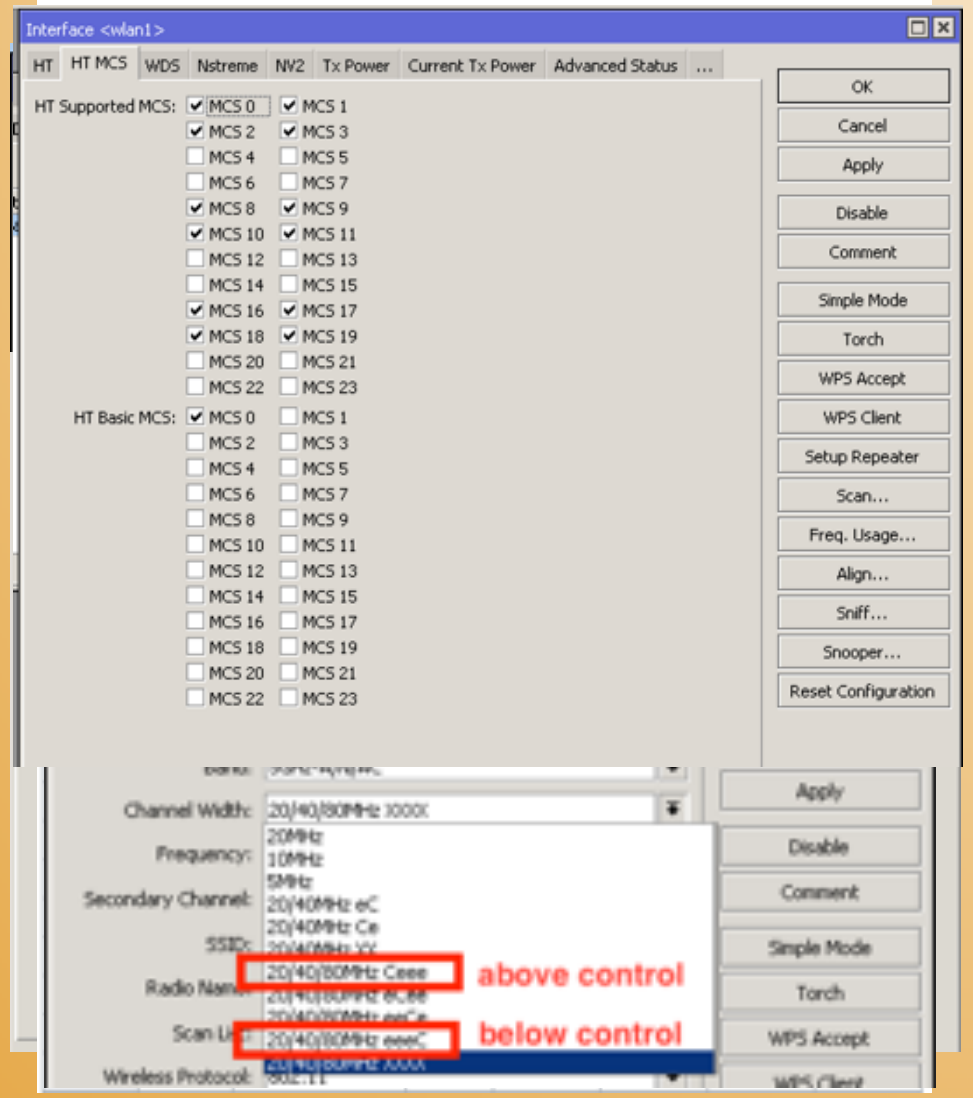

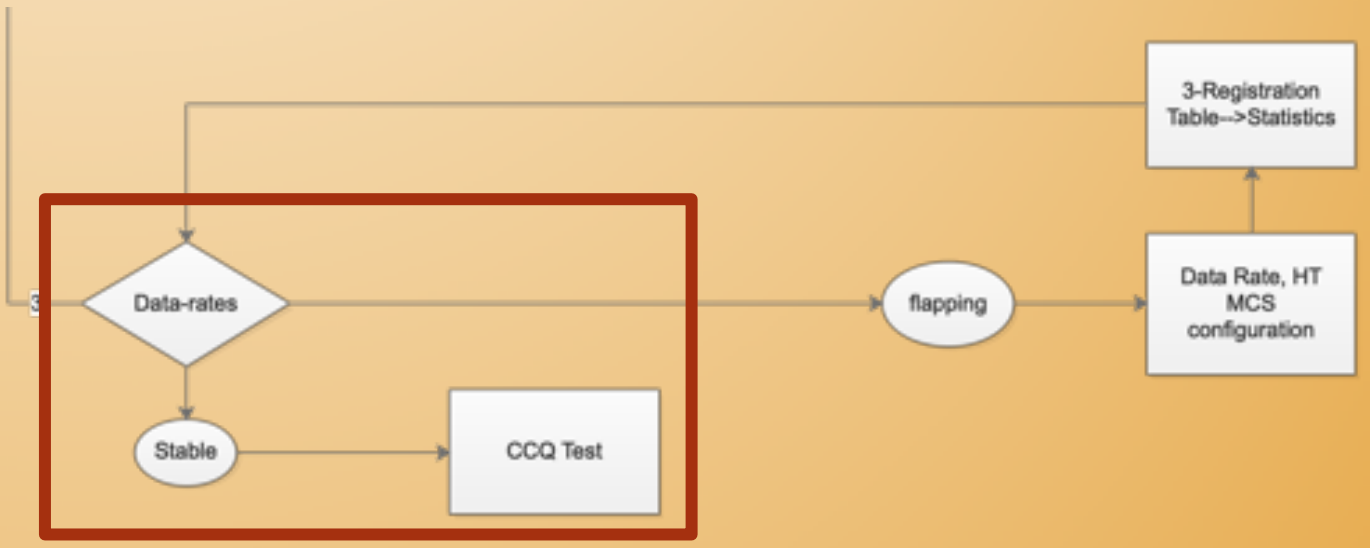

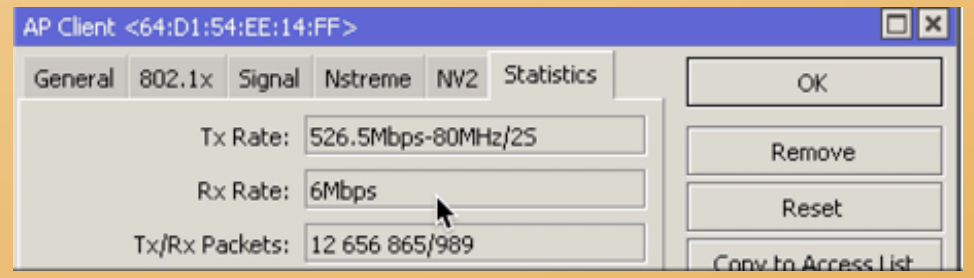

Wireless Netware, VAD

Registration Table, Signal

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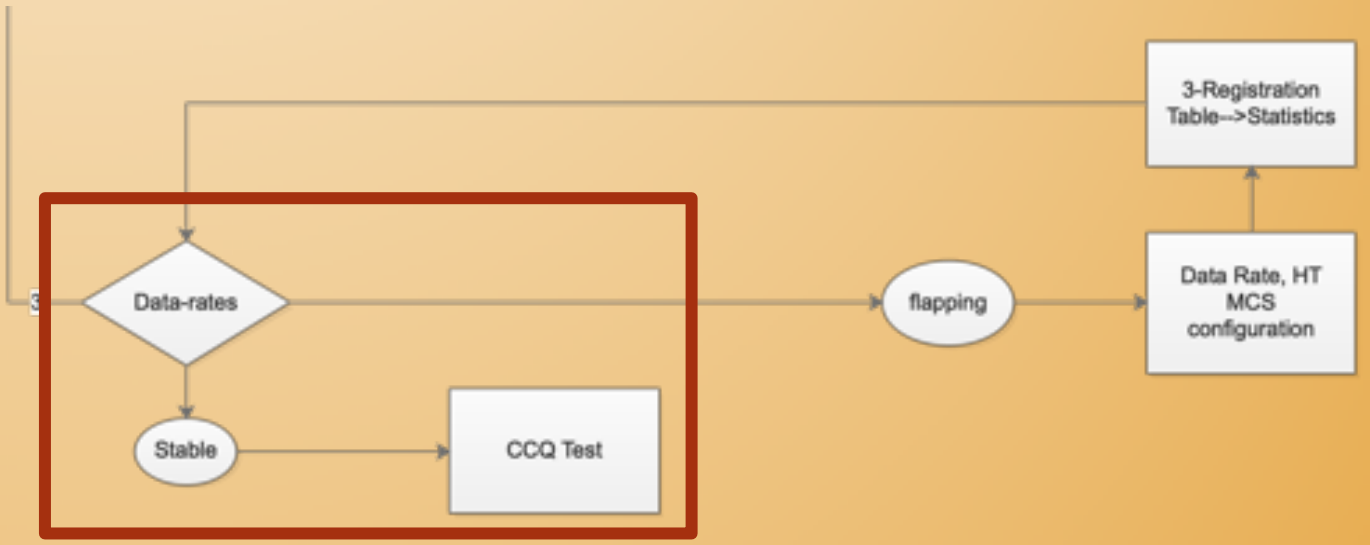
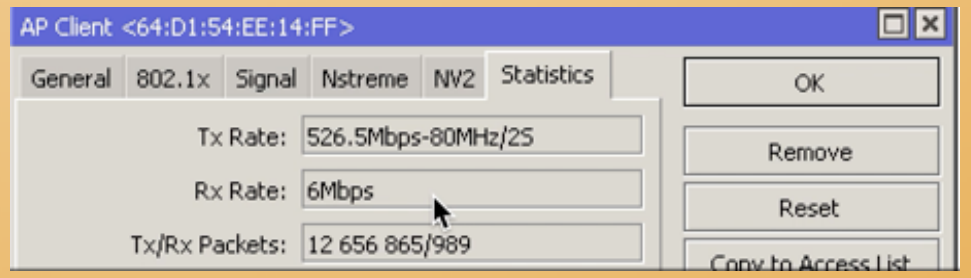
Modulation and coding schemes

MCS index	Spatial streams	Modulation type	Coding rate	Data rate (in Mbit/s)[a]			
				20 MHz channel		40 MHz channel	
				800 ns GI	400 ns GI	800 ns GI	400 ns GI
0	1	BPSK	1/2	6.5	7.2	13.5	15
1	1	QPSK	1/2	13	14.4	27	30
2	1	QPSK	3/4	19.5	21.7	40.5	45
3	1	16-QAM	1/2	26	28.9	54	60
4	1	16-QAM	3/4	39	43.3	81	90
5	1	64-QAM	2/3	52	57.8	108	120
6	1	64-QAM	3/4	58.5	65	121.5	135
7	1	64-QAM	5/6	65	72.2	135	150
8	2	BPSK	1/2	13	14.4	27	30
9	2	QPSK	1/2	26	28.9	54	60
10	2	QPSK	3/4	39	43.3	81	90
11	2	16-QAM	1/2	52	57.8	108	120
12	2	16-QAM	3/4	78	86.7	162	180
13	2	64-QAM	2/3	104	115.6	216	240
14	2	64-QAM	3/4	117	130	243	270
15	2	64-QAM	5/6	130	144.4	270	300
16	3	BPSK	1/2	19.5	21.7	40.5	45
17	3	QPSK	1/2	39	43.3	81	90
18	3	QPSK	3/4	58.5	65	121.5	135
19	3	16-QAM	1/2	78	86.7	162	180
20	3	16-QAM	3/4	117	130	243	270
21	3	64-QAM	2/3	156	173.3	324	360
22	3	64-QAM	3/4	175.5	195	364.5	405
23	3	64-QAM	5/6	195	216.7	405	450





Wireless Netware, VAD

Registration Table, Signal

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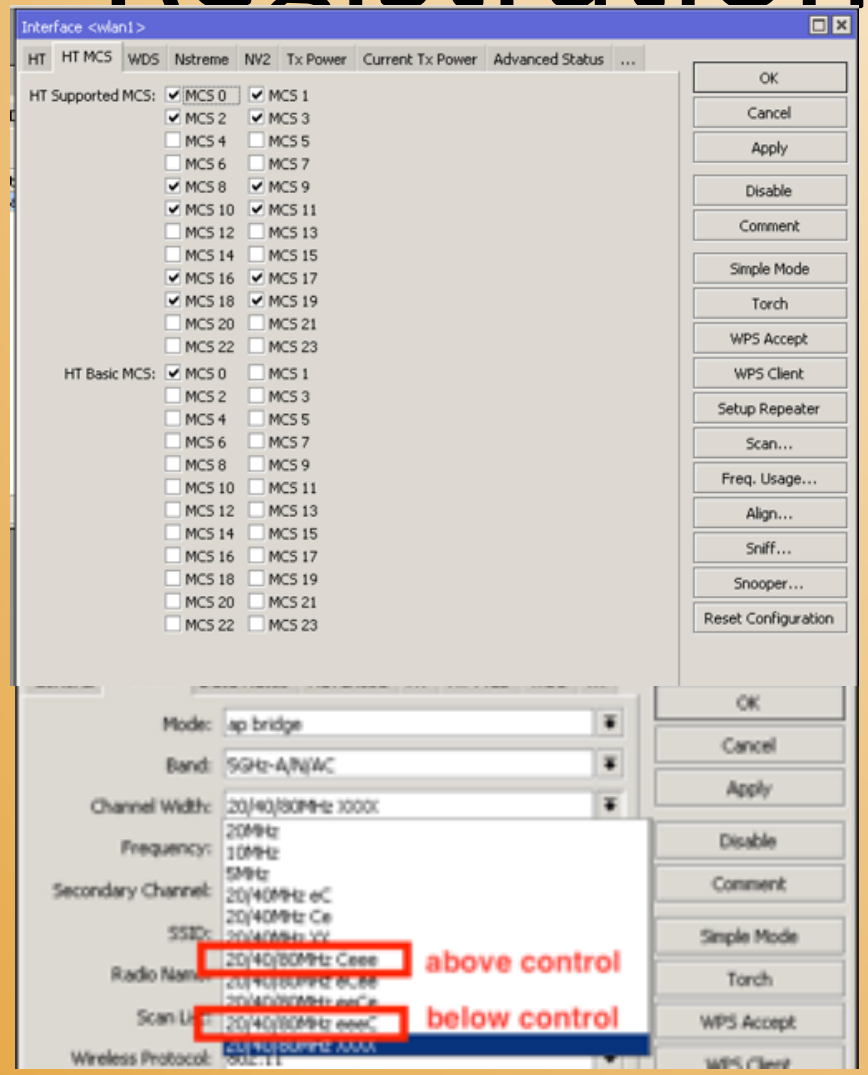

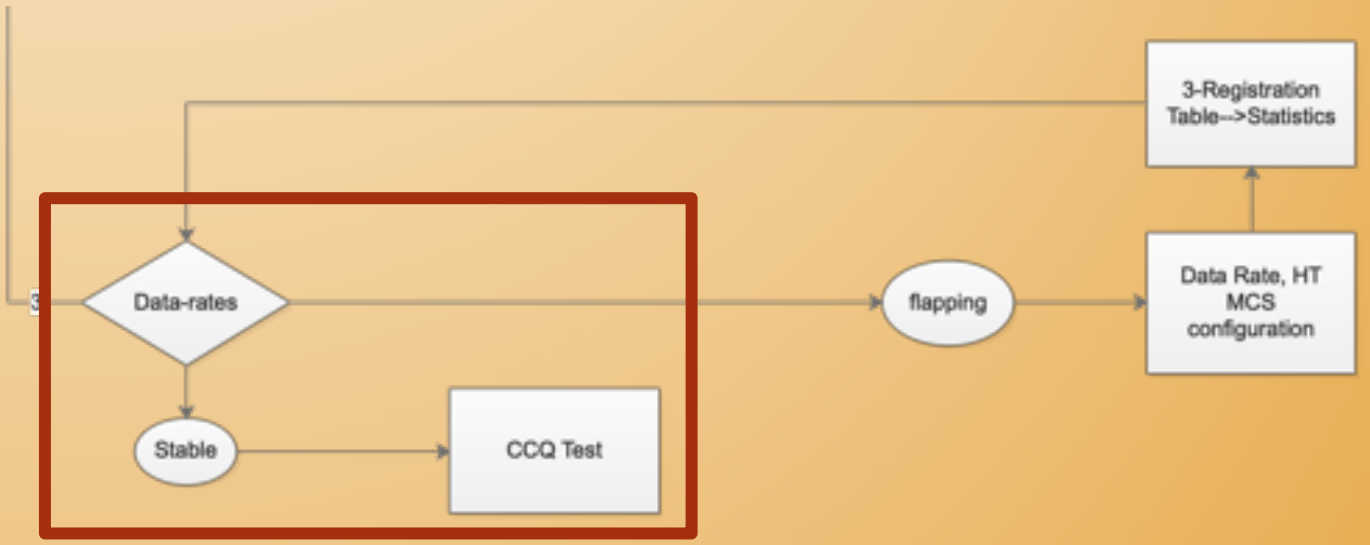

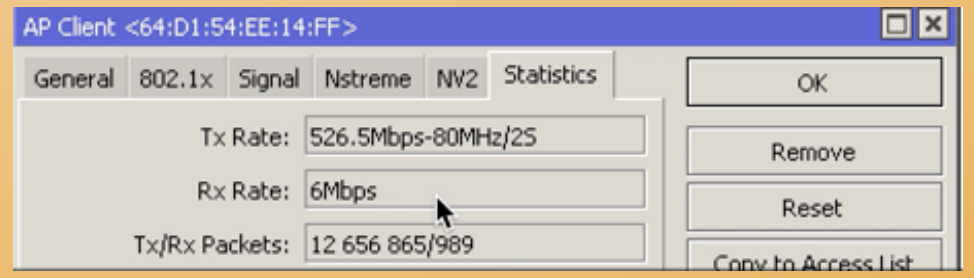

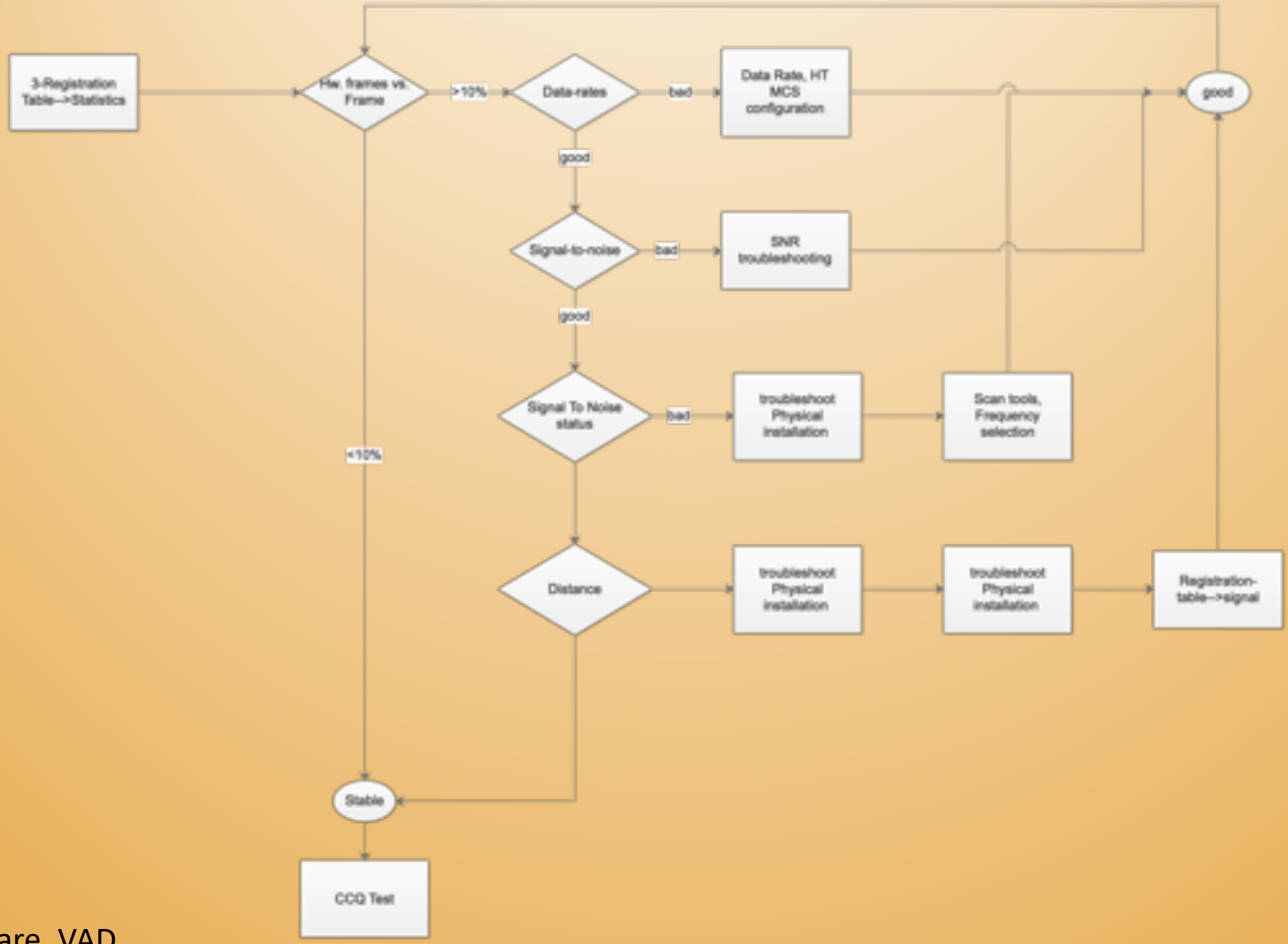

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Question?