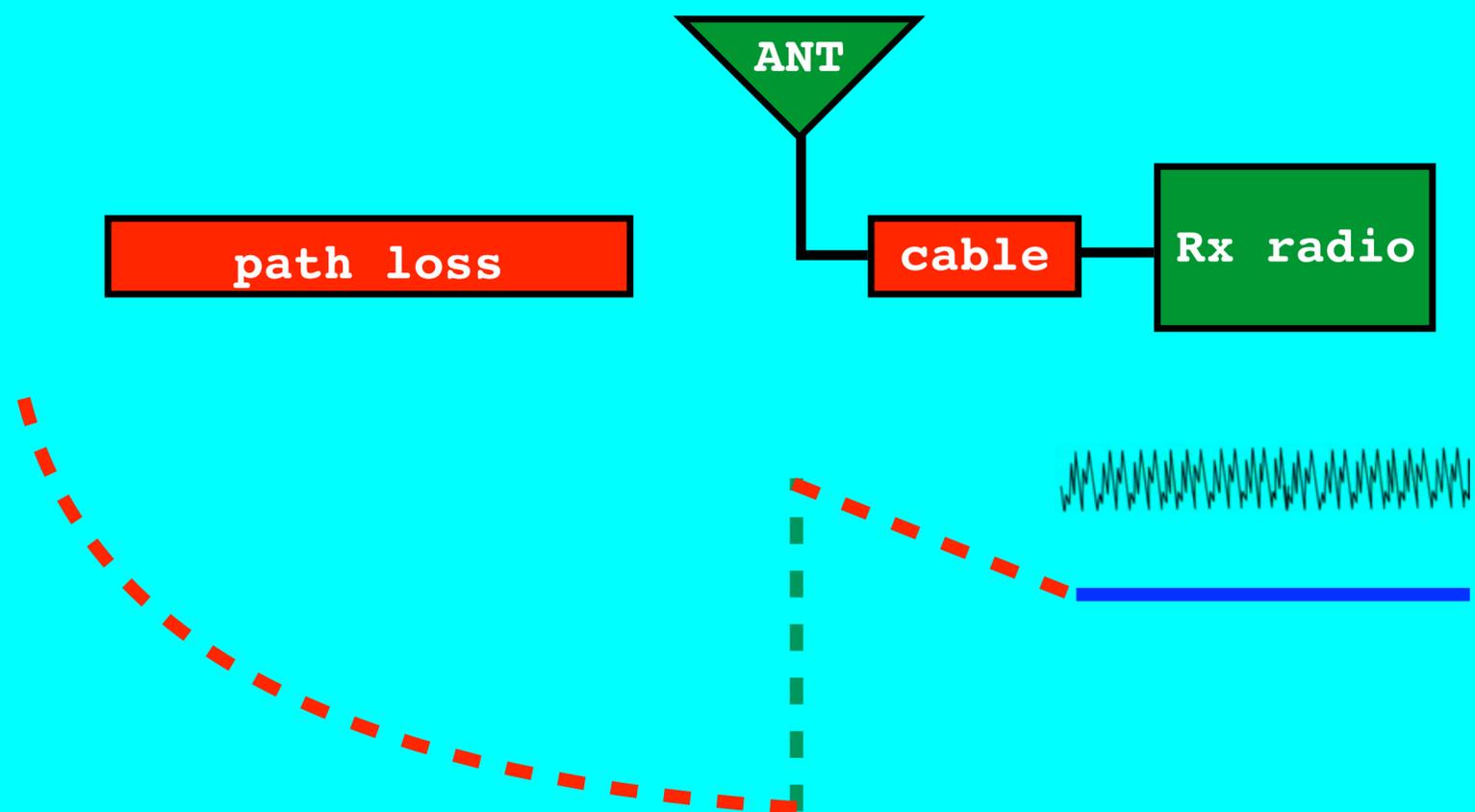


# LORA / LORAWAN TUTORIAL 10

## RSSI & SNR

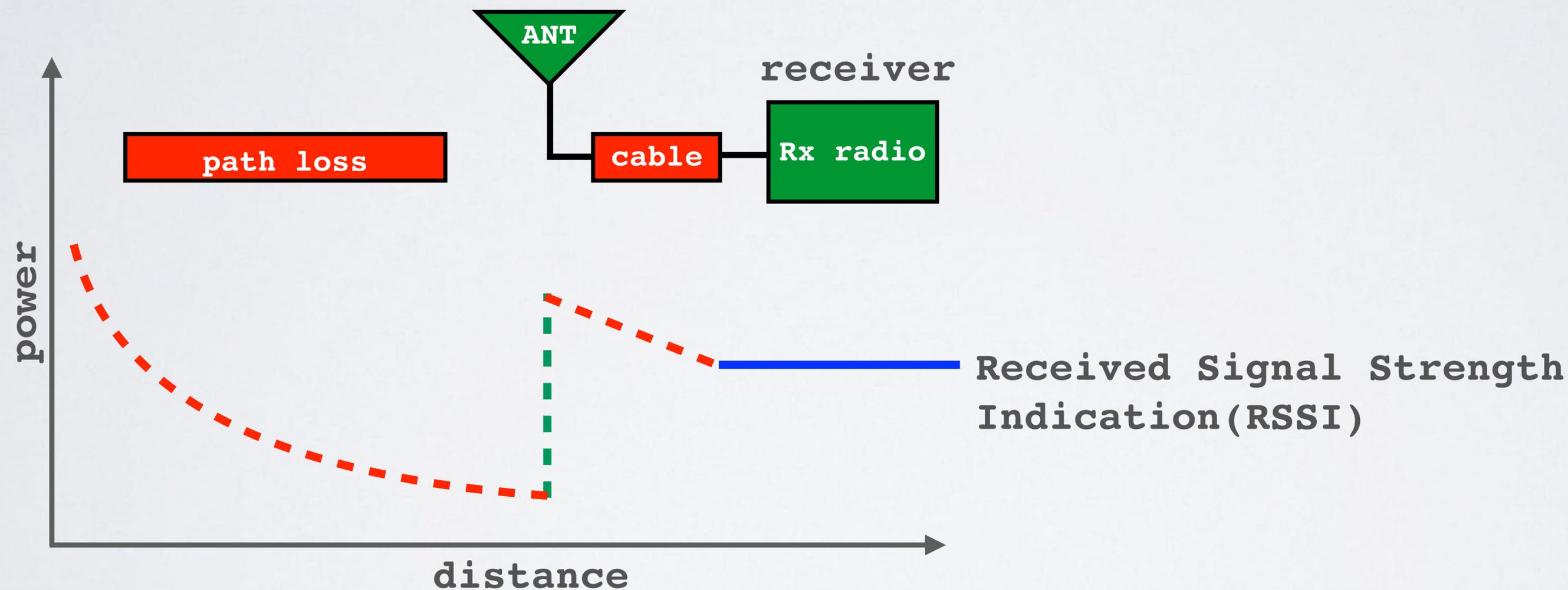


# INTRO

- In this tutorial I will explain what RSSI and SNR are.

# RSSI

- The Received Signal Strength Indication (RSSI) is the received signal power in milliwatts and is measured in dBm. This value can be used as a measurement of how well a receiver can “hear” a signal from a sender.

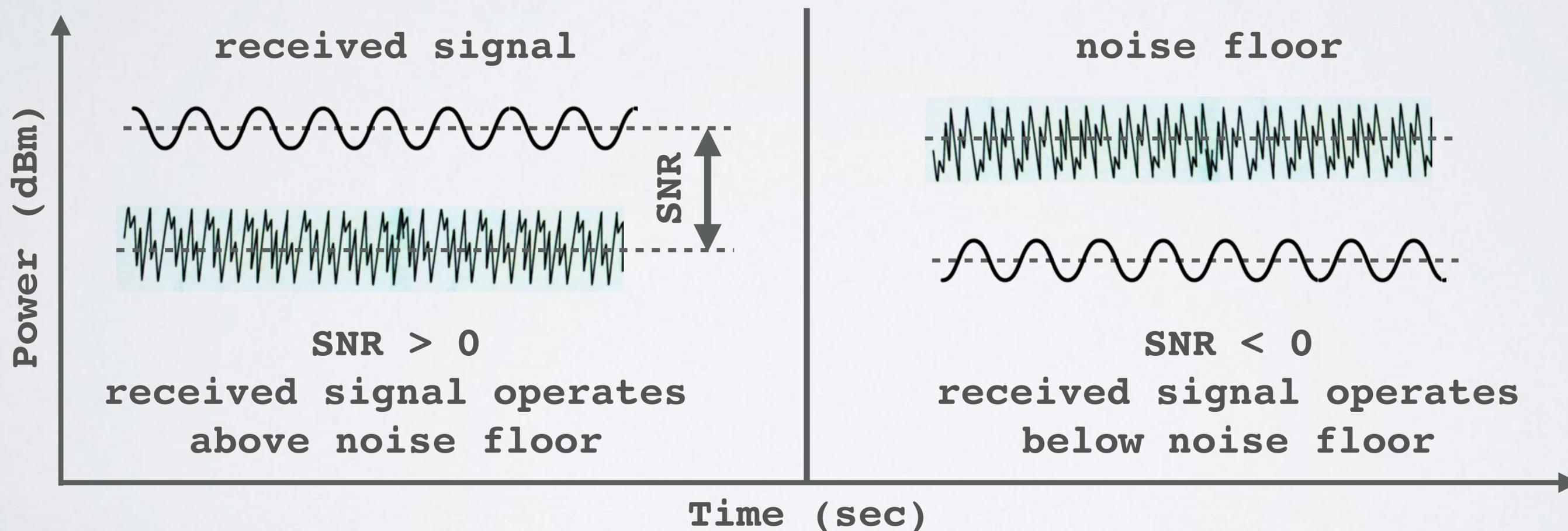


# RSSI

- The RSSI is measured in dBm and is a negative value. The closer to 0 the better the signal is.
- Typical LoRa RSSI values are:  
RSSI minimum = -120 dBm.  
If RSSI=-30dBm: signal is strong.  
If RSSI=-120dBm: signal is weak.

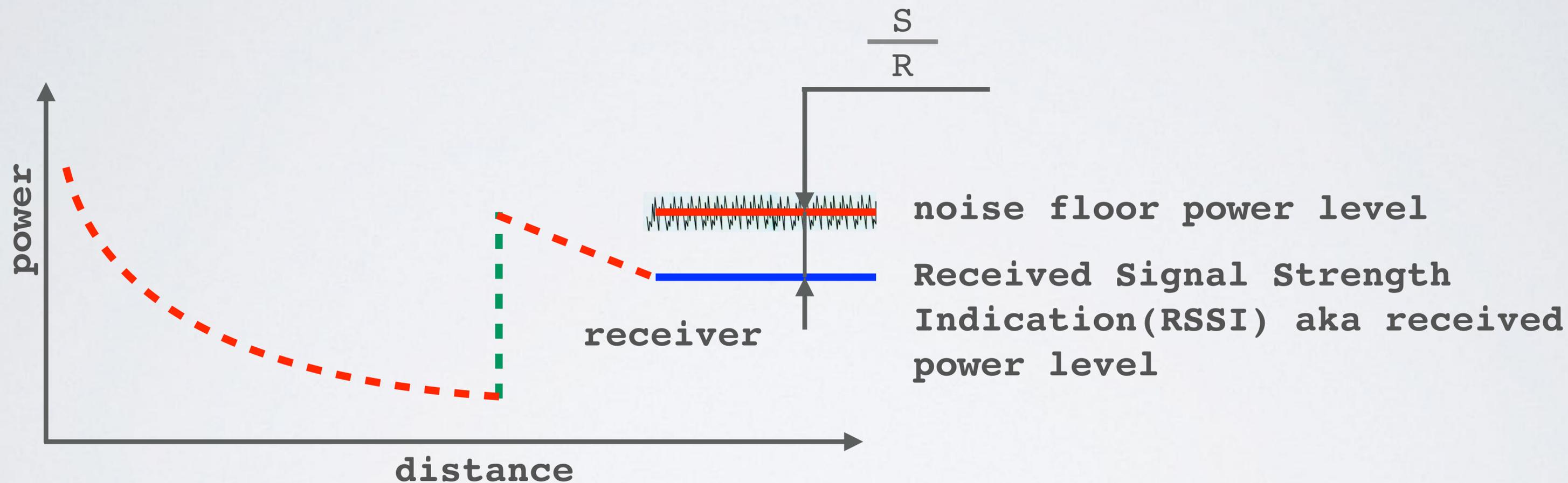
# SNR

- Signal-to-Noise Ratio (SNR) is the ratio between the received power signal and the noise floor power level.
- The noise floor is an area of all unwanted interfering signal sources which can corrupt the transmitted signal and therefore re-transmissions will occur.



# SNR

- Normally the noise floor is the physical limit of sensitivity, however LoRa works below the noise level.



# SNR

- Typical LoRa SNR values are between: -20dB and +10dB  
A value closer to +10dB means the received signal is less corrupted.
- LoRa can demodulate signals which are -7.5 dB to -20 dB below the noise floor.