

# Physical Layer Design for a Narrow Band Communication System

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*Abstract*—This a simple document explaining a question about the concept of similar triangles.

Download all python codes from

svn co <https://github.com/SiddharthPh/Summer2020/trunk/geometry/codes>

and latex-tikz codes from

svn co <https://github.com/gadepall/school/trunk/ncert/geometry/figs>

## 1 SPECIFICATIONS

The specifications for the communication system to be designed are listed in Table 0.

Parameter	Value
Hardware	FPGA based baseband
MODEM	8PSK-TCM
Modem Rate	555Kbps
SNR	7.6 db at 1e5
Channel (V/UHF)	30Mhz - 512Mhz
Bandwidth	250khz
Bit Duration	2.7us
Throughput	100kbps ( Throughput at application Layer)
Ramp up time	116 us (Junk symbols will be sent)
Propagation Delay	100 us (Junk symbols will be sent)
Training sequence	421.2us(provided time for training sequence)
Frame Slot	2 ms
Frame SOM	8 bytes
Payload	32 bytes (692 us)

TABLE 0: Specifications