

Maximum datarate in (de)modulators (NTC/2063/APN04)

Examples :

(*) (interface rate : 8.294118 Mbit/s), QPSK modulation, FEC-3/4, internal MPEG framing

$$\text{symbol rate : } 8.294118 \text{ Mbit / s} \times \frac{188}{187} \times \frac{204}{188} \times \frac{4}{3} \times \frac{1}{2} = 6.032086 \text{ Mbaud}$$

(*) interface rate : 8.294118 Mbit/s, QPSK modulation, FEC-3/4, external MPEG framing, 188 byte frames

$$\text{symbol rate : } 8.294118 \text{ Mbit / s} \times 1 \times \frac{204}{188} \times \frac{4}{3} \times \frac{1}{2} = 6.000000 \text{ Mbaud}$$

(*) interface rate : 8.294118 Mbit/s, QPSK modulation, FEC-3/4, external MPEG framing, 204 byte frames

$$\text{symbol rate : } 8.294118 \text{ Mbit / s} \times 1 \times 1 \times \frac{4}{3} \times \frac{1}{2} = 5.529412 \text{ Mbaud}$$

(*) interface rate : 8.294118 Mbit/s, 8PSK modulation, FEC-5/6, external framing, 188 byte mode

$$\text{symbol rate : } 8.294118 \text{ Mbit / s} \times 1 \times \frac{204}{188} \times \frac{6}{5} \times \frac{1}{3} = 3.600000 \text{ Mbaud}$$

(*) interface rate : 8.294118 Mbit/s, 16QAM modulation, FEC-3/4, external framing, 188 byte mode

$$\text{symbol rate : } 8.294118 \text{ Mbit / s} \times 1 \times \frac{204}{188} \times \frac{4}{3} \times \frac{1}{4} = 3.000000 \text{ Mbaud}$$



Newtec

Innovative Solutions for Satellite Communications

Maximum datarate in (de)modulators (NTC/2063/APN04)

Knowing this it is easy to calculate the limiting factors on interface and symbol rate if we take the design limits in account.

For example as defined in the datasheets of the NTC/2063 demodulator the following rules should be followed to obtain the highest applicable datarate:

Maximum interface rate limit for QPSK : 55 Mbit/s
Maximum Interface rate limit for 8PSK and 16QAM : 110 Mbit/s
Maximum satellite Baudrate : 45 Mbaud

Modulation type	Interface rate in Mbit/s	Baudrate in Mbaud
QPSK-1/2	41.470588	45
QPSK-2/3	55	44.760638
QPSK-3/4	55	39.787234
QPSK-5/6	55	35.808511
QPSK-7/8	55	34.103343
8PSK-2/3	82.941176	45
8PSK-5/6	103.67647	45
8PSK-8/9	110	44.760638
16QAM-3/4	110	39.787234

Hence we can conclude that in some cases the interface rate and in other the Baudrate is the limiting factor.



Innovative Solutions for Satellite Communications

LAARSTRAAT 5, B-9100 SINT-NIKLAAS - BELGIUM

TEL : +32 3 780 65 00 FAX : +32 3 780 65 49

Please visit our web-site at address www.newtec.be for the latest editions

info : sales@newtec.be

NEWTEC Cy reserves the right to alter specifications of the equipment described in this brochure without prior notice

DSU - 22 NOV. 2000