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Microwave Links Point-to-Point Choice of Polarization

The following table gives some indication on minimal path length for polarization V (dmin pol. V) per frequency band in both areas of Switzerland:

- Northern part, ANS,
- Southern part, ASS.

The column "min. path length [km]" reflects the link-length-policy of BAKOM with minor differences between ANS and ASS, please refer also to Radio Interface Regulation RIR0302-nn, item 11.

Minimal path lengths "dmin pol. V" are calculated and rounded figures considering typical radio equipment available on market with following parameters as mentioned:

- modulation,
- channel width [MHz],
- antenna diameter [ft].

Remarks:

- Decoupling of links has priority over allocation of polarization H or V,
- Tolerance of the minimum path length should not exceed -6%,
- Insertion losses of the radio equipment shall not cause any change of "dmin pol. V" - compensation has to be made by other means.



Choice of Polarization

Band [GHz]	calculation parameters			ANS		ASS	
	Mod.	channel [MHz]	Ant. \varnothing [ft]	min. path length [km]	dmin pol. V	min. path length [km]	dmin pol. V
6.2 / 6.8	128-QAM			30	40	30	40
7.1	16-QAM	14		20	30	20	30
7.6	128-QAM	28		20	30	20	30
10	16-QAM	14	6	15	25	15	25
11.2	128-QAM		6	10	15	10	15
13	16-QAM	14	6	10	15	10	15
15	16-QAM	14	6 / 8	10	15	10	15
18	16-QAM	28	4	8	11	4	6
18	64-QAM	28	4	5	10	3	5
18	128-QAM	28	4	3	8	3	5
23	16-QAM	14	4	5	8	3	5
26	128-QAM	56	4	2	4	2	3
28	16-QAM	56	2	2	4	1.5	3
32	64-QAM	28	2	0.5	2	0.5	2
32	128-QAM	28	2	0.5	2	0.5	2
38	16-QAM	14	2	1	3	1	2
42	16-QAM	56	2	0.5	2	0.5	1
52	16-QAM	28	1	0.15	0.6	0.15	0.6
80	QPSK	1'000	1	0.10		0.10	

Figure 1