

## Maximum Transmission length

The maximum transmission length of a cable essentially depends solely on the attenuation value at the frequency to be considered.

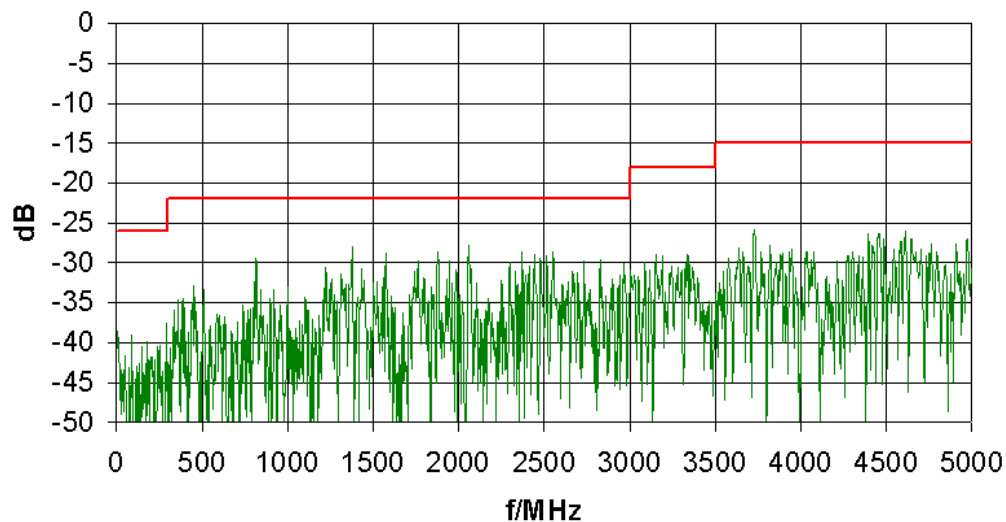
The attenuation values of coaxial cables are determined by:

- Diameter of inner conductor and the construction of the inner conductor
- Braid (braid angle and diameter in proportion to the diameter of the dielectric insulation)
- Construction and thickness of the foil
- Dielectric losses at high frequencies (loss factor  $\tan \delta$ ).

If the physical conditions are identical with different manufacturers, also will be the electrical properties. Very often, thin inner conductors are compared with thick ones. It is important that when you comparing cables the same conductor size should be used.

Draka video cables are measured and tested up to a frequency of 5GHz.

### RL Video Cable 0.6/2.8AF



The red line presents the Return loss limits (RL). The green line presents the values of the Draka Comteq 0.6/2.8AF coaxial video cable.

## HD Maximum Transmission length

On the occasion of the 2006 Soccer World Cup and the required HDTV signals 1080i, a number of tests have been conducted regarding the transmission length (independent institutes, appliance and broadcast van manufacturers).

Measurement Setup:

Clock generator: Tektronix TG 2000, or TG700

Wave Form Monitor: Tektronix WFM 700, alternative TDS 748D

This measurement ( $x_1$ ) is subject to certain conditions:

- Laboratory conditions (constantly low humidity, constant room temperature, etc.)
- New, optimum condition of the assembled cable
- Cable and connector have been tuned

Standard Cable type	maximum cable length HD 1080i measured $x_1$	maximum cable length HD 1080i calculated $x_2$	maximum cable length HD 1080i calculated with head room $x_3$	Maximum cable length 3Gbit/s calculated
Draka Comteq				
0.6/2.8AF	90m	66m	60m	42m
0.8/3.7AF	120m	91m	80m	58m
1.0/4.8AF	140m	112m	100m	72m
1.6/7.3AF	240m	161m	145m	90m

Additional transmission length and more cable types please see next page

Considering the attenuation value of the test cable and the requirements of SMPTE 292M, this results in a calculated transmission length of the 0.6/2.8AF cable of 66,6m ( $X_2$ ) as an example. Reducing this value by 10%, you will achieve a transmission length of 60m ( $x_3$ ) at 1485 MHz.

## Summary of transmission distances Video Cables

### 1.) SDI ( Serial Digital Interface)

30dB loss under consideration of half clock frequency results in the max. calculated length. Reducing this value by 10%, you achieve the recommended transmission length for our coaxial cables.

### 2.) HDTV

20dB loss under consideration of half clock frequency results in the max. calculated length. Reducing this value by 10%, you achieve the recommended transmission length for our coaxial cables.

Cable type	143 Mb/s Composite NTSC SMPTE 170M	177Mb/s Composite PAL	270 Mb/s Component SMPTE 259M SDI	1.5 Gb/s HDTV SMPTE 292M
0.51/2.4 AF	205	180	165	45
0.58/2.6 AF	270	240	218	55
0.6/2.8 AF	290	255	230	60
0.6/3.7 Dz	285	245	200	55
0.8/3.7 AF	385	340	305	80
0.8/4.9 Dz	380	325	265	75
1.0/4.8 AF	485	430	365	100
1.0/6.6 D	475	425	360	95
1.4/6.6 AF	645	570	480	130
1.6/7.3 AF	705	630	530	145
755-701	290	255	230	60
755-804	385	340	305	80
753-801	385	340	305	80
755-801	385	340	305	80
755-803	385	340	305	80
755-901	485	430	365	100
755-901/5	485	430	365	100

### 3.) Analoge Videosignale

Transmission distances of analogue video signals based upon the limit frequency of 5,5MHz at - 3dB (70.7%).

Cable type	Product code	Attenuation at 100MHz/100m	Composite	Y/C	YUV	RGB
			FBAS	S-VHS	Components	
752-704	CT2722000	10.5dB	115m	115m	115m	115m
758-704	CT2958600	10.5dB	115m	115m	115m	115m
753-701	CT2729900	10.5dB	115m	115m	115m	115m
754-701	CT2729800	10.5dB	115m	115m	115m	115m
755-701	CT2960700	10.5dB	115m	115m	115m	115m
757-701	CT2729700	10.5dB	115m	115m	115m	115m
755-804 PVC	CT2961400	7.9dB	152m	152m	152m	152m
753-801 FRNC	CT7680100	7.9dB	152m	152m	152m	152m
755-801 FRNC	CT7680200	7.9dB	152m	152m	152m	152m
755-803 PUR	CT7603400	7.9dB	152m	152m	152m	152m
755-901	CT2985800	6.2dB	182m	182m	182m	182m
755-901/5	CT2988900	6.2dB	182m	182m	182m	182m
755-1103	CT2739400	17.9dB	72m	72m	72m	72m
753-1104	CT2769200	17.9dB	72m	72m	72m	72m
753-1302	CT2668200	20.3dB	61m	61m	61m	61m
755-1302	CT2769300	20.3dB	61m	61m	61m	61m
VADN-Cable	CS2768400	14.4dB	80m	80m	80m	80m
VA 72	CT2958800	7.9dB	152m	152m	152m	152m
0.41/1.9 AF PVC	CS2704501	17.9dB	72m	72m	72m	72m
0.6/2.8 AF FRNC	CT2850202	10.5dB	115m	115m	115m	115m
0.6L/2.8 AF PVC	CT2739600	12.1 dB	100m	100m	100m	100m
0.6L/3.7 PVC	CT2741200	13.5dB	93m	93m	93m	93m
0.6/3.7 Dz PVC	CT2741001	10.9dB	121m	121m	121m	121m
0.8/3.7 AF FRNC	CT2850302	7.9dB	152m	152m	152m	152m
0.8/3.7 AF FRNC	CT2850301	7.9dB	152m	152m	152m	152m
0.8/3.7 AF PVC	CT2710806	7.9dB	152m	152m	152m	152m
0.8/3.7 AF PVC	CT2710805	7.9dB	152m	152m	152m	152m
0.8/4.9 Dz PVC	CT2741600	8.0dB	161m	161m	161m	161m
1.0/4.8 AF PVC	CT2758300	6.2dB	182m	182m	182m	182m
1.0/4.8 AF FRNC	CT2850401	6.2dB	182m	182m	182m	182m
1.0/6.6 Dz PVC	CT2742601	6.4dB	208m	208m	208m	208m
1.6/7.3 AF FRNC	CT2760901	4.5dB	323m	323m	323m	323m