

Typical IL characteristics of STP

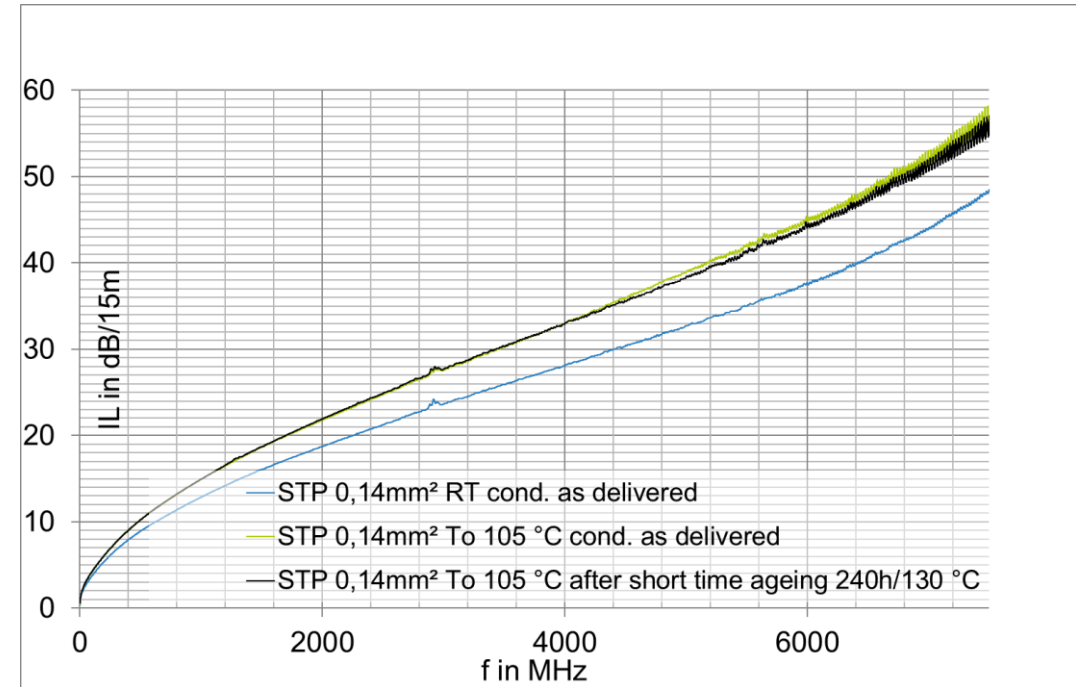
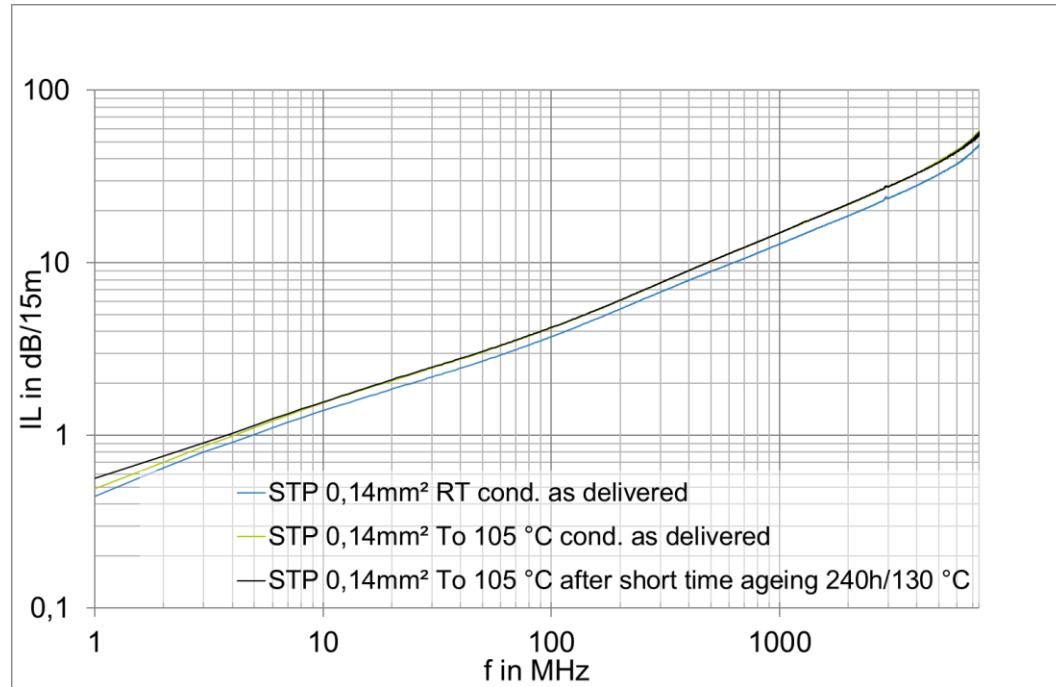
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Information

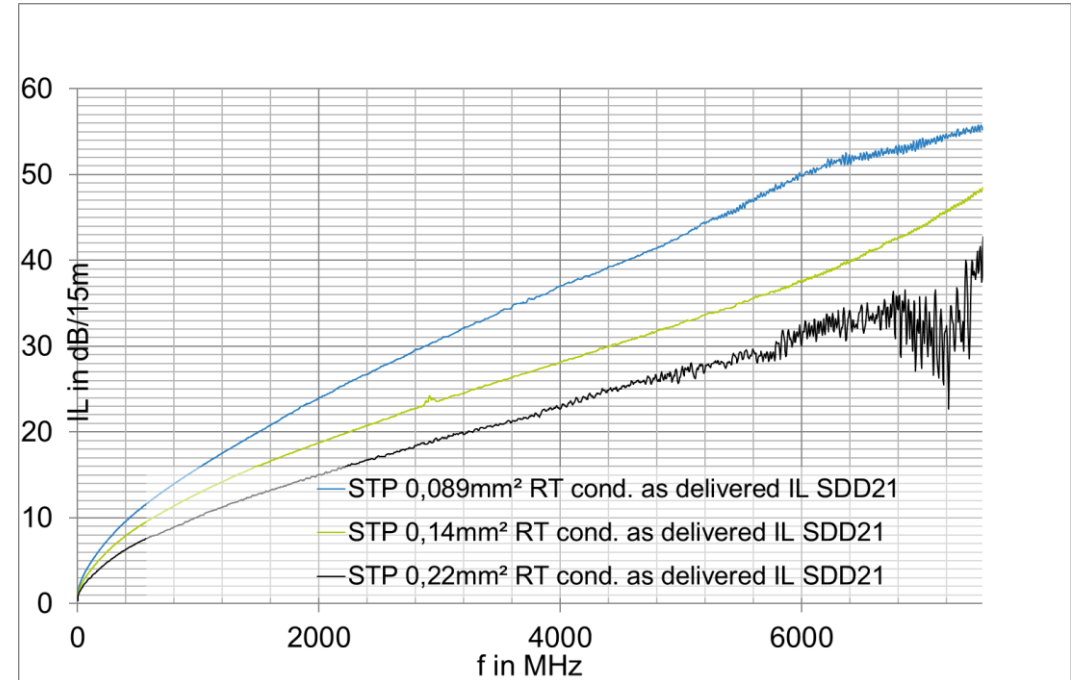
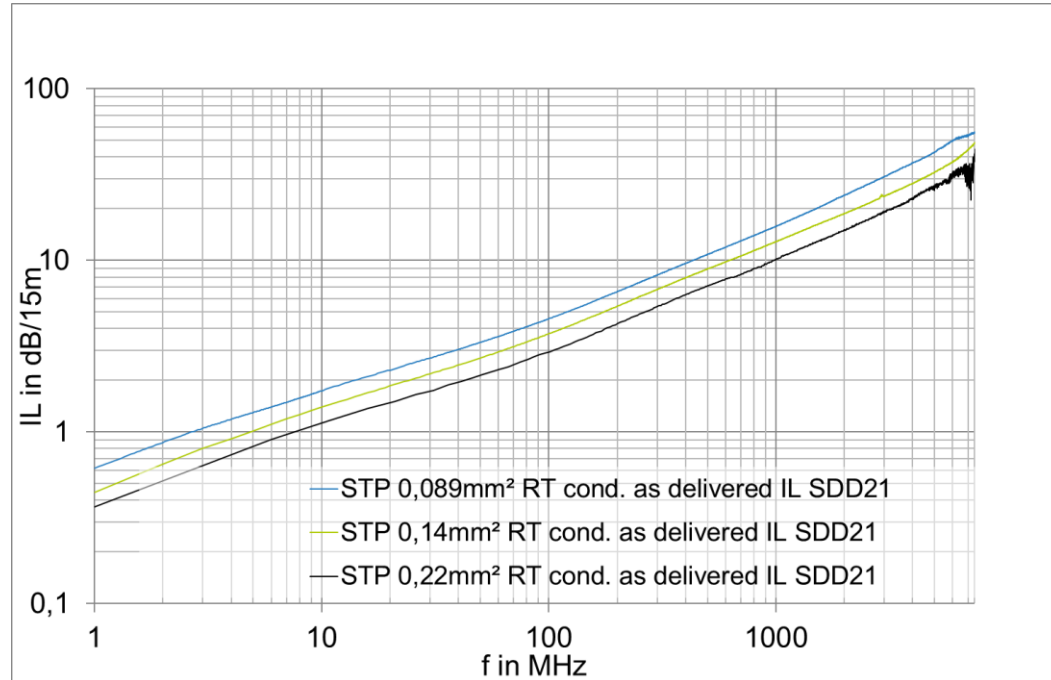
- Simulating lifetime and env. conditions
 - Operating temperature +105°C
 - Ageing -> accelerated short time ageing +130°C for 240h
- Cable (STP)
 - copper strands
 - designed in order to meet typ. Automotive requirements (e.g. Temp, ageing,..)
 - Nominal Z_{dm} 100 Ohm
 - Double shielded
 - twisted
- Measurement setup IL
 - VNA
 - 10m cable only, scaled to 15m
 - $Z_{dm}=100$ Ohm

Insertion loss (0,14mm²)



	RT cond. as dedlivered	+105°C cond. as dedlivered	+105°C after short time ageing
Hz	dB/15m	dB/15m	dB/15m
1,00E+06	0,4	0,5	0,6
1,00E+07	1,4	1,6	1,6
1,00E+08	3,7	4,2	4,2
1,00E+09	12,9	14,9	15,0
2,00E+09	18,7	21,8	21,9
3,00E+09	23,6	27,5	27,7
4,00E+09	28,1	33,0	33,0
5,00E+09	32,7	38,9	38,4
6,00E+09	37,7	45,0	44,1
7,00E+09	43,9	52,9	50,7

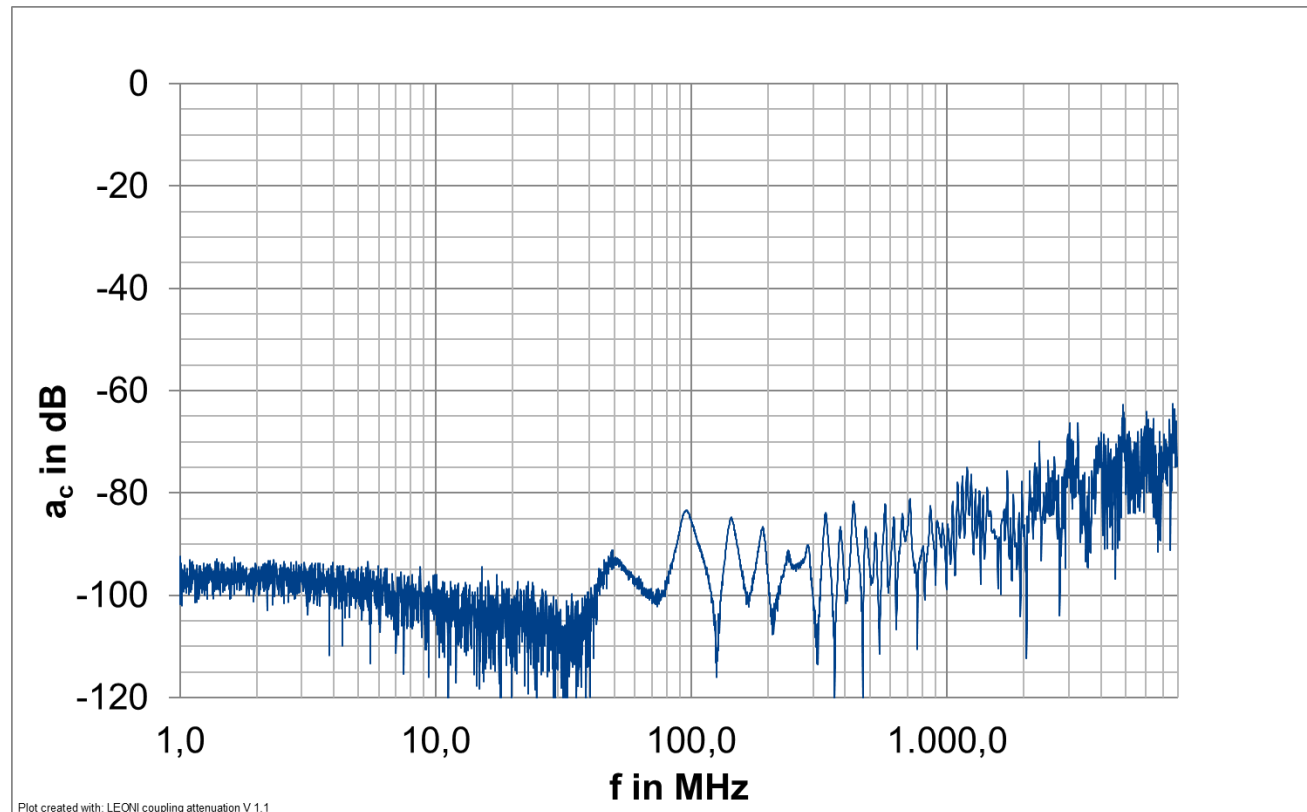
Insertion loss (0,089/0,14/0,22mm²)



Hz	0,089mm ² dB/15m	0,14mm ² dB/15m	0,22mm ² dB/15m
1,00E+06	0,6	0,4	0,4
1,00E+07	1,7	1,4	0,9
1,00E+08	4,6	3,7	2,9
1,00E+09	15,8	12,9	10,1
2,00E+09	24,0	18,7	15,0
3,00E+09	30,8	23,6	19,1
4,00E+09	37,0	28,1	22,7
5,00E+09	42,8	32,7	26,3
6,00E+09	49,9	37,7	30,2
7,00E+09	53,9	43,9	27,4

DM coupling attenuation (0,14mm²)

- Triaxial tube, length of tube 3m



Remarks

- Typical IL for different conductor crosssections shown
- Typical ageing and temperature effects shown
- Typical coupling attenuation shown
- IL-curves can be optimized in order to have smooth/rippleless characteristics up to 7,5GHz no matter which crosssection; no general conclusion regarding this topic possible from the curves. Curves show individual sample status.
In addition, measurement setups have to be further improved. Some ripple probably from setup..