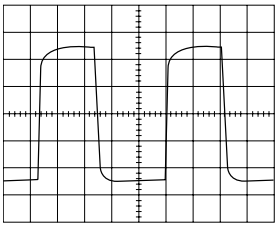
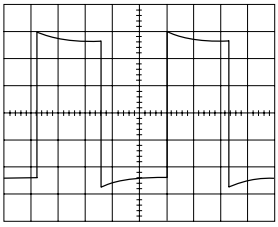
P500 Probe for Moku:Pro

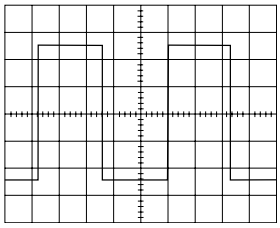
500 MHz 10:1 High Impedance Passive Probe



undercompensated



overcompensated



optimum

Electrical Specifications

System Bandwidth	500 MHz	(-3 dB)
Attenuation Ratio [1]	10:1	± 2 % at DC
Probe Risetime	700 ps	
Input Resistance (System)	10 MΩ	± 1 %
Input Capacitance (System)	9.5 pF	
Compensation Range	13.5 pF - 30 pF	
Input Coupling of the Moku	1 MΩ AC / DC	
Voltage Coefficient	0.00025 %/V	at DC

Maximum Rated Input Voltages, CAT II [2]

Pollution Degree	2
Measurement Category II:	300 V CAT II

Low frequency (LF) Compensation

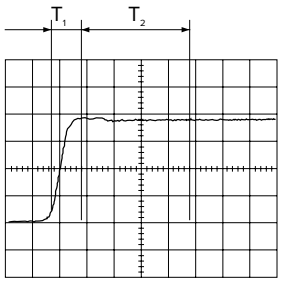
LF needs to be adjusted when the probe is connected to the Moku:Pro input the first time. LF compensation matches the probes cable capacitance to the oscilloscope input capacitance. This matching assures good amplitude accuracy from DC to upper bandwidth limit frequencies. A poorly compensated probe clearly influences the overall system performance (probe + Moku:Pro) and introduces measurement errors resulting in inaccurate readings and distorted waveforms.

LF compensation is performed by connecting the probe to the a Moku:Pro output channel. Set Moku:Pro oscilloscope output to 1 kHz square wave, 1 Vpp and adjusting the LF compensation trimmer to optimum square wave response. For clarification see figures on the top of the second column.

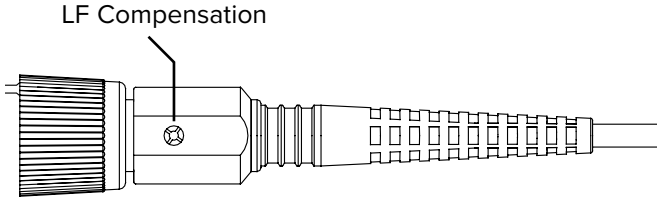
High frequency (FF) Compensation

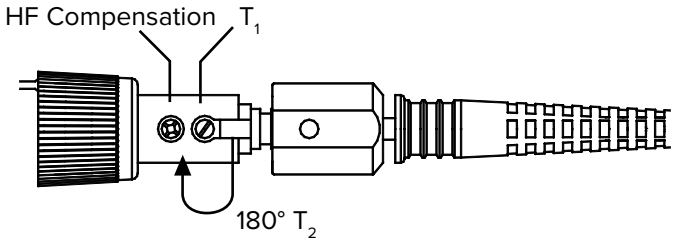
It is typically not necessary to adjust HF compensation unless the probe is being used with Moku having large differences in input characteristic. HF adjustment is performed by connecting the probe to the rectangular wave generator. Adjust trimmers (T_1 and T_2) for optimum square wave response.

T_1 is used for rise time adjustment.
T_2 influences probe response time.



optimum





(1) Connected to oscilloscope with an input impedance of 1 MΩ ± 1 %
(2) As defined in IEC 61010-031