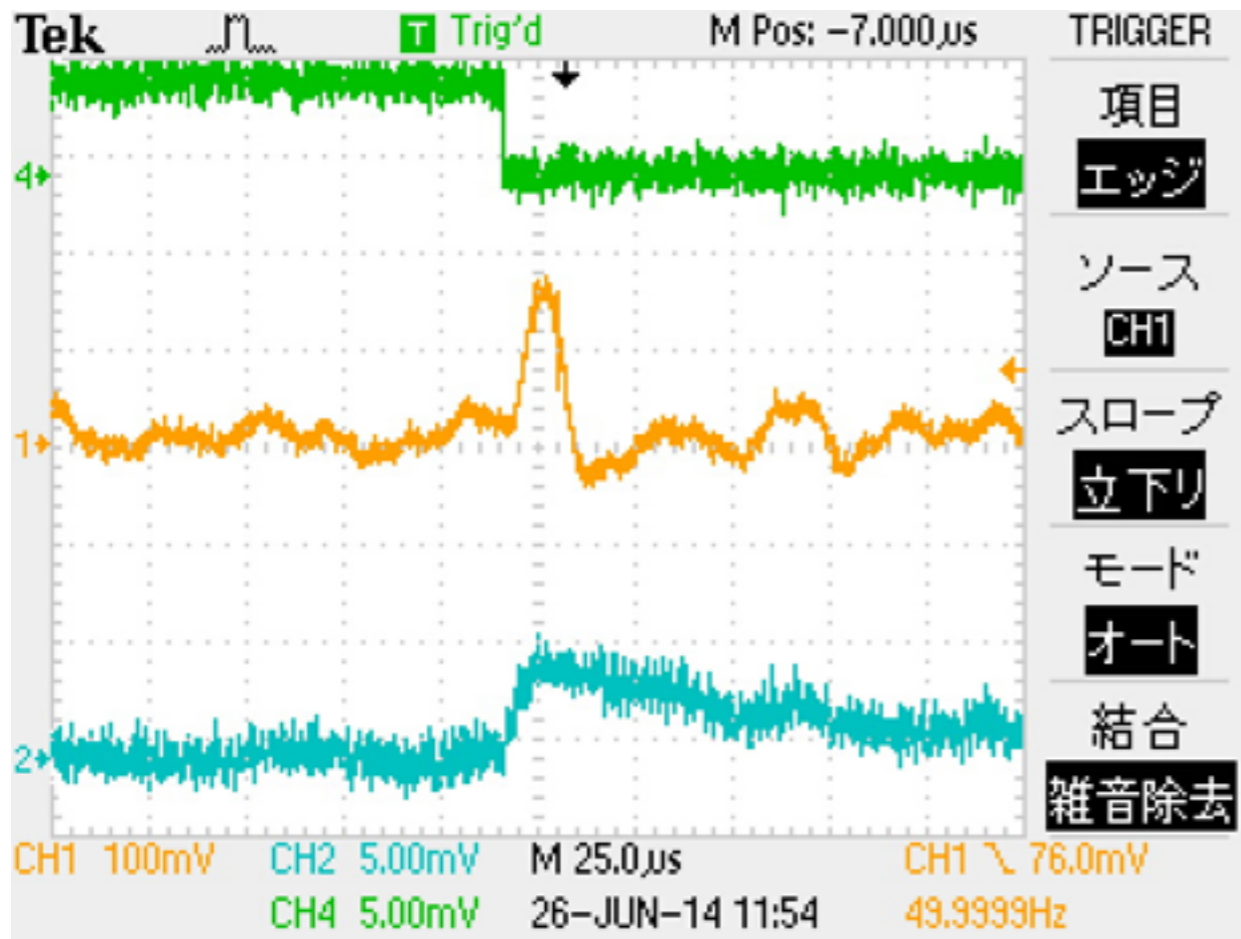
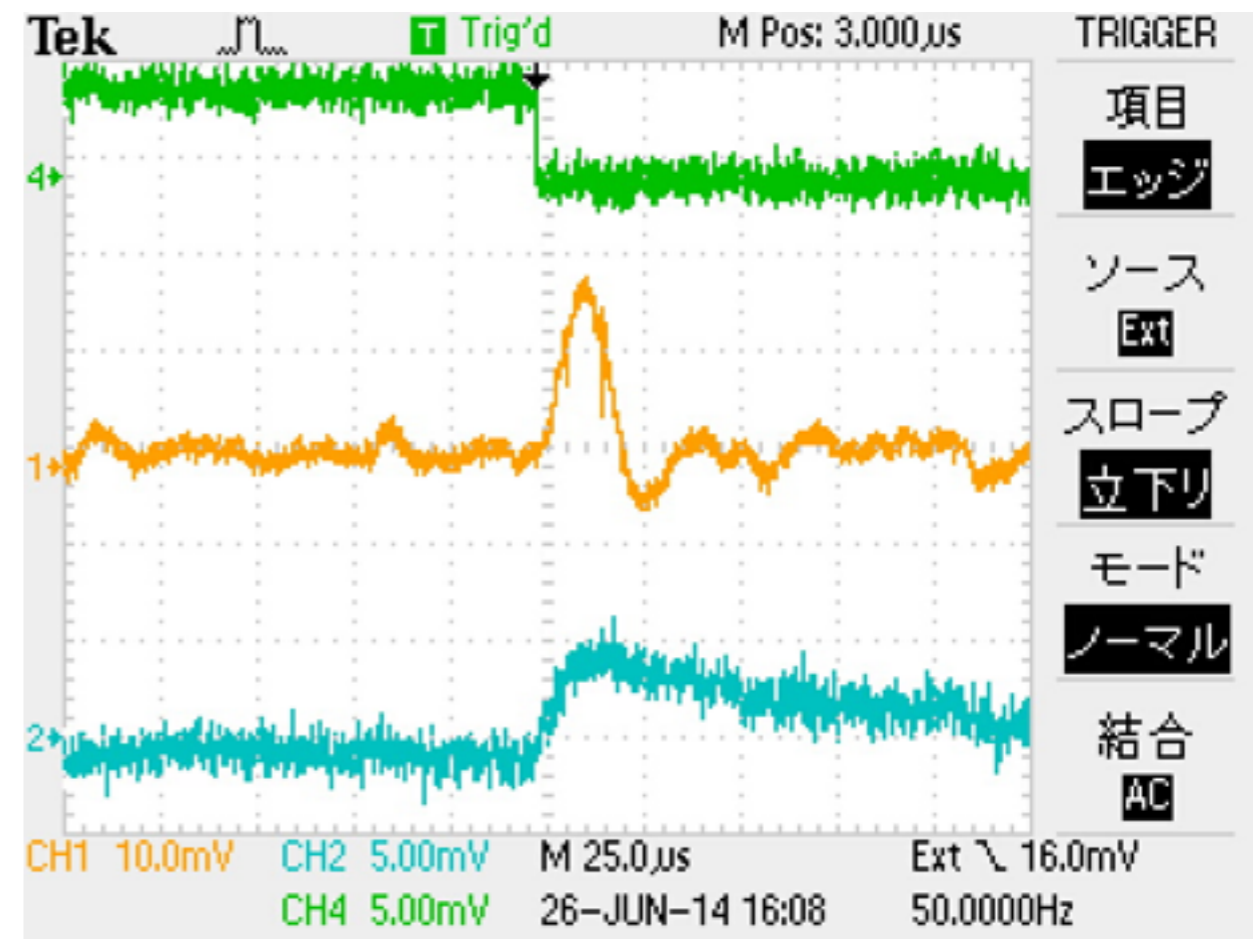


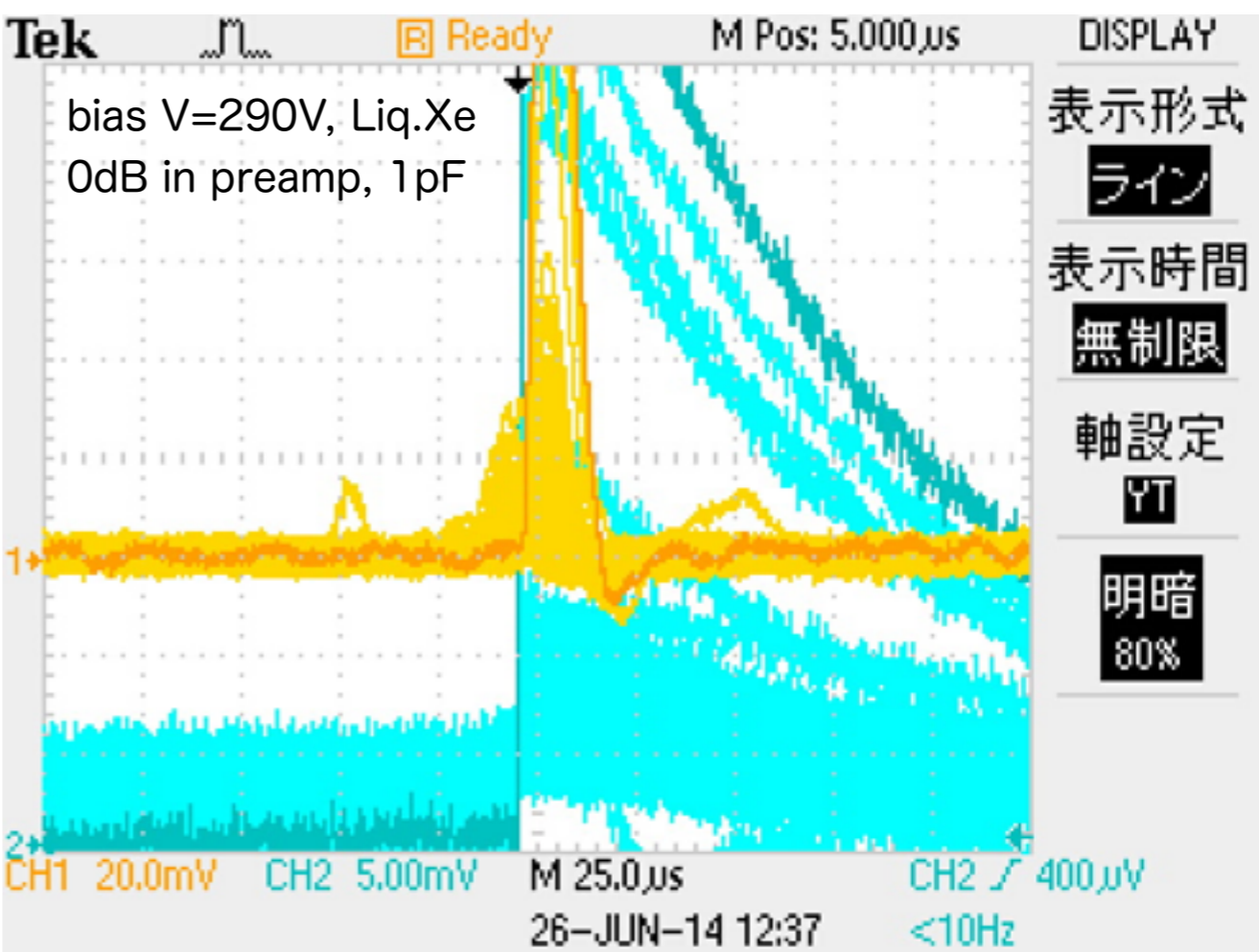
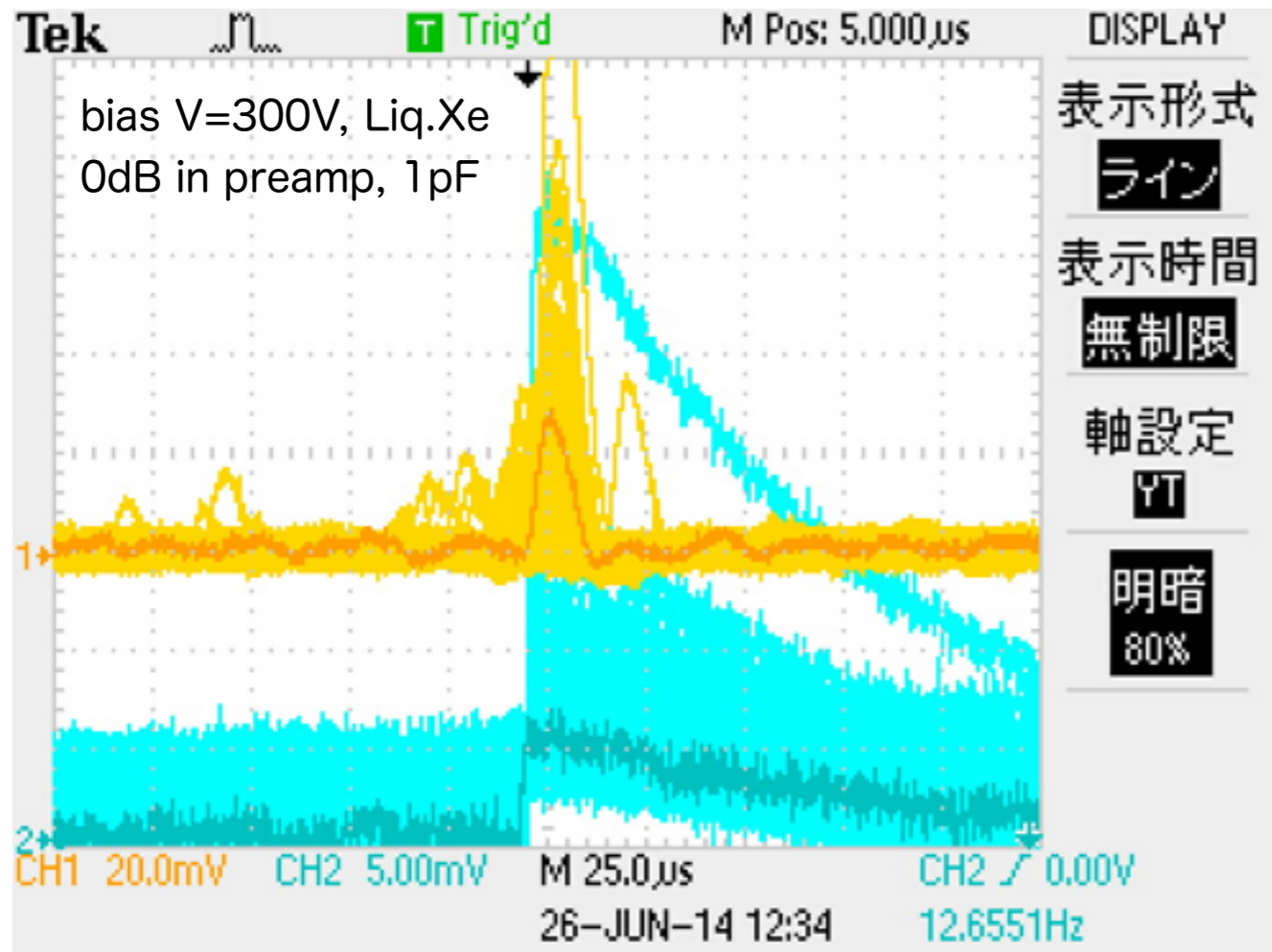
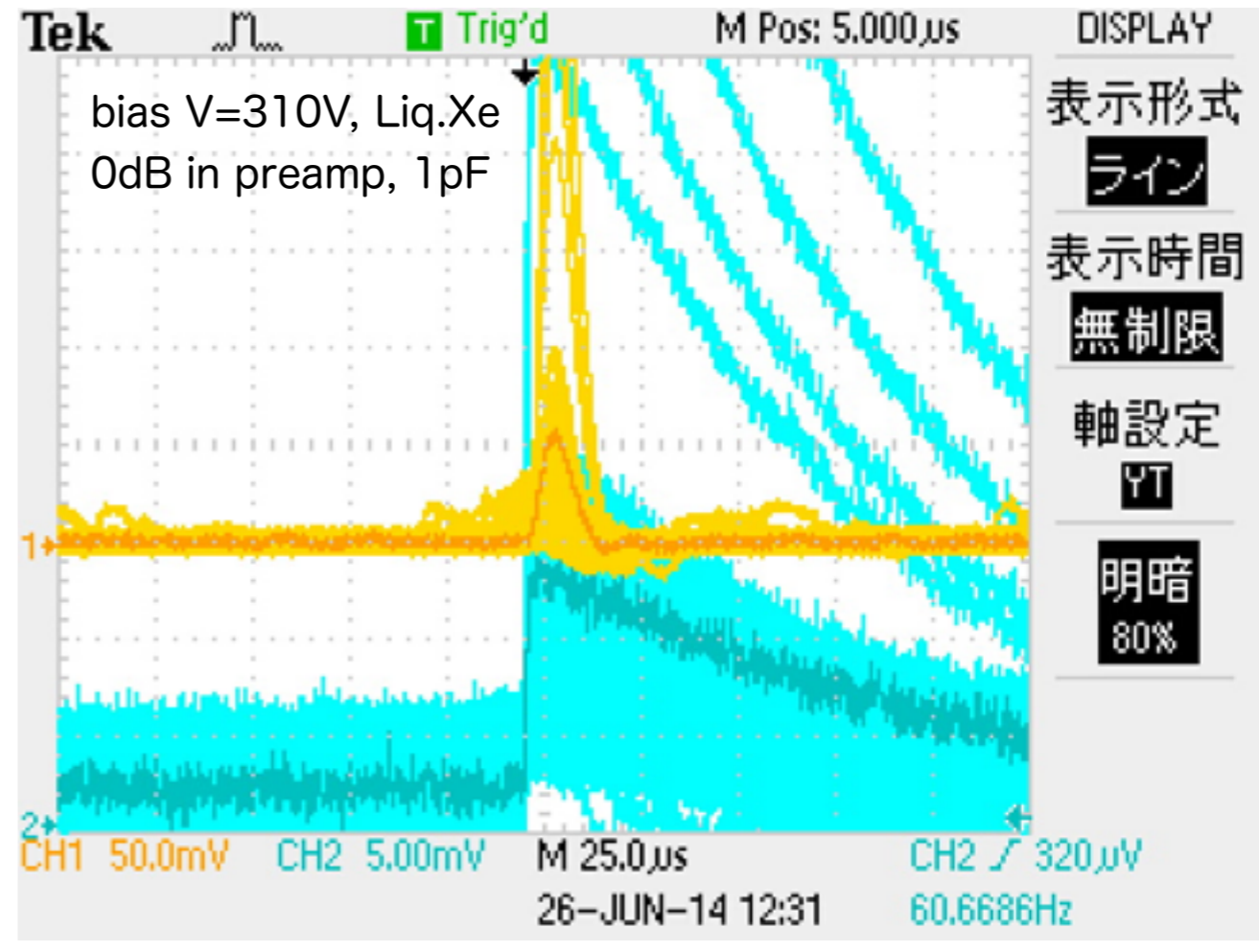
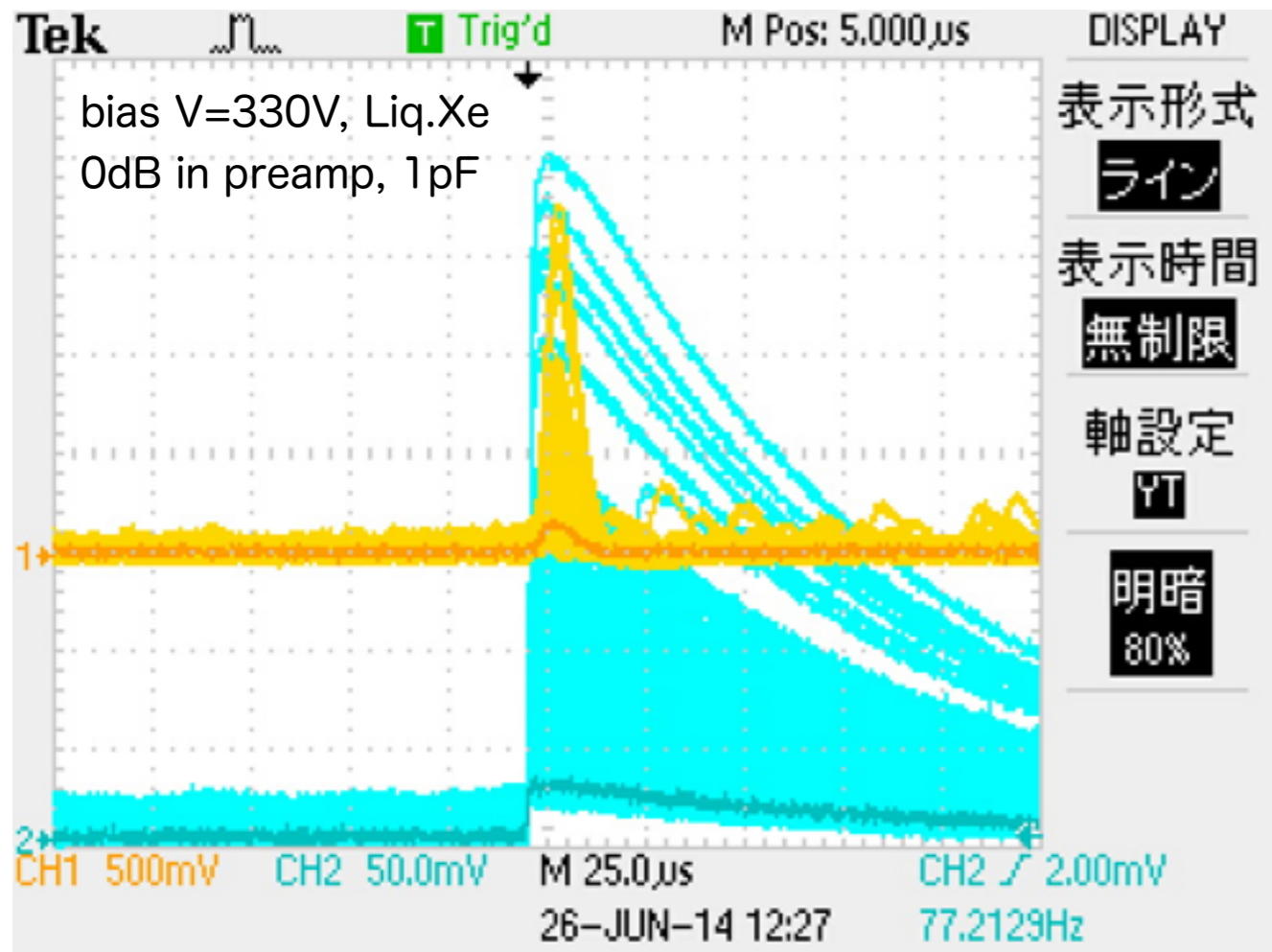
# Test Pulse results, 5mV, Square, 50Hz

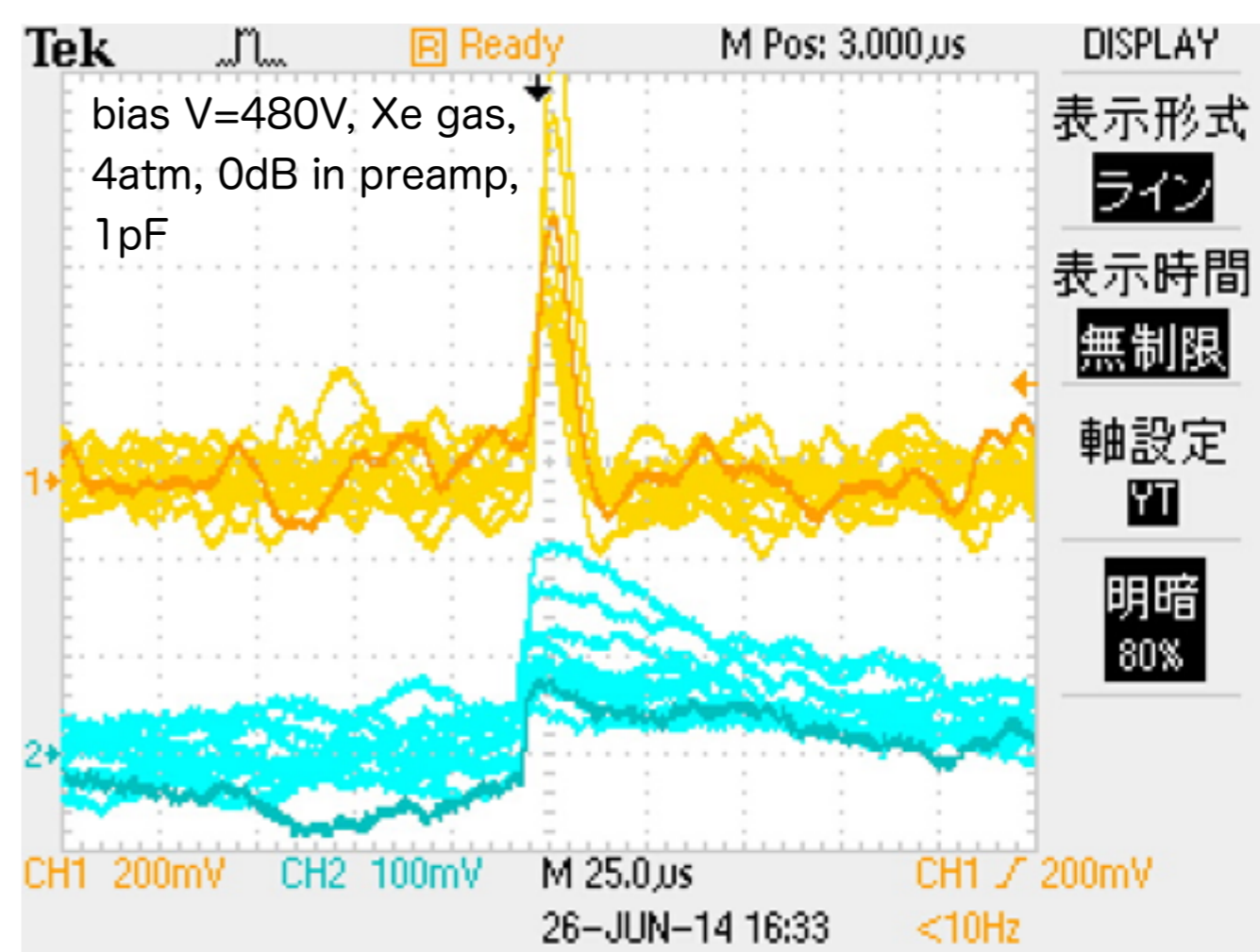
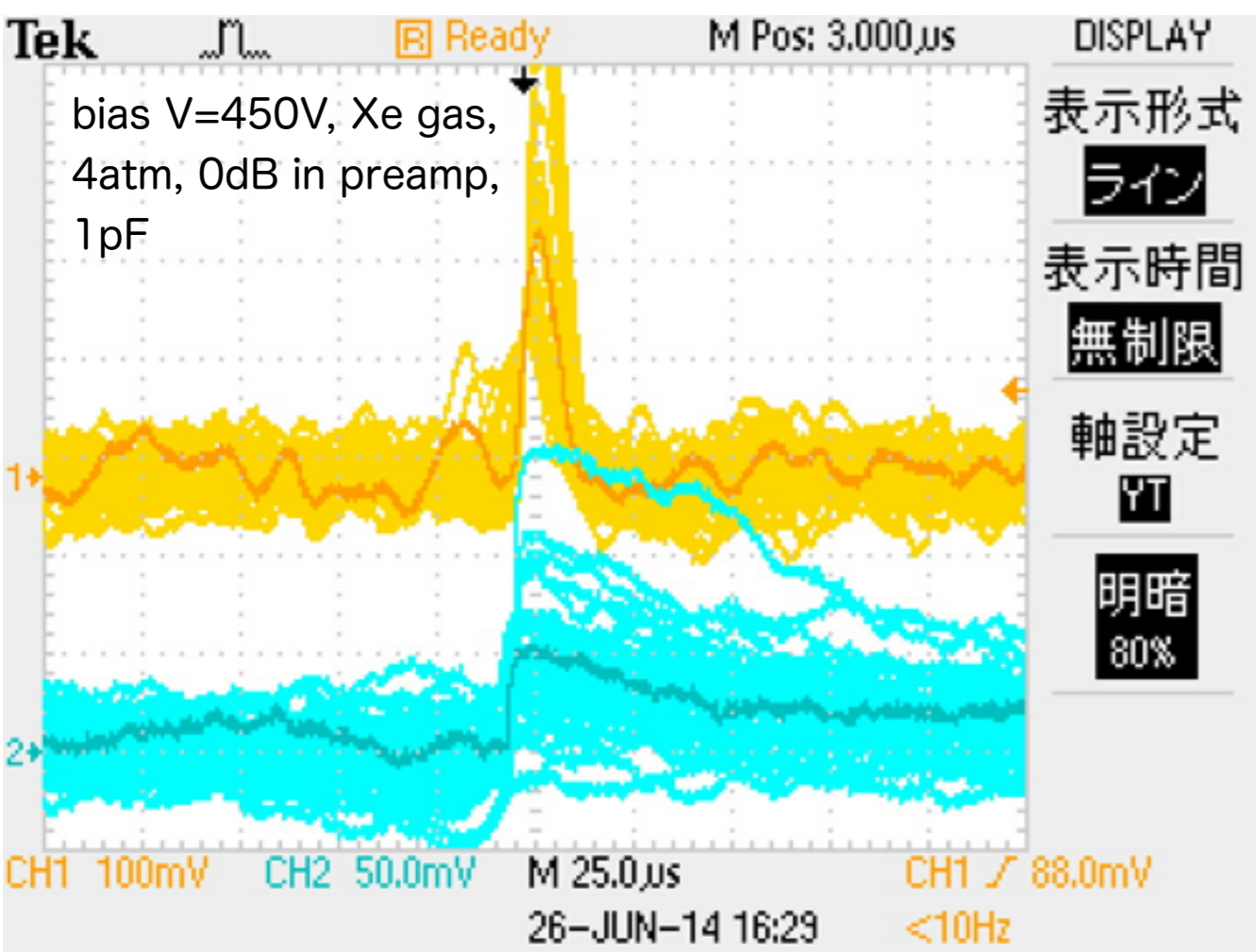
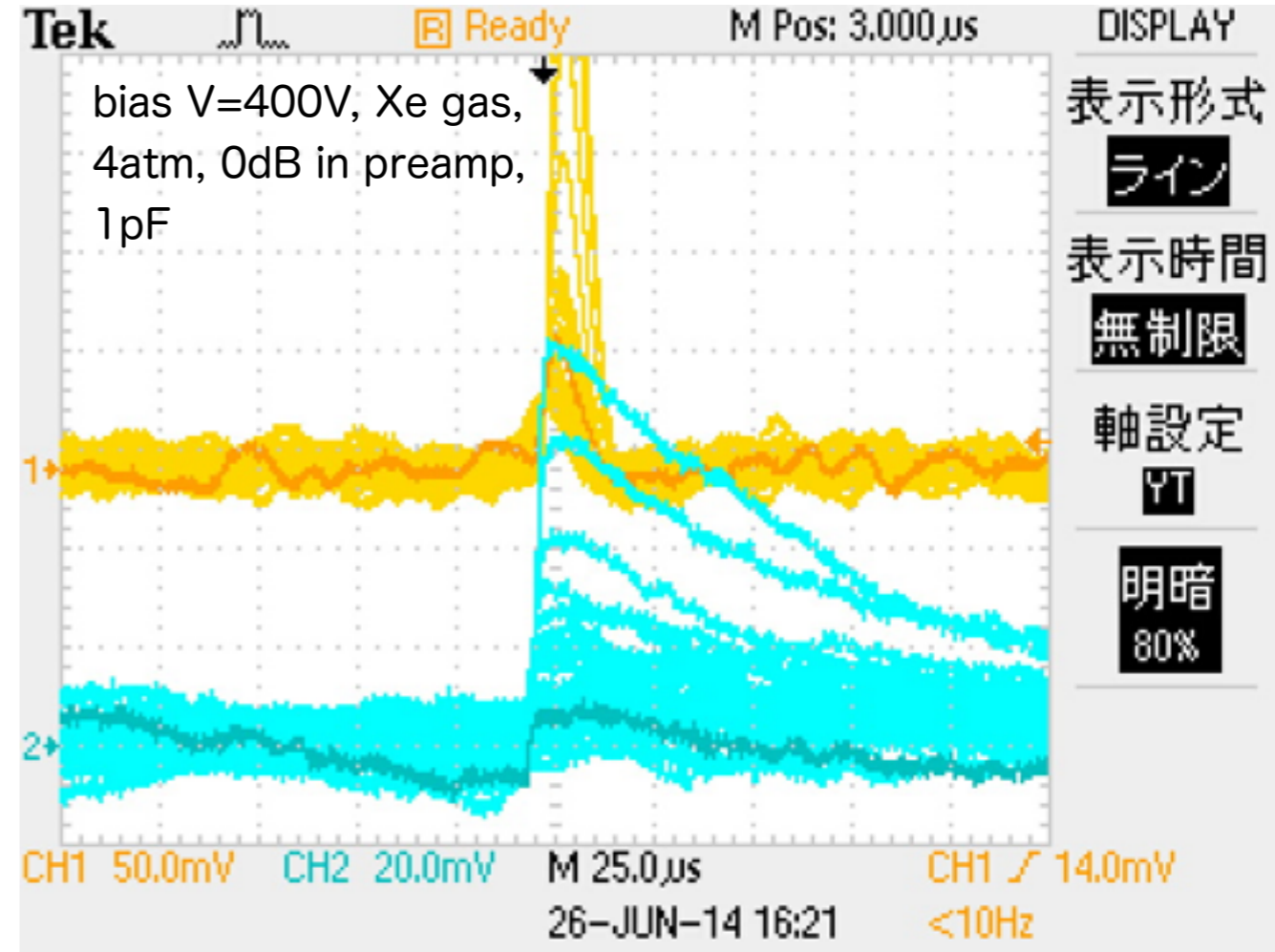
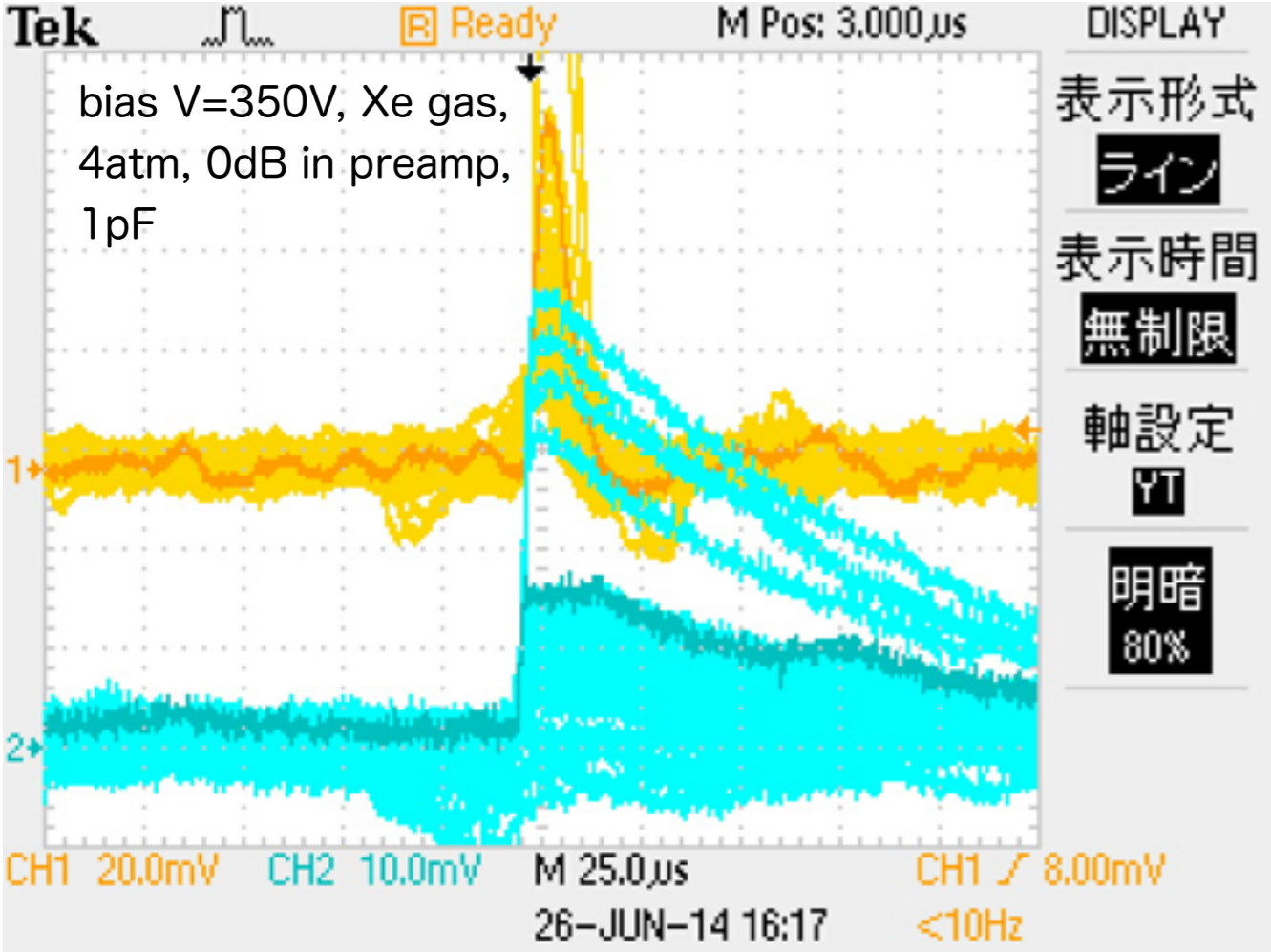
bias V=0V, Liq.Xe, 0dB in preamp, 1pF

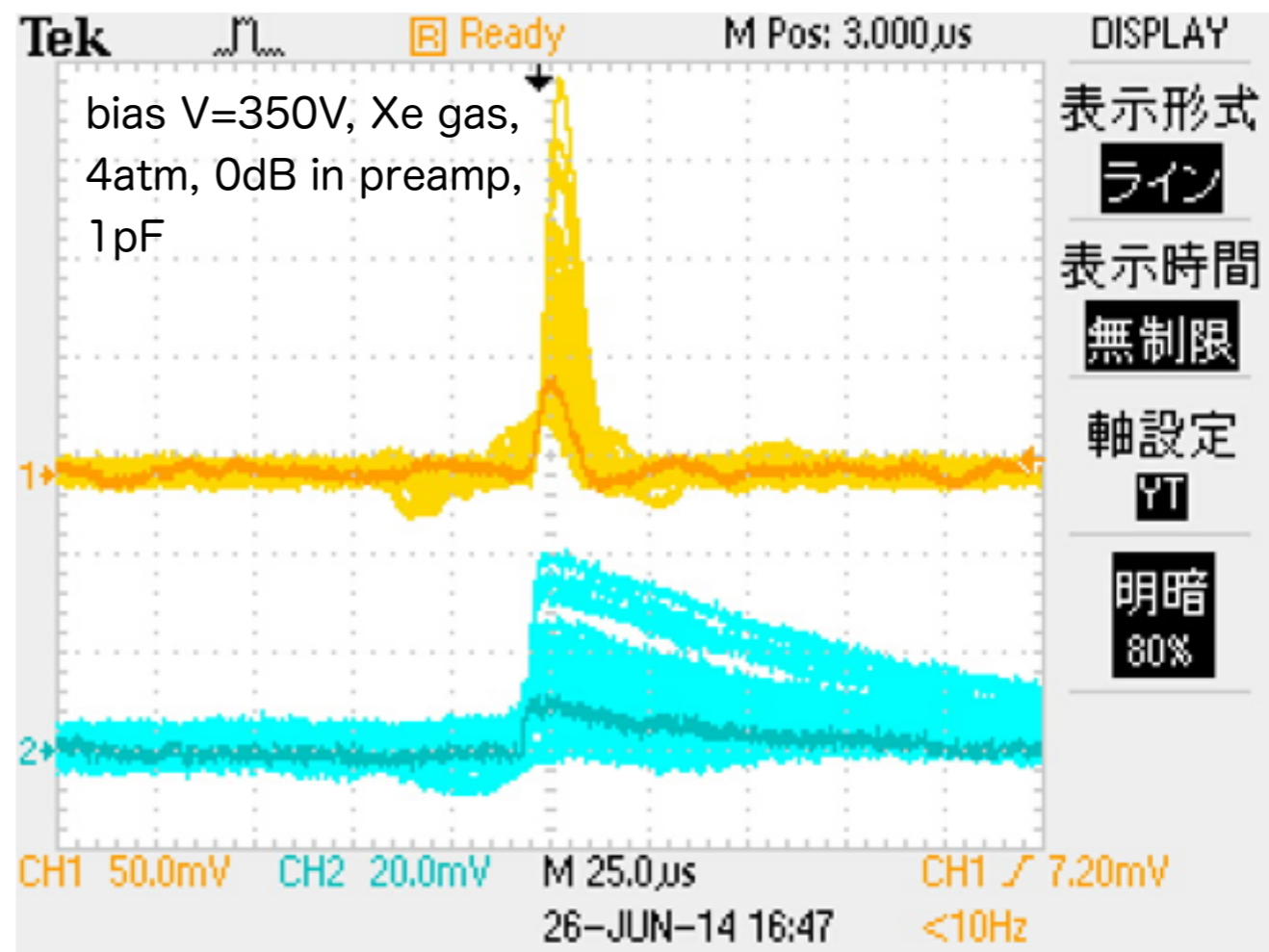
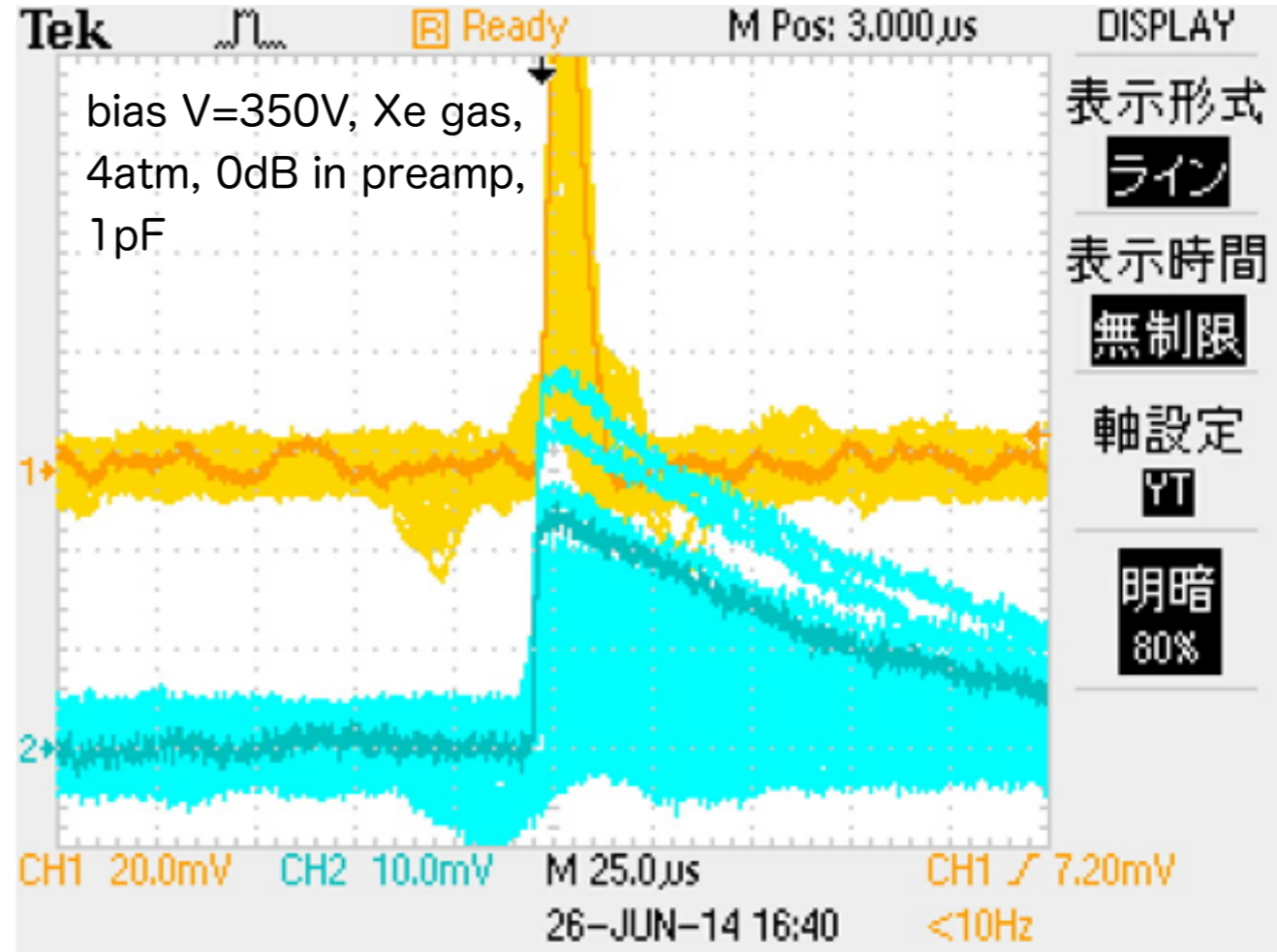
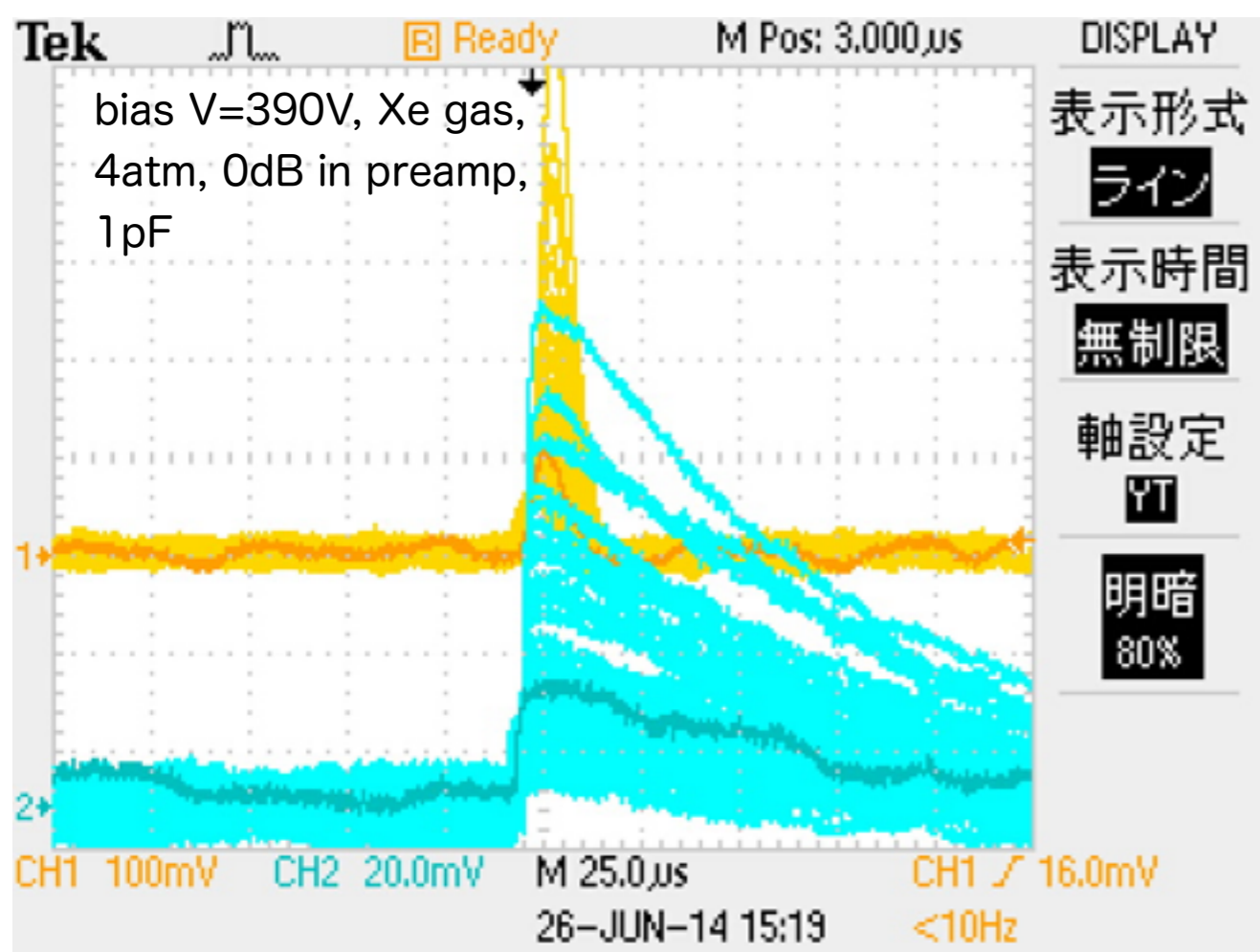


bias V=0V, Xe Gas, 0dB in preamp, 1pF

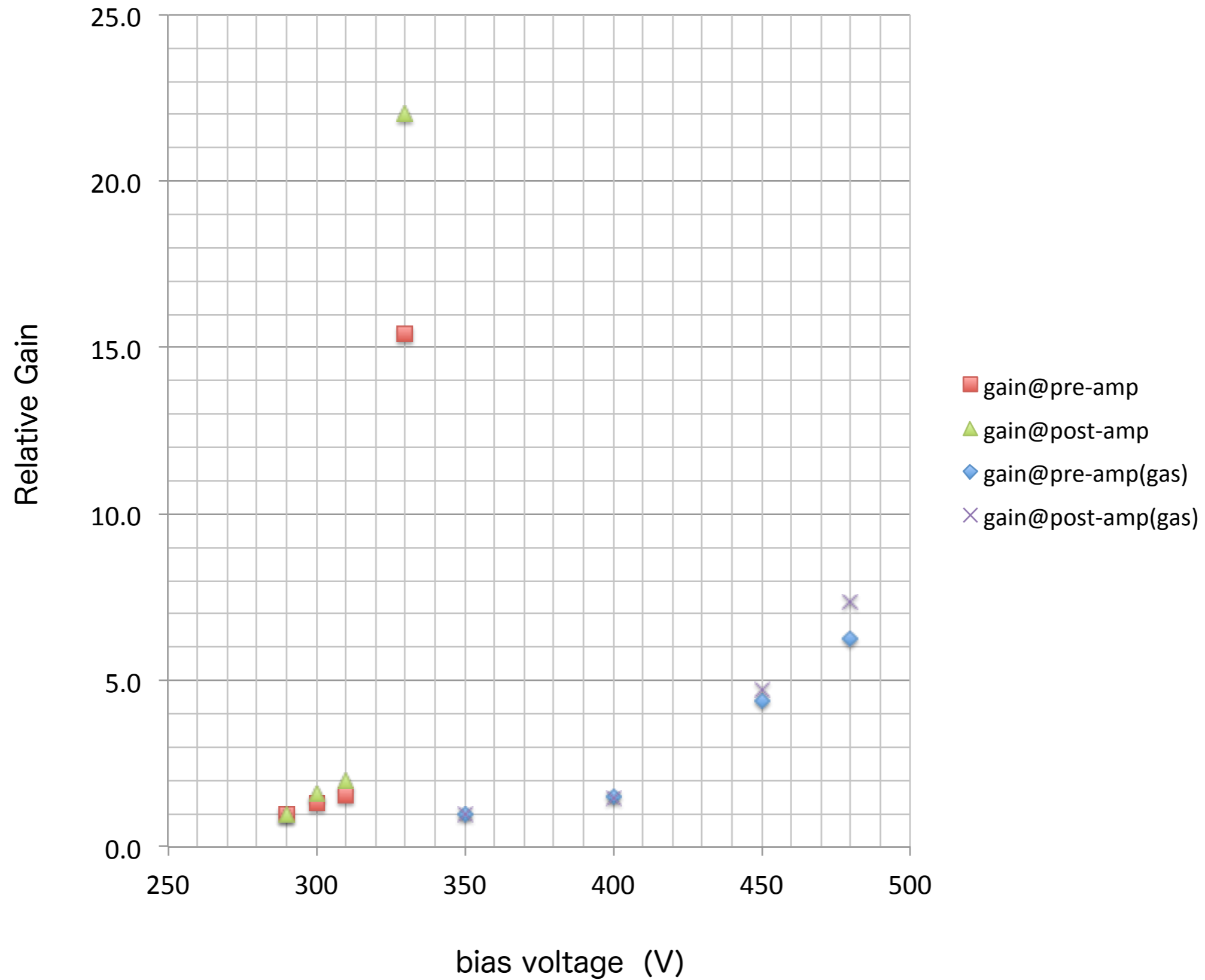








# APD with $^{137}\text{Cs}$ (10kBq) in Xe at Liquid and Gas ( $P_{\text{abs}}=4\text{atm}$ ) phases with the feedback capacitor of 1pF



2014.6.26 15:00-

Liquid Xe	C feedback (pF)	Bias Vol. (V)	Preamp (V)	Post amp (V)	Post /Preamp	gain@pre-amp	gain@post-amp
	1	330	0.2	1.1	5.5	15.4	22
	1	310	0.02	0.1	5.0	1.5	2
	1	300	0.017	0.08	4.7	1.3	1.6
	1	290	0.013	0.05	3.8	1	1

Xe Gas @room	C feedback (pF)	Bias Vol. (V)	Preamp (V)	Post amp (V)	Post /Preamp	gain@pre-amp(gas)	gain@post-amp(gas)
	1	350	0.016	0.068	4.3	1.0	1
	1	400	0.024	0.1	4.2	1.5	1.5
	1	450	0.07	0.32	4.6	4.4	4.7
	1	480	0.1	0.5	5.0	6.3	7.4

# Proposal of study on the scintillation light in Xenon

## Study in the test chamber

1. APD gain measurements as a function of the bias voltage in liquid Xe and Xe gas ( 4atm of absolute pressure ) measurements by K102 (MCA)  
the gain estimated by the photo-electric peak and the average energy deposits  
radiation source :  $^{137}\text{Cs}$  (10kBq) or  $^{22}\text{Na}$ (100kBq) , the latter is preferable in Xe gas
2. The same measurement by PMT, may be done in rehearsal of summer challenge  
comparison with the APD  
estimation of the APD quantum efficiency relative to the PMT  
assuming the PMT one in the data sheet and correction of acceptance

## Study in the TPC chamber

1. Measurement of scintillation lights as a function of drift time in the TPC, 5cm drift as a function of drift electric field and the anode-grid electric field  
by using FADC (500MHz, 8k memory), current data in 5800 -6000 to be optimized  
purpose : detection of second scintillation lights in the anode-grid region  
as alternative method of the two phase Xe detector