

Channel	HLT requirement	Lepton selection		
$\mu\tau_h$	$\mu(12-18) \ \& \ \tau_h(10-20)$	$p_T^\mu > 17-20$ $p_T^{\tau_h} > 30$	$ \eta^\mu  < 2.1$ $ \eta^{\tau_h}  < 2.4$	$R^\mu < 0.1$ $I^{\tau_h} < 1.5$
$e\tau_h$	$e(15-22) \ \& \ \tau_h(15-20)$	$p_T^e > 20-24$ $p_T^{\tau_h} > 30$	$ \eta^e  < 2.1$ $ \eta^{\tau_h}  < 2.4$	$R^e < 0.1$ $I^{\tau_h} < 1.5$
$\tau_h\tau_h$ (2012 only)	$\tau_h(35) \ \& \ \tau_h(35)$ $\tau_h(30) \ \& \ \tau_h(30) \ \& \ \text{jet}(30)$	$p_T^{\tau_h} > 45$	$ \eta^{\tau_h}  < 2.1$	$I^{\tau_h} < 1$
$e\mu$	$e(17) \ \& \ \mu(8)$ $e(8) \ \& \ \mu(17)$	$p_T^{\ell_1} > 20$ $p_T^{\ell_2} > 10$	$ \eta^\mu  < 2.1$ $ \eta^e  < 2.3$	$R^\ell < 0.1-0.15$
$\mu\mu$	$\mu(17) \ \& \ \mu(8)$	$p_T^{\mu_1} > 20$ $p_T^{\mu_2} > 10$	$ \eta^{\mu_1}  < 2.1$ $ \eta^{\mu_2}  < 2.4$	$R^\mu < 0.1$
$ee$	$e(17) \ \& \ e(8)$	$p_T^{e_1} > 20$ $p_T^{e_2} > 10$	$ \eta^e  < 2.3$	$R^e < 0.1-0.15$
$\mu + \mu\tau_h$	$\mu(17) \ \& \ \mu(8)$	$p_T^{\mu_1} > 20$ $p_T^{\mu_2} > 10$ $p_T^{\tau_h} > 20$	$ \eta^\mu  < 2.4$ $ \eta^{\tau_h}  < 2.3$	$R^\mu < 0.1-0.2$ $I^{\tau_h} < 2$
$e + \mu\tau_h /$ $\mu + e\tau_h$	$e(17) \ \& \ \mu(8)$ $e(8) \ \& \ \mu(17)$	$p_T^{\ell_1} > 20$ $p_T^{\ell_2} > 10$ $p_T^{\tau_h} > 20$	$ \eta^e  < 2.5$ $ \eta^\mu  < 2.4$ $ \eta^{\tau_h}  < 2.3$	$R^\ell < 0.1-0.2$ $I^{\tau_h} < 2$
$\mu + \tau_h\tau_h$	$\mu(24)$	$p_T^\mu > 24$ $p_T^{\tau_{h,1}} > 25$ $p_T^{\tau_{h,2}} > 20$	$ \eta^\mu  < 2.1$ $ \eta^{\tau_h}  < 2.3$	$R^\mu < 0.1$ $I^{\tau_h} < 2-3$
$e + \tau_h\tau_h$	$e(20) \ \& \ \tau_h(20)$ $e(22) \ \& \ \tau_h(20)$	$p_T^e > 24$ $p_T^{\tau_{h,1}} > 25$ $p_T^{\tau_{h,2}} > 20$	$ \eta^e  < 2.1$ $ \eta^{\tau_h}  < 2.3$	$R^e < 0.1-0.15$ $I^{\tau_h} < 2$