STC3115 OCV registers:

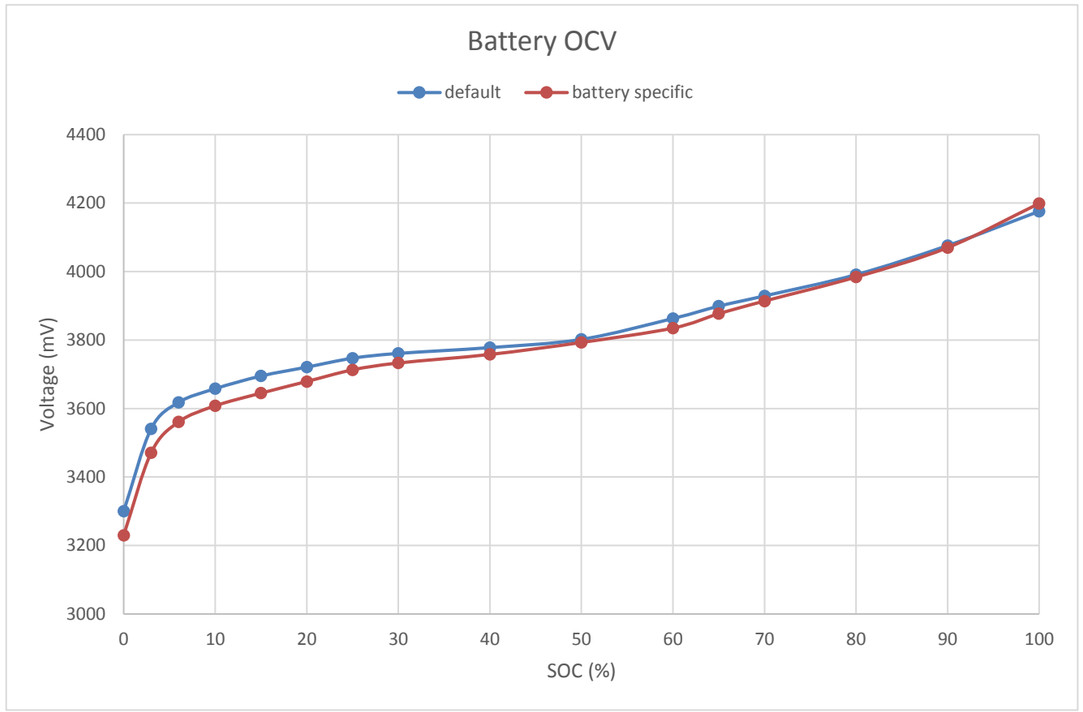
How to fill the STC3115 registers depending on battery characteristics

- Example for a 3.7V battery (4.2V max charge voltage)

register Address	corresponding SOC (%)	Default OCV curve voltage (mV)	REG_OCVTAB
		STC3115AIJT (4.2V max battery)	Default register value (mV)
0x30	0	3300	0
0x31	3	3541	0
0x32	6	3618	0
0x33	10	3658	0
0x34	15	3695	0
0x35	20	3721	0
0x36	25	3747	0
0x37	30	3761	0
0x38	40	3778	0
0x39	50	3802	0
0x3A	60	3863	0
0x3B	65	3899	0
0x3C	70	3929	0
0x3D	80	3991	0
0x3E	90	4076	0
0x3F	100	4176	0

Example with user specific battery

Battery specific OCV curve	OCV offset (mV)	register REG_OCVTAB value	
[mV]	(relative to reference curve)	Dec (0.55 mV)	Hex (0.55 mV)
3230	-70	-127	FFFFFFF81
3471	-70	-127	FFFFFFF81
3561	-57	-104	FFFFFFF98
3608	-50	-91	FFFFFFFA5
3645	-50	-91	FFFFFFFA5
3679	-42	-76	FFFFFFFB4
3713	-34	-62	FFFFFFFC2
3733	-28	-51	FFFFFFFCD
3758	-20	-36	FFFFFFFDC
3793	-9	-16	FFFFFFFF0
3835	-28	-51	FFFFFFFCD
3877	-22	-40	FFFFFFFD8
3914	-15	-27	FFFFFFFE5
3984	-7	-13	FFFFFFFF3
4070	-6	-11	FFFFFFFF5
4199	23	42	2A

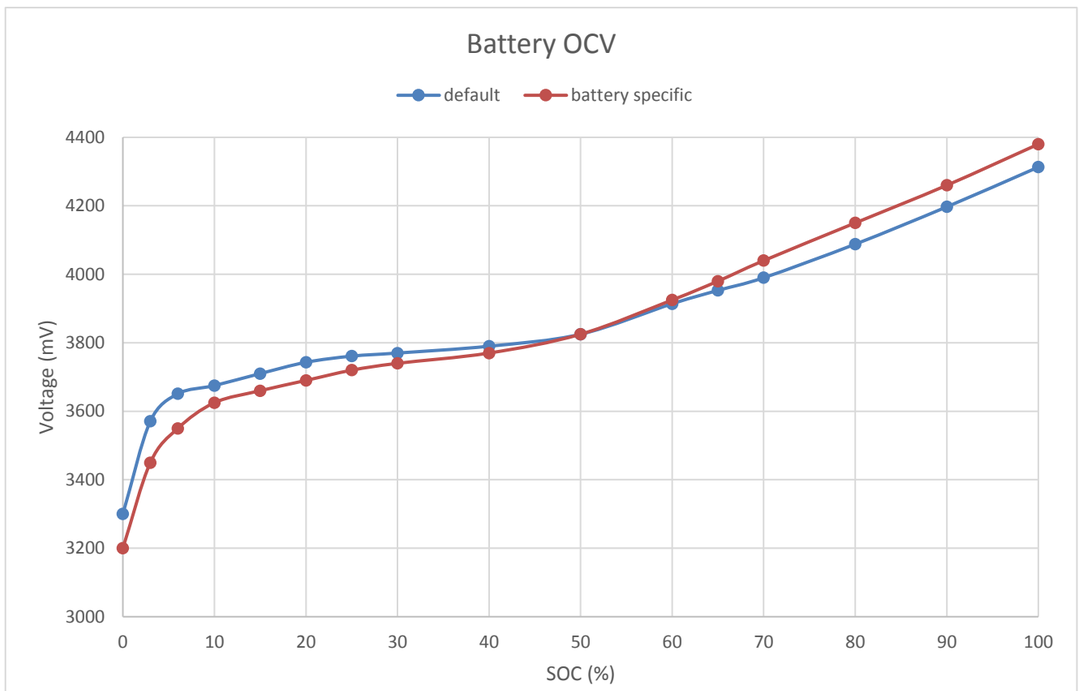


- Example for a 3.8V battery (4.35V max):

register Address	corresponding SOC (%)	Default OCV curve voltage (mV)	REG_OCVTAB
		STC3115IJT (4.35V max battery)	Default register value (mV)
0x30	0	3300	0
0x31	3	3571	0
0x32	6	3651	0
0x33	10	3675	0
0x34	15	3710	0
0x35	20	3743	0
0x36	25	3761	0
0x37	30	3770	0
0x38	40	3790	0
0x39	50	3825	0
0x3A	60	3914	0
0x3B	65	3953	0
0x3C	70	3990	0
0x3D	80	4088	0
0x3E	90	4197	0
0x3F	100	4313	0

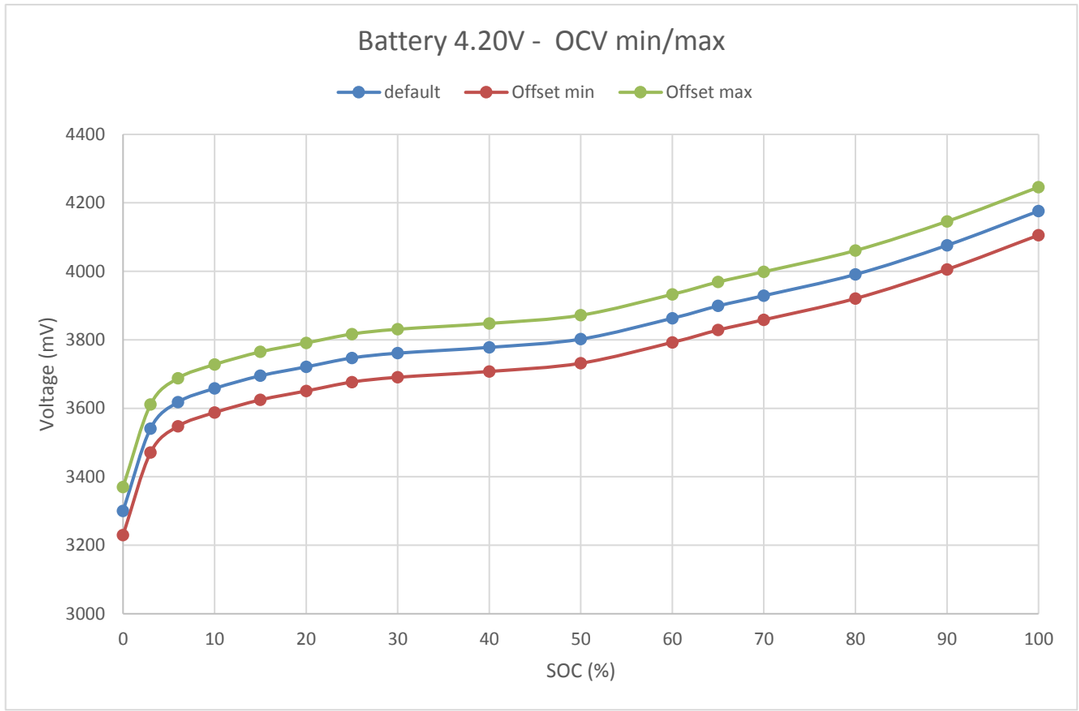
Example with user specific battery

Battery specific OCV curve	OCV offset (mV)	register REG_OCVTAB value	
[mV]	(relative to reference curve)	Dec (0.55 mV)	Hex (0.55 mV)
3200	-100	-182	FFFFFFF4A
3450	-121	-220	FFFFFFF24
3550	-101	-184	FFFFFFF48
3625	-50	-91	FFFFFFFA5
3660	-50	-91	FFFFFFFA5
3690	-53	-96	FFFFFFFA0
3720	-41	-75	FFFFFFFB5
3740	-30	-55	FFFFFFFC9
3770	-20	-36	FFFFFFFDC
3825	0	0	00
3925	11	20	14
3980	27	49	31
4040	50	91	5B
4150	62	113	71
4260	63	115	73
4380	67	122	7A



• Example for the min/max battery voltage:

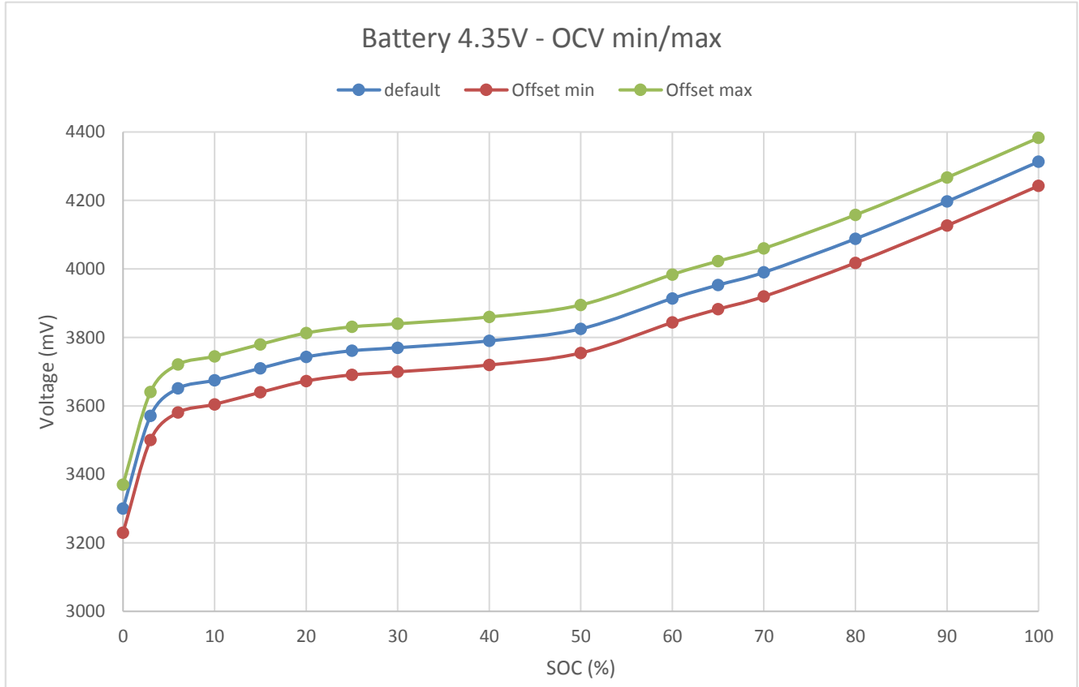
register Address	corresponding SOC (%)	Default OCV curve voltage (mV)	REG_OCVTAB	register REG_OCVTAB value		OCV offset (mV)	Battery OCV curve
		STC3115AIJT (4.2V max battery)	Default register value (mV)	Offset MIN (8bit) Dec (0.55 mV)	Offset MIN (8bit) Hex (0.55 mV)	(relative to reference curve)	[mV]
0x30	0	3300	0	-128	FFFFFFFF80	-70.4	3229.6
0x31	3	3541	0	-128	FFFFFFFF80	-70.4	3470.6
0x32	6	3618	0	-128	FFFFFFFF80	-70.4	3547.6
0x33	10	3658	0	-128	FFFFFFFF80	-70.4	3587.6
0x34	15	3695	0	-128	FFFFFFFF80	-70.4	3624.6
0x35	20	3721	0	-128	FFFFFFFF80	-70.4	3650.6
0x36	25	3747	0	-128	FFFFFFFF80	-70.4	3676.6
0x37	30	3761	0	-128	FFFFFFFF80	-70.4	3690.6
0x38	40	3778	0	-128	FFFFFFFF80	-70.4	3707.6
0x39	50	3802	0	-128	FFFFFFFF80	-70.4	3731.6
0x3A	60	3863	0	-128	FFFFFFFF80	-70.4	3792.6
0x3B	65	3899	0	-128	FFFFFFFF80	-70.4	3828.6
0x3C	70	3929	0	-128	FFFFFFFF80	-70.4	3858.6
0x3D	80	3991	0	-128	FFFFFFFF80	-70.4	3920.6
0x3E	90	4076	0	-128	FFFFFFFF80	-70.4	4005.6
0x3F	100	4176	0	-128	FFFFFFFF80	-70.4	4105.6



register REG_OCVTAB value		OCV offset (mV)	Battery OCV curve
Offset MAX (8bit) Dec (0.55 mV)	Offset MAX (8bit) Hex (0.55 mV)	(relative to reference curve)	[mV]
127	7F	69.85	3369.85
127	7F	69.85	3610.85
127	7F	69.85	3687.85
127	7F	69.85	3727.85
127	7F	69.85	3764.85
127	7F	69.85	3790.85
127	7F	69.85	3816.85
127	7F	69.85	3830.85
127	7F	69.85	3847.85
127	7F	69.85	3871.85
127	7F	69.85	3932.85
127	7F	69.85	3968.85
127	7F	69.85	3998.85
127	7F	69.85	4060.85
127	7F	69.85	4145.85
127	7F	69.85	4245.85

• Example for the min/max battery voltage:

register Address	corresponding SOC (%)	Default OCV curve voltage (mV)	REG_OCVTAB	register REG_OCVTAB value		OCV offset (mV)	Battery OCV curve
		STC3115IJT (4.35V max battery)	Default register value (mV)	Offset MIN (8bit) Dec (0.55 mV)	Offset MIN (8bit) Hex (0.55 mV)	(relative to reference curve)	[mV]
0x30	0	3300	0	-128	FFFFFFFF80	-70.4	3229.6
0x31	3	3571	0	-128	FFFFFFFF80	-70.4	3500.6
0x32	6	3651	0	-128	FFFFFFFF80	-70.4	3580.6
0x33	10	3675	0	-128	FFFFFFFF80	-70.4	3604.6
0x34	15	3710	0	-128	FFFFFFFF80	-70.4	3639.6
0x35	20	3743	0	-128	FFFFFFFF80	-70.4	3672.6
0x36	25	3761	0	-128	FFFFFFFF80	-70.4	3690.6
0x37	30	3770	0	-128	FFFFFFFF80	-70.4	3699.6
0x38	40	3790	0	-128	FFFFFFFF80	-70.4	3719.6
0x39	50	3825	0	-128	FFFFFFFF80	-70.4	3754.6
0x3A	60	3914	0	-128	FFFFFFFF80	-70.4	3843.6
0x3B	65	3953	0	-128	FFFFFFFF80	-70.4	3882.6
0x3C	70	3990	0	-128	FFFFFFFF80	-70.4	3919.6
0x3D	80	4088	0	-128	FFFFFFFF80	-70.4	4017.6
0x3E	90	4197	0	-128	FFFFFFFF80	-70.4	4126.6
0x3F	100	4313	0	-128	FFFFFFFF80	-70.4	4242.6



register REG_OCVTAB value		OCV offset (mV)	Battery OCV curve
Offset MAX (8bit) Dec (0.55 mV)	Offset MAX (8bit) Hex (0.55 mV)	(relative to reference curve)	[mV]
127	7F	69.85	3369.85
127	7F	69.85	3640.85
127	7F	69.85	3720.85
127	7F	69.85	3744.85
127	7F	69.85	3779.85
127	7F	69.85	3812.85
127	7F	69.85	3830.85
127	7F	69.85	3839.85
127	7F	69.85	3859.85
127	7F	69.85	3894.85
127	7F	69.85	3983.85
127	7F	69.85	4022.85
127	7F	69.85	4059.85
127	7F	69.85	4157.85
127	7F	69.85	4266.85
127	7F	69.85	4382.85