In this section, as shown in Table, we present all the abstract symbols used during the experiment. For the specific meanings of the symbols, please refer to Table I in the text.

Table 1: Abstract alphabet used in experiment

Vendors	Devices	Input Symbols	Output Symbols
		o l AD	o l AD_CLS1
		o l IaAC	o l IaAC_CLS_2
			o l IaAC_CLS_3
	Lamp	o l RFH	o l RFH_CLS_1
		o l RD	o l RD_CLS_0
		o l DC	o l DC_CLS_0
		o r DC	o r DC_CLS_0
		g l DC	g l DC_CLS_0
		glilDC	g l DC_CLS_3
			g l DC_CLS_NoResp
		ala DC	g r DC_CLS_0
		g r DC	
Vendor A			g r DC_CLS_4
		III A D	g r DC_CLS_5
		o l AD	o l AD_CLS1
		o l ITH	o l ITH_CLS_0
		HDTT	o l ITH_CLS_1
		o l RFH	o l RFH_CLS_0
		o l RD	o l RD_CLS_0
	m1	o l DC	o l DC_CLS_0
	Plug	o r DC	o r DC_CLS_3
		g l DC	g l DC_CLS_0
		g r DC	g r DC_CLS_0
			g r DC_CLS_1
			g r DC_CLS_4
		g r DI	$g r DI\_CLS\_0$
		g r AC	g r AC_CLS_0
			g r AC_CLS_3
	Plug	o l AD	o l AD_CLS1
		o l RD	o l RD_CLS_0
		o l DC	o l DC_CLS_0
		o l SP	o l SP_CLS_0
			o l SP_CLS_1
BULL		o l UnP	o l UnP_CLS_0
		g r DC	$g r DC\_CLS\_0$
			g r DC_CLS_1
		g r ADS	g r ADS_CLS_1
			g r ADS_CLS_2
			g r ADS_CLS_3
		o l AD	o l AD_CLS1
		o l RD	o l RD_CLS_0
Xiaomi	Camera	o r DC	o r DC_CLS_0
		o l SC	o l SC_CLS_0
			o l SC_CLS_1
			o l SC_CLS_2
		o l UnC	o l UnC_CLS_0
		g r DC	g r DC_CLS_0
		01-1	g r DC_CLS_1
			g r DC_CLS_4
			PI_IDC_CDO_1

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		g r ADS	g r DC_CLS_NoResp g r ADS_CLS_0 g r ADS_CLS_1 g r ADS_CLS_2
	Plug	o l AD o l ITH	o l AD_CLS_0 o l ITH_CLS_0
		0 1 1111	o l ITH_CLS_0
		o l RFH	o l RFH_CLS_0
		o l RD	o l RD_CLS1
		o l DC	o l DC_CLS_0
		o r DC	o r DC_CLS1
		g l DC	g l DC_CLS_0
Broadlink			g l DC_CLS_5
Dioudillin			g l DC_CLS_NoResp
		g r DC	g r DC CLS 1
			g r DC_CLS_3
			$g r DC\_CLS\_NoResp$
		g r SQR	g r SQR_CLS_0
			g r SQR_CLS_1
		g r QH	g r SQR_CLS_2
			g r QH_CLS_0
			g r QH_CLS_1
		g r AC	g r QH_CLS_5
			g r AC_CLS_0 g r AC_CLS1
		o l AD	o l AD_CLS1
	t Plug	o l SP	o l SP_CLS_0
		Olilor	o l SP_CLS_1
		o l UnP	o l UnP_CLS_0
		o l RD	o l RD_CLS_0
Tuya Smart		o l DC	o l DC_CLS_0
raya Sinari		o r DC	o r DC_CLS_0
		g l DC	$g l DC\_CLS\_0$
			g l DC_CLS_1
		g r DC	$g l DC\_CLS\_NoResp$
			g r DC_CLS_0
			g r DC_CLS_1
			N/A