

# SRDP Frame Format

	Bits			Field*							
	2	2	12	16	16	16	16	16	16	<64k octets	
	FT	OP	DEV	SEQ	REG	POS	LEN	CRC16	DATA		
*: all fields little endian											
Synchronize	1	1	0	Frame Sequence Number	0	<Magic Value>	<Magic Value>	Frame CRC-16	-		
Read Register	1	2	Device Index	Frame Sequence Number	Register Index	Read Position	Read Length	Frame CRC-16	-		
Read Acknowledge	2	2	Device Index	Frame Sequence Number	Register Index	Read Position (actual)	Read Length (actual)	Frame CRC-16	Read Data		
Read Error	3	2	Device Index	Frame Sequence Number	Register Index	0	Error Length	Frame CRC-16	Error Data		
Write Register	1	3	Device Index	Frame Sequence Number	Register Index	Write Position	Write Length	Frame CRC-16	Write Data		
Write Acknowledge	2	3	Device Index	Frame Sequence Number	Register Index	Write Position (actual)	Write Length (actual)	Frame CRC-16	-		
Write Error	3	3	Device Index	Frame Sequence Number	Register Index	0	Error Length	Frame CRC-16	Error Data		
Register Change	1	4	Device Index	Frame Sequence Number	Register Index	Change Position (actual)	Change Length (actual)	Frame CRC-16	Change Data		
Change Acknowledge	2	4	Device Index	Frame Sequence Number	Register Index	0	0	Frame CRC-16	-		
Change Error	3	4	Device Index	Frame Sequence Number	Register Index	0	Error Length	Frame CRC-16	Error Data		

## Register Map Example: Arduino Demoboard

Note: Our Arduino Demoboard has the following hardware connected: 2 monochrome LEDs, 1 RGB LED, 2 Buttons, 2 Potis

Path mapped by WebMQ	Device Index	Register Index	Operations	Type Signature	Components	Description	Comments
/id	0	1	READ	QQ		The globally unique 128-Bit UUID of the adapter.	
/eds	0	2	READ	s		The URI of the electronic datasheet (EDS) of the adapter.	
/devices	0	3	READ	H*		A vector of the device indices of the devices currently connected to the adapter.	
/device/1/id	1	1	READ	QQ		The globally unique 128-Bit UUID of the device.	
/device/1/eds	1	2	READ	s		The URI of the electronic datasheet (EDS) of the device.	
/device/1/led1	1	1024	WRITE	B		LED 1 (monochrome "red"). If non-zero, turn on LED. Else off.	
/device/1/led2	1	1025	WRITE	B		LED 2 (monochrome "green"). If non-zero, turn on LED. Else off.	
/device/1/led3	1	1026	WRITE	BBB		LED 3 ("RGB"). Set RGB value.	
/device/1/button1	1	1027	READ	B		Button 1: if non-zero, button is pressed.	
/device/1/button1#watch	1	1028	READ, WRITE	B		Button 1 watch: if non-zero, button will generate events.	
/device/1/button2	1	1029	READ	B		Button 2: if non-zero, button is pressed.	
/device/1/button2#watch	1	1030	READ, WRITE	B		Button 2 watch: if non-zero, button will generate events.	
/device/1/poti1	1	1031	READ	H		Poti 1: value from 0 - MAX (see other config register)	
/device/1/poti1#max	1	1032	READ, WRITE	H		Poti 1: MAX value configuration.	
/device/1/poti1#watch	1	1033	READ, WRITE	B		Poti 1 watch: if non-zero, poti will generate events whenever poti value changes	
/device/1/poti1#updateRate	1	1034	READ, WRITE	H		Poti 1 update rate: if non-zero, poti will generate event every N ms (whether value has changed or not).	
/device/1/poti2	1	1035	READ	H		Poti 2: value from 0 - MAX (see other config register)	
/device/1/poti2#max	1	1036	READ, WRITE	H		Poti 2: MAX value configuration.	
/device/1/poti2#watch	1	1037	READ, WRITE	B		Poti 2 watch: if non-zero, poti will generate events whenever poti value changes	
/device/1/poti2#updateRate	1	1038	READ, WRITE	H		Poti 2 update rate: if non-zero, poti will generate event every N ms (whether value has changed or not).	

## Register Map Example: Adapter with GPS Sensor

Path mapped by WebMQ	Device Index	Register Index	Operations	Type Signature	Components	Description	Comments
/id	0	1	READ	QQ		The globally unique 128-Bit UUID of the adapter.	
/eds	0	2	READ	s		The URI of the electronic datasheet (EDS) of the adapter.	
/devices	0	3	READ, WATCH	H*		A vector of the device indices of the devices currently connected to the adapter.	Whenever the adapter recognizes a new device or a device is leaving (or lost), this register changes it's value.
/device/1/id	1	1	READ	QQ		The globally unique 128-Bit UUID of the device.	
/device/1/eds	1	2	READ	s		The URI of the electronic datasheet (EDS) of the device.	
/device/1/location/position	1	1024	READ, WATCH	Iffc	timestamp, longitude, latitude, mode	The current GPS position and auxiliary information.	
/device/1/location/position/maxUpdateRate	1	1025	READ, WRITE	I		Maximum update frequency of position.	