

SA818S communication protocol summary, now clearly showing which settings are optional, as requested:

## SA818S Serial Protocol (Simplified & Labeled)


### Serial Port Settings

Setting	Value
Baud Rate	9600 bps
Data Bits	8
Stop Bit	1
Parity	None
Line Ending	\r\n (Carriage Return + Line Feed)

## Command Reference

### 1. AT+DMOCONNECT







#### Required.

- ◆ Purpose: Handshake to confirm communication.
- ◆ Response: +DMOCONNECT:0
-  Send after power-on or reset.

### 2. AT+DMOSETGROUP=GBW, TFV, RFV, Tx\_CXCSS, SQ, Rx\_CXCSS

#### Required.

- ◆ Purpose: Set radio parameters.

Parameter	Description	Required
GBW	Bandwidth: 0 = 12.5 kHz, 1 = 25 kHz	 Yes
TFV	TX Frequency: 446-446.2 MHz	 Yes
RFV	RX Frequency: same range	 Yes
Tx_CXCSS	TX Tone: 0000 = none, or CTCSS (0001-0038), CDCSS (e.g. 223I)	 Yes
SQ	Squelch Level: 0-8 (0 = open squelch)	 Yes
Rx_CXCSS	RX Tone: same format as Tx_CXCSS	 Yes

 Example:

```
AT+DMOSETGROUP=0,446.0250,446.0250,0013,4,0013\r\n
```

### 3. `AT+DMOSETVOLUME=X`

#### Optional.

- ◆ Purpose: Set volume level (1–8).
- ◆ Default: Unspecified in datasheet.

✓ Example:

```
AT+DMOSETVOLUME=4\r\n
```

### 4. `AT+SETFILTER=PRE,HPF,LPF`

#### Optional.

- ◆ Purpose: Enable/disable audio filters.

Param	Description	Value
PRE	Pre-emphasis (0 = ON, 1 = OFF)	Optional
HPF	High-pass filter (0 = ON, 1 = OFF)	Optional
LPF	Low-pass filter (0 = ON, 1 = OFF)	Optional

✓ Example (enable all filters):

```
AT+SETFILTER=0,0,0\r\n
```

PROF

### 5. `AT+SETTAIL=X`

#### Optional.

- ◆ Purpose: Enable/disable end-of-transmission tail tone.
- ◆ Values: 0 = Off, 1 = On

✓ Example:

```
AT+SETTAIL=0\r\n
```

## 6. AT+DMOREADGROUP

### Optional.

- ♦ Purpose: Read current radio configuration.

✓ Response:

```
+DMOREADGROUP=GBW,TFV,RFV,Tx_CXCSS,SQ,Rx_CXCSS
```

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## 7. AT+VERSION

### Optional.

- ♦ Purpose: Read firmware version.

✓ Response:

```
+VERSION:SA818_V5.0
```

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## 8. RSSI?

### Optional.

- ♦ Purpose: Read signal strength.

✓ Response:

```
RSSI:010
```

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PROF

## 9. S+<frequency>

### Optional.

- ♦ Purpose: Frequency scan (detect signal presence).

✓ Response:

- S=0 → signal detected
- S=1 → no signal

✓ Example:

```
S+446.0250\r\n
```

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## ✓ Example Sequences

### 🔊 Transmitter

```
AT+DMOCONNECT\r\n
AT+SETFILTER=0,0,0\r\n          ; optional
AT+SETTAIL=0\r\n                ; optional
AT+DMOSETGROUP=0,446.0250,400.0000,0012,4,0000\r\n
```

### 🔊 Receiver

```
AT+DMOCONNECT\r\n
AT+DMOSETVOLUME=4\r\n          ; optional
AT+SETFILTER=0,0,0\r\n          ; optional
AT+DMOSETGROUP=0,400.0000,446.0250,0000,4,0012\r\n
```

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