

# MATeF Service Module Assembly Manual

*Checklist*

Mission	Date

Integration Engineer(s)	Supervisor(s)

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## 1 Bill of Material

Qty	Part	
1	Assembled Service Module Electronics	
	2	Small separator (D108)
	1	Large separator (D148)
	10	M3 Screws (11mm)
	2	37mm spacer (M-FM)
	2	15mm spacer (FM-FM)
	1	15mm spacer (M-FM)
	1	20mm spacer (M-FM)
	1	Assembled UPRA-MATeF Flight Computer
	1	Experimental APRS Module
	1	APRS Data Cable
	1	APRS Power Cable
1	Preformatted SD Card	
1	Backup GPS Tracker	
1	Battery Holder	
4	AA Battery	
1	GPS Antenna	
1	TOP Insulation Shell (w/ temperature sensor)	
1	Bottom Insulation Shell (w/ antenna and RBF pins)	
2	RBF pin	
1	APRS Antenna	
1	SMA Coaxial extender cable	
1roll	Kapton Tape	
1roll	Duct Tape	
3	Zip-tie	
2	Information Plaque	
1	Mission Patch	
1	Information Dog Tag	

## 2 Battery, Backup GPS and SD Card

<b>2.1</b>	Attach 2 zip-ties to D108 separator DO NOT CLOSE ZIP-TIES!	
<b>2.2</b>	Attach 2 zip-ties to D108 separator DO NOT CLOSE ZIP-TIES!	
<b>2.3</b>	Add AA batteries to battery holder	
<b>2.4</b>	Secure batteries with duct tape	
<b>2.5</b>	Attach battery holder to bottom D108 separator by zip-ties	
<b>2.6</b>	Fasten zip-ties	
<b>2.7</b>	Secure Backup GPS battery cover with duct tape	
<b>2.8</b>	Attach Backup GPS to top D108 separator by zip-ties	
<b>2.9</b>	Fasten zip-ties	
<b>2.10</b>	Insert SD Card into Flight Computer OBC SD Card slot	

### 3 Insulation capsule

#### BOTTOM Insulation Shell

<b>3.1</b>	Insert RBF pins to circuit breakers	
<b>3.2</b>	Connect UHF antenna cable (UHF ANT) to UPRA-MATeF flight computer	
<b>3.3</b>	Connect battery cable to BAT-RBF circuit breaker (BAT IN)	
<b>3.4</b>	Connect BAT-RBF circuit breaker (EPS-IN) to UPRA-MATeF flight computer	
<b>3.5</b>	Connect Backup_GPS-RBF circuit breaker to Backup_GPS Power Cable (Backup_GPS-RBF)	
<b>3.6</b>	Secure cable connectors with kapton tape	
<b>3.7</b>	Arrange cables using the cable holders on separators	
<b>3.8</b>	Place assembled internal frame to insulation shell USE MARKERS ON INSULATION!	

#### TOP Insulation Shell

<b>3.9</b>	Connect external temperature sensor cable to UPRA-MATeF flight computer	
<b>3.10</b>	Lead GPS antenna cable through TOP insulation shell opening	
<b>3.11</b>	Lead SMA Coaxial extender cable through TOP insulation shell opening	
<b>3.12</b>	Lead kite line through TOP insulation shell opening	
<b>3.13</b>	Connect GPS antenna cable to main GPS pigtail	
<b>3.14</b>	Connect SMA Coaxial extender cable to Experimental APRS (APRS ANT)	
<b>3.15</b>	Place TOP insulation shell on BOTTOM shell	

## 4 Sealing

<b>4.1</b>	Use duct tape to seal the connection between insulation shells	
<b>4.2</b>	Use duct tape diagonally to secure the insulation shells	
<b>4.3</b>	Attach information plaques to insulation	
<b>4.4</b>	Attach mission patch to insulation	
<b>4.5</b>	Attach Information Dog Tag to kite-line with zip-tie	

[illegible]