

INVERTER TYPE	All In One in Parallel	Approved for Issue -No issues found	
Firmware Version	D620-A620 - With GW GAAA0013 & BMS 13		
Test Engineer	Paul L		
Date of Testing	6-8 Oct		
Test Description	Expected Result	Pass/Fail	Notes
Basic Functions			
Inverter in ECO Mode, various loads	Inverter covers load	P	
PV Data	With PV connected, PV power, energy seen and correct	P	
Grid/Load Values	All the load and grid adds up to a sensible balance. Ie with no PV and battery ECO off, load=Grid Import within a % or 2	P	
Set Reserve > SOC	Inverter stops covering load and trickle charge from Grid to get back to the set reserve level	P	
Set Reserve < SOC (4%)	Inverter goes back to covering Load	P	
AC Charge Schedule Set Start/Stop 100% Target	Inverter starts at the correct time, charges till the end time, or target reached	P	Ensure clock is set
Repeat schedules for all 10 schedules		P	
AC Charge to Target, Set a value 2-3% above current SOC	Inverter should charge at the expected power and then stop and wait till end time reached Then return to ECO Mode	P	For Parallel, each will continue to charge till individually they are at the target.
DC Discharge Start/Stop Set a 5 Min discharge slot	Inverter outputs at full expected power for the duration, then return to ECO	P	AC output power is as expected
DC Discharge to Target	Inverter discharges to target and stops till end of time window	P	Once each reaches the target, it stops allowing the other to continue in parallel, till both at the target.
Repeat for any 3 of the 10 slots available	As above, should be same for any slot used	P	Tested Slot 1 & 2
Pause Function	Should Pause charge & discharge or both as set at the set time	P	Pause Charge Approx 60W charge seen, which is the inverter powering itself
Repeat Pause with a schedule that crosses midnight	A schedule crossing midnight should not affect the pause function	P	
Battery Power Sliders DC in Watts	The battery adjusts its power in steps	N/A	N/A for Parallel, works as expected on Single (This is a Battery register, GW has no battery)
Inverter Power Sliders AC in %	The Battery charges and discharges at an Inverter Power the same as that set. E.g. a 6kw inverter set as 50% will charge at 3000W AC, or discharge at 3000W AC. With corresponding DC power	P	
Inverter Active Power (50) Alters AC Power	Active Power (Reg50)Adjust to 10%, 15 % and some other values to ensure the Inverter obeys the set power. Important as this is used for EMS & EVC Power balancing. This is also a Safe Register	P	
Meter Data	Send 01 04 00 3C 00 3C to get meter data from meter 1	P	Gateway returns meter data
Can raw meter Info be read	Send 01 16 00 3C 00 3C to get Meter Info send 11 10 00 6F 00 02 00 00 00 00 00 Confirm battery charge & discharge read 0. Revert it with 11 10 00 6F 00 02 00 32 00 32	P	GW now returns both meter Info & Data so Portal now see Meters
Test Function Code 10 (Multi Write)		N/A	GW not support Function 10
GRID CHECKS			
Export Limit	Set Export limit to a value less than the inverter power is capable of. E.g. 1000W Repeat for various levels, inc. 0.	P	The exported power as read by the meter Pac, will NOT exceed that set and actually be at least 5% less
		P	When set 0, the actual exported power should be less than 250W
Import Limit	Set the import limit to a value that can be tested, in the lab usually very low e.g. 10A Set a charge on the inverter and then as the Import is adjusted, the charge should throttle so that the import level is NOT breached	P	Import limit default 80A. Preserves GW tripping
Meter Lost Comms	In normal ECO mode and meters set. Turn off the meter and the Inverter should stop output within 2 mins	N/A	GW meters are internal
EPS Check	Does the EPS port switch over on grid failure (Check 05 is enabled if not fast) Set Reserve level to a %%. Discharge down the battery in ECO till it meets reserve and stops. Then cut power with load attached.	P	Very fast, virtually un-noticeable LED flicker, Real home testing & Lab testing.
EPS @ Reserve Check	Inverter should have EPS operate normally Simulate normal operation	P	Fast Switchover
EPS while PV generating & charging the battery	Expect instant switch over and continue to charge battery	P	
EPS While PV generating & exporting due to full battery	Expect instant switchover and switch to 54Hz.	P	PV correctly shuts down, tested using PV6 & G4 6kw with various PV levels
Multiple Grid failure Test	Simulates a 2nd or more grid fail while the Inverter would normally be synchronising	P	Immediately returns to Island State, regardless of time grid is removed
Battery Checks			
Full Calibration Check	Does the capacity of the charge (fully flat to fully full) meet at least the capacity of the battery	P	AIO example would be >13.5 typical 16kWh
Discharge capacity User energy	Fully full, discharge using a forced export till its 4% and idle. Capacity is as expected	P	14-14.5kWh discharged while batteries >25C
Charge Capacity User Energy	From 4% flat, fully charge to 100%. Capacity should be as expected.	P	Note new logic continues to charge 99% till battery actually full. Maintaining 100% point at each opportunity
2 cycle test	Repeat the above 2 in sequence twice and note the results should be similar	P	
BMS Data	Can BMS data Be seen in portal admin pages	P	1 x BCU with 4 x BMU
New Features			
Check Registers in RAM	See separate list of registers to test, edit any of the list ones. While register 166 is Enabled Then reboot the inverter. The value read post reboot should be that set PRIOR to you changing it. Ie reverted	N/A	Gateway not support Register 166 yet. This is an Inverter register only
P = Pass F = Test Fail N/T - Not Tested N/A - Not Applicable to this model			