

# Understanding the Astratec XpressTEST

## ***What is the XpressTEST?***

The Astratec XpressTEST is a unique, self-contained fast tester for cellular telephone and PDA batteries. The fast 10-second test checks battery performance and identifies defective batteries. All battery types can be tested and the fully automatic operation means that no technical knowledge is required to operate the unit.



## ***Who are Astratec?***

Astratec are Europe's leading battery testing equipment supplier and have more than 25 years of experience of testing a wide range of battery types. Astratec supply cellular battery testers world-wide and are an approved supplier to many cellular phone manufacturers and distributors including Nokia and Vodafone.

## ***Who uses the XpressTEST?***

The XpressTEST is a third generation tester designed specifically for use in service centres, retail outlets and anywhere that a fast judgement of battery condition is required. The fast 10-second test and simple operation makes the XpressTEST ideal for use in retail stores and service points. The robust construction and fast operation makes the XpressTEST the first choice for service centres where high volumes of batteries need to be tested.

## ***How does it work?***

The XpressTEST incorporates a special testing algorithm developed by Astratec over three generations of cellular battery testers.

This unique testing method uses battery state of charge, battery impedance, battery temperature, battery reaction to loads and recovery from loads to accurately determine battery condition. Unlike some testers it does not rely on impedance measurements alone to

determine battery condition (see note below).

The test begins when the battery and the adapter are inserted. The test program reads the data held in the adapter memory and matches the battery to the appropriate data. Once confirmed by the operator, the rest of the test sequence is completed automatically.

The special test algorithm applies a sequence of load and recovery tests to the battery and combines these results with measurements of charge level, impedance and other data read from the adapter's data base to determine battery condition and estimated capacity in just 10 seconds!

The test requires no technical input, is fully automatic and is ideal for use in service centres and retail outlets. At the end of the test a clear, Good Battery / Replace Battery result is displayed.

*IMPORTANT NOTE: Using impedance only to determine battery condition*

Battery Impedance is, under the right conditions a useful contributing indicator of battery condition but the value measured needs to be qualified against typical values for each particular battery type. Variations in cell interconnections and safety circuit configuration can mean that a reading of say 120mohms may be normal for one battery type yet indicates a potential defective battery for another type. Many other factors need to be considered to make impedance measurements useful and as a single measurement it is a poor indicator of battery performance.

The XpresTEST adapters contain data that relates to the expected impedance performance of the battery being tested. The measured results are then used as a part of the overall judgment of condition.

### ***How accurate and how repeatable is the XpresTEST?***

The unique test algorithm, developed specifically for the XpresTEST is very accurate. Results from the 10 second test are typically within 4% or better of the readings that will be obtained if a full charge /discharge test (which might take 4 or 5 hours to complete!) is performed. Test repeatability is very important and repeat tests are normally within a few percent of the original test result.

### ***How does it connect to different batteries?***



*PT4M/ Battery adapter*

A range of simple "plug in" adapters – unique to the XpresTEST connects the battery to the XpresTEST. The battery snaps or drops into the adapter and is ready to test. An integral memory chip contains all of the test data appropriate to the batteries being tested. Some adapters are specific to a particular battery, but others can accommodate as many as 10 different battery types.

## ***Are adapters available for all phones?***

Astratec have a comprehensive list of adapters covering most phone battery types. New adapters are being added every day and a special service is available to make the adapter you want if it is not currently available.

## ***How many batteries can I test per day with the XpressTEST?***

The XpressTEST uses a unique 10-second test which checks battery charge level, impedance and estimates condition. The simple plug in adapters and automatic software means that each test, including fitting the battery takes around 20-25 seconds.

For a typical 8-hour day, the XpressTEST can test around 1400 batteries?

## ***Do I need to charge the battery before I test it?***

No, the XpressTEST will measure the charge level of the battery and automatically adjust it's test process to take this into account. If the battery is less than 10% charged, the test sequence will charge the battery for 60 seconds before testing of the battery's performance begins.

## ***What do we do when new phones are launched with different batteries?***

The XpressTEST is designed to be easily updated. Improvements in the testing software can be incorporated by simply changing two low cost chips. Changes in battery capacities can be accommodated by replacing the plug in chip mounted on each adapter card.

Astratec have a close relationship with the major cellular manufacturers and retailers and often see new batteries before the appropriate phone model is even released. This means that our battery adapters are available for most new phones, as or shortly after they are released.

Our unique adapter construction means that we do not have the burden of high cost moulds and jigs and unlike some suppliers we can make 1 off adapters at sensible prices.

If a battery you need to test is not shown on our list, contact us with a sample battery and we will do our best to help.

## ***Can we print a report or download the test results to a PC?***

Yes, the XpressTEST PC version is configured to do both. The standard setup outputs all reports to an EXCEL spreadsheet and only prints a paper report for batteries that fail the test (thus saving unnecessary paper reports). If required a printout of every test result can be configured.

TEST REF	DATE	TIME	Rpt No	MAKE	BAT Ref	CHEM	VOLTS	RATING	CAP %	IMPED	ID RES	TEMP	STATUS	TESTED BY
D3459	17/12/03	11:21:31	21	NOKIA	BLD-3	Li-ion	3.6	720	64	150	68000	20	CHANGE	Daniel
D3459	17/12/03	10:59:34	20	NOKIA	BLC-2	Li-ion	3.6	950	91	100	82000	22	GOOD	Daniel
D3459	17/12/03	10:55:38	19	SAMSUNG	BST0917SE	Li-ion	3.7	700	100	120	5100	15	GOOD	Daniel
A3458	17/12/03	10:34:42	18	MOTOROLA	SNN5705A	Li-ion	3.6	850	103	130	0	18	GOOD	Alan
A3457	17/12/03	10:28:46	17	NOKIA	BLN-4	Li-ion	3.6	1800	98	120	130000	18	GOOD	Alan
D3456	16/12/03	16:28:19	16	NOKIA	BLD-3	Li-ion	3.6	780	64	150	75000	20	CHANGE	Daniel
D3456	16/12/03	16:22:23	15	MOTOROLA	AANN4010A	Li-ion	3.6	600	91	100	0	22	GOOD	Daniel

## ***Does the XpressTEST perform any other battery tests ?***

Yes, the XpressTEST provides a choice of 4 useful battery test/maintenance features:

1. 10 second battery test and capacity estimate
2. 3 cycle battery condition test (full charge /discharge test)
3. Automatic battery recharge
4. Battery impedance test

## ***Are custom versions of the XpressTEST available?***

The XpressTEST is a very flexible product and customised versions are available for volume applications. Typically customisations include print reports with customers name included and specific battery selection listings.

## ***What service/maintenance does the XpressTEST require?***

For normal use we recommend the XpressTEST be checked and calibrated 24 months after purchase and every 12 months there after.

For heavy users the XpressTEST should be checked and calibrated every 12 months. There is no need for monthly calibration checks.

Your local distributor may be able to provide this recalibration service

## ***Need more information on the XpressTEST?***

Contact our sales office at the address below and we will put you in touch with your nearest distributor.

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