

SmartClass ADSL *Copper Testing*



About SmartClass ADSL Copper Testing

The SmartClass Tester's copper features allow quick turn-up and basic troubleshooting of the copper local loop.

The copper features include two quick tests:

- **CABLE CHECK**, auto test
- **SNAPSHOT**

You can also perform specific measurements for the following tests (called **MEASURE**):

- AC volts
- DC volts
- Resistance
- Leakage
- Distance to short
- Opens (distance) and capacitance
- DC current
- Balance
- Load coil detect

Extreme Ease of Use

```
MAIN MENU ▾  
1. MODEM TEST  
2. DSL QUICK  
3. COPPER TEST  
4. SYSTEM SETUP
```

OK

```
COPPER TEST ▾  
CABLE CHECK  
2. SNAPSHOT  
3. MEASURE  
4. SETUP
```

OK



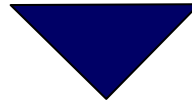
```
DC VOLTS ▾  
+0.0 V (TR)  
LOW:-10.0 HIGH:+10.0
```

	ACT	LOW	HIG
>1.TR	+0.0	+0.0	+0.0
2.TG	-	-	-
3.RG	+10.0	-5.2	+10.7

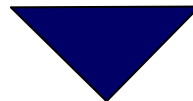
Extreme Ease of Use



DC VOLTS			
+0.0 V (TR)			
LOW:-10.0		HIGH:+10.0	
	ACT	LOW	HIG
>1.TR	+0.0	+0.0	+0.0
2.TG	-	-	-
3.RG	+10.0	-5.2	+10.7



AC VOLTS			
0.1 V(AB)			
TERMINATION(#): 100KOhm			
	ACT	LOW	HIG
>1.AB	0.1	0.1	0.1
2.AE	-	-	-
3.BE	-	-	-



RESISTANCE			
>100.0 MΩ(TR)			
Distance to Short N/A			
	ACT	LOW	HIG
>1.TR	100.0M	100.0M	100.0M
2.TG	-	-	-
3.RG	-	-	-



Connecting the SmartClass ADSL to the dry Copper line



- **Connect the 3 test leads to the mini-Banana connectors on the top:**
 - **Red** to A
 - **Black** to B
 - **Green** to Earth



300 V MAX is a peak value

**Never connect and test on the
230 VAC mains power**

SmartClass ADSL

Configuring Tests



TDC krav - Kobber målinger

Måleværdi	Målt på linien	Norm på Produktet	Bemærkning
Volt DC/AC	A ► B= A ► J= B ► J=	Max. 2 Volt DC Max. 0,8 Volt AC	
Isolation (MOhm)	A ► B= A ► J= B ► J=	Min. 1 M-ohm.	
Sløjfemodstand	A ► B=	PSTN/Rå Kobber: Max. 1400 Ohm ISDN: Max. 1300 Ohm	Skal <u>altid</u> måles ved Rå kobber.
DC balance	Ohmsk forskel på A og B tråd (I forhold til reference tråd)	Afvigelse, max. 2%	Målingen kan bl.a. afsløre dårlige samlinger.
Kapacitiv Balance (nF)	A ► J= B ► J=	Afvigelse, max. 5%	Kan måles med Isokap. (Kapacitive balancefejl afsløres også ved måling af stresstest)
Jordbalance (Stresstest)	(Stress=)	> 60dB (Stresstest <30dBnc) Alle delstrækninger skal måles	Skal måles ved støjfejl, bitfejl eller for lav margin up. Hvis skema "XDSL måleværdier" er overholdt og margin er < 6dB skal Jordbalancen måles. Jordbalancen kan måles med Sidekick, SmartClass eller 3M 965

(evt. af gul mand)

Specifying Test Configuration Settings – SETUP

COPPER TEST

1. CABLE CHECK

2. SNAPSHOT

3. MEASURE

4. SETUP

5. CALIBRATION

SETUP

1. DEFAULT PAIR	RE
2. CABLE TYPE	CUSTOM
3. CABLE GAUGE	0.40 mm
4. TEMPERATURE	10 C
5. SYSTEM UNITS	METRIC
6. TERMINATION	100KOhm
7. LIMITS	CUSTOM
8. CORDCOMP	<SET>

LIMITS

1. AC VOLTS	1 / 2 V
2. DC VOLTS	2 / 3 V
3. RESISTANCE	1.2 / 1.0 MΩ
4. OPEN	0.0 m
5. BALANCE	60.0 dB

CORDCOMP

SHORT ALL LEADS

'#' - Compensate

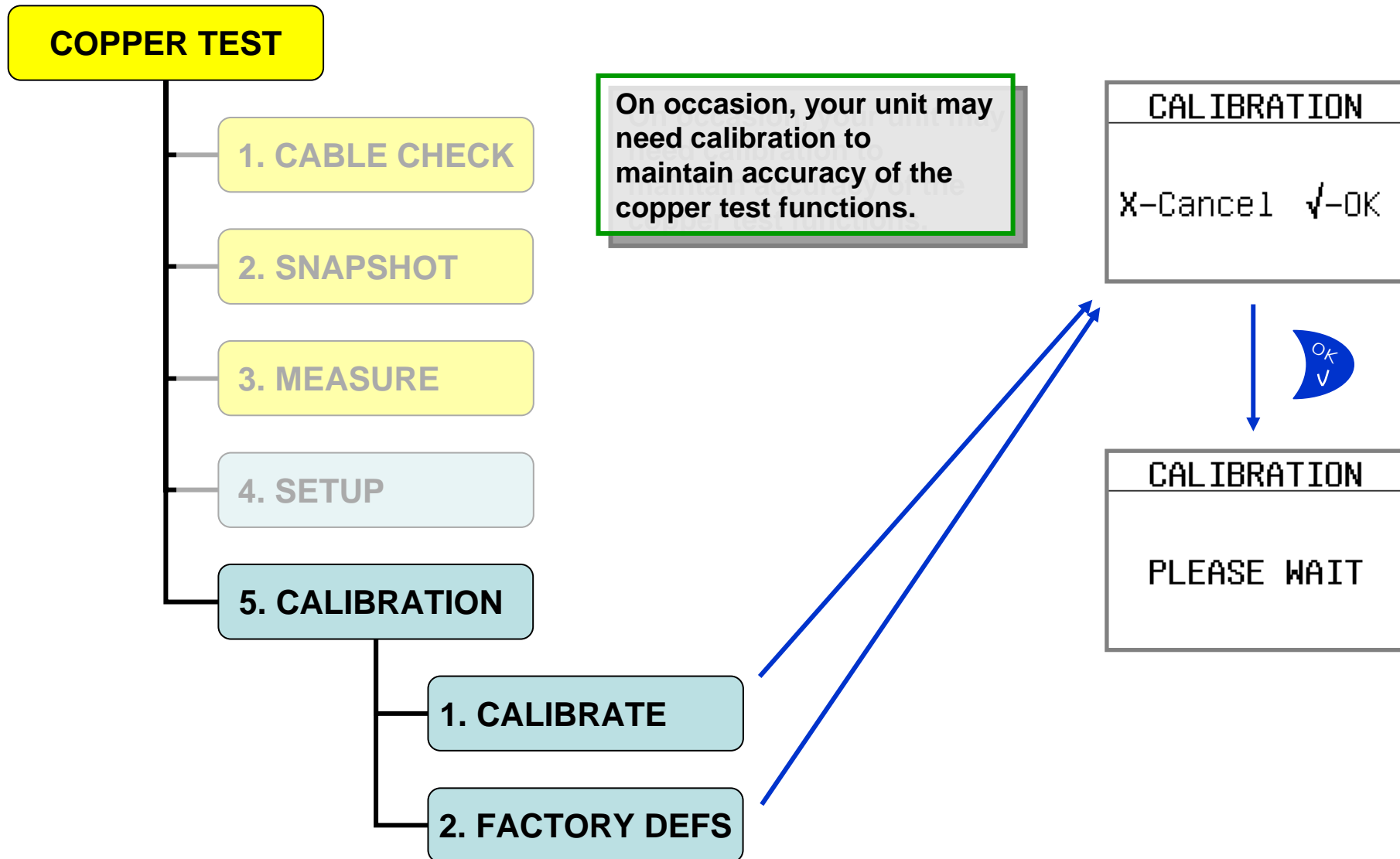
CORDCOMP

OPEN ALL LEADS

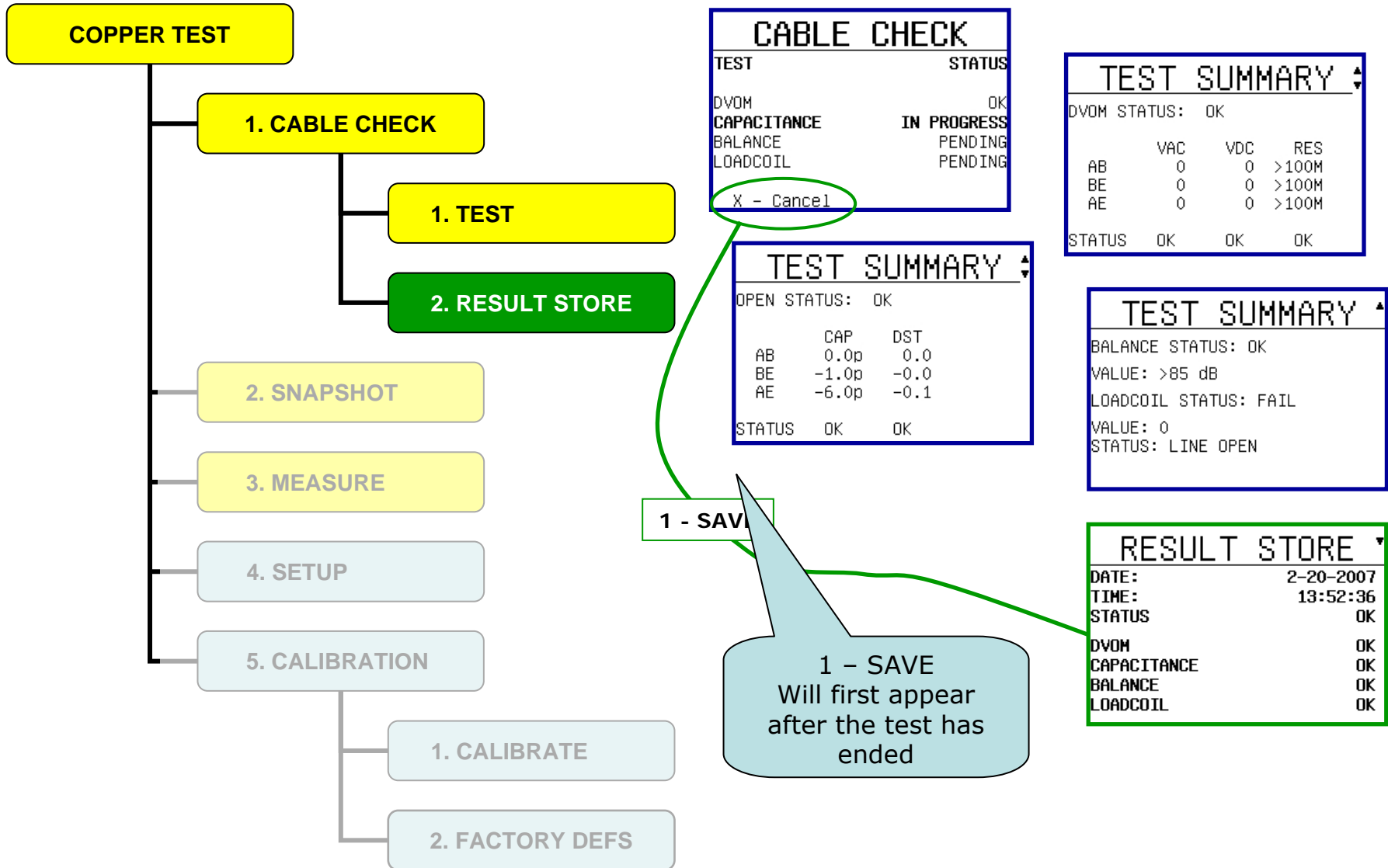
'#' - Compensate

For greatest accuracy, JDSU also recommends that you perform a cord compensation to remove the effects of the test leads from the test measurements. There are two scenarios for compensation: all leads open and all leads shorted.

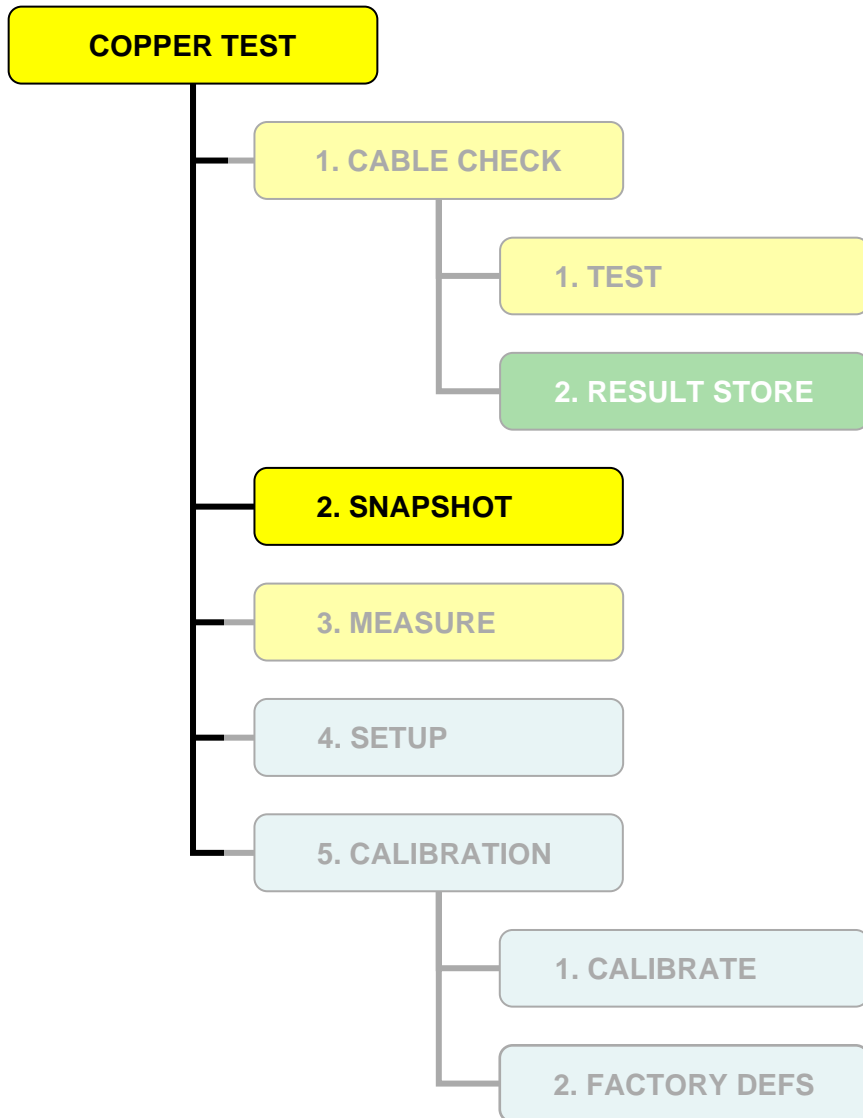
Calibration and Factory Defaults



CABLE CHECK



SNAPSHOT



SNAPSHOT			
	AB	BE	AE
AC	0	0	0
DC	0	0	0
RES	>100M	>100M	>100M
#-Restart			

The **SNAPSHOT** feature performs a quick test of

- AC volts
 - DC volts, and
 - Resistance
- across all pairs

MEASURE

COPPER TEST

1. CABLE CHECK

2. SNAPSHOT

3. MEASURE

4. SETUP

5. CALIBRATION

AC VOLTS

DC VOLTS

0 V(BE)

TERMINATION(*): 100KOhm

	ACT	LOW	HIGH
1.AB	0	0	0
>2.BE	0	0	0
3.AE	0	0	0

#-Clear

RESISTANCE

594.2 Ω(AB)

* DISTANCE SHORT

	ACT	LOW	HIGH
>1.AB	594.2	0.0	>100M
2.BE	>100M	>100M	>100M
3.AE	>100M	593.9	>100M

#-Clear

LEAKAGE

594.6 Ω

	ACT	LOW	HIGH
1.AB	231.7K	231.7K	>100M
>2.BE	>100M	>100M	>100M
>3.AE	594.6	594.6	>100M

#-Clear

"* distance to ground possible if across A"

DISTANCE SHORT

2164 m

CABLE GAUGE: 0.40 mm

TEMPERATURE: 10 C

RESISTANCE: 594.2 Ohms

OPEN

0.1 m(AE)

CAPACITANCE: 4.0 pF

1.AB	1.5 m /	79.0 pF
2.BE	0.2 m /	11.0 pF
>3.AE	0.1 m /	4.0 pF

CABLE: CUSTOM

BALANCE

>85 db

	ACT	LOW	HIGH
>1.AB	>85	>85	>85

#-Clear

DC CURRENT

-40 mA(AB)

	ACT	LOW	HIGH
>1.AB	-40	-40	0

#-Clear

LOADCOIL

-

STATUS: LINE OPEN

#-Restart