



ufdf - universal adapter data format

The ufdf format can be automatically adopted by ATX for production and testing of the test adapter.

Since the use of test adapters special wiring plays an increasingly important role, for many users there arises for the description of this special wiring, the desire for a uniform data format. The present ufdf format is a format developed for this purpose by ATX, which was created in collaboration with customers.

Basic concept

For each wiring, a separate line is provided in the data format.

The format description is based on the approach that all the wiring in the test adapter represents connections between different modules or those within a module. Modules are additional modules such as relays, load resistors, additional plugs, but also needle field (s) and interface (interface) as well as e.g. power islands. For each wiring, a separate line is provided in the data format. Connected multiple wirings (e.g. power wiring or adapter coding) can also be described using powerful group commands.

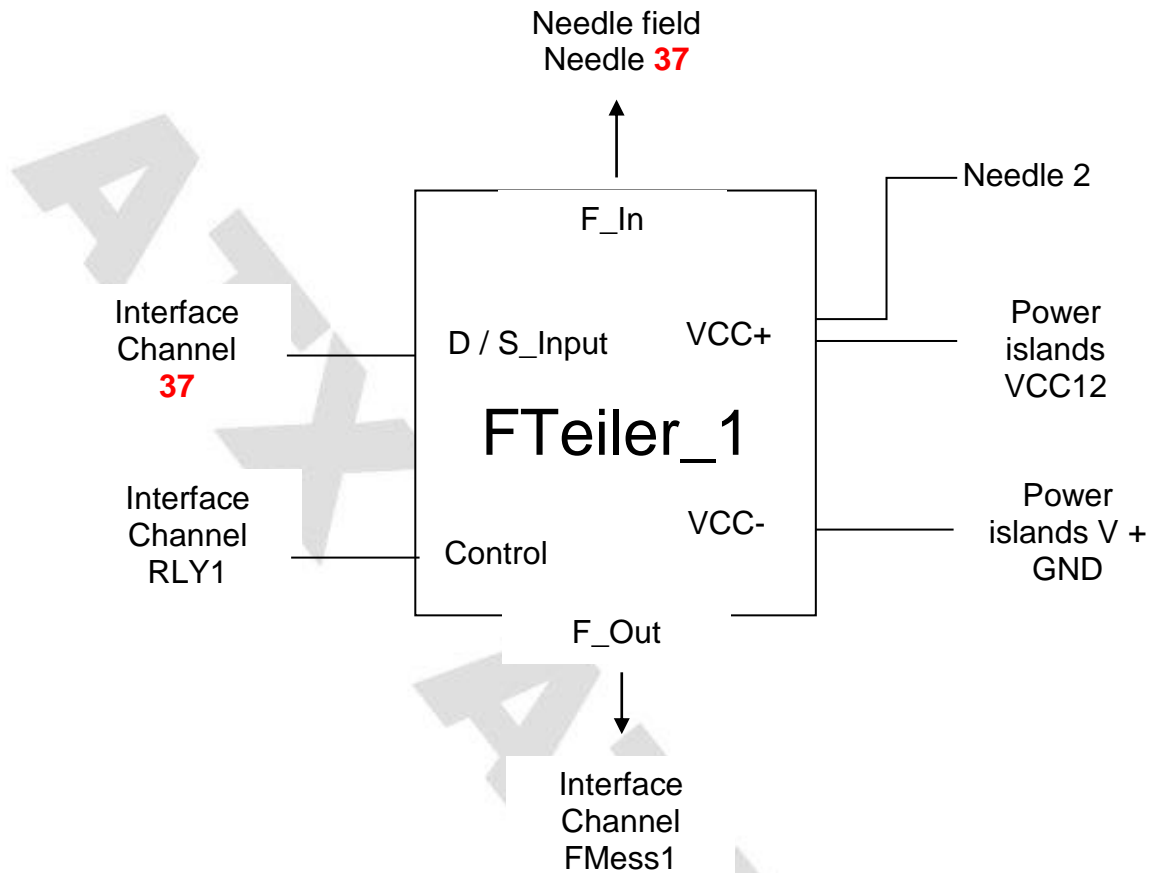
The implementation of the basic principle is clear from the schematic diagrams and the associated ufdf description:

Beginning of wiring (Interface / module)	PIN / channel	Wire to	wiring end (interface / module)	PIN channel / channel
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Examples

From the next page

Example 1, for a simple additional circuit with frequency divider and shutdown of the standard wiring.



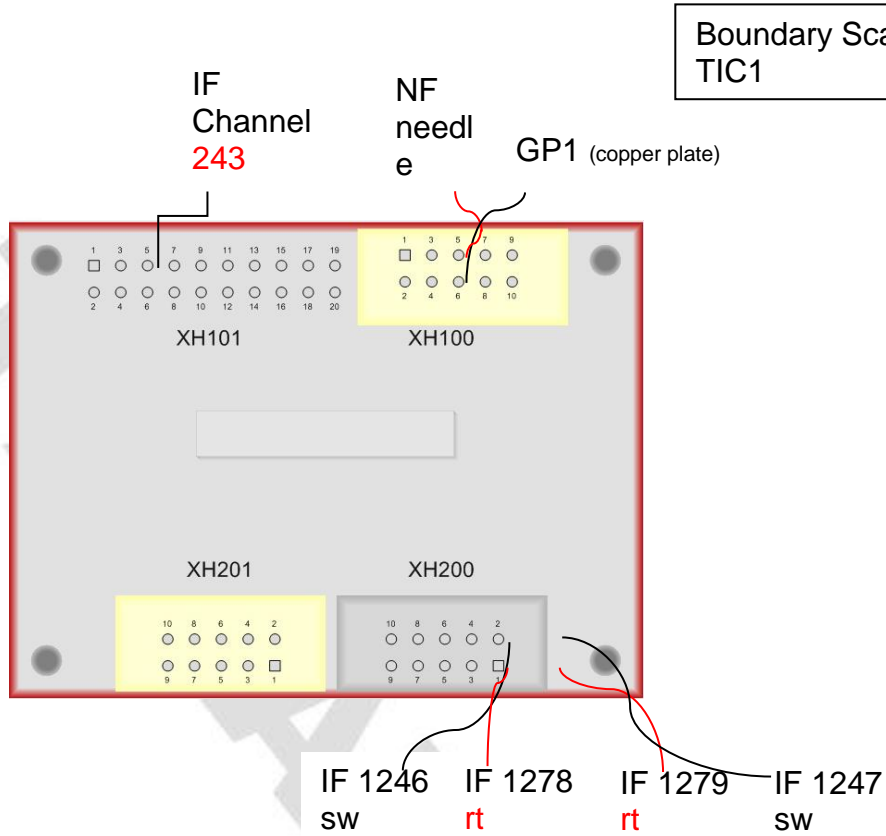
The direct connection interface to the needle 37 from the standard wiring is indicated by "ABSCH" in the column, additional information for the adapter construction, then switched off in the wiring program.

Beispiel udfd-Format: optionale Angaben:

von_Modul	von_Pin	nach_Modul	nach_Pin	Seite	Farbe	Drahtstaerke	twst	Art	Zusatzangabe f. Adapterbau	Kommentar intern
IF	RLY1	FTeiler_1	Strg	b		AWG30		WW		
IF	37	FTeiler_1	D/S_Input	b		AWG30		WW		
FTeiler_1	F_in	NF	37	b		AWG30		WW	ABSCH	
FTeiler_1	VCC+	Powerinseln	VCC12	b				WW		
NF	2	Powerinseln	VCC12	b				WW		
FTeiler_1	VCC-	Powerinseln	V+GND	b				WW		
IF	FMess1	FTeiler_1	F_Out	b		AWG30		WW		

The udfd description of the circuit diagram starts from the bottom left, the pin RLY1 of the module IF (Interface) is connected to the pin Ctrl of the frequency divider FTeiler 1. The wiring endpoints are defined by the module and pin specifications. Through additional information ABSCH there is a direct connection between NF in the present example, predetermined by the in-circuit wiring .37 and IF.37 automatically removed from the ICT wiring.

Example 2, for additional wiring with BoundaryScan, twisted pair and switching off the standard wiring



The TwistedPair wirings are entered in the twist column as pairs with imagined #. "# X-1" = red wire, "# x-2" = black wire.

The direct connection interface to the needle 243 from the standard wiring is indicated by "ABSCH" in the column, additional information for the adapter construction, then switched off in the wiring program.

Beispiel udf-Format:

Beispiel udf-Format:								optionale Angaben:		
von_Modul	von_Pin	nach_Modul	nach_Pin	Seite	Farbe	Drahtstaerke	twst	Art	Zusatzangabe f. Adapterbau	Kommentar intern
TIC1	XH200_1	IF	1279	b		AWG30	#2-1	WW	verdrillt mit TCK-_TIC1_X200_2	
TIC1	XH200_2	IF	1247	b		AWG30	#2-2	WW	verdrillt mit TCK+_TIC1_X200_1	
TIC1	XH200_5	IF	1278	b		AWG30	#3-1	WW	verdrillt mit TDI-_TIC1_X200_6	
TIC1	XH200_6	IF	1246	b		AWG30	#3-2	WW	verdrillt mit TDI+_TIC1_X200_5	
TIC1	XH100_1	NF	243	b		AWG30	#8-1	WW	ABSCH	
TIC1	XH100_2	GP1	1	b			#8-2	WW	Kupferplatte	
IF	243	TIC1	XH101_1	b		AWG30		WW		

File Format

The file can be saved as .xlsx, .xls or .xlsm.

The udf file is created in Excel, the file name ends with "udf".

Modul_Namen

Each module receives its own module name.

All modules receive a module name, which is defined in advance in sheet 1 (modules) of the Excel sheet together with additional information. (e.g. R1). See appendix 1

Contacting several DUTs

When testing several samples, they are treated separately in the udf (NF, NF2, NF3, etc. NF = Needle field).

A needle list can also be integrated separately as sheet 3_(needle field) directly into the udf file.

If there is a separate coordinate list (e.g. for ICT programs), the xy coordinates and the specification bot or top are further extracted from this coordinate list.

Double-sided contacting

Wirings from bot to top that run over a transfer are automatically generated from the needle list.

Additional handover pins can be described in udf (Appendix 2).

Twisted pair.

Twisted pair wiring is entered with either # or # -1 and # -2.

For # alone, the GND line is connected to the copper plate or GND island respectively. # -1 and # -2 describe twisted lines and are described in two lines. Further details are explained in Annex 2.

Comment column

Comments can be added in the last two columns.

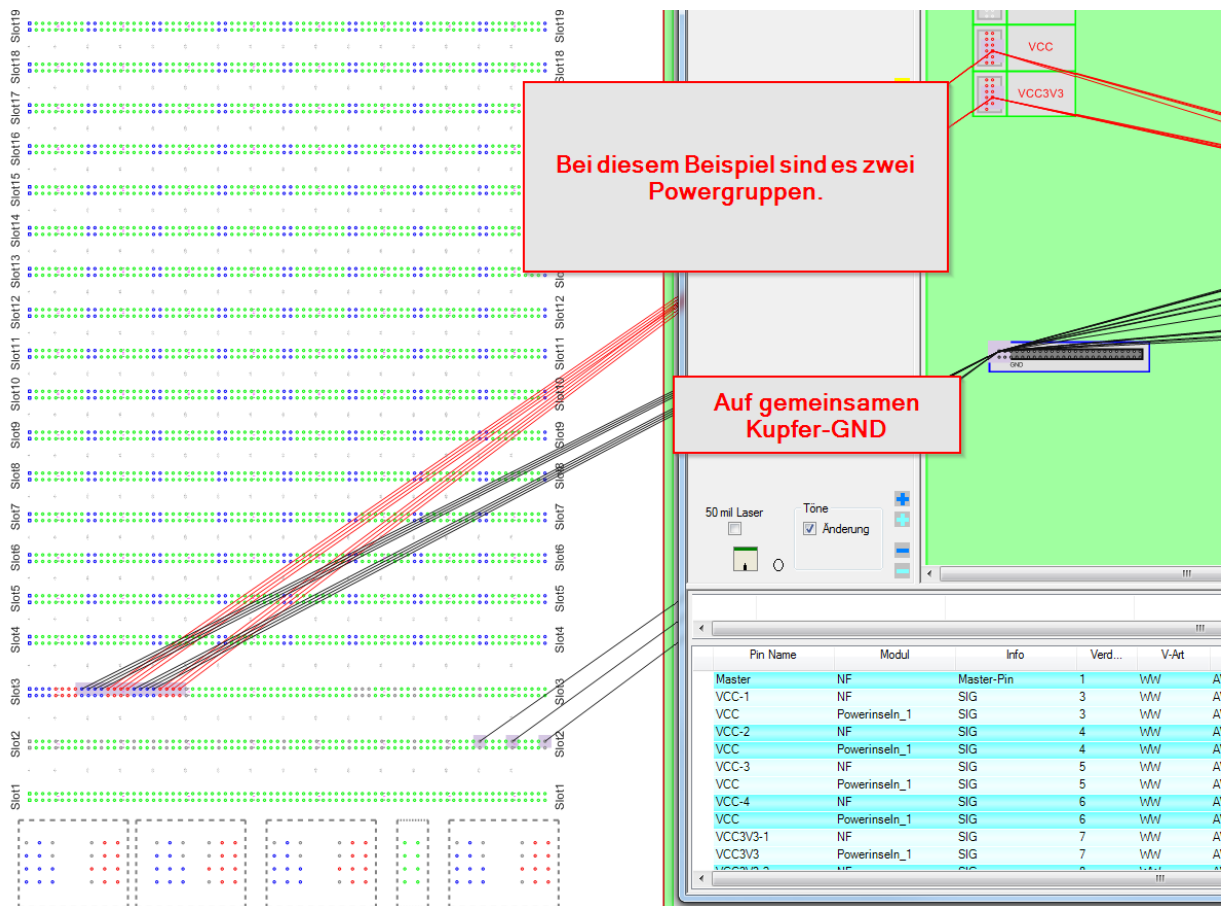
(e.g. network name as internal comment). Information in the field "Additional information about the adapter" is taken into account manually, information in the field "Comment internal" is not included in the adapter construction.

Powerpin groups

Power supplies and GNDs can be grouped together.

As an alternative to a detailed listing, the specification of the wiring between power islands and the interface can also be displayed compactly, it is optionally possible to display all the pins of a power supply connection as a group, whereby the name is always based directly on the name of the interface description. PS1-HI_Gruppe means that each interface Pin of the power supply is used to power the power island.

von_Modul	von_Pin	nach_Modul	nach_Pin	Seite	Farbe	Drahtstaerke	twst	Art	Zusatzangabe f. Adapterbau	Kommentar intern
IF	PS1-HI_Gruppe	Powerinseln	VCC		rt	AWG26		WW		
IF	PS1-HIS	Powerinseln	VCC		rt	AWG26		WW		Sense-Leitung
IF	PS2-HI_Gruppe	Powerinseln	VCC3V3		rt	AWG26		WW		
IF	PS2-HIS	Powerinseln	VCC3V3		rt	AWG26		WW		Sense-Leitung
IF	PS1-LO_Gruppe	GND	1		sw	AWG26		WW	GND = Kupferplatte	
IF	PS1-LOS	GND	1		sw	AWG26		WW	GND = Kupferplatte	
IF	PS2-LO_Gruppe	GND	1		sw	AWG26		WW	GND = Kupferplatte	
IF	PS2-LOS	GND	1		sw	AWG26		WW	GND = Kupferplatte	

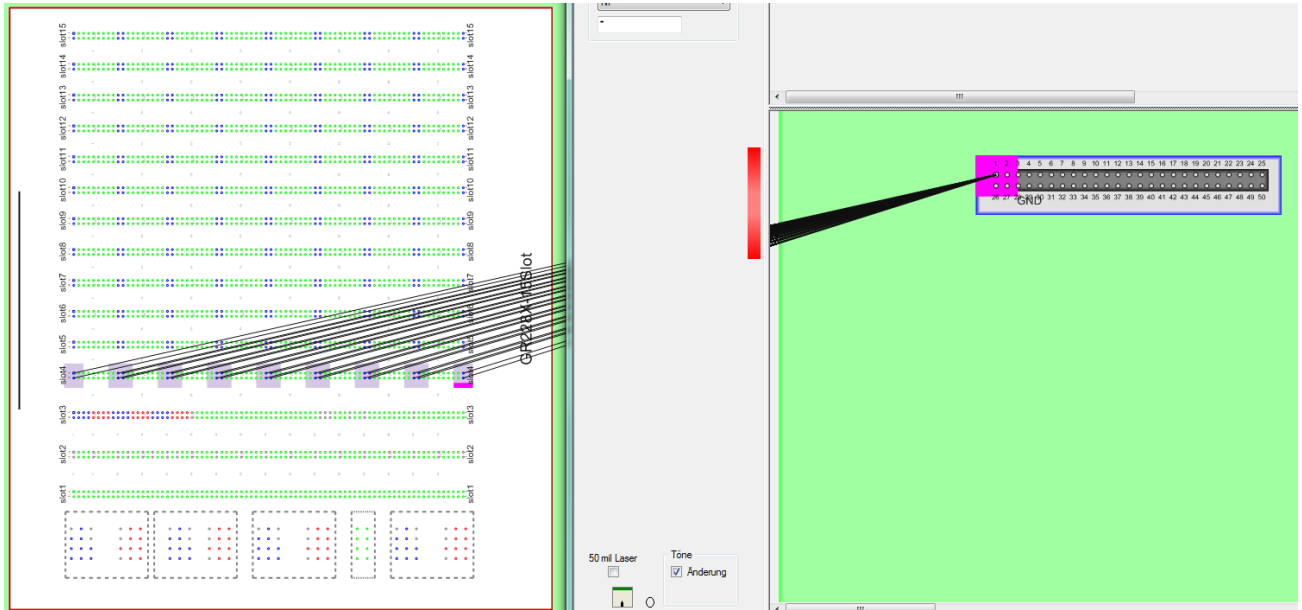


GND wiring

Copper GND

Likewise, the extensive number of GND wires from the interface to the copper plate in some test systems can be described by a group term (e.g. GND_Group). Here, the area that is currently required is automatically selected.

von_Modul	von_Pin	nach_Modul	nach_Pin	Seite	Farbe	Drahtstaerke	twst	Art	Zusatzangabe f. Adapterbau	Kommentar
GND_D_Insel	1	IF	GND_Group	b		AWG26		WW	GND=Kupferplatte	



Adapter coding

The corresponding group concept is: FixtureID = nnnn.

If the coding key of the IF (Interface) is available. We do not need any further information apart from the coding digit.

von_Modul	von_Pin	nach_Modul	nach_Pin	Seite	Farbe	Drahtstaerke	twst	Art	Zusatzangabe f. Adapterbau	Kommentar intern
IF	FixtureID	IF		b	sw			WW	ID=245	

Appendix 1: Example of a complete ufd file:



File Name



Name of the table sheets

Sheet **modules**:

Modul_Name	Typ	top/bot	Kommentar
IF	GR228X-15slot	bot	
NF	Nadelfeld	bot	
R1	Widerstand 1K / 5 Watt		kein Kühlkörper erforderlich
Relais1	ATX-Relais_2xUM		

*Anmerkung: Inseln und die Kupferplatte müssen nicht als Module definiert werden. Module ohne top/bot Angabe werden automatisch so zugeordnet, dass eine minimale Anzahl von Übergabeverbindungen erreicht wird.

Sheet **wiring**:

	A	B	C	D	E	F	G	H	I	J	K
	von_Modul	von_Pin	nach_Modul	nach_Pin	Seite	Farbe	Drahtstaerke	twst	Art	Zusatzangabe f. Adapterbau	Kommentar
1	GND_D_Insel	1	IF	GND_Gruppe	b		AWG26		WW	GND=Kupferplatte	
2	IF	PS1-HI_Gruppe	Powerinseln	VCC5	b		AWG26		WW		
3	IF	PS1-HIS	Powerinseln	VCC5	b		AWG26		WW		
4	IF	PS1-LO_Gruppe	Powerinseln	GND_D	b		AWG26		WW		
5	IF	PS1-LOS	Powerinseln	GND_D	b		AWG26		WW		
6	IF	PS2-HI_Gruppe	Powerinseln	VCC12	b		AWG26		WW		
7	IF	PS1-HIS	Powerinseln	VCC12	b		AWG26		WW		
8	IF	PS2-LO_Gruppe	Powerinseln	GND_12V	b		AWG26		WW		
9	IF	PS2-LOS	Powerinseln	GND_12V	b		AWG26		WW		
10	R1	1	NF	345	b		1.5		Loet		
11	R1	2	Powerinseln	VCC5	b		1.5		Loet		
12	IF	340	Relais1	COM1	b		AWG30		# WW		
13	Relais1	NC1	NF	340	b		AWG30		# WW	ABSCH	
14	Relais1	VCC	Powerinseln	VCC12	b		AWG26		WW		
15	Relais1	GND	IF	RLY1	b		AWG30		WW		
16	IF	V+GND_3A60	Powerinseln	GND_12V	b		AWG26		WW		
17	IF	FixtureID	IF	ID=245	b	bl	AWG30		WW	ID=245	

Page Needle **Field**:

NF	Pin	x	y	top/bot
NF	101	32.45	17.34	bot
NF	102	32.45	18.45	bot
NF	103	45.67	22.12	top
NF2	198	134.12	23.67	bot
NF2	199	156.33	25.89	top

