

# Tech Tip: Data Transmission with OTT netDL and FTP Server



## FTP transmission with OTT netDL



This tech tipp explains how to set up an automatic data transmission from OTT netDL to an FTP server via a mobile Internet connection (GPRS). Please mind that encryption is not possible (sFTP or FTPs are not supported by OTT netDL). We require an OTT netDL 500 or 1000 with internal modem (variant B... or C...), inserted SIM card (contact surface downwards; PIN known or unlocked) and connected **GSM antenna**. In addition, you need the login information of an **FTP server** as well as the **APN** (Access Point Name) of your mobile network operator. Sensors are optional.

	File Device netDL 1000 Configurations Voice announcer	A
The 4 areas highlighted in colour define the datatransmission. On the following pages you'll see how the configuration is done manually (pages 3-6) or via wizards (pages 7- 13).	Channel Meas. cycle Analog sensors Digital sensors Serial sensor New Channel	s The i opera the corread e device Name Timezone (S Activate Last configure
	Servers [1]     Incoming CSD calls [internal Modem]	Last parame Version MAC addres

Action management (0)

🚈 OTT Data Logger Operating Program - netDL 1000

	Channel Meas. cycle Analog sensors Digital sensors Serial sensor	🚾 The interfaces a	appear in the	
	New Channel	operating progra	am as soon	as
	netDL 1000: FTP_DEMO_1 / Tech Tipp FTP Transmission	💀 the configuratio	n has been	
	- Interfaces (4) - F7 +F8	read in and dep	end on the	
	[2] COM2 (Q-R)	device type use	d.	
	[3] ETH (F) [5] COM3 (A-B)	Name	Tech Tipp FTP T	ransmission
	Devices (1)	Timezone (Station)	= UTC/GMT +01:	00 ~
Y	Connections IP (1)	🗹 Activate European DST		
	[1] GPRS Connection [internal Modem]	Last configuration download	22.04.2020 12:08:	29
	El Servers [1]	Last parameter download	22.04.2020 12:08:	29
	Transmissions (1)	Version		
	[1] GPRS FTP OTT-ML [GPRS Connection] [15min]	MAC address		Find a sample configuration in the
	- Maintenance windows (1) - [1] Incoming CSD calls [internal Modem]	Address no. / PIN	0000	blog post
	External IP Devices (0) Time synchronisation	Password		

0.0

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## FTP transmission with OTT netDL



For manual configuration, select the desired section, click "New" and enter the required information (see following pages).



## IP Communication – OTT netDL



### Transmission to Server via connection with device connected to interface

### Interfaces: up to 3x COM and 1x ETHernet, depending on datalogger

■ COM3 is created (if not already displayed) by adding an internal modem (which needs to exist physically too <sup>(2)</sup>).

	Devices				
Devience	General GSM - SMS			Increase the set to a set DINL of	
Devices:	Name	GenPro		your SIM-card	
	Index	1 😫			
	Туре	GSM/GPRS/3G Modem internal 🛛 🗸 🗸			
	Interface	LAN device GSM/GPRS/3G/4G Modem external GSM/GPRS/3G Modem internal	aral GSM - SMS		
	Activation control via switching output at terminal blo	o Standard Hayes Modem - unspecific -	service center - e-mail phone no.		
	Lag time [s]	10 童	service center - FAX no. prefix		
	Dial no. (Station)		PIN	Respect the correct PIN! 1234	
Connection:	Connections IP General PPP		Connections IP		
	Name	GPRS Connection			
	Index	1 1	Provider name	Germany D2 Vodafone	~
	Device	internal Modem 🗸 🗸	Access Point Name (APN)	web, vodafone, de	
(	Always stay connected		User name		
	transm	ission intervals!	Password		
			Carrier access code GPRS / Land	ne ×99***1#	



## IP transmission and devices

Server:

General       FTP       FTP Path         Name       OTT FTP         Index       2         Type       FTP         Servers       FTP         General       FTP         Server address / Port       your.ftp.server.com         User name       User         Password       xxxx         Active FTP       Timeout (sec.)	
Name       OTT FTP         Index       2         Type       FTP         Type       FTP         Servers	
Servers General FTP FTP Path Server address / Port your.ftp.server.com 21 User Password Active FTP Timeout (sec.) 20	2
Server address / Port your.ftp.server.com 21 User name Password Active FTP Timeout (sec.) 20	
Active FTP	
	20 韋

If the path does not exist on the server or cannot be changed, the data is stored in the root directory of that FTP user.

ne	Servers		 	 	 	
	General FTP	FTP Path				
	Data path		training			

## IP transmission and server



		- Transmissions	
Tran	smission	General Data transmission OTT-ML format	
an Tr	ansmission X	Name	GPRS FTP OTT-ML
Tran Tran Tran Tran Tran	nsmission Internet Insmission Satellite Insmission SMS / X.31 / Line Insmission PLC (S7) Insmission UNIGATE	Connection IP Redundant connection Retries Server 1	GPRS Connection
SeeTech-Tipp		Retries	1 🚖
about alerts	Transmissions		
	Cycle Standard Cycle Limit Level 1 5min ~ 2 5min ~ 3 Transmission start time offset	15min ✓ 5min ✓ 4 5min ✓ 5 5min ✓ 00:00:00 🖨	Transmissions General Data transmission OTT-ML format Station ✓ Status infos
	Data format	OTT-ML format	Event log messages
	Compression	····· ·· ·	
	UUID	~	Event log messages
	Channel(s) transmitted	0010 / Water Level SE200	



### Support by Wizard 1



,∕an Wiz	zard to setup an IP connection netDL 1000			_	$\times$
;	You are here: ▶ Connection IP				
I	How to get access to the internet?				
(	● Via dial-up to a mobile network (GPRS)				
(	$\bigcirc$ Via DSL router or a LAN connection				
(	⊖ Via dial-up to an analog / digital telephon	e network (PPP)			
	Name (Connection)*	GPRS Connection			
	Rack	Nevt	0	Canco	
_	Back	INEX(	<u> </u>	Lance	



### Setup IP connection and device via the Wizard 1

Select which modem shall be used; e. g. internal modem

		> ection IP > Device / COM? - Settings > GSM/GPRS/3G Mode	m internal - Setting:
GPRS: Which device should be used for a	communication?	GSM/GPRS module internal: Enter a name for the device	
● GSM/GPRS/3G Modem internal		Name (Device)*	
⊖ GSM/GPRS/3G/4G Modem external COM1			
GSM/GPRS/3G/4G Modern external COM2		7	
Provider name Ger	many D2 Vodafone 🗸 🗸		
Access Point Name (APN)*	.vodafone.de	Device description	
Jser name		·	
Password			
Dial No.*	we1#		
Entry depends on th	e provider used		
(e. a. T-Mobile, E-Pl	us. $O_2$ or Vodafone).		
Configurable via sele	ection menu.		
<b>U</b>			



IP connection and device can also be set up in the configuration tree

🚈 OTT Data Logger Operating Program - netDL 1000		– 🗆 ×
File Device netDL 1000 Configurations Voice announcer	Assistant Tools Help	
Channel Meas. cycle Analog sensors Digital sensors Serial sen	sors Sonicflow Processing Output Specials	
New Channel		
netDL 1000: FTP_DEM0_1 / Tech Tipp FTP Transmission	Device	
- Interfaces (4) - F7 +F8	General GSM - SMS	
[1] COM1 (0-P) [2] COM2 (Q-R) [2] ETH (E)	Name	internal Modem
[5] COM3 (A-B)	Index	1 👤
Devices (1)     [1] internal Modem [COM3 (A-B)]	Туре	GSM/GPRS/3G Modem internal V
Connections IP (1)	Interface	COM3 (A-B) 🗸 🗸
E-Servers (1)	Activation control via switching output at terminal ble	ock GSM int. ~
Transmissions (1)	Lag time [s]	10 👤 .
	Dial no. (Station)	
[1] Incoming CSD calls [internal Modem]	,	
External IP Devices (0)		
Time synchronisation		
Action management (0)		
Display 7 Observer     Display 7 Observer		
Meas. cycle internal [00:01:00]		



### Wizard 2 support for IP transmission and server

<u>∕</u> ⊡ 0∏	Data Logger	Operating Progr	am - netDL 100	0			
File De	evice netDL	1000 Configu	rations Voice	announcer	Assistant	Tools Help	
Channel	Meas, cycle	Analog sensors	Digital sensors	Serial sense	IP C	onnection & Device	s
New Ch	annel				P Tr	ansmission & Server	
netDL 10	00: FTP DEM	0 1 / Tech Tipp F	FTP Transmission		- Devices		
	-						
Attentio	on: the W	/izards are	only used	for 🌁	Transmissi	on	×
P com	municatio	on - other tra	ansmission	ו 🕎	ansmissio	on Internet	
aths III	ke Satelli	te, SMS,			ansmissio	on Satellite on SMS / V 21 / Lin/	_
)-chan	nel (base	d on ISDN,	discontinu		ansmissiu ansmissiu	n BLC (S7)	-
and Lin	e as well	as industria	al	Ti	ansmissio	on UNIGATE	
commu	nication (	PLC S7 or	UNIGATE)				
are set	up direct	v under "Tr	ansmissio	ns"			

in the configuration tree.

ΟK

Cancel

<sup>†</sup> Wizzard to setup a transmission and serv	er netDL 1000	-		×
You are here: > Connection?				
Which connection should be	taken for transmission?			
Connection*	GPRS Connection		~	
Name (Transmission)*	GPRS Vodafone			]
				_



Wizard 2: Name of server and server selection. Instead of the FTP Server for example you can select HTTP and HTTPs server alternatively (e.g. for Hydromet Cloud or View or OTT Hydras 3 net). It is also possible to define additional servers for further transmissions.

You are here: Connection? Server?		You are here: Connection? > Server? > Internet protocol?	
Server on which the transn	nission is to take place?	Which Internet protocol is to be used?	
● Create new server Name (Server)*	FTP Server	OHTTP OHTTPS (HTTP Secure) ●FTP	
OUse existing server Server	FTP Server 🗸		
	New Concel	Back Nevt	R Ca



Wizard 2: The address and login data for the FTP Server can usually be obtained from your IT department or the service provider (OTT is also happy to offer you an FTP server).

The transmission interval (standard cycle) specifies, how often the OTT netDL should send data to the FTP server: 15 min. to 1 h are typical intervals for surface water stations.

Having a big network consisting of many stations, the offset can be used to distribute the load on the server or (using a transmission interval of 24 h) to define the time of data transmission e.g. 7:00 AM.

🚈 Wizzard to setup a transmission and server netDL 1000 — 🗌 🗙	🗯 Wizzard to setup a transmission and server netDL 1000 — 🗌 🗙
You are here: > Connection? > Server? > Internet protocol? > FTP	You are here: > Connection? > Server? > Internet protocol? > FTP > Timing control
FTP - Settings	How often and when should the data be sent?
Server address*     OTTdatencenter.ftp.com       Port*     21       User name*     xxxxxx       Password*     xxxxxx       Data path     OTTdaten	Cycle Standard Transmission start time offset



Wizard 2: Select channels for transmission. It is possible to select different formats. Infodata (e. g. observer entries) can only be transmitted via OTT protocol binary (+ XL) and also in OTT-ML.

The additional information marked in red is only available in OTT-ML format.



## Example for various formats

![](_page_13_Picture_1.jpeg)

![](_page_13_Figure_2.jpeg)

## Further data processing

ZRXP for SODA-Box of Kisters (additional software might be necessary)

ZRXP V3 for direkt import in WISKI of Kisters

Custom Build Code might be used to implement further ZRXP adaptions

General Data transmission Data transmission 2
Load custom-built code file

OTT-ML Format for direct import to **Hydras 3** Software (especially Hydras 3 Net) and other Software with corresponding import routine

OTT Protocol binary (also OTT Protocol binary XL): conversion via Hydras 3 RX Software with MIS output for Hydras 3 or ZRXP for Kisters Software.

CSV Format: universal text format

MIS Format for direct (auto-)import to Hydras 3 (+ additional software if necessary)

![](_page_15_Picture_1.jpeg)

### For all text formats a compression can be selected

(for FTP servers only GZIP can be used, for HTTP servers also Deflate).

Please consider possible effects on the processing.

'Deflate' is usually decompressed automatically by the server at time of reception.

With 'GZIP', an unpacking routine must be implemented before import in Hydras 3.

🗯 Wizzard to setup a transmission and server netDL 1	000	-	×
You are here: >>Server? >Internet protocol? >FTP	> Timing control > Channel	> Data form	nat
In what format should the data be tra	nsmitted?		
Data format	OTT-ML format		~
Compression	GZIP (HTTP,HTTPS, FTP)		~
🗌 Transmit INFO data (Observer,)	Deflate (HTTP,HTTPS) GZIP (HTTP,HTTPS, FTP)		
Station - Status infos			
Station - Error messages			
Channel - Error messages			
- Park	Finish	Canaal	
DdCK		, cancer	

## Maintenance window

![](_page_16_Picture_1.jpeg)

To enable accessing an OTT netDL remotely, the operating program reminds you to set up a maintenance window when 'programming' (not included in the Wizard). You can set this up under Maintenance Window and "New".

Channel	Meas, cycle	Analog sensors	Digital sensors	Serial sensor	s Sonicflow	Processin	ig Output	Specials					
New Ch	annel												
netDL 10	DO: FTP_DEM	D_1 / Tech Tipp F	FTP Transmission		daintenance (	windows —							
📄 Interf	aces (4)		- F7	+F8	[1] Incoming	CSD calls							
	1] COM1 (U-P) 21 COM2 (O P												
L	2] COMZ (Q-H 3] FTH (F)	J											
	51 COM3 (A-B)	1											
🚊 Devic	;es (1)												
· ['	] internal Mod	lem [COM3(A-B)]											
📄 · Conn	ections IP (1)												
(	] GPRS Conr	nection [internal M	lodem]			New		Ed	lit		Delete	;	
Serve	915 (1) 11 ETD Canvas												_
Trans	n in the server missions (1)	[F   F]						•		_			
	11 GPRS FTP	OTT-ML (GPRS)	Connection] [15mi	inl	Ma	aintenance	window -	<i>A</i>	>	×			
🗐 - Maint	enance windo	ws (1)											
···· [	1] Incoming CS	6D calls [internal]	Modem]			Name							
Exter	nal IP Devices	(0)				Internal We	b Server						
Time	synchronisatio	n (O)				_							
- Actio Displ	n management 	(U)					OK	Abbrech	en				
E- Chan	ay / Observer nel:0010 / W//	ater Level SE200	[m]										
	feas, cycle inte	ernal (00:01:00)	[]										
[	C 3-4 /0] SDI-1	2 Master []											
	caling y=ax+b												
h	nstantaneous v	/alue											
E E	xtremes	-1								C			
N	1ean (00:15:0	U]		× [					Lon	rigurations			
		O. 17 1.			Read		IP (HTTP)		~	Load			
C		Stored Lemplate:	S										14
<b>C</b> 0 GPS		Stored Lemplate:	8	~	Program	m	<b>7</b> 10.13	30.62.211	$\overline{}$	Save		E>	кit

## Maintenance window

![](_page_17_Picture_1.jpeg)

As connection type you can choose e.g. "Accept incoming calls". Under Devices the configured device needs to be selected.

(CSD service must be supported by the mobile provider; as this is service is going to be discontinues by the providers, please consider using Hydras 3 net for 'offline' configuration or one of the other maintenance window modes)!

![](_page_17_Figure_4.jpeg)

## Communication to the FTP server completely set up

![](_page_18_Picture_1.jpeg)

This completes the setup of the data transmission to the FTP server :

#### Device/Connection/Server/Transmission/Maintenance window

🚈 OTT Data Logger Operating Program - netDL 1000		- 🗆 ×
File Device netDL 1000 Configurations Voice announce	r Assistant Tools Help	
Channel Meas. cycle Analog sensors Digital sensors Serial sen	sors Sonicflow Processing Output Specials	
New Channel		
netDL 1000: FTP_DEMO_1 / Tech Tipp FTP Transmission	Maintenance window General	
[1] COM1 (0-P) [2] COM2 (Q-R)	Name	Incoming CSD calls
[3] ETH (F) [5] COM3 (A-B)	Index	1 🛓
Devices (1)	Connect mode	Accept incoming phone calls $\qquad \sim$
[1] internal Modern [COM3 (A-B)]	Device	internal Modem $\sim$
Servers (1)		
Transmissions (1)		
[1] GPRS FTP OTT-ML [GPRS Connection] [15min]     [     Maintenance windows (1)	Accepted dial no. 1 / 2	/
[1] Incoming CSD calls [internal Modem] External IP Devices (0)	Accepted dial no. 374	
Time synchronisation	Activation time / Duration [min] 1/2	10:00 1438 🔶 / 29:59 60 🜩
Action management (U) Display / Observer	Activation time / Duration [min] 3/4	2959 60 🔺 / 2959 60 🛋
Channel: 0010 / Water Level SE200 [m]	Activation time 7 Daration (min) 374	
Meas. cycle internal [00:01:00] 		

_ netDL 1000		Configurations	
Read	USB ~	Load	<b>F</b> 3
Program	<	Save	Exit

### Now "program" the configuration on the OTT netDL (including erase of data memory).

The first FTP transfer in this example takes place hourly with a 15 min. offset (e. g. programmed at  $10.48 \rightarrow$  first transmission at 11.15).

## Testing the FTP transmission

**Open terminal mode (1)** and briefly check the connection to the OTTnetDL with "A" followed by the Enter key (2) which is acknowledged by the OTT netDL with '?08' (eventually type it two times).

To "trigger" the transmission, enter the command cl/ipcom/1 (3); this is confirmed with "Start IP Transmission 1".

on netDL 1000 - Terminal-Modus (USB)

Start IP Transmission 1

![](_page_19_Picture_3.jpeg)

#### 🚈 OTT Data Logger Operating Program - netDL 1000 File Device netDL 1000 Configurations Voice announcer Assistant Tools Help Channel Mea ial sensors Sonicflow Processing Read New Channel Program Meas, cycle internal netDL 1000; FT Instantaneous values Interfaces Sample interval Date / time [1] CO Delete data memory [2] CO - [3] ETI Terminal mode - [5] CO Enter password 🚊 Devices (1 ...... [1] inte Device view Connection --- [1] GP New program code 🛓 Servers (1) New program code (BIOS) ..... [1] FTF Transmissions (1) [1] GPRS FTP OTT-ML [GPRS Connection] [15min] 4 3

Close terminal window(4).

<sup>A</sup> 208 2 cl/ipcom ←

Command cl/ipcom is sufficient

to start the first IP transmission

## Testing the FTP transmission

![](_page_20_Picture_1.jpeg)

- To check if your transmission is working please have a look at the logger LED.
- After preparation it will blink green 2 times per second. If it will not blink red after that the transmission was successful.
- For details and if it didn't work please have a look at our next

## Tech Tipp: error analysis with the diagnosis files

![](_page_21_Picture_0.jpeg)

![](_page_21_Picture_1.jpeg)

## Good luck for your realisation

## OTT HydroService (Dr. Torsten Dose)

![](_page_21_Picture_4.jpeg)