AdvanIDe

NFC NDEF – Messenger Software (for the AdvanIDe NFC Dev Kit)



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NFC and NDEF

NFC allows you to share payloads of data between an NFC tag and a powered device, or between two powered devices

The data stored in the tag can be written in a variety of formats, most are based around a NFC Forum standard called NDEF (NFC Data Exchange Format)

Devices with NFC can support three main modes of operation:

- **Reader/Writer mode**, allowing the NFC device to read and/or write passive NFC tags and stickers
- **P2P mode,** allowing the NFC device to exchange data with other NFC device
- **Card emulation mode**, allowing the NFC device itself to act as an NFC card. The emulated NFC card can then be accessed by an external NFC reader, such as an NFC point-of-sale terminal

NFC Technology

Technology	 Evolved from13.56 MHz Near Field RFID protocols Magnetic coupling for transmitting data and energy 2-10 cm read-range
Standardization	NFC Forum: standards up to application level Based on: ECMA-340 Near Field Communication and Interface Protocol ISO IEC 18092 NFCIP-1 Near Field Communication
Usage	Touch and Connect
Benefits	 "Simple", no need for configuration, intuitive Flexible: lowest cost using NFC Tags Flexible: full functionality (P2P, Card Mode)

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NFC NDEF Messenger

The NDEF Messenger allows to read and write information and data from and to NFC compliant devices (e.g. NFC Tags, Smartphones, Tablets,...)





NFC NDEF Messenger

- Connect the AdvanIDe r-MOD Plug & Play Reader via USB to your PC
- Start the NDEF_Messenger.exe with double click



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• NDEF Messenger starts on your screen

enal intern	face			Communica	ation Output				
COM Port Status	COM3 Baudrate 115200		System:	System: 1 valid boards detected r-MOD on COM3 (TA 1.04.13 @ 115200 Bau			AdvanID	De	
	Pofessk Past List Connect						An ASSA ABLOY Group	brand	
	Netresh	Fort List	Connect					NDEE Marraga Record Tree	
arget Dev	vice Information							NDEF Message (0 Bytes / 0 Record	ds)
		Tag Type	-						
		UID	-						
		NEC ForumType	-						
		NDEE Exemption							
		NOEP Formated							
		NUEF Max. Mem Size	-						
		R\W Access	-						
Securi	ity Check	Format Target	Identify Target						
							Clear	Write NDEF Multi Record Message	Clear
elect Targ	get Device			Text	Website (URI	VCard SmartPoster			
Tag R	2/W		Read NDEF Message						
Card E	emulation			Select L	Language	English (en)	~	Text Encoding	
	Timeout [s]	5 - Receive	Timeout [s] 5 🖨	Messag	le lext	NDEF Text Record Sample		UTF-8	
Send								UTF-16 (BE)	
Send								insert Byte Order Mark for UTF-16 (POM)
Send	Initiator		Target						DOIN)
Send	Initiator RW		Target						UO MI)
Send	Initiator RW		Target						DOM
Send	Initiator RW	34	Target						DOM
Send 1	Initiator RW	Ic	Target						DOIM)
Send	Initiator RW	3	Target					Write NDEF Single Record Messa	ge

 Chose the COM-Port from the suggested list in the Communication Output Box

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• Press the "Connect" Button

ID		NDEF Messenger v1.0.0	_ 🗆 ×
D Serial Interface COM Port COM3 Status not connect Refresh Target Device Information	Baudrate 115200 ed Connect Port List Connect Tag Type - UID - NFC ForumType - NDEF Formatted - NDEF Max. Mem Size - R\W Access - Format Target Identify Target	NDEF Messenger v1.0.0 Communication Output System: 1 valid boards detected r-MOD on COM3 (TA 1.04.13 @ 115200 Baud)	ADDEF Message Record Tree NDEF Message (0 Bytes / 0 Records)
Select Target Device Tag R/W Card Emulation P2P with Phone Send Timeout [s] Initiator RW	5 Receive Timeout [s] 5 Target	Clear Text Webste (URI) VCard SmartPoster Select Language English (en) Message Text NDEF Text Record Sample NDEF Message Size: 30 Bytes	V Virte NDEF Multi Record Message Clear V Text Encoding ① UTF-8 ① UTF-16 (BE) ☐ insert Byte Order Mark for UTF-16 (BOM) Write NDEF Single Record Message Append to Multi Record Message

AdvanIDe An ASSA ABLOY Group brand Put a NFC compliant card / tag on the AdvanIDe r-MOD Plug & Play Reader Select a mode in the "Select Target Device" box **Identify** the target • _ 🗆 🗙 NDEF Messenger v1.0.0 Serial Interface Communication Output COM Port COM3 ✓ Baudrate 115200 System: 1 valid boards detected AdvanIDe r-MOD on COM3 (TA 1.04.13 @ 115200 Baud) Status An ASSA ABLOY Group bran <Connect Button> clicked Success opening COM3 @ 115200 Baud Refresh Port List Disconnect System Board detected: r-MOD FW running: TA 1.04.13 NDEF Message Record Tree Target Device Information - NDEF Message (0 Bytes / 0 Records) Tag Type <Identify Target Button> clicked Target identified as DESFIRE EV1 8K UID NP DESFire[™] EV1 NFC Forum Typ NP NDEE Format MIFARE DESFire TM EV1 NDEE Max Me R\W Access Security Check Format Target Identify Target Write NDEF Multi Record Message Clear Clear Select Tarnet Device Website (URI) VCard SmartPoster Tag R/W Read NDEF Message O Card Emulation Select Language English (en) O P2P with Phone Text Encoding Message Text NDEF Text Record Sample Send Timeout [s] 5 UTF-8 Receive Timeout [s] 5 O UTF-16 (BE) Initiator Target insert Byte Order Mark for UTF-16 (BOM)

Write NDEF Single Record Message

Append to Multi Record Message

RW

DESFire THE EV1

NDEF Message Size: 30 Bytes



•Read a message:

•Select Target device

•Press "Read NDEF Message" Button

•Pop-Up Window with NDEF Message opens

•Write a message:

•Select Target device

•Select NDEF Message Type (Text, Website, VCard or Smartposter)

•Put in the desired information/message

•Press "Write NDEF Single Record Message" to write to the target

•Press "Append to Multi Record Message" to write Message Record tree to bundle differend Message Records and press "Write NDEF Multi Record Message" to write to the target

Text Makes (UDD	Month Country Destan	Text Web	site (URI) VCard SmartPoster			
Website (URI)		Name Prefix	Mr	Title	DiplIng. (FH)	
		First Name	Max	Last Name	Mustermann	
Select Language	English (en)	Address	Musterstrasse 22	City	Musterstadt	
Message Text	NDEF Messenger Text Record Sample	Post Code	123456	Country	Musterland	And V CALL Concerned
		Company	MaxMustermann GmbH	Job Title	NFC Sales & Marketing Director	
		Phone Nr.	+491234567890	Mobile Nr.	+490987654321	
		Website	www.mustermann.com	Picture 📃	E:\NDEF Messenger\MaxMusterm	ann.jpg
		EMail	max@mustermann.com		Write NDEF Single	Record Message
		NDEF Messa	age Size: 410 Bytes		Append to Multi Re	ecord Message

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NFC NDEF Messenger SPEC

Concept	NDEF Processing on Host Configurable OS Layer Portable User Interface Executable File to run
Programming Language	C/C++
Supported OS	Windows 7, Windows 8, Windows 8.1
NDEF Specifications	NFC Data Exchange Format NDEF 1.0 NFC Record Type Definition RTD 1.0 Text Record Type Definition RTD-Text 1.0 URI Record Type Definition RTD-URI 1.0 Smart Poster Record Type Definition SPR 1.1





AdvanIDe® r-MOD and m-MOD NFC Developer's Kit

Enable new RFID applications with NFC readers and tags Easy integration of NFC technology into OEM devices

Content:

1 AdvanIDe r-MOD NFC P&P reader board 1 AdvanIDe m-MOD NFC P&P reader board documentation & reader tool SW, NFC Messenger 5 NXP NFC NTAG203 Keyfobs 5 NXP NFC NTAG203 Labels 5 NXP Mifare[™] Classic 1K Cards 5 NXP Mifare[™] DESFIRE EV1 Cards 5 Infineon my-d[™] NFC SLE66R01PN Cards 5 Infineon my-d[™] NFC SLE66R01PN Labels 5 Infineon my-d[™] NFC SLE66R01PN SLE66R01PN NFC Keyrings

Reader TA 1.04.03 on COMB selected.	0	A - 1	
Tag selected/continuous read		Advanid	e
Device			
IB-CON3		Scan D	inine .
COM1			
B COMB		FindB	ander.
NFC+ Reader (TA 1.04.09)			
Mifaee Classic 19, 4 byte UID (025E22414E)		C	David
		Lanci	Chever
1			
Communications on data 4			
Communication output			
Communication output Hifare Clarric 18, 4 byte UID +025822414;	145,0 mm	c) 🔺 Cle	NH NH
Communication output Histare Classic 1k, 4 byte UID +025822414) Histare Classic 1k, 4 byte UID +025822414) Histare Classic 1k, 4 byte UID +025822414)	145,0 mr 146,0 mr 146,0 mr		ar .
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Communication output Hifare Clarsto 18, 4 byte UID +025822414 Hifare Clarsto 18, 4 byte UID +025822414	 145,0 mm 146,0 mm 146,0 mm 144,6 mm 145,7 mm 145,7 mm 142,1 mm 	ec) A Ce	a
Communication output Hifare Classic 10, 4 byte UID +025822414 Hifare Classic 10, 4 byte UID +025822414	 145,0 mm 146,0 mm 146,0 mm 144,6 mm 145,7 mm 145,7 mm 145,2 mm 145,2 mm 	ec) A Cle	w
Communication output Mitare Clawsic 10, 4 byte ULD +025822414 Mitare Clawsic 10, 4 byte ULD +025822414 Mitare Classic 10, 4 byte ULD +025822414	 145,0 mm 146,0 mm 144,6 mm 145,7 mm 145,7 mm 145,2 mm 145,2 mm 145,9 mm 	ec] A Ce ec] ec] ec] ec] ec] ec] ec]	Nar
Communication output Hifare Classic Lk, 4 byte UED <025H2444 Hifare Classic Lk, 4 byte UED <025H2444	1+ 145,0 mm 1+ 146,0 mm 1+ 146,0 mm 1+ 146,7 mm 1+ 145,7 mm 1+ 145,2 mm 1+ 145,2 mm 1+ 146,4 mm	eci A Ce eci eci eci eci eci eci eci	w
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	 145,0 mm 146,0 mm 146,0 mm 146,7 mm 145,7 mm 145,2 mm 145,2 mm 145,4 mm 145,3 mm 145,4 mm 145,7 mm 	ici Image: Comparison of the comparison of t	ar an
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