**IO-Link Device Test Report**

TMG IO-Link Device Tool V5.1 - TS:

Revision: 5.1.1

Build: 8279

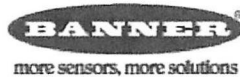
TEngBas V5.1.1:

Revision: 5.1.1

Build: 8279

Test ID:

751031335



Vendor : Banner Engineering Corporation

Device Name : Q90R-4040-6KDQ

Vendor ID : 0x01C3

Device ID : 0x0C0001

IO-Link Version : V1.1

Product ID : Q90R-4040-6KDQ

ISDU supported : True

SIO mode supported : True

Process Data Input Bits : 48

Process Data Output Bits : 0

Min Cycle Time : 3900 μ s

Bitrate : COM2

Implemented Access Locks :

parameter="False" datastorage="False" localParameterization="False" localUserInterface="False"

IODD : Banner_Engineering-Q90R-20231215-IODD1.1.xml

Checker : IODD-Checker V1.1.9

CRC : 658846328

Firmware Revision : 0.4.42174

Hardware Revision : 1.0

Test conditions: Test according IO-Link specification V1.1.3

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Test result : All test were passed with positiv result in complete operation.

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Test operated by :

Company : Banner Engineering CorporationName : David S. AndersonSignature : [Signature]

Testreport : Test System Version information

TMG IO-Link Device Tool V5.1 - TS:	Revision: 5.1.1	Build: 8579
TEngBas V5.1.1:	Revision: 5.1.1	Build: 8579
Testcase DLL:	Name: ProtocolTests	Build: 8579
USB Master Firmware Revision:	3.1.F / 1.3.B	

Testreport : Test Configuration

Test variable for 8 Bit index access :

Index	: 200	Length: 2
Data (hex)	: 00 00	

Test variable for 16 Bit index access :

Index	: 1000	Length: 1
Data (hex)	: 01	

Test variable for 8 Bit index extended length :

Index	: 24	Length: 16
Data (hex)	: 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20	

Implemented system commands :	1 2 3 4 5 6 129 131 65 66 126 127
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M-sequence Capability (hex) :	2B
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Commands to generate events :

Event trigger 1 : appear value = 1	Index : 201	disappear value = 2
Event trigger 2 : appear value = 3		disappear value = 4

Device Test Report

Testreport Overview (1)

TC_Device_Identification	ok
Data Layer Tests V5.1.1.0	
SDCI_TC_0034 TCD_DLPC_STUP_CYCTIME	ok
SDCI_TC_0035 TCD_DLPC_STUP_STUOPER1	ok
SDCI_TC_0306 TCD_DLPC_CHK_OVERRIDOK	ok
SDCI_TC_0036 TCD_DLPC_STUP_STUOPER2	ok
SDCI_TC_0037 TCD_DLPC_OPER_OPERSTUP1	ok
SDCI_TC_0038 TCD_DLPC_STAR_OPERSTAR2	ok
SDCI_TC_0039 TCD_DLPC_PREO_READDPP1	ok
SDCI_TC_0040 TCD_DLPC_PREO_WRITEDPP1	ok
SDCI_TC_0041 TCD_DLPC_PROP_SHORT_MESSAGE	ok
SDCI_TC_0043 TCD_DLPC_PROP_SIMRESET	ok
SDCI_TC_0044 TCD_DLPC_PROP_MSEQFAULT	ok
SDCI_TC_0045 TCD_DLPC_OPER_READ	ok
SDCI_TC_0046 TCD_DLPC_OPER_WRITE	ok
SDCI_TC_0047 TCD_DLPC_OPER_NEGWRITE	ok
SDCI_TC_0049 TCD_DLPC_OPER_SIMRESET	ok
SDCI_TC_0312 TCD_DLPC_OPER_OUTINVALID	ok
SDCI_TC_0313 TCD_DLPC_OPER_CONNECTIONLOSS	ok
ISDU Tests V5.1.1.0	
SDCI_TC_0052 TCD_DLPC_ISDU_AVAILMSEQCAP	ok
SDCI_TC_0053 TCD_DLIC_ISDU_IDLEBUSYCHECK	ok
SDCI_TC_0054 TCD_DLIC_ISDU_READINDEX8	ok
SDCI_TC_0055 TCD_DLIC_ISDU_READ8EXTLENGTH	ok
SDCI_TC_0056 TCD_DLIC_ISDU_WRITE8	ok
SDCI_TC_0057 TCD_DLIC_ISDU_READ8RESERVED	ok
SDCI_TC_0058 TCD_DLIC_ISDU_READ8NOSUBINDEX	ok
SDCI_TC_0059 TCD_DLIC_ISDU_READ16	ok
SDCI_TC_0060 TCD_DLIC_ISDU_WRITE16	ok
SDCI_TC_0061 TCD_DLIC_ISDU_READ16RESERVED	ok
SDCI_TC_0062 TCD_DLIC_ISDU_READ16NOSUBINDEX	ok
SDCI_TC_0063 TCD_DLIC_ISDU_WRITE8LENOVERRUN	ok
SDCI_TC_0064 TCD_DLIC_ISDU_WRITE8WRONGLEN	ok
SDCI_TC_0065 TCD_DLIC_ISDU_WRITE8WRONGCHECKSUM	ok
SDCI_TC_0066 TCD_DLIC_ISDU_WRITE8ROINDEX	ok
SDCI_TC_0067 TCD_DLIC_ISDU_ABORTREADREQ	ok
SDCI_TC_0068 TCD_DLIC_ISDU_ABORTREADRESP	ok
SDCI_TC_0309 TCD_DLIC_ISDU_ELEMENT_RETRY	ok
Event Tests V5.1.1.0	
SDCI_TC_0069 TCD_DLIC_EVNT_OPERSINGLEEVENT	ok
SDCI_TC_0070 TCD_DLIC_EVNT_PROPSINGLEEVENT	ok
SDCI_TC_0071 TCD_DLIC_EVNT_OPEREVENTCLEAR	ok

Device Test Report

Testreport Overview (2)

SDCI_TC_0072 TCD_DLIC_EVNT_OPERCOMMINTERRUPT	ok
SDCI_TC_0073 TCD_DLIC_EVNT_OPERPOWERINTERRUPT	ok
SDCI_TC_0074 TCD_DLIC_EVNT_OPERAPPEARDISAPPEAR	ok
SDCI_TC_0075 TCD_DLIC_EVNT_OPERMULTEVENT	ok
SDCI_TC_0076 TCD_DLIC_EVNT_OPERSHORTEVENT	ok
Data Storage Tests V5.1.1.0	
SDCI_TC_0077 TCD_APPS_DSUP_NOFLAG	ok
SDCI_TC_0078 TCD_APPS_DSUP_VIADOWNLOADSTORE	ok
SDCI_TC_0079 TCD_APPS_DSUP_VIADOWNLOADSTORENOWRITE	ok
SDCI_TC_0080 TCD_APPS_DSUP_VIALOCALCHANGE	ok
SDCI_TC_0081 TCD_APPS_DSUP_PARABREAKABORT	ok
SDCI_TC_0082 TCD_APPS_DSDN_PARAMODIFICATION	ok
SDCI_TC_0083 TCD_APPS_DSDN_FACTORYRESET	ok
SDCI_TC_0084 TCD_APPS_DSDN_PARABREAKABORT	ok
SDCI_TC_0321 TCD_APPS_DSBP_APPLDSSINGLEPARAM	ok
SDCI_TC_0322 TCD_DS_APP_IDLEFLAGCLEAR	ok
Legacy Master Tests V5.1.1.0	
SDCI_TC_0085 TCD_DLIC_COMP_STARTUP	ok
SDCI_TC_0086 TCD_DLIC_COMP_TYPE1INTERLEAVE	ok
SDCI_TC_0087 TCD_DLIC_COMP_PDINVALIDEVENT	ok
Direct Parameter Page 1 Tests V5.1.1.0	
SDCI_TC_0089 TCD_DLPC_STDP_MASTERCYCLETIME	ok
SDCI_TC_0090 TCD_DLPC_STDP_MINCYCLETIME	ok
SDCI_TC_0091 TCD_DLPC_STDP_MSEQCAPABILITY	ok
SDCI_TC_0092 TCD_DLPC_STDP_REVISIONID	ok
SDCI_TC_0093 TCD_DLPC_STDP_PDIN	ok
SDCI_TC_0094 TCD_DLPC_STDP_PDOUT	ok
SDCI_TC_0095 TCD_DLPC_STDP_VENDORID	ok
SDCI_TC_0096 TCD_DLPC_STDP_DEVICEID	ok
SDCI_TC_0097 TCD_DLPC_STDP_FUNCTIONID	ok
SDCI_TC_0100 TCD_DLPC_STDP_READRESPAR	ok
SDCI_TC_0101 TCD_DLPC_STDP_WRITERESPAR	ok
Predefined Device Parameter Tests V5.1.1.0	
SDCI_TC_0104 TCD_DLIC_DEFP_SYSCMDRES	ok
SDCI_TC_0107 TCD_DLIC_DEFP_DSINDEX	ok
SDCI_TC_0108 TCD_DLIC_DEFP_DSRECORD	ok
SDCI_TC_0323 TCD_DLIC_DEFP_DSRECORDMARKER	ok
SDCI_TC_0109 TCD_DLIC_DEFP_ACCESSLOCKSVAL	ok
SDCI_TC_0110 TCD_DLIC_DEFP_ACCESSLOCKSINVAL	ok
SDCI_TC_0111 TCD_DLIC_DEFP_PROFILCHARAC	ok
SDCI_TC_0112 TCD_DLIC_DEFP_PDINDESC	ok
SDCI_TC_0113 TCD_DLIC_DEFP_PDOUTDESC	ok

Device Test Report

Testreport Overview (3)

SDCI_TC_0114 TCD_DLIC_DEFP_VENDORNAM	ok
SDCI_TC_0115 TCD_DLIC_DEFP_VENDORTXT	ok
SDCI_TC_0116 TCD_DLIC_DEFP_PRODUCTNAM	ok
SDCI_TC_0117 TCD_DLIC_DEFP_PRODUCTID	ok
SDCI_TC_0118 TCD_DLIC_DEFP_PRODUCTTEXT	ok
SDCI_TC_0119 TCD_DLIC_DEFP_SERNUM	ok
SDCI_TC_0120 TCD_DLIC_DEFP_HARDREV	ok
SDCI_TC_0121 TCD_DLIC_DEFP_FIRMREV	ok
SDCI_TC_0122 TCD_DLIC_DEFP_TAGVALID	ok
SDCI_TC_0123 TCD_DLIC_DEFP_TAGINVALID	ok
SDCI_TC_0124 TCD_DLIC_DEFP_ERRCOUNT	ok
SDCI_TC_0128 TCD_DLIC_DEFP_DEVSTAT	ok
SDCI_TC_0129 TCD_DLIC_DEFP_DETAILDEVSTAT	ok
SDCI_TC_0131 TCD_DLIC_DEFP_DETAILDEVSTATACTIVE	ok
SDCI_TC_0132 TCD_DLIC_DEFP_PDIN	ok
SDCI_TC_0133 TCD_DLIC_DEFP_PDOUT	ok
SDCI_TC_0134 TCD_DLIC_DEFP_OFFTIMEVALID	ok
SDCI_TC_0136 TCD_DLIC_DEFP_PROFILEPARREAD	ok
SDCI_TC_0137 TCD_DLIC_DEFP_PROFILEPARWRITE	ok
SDCI_TC_0140 TCD_DLIC_DEFP_WRITETOREADONLY	ok
SDCI_TC_0141 TCD_DLIC_DEFP_WRITETOOSHORT	ok
SDCI_TC_0142 TCD_DLIC_DEFP_WRITETOOLONG	ok
Block Parameter Tests V5.1.1.0	
SDCI_TC_0143 TCD_DSBP_APPL_BPDOWNLOAD	ok
SDCI_TC_0144 TCD_DSBP_APPL_BPBREAKCMD	ok
SDCI_TC_0145 TCD_DSBP_APPL_BPBREAKRESET	ok
SDCI_TC_0146 TCD_DSBP_APPL_BPBREAKILLPARAM	ok
SDCI_TC_0147 TCD_DSBP_APPL_BPBREAK2DOWNLOADS	ok
SDCI_TC_0148 TCD_DSBP_APPL_BPBREAKLOCALLOCK	ok
SDCI_TC_0324 TCD_DSBP_APPL_UNEXPECTEDINIDLE	ok
SDCI_TC_0325 TCD_DSBP_APPL_WRITEINUPLOAD	ok
SDCI_TC_0326 TCD_DSBP_APPL_READINDOWNLOAD	ok
SDCI_TC_0327 TCD_DSBP_APPL_UNEXPINUPLOAD	ok
SDCI_TC_0328 TCD_DSBP_APPL_SWITCHSTATES	ok
SDCI_TC_0329 TCD_DSBP_APPL_UPBREAKRESET	ok
SDCI_TC_0330 TCD_DSBP_APPL_DNENDBYUPLOAD	ok
Parameter verification tests V5.1.1.0	
SDCI_TC_0149 TCD_IODD_PARV_IDENT	ok
SDCI_TC_0150 TCD_IODD_PARV_COMPPROFILE	ok
SDCI_TC_0151 TCD_IODD_PARV_READVERIFY	ok
SDCI_TC_0152 TCD_IODD_PARV_WRITEVERIFY	ok
SDCI_TC_0157 TCD_IODD_PARV_INDEXCONSISTENT	ok

Device Test Report

Testreport Overview (4)

Functional System Tests V5.1.1.0

SDCI_TC_0156 TCD_IODD_PARV_ACCESSLOCK	ok
SDCI_TC_0316 TCD_IODD_PARV_DEVICERESET	ok
SDCI_TC_0317 TCD_IODD_PARV_APPLRESET	ok
SDCI_TC_0155 TCD_IODD_PARV_FACTORYSETTINGS	ok
SDCI_TC_0318 TCD_IODD_PARV_BACKTOBOX	ok
SDCI_TC_0314 TCD_DLPC_DID_OVERWRITE_COMP	ok
SDCI_TC_0315 TCD_DLPC_DID_OVERRIDE_INCOMP	ok

support of Physical Layer Tests V5.1.1.0

SDCI_TC_0304 TCD_PHYL_INTF_UARTTRANSDelay	ok
SDCI_TC_0305 TCD_PHYL_INTF_RESPONSETime	ok
SDCI_TC_0319 TCD_PHYL_INTF_TRANSMISSIONErrors	ok

Common Profile V5.1.1.0

CP_TC_0001_TCD_CMPR_ID_ASCENDID	ok
CP_TC_0002_TCD_CMPR_ID_HIDDEN_I_D	ok
CP_TC_0003_TCD_CMPR_ID_LEASTPROFILE	ok
CP_TC_0004_TCD_CMPR_ID_EXTENSION	ok
CP_TC_0005_TCD_CMPR_ID_PDOUTDESCR	ok
CP_TC_0006_TCD_CMPR_ID_LOCATOR	ok

Test Report Statistics:

Number of test cases overall : 133
Number of test cases ok : 133
Number of test cases failed : 0
Number of test cases skipped : 0
Test Operation : single