

# NLink V1.3

NLink\_LinkTrack\_Anchor\_Frame0 (Length: 896Bytes) --- RO

Data	Type	Length (Bytes)	Description	Index
Frame Header	uint8	1	Value = 0x55	0
Function Mark	uint8	1	Value = 0x00	1
id	uint8	1	ID corresponding to this block (Invalid when the value equals "0xFF")	Block0
role	uint8	1	Role corresponding to this block, value = TAG, refer to the <b>Role Table</b> for more information	
{pos.x, pos.y, pos.z} * 1000	int24	9	Position of the tag, unit: m	
{dis0, dis1, dis2, dis3, dis4, dis5, dis6, dis7} * 100	uint16	16	Distance from the tag to the corresponding anchor, unit: m	Block1
id	uint8	1	ID corresponding to this block (Invalid when the value equals "0xFF")	
role	uint8	1	Role corresponding to this block, value = TAG, refer to the <b>Role Table</b> for more information	
{pos.x, pos.y, pos.z} * 1000	int24	9	Position of the tag, unit: m	Block2-Block28
{dis0, dis1, dis2, dis3, dis4, dis5, dis6, dis7} * 100	uint16	16	Distance from the tag to the corresponding anchor, unit: m	
id	uint8	1	ID corresponding to this block (Invalid when the value equals "0xFF")	
role	uint8	1	Role corresponding to this block, value = TAG, refer to the <b>Role Table</b> for more information	Block29
{pos.x, pos.y, pos.z} * 1000	int24	9	Position of the tag, unit: m	
{dis0, dis1, dis2, dis3, dis4, dis5, dis6, dis7} * 100	uint16	16	Distance from the tag to the corresponding anchor, unit: m	
reserved	*	67	Reserved	812
local_time	uint32	4	Time of local node, unit: ms	879
reserved	*	4	reserved	883
voltage * 1000	uint16	2	Interface supply voltage of the local node, unit: V	887
system_time	uint32	4	Time of system, unit: ms	889
id	uint8	1	Local node ID	893
role	uint8	1	Local node role, refer to the <b>Role Table</b> for more information	894
Checksum	uint8	1	Value = 0xEE	895

NLink\_LinkTrack\_Tag\_Frame0 (Length: 128Bytes) --- RO

Data	Type	Length (Bytes)	Description	Index
Frame Header	uint8	1	Value = 0x55	0
Function Mark	uint8	1	Value = 0x01	1
id	uint8	1	ID	2
role	uint8	1	Local node role, refer to the <b>Role Table</b> for more information	3
{pos.x, pos.y, pos.z} * 1000	int24	9	Position of the tag, unit: m	4
{vel.x, vel.y, vel.z} * 10000	int24	9	Velocity of the tag, unit: m/s	13
{dis0, dis1, dis2, dis3, dis4, dis5, dis6, dis7} * 1000	uint24	24	Distance from the tag to the corresponding anchor, unit: m	22
{g.x, g.y, g.z}	float	12	IMU angular velocity, unit: rad/s	46
{a.x, a.y, a.z}	float	12	IMU acceleration, unit: m/s^2	58
reserved	float	12	*	70
{angle.x, angle.y, angle.z} * 100	int16	6	Euler angle of the tag, unit: deg	82
{q0, q1, q2, q3}	float	16	Quaternion	88
reserved	*	4	Reserved	104
local_time	uint32	4	Time of local node, unit: ms	108
system_time	uint32	4	Time of system, unit: ms	112
reserved	uint8	1	reserved	116
{eop.x, eop.y, eop.z} * 100	uint8	3	Estimation of the tag position's precision, unit: m	117
voltage * 1000	uint16	2	Interface supply voltage of the local node, unit: V	120
reserved	*	5	Reserved	122
Checksum	uint8	1	The Checksum is equal to all previous bytes added	127

NLink\_LinkTrack\_Node\_Frame0 (Length: Frame\_Length Bytes) --- RO

Data	Type	Length (Bytes)	Description	Index
Frame Header	uint8	1	Value = 0x55	0
Function Mark	uint8	1	Value = 0x02	1
Frame Length	uint16	2	Frame length	2
role	uint8	1	Local node role, refer to the <b>Role Table</b> for more information	4
id	uint8	1	Current node ID	5
reserved	*	4	Reserved	6
valid_node_quantity	uint8	1	Total valid nodes	10
role	uint8	1	Role corresponding to this block, refer to the <b>Role Table</b> for more information	11
id	uint8	1	ID corresponding to this block	12
data_length	uint16	2	Transparent data length	13
data[length]	uint8	1*length	Transparent data	15
role	uint8	1	Role corresponding to this block, refer to the <b>Role Table</b> for more information	16
id	uint8	1	ID corresponding to this block	17
data_length	uint16	2	Transparent data length	18
data[length]	uint8	1*length	Transparent data	20
Checksum	uint8	1	The Checksum is equal to all previous bytes added	Block_... Frame_Length - 1

NLink\_LinkTrack\_Node\_Frame1 (Length: Frame\_Length Bytes) --- RO

Data	Type	Length (Bytes)	Description	Index
Frame Header	uint8	1	Value = 0x55	0
Function Mark	uint8	1	Value = 0x03	1
Frame Length	uint16	2	Frame length	2
role	uint8	1	Local node role, refer to the <b>Role Table</b> for more information	4
id	uint8	1	Current node ID	5
system_time	uint32	4	Time of system, unit: ms	6
local_time	uint32	4	Time of local node, unit: ms	10
reserved	*	10	Reserved	14
voltage * 1000	uint16	2	Interface supply voltage of the local node, unit: V	24
valid_node_quantity	uint8	1	Total valid nodes	26
role	uint8	1	Role corresponding to this block, refer to the <b>Role Table</b> for more information	Block0
id	uint8	1	ID corresponding to this block	
{pos.x, pos.y, pos.z} * 1000	int24	9	Position of the tag, unit: m	
reserved	*	9	Reserved	Block1
role	uint8	1	Role corresponding to this block, refer to the <b>Role Table</b> for more information	
id	uint8	1	ID corresponding to this block	
{pos.x, pos.y, pos.z} * 1000	int24	9	Position of the tag, unit: m	Block_... Frame_Length - 1
reserved	*	9	Reserved	
Checksum	uint8	1	The Checksum is equal to all previous bytes added	

NLink\_LinkTrack\_Node\_Frame2 (Length: Frame\_Length Bytes) --- RO

Data	Type	Length (Bytes)	Description	Index
Frame Header	uint8	1	Value = 0x55	0
Function Mark	uint8	1	Value = 0x04	1
Frame Length	uint16	2	Frame length	2
role	uint8	1	Local node role, refer to the <b>Role Table</b> for more information	4
id	uint8	1	Local node ID	5
system_time	uint32	4	Time of system, unit: ms	6
{eop.x, eop.y, eop.z} * 100	uint8	3	Estimation of the tag position's precision, unit: m	10
{pos.x, pos.y, pos.z} * 1000	int24	9	Position of the tag, unit: m	13
{vel.x, vel.y, vel.z} * 10000	int24	9	Velocity of the tag, unit: m/s	22
reserved	int24	9	Reserved	31
{g.x, g.y, g.z}	float	12	IMU angular velocity, unit: rad/s	40
{a.x, a.y, a.z}	float	12	IMU acceleration, unit: m/s^2	52
reserved	float	12	*	64
{angle.x, angle.y, angle.z} * 100	int16	6	Euler angle of the tag, unit: deg	76
{q0, q1, q2, q3}	float	16	Quaternion	82
reserved	*	4	Reserved	98
local_time	uint32	4	Time of local node, unit: ms	102
reserved	*	10	Reserved	106
voltage * 1000	uint16	2	Interface supply voltage of the local node, unit: V	116
valid_node_quantity	uint8	1	Total valid nodes	118
role	uint8	1	Role corresponding to this block, refer to the <b>Role Table</b> for more information	Block0
id	uint8	1	ID corresponding to this block	
dis * 1000	int24	3	Distance from the tag to the corresponding anchor, unit: m	
fp_rssi * (-2)	uint8	1	First path power level, unit: dB	
rx_rssi * (-2)	uint8	1	Received power level, unit: dB	
reserved	*	6	Reserved	
role	uint8	1	Role corresponding to this block, refer to the <b>Role Table</b> for more information	

id	uint8	1	ID corresponding to this block	
dis * 1000	int24	3	Distance from the tag to the corresponding anchor, unit: m	
fp_rssi * (-2)	uint8	1	First path power level, unit: dB	Block1
rx_rssi * (-2)	uint8	1	Received power level, unit: dB	
reserved	*	6	Reserved	
Checksum	uint8	1	The Checksum is equal to all previous bytes added	Block... Frame Length - 1

NLink_LinkTrack_Node_Frame3 (Length: Frame Length Bytes) --- RO				
Data	Type	Length (Bytes)	Description	Index
Frame Header	uint8	1	Value = 0x55	0
Function Mark	uint8	1	Value = 0x05	1
Frame Length	uint16	2	Frame length	2
role	uint8	1	Local node role, refer to the Role Table for more information	4
id	uint8	1	Local node ID	5
local time	uint32	4	Time of local node, unit:ms	6
system time	uint32	4	Time of system, unit:ms	10
reserved	*	4	Reserved	14
voltage * 1000	uint16	2	Interface supply voltage of the local node, unit: V	18
valid node quantity	uint8	1	Total valid nodes	20
role	uint8	1	Role corresponding to this block, refer to the Role Table for more information	
id	uint8	1	ID corresponding to this block	
dis * 1000	int24	3	Distance from the tag to the corresponding anchor, unit: m	
fp_rssi * (-2)	uint8	1	First path power level, unit: dB	Block0
rx_rssi * (-2)	uint8	1	Received power level, unit: dB	
role	uint8	1	Role corresponding to this block, refer to the Role Table for more information	
id	uint8	1	ID corresponding to this block	
dis * 1000	int24	3	Distance from the tag to the corresponding anchor, unit: m	Block1
fp_rssi * (-2)	uint8	1	First path power level, unit: dB	
rx_rssi * (-2)	uint8	1	Received power level, unit: dB	
Checksum	uint8	1	The Checksum is equal to all previous bytes added	Block... Frame Length - 1

NLink_LinkTrack_User_Frame1 (Length: (11 + data_length) Bytes) --- WO				
Data	Type	Length (Bytes)	Description	Index
Frame Header	uint8	1	Value = 0x54	0
Function Mark	uint8	1	Value = 0xF1	1
reserved	*	4	Reserved. The byte written must be 0xFF	2
remote role	uint8	1	Value = NODE/SLAVE, refer to the Role Table for more information	6
remote_id	uint8	1	Remote ID. Range: [0,254]	7
data_length	uint16	2	Transparent data length	8
data[length]	uint8	1*length	Transparent data	10
Checksum	uint8	1	The Checksum is equal to all previous bytes added	10 + data_length

NLink_LinkTrack_Setting_Frame0 (Length: 128Bytes) --- RW				
Data	Type	Length (Bytes)	Description	Index
Frame Header	uint8	1	Value = 0x54	0
Function Mark	uint8	1	Value = 0x00	1
mix	uint8	1	Value = 0x00---WO Value = 0x01---RO	2
role	uint8	1	Local node role, refer to the Role Table for more information---RW	3
reserved	*	5	It must be the same as the parameter read---WO Reserved---RO	4
id	uint8	1	Local node ID---RW	9
reserved	*	26	It must be the same as the parameter read---WO Reserved---RO	10
group	uint8	1	Role = ANCHOR, Value = id / 10; Role = TAG, Range: [0,11]; Role = CONSOLE, Value = 0	36
{ag0.x, ag0.y, ag0.z} * 1000	int24	9	If anchor_group = 0, then	37
{ag1.x, ag1.y, ag1.z} * 1000	int24	9	ag0.x -> a00.x/a0.x, ag0.y -> a00.y/a0.y, ag0.z -> a00.z/a0.z	46
{ag2.x, ag2.y, ag2.z} * 1000	int24	9	.....	55
{ag3.x, ag3.y, ag3.z} * 1000	int24	9	ag9.x -> a09.x/a9.x, ag9.y -> a09.y/a9.y, ag9.z -> a09.z/a9.z	64
{ag4.x, ag4.y, ag4.z} * 1000	int24	9	If anchor_group = 1, then	73
{ag5.x, ag5.y, ag5.z} * 1000	int24	9	ag0.x -> a10.x, ag0.y -> a10.y, ag0.z -> a10.z	82
{ag6.x, ag6.y, ag6.z} * 1000	int24	9	.....	91
{ag7.x, ag7.y, ag7.z} * 1000	int24	9	ag0.x -> a19.x, ag0.y -> a19.y, ag0.z -> a19.z	100
{ag8.x, ag8.y, ag8.z} * 1000	int24	9	.....	109
{ag9.x, ag9.y, ag9.z} * 1000	int24	9	.....	118
Checksum	uint8	1	The Checksum is equal to all previous bytes added	127

Role Table	
enum{NODE,ANCHOR,TAG,CONSOLE,MASTER,SLAVE};	

Byte's Quantities		Typedef	
1			uint8, int8
2			uint16, int16
3			uint24, int24
4			uint32, int32, float
8			uint64, int64

Typedef		
Abbreviation	Full Title	Type
RW	Read Write	Terminal can read data from node & write data to node
RO	Read Only	Terminal can only read data from node
WO	Write Only	Terminal can only write data to node