MultiHop

Rev. A 5/28/2013
151317

BANNER®

MultiHop

MultiHop   .
MultiHop   -   . MultiHop
                         ,   .

- •
- •
- •

                                                                                       .
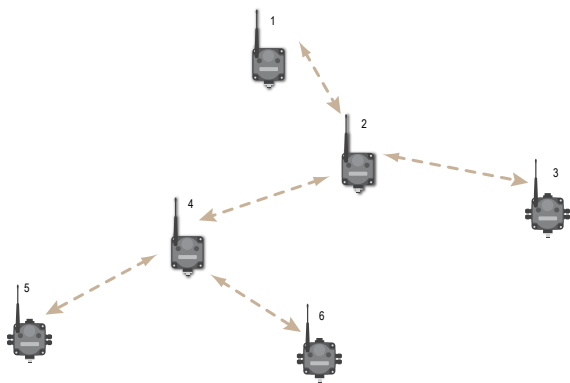   .   ,
                         /   .
              .   MultiHop
        .   MultiHop   .
                                                                           .

- •   1   2(   )
                         .
- •   2(   )   1(   )
              3(   )   4(   )   .
- •   4(   )   2(   )
              5   6(   )   .
              LCD   (PADR)
              (DADR)   .

MultiHop   . MultiHop
                                                                            .

              MultiHop   .
                                                                   .

MultiHop   . MultiHop   .
                                                                   .

MultiHop   .   MultiHop   .   .
                              (   )   .

MultiHop

MultiHop   Modbus   .   DIP
         .   MultiHop   .

Modbus

Modbus   RF   MultiHop
                                                            . Modbus
                      Modbus
         .

Modbus   Modbus
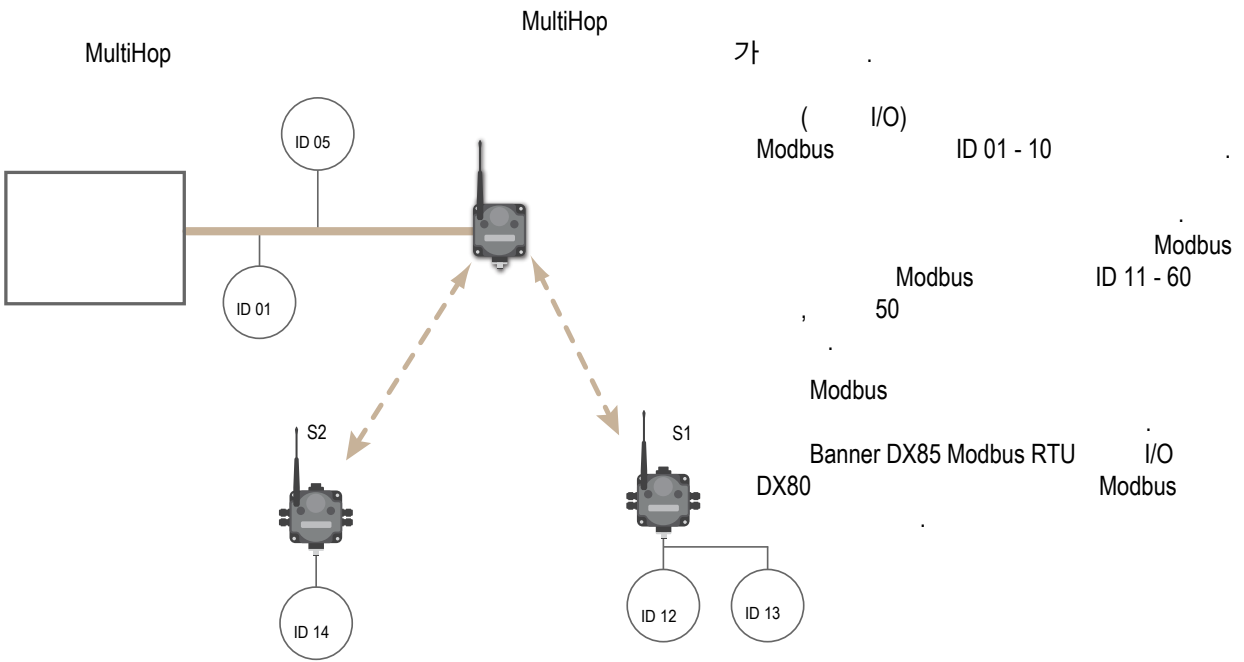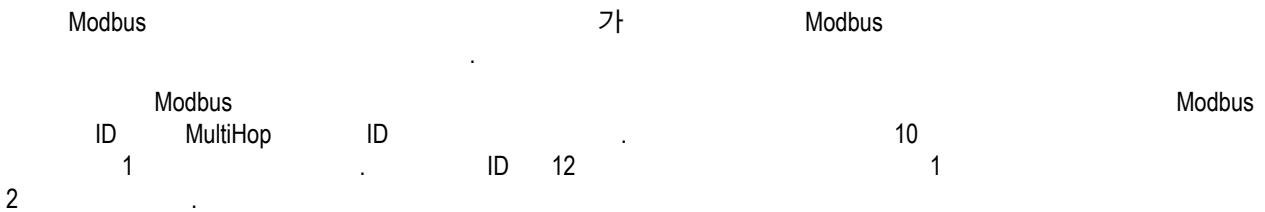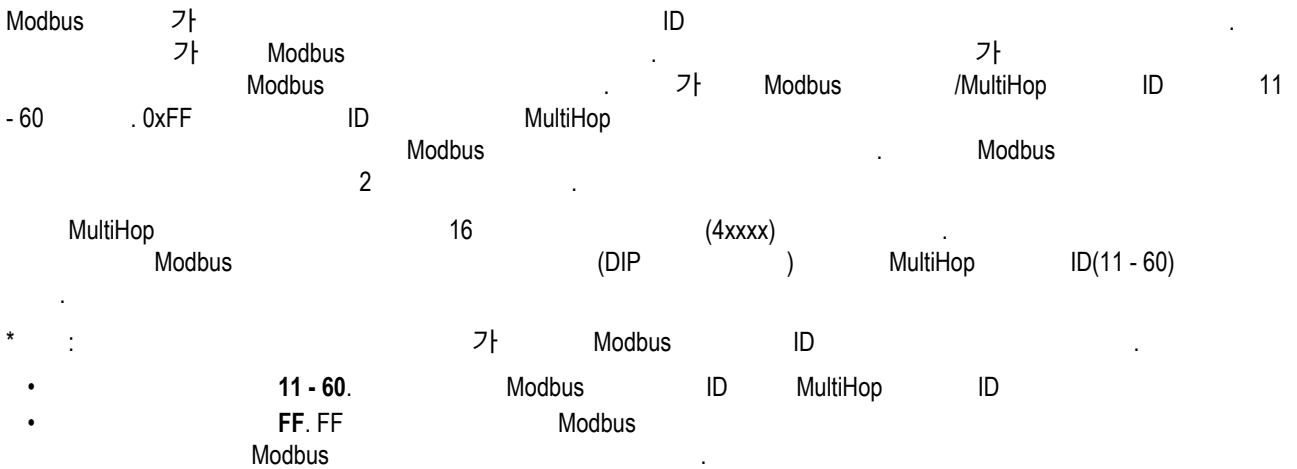   Modbus   Modbus   ID   Modbus
                              .   .   Modbus
         .   .

MultiHop   .

MultiHop   .

(I/O)
Modbus   ID 01 - 10   .

.

Modbus
Modbus   ID 11 - 60
,   50
.

Modbus   .
Banner DX85 Modbus RTU   I/O
DX80   Modbus
.

ID 05

ID 01

S2

S1

ID 14

ID 12   ID 13

MultiHop   ID

Modbus   Modbus
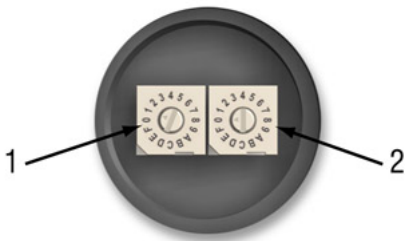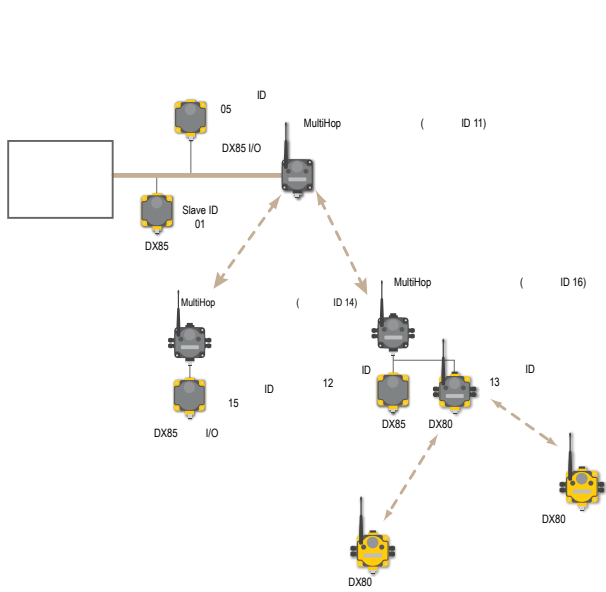.

Modbus   Modbus
ID   MultiHop   ID   .   10
1   .   ID   12   1
2   .

SureCross

1   -   ID   10
.

2   -   ID   1
.

1   2

Modbus   ID   .
Modbus   .
Modbus   .   Modbus   /MultiHop   ID   11
- 60   . 0xFF   ID   MultiHop
Modbus   .   Modbus
2   .

MultiHop   16   (4xxxx)   .
Modbus   (DIP   )   MultiHop   ID(11 - 60)
.

*   :   Modbus   ID   .
• **11 - 60**.   Modbus   ID   MultiHop   ID
• **FF**. FF   Modbus
Modbus   .

MultiHop

ID
05
MultiHop   (ID 11)
DX85 I/O

DX85
I/O Modbus   01, DX85   I/O Modbus
05   MultiHop
. Modbus
01 - 10
. Modbus   MultiHop
11 - 60
.

Slave ID
01
DX85

MultiHop   (ID 16)
MultiHop   (ID 14)

ID   ID   ID
15   12   13
DX85   I/O   DX85   DX80

DX80

DX80

Modbus   .

MultiHop
.   .
.

MultiHop
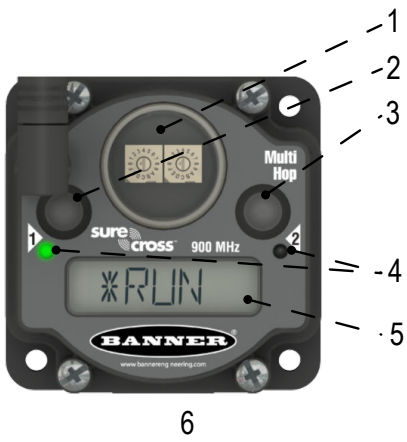.   .

6

1   . Modbus   Modbus   ID
        . (.)

2   1.
         .

                . (MultiHop
    .)

3   2.
         .
     .   .

4   LED 1   2. RF   ,
               .

5   LCD   . 6   /
       .
     .

6   5   M12   .
             . (
    .)

MultiHop

MultiHop   .

1.   DIP   DIP   . DIP
.

2.   MultiHop   .   I/O
.

3.   .
4. MultiHop   MultiHop   (   ) ID   . MultiHop
.

5.   .
6. LED   .
7. Multihop   .
8.   .

MultiHop

MultiHop   .

MultiHop   ID   .
.

1.   4   DIP   .
2.   .
3.   /   /   DIP   .   Multi-
Hop   .
4.   DIP   .
5.   DIP   . (DIP
.)   MultiHop   Modbus   .
DIP   .
6. MultiHop   DIP   .

MultiHop

DC   . FlexPower   5.5V
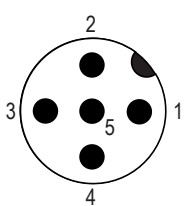.

FlexPower Multihop   .
.   SPx   DC 10 -
30V   .

		DC 10 - 30V(RS-485)	FlexPower(RS-485)	FlexPower(RS-232)
	1	DC 10 - 30V	DC 10 - 30V	DC 10 - 30V
	2	RS-485/D1/B/+	RS-485/D1/B/+	RS-232 Tx
	3	DC (GND)	DC (GND)	DC (GND)
	4	RS-485/D0/A/-	RS-485/D0/A/-	RS-232 Rx
	5	-	DC 3.6 - 5.5V	DC 3.6 - 5.5V

MultiHop   (   ) ID

MultiHop   MultiHop   ID   .

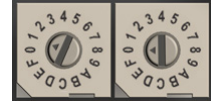   (I/O)   Modbus   ID 01 - 10
        .
    . MultiHop   ,   Modbus   ID 11 - 60
                .   50   (   )
            .

            01 - 60   MultiHop   ID   .

MultiHop

MultiHop   .

MultiHop   MultiHop
                    . MultiHop
                .   .   /
                        /   .
                                    LCD   *DVCFG   , -BIND   .
                                    .

1.   MultiHop   MultiHop
            2m   .
2.   MultiHop   .
     MultiHop   **:**
     2   2
     1

     2   LED/   LED   LCD   *BINDNG and *MASTER   .   LED/
            LED   .
3.   MultiHop   .
     MultiHop   **/**   **:**
     2   2
     1

                                                                                                .
                        LED   .
            LED   4   4   . M-GAGE   LED
                        (   )   .   /
                                                                                    .
4.   3   .
5.   MultiHop   .
     MultiHop   **:**
     2   2
     1

                                                                                                                .

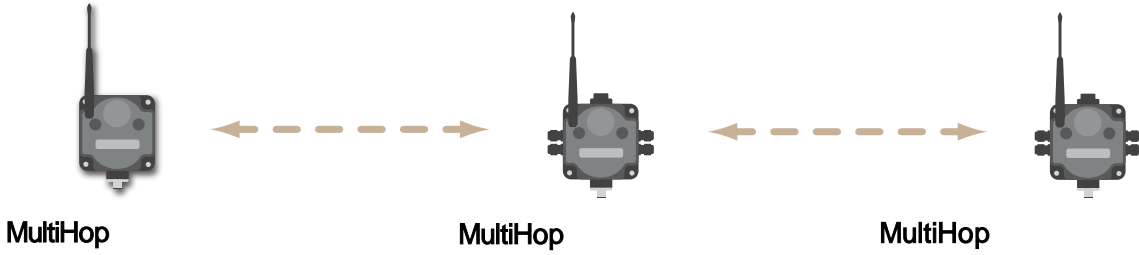   SureCross   .
                                        .

2m

LED

LED

.

		2　　/		1　　/LED
		LED 1	LED 2	LED
1	.	-	（　）	
2	/　　　　　　　　　　　.		-	(3 1　)
3	.　　　/ .		-	
4	/　　　　　　　　　.	-		
5	/ .	-		
6	/　　　　　　　.		-	
7	/　　RUN　　　　　　.			
	/ .	-		

LED

LED　　　　　.

		2　/		1　　/LED
		LED 1	LED 2	LED
1	.	-		
2	RUN　　　.		-	
	.	-		

MultiHop
.

Multihop   *(LCD*   *)*

,   .

MultiHop   MultiHop   MultiHop

LED   LCD

2   1

4   ,   ,

2   . (.)

1. MultiHop   *SITE   1   .

                   I/O

2.   2   .

            :   CHLDRN   .   :   PARENT   .

            :   PARENT   .

3.   MultiHop   .

MultiHop   .

             2   . (

         *RUN   .)   1

            .   2   .

            1   PARENT   CHLDRN   .   2

PARENT   CHLDRN   .

         1   . (

         *RUN   .)   2

                  .

         2   PARENT   .   2

               .

                .   LED 2   RF

                  LED 1   .

           (,   )

4.   (G, Y, R, M)   . M   (%)   G, Y

    R   (%)   .

GRN = GREEN   ; YEL = YELLOW   ; RED = RED   ; MIS =

      (%).   YELLOW   GREEN

      .

5.   2

       .   1   4   ,   ,

      .   2   .

6.   2   .

MultiHop

(   )   LCD

•   .
•   .
•   15dB   .
•   . (
                                                                                                    .)

                                                                            40%
                                                          ,
        .   .

                                            .   ID
                                                                                    .
                                                          .

                                                    LED   LCD   .

SureCross®

.

SureCross

2

                              SureCross   2   .
                                                          .

2
        .

-      .
-
-      .

2   .
.

.   .

-   ,   .
-      .

.

Banner   SureCross   1/2" NPT   (BWA-HW-031)
.

NPT

PTFE   .

1. PTFE(   )
    4-8   .
2.   .   5in-lbf
    *

    PG-7   .   PG-7
    :

1. PTFE( )   4-8
   .

2.   .
                        10in-lbf   .
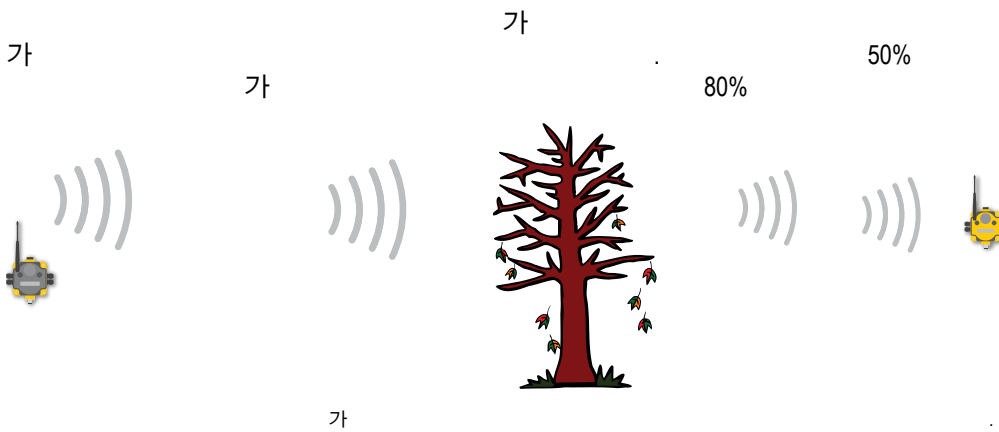
*   .   .
                                                                    .
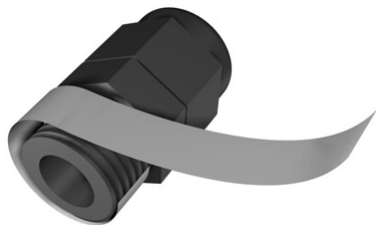
NPT

1/2" NPT   .   NPT   :
  1.   PTFE   12-16   .
  2.   .
  3. 9/16"
                                    .   .   SureCross   .
                                                              .

*   .   .
                                    .

                                                                                                              .

      ,   .

  •   .
                                          .
  •   .   .
  •   .   100g
                        .
                                                                    .

                                                    .

                                                                                                      .

                              .

                                                        , Banner   p/n 132113   .
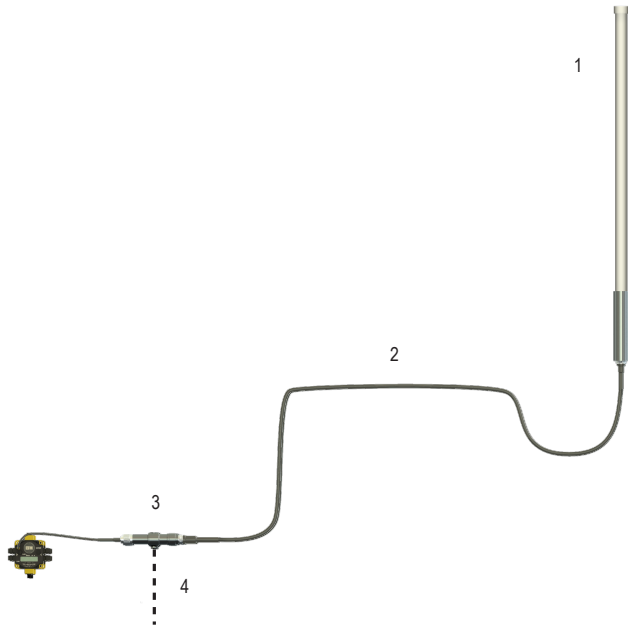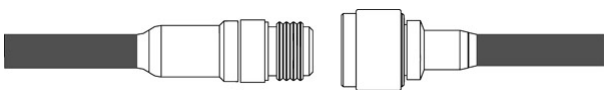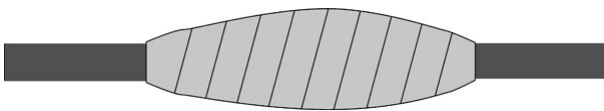
        RF   .   Sure-
Cross   .   .

2m

50%

80%

, Banner   132113(

)   .

1

2

3

4

1	.
2	
3	
4	
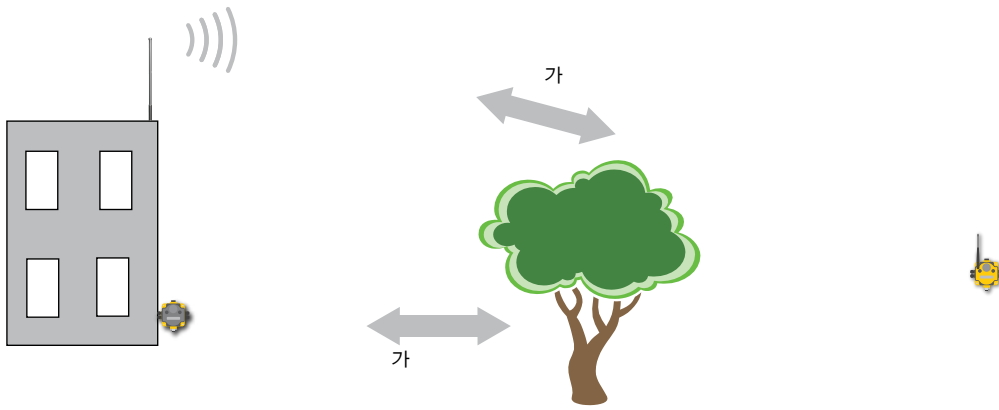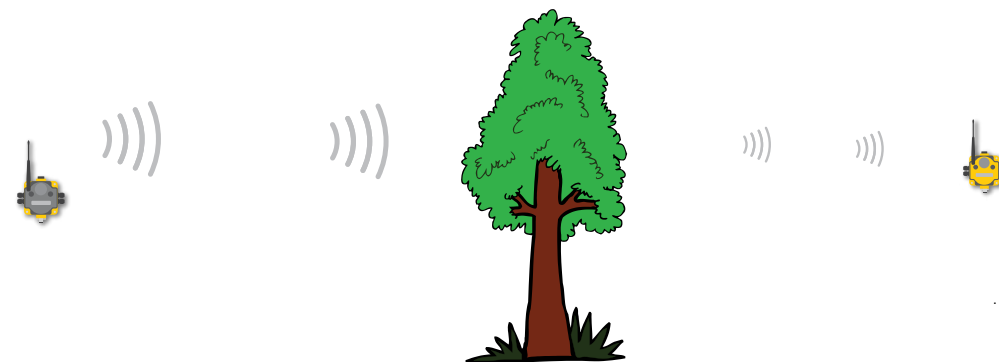
I/O   **.**   I/O   VFD(Variable Frequency Drives)
 /   DX80   ,
 .   Banner Engineering Corp.   .
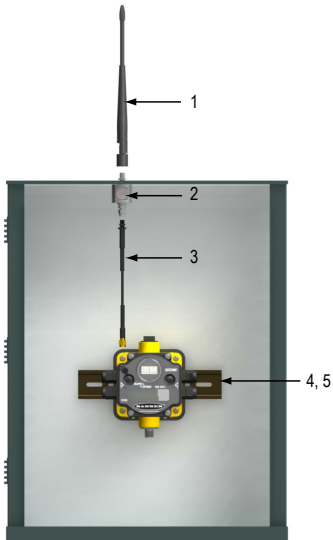
.

1:
.

2:   .   1
 1   .
 .

3:   UV
 .   1
 .

.

.

. SureCross® SureCross

.

RP-SMA

SureCross .

1	BWA-9O2-C	, , 902-928MHz, 2dBd, , RP-SMA MALE
	BWA-2O2-C	, , 2.4GHz, 2dBd, , RP-SMA MALE
	BWA-2O5-C	, , 2.4GHz, 5dBd, , RP-SMA MALE
	BWA-2O7-C	, , 2.4GHz, 7dBd, , RP-SMA MALE
2	BWC-LMRSFRPB	, , RP-SMA , 900MHz/2.4GHz
3	BWC-1MRSFRSB02	RG58 , RP-SMA TO RP-SMA Female , 0.2m
	BWC-1MRSFRSB1	RG58 , RP-SMA TO RP-SMA Female , 1m
	BWC-1MRSFRSB2	RG58 , RP-SMA TO RP-SMA Female , 2m
	BWC-1MRSFRSB4	RG58 , RP-SMA TO RP-SMA Female, , 4m
4	DIN-35-105	DIN , 105mm , 35mm
5	SMBDX80DIN	DX70 DX80 DIN .

RP-SMA

SureCross .

Yagi
.

   MultiHop
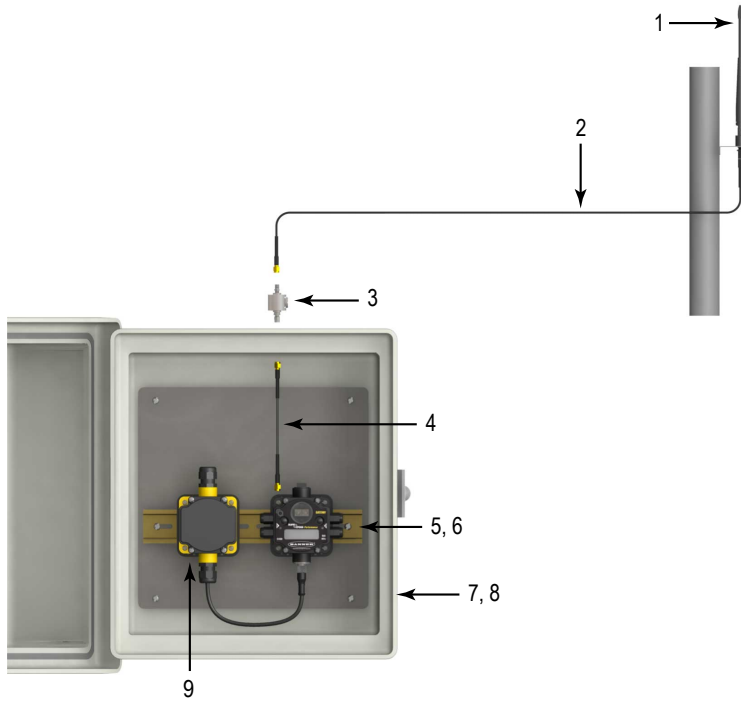
1	BWA-9O2-C	, , 902-928MHz, 2dBd, , RP-SMA MALE
	BWA-9O5-C	, , 902-928MHz, 5dBd, , RP-SMA MALE
	BWA-2O2-C	, , 2.4GHz, 2dBd, , RP-SMA MALE
	BWA-2O5-C	, , 2.4GHz, 5dBd, , RP-SMA MALE
	BWA-2O7-C	, , 2.4GHz, 7dBd, , RP-SMA MALE
2	BWC-1MRSFRSB02	RG58 , RP-SMA TO RP-SMA Female , 0.2 m
	BWC-1MRSFRSB1	RG58 , RP-SMA TO RP-SMA Female , 1 m
	BWC-1MRSFRSB2	RG58 , RP-SMA TO RP-SMA Female , 2m
	BWC-1MRSFRSB4	RG58 , RP-SMA TO RP-SMA Female, , 4m
3	BWC-LMRSFRPB	, , RP-SMA , 900MHz/2.4GHz
4	BWC-1MRSFRSB02	RG58 , RP-SMA TO RP-SMA Female , 0.2 m
	BWC-1MRSFRSB1	RG58 , RP-SMA TO RP-SMA Female , 1 m
	BWC-1MRSFRSB2	RG58 , RP-SMA TO RP-SMA Female , 2m
	BWC-1MRSFRSB4	RG58 , RP-SMA TO RP-SMA Female, , 4m
5	DIN-35-105	DIN , 105mm , 35mm
6	SMBDX80DIN	., DIN , DX80
7	BWA-EF14128	, 14"x 12" x 8"
8	BWA-PA1412	, 14" x 12"
9 *	DX81	DX81 FlexPower
	DX81P6	DX81P6 FlexPower 6

*   DC +12 - 24V   DX80   .   DX70
       MultiHop   .   DX81   DX81P6 FlexPower   FlexPower
                     .   DC +12 - 24V   DX70
       .

N-

SureCross   .
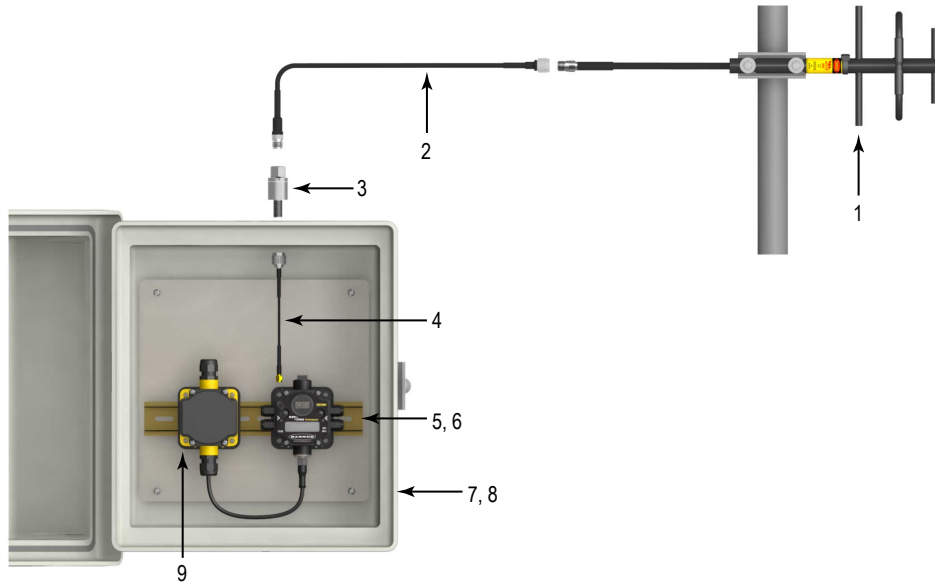
Yagi
                              .

1	BWA-9Y6-A	, Yagi, 900MHz, 6.5dBd, N Female
	BWA-9Y10-A	, Yagi, 900MHz, 10dBd, N Female
	BWA-9O6-A	, , 900MHz, 6dBd, , N Female
	BWA-9O5-B	, , 900MHz, 5dBd/7.2dBi, , N Female
	BWA-2O8-A	, , 2.4GHz, 8.5dBd, N Female, 24"
	BWA-2O6-A	, , 2.4GHz, 6dBd, N Female, 16"
2	BWC-4MNFN3	LMR400 , N-Male ~ N-Female, 3m
	BWC-4MNFN6	LMR400 , N-Male ~ N-Female, 6m
	BWC-4MNFN15	LMR400 , N-Male ~ N-Female, 15m
	BWC-4MNFN30	LMR400 , N-Male ~ N-Female, 30m
3	BWC-LFNBMN-DC	, , N- , 900MHz/2.4GHz, DC
4	BWC-1MRSMN05	LMR200 , RP-SMA ~ N-Male, 0.5m
	BWC-1MRSMN2	LMR200 , RP-SMA ~ N-Male, 2m
5	DIN-35-105	DIN , 105mm , 35mm
6	SMBDX80DIN	., DIN , DX80
7	BWA-EF14128	, 14"x 12" x 8"

8	BWA-PA1412	, 14" x 12"
9 *	DX81	DX81 FlexPower
	DX81P6	DX81P6 FlexPower 6

* DC +12 - 24V DX80 . DX70
MultiHop . DX81 DX81P6 FlexPower FlexPower
. DC +12 - 24V DX70
.

Modbus

,   Modbus   .
                                        Modbus   Modbus   ID
        .

                            1,   2,   1
            .   (,   ,   4 - 20mA)   1,   2,   1
    I/O   .   .
            I/O   Modbus   /
            .   *MultiHop*   (**151317)**   .
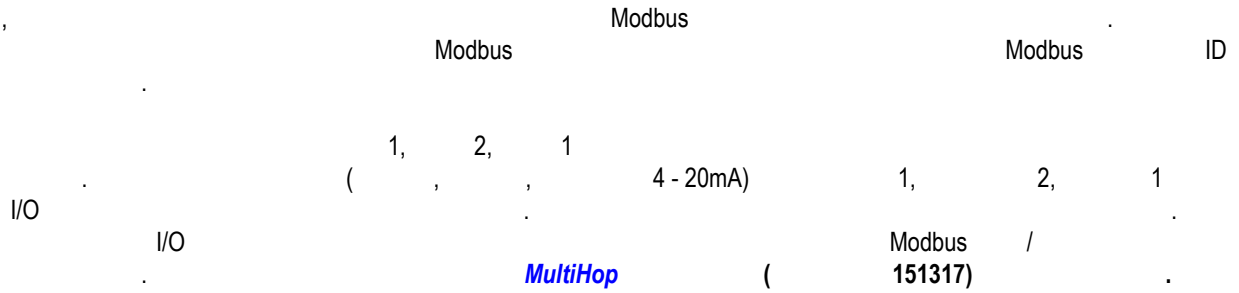
00000s
            1 - 16   1 - 16   .

MultiHop   .

00400s
            401 - 500   1 - 100   .

MultiHop   .

00500s
            501 - 516   1 - 16   .

MultiHop   .

00900s
            901 - 1000   1 - 100   .

MultiHop   .

01000s

                                                                            .
                .

        16   I/O   .   1
            1001 - 1008   .   2   1051 - 1058   .
            50   .
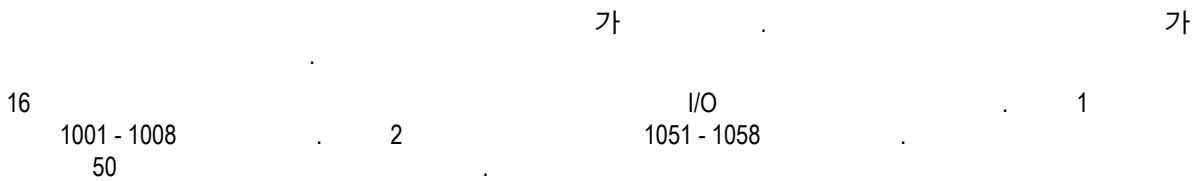
(4xxxx)									
1	2	3	4	5	6	7	8	9	
1001	1051	1101	1151	1201	1251	1301	1351	1401	
1002	1052	1102	1152	1202	1252	1302	1352	1402	( )
1003	1053	1103	1153	1203	1253	1303	1353	1403	( )
1008	1058	1108	1158	1208	1258	1308	1358	1408	(Out-of-Sync)

        . 1   0   .
                .   1   .
                                    0   .   1   .

        (   ).   (   )   32   (
    Modbus   )   .   Modbus   125(900MHz

)   5   (125 x .040   = 5   )   . 900MHz   40
. 2.4GHz   20   .

(   ).   (   )   .

1xx4 - 1xx7.   .

.

16   I/O   .   1
1004 - 1007   .   2   1054 - 1057   .
50   .

(4xxxx)									
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	
1004	1054	1104	1154	1204	1254	1304	1354	1404	
1005	1055	1105	1155	1205	1255	1305	1355	1405	
1006	1056	1106	1156	1206	1256	1306	1356	1406	
1007	1057	1107	1157	1207	1257	1307	1357	1407	

.
.   0x000F   4
.   1   2 - 4   0   .
.   1 - 4   .
.
.   MultiHop   .

- 0x0 -
- 0x1 - SP1
- 0x2 - SP2
- 0x3 - SP1   SP2
- 0x4 - SP3
- 0x8 - SP4
- 0xC - SP3   SP4

.   .
.
.

0V	255
5V	204
7V	125
10V	69
15V	32
20V	12
24V	03

.
.
. 900MHz   40   . 2.4GHz   20
.

www.bannerengineering.com - tel: 763-544-3164   Rev. A

02000s

1   2001 - 2004   2   2051 - 2054
50

(4xxxx)									
1	2	3	4	5	6	7	8	9	
2001	2051	2101	2151	2201	2251	2301	2351	2401	
2002	2052	2102	2152	2202	2252	2302	2352	2402	
2003	2053	2103	2153	2203	2253	2303	2353	2403	
2004	2054	2104	2154	2204	2254	2304	2354	2404	(Out of Sync)

1   0

1, 2, 3   4   1 - 4

4401, 4411, 4421   4431

1   0

1
0   1

02950s

2951   " "   1   0

2952   ." "
     I/O
    1

2953   **I/O**   **(100ms/).**   100

2954   1
0

03000s

1   3001 - 3004   2   3021 - 3024
20

(4xxxx)				
IN 1	IN 2	IN 3	IN 4	
3001	3021	3041	3061	PNP/NPN
3002	3022	3042	3062	
3003	3023	3043	3063	
3004	3024	3044	3064	

(4xxxx)				
IN 1	**IN 2**	**IN 3**	**IN 4**	
3007	3027	3047	3067	
3008	3028	3048	3068	
3009	3029	3049	3069	

. . 3xx8

3xx9 .

100ms . 0 .

. .

1 0 .

.

. 1 " " (

).

PNP **NPN**. PNP( ) 1 . NPN( )

0 .

. 0 . 1 - 255 .

(1) (1 - 255) .

. 0 . 1 - 255 .

(0) (1 - 255) .

03300s

.

1 1 - 3301 . 2 3321

. 20 .

(4xxxx)				
IN 1	**IN 2**	**IN 3**	**IN 4**	
3301-3320	**3321-3340**	**3341-3360**	**3361-3380**	
3301	3321	3341	3361	
3302	3322	3342	3362	
3303	3323	3343	3363	
3304	3324	3344	3364	C/F
3305	3325	3345	3365	
3306	3326	3346	3366	
3307	3327	3347	3367	
3308	3328	3348	3368	
3309	3329	3349	3369	
3310	3330	3350	3370	
3311	3331	3351	3371	
3312	3332	3352	3372	
3313	3333	3353	3373	
3314	3334	3354	3374	
3315	3335	3355	3375	

(4xxxx)				
IN 1	IN 2	IN 3	IN 4	
3301-3320	3321-3340	3341-3360	3361-3380	
3316	3336	3356	3376	
3317	3337	3357	3377	
3318	3338	3358	3379	
3319	3339	3359	3379	
3320	3340	3360	3380	

. 1 .

. .

. 0 .

. 0 - 65535 1 .

4 - 20mA 0 4mA 65535 20mA .

0 . 15.53mA 15530

. (0 - 20mA) μA( ) mV( )

. .

. ON OFF

. (ON) . ON

. OFF

. 10% - 20% .

15mA

. 13mA 2mA

. 2mA

. .

. .

. 20mA 20000 8V 8000

. .

. 0 . 1 .

. .

. 4mA 4000 2V 2000

. .

. .

. .

. .

. .

. 0 . 1( ) - 6( )

. (DX80 .)

RTD

.

(4xxxx)				
IN 1	**IN 2**	**IN 3**	**IN 4**	
3301-3320	**3321-3340**	**3341-3360**	**3361-3380**	
3304	3324	3344	3364	C/F
3305	3325	3345	3365	
3306	3326	3346	3366	
3307	3327	3347	3367	

C/F.   1   0(   )   .

.   RTD   (1/10   )   (   )   .

(   )   0   1   .

.

. DX80   (× 20)   1   20.5

.   1/10   (x 10)   0(   )   .   20.5

1   410   . 0

205   .

.   B

(0)   .

0	B	5	J	10	P
1	C	6	K	11	R
2	D	7	L	12	S
3	E	8	M	13	T
4	G	9	N	14	U

03500s

.

1   3501 - 3505   .   2

3521 - 3525   .   20

.

(4xxxx)	
IN 1	
3501	/
3502	
3503	
3504	
3505	

.   3504(   )   3505(   )   32

.   '   '   '

.

/ . (Hz) 0 1(PNP)

( ) .

1 .

0 . 0

.

. / .

. 1 Modbus 3504

3505 . 0 .

03600s H-

H- .

H- 1 3604 - 3609 . H- 2 3624 - 3629 .

H- 20 .

H- (4xxxx)	
H- 1	
3604	H-
3605	H-
3606	H-
3607	H-
3608	H-
3609	H-

H- . H- (1) (0) . SDI-12 H-

.

H- . 40

.

H- . H- ON OFF

.

		DO4	DO3	DO2	DO1	SP4	SP3	SP2	SP1
3607	(ON)	0	0	1	0	0	0	0	1
3608	(OFF)	0	0	0	1	0	0	1	0

H- . H- H-

40 .

H- . Banner Engineering Corp

.

.

03600s

.

.

FlexPower (SP)

5, 10 15V (4 -

20mA).

.

. , .

SP 1   3601 - 3603   . SP 2   3621 - 3623   .

20   .

(4xxxx)				
SP1	**SP2**	**SP3**	**SP4**	
3601	3621	3641	3661	
3602	3622	3642	3662	
3603	3623	3643	3663	

. SP#

(   ).   . SP

"   "   .

.

0V		255	15V		32
5V		204	20V		12
7V		125	24V		03
10V		69			

.   .

I/O

. 0   . 1

.

.

1   .

0   .

03700s

.

1   3701 - 3703   .   2   3721 - 3723   .

20   .

(4xxxx)				
OUT 1	**OUT 2**	**OUT 3**	**OUT 4**	
3701	3721	3741	3761	
3702	3722	3742	3762	
3703	3723	3743	3763	

.   .

0   1   .

.

.

1   .

0   .

04000s

.

1   4001 - 4005   .   2   4021 - 4025

.   20   .

			(4xxxx)	
OUT 1	**OUT 2**	**OUT 3**	**OUT 4**	
4001	4021	4041	4061	
4002	4022	4042	4062	
4003	4023	4043	4063	
4004	4024	4044	4064	
4005	4025	4045	4065	

.   .

16   .

.   0 - 65535   1   .

4 - 20mA   0   4mA   65535   20mA   .

0   .   15.53mA   15530   .

(0 - 20mA   )   µA(   )   mV(   )   .

.

1   .

0   .

.   .

.   20mA   20000   8V

8000   .

.   .

.   4 mA   4000   2V

2000   .

04150s

4151   .

1   .

4152   **I/O**   .   I/O   .

4153   .   .

4154   .   (   )

.

04400s

On   Off   .

.

.   40   .

.

4401-4408   **1**.

4401-4408   **2**.

4401-4408   **3**.

4401-4408   **4**.

04500s M-GAGE

M-GAGE   .

4501   .   1   . M-GAGE

X, Y   Z   .

M-GAGE   .   M-GAGE
.

4502   .   (0000).   0   X   ,   1   Y   ,   2   Z
1   .

4503   .   1   .

4504   .   1   .

4505   .   T0 - T6
. T0   . T6   .
(   )   .

( )			( )	
T0	0		T4	4
T1	1		T5	5
T2	2		T6	6
T3	3			

4506   .
.   0   .   1 - 255   .
(1)   (1 - 255)
.

4507   .   0   .   1 - 255   .
(0)   (1 - 255)   .

4509   .   .

4510   **4511**   .   ON   OFF
.   M-GAGE™   (ON   )   .
OFF   (ON   )
.   10% - 20%   .

M-GAGE   0 - 65,535   .

150   30   (-   150
- 30 = 120   OFF   ).   150   ON   "1"   Modbus
LSB(Lowest Significant Bit)   . M-GAGE   OFF   (-   )
Modbus   LSB   "0"   .

M-GAGE   .
150   ,   15   ,   250   200
.   .

4512   (   )   .   .
.   .

4513   (   )   .
.

4514   (   )   .   .

4521   . x-, y-   z-   .

4522   [x   ]. X   .

4523   [y   ]. Y   .

4524   [z   ]. Z   .

4525   [x   ]. X   .

4526   [y   ]. Y   .

4527　　　　　**[z   ]**. Z　　　　　　　　　　　.

4528　　　　　**[x   ]**. X　　　　　　　　　　.

4529　　　　　**[y   ]**. Y　　　　　　　　　　.

4530　　　　　**[z   ]**. Z

04800s

.

4810　　　　　　.　　　　　　　　　　　　　　　　　　　　　　.
　　　　.　　　　　　　　　　　20mA　　　　20000　　　　　　　　　　　　　　8V　　　　8000
　　　　.

4811　　　　　　.　　　　　　　　　　　　　　　　　　　　　　.
　　　　.　　　　　　　　　　　4mA　　　4000　　　　　　　　　　2V　　　　2000
　　　.

4812　　　　　　　　　　.　　　　　　　　　0 - 65535　　　　　　　　　　1
　　. 4 - 20mA　　　　　0　　4mA　　　　　65535　　20mA　　　　　.
　　　　　　　　0　　　　　　.　　　　15.53mA
15530　　.　　　　(0 - 20mA　　　)　　　　　　　μA(　　　　　　)　　　　　　mV(　　　　)
　　　　.

4813　　　**4814**　　　　　　　.　　　　　　　　　　　　　　　ON　　OFF
　　.　　　　　　　　　　　　　　　　(ON　　)　　　　.
　　ON　　　　　.　　　　　　　　OFF
　　　　　.　　　　　　　　　10% - 20%　　　.

　　　　　　　　　　　　　　　　　　　　15mA　　　　.　　　13mA
　　　　2mA　　.　　　　　　　2mA　　　　　　　.

4815　.
　　　.　　　　　　　　0　　　　.

4816　　　**4817**　　　.
　　　　　　　　.
　　　　　　.　　　0　　　　　.
　1 - 255　　.

4818　　　　　.　　　　　　　　1　　.
　.

4819　　　　.　　　　0　　　　1　　.

4820　**(   )**.　　　　0　　　.　　1(　　) - 6(
　)　　　.(DX80　　　　.)　　(   )
　　.

( )			( )	
T0	0		T4	4
T1	1		T5	5

( )			( )	
T2	2		T6	6
T3	3			

06050s

( ).

3.6V DC 10 ~ 30V DC 4.2V DC .
MultiHop .

6051 . 0 .
1 .

6052 . .
( ) = 0.040 × 2^RegValue. : 9(20).

6053 . 44061 0 1
. 100mA . 38(3.8V) .

6054 .
. 3.0V PCB Vcc 0 . 3.3V PCB Vcc 1 .
0 .

6061 . 0 6053 (
). 1 (10 ~ 30V DC).

6062 . 100mV .

11000s SDI-12

SDI-12 . A SDI-12 B SDI-12
. SDI-12 ID A B .

11001 A **SDI-12** . SDI-12 SDI-12 11001 .

11201 B **SDI-12** . SDI-12 SDI-12 11201 .

SDI-12 0 ~ 9, 'a' ~ 'z' 'A' ~ 'Z' .
ASCII . SDI-12 0 ASCII 0x30 .

11002 A **SDI-12** . M! . C! 1
.

11202 B **SDI-12** . M! . C! 1
.

SDI-12

SDI-12 9 . SDI-12
.

SDI-12 (A) 11011 , Modbus
20 20 Modbus . SDI-12
Modbus 11011 . SDI-12 Mod-
bus 11021 .

SDI-12 (B) 11211 . SDI-12
200 .

		SDI-12	A		(4xxxx)		
						16	32
1	11011	11012	11013	11014	11015		
2	11021	11022	11023	11024	11025		
3	11031	11032	11033	11034	11035		
4	11041	11042	11043	11044	11045		
5	11051	11052	11053	11054	11055		
6	11061	11062	11063	11064	11065		
7	11071	11072	11073	11074	11075		
8	11081	11082	11083	11084	11085		
9	11091	11092	11093	11094	11095		

16   **32**   . 16   0   32   1   .

. SDI-12   0 ~ 7

.

.   0   1   .

.   (1)   (0)   .

.   1   0   .

Configuration Examples

SP3   *IN*

1:   3

.

1   5   .

Modbus   .

- (reg 1202   , 1203   ):   1   15
- (reg 1204):   3
- (reg 1205):   .
- (reg 1206):   .

.

- : 15   (900   )
- : 0x4
- : 1
- : 15V

.

Modbus		
1202	0	
1203	22,500	40ms . 900 ÷ 0.040 = 22,500
1204	4	3 , .

Modbus		
1205	25	1 40ms . 1 ÷ 0.040 = 25
1206	32	15V . .

Acclima SDI-12

Acclima SDI-12 .

SDI-12 (Acclima)		(1)	(0-7)	(0) (1)	(1) (0)	16 (0) 32 (1)
1		ON	2			32
2		ON	1			32
3		ON	2			32
4		ON	2			32

Acclima		(:)			
1		11101:11102	×100	0:124	1.24%
2		11103:11104	×10	0:238	23.8 ℃
3		11105:11106	×100	0:402	4.02
4		11107:11108	×100	0:123	1.23dS/m

Decagon 5T3 SDI-12

Decagon 5T3 SDI-12 .

SDI-12 (Decagon 5T3)		(1)	(0-7)	(0) (1)	(1) (0)	16 (0) 32 (1)
1		ON	2			32
2		ON	2			32
3		ON	1			32

Decagon		(:)			
1		11101:11102	×100	0:124	1.24%
2		11103:11104	×100	0:123	1.23dS/m
3		11105:11106	×10	0:238	23.8 ℃

MultiHop   .   4xxxx
.

04100s

(4xxxx)		
4101–4104	, 1-8	ASCII,
4111–4113	, 1-6	ASCII,
4121–4123	, 1-6	ASCII,

04200s

(4xxxx)		
4201–4209	1-18	ASCII

04300s

(4xxxx)		
4301–4303	RF p/n	ASCII,
4304–4305	RF	ASCII,
4306–4308	RF EEPROM , 1-6	ASCII,
4309–4310	RF EEPROM , 1-3	ASCII,
4311–4313	LCD p/n	ASCII,
4314–4315	LCD	ASCII,
4316–4318	LCD EEPROM , 1-6	ASCII,
4319–4320	LCD EEPROM , 1-3	ASCII,

06400s

ASCII   Modbus   2   .   Modbus
.   Modbus
ASCII   .

(4xxxx)		
6401		16
6402		16 ,

148691   .

(4xxxx)		Modbus (16)	
4111	6-5	0x3139	1 9
4112	4-3	0x3638	6 8
4113	2-1	0x3431	4 1

P   (ASCII   )   16   .
                                                    .

(4xxxx)		(16)	(10)
6401		0x002A	42
6402		0x0023	35

Device and System Parameters

08200s

                                                                        .
                                                          .

                                    MultiHop   0   .
                                                    .

1.   8201
2.   8221(1) ~ 8236(16)   1   .
                    8201   8221 ~ 8236   .

8201   **1-16**   (   ).   2
                    0000 0000 0001 0001 (0x0011)   1   5
                                                                        .

8221   **1**   .   1   1   .

8221   **2**   .   2   1   .

...

8236   **16**   .   16   1   .

		900MHz(150mW)	900MHz(250mW)	900MHz(1W)	2.4GHz(65mW)
					x
					x
		x			x
					x
					x
					x
					x
		x	x	x	x
					x
					x
		x			x
					x
					x
					x
					x
					x
					x
					x
					x
					x
		x	x		x
					x
					x
					x
					x
					x*
					x
					x
					x
					x
					x

		900MHz(150mW)	900MHz(250mW)	900MHz(1W)	2.4GHz(65mW)
					x
					x
		x	x	x	x
					x
					x
					x
					x
		x			x
					x
					x
					x
					x
					x
					x
					x
					x
					x
					x
					x
					x **
					x
					x
					x
		x	x	x	x

-                  .

-         A   .
           . (1)   (2)
            .

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouiller du Canada. Le present appareil numérique n'emet pas de bruits radioélectriques dépassant les limites applicables aux appareils numeriques de le Classe A préscrites dans le Reglement sur le brouillage radioélectrique édits par le ministere des Communications du Canada.

          -      (   )   La Réunion(   )   .

*   - DX80   DX99   .

        -                     .

          -                .

**   -   DX70, DX80   DX99   .
       .

- 900MHz

Banner Engineering   9dBm

.   9dBm

.   50   .

EIRP(   )

.

SureCross   .

.

FCC   , 900MHz, 1W

DX80   FCC   15   .

FCC ID: UE3RM1809   FCC   15   .   . (1)

(2)

.

FCC

:   FCC   2.1091   FCC

.

.

:   .

SAR   .

:   FCC ID   ,

.   2

. FCC ID: UE3RM1809   .

FCC   15   B   .

.

,   .   .

TV   (   )

.

- •   ,
- •   ,
- •   ,   /
- •   /TV   .

:   1   A   Reverse Polarity SMA

. OEM

.   FCC   15.203(   )   15.247(

)   .

FCC

:   .

20cm

.

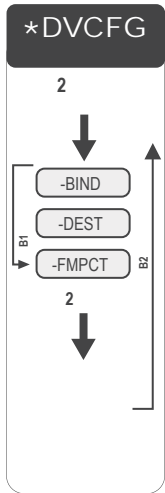DX80   .

-   0

BWA-9O1-x	, 1/4 ,	≤2dBi	0
BWA-9O2-C	, 1/2 , ,	≤2dBi	0
BWA-9O6-A	,	≤8.2dBi	2.2dB
BWA-9O5-B		≤7.2dBi	1.2dB
BWA-9Y10-A	Yagi	≤10dBi	4dB

FCC , 2.4GHz

DX80 FCC 15 ..

FCC ID: UE300DX80-2400 FCC 15 .
(1) (2)
.

FCC

: DX80 FCC 2.1091 FCC
.
.

: DX80 .
SAR .

: FCC ID ,
. 2
. FCC ID: UE300DX80-2400 .

FCC 15 B .
.
, .
. .
TV ( )
.

- ,
- ,
- , /
- /TV .

: 1 A Reverse Polarity SMA
. OEM
. FCC 15.203( )
15.247( ) .

FCC

: .
20cm
.

DX80 .

BWA-2O2-C	, 1/2 , ,	≤2dBi

BWA-2O5-C	,	,		≤5dBi
BWA-2O7-C	,	,		≤7dBi

MultiHop   ,

65.0
[2.56"]

7.9
[0.31"]

65.0
[2.56"]

80.3
[3.16"]

7.65
[0.30"]

109
[4.29"]

42
[1.65"]

14.67
[0.578"]

80.8
[3.18"]

I/O   MultiHop

65.0
[2.56"]

7.9
[0.31"]

22.2
[0.875"]

30.65
[1.21"]

65.0
[2.56"]

19
[0.75"]

80.3
[3.16"]

127
[5"]

7.65
[0.30"]

60
[2.36"]

14.67
[0.578"]

80.8
[3.18"]

120
[4.72"]
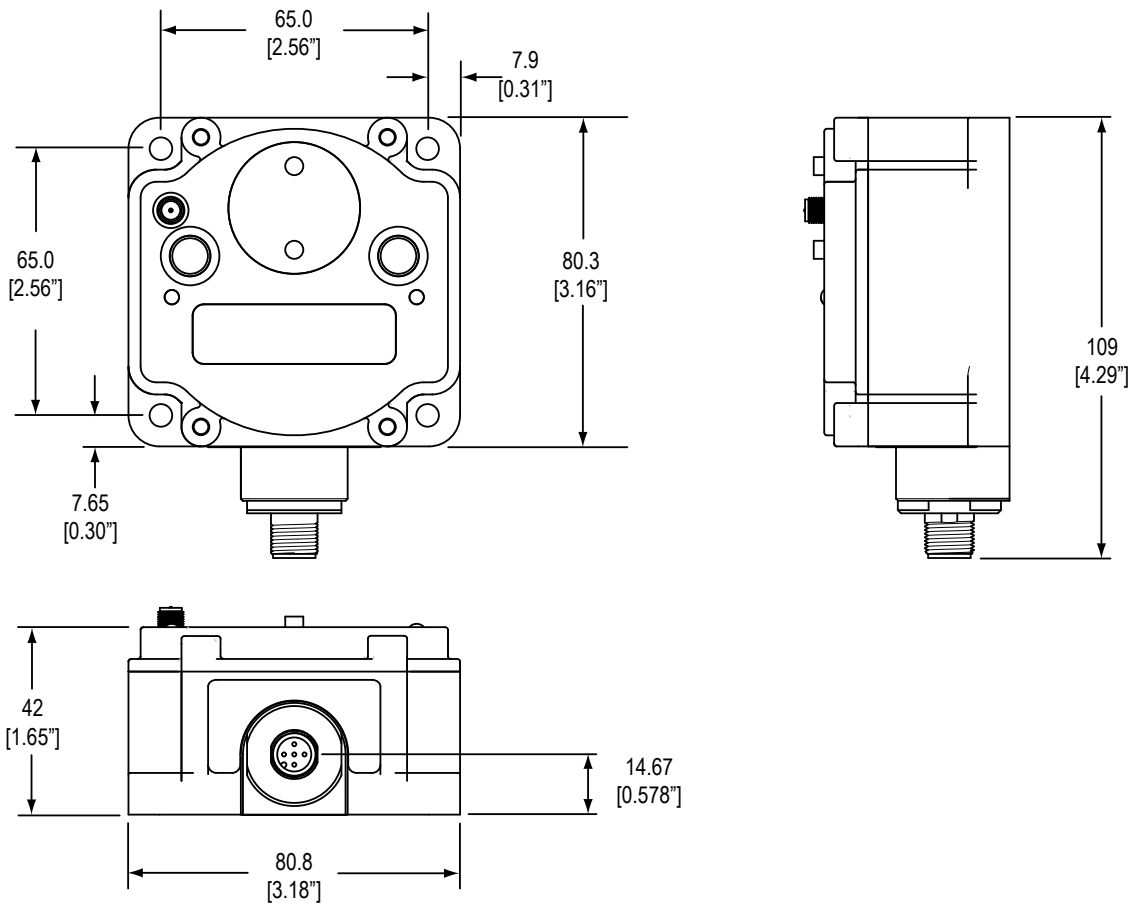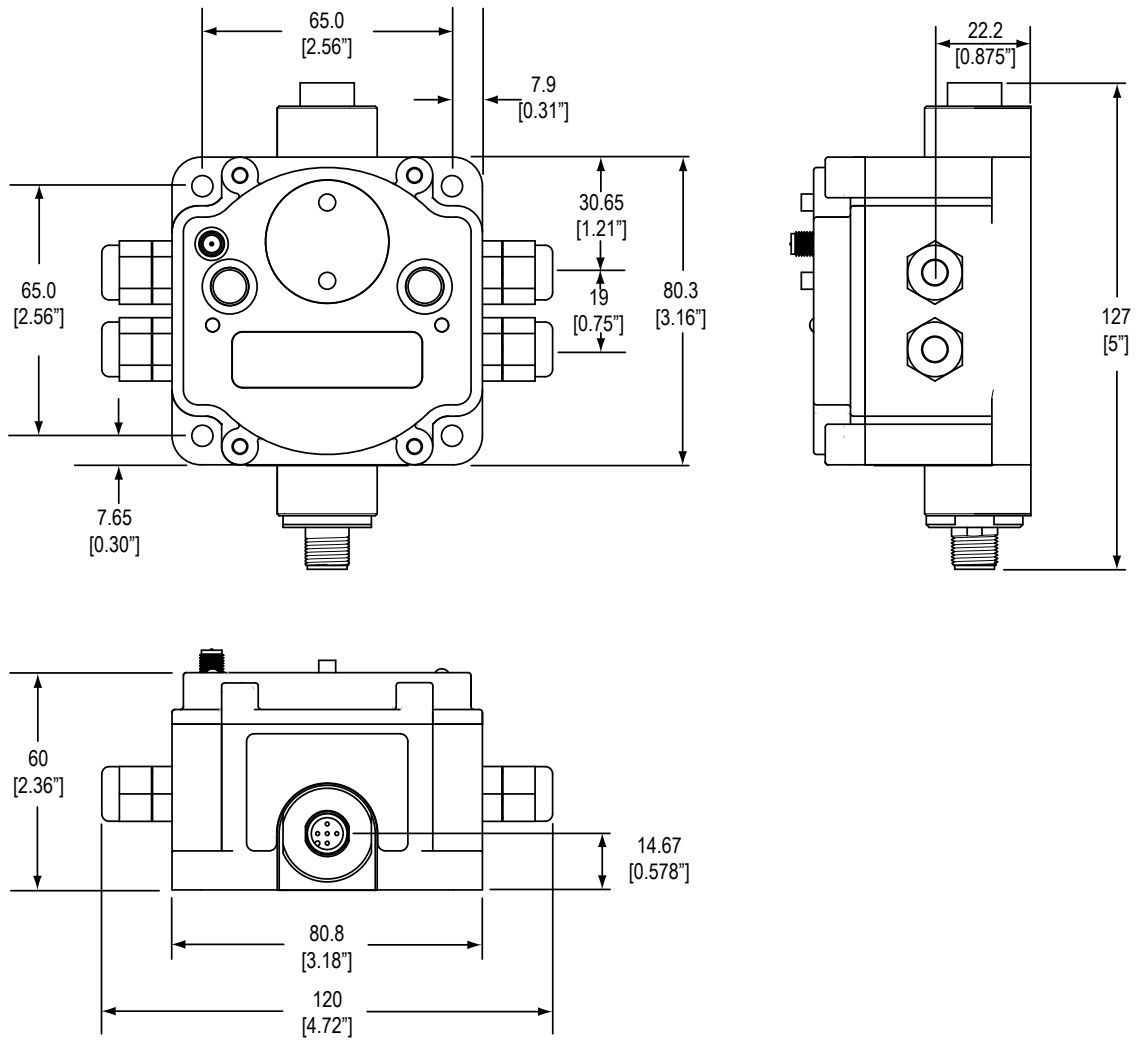
Advanced Setup

MultiHop

MultiHop . *RUN
. *RUN
.

LCD .

RUN

RUN   ID,   ,   ,   ,   (,   ,   )   /
                        .

PADR.   . PADR   6
            - 65535   .
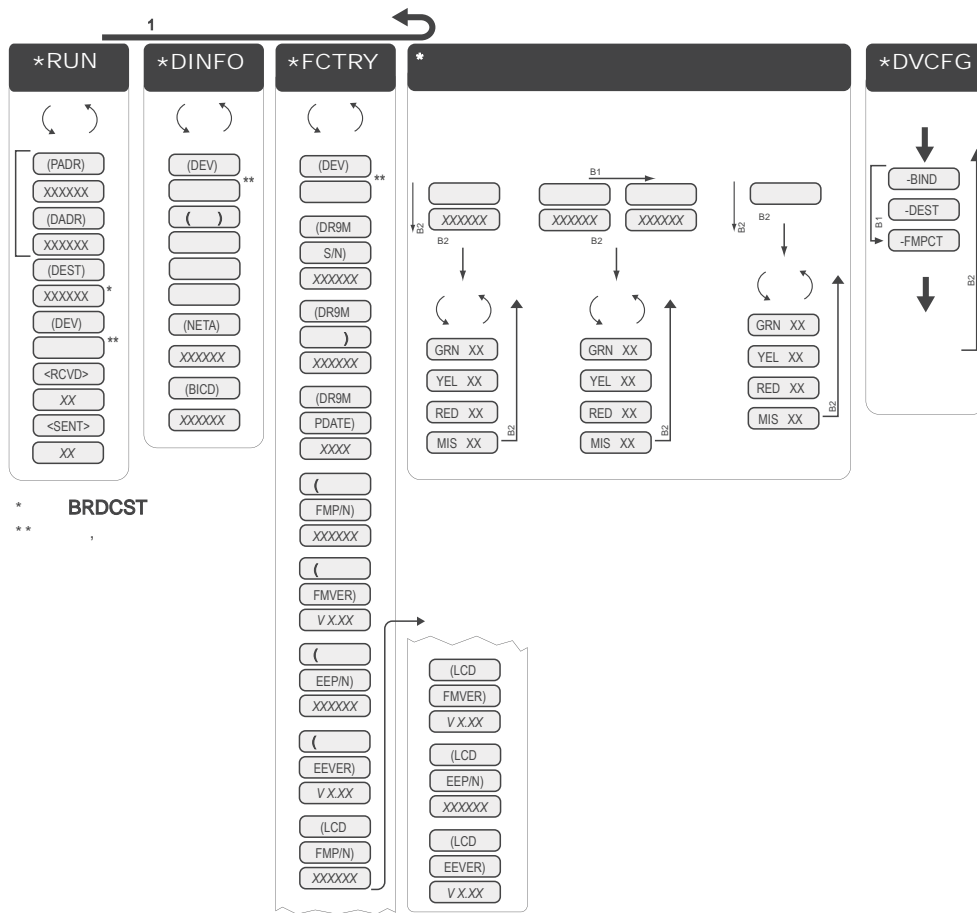
DADR.   . DADR   6   - 65535
          .

DEST.   BRDCST
                                                                Modbus
                        .

RCVD.   .

SENT.   .

DINFO(   )

DINFO   .

(NAME). 18   .

(NETA).   (   )   .

(BICD).   (   )   .

FCTRY(   )

FCTRY   ,   .

S/N.   .

Model #. DX80DR9M   .

PDate.   .

Radio FMP/N.   .

SITE(   )

                    /   2   .   1   GRN,
YEL, RED   MIS   .

DVCFG(   )

        2   .   1   .

-BIND.   .   2   .
                                2   1   .
                        2   .   (2)
            (1)   .

-DEST.   .   .

-FMPCT.   50%   .   50%   (25%   )
                                /   .   25%
                        .

MultiHop   (
)

                            .

MultiHop   MultiHop
                        . MultiHop
                        .   .   /

MultiHop

/

. MultiHop

LCD   *DVCFG   , -BIND   .

.

.

.

.

:

1.   1   *DVCFG   .1.

2.   2   DVCFG   .2. -BIND   DVCFG
.

3.   2   .
.3.

4.   1
.   2   4.
.

5.   2   .
5.   SAVE   2   .

6.   .   1
.6.   2   .

7.   2   DVCFG   .

Modbus

Modbus   /   .

. Modbus   /
.

1.   46452 - 46455   0   .

2.   46451   1   .
.

                        100   .

3.   10   .
100   .

4.   .

46452   .   46453
.   46454   .   46455
.

12 ~ 24V DC   MultiHop

DC +12 - 24V(: +12 ~ 24V dc, ± 10%)   MultiHop
4   .
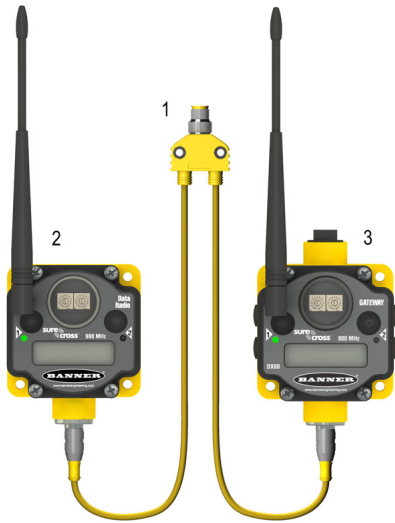
1   CSB-M1240M1241.   , 4   QD,
          , 2   ,   .
                                                                    .

2   DX80DR9M-H*x*. DC +12 - 24V(: +12 ~ 24V dc, ± 10%)
                                        MultiHop

3   DX80   , DC +12 - 24V(: +12 ~ 24V dc, ±
    10%)

MultiHop   FlexPower

                                    FlexPower   5
.

1   CSRB-M1250M125.47M125.73.   , 5
          QD,   , 2   ,   .
          FlexPower   .
                  , 5   QD,   , 2
                ,   .
                              .

2   DX80DR9M-H*x*. MultiHop

3   DX80 FlexPower

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gineering

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: Banner Banner Corporate .

: Banner Engineering Corp. 9714 Tenth Ave. North, Minneapolis, MN 55441, : 763-544-3164, *www.bannerengineer-ing.com*, *sensors@bannerengineering.com*

: Banner Engineering Europe Park Lane, Culliganlaan 2F, Diegem B-1831 BELGIUM, : 32-(0)2 456 07 80, : 32-2 456 07 89, *www.bannereurope.com*, *mail@bannereurope.com*

Banner Engineering Turkey Barbaros Mah. UpHill Court Towers A Blok D:49 Batı Atasehir - Istanbul TURKEY, : +90 216 688 8282, : +90 216 688 8181, *www.bannerengineering.com.tr*

: Banner Engineering Corp.( ) . **:** *mexico@bannerengineer-ing.com* **:** *brasil@bannerengineering.com*

:

Banner Engineering China Shanghai Rep Office Xinlian Scientific Research Building, Level 12, Building 2, 1535 Hongmei Road, Shanghai 200030 CHINA, : 86-21-33986888, : 86-21-33986999, *www.bannerengineering.com.cn*, *sensors@banneren-gineering.com.cn*

Banner Engineering India Pune Head Quarters Office, No. 1001 Sai Capital, Opp. ICC Senapati Bapat Road, Pune 411016 INDIA, : 91-(0)20-66405624, : 91-(0)20-66405623, *www.bannerengineering.co.in*, *india@bannerengineering.com*

Banner Engineering Japan Cent-Urban Building 305 3-23-15, Nishi-Nakajima Yodogawa-Ku, Osaka 532-0011 JAPAN, : 81-(0)6-6309-0411, : 81-6-6309-0416, *www.bannerengineering.co.jp*, *mail@bannerengineering.co.jp*

Banner Engineering Korea 8th Fl., CM Bldg, 32-7, Songpa-Dong Songpa-Gu, Seoul, REPUBLIC OF KOREA 138-849, : +82 (0)2 417 0285 : +82 (0)2 413 0285, *www.bannerengineering.co.kr*

Banner Engineering Int'l Incorporated Taiwan Rep. Office 8F-2, No. 308, Sec. 1, Neihu Rd. Taipei, TAIWAN 114 : +886 (0)2 8751 9966, : +886 2 8751 2966, *www.bannerengineering.com.tw*, *info@bannerengineering.com.tw*

Banner Engineering Corp

Banner Engineering Corp. 1 .
Banner Engineering Corp.

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