	<h1>DOCUMENTATION</h1>
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N° TPr	Libellé des travaux liés	Projet	Code
0009	Conception radio mixte 868-915MHz	USDomoSystem.RSI	USDS

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J-L BUCHER			

Diffusion interne	Pour information interne	Diffusion externe	Société
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Résumé

## HISTORIQUE DU DOCUMENT

Version	Date (J-M-A)	Initiales auteurs	Objet de la modification	Chapitre
1.1	20-01-2010	JLBU	Update TX Power	1...
1.0	20-01-2010	JLBU	Creation	1...

## REFERENCES

Référence	Nom

## ABREVIATIONS

Abréviation	Désignation
FHSS	Frequency Hopping Spread Spectrum

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## 1. TUNE UP INFORMATION

	Min.	Typical	Max.	Unit	Comments
<b>1.1 Frequency Band</b>					
ISM Band	902		928	MHz	
Center Frequency		915.3		MHz	
Bandwidth		22		MHz	
Spectral Dispersion		FHSS			
Channel Number		25			
Frequency Separation between channels		900		kHz	
Center Frequency Channel n		904,5 +0,9 n		MHz	n : 0 to 24
Frequency Accuracy at 25°C			±12	ppm	
Frequency Stability over temperature :			±10	ppm	(- 10 to + 55°C / ref. 25°C)
<b>1.2 Channel Modulation</b>					
Modulation Type		FSK			
Deviation		±120		kHz	
-20dB Bandwidth	250			kHz	Min FCC value for 25 ch
Binary Rate		38,67		kbps	~ 19,8MHz/8/64
<b>1.3 RF Power</b>					
					(Conducted Measurements)
TX Power	8	10	12	dBm	Delivered to the antenna
RX Sensitivity		-103		dBm	

## 2. FREQUENCY MAPPING

Channel n	Fequency (MHz)	Pseudo Random Rank
0	904.5	0
1	905.4	10
2	906.3	6
3	907.2	16
4	908.1	22
5	909.0	24
6	909.0	3
7	910.8	5
8	911.7	2
9	912.6	18
10	913.5	14
11	914.4	20
12	915.3	12
13	916.2	1
14	917.1	23
15	918.0	11
16	918.9	15
17	919.8	9
18	920.7	7
19	921.6	17
20	922.5	21
21	923.4	19
22	924.3	4
23	925.2	8
24	926.1	13

### 3. PACKETS FORMATS

A given message is divided in several packets (fixed length = 10 bytes). The preamble packets are transmitted first and contain longer preamble bytes for easier synchronization of the receiver. The following data packets contain the payload (5 bytes). The total number of packets is variable.

Preamble packet :

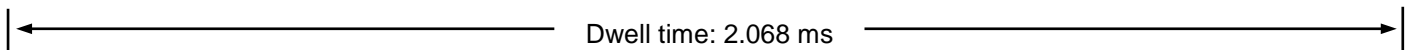
01010101	01010101	01010101	01010101	01010101	01010101	11110010	type   hop   chan#	8-bit	8-bit
learn	learn	learn	learn	learn	learn	sync-P	xx   flag   ccccc	syst Id_lo	syst Id_hi

Usage :

pairing	00	preamb async	hop flag + channel #	hop=0 : default hop table
std preamb	01	preamb sync	hop flag+ down-counter	hop=1 : alternate hop table
resync	11	preamb async	hop flag + channel #	

Data packet :

01010101	01010101	01000001	type   dwn cntr	data1	data2	data3	data4	data5	CRC-8
learn	learn	sync-D	10   ddddd	(*)	(*)	(*)	(*)	(*)	



Blank time: ~206.9µs

(\*) The data bytes may have any values, included consecutive '0' or '1'. These cases shall not affect the clock recovery function.