BABV

KESIMPULAN

1. Dari hasil perancangan antena untuk frekuensi operasi Wifi 2,4 s.d 2,5 GHz diperoleh target dari parameter yang diperoleh dari hasil simulasi dan pengukuran. Parameter hasil simulasi maupun pengukuran untuk parameter S11 antara lain : Return Loss dibawah 10 dB dari hasil simulasi didapat 13,99- 18,83 dB dan dari hasil pengukuran didapat 10,121 – 14,503. VSWR untuk nilai min s.d maks dari simulasi didapat dari 1,687 – 1,72 dan dari pengukuran didapat dari 1,4623 – 1,9174. Untuk target resonansi di daerah frekuensi *center* 2,45 GHz dari hasil simulasi dan pengukuran diperoleh penyimpangan atau pergeseran frekuensi resonansi sebesar 0,73%. Impedansi masukan dari hasil proses simulasi 49,04 Ω dan hasil pengukurannya 58,57 + j1,4536 Ω.

2. Karakteristik antena bersifat Monopole dari hasil polaradiasi dengan maksimum directivity diperoleh.gain 6,42 dB dengan lebar Beamwidth $85{,}02^0$.. Dari hasil rancang bangun antena mikrostrip patch bujur sangkar dengan struktur planar menggunakan saluran microstrip mempunyai polarisasi linear

3. Penambahan sebuah stub seri sebagai *transformer matching* impedansi diperoleh efektif diletakan dengan panjang 0,162 λg dan ditempatkan pada

posisi jarak dari patch 0.081 λg. Kondisi ini diperoleh dari parameter yang didapat dari S11. Penggunaan *Stub line* memberikan kondisi *matching* yang diharapkan sehingga dapat untuk meng-eliminasi refleksi akibat perbedaan impedansi beban dengan impedansi gelombang.

4. Protoype antena mikrostrip memperlihatkan sebuah rancang bangun antena yang compact, minimalis, sederhana, mudah fabrikasi dan maksimal dalam pencapaian hasil terhadap parameter yang diinginkan

DAFTAR PUSTAKA

1. JR James & PS Hall, "*Handbook of Microstrip Antennas*", Peter Peregrinus Ltd, Volume 1 dan Volume 2, 1993.
2. John D. Kraus, " Antennas ", McGraw –Hill, 2nd ed, 1988.
3. Kai Chang,Inder Bahl,Vijay Nair ; " *RF and Microwave Circuit and Component Design for Wireless System*", John Wiley & Son, 2002.
4. Kin-Lu Wong, *"Compact and Broadband Microstrip Antennas* "Copyright_c 2002 John Wiley & Sons, Inc.ISBNs: 0-471-41717-3.
5. M. Darsono, Sapto Nugroho," *Rancang Bangun Antena Microstrip Polarisasi Melingkar Patch Bujur Sangkar Untuk Komunikasi Satelit*", Jurnal Ilmiah Nasional Elektronika dan Telekomunikasi (Terakreditasi LIPI No : 276/AU1/P2MBI/05/2010), Volume 10, Nomor 1 , ISSN : 1411-8289, Januari-Mei 2010.
6. M. Darsono,"*Design of Circularly Polarisation Microstrip Antenna for LAPAN TUBSAT Micro Satellite Application*", Jurnal Ilmiah Nasional Bidang Rekayasa Sains & Teknologi -GIGA, Vol. 12, No.2, Hal : 87-91, ISSN : 1410-8682, Juni 2009.
7. Robert E.Collin ; " *Foundation For Microwave Engineering* " , McGraw-Hill, 2nd ed, 1992.W.Hasbi, E.Nasser, A.Rahman," *Spacecraft Control Center Of Lapan-Tubsat Micro Satellite*" National Institute for Aeronautics and Space (LAPAN)-Indonesia, http://www.aprsaf.org/feature/PAPER_ASC2007-WHASBI-LAPAN-2.
8. Suhata,"Pengembangan Model Feed Horn Antena S-band untuk Ground Station Satelit Mikro LAPAN TUBSAT", Buku: Pengembangan Teknologi

Dirgantara Untuk Mendukung Program Satelit Mikro LAPAN, ISBN : 978-979-1458-16-0, LAPAN, 2008.

9. http://www.antenna-theory.com/
10. Wong, K. L., *Compact and Broadband Microstrip Antenas*, (New York : John Willey & Son, 2002).
11. http://en.kioskea.net/contents/wifi /wifimodes.php3

LAMPIRAN 1

Spesifikasi Substrate

ROGERS CORPORATION

Advanced Circuit Materials Division
480-961-1382 FAX: 480-961-4533
www.rogerscorporation.com

High Frequency Laminates: Standard Thickness, Tolerance and Panel Sizes

Grade	Dielectric Constant	Standard Dielectric Thickness	Standard Panel Sizes
RT/duroid® 5870 RT/duroid 5880	2.33 2.20	0.005" (0.127mm) ±0.0005" 0.010" (0.254mm) ±0.0007" 0.015" (0.381mm) ±0.001" 0.020" (0.508mm) ±0.001" 0.031" (0.787mm) ±0.001" 0.062" (1.570mm) ±0.002" 0.125" (3.170mm) ±0.004"	18" X 12" (457 X 305mm) 18"X 24" (457 X 305mm) 18"X 36" (457 X 914mm) 18" X 48" (457X 1.219m)
RT/duroid 5880LZ	1.96	0.010" (0.256mm) ±0.001" 0.020" (0.508mm) ±0.001" 0.025" (0.625mm) ±0.001" 0.030" (0.762mm) ±0.002" 0.040" (1.026mm) ±0.002" 0.050" (1.270mm) ±0.003" 0.100" (2.540mm) ±0.004" Other thicknesses available in 10 mil increments.	12" X 18" (305X457mm) 24"X18" (610X457mm) 24"X 54" (610X1.37m)
RT/duroid 6002 *RT/duroid 6202	2.94 *2.90(0.005") *2.98(0.010") *3.00(0.015") *2.90 (0.020/0.030)	0.005" (0.127mm) ±0.0005" 0.010" (0.254mm) ±0.0007" 0.020" (0.508mm) ±0.001" 0.030"(0.762mm) ±0.0015" 0.060" (1.524 mm) ±0.002" 0.120"(3.048mm) ±0.004"	12" X 18" (305X 457mm) 24"X 18" (610X 457mm) 24"X 54" (610X1.37m)
RT/duroid 6006	6.15	0.010" (0.254mm) ±0.001" 0.025" (0.635mm) ±0.001" 0.050" (1.270mm) ±0.002" 0.075" (1.905mm) ±0.004" 0.100"(2.540mm) ±0.005"	10"X10" (254X254mm) 10" X 20" (254X 508mm) 20" X 20" (508X 508 mm) 18" X 12" (457.2X305mm) 18" X 24" (457X 305mm)
RT/duroid 6010LM	10.2 10.5 10.8		
RT/duroid material available claddings: 1/4 oz. (9µm), 1/2oz (17µm), 1 oz (35µm), 2 oz(70µm) electrodeposited copper foil. 1/2 oz (17µm), 1oz(35µm), 2 oz (70µm) rolled copper foil. Thick metal cladding on aluminum, brass and copper are available.			
TMM®3	3.27	0.015" (0.381mm) ± 0.0015" 0.020" (0.508mm) ± 0.0015" 0.030" (0.762mm) ± 0.0015" 0.060" (1.524mm) ± 0.0015" 0.125" (3.175mm) ± 0.0015	18" X 12" (457X 305mm) 18"X24" (457 X610mm)
TMM4	4.50		
TMM6	6.00	0.015" (0.381mm) ± 0.0015" 0.025" (0.635mm) ± 0.0015" 0.050" (1.270mm) ± 0.0015" 0.075" (1.905 mm) ± 0.0015" 0.100" (2.540 mm) ± 0.0015"	
TMM10	9.20		
TMM10i	9.80		
TMM13i	12.80		
TMM material available claddings: 1/4 oz. (9µm), 1/2 oz(17µm), 1 oz(35um), 2 oz(70um) electrodeposited copper foil. Thick metal cladding on aluminum and brass are available.-			
ULTRALAM® 2000	2.40 2.45 2.48 2.50 2.55	0.004" (102 mm) ± 0.0004 0.0101" (0.257mm) ± 0.009 0.0147" (0.373mm) ±0.001 0.0190" (0.483mm) ±0.001 0.0300" (0.762mm) ±0.001	18" X 12" (457 X 305mm) 18" X 24" (457 X 610mm) 18"X 36" (457 X 915mm) 18"X 48" (457 X 1.219m)
ULTRALAM 2000 material available claddings: 1/4 oz. (9µm), 1/2 oz (17µm), 1 oz (35µm), 2 oz (70µm) electrodeposited copper foil, 1/2 oz., 1 oz and 2 oz rolled copper foil. Thick metal cladding on aluminum, brass and copper are available.			

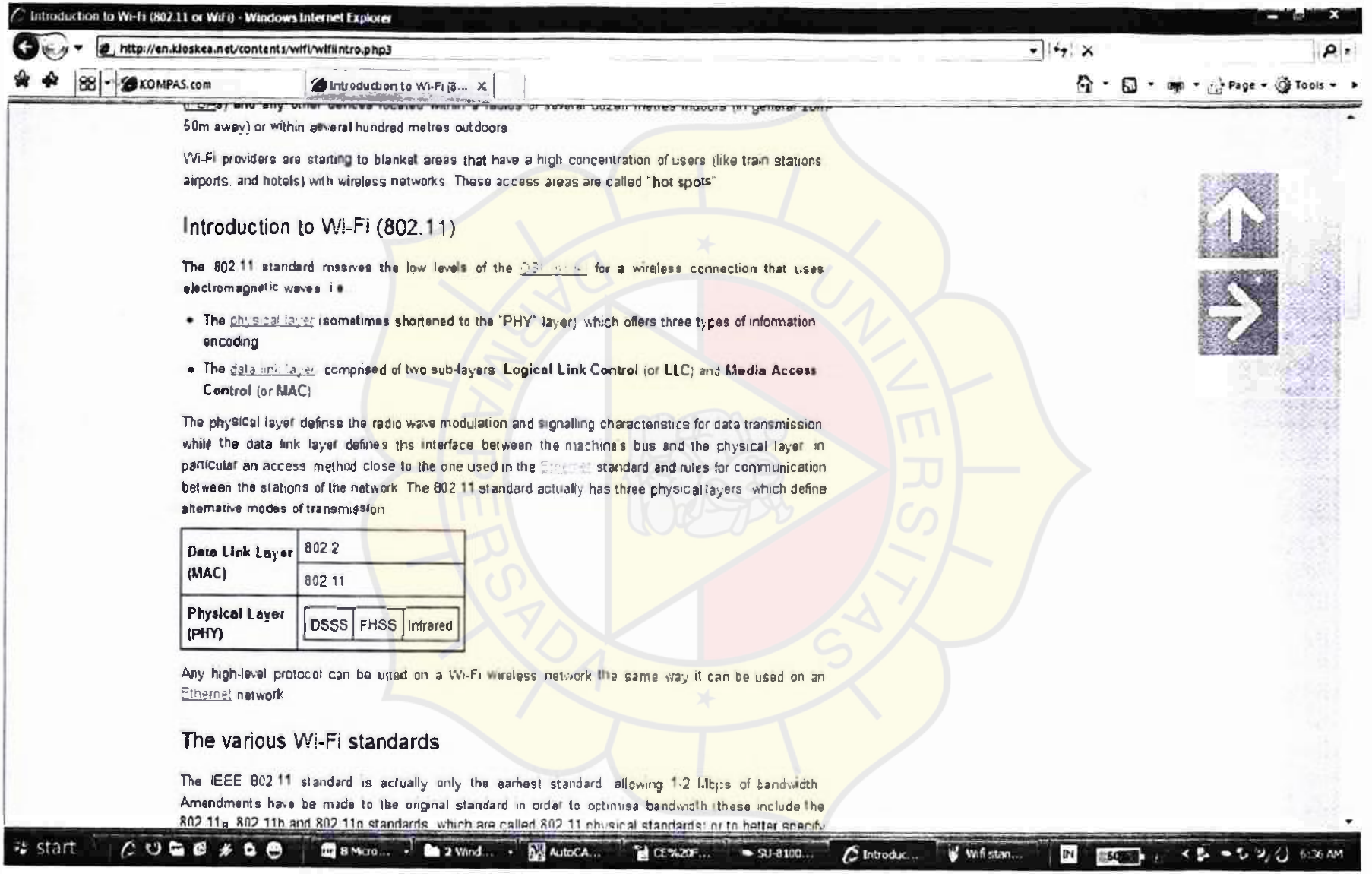
Grade	Dielectric Constant	Standard Dielectric Thickness	Standard Panel Sizes
RO3003™	3.00	0.005" (0.13mm) ± 0.0005 0.010" (0.25mm) ± 0.0007 0.020" (0.50mm) ± 0.001 0.030" (0.75mm) ± 0.0015 0.060" (1.52mm) ± 0.003	12" X 18" (305 x 457mm) 24" X 18" (610 X 457 mm) 24" X 36" (610 X 915 mm)
RO3035™	3.5		
RO3006™	6.15	0.005" (0.13mm) ± 0.0005 0.010" (0.25mm) ± 0.0007	
RO3010™	10.2	0.025" (0.64mm) ± 0.001 0.050" (1.27mm) ± 0.002	
RO3203™	3.02	0.010" (0.25mm) ± 0.0007 0.020" (0.50mm) ± 0.001 0.030" (0.75mm) ± 0.0015 0.060" (1.52mm) ± 0.003	
RO3206™	6.15	0.025" (0.64mm) ± 0.001 0.050" (1.27mm) ± 0.002	
RO3210™	10.2		
RO4000 series materials Grade dependent 0.002" (0.05mm), 0.004" (0.10mm), 0.008" (0.20mm) electrodeposited copper foil.			
RO4003C™ RO4350B™	3.38 3.48	0.005" (0.203mm) ± 0.0010 0.010" (0.305mm) ± 0.0010 0.020" (0.406mm) ± 0.0015 0.020" (0.508mm) ± 0.0015 0.032" (0.813mm) ± 0.0020 0.060" (1.524mm) ± 0.0040	12" x 18" (305 x 457 mm) 24" x 18" (610 x 457 mm) 24" x 36" (610 x 915mm) 48" x 36" (1.224m x 915mm)
RO4535™	3.48	0.0066" (0.168mm) ± 0.0007 0.0101" (0.25 mm) ± 0.0010 0.0133" (0.338mm) ± 0.0015 0.0166" (0.422mm) ± 0.0015 0.020" (0.51mm) ± 0.0015 0.030" (0.76mm) ± 0.0020 0.060" (1.52mm) ± 0.0040	
RO4450 B PREPREG	3.20	0.0036" (0.091mm)	24" X 18" (610 X 457mm)
	3.54	0.004" (0.102mm)	
RO4450F PREPREG	3.52	0.004" (0.102mm)	24" x 18" (610 x 457 mm)

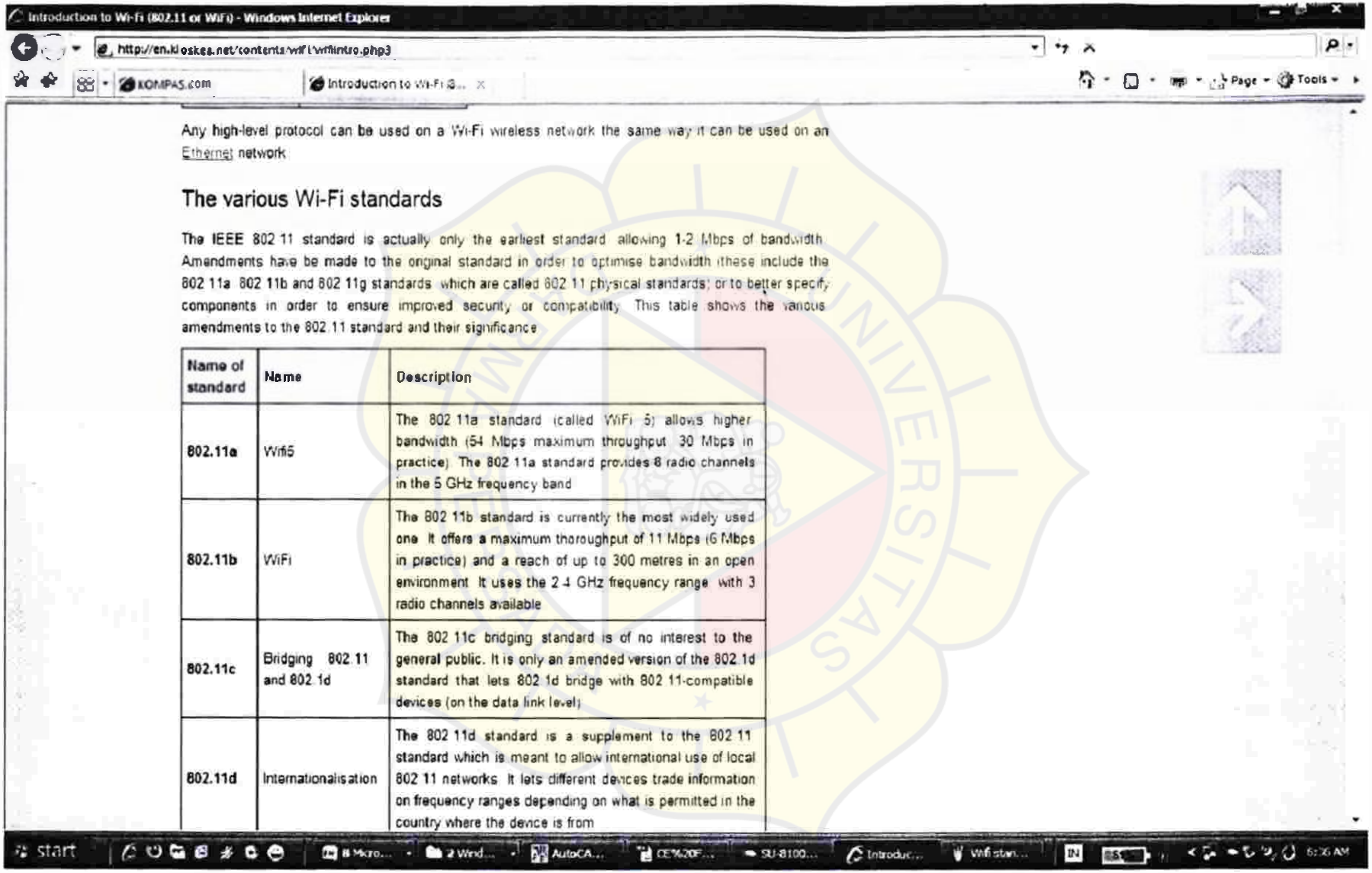
Grade	Dielectric Constant	Standard Dielectric Thickness	Standard Panel Sizes
RO3730 Antenna Grade	3.00	0.030 (0.762mm) ± 0.0015 0.060 (1.524mm) ± 0.003	24"X18" (601mmX 477 24X54" (610mm X 1.37m)
RO4730 Antenna Grade	3.00	0.0307 (0.780mm) ± 0.015 0.0407 (1.034mm) ± 0.002 0.0607 (1.542mm) ± 0.003	24X18 (610X457 mm) 48 X 36" (1.224 m X 0.915mm)

LAMPIRAN 2

Wifi Standar


Introduction to Wi-Fi (802.11) - Windows Internet Explorer
http://en.kioskea.net/contents/wifi/wifiintro.php3
Article
Table of contents
Tweet 5
Share 18
Introduction to Wi-Fi (802.11)
The IEEE 802.11 specification (ISO/IEC 8802-11) is an international standard describing the characteristics of a wireless local area network (WLAN). The name Wi-Fi (short for "Wireless Fidelity", sometimes incorrectly shortened to WiFi) corresponds to the name of the certification given by the Wi-Fi Alliance, formerly WECA (Wireless Ethernet Compatibility Alliance), the group which ensures compatibility between hardware devices that use the 802.11 standard. Today, due to misuse of the terms (and for marketing purposes), the name of the standard is often confused with the name of the certification. A Wi-Fi network, in reality, is a network that complies with the 802.11 standard. Hardware devices certified by the Wi-Fi Alliance are allowed to use this logo:
Wi Fi
With Wi-Fi, it is possible to create high-speed wireless local area networks, provided that the computer to be connected is not too far from the access point. In practice, Wi-Fi can be used to provide high-speed connections (11 Mbps or greater) to laptop computers, desktop computers, personal digital assistants (PDAs) and any other devices located within a radius of several dozen metres indoors (in general 20m-50m away) or within several hundred metres outdoors.
Wi-Fi providers are starting to blanket areas that have a high concentration of users (like train stations, airports, and hotels) with wireless networks. These access areas are called "hot spots".
Introduction to Wi-Fi (802.11)
The 802.11 standard reserves the low levels of the OSI model for a wireless connection that uses
Rollover to Play
Exclusive interview for Kioskea
Paul Hermelin (CEO, Capgemini) : "We expect to join the top 10 in the US soon"
start
6:55 AM


Introduction to Wi-Fi (802.11 or Wifi) - Windows Internet Explorer
http://en.kioskea.net/contents/wifi/wifiintro.php3
KOMPAS.com
Introduction to Wi-Fi (8...
Page
Tools
50m away) or within several hundred metres outdoors
Wi-Fi providers are starting to blanket areas that have a high concentration of users (like train stations airports, and hotels) with wireless networks. These access areas are called "hot spots"
Introduction to Wi-Fi (802.11)
The 802.11 standard reserves the low levels of the OSI model for a wireless connection that uses electromagnetic waves, i.e.
The physical layer (sometimes shortened to the "PHY" layer) which offers three types of information encoding
The data link layer, comprised of two sub-layers: Logical Link Control (or LLC) and Media Access Control (or MAC)
The physical layer defines the radio wave modulation and signalling characteristics for data transmission while the data link layer defines the interface between the machine's bus and the physical layer, in particular an access method close to the one used in the Ethernet standard and rules for communication between the stations of the network. The 802.11 standard actually has three physical layers, which define alternative modes of transmission
Data Link Layer (MAC)
802.2
802.11
Physical Layer (PHY)
DSSS
FHSS
Infrared
Any high-level protocol can be used on a Wi-Fi wireless network the same way it can be used on an Ethernet network
The various Wi-Fi standards
The IEEE 802.11 standard is actually only the earliest standard, allowing 1-2 Mbps of bandwidth. Amendments have be made to the original standard in order to optimise bandwidth these include the 802.11a, 802.11b and 802.11g standards, which are called 802.11 physical standards or to better specify
start
8 Micro...
2 Wind...
AutoCA...
CE%20F...
SU-8100...
Introduc...
Wifi stan...
6:36 AM

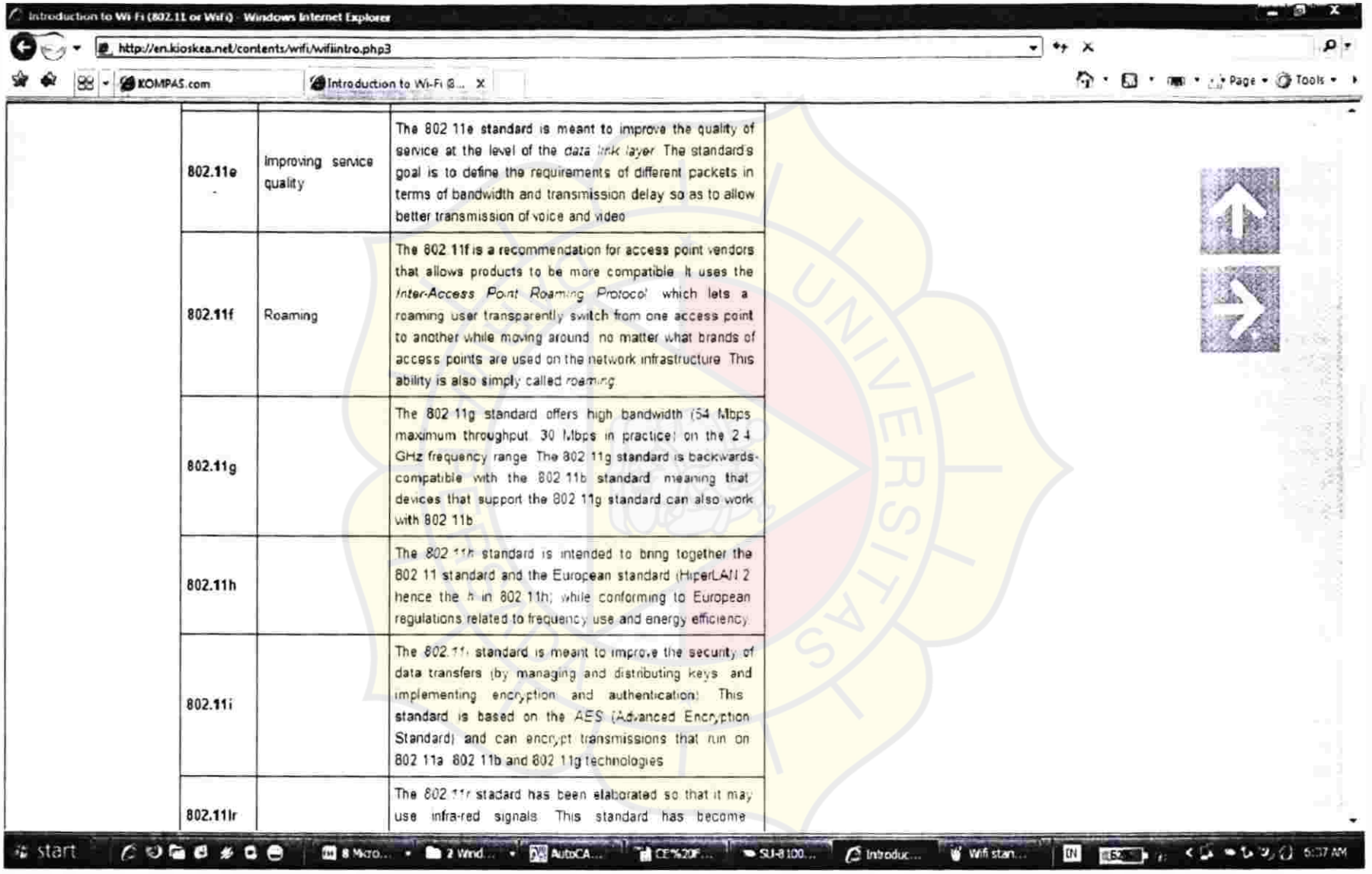


Any high-level protocol can be used on a Wi-Fi wireless network the same way it can be used on an Ethernet network

The various Wi-Fi standards

The IEEE 802.11 standard is actually only the earliest standard allowing 1-2 Mbps of bandwidth. Amendments have be made to the original standard in order to optimise bandwidth (these include the 802.11a, 802.11b and 802.11g standards, which are called 802.11 physical standards), or to better specify components in order to ensure improved security or compatibility. This table shows the various amendments to the 802.11 standard and their significance:

Name of standard	Name	Description
802.11a	Wifi5	The 802.11a standard (called WiFi 5) allows higher bandwidth (54 Mbps maximum throughput, 30 Mbps in practice). The 802.11a standard provides 8 radio channels in the 5 GHz frequency band
802.11b	WiFi	The 802.11b standard is currently the most widely used one. It offers a maximum thoroughput of 11 Mbps (6 Mbps in practice) and a reach of up to 300 metres in an open environment. It uses the 2.4 GHz frequency range, with 3 radio channels available
802.11c	Bridging 802.11 and 802.1d	The 802.11c bridging standard is of no interest to the general public. It is only an amended version of the 802.1d standard that lets 802.1d bridge with 802.11-compatible devices (on the data link level)
802.11d	Internationalisation	The 802.11d standard is a supplement to the 802.11 standard which is meant to allow international use of local 802.11 networks. It lets different devices trade information on frequency ranges depending on what is permitted in the country where the device is from


Introduction to Wi-Fi (802.11 or WiFi) - Windows Internet Explorer
http://en.kioskea.net/contents/wifi/wifiintro.php3
KOMPAS.com
Introduction to Wi-Fi (8...
Page
Tools
802.11e
Improving service quality
The 802.11e standard is meant to improve the quality of service at the level of the data link layer. The standard's goal is to define the requirements of different packets in terms of bandwidth and transmission delay so as to allow better transmission of voice and video
802.11f
Roaming
The 802.11f is a recommendation for access point vendors that allows products to be more compatible. It uses the Inter-Access Point Roaming Protocol which lets a roaming user transparently switch from one access point to another while moving around, no matter what brands of access points are used on the network infrastructure. This ability is also simply called roaming.
802.11g
The 802.11g standard offers high bandwidth (54 Mbps maximum throughput, 30 Mbps in practice) on the 2.4 GHz frequency range. The 802.11g standard is backwards-compatible with the 802.11b standard, meaning that devices that support the 802.11g standard can also work with 802.11b.
802.11h
The 802.11h standard is intended to bring together the 802.11 standard and the European standard (HiperLAN 2, hence the h in 802.11h), while conforming to European regulations related to frequency use and energy efficiency.
802.11i
The 802.11i standard is meant to improve the security of data transfers (by managing and distributing keys and implementing encryption and authentication). This standard is based on the AES (Advanced Encryption Standard) and can encrypt transmissions that run on 802.11a, 802.11b and 802.11g technologies.
802.11ir
The 802.11r stadard has been elaborated so that it may use infra-red signals. This standard has become
start
8 Micro...
2 Wind...
AutoCA...
CE%20F...
SU-8100...
Introduc...
Wifi stan...
EN
5:37 AM

CURICULUM VITAE

Nama	: Gun Gun Gundalih Permadi
Tempat/Tanggal Lahir	: Sukabumi, 19 September 1975
Jenis Kelamin	: Laki-laki
Agama	: Islam
Status	: Menikah
Alamat	: Vila Indah Permai, Blok 14 no.2, Teluk Pucung, Bekasi Utara
Telepon	: 0812 9699 519
Email	: gungun.gundalih@aplcare.com

PENDIDIKAN:

1. SDL Ir H Djuanda, Sukabumi — Lulus 1988
2. SMP Negeri 1, Sukabumi — Lulus 1991
3. SMA Negeri 1, Sukabumi — Lulus 1994
4. D3 Instrumentasi Elektronika, Universitas Padjadjaran Bandung — Lulus 1997
5. S1 Teknik Elektro, Universitas Darma Persada Jakarta — Lulus 2011

PEKERJAAN:

1. PT. Aiwa Indonesia Sukabumi, 1998 ~ 2001, Quality Assurance Leader
2. PT Anugerah Pharmindo Lestari, 2001 ~ sekarang, Infrastructure/Logistic Officer