BAB V

KESIMPULAN

1. Pada hasil perhitungan didapat, jarak wilayah jangkauan pada blok Cinanggung 2, 79 Km, dan untuk jarak wilayah jangkauan blok Kragilan adalah 2,8 Km, sedangkan antara blok Kragilan dan blok Cinanggung terpisah pada jarak 10,48 Km sehingga setelah di analisis maka terdapat daerah yang belum tercover (blank spot) dengan jarak 4,89 Km.
2. Dengan dibangunnya new site dengan jarak wilayah jangkauan yaitu 5,56 Km sehingga daerah yang belum tercover (blank spot) yang terjadi dapat diatasi, sehingga komunikasi dapat terjadi.

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2.[Mulyanta 2003] Mulyanta, Edi, "Kupas Tuntas Telepon Selular", Penerbit Andi, Yogyakarta, 2003

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6.Global Sistem for Mobile Communication (GSM) oleh Uke Kurniawan Usman STTTELKOM.Syafari Anjar, *Sekilas tentang Teknologi 3G*, http://www.ansite.com/.html

LAMPIRAN I

SPESIFIKASI KABEL

lew HELIAX® AVA5-50 Coaxial Cable

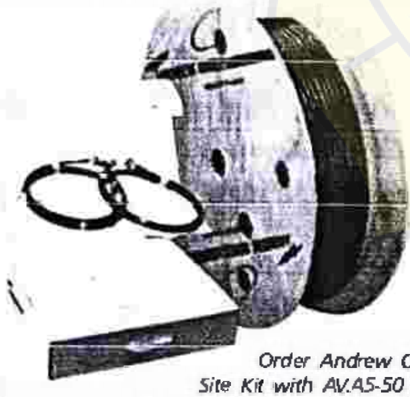
/8" Andrew Virtual Air™ Cable for Wireless Applications

ELIAX AV.A5-50 from Andrew Corporation the lowest attenuation coaxial cable in e industry.

th HELIAX AVA5-50, system designers and operators **cut cable subsystem costs by up to 30%** and n tower height at the same time. Engineers can v meet system link budgets using HELIAX AVA5-50 " coaxial cable in certain taller tower applications, ead of a 1-1/4" cable which would have previously n required.

ufactured worldwide, HELIAX AVA5-50 cables can t your site quickly via our global distribution vork. Or simply order an Andrew OnePack℠ Site Kit AVA5-50 for even faster, more consistent site douts.

gned and engineered with both your link and cost gets in mind, AVA5-50 cable continues the long-ding tradition of quality and excellence that AX has delivered to the communication industry ecades.



Order Andrew OnePack℠ Site Kit with AV.A5-50 for even faster, more consistent site buildouts.

UMTS and GSM 1800 System Users – Lower attenuation means less line loss!

GSM 1800 mid-band (1798 MHz)
LDF5-50A @ 30 m = 1.72 dB
AVA5-50 @ 30 m = 1.65 dB

UMTS mid-band (2035 MHz)
LDF5-50A @ 30 m = 1.85 dB
AVA5-50 @ 30 m = 1.70 dB

ailable in 1-5/8" (AVA7-50)

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ecifications for HELIAX® AVA5-50 Low Density Foam Dielectric Coaxial Cable 7/8"

:hanical

iinal size	7/8 inch
et O.D, *in (mm)*	1.102 (27.99)
er conductor O.D, *in (mm)*	1.000 (25.4)
n dielectric O.D, *in (mm)*	0.950 (24.13)
r conductor O.D, *in (mm)*	0372 (9.45)
ght, *lb/ft (kg/m)*	030 (0.44)
ile strength, *lb (kg)*	325 (147)
h, *lb/in (kg/mm)*	60 (1.1)
mum bend radius, *in (mm)*	10 (250)
time minimum bend radius, *in (mm)*	5 (127)
ling moment, *lb-ft (N-m)*	11 (15.2)
ber of bends, *min. (typical)*	15 (30)

ronmental

ge temperature, *°F (°C)*	-94 to +185° (-70 to +85°)
lation temperature, *°F (°C)*	-40 to +140° (-40 to +60°)
ating temperature, *°F (°C)*	-67 to +185° (-55 to +85°)

rical

dance, *ohms*		50 ± 1
reflection, *maximum %*		0.5
ency, *maximum MHz*		4900
ty, %		91
power, *kW*		91
istance, *ohm/kft (ohm/km)*	*inner*	0.41 (1.35)
	outer	0.34 (1.12)
tance, *pF/ft (pF/m)*		22.3 (73.2)
ance, *microH/ft (microH/m)*		0.05 (0.18)
akdown, *volts*		6,000
spark, *volts RMS*		8,000
ion resistance, *Mohm*		100,000
hs to 610 m (2000 ft)		
trim, *degrees minimum/GHz*		±4.540
ler IM, *20 W carriers, 1900 MHz*		-120.0 (dBm, typical)

Frequency MHz	Attenuation dB/100 ft	Attenuation dB/100 m	Average Power, kW
30	0.183	0.599	14.0
150	0.417	1.37	6.14
450	0.744	2.44	3.44
824	1.03	3.38	2.49
894	1.08	3.53	2.38
960	1.12	3.67	2.29
1500	1.43	4.70	1.79
1700	1.54	5.04	1.67
2000	1.68	5.53	1.52
2300	1.82	5.98	1.41
3000	2.12	6.97	1.21
4900	2.83	9.29	0.905

Rating temperature *(attenuation), °F (°C)*	68 (20)
Rating temperature *(power)-inner, °F (°C)*	212 (100)
Rating temperature *(power)-ambient, °F (°C)*	104 (40)

Accessories

Standard Hangers, kit of 10	42396A-5
Hardware, kit of 10	
3/4" (19 mm) long	31769-5
1" (25 mm) long	31769-1
Snap-In Hangers, kit of 10	206706A-2
Click-On Hangers, kit of 10	L5CLICKB
Support Hoisting Grip	
Grip with one clamp	L5SGRIP
Support clamp, kit of 10	L5SGRIP-S1K
Standard Hoisting Grip	19256B
SureGround™ Grounding Kit	
one-hole lug	SGL5-06B1
two-hole lug	SGL5-06B2
three-hole lug	SGL5-15B4
3M™ Cold Shrink™ Weatherproofing Kit	
7/8" to 1/2" cables	241475-9
Entry Systems	
Standard 4" cable entry boot, 1 hole	240679A-2
Standard 4" cable entry boot, 3 holes	240679A-15

AVA5-50 Connectors

Connectors	Part Number
N Female RingFlare™	A5PNF-RCN
N Female OnePiece™	A5PNF-RPC
N Male RingFlare	A5PNM-RCN
N Male OnePiece	A5PNM-RPC
DIN Female RingFlare	A5PDF-RCN
DIN Female OnePiece	A5PDF-RPC
DIN Male RingFlare	A5PDM-RCN
DIN Male OnePiece	A5PDM-RPC

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All designs, specifications and availabilities of products and services presented in this bulletin are subject to change without notice.

LAMPIRAN II

SPESIFIKASI MOBILE STASION

Radio Licence Interface Requirement 2019
Second Generation Mobile

98/34/EC Notification Number: 2001/099

Published [date/year to be added]

Table 2: Minimum Requirements for Second Generation Mobile Equipment

Frequency Range (MHz)	Utilisation	Licensing Requirement	Channel Raster	Maximum Output Power	Equipment Type (indicative)	Modulation	Access Technique	Additional Technical Requirements
1899.9 - 1920	Mobile Transmit (Network user equipment)	Network user equipment, meeting the minimum requirements outlined in this interface requirement, is exempt from licensing provided that it meets the requirements of the relevant exemption regulations.	200 kHz	Power class 1: 30 dBm Power class 2: 24 dBm Power class 3: 21 dBm Power class 4: 10 dBm	IMT-2000[1] CDMA TDD	Quaternary Phase Shift Keying (QPSK)	Direct Sequence Code Division Multiple Access (DS-CDMA) with a Time Division Multiple Access (TDMA) component and Time Division Duplex (TDD)	1. Not all frequencies within these ranges are available for licensing. 2. The RA may impose additional restrictions on the maximum power used for specific frequencies and locations.
	Base Transmit	WT Act Licence, T Act Licence	200 kHz	62 dBm EIRP 58 dBm/MHz EIRP				
1920 - 1980	Mobile Transmit (Network user equipment)	Network user equipment, meeting the minimum requirements outlined in this interface requirement, is exempt from licensing provided that it meets the requirements of the relevant exemption regulations.	200 kHz	Power class 1: 33 dBm Power class 2: 27 dBm Power class 3: 24 dBm Power class 4: 21 dBm	IMT-2000[1] CDMA Direct Spread	Quaternary Phase Shift Keying (QPSK)	Wideband Code Division Multiple Access (W-CDMA)	
2110 - 2170	Base Transmit	WT Act Licence, T Act Licence	200 kHz	62 dBm EIRP 58 dBm/MHz EIRP				

[1] IMT-2000 is defined in Recommendation ITU-R M.1457

LAMPIRAN III

NILAI NOISE FIGURE

TSG-RAN Working Group 4 (Radio) R4-071688
Shanghai, China, 8-12 October 2007

Source: Ericsson

Title: noise figure

Agenda item: 6.2.3

Document for: Measurement

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1 Background

Most of the BS receiver requirements are set relative to the reference sensitivity level. That level will depend directly on the noise figure of the base station receiver and user equipment receiver. This contribution discusses the selection of Noise Figure for setting RF requirements.

2 Discussion

The Noise Figure of a BS receiver and mobile station (Ms) receiver is a measure of the degradation of the Signal-to-Noise ratio through the BS receiver. It is defined as the ratio between SNR at the input to the SNR at the output and is purely determined by the analogue parts of the receiver. This has some implications for what can impact the Noise Figure.

- Since NF depends only on the analogue parts of the receiver, it will *not have any dependence* on the choice of multiple access technology or detailed physical layer parameters such as the frame structure.
- The duplex method can however have implications for the NF.
  - A TDD BS will require an antenna switch, assuming that Tx and Rx are on the same antenna. The antenna switch has an insertion loss of at the most a few tenths of a dB.
  - An FDD BS will require a duplex filter, since it operates with simultaneous transmission and reception. The filter must ensure that the receiver can operate at full sensitivity with the transmitter on in all possible carrier positions and at the maximum output power, requiring very high attenuation of the transmitted signal towards the receiver. Such a filter always has a certain insertion loss.

The noise figure used for RF requirements was originally selected to be 6 dB both for FDD and TDD operation for BS receiver, and selected to be 8 dB both for FDD and TDD operation for mobile station (Ms) receiver. This value is also the same value that was used within ITU-R [1].

The noise figure is an essential parameter for any radio communication system, since it is fundamental to the system performance.

3 References

[1] ITU-R Recommendation M.1225, "Guidelines For Evaluation Of Radio Transmission Technologies".

LAMPIRAN IV

NILAI EB/NO

INTERNATIONAL TELECOMMUNICATION UNION

CCITT

O.152

THE INTERNATIONAL
TELEGRAPH AND TELEPHONE
CONSULTATIVE COMMITTEE

(10/92)

SPECIFICATIONS OF MEASURING EQUIPMENT

PERFORMANCE MEASURING EQUIPMENT FOR ENERGY BIT FROM NOISE OF ADATIVE MULTI-RATE

Recommendation O.152

FOREWORD

The CCITT (the International Telegraph and Telephone Consultative Committee) is a permanent organ of the nternational Telecommunication Union (ITU). CCITT is responsible for studying technical, operating and tariff uestions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide asis.

The Plenary Assembly of CCITT which meets every four years, establishes the topics for study and approves Recommendations prepared by its Study Groups. The approval of Recommendations by the members of CCITT between Plenary Assemblies is covered by the procedure laid down in CCITT Resolution No. 2 (Melbourne, 1988).

Recommendation O.152 was revised by Study Group IV and was approved under the Resolution No. 2 procedure on the 5th of October 1992.

CCITT NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a lecommunication administration and a recognized private operating agency.

PERFORMANCE MEASURING EQUIPMENT FOR BIT RATES OF ADAPTIVE MULTI-RATE

(Published 1984; revised 1988, 1992)

Abstract

Defines the requirements for an equipment to measure energy bit from noise at Adaptive Multi-rate.

Keywords

– pattern generator;

– performance measurement;

– measurement;

– tester.

PREAMBLE

The requirements for the characteristics of a energy bit for noise performance measuring equipment which are described

below must be adhered to in order to ensure compatibility between equipment produced by different manufacturers.

1 General

The equipment is designed to measure the bit-error performance of speech codec paths (operating at AMR *by the direct comparison of a pseudo-random test pattern with locally generated test pattern identical to the transmitted test pattern.*

2 Test patterns

The following patterns are recommended (see Recommendation O.150 [8], for further details).

2.1 Pseudo-random pattern of $2^{11} - 1$ (2047 bit) pattern length

This pattern is primarily intended for energy bit and jitter measurements on circuits operating at bit rates of 12.2, 10.20, 7.95, 7.40, 6.70, 5.90, 5.15 and 4.75 kbps

The pattern may be generated in an eleven-stage shift register whose 9th and 11th stage outputs are added in a modulo-two addition stage, and the result is fed back to the input of the first stage.

Number of shift register stages 11

Length of pseudo-random sequence $2^{11} - 1 = 2047$ bits

Longest sequence of ZEROs 10 (non-inverted signal)

Note 1 – In the case of international testing where the measurement includes systems based on 1544 kbit/s, it is necessary to modify the test sequence in such a way that more than seven consecutive ZEROs are avoided. This is achieved by forcing the output bit to ONE whenever the previous 7 bits of the sequence are all ZEROs.

Note 2 – It is recommended to use the test pattern of 2047 bit length also at other bit rates in the range of

References

[1]CCITT Recommendation G.703 – Physical/electrical characteristics of circuit interfaces.

[2]CCITT Recommendation V.36 – Modems for synchronous data transmission using 60-108 kHz group band *circuits.*

[3]CCITT Recommendation V.11 – Electrical characteristics for balanced double-current interchange circuits *for general use with integrated circuit equipment communications.*

[4]CCITT Recommendation G.821 – Error performance on an international digital connection forming part of

[5]CCITT Recommendation V.24 – List of definitions for interchange circuits between data terminal equipment *and data circuit-terminating equipment.*

[6] IEC Publication 625 – An Interface system for programmable measuring instruments (byte serial, bit parallel).

[7]CCITT Recommendation I.430 – Basic user-network interface-Layer/Specification.

[8]CCITT Recommendation O.150 – Digital test patterns for performance measurements on digital transmission *equipment.*

9]CCITT Recommendation O.3 – Climatic conditions and relevant tests for measuring equipment.

LAMPIRAN V

NILAI SOFT HAND OVER

Measured Soft Handover Gains in Live Networks

In order to verify that the simulated results are realistic, a comparison has been made to field measurement results. The measurement contains 100 soft handover add events from a drive test in a suburban area. The add and delete thresholds were set to 3 and 5dB respectively. Average mobile power was measured 1 second before and after each add event. The distribution of the mobile power decrease, power before minus power after, is shown in Figure 10 (left). 51% of all events resulted in a decrease of power with ≥0.5dB, 19% stayed within ±0.5dB, and 32% increased the power with ≥0.5dB. The average handover gain measured as power decrease was 0.9dB. This gain is however not at the cell edge where the path loss between the cells are equal, but rather at the edge of the soft handover area where the path loss differs between the cells at around 3dB according to the add threshold. The mobiles closer to the cell edge will have more equal uplink paths to the two cells and thereby a larger handover gain.

In Figure 10 (right) the SIR C.D.F. from the hard- and soft-handover simulations used in this paper are shown. At a level around the soft handover fraction, 24% with 3dB threshold, the soft handover gain is around 1dB. This verifies that the simulation results are realistic and that the handover gain results presented in this paper can be achieved. At the cell edge, as measured in this paper at 5[th] percentile, the soft handover gain is larger and approximately 2dB.

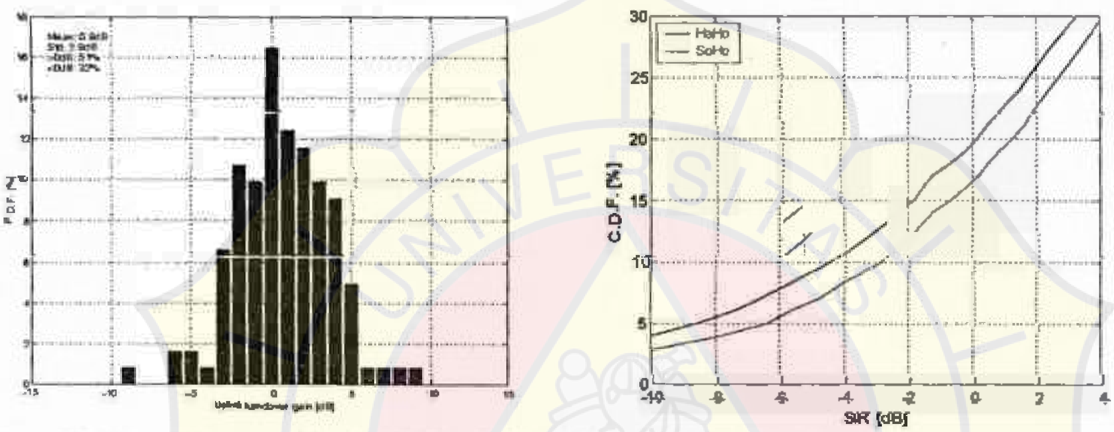

Figure 10. Measured power gain distribution (left) and simulated SIR (right).

LAMPIRAN VI

DATA TEST CALL BLOK CINANGGUNG